
UNIT 6 ARCHAEOLOGY AND GEOGRAPHY OF AGRICULTURAL AND PASTORAL COMMUNITIES OF THE SUBCONTINENT TO THE MIDDLE OF THE FIRST MILLENNIUM BC

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6.1 INTRODUCTION

The theme of this Unit which concerns the 'agricultural and pastoral communities' of the Indian subcontinent, in many ways, is both culturally and chronologically complex. So, one may begin by clarifying a number of issues.

First, a clarification about the terminology is in order. While there may be some cultures that are more dependent on domesticated animals than on cultivated crops and vice versa, generally speaking, in the time frame that we are considering here – from the beginning of food production in India till the time that cities came to be established, after the Harappan cities of about 2600-1800 BC, in northern and central India around c. 600 BC or so – there are hardly any archaeological examples of societies that can be described as either purely pastoral or as exclusive cultivators. This does not mean that there were no nomadic pastoral groups in protohistoric India but merely that there are no specifically delineated archaeological sites that can be categorized as the occupation or camp sites of such societies. This also means that the cultures that we will discuss here are better described as cultures that depend on the food that they grow and on the animals that they keep. The characteristic feature of such societies is the settled hamlet

or village which can and has been recognized in the archaeological record of most regions during this timespan.

Secondly, we are looking at such societies in diverse geographical and chronological horizons. Since the Indus civilization has already been discussed, it is the areas that fall outside its geographical ambit that are considered here. These range from the North-West Frontier and Kashmir, across the Gangetic plains to the regions in northeast India. From the Vindhyas, such horizons stretch across Malwa and Maharashtra into peninsular India. The societies that will be discussed here appear in the archaeological record as distinct cultures, marked by various traits ranging from their technological equipment to the remains of what they ate. This includes the cereals they grew, the animals they kept as also those that they hunted. The most common artefact at sites, though, is pottery which generally occurs in very large quantities. Having a knowledge of the kinds of potteries that are associated with the various cultures is important for a number of reasons but, above all, because it allows us to analytically distinguish one culture from another. However, the ceramic or pottery types and their distinctive traits are not discussed here because a good description of them is available in EHI-O2 (Block 3) which you are expected to read.

The archaeological cultures themselves have been named in a number of ways; on the basis of the sites where they were first discovered (Ahar, Narhan, Jorwe, Kayatha cultures are some examples) or the region where they are widely distributed (Malwa culture, named after the region of Malwa) or the pottery that is typical of the said culture (Painted Grey Ware and Ochre Coloured Pottery are some such cultures). In the case of regional designations, this must not be understood to mean that the culture's distribution is confined to that region alone. The Malwa culture is found in both Malwa and Maharashtra. In the case of cultures that are named after a pottery type, it is relevant to remember that this does not mean that this was the *only* type of pottery that was used and manufactured by such a society. For example, Painted Grey Ware that gives its name to first millennium BC Iron Age culture of the upper Gangetic plains, in most cases, constituted less than 15% of the total pottery assemblage and coexisted with plain Grey, Black-and-red, Black Slipped, fine red slipped and unslipped and coarse red wares. But the reason why it has been used to designate this cultural phase is because it is its archetypal pottery. On the question of pottery cultures, a clarification about one of them – the Black and Red Ware culture – is necessary. On the one hand, Black-and-Red Ware gives its name to specific cultures of the Ganga-Yamuna *doab* and the Upper Gangetic plains, as also Bengal/Bihar. On the other hand, pottery of this genre is a ubiquitous ceramic, one that is found as a dominant ceramic type in many other regions during this period or later – Rajasthan, Malwa, Maharashtra, peninsular India to name a few. This does not mean that all protohistoric farming cultures who used this pottery were part of the same culture. For one thing, the shapes and painted designs that are found in the Black-and-Red Ware in West Bengal are qualitatively different from those of the Black-and-Red Ware of the Malwa culture. For another thing, there can be wide difference in the time range of the various Black-and-Red Ware cultures – the Ahar culture of Rajasthan, with its white painted Black-and-Red Ware, is a third-second millennia BC culture while the Black-and-Red Ware culture of Bengal is a second-first millennia BC phenomenon. So, Black-and-Red Ware should not be understood as constituting a homogeneous cultural entity, nor are the societies that used this pottery part of any common community.

The long chronology of the protohistoric societies that form the cultural fabric of non-Harappan India is the other element which is necessary to understand clearly. The radiocarbon dates that are available to us make this reasonably clear and will be discussed

later, but, for the moment, it may be pointed out that we are looking at a time period that stretches from the fourth millennium BC and even earlier in some cases, till about c. 600 BC or so. This means that there are some cultures that are prior to the birth of the Harappan civilization, others that are contemporaries of it, still others which continued to flourish in the centuries that follow the collapse of India's first urban culture. By 1000 BC, a familiarity with iron and tools made of iron is common to farming cultures in many regions of India.



Map 1 : Neolithic and Chalcolithic Sites

This brings up the third aspect about such communities which concerns their technology. Agricultural-pastoral subsistence systems in these millennia are dependent on varied technologies. On one end of the spectrum, there are communities that are generally described as ‘neolithic-chalcolithic’ cultures. This is not a particularly logical classificatory label but has been extensively used in Indian archaeological literature to describe early village cultures in non-Harappan India. It includes both pure neolithic communities with a predominantly stone technological component and those groups that are ‘chalcolithic’, in the sense that they use both stone and copper. At the other end of the spectrum, agricultural groups that, over time, began to smelt and use iron in various ways are encountered. In many instances, the inclusion of iron technology does not automatically lead to any striking material changes. One of the issues, therefore, that needs to be explored concerns whether the adoption of a new technology led to major changes in the economy and society.

Fourthly, even while there are no archaeological indicators of states or empires in this period, there are levels of cultural complexity. While many of the cultures, in terms of their archaeology, seem to be made up of small, relatively undifferentiated sites, there are others where there are several kinds of settlements, some of which are fairly complex and would seem to be the centres of regional 'chiefdoms'. In other words, the scale of social organization in this period would range from small-scale village cultures to more hierarchically organized societies. Complex cultures become more common in the latter part of the second and the first half of the first millennia BC.

Finally, there is a large corpus of Vedic literature which has been accepted by several scholars as falling within this time bracket and this itself raises a number of questions. Some of the problems concern the time period within which the texts should be placed while another set of issues revolves around how one can fit in the images that they contain with what is known about the archaeology of the geographical segments that are described there. Within this theme, one can only briefly discuss some of these problems and issues.

6.2 NEOLITHIC AND CHALCOLITHIC COMMUNITIES (UPTO THE BIRTH OF THE HARAPPAN CIVILIZATION)

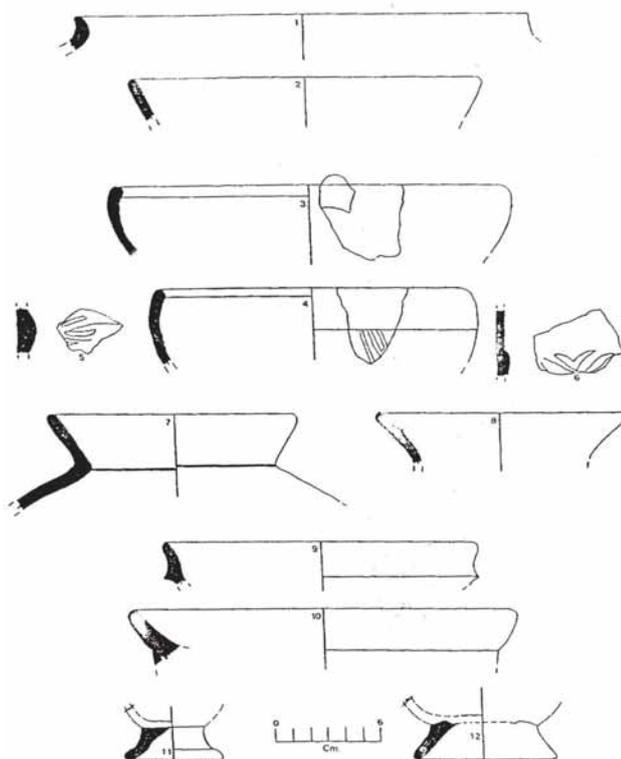
The first food producing society, based on wheat-barley cultivation and domesticated sheep-goat-cattle, at Mehrgarh in Baluchistan has already been discussed in the previous Unit. Here, we turn to India beyond the arc of Baluchistan-Indus-Hakra-Gujarat and to the archaeology and geography of the various agricultural-pastoral communities in the subcontinent's other segments.

6.2.1 Early Agricultural-Pastoral Communities from Vindhya to Ladakh

One of the earliest such cultures is located in the Vindhyan range of southern Uttar Pradesh and adjacent segments of Madhya Pradesh, at places like Koldihawa and Kunjhun. The archaeology of these sites shows a neolithic stratum. Their inhabitants used polished stone axes and microliths as also handmade pottery and lived in wattle and daub houses. Most importantly, this is an early rice cultivating community which, among other things, is evident from the husks of this cereal that are embedded in the clay of the pottery. Even if there are uncertainties about whether this cereal was independently domesticated here or about the chronology of its first cultivation – of the nine radiocarbon dates of Koldihawa, only three go back to the 7th and 6th millennia BC – there is little doubt that we are looking at the earliest rice growing culture of the Indian subcontinent. The dates from Kunjhun II clearly attest that such a society had been established in the Vindhya by the 4th millennium BC. More recent excavations at Lahuradeva (Sant Nagar district) in Uttar Pradesh suggest that such early rice cultivation was not just confined to the Vindhyan hills but extended into the Gangetic alluvium. The earliest cultural occupation there (marked by coarse red ware and black and red ware, with cord impressions on its exterior) has yielded grains of cultivated rice and its calibrated dates are found the late sixth and early fifth millennium BC.

The possibility of an early transition from hunting-gathering cultures to agriculture and pastoralism in certain other areas may also be considered, although the evidence is not unambiguously clear. For instance, in the Ladakh region, the neolithic site of Giak is as early as the sixth millennium BC (calibrated radiocarbon date), although another site of

the same cultural complex has yielded a *c.* 1000 BC date. Another such case is that of Rajasthan, where the salt lakes of Didwana, Lunkaransar and Sambhar have yielded *cerealia* type of pollen in a *c.* 7000 BC context, along with comminuted/charcoal pieces. This is apparently indicative of forest clearance and the beginning of some sort of agriculture. However, to archaeologically confirm the lake evidence, food producing cultures of similar antiquity will have to be discovered in Rajasthan. Taken together, the evidence from Ladakh to the Vindhyas does seem to indicate that the advent of food production in India was not a single event but was made up of multiple strands.



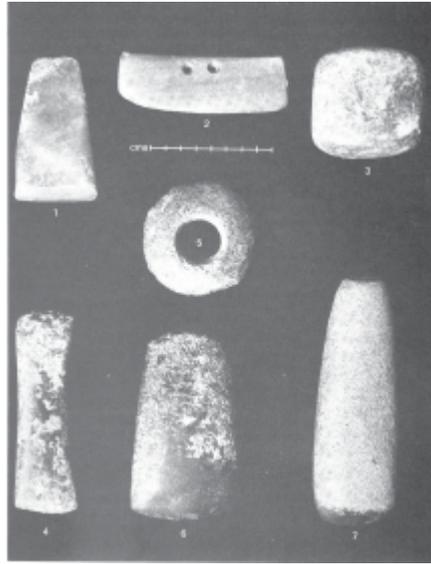
Shapes of Representative Potsherds of
IA at Lahuradeva (Uttar Pradesh)

6.2.2 Neolithic Horizons of the Northwest and Chalcolithic Cultures in Rajasthan

Such strands become much clearer a little later, and from 3000 BC onwards, for over a millennia, various early farming cultures can be encountered in the North-western highlands and lowlands of Pakistan, in the valley of Kashmir, in the Rajasthan plains as also in peninsular India. While the archaeological character of such cultures cannot be discussed in depth here (you can read about them in the books that are mentioned at the end of this Unit), a few salient features are certainly worth highlighting.

Beginning with the north-west, the geographical distribution of sites in mountainous north Pakistan is roughly in the area between Peshawar and Chitral. In the case of Kashmir, the sites are widely distributed in the valley area between Baramulla and Anantnag on the one hand, and towards Srinagar, on the other hand. Although these are separate cultural horizons, what is common to them is that the early phases of cultures (at sites like the Ghalighai cave in the Swat valley of Pakistan [Phases I-III] and Gufkral [IA-B] as also Burzahom [I] in Kashmir) in both areas seem to be metal-free neolithic horizons marked by stone tools and bone implements of various kinds. However, whereas in the case of Kashmir, to begin with, there is no pottery, the sequence at the Ghalighai cave begins with handmade pottery.

The character of settlements in the Kashmir valley is especially clear where we seem to be in the presence of people trying to cope with long, cold winters. The climatic rigors were sought to be mitigated by living below the ground level which is always warmer than the top surface. The pit dwellings that they used as residences, along with the hearths that they lit to keep warm have been encountered at Gufkral and Burzahom.

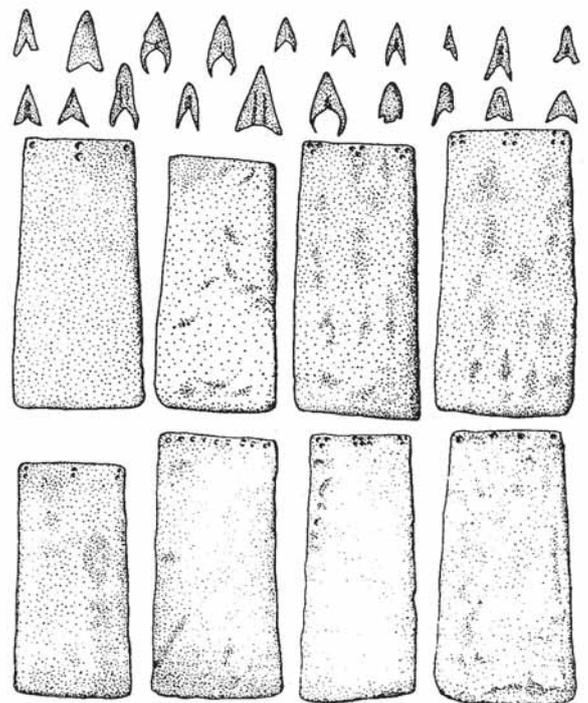


Neolithic Tools from Burzahom (Kashmir)

While the pit dwellings were accessed by steps as also by ladders, wooden pillars apparently supported the roofs that covered them. Pits were also dug for storage purposes and frequently contained animal bones, stone and bone tools. Wheat, barley and lentil were cultivated while sheep, goat and cattle as also domestic fowl were kept. The bones of wild animals like ibex, deer, wolf, and bear have also been found, attesting to the fact that hunting continued to augment farming activities.

As we move towards Rajasthan, two distinctive cultures are encountered – the Ganeshwar-Jodhpura culture in the northeastern part of the state (with the largest concentration in Sikar district, along with sites in Jaipur and Churu districts) and the Ahar culture towards the

southeast (in the districts of Udaipur, Chitorgarh and Bhilwara). Unlike the situation in the northwest, here, the first sedentary communities are chalcolithic. The early exploitation of copper is not surprising since both these cultural zones are located in areas that are rich in copper mineralization. The Ganeshwar-Jodhpura culture is largely distributed across the Baleshwar and Khetri copper desposit areas where extensive traces of old copper workings exist. That the demand for copper of ‘early Harappan’ cultures from the Indus plains to Haryana may have been one of the reasons for the large scale presence of copper-using sedentary, food producing societies in these segments of Rajasthan needs to be considered. At least, at Ganeshwar, the cultural sequence seems to suggest this. To begin with (Period I), the picture that we get there is of a microlithic-using hunter-gatherer group (the charred bones are presumably of wild animals) which subsequently (Period II) becomes a hut inhabiting, pottery using society whose technology expands to include both microliths and copper objects including arrowheads and fish-hooks. Subsequently (Period III), copper objects (arrowheads, rings, bangles, spearheads, chisels, celts, etc.) were found in large quantities, going into several hundreds, and these could not have been manufactured for the inhabitants of Ganeshwar alone which is a small 3 to 4 acre settlement. In the case of the Ahar culture, the recent excavations at Balathal, a roughly five acres site in the Udaipur area, are worth mentioning. While its later phase will be discussed in the next section, in the first phase, there is evidence of structural activity in the form of small circular wattle-daub houses with mud-plastered floors and two plastered storage pits.



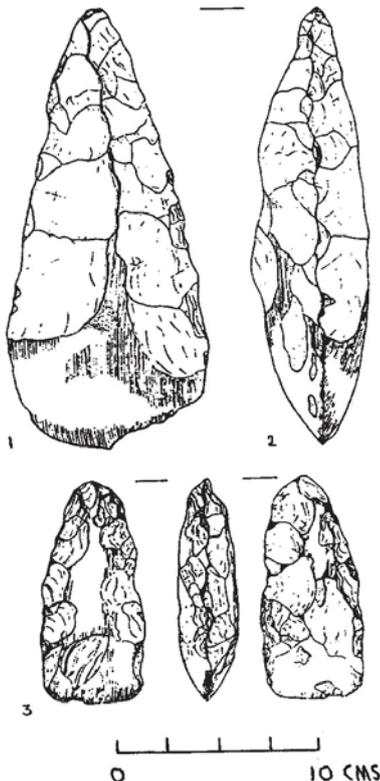
Copper Objects from Ganeshwar (Rajasthan)

What is most striking about the chalcolithic cultures of Rajasthan and the neolithic horizons of the northwest, though, is neither the character of their structures nor the nature of their economy. Instead, it is time period that they occupied which, as their dates show, was prior to the birth of the Harappan civilization. In the case of the Kashmir neolithic, the calibrated radiocarbon date of Period I at Burzahom is c. 2800 BC. The dramatic revision in the chronology of the Ahar culture is another instance in point. Its beginnings at Balathal (Udaipur, Rajasthan) go back to c. 2800 BC, if not earlier. Prior to these discoveries, many scholars visualized the Harappan civilization as the supreme urban, literate phenomenon that illuminated other contemporaneous cultures, as it were, with the 'radiance' of its character, as a phase when the scale and importance of the civilization's subcontinental trade facilitated the creation of regional cultures with which the Harappans had intimate interactions in various regions to its north, east and southeast. What has now become evident, is that some such cultures that had earlier been bracketed as contemporaries of the Indus civilization have turned out to be older and were, in fact, interacting with the early Harappans. Burzahom, for instance, is known to have yielded a wheel made red pot with 950 agate and carnelian beads (whose provenance seems to be somewhere in the Indus plains) and another pot of the same type on which is painted the 'horned deity' motif (also of Indus inspiration which occurs in early Harappan contexts as at the Indus plains site of Kot Diji). Again, at Ganeshwar, the wheelmade pottery of Period II is of early or 'pre-Harappan' affinity. When one considers the large scale presence of copper



'Horned deity' Pot
from Burzahom

artefacts in a similar context at sites like Kalibangan, the likelihood of contemporaneous copper rich farming cultures in the Rajasthan belt being the primary suppliers of such objects seems most likely. Undoubtedly these interactions come to be more strongly articulated with the birth of the Harappan civilization. But, what seems to be worth underlining is that even before the creation of Harappan cities, the neolithic-chalcolithic cultures of the Northwest and Rajasthan were not closed or isolated cultural worlds.

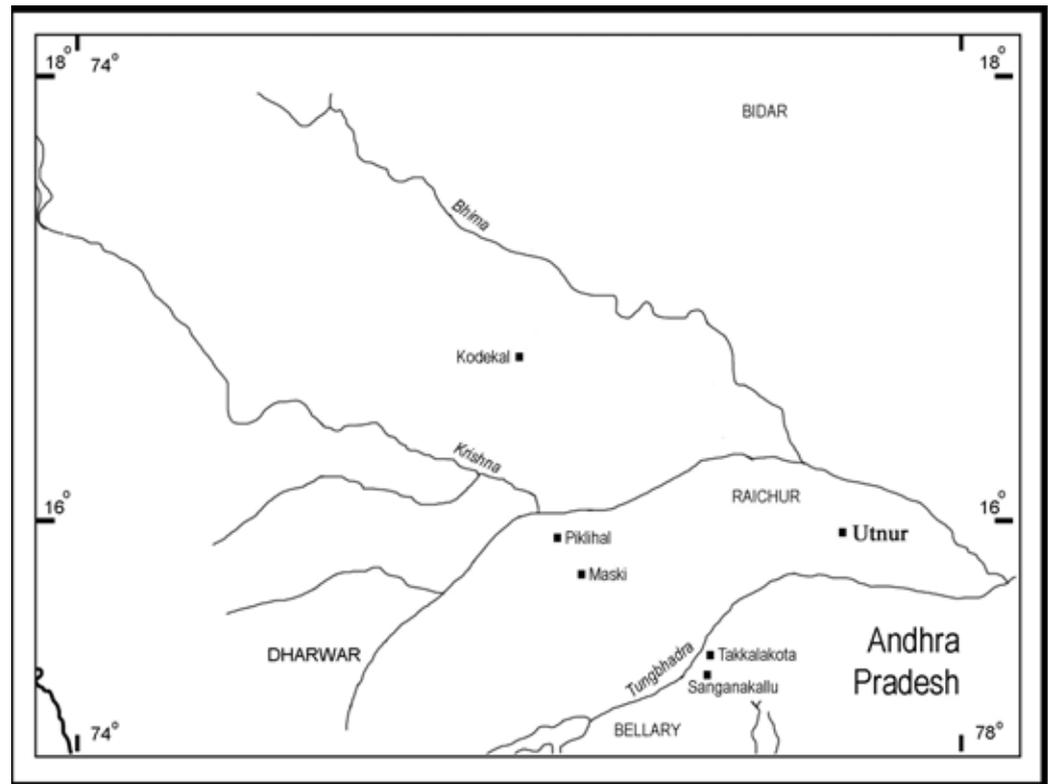


Southern Stone Neolithic Axes

6.2.3 Southern Neolithic Ash Mound Tradition

Another equally early third millennium BC horizon is the Southern Neolithic or ash mound tradition. Geographically speaking, a large number of the settlements are located on the southern Deccan plateau (northern Karnataka and western Andhra Pradesh), and are more often associated with minor streams than major rivers. The ash mounds are derived from the burnt accumulations of cattle dung at sites of ancient cattle pens and, not

surprisingly, the presence of animal herding in the economy has long been recognized. The importance of cattle keeping is also suggested by the presence of cattle bones, terracotta figurines of humped cattle as also rock paintings depicting cattle.



Map 2 : Karnataka and Andhra Pradesh

More recent work has suggested that, along with cattle keeping, agriculture also formed a major part of the neolithic diet there. A variety of plant remains have been recovered from several sites, including Hallur in the west, Sanganakallu and Tekkalakota in the Bellary district and sites in the Cuddapah district which show the presence of small millets and tropical pulses. The crop regime is qualitatively different from any other subcontinental culture of this time and is one that was logically the best adaptation in the lower rainfall area of south India. The consistently recovered pulses from the earliest levels are mungbean and horsegram, two species whose wild progenitors are known to occur in the region. It is entirely possible that these were locally and independently domesticated there. Several non-native cereals are also present, always occurring together and include emmer wheat, free threshing wheat and barley. Although they are found in early levels at Sanganakallu and Hallur (where rice is also found) and could, therefore, have been present from the beginning of the neolithic, their frequency increases over time, thus suggesting that they may have been adopted on a small scale and increased in importance later on. The earliest dates obtained so far, though, are not from the abovementioned sites but from the ash mounds where the pastoral element is much stronger than the agricultural element. These are the excavated sites of Kodekal (Gulbarga district, Karnataka), Utnur (Mahbubnagar district, Andhra Pradesh) and Palvoy (Anantapur district, Andhra Pradesh) which range from between 2900 and 2400 BC.

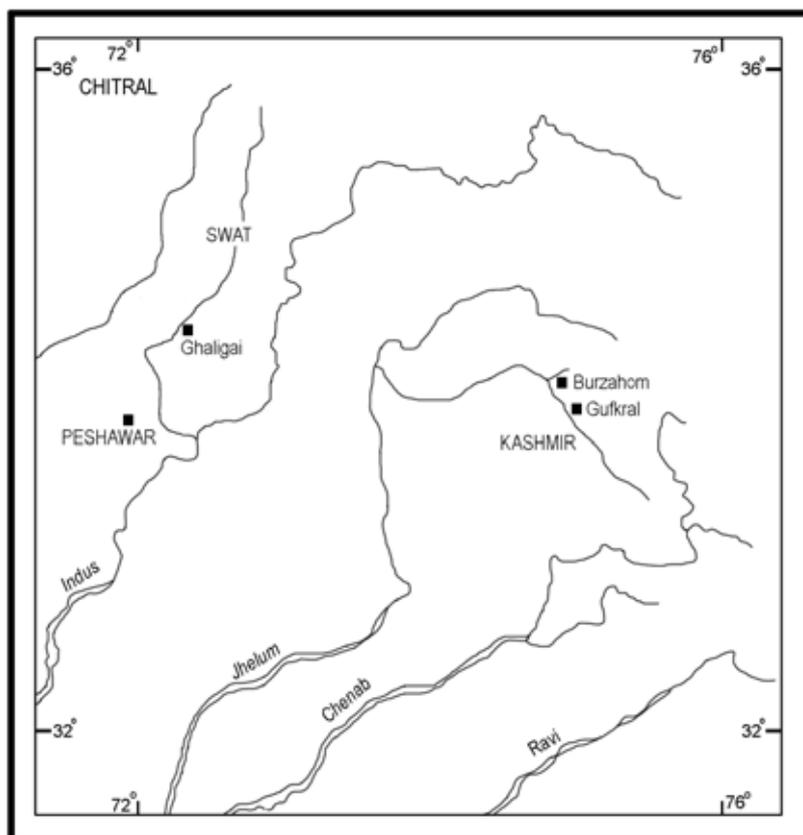
6.3 CULTURES CONTEMPORARY WITH THE HARAPPAN CIVILIZATION

The archaeology of India in the third millennium-early second millennium BC is dominated by the presence of the Harappan civilization, the only literate subcontinental segment of its time with a transregional spatial spread from Baluchistan to the upper Ganga-Yamuna

doab and from Jammu to Gujarat. Its various features have been delineated for you in the previous Unit. What the present section will try and demonstrate is that this civilization did not exist in a cultural vacuum. On the contrary, on the peripheries of the Harappan distribution area as also much beyond the Harappan world, important cultural changes were taking place. These basically cohered around the emergence of village societies in those regions where only hunter-gatherers were earlier present and the consolidation of such societies in areas where agricultural-pastoral groups were already in place. In more ways than one, it is from this period onwards that there is practically an unbroken succession of cultures which make most segments of inner India visible. That there are few gaps in the sequence of such cultures also means that we are looking at fairly continuous occupations. This does not mean that the successors of the people who first inhabited these areas continued to live there for centuries on end. There must have been, as there is today, demographic mobility and constant readjustments of population groups. All that it means is that new groups of people came and settled in the very areas, and frequently at the same sites where the pioneer farmers had first established their villages in the third and second millennia BC.

6.3.1 Northwest and the Chalcolithic Roots of Iron Technology

One may begin with the cultural configurations in those areas already discussed in the previous section. In northwest Pakistan, by c. 2000-1800 BC, the neolithic situation gave way to a copper/bronze using cultural complex which is known as the Gandhara Grave culture (its first phase is dated to this period which in terms of the general sequence of the Ghalighai caves is Phase V). So called because it is marked by large grave complexes on hill sides (in which cremation prevails over inhumation), it also had associated settlements marked by rectangular stone constructions. The geographical distribution of settlements was in the hills in the area between Swat and Chitral-at places like Timargarha, Balambat and Thana- and in the vicinity of the Peshawar valley, where Zarif Karuna is located.



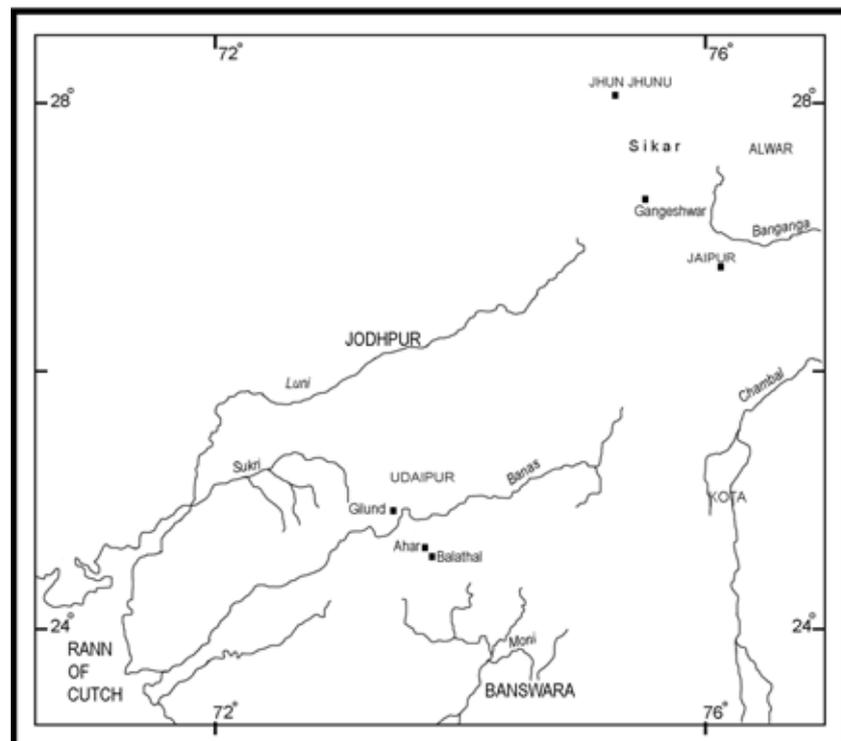
Map 3 : North of the Indus and Kashmir

In the case of Kashmir, while neolithic-chalcolithic sites continued to flourish, a new element is the presence of an iron-bearing megalithic level at Gufkral (Period II). Calibrated versions of four dates from there hover around c. 2000 BC. While the iron objects are not many, two points or needles and an indeterminate fragment, there is little doubt that this marks the beginning of iron technology in this region. In the larger perspective, this should not surprise us because iron objects in equally early contexts come not only from other contemporaneous agricultural communities in Rajasthan and Uttar Pradesh but also from Harappan sites like Lothal and Allahadino. Within the larger perspective of Old World cultures, such a situation is frequently encountered. For instance, knowledge of iron smelting was part of the Bronze Age Sumerian tradition.

In all such cases, one has to make a distinction between the beginning of iron technology which, in the Indian context, can be dated to the end of the third-beginning of the second millennia BC and the advent of the Iron Age. If the Iron Age can be defined as the period between the significant presence of iron in the archaeological sequence of a given area and the beginning of the early historical period in that area, it is reasonably clear that by around c. 1000 BC large parts of the Indian subcontinent had passed into the 'Iron Age', while in certain areas the process may have begun earlier. In the case of Kashmir, it is likely that we are still largely in the presence of a neolithic-chalcolithic phenomenon because the primary dependence of protohistoric people was on a stone technology and copper based artefacts.

6.3.2 Fortified Ahar Culture Settlements of Rajasthan

In Rajasthan, the later phases of the Ganeshwar-Jodhpura and Ahar chalcolithic cultures are encountered. As before, there is abundant evidence of copper objects and local metalcrafting. The subsistence pattern seems to have been a combination of agriculture and stock raising. Wheat, barley, two varieties of millet, gram, linseed, etc. are found along with bones of various domesticated animals (cattle, buffalo, sheep, goat and pig) in which cattle are predominant. The wild animals include several types of deer, turtle, fish, pea fowl and fowl. At Balathal and Gilund, large silo bases, storage bins and structures identified as possible granaries give us a clear indication of the strong agricultural base of

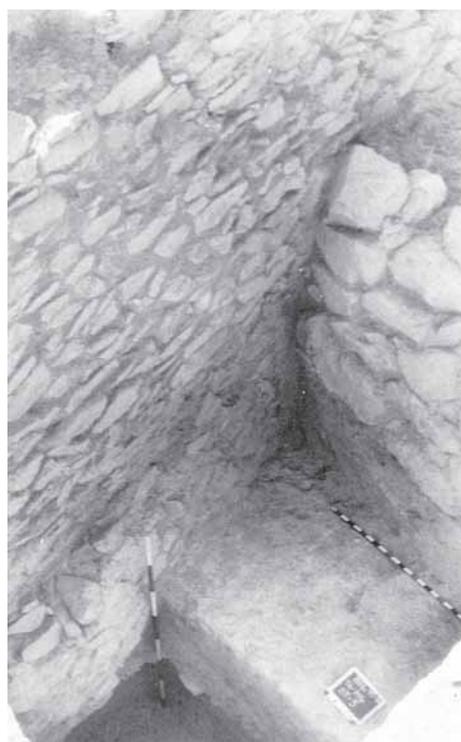


Map 4 : Rajasthan

the economy. But of the various archaeological features of the Rajasthan cultures, two are specially noteworthy. First, an early presence of iron can be seen there. For example, at Ahar, as many as 12 iron objects in the second and third phases of the three phase Ahar culture, are present. These have been found in the same contexts which have yielded etched carnelian beads and one of lapis lazuli, both of which are clearly of Harappan provenance. The earliest calibrated points for these phases which are 2100 and 1900 BC, also underline that we are in the presence of a culture that is contemporaneous with the Harappan civilization.

The second aspect worth highlighting is the complexity that can now be discerned in the character of Ahar culture settlements. There are more than eighty sites, many of which are as small as a couple of acres while there are some that occupy more than 10 acres (Ahar and Gilund would fall in this category).

That this was a society where some settlements were structurally and functionally complex is also evident from the excavated evidence of Balathal and Gilund. At Balathal, by the beginning of the second millennium BC, the earlier village-like settlement gives way to a more complex one in Phase 2, marked by multi-roomed structural complexes in which kitchen and storage spaces can be identified. Most interestingly, several features that we generally associate with Harappan settlements are found at Balathal. For one thing, this is a fortified settlement with an area of about 500 sq m. The fortifications are fairly wide, between 4.8 to 5 m, with a mud core revetted with stones on the inside and outside. On the south-western corner, a bastion has been exposed. That mud bricks, along with stone is used for making rectangular houses is also significant. Finally, a street of irregular width (2.7 m in the north and 4.8 m in the south) runs across the settlement and associated with this street, is also a small lane.



**Stone Revetting on the Northern Face of
Rampart at Balathal, Rajasthan
(After V.N. Misra, *South Asian
Studies* 13, 1997, p.261**

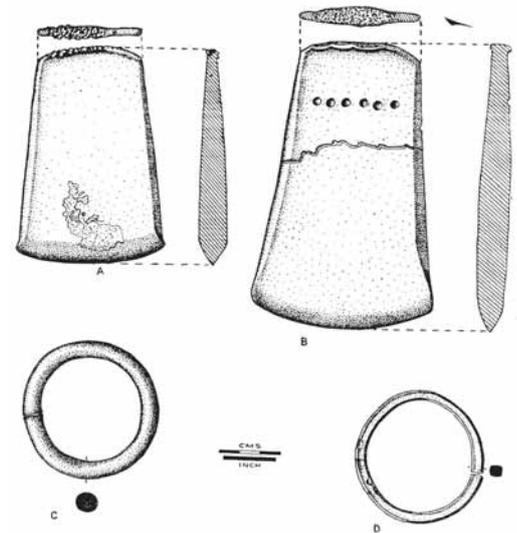
In the case of Gilund, the recent excavations there have shown that both the mounds were surrounded by mud/mud-brick fortifications with a road between them. Apparently the smaller, higher eastern mound recalls the elevated areas of some Harappan sites while the western mound resembles the 'lower town' of these sites. Considering the nature of these settlements in relation to the average Ahar culture site, the possibility that Gilund and Balathal were regional centre of a chiefdom organization needs to be considered. That the architectural features of such centres imitated the forms of contemporaneous Harappan towns also seems likely.

Rajasthan and the northwestern areas of the Indian subcontinent, of course, are regional segments where by this time agricultural and pastoral groups already had a presence that was several hundred years old. But, if we move to inner India, for the first time such societies make their presence felt, in areas like the Malwa plateau, in Maharashtra and in the upper and middle Gangetic plains.

6.3.3 Pioneer Farmers of Malwa and Maharashtra

Malwa is dominated by a large fertile plateau drained by the Chambal, Kali Sindh,

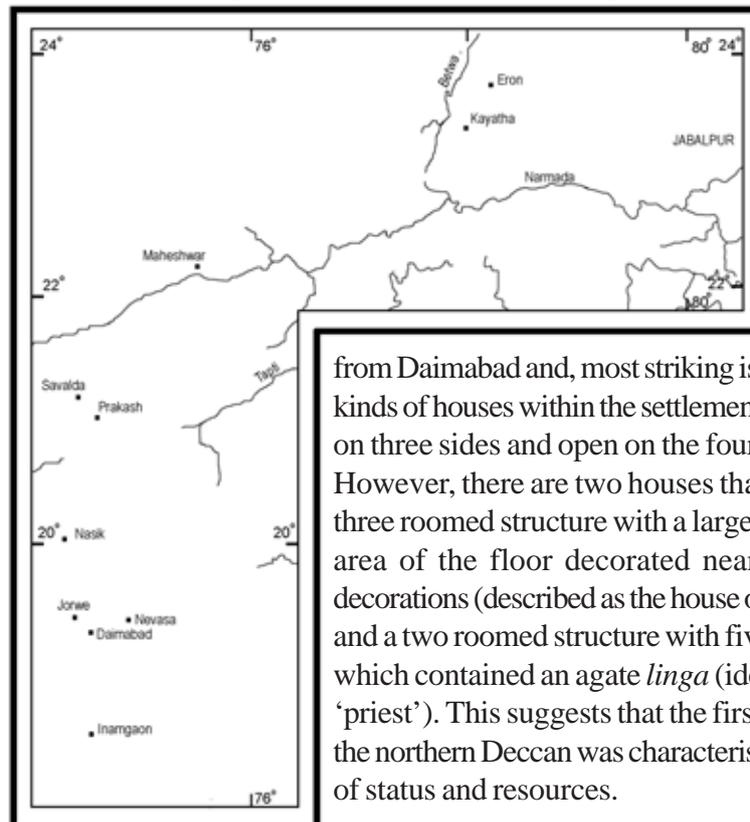
Narmada, Sipra, Betwa and other rivers, It is on the banks of the Choti Kali Sindh, a tributary of the Kali Sindh, that the type site of Kayatha (Ujjain district) is located. It is this site which has given its name to the first chalcolithic horizon of Malwa – the Kayatha culture of which there are over 40 sites, mainly in the Chambal valley. The settlement at Kayatha was marked by houses of mud and reed with mud plastered floors while the technology was a combination of copper and an extensive microlithic blade industry, dominated by chalcedony. The Kayatha horizon at Kayatha is dated to the second half of the third millennium BC which makes it a contemporary of the Harappan civilization.



Copper Axes and Bangles from Kayatha (Malwa)

Its interaction with the Harappans is evident from a number of things ranging from the pottery called ‘Kayatha ware’ which has an early Harappan affinity and the 40,000 microbeads of steatite found there which are apparently identical to Harappan specimens. Its interaction with the Rajasthan area is evident from the similarity in the shapes of its copper axes with those from Ganeshwar (see below and compare with the Ganeshwar culture specimens). What succeeds the Kayatha culture is a culture that is similar to what we have already encountered in Rajasthan. This has also been described as the Ahar culture in central India since its pottery is similar to what can be seen in places like Ahar and Gilund. In all probability, that is an early second millennium BC phenomenon.

In the case of Maharashtra, the village society that was a contemporary of the Harappans is represented by the chalcolithic Savalda culture. This culture is concentrated in the Tapi basin where twenty seven sites are found (twenty are located on the Tapi itself) and



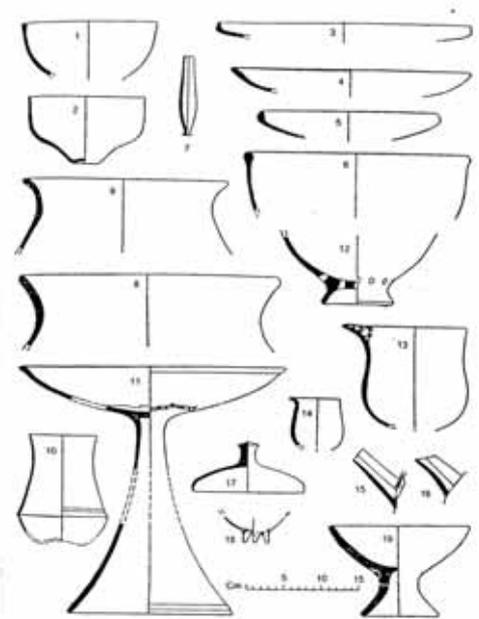
perhaps, the only known site outside this zone is Daimabad, located in the Godavari-Pravara basin. Much of our knowledge about the archaeological features of this culture comes

from Daimabad and, most striking is the presence of different kinds of houses within the settlement. Most houses are closed on three sides and open on the fourth, with low mud walls. However, there are two houses that are visibly different: a three roomed structure with a large courtyard and a 25 sq m area of the floor decorated near the hearth with shell decorations (described as the house of the village ‘nobleman’) and a two roomed structure with five circular hearths one of which contained an agate *linga* (identified as the house of a ‘priest’). This suggests that the first farming community of the northern Deccan was characterised by inequality in terms of status and resources.

6.3.4 First Farmers of Bihar and the Doab

Finally, one can move north and observe the emergence and expansion of village farming communities in the Gangetic plains of Bihar and in the *doab* region of Uttar Pradesh. In the case of Bihar, although its southern segment is known to have a long prehistoric segment, no early neolithic or farming community is known from there. On the other hand, in the alluvial plains of northern Bihar there are several such sites – Chirand, Chechar-Kutubpur, Senuar, Maner and Taradih are some of the important ones that have been excavated. These are all river bank sites with Chirand, Maner and Chechar-Kutubpur on the Ganga itself.

There is nothing tentative about such neolithic sites and the cultural deposits indicate a secure, long presence. Chirand is an example of this where the neolithic stratum (Period I) is 3.5 m thick. It is marked by neolithic axes, bone and antler implements, along with a rich microlithic industry. The ornaments are equally diverse – in bone, ivory, agate, carnelian, jasper, steatite and faience. The farming pattern is a broad based one with the remains of crops like rice, wheat, barley, moong and lentil while the animal remains include domesticated cattle as also wild animals like elephant and rhinoceros. Most importantly, this represents premetallic agricultural villages that largely thrived in the third millennium BC, possibly continuing into the first century of the second millennium BC. Subsequently, they were to become metal using cultures.

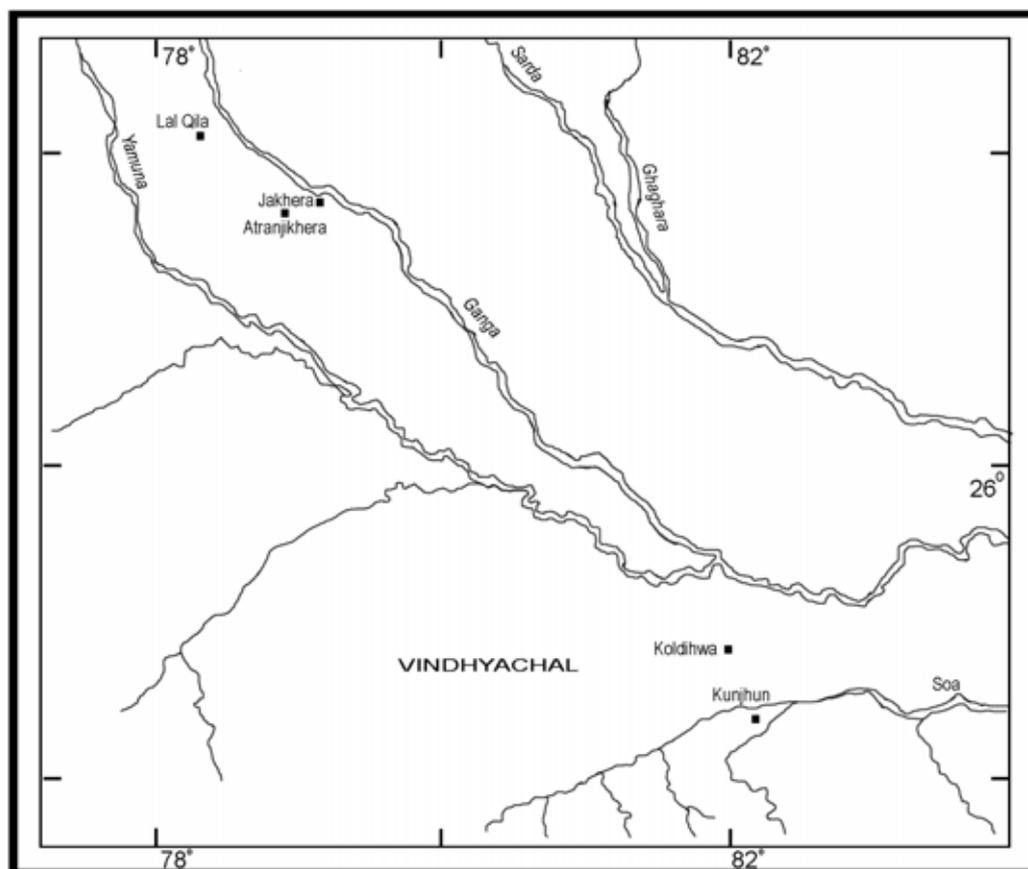


Pottery from Chirand, (Bihar)



OCP Pottery Types from Lal Qila (Uttar Pradesh)

The picture that we have of early farming communities in the *doab*, however, is a substantially different one. For one thing, the Ochre Coloured Pottery culture (OCP hereafter) is chalcolithic not neolithic. An important aspect of it is the association of OCP with ‘copper hoards’. Such hoards contain various artefact types – harpoons, swords, axes of various kinds, etc. One of these, an anthropomorph/lugged axe is also found in the mature Harappan context at Lothal which takes back its antiquity to the second half of the third millennium BC. For another thing, the farming groups represented by this culture coexisted with the Harappans in some pockets of the *doab*. This means that in this region, the OCP culture must share its status as representing the first farming communities of the *doab* with the Harappans.



Map 6 : Upper Gangetic Plains and
the Vindhyachal Plateau

6.3.5 Nature of Contacts Between Harappan and Non-Harappan India

In concluding this section, it is relevant to underline the aspect of trade and interaction between the Harappan civilization and the contemporaneous neolithic-chalcolithic horizons that have been briefly discussed here. On balance, it would be fair to say that none of these horizons are isolated village societies. The kinds of raw materials that are used at neolithic Chirand on the one hand and chalcolithic Ahar on the other hand, underline this quite forcefully. Some of these cultures are also located in resource rich areas and it is likely that they were supplying copper, alloying metals, semi-precious stones, etc. to the Harappans. These links are evident from the presence of Harappan and Harappan inspired objects in various such contexts as well – the etched carnelian beads at Ahar, the microbeads of steatite at Kayatha in Malwa and at Chechar-Kutubpur in Bihar are a few such examples. Additionally, that certain cultural traits may have been borrowed by the Harappans from contemporaneous neolithic-chalcolithic horizons needs to be considered. For instance, one fact that is noticeable about the crop patterns of protohistoric India is that prior to the third millennium BC, the rice growing sites seem to be concentrated in the Gangetic plains. It is entirely possible that the adoption of rice in the Harappan subsistence pattern (found at Harappa, Mitathal and in the Gujarat sites) may have been a consequence of its links with areas to the east of the Indus system. These links may also explain why, following the collapse and abandonment of cities and settlements, there were significant migrations from Sind and Cholistan towards areas that lay east of the Harappan distribution zone.

6.4 NEOLITHIC-CHALCOLITHIC AND IRON AGE HORIZONS OF THE SECOND AND FIRST MILLENNIA BC

The various archaeological features of the abovementioned cultural horizons are not being discussed because the data are vast and also because competent summaries are available in several textbooks on the archaeology of India. Here, only a few aspects concerning the existence of chiefdoms, the manner in which complex societies were developing in north India and the role of iron technology in this process will be taken up.

6.4.1 Integration of 'Late Harappan' and Local Cultures in Maharashtra and Uttar Pradesh

In the area that lies geographically west of the Aravalli-Cambay divide, the early centuries of the second millennium BC were dominated by the decline and end of Harappan urban culture. The process in some areas, though, began earlier than in others. Urban decline at Mohenjodaro had set in by 2200 BC and by 2000 BC, its death knell had been sounded. However, the civilization continued after 2000 BC in other areas and, at some sites, it survived well into 1800 BC or even later. In cultural terms, the devolution and transformation of the Harappan civilization is important for a number of reasons, but from the perspective of some non-Harappan agricultural societies in north and western India, the aspect that is worth noting is that several of the migrating Harappan groups directly impinged into their cultural orbits and became part of the cultural sequences there.

Such successor groups are generally designated as 'late Harappan' cultures (so called because they that devolved from the Harappan tradition) and, in Maharashtra as also in the upper *doab* of Uttar Pradesh, this process of integration with the local cultures can be seen quite clearly. The Savalda culture of Maharashtra, for instance, is followed by a late Harappan phase. Apparently, the general material equipment of these sites in the Tapi basin, of which there are more than twenty, was not very different from the local chalcolithic cultures. The new element was the presence of late Harappan Sturdy Red ware. In the case of Daimabad (in the Godavari-Pravara basin), however, there were other 'Harappan' features such as the presence of mud bricks in the Harappan ratio of 4:2:1, Indus script signs on pottery and terracotta seals. In the *doab*, there is a massive jump in the number of settlements. A 1984 list mentions thirty one mature Harappan sites but one hundred and thirty late Harappan sites. Here also, as in the case of Maharashtra, there was an intermixture of the late Harappan tradition with the OCP cultural horizon that continued to flourish in the *doab* during the first half of the second millennium BC.

6.4.2 Summary of Cultural Horizons in the Subcontinent

The other aspect of the archaeology of the second millennium and first half of the first millennia BC is the continuous sequences of cultures in various regions. The sequence of cultures may be briefly summarized: *Northwest Pakistan*: Phases VI and VII of the Gandhara Grave culture; *Kashmir and Almorah*: Megalithic cultures; *Madhya Pradesh*: Malwa culture; *Maharashtra*: Malwa culture, two phases of Jorwe culture, megalithic burial and habitation sites; *Karnataka and Andhra Pradesh*: chalcolithic horizons containing Black and Red and Black on Red Ware, megaliths; *Orissa*: neolithic sites, chalcolithic culture with unpainted black-and red ware, dull red ware and burnished black, chocolate and red wares (this becomes iron bearing later); *Northeast*: neolithic

cultures in Assam, Meghalaya and Manipur; *West Bengal*: black-and red ware sites ; *Bihar*: black and red ware horizons; *Eastern Uttar Pradesh*: Pre-Narhan handmade cord impressed red ware horizons, Narhan culture, Black slipped ware culture; *Western Uttar Pradesh*: OCP culture, Black and Red Ware culture, Painted Grey Ware culture. The picture is one of great diversity made up of neolithic, chalcolithic and iron bearing farming cultures. Moreover, within the same technological horizon as well the cultural character of sites even in geographically contiguous zones can be qualitatively different. In Kashmir, the advent of iron coincides with a phase marked by megaliths while in the Swat-Chitral zone of northwest Pakistan, iron becomes part of what is called the cultural column of the Gandhara Grave culture in Phase VII. In the case of north India, this diversity has one very important implication. It reveals that no one culture or one society can claim to be the harbinger or pioneer in the creation of a strong agricultural base there. The situation in the *doab* is qualitatively different from that in eastern Uttar Pradesh. Again, the communities in the latter region, in their trajectory of cultural development are qualitatively different from the manner in which village cultures in Bihar evolved. Multiple lines of development, rather than a unilineal pattern, is the dominant feature of the archaeology of north India in this phase.

6.4.3 Chiefdoms

In the previous section, the possibility of a chiefdom society being present in the Ahar culture of Rajasthan had been considered. In this period, there are many other areas where such indicators of social complexity can be discerned. Take the case of the Jorwe culture in Maharashtra (c.1400-1000 BC with the 'Late Jorwe' continuing till c. 700 BC). Generally speaking, the vast majority of Jorwe settlements are small and the data on the central Tapi basin indicate this. Of the 49 settlements, 40 are below 1 hectare, 6 measure between 1 to 2 hectares, 2 are between 2 to 3 hectares while one settlement approaches 9 to 10 hectares. At the same time, in each of the three geographical units which are within the Jorwe distribution zone there is one large center-Prakash on the Gomai in the Tapi basin, Daimabad on the Pravara in the Godavari valley and Inamgaon on the Bhima river in the Bhima valley. These have been described as the regional centres of chalcolithic chiefdoms.

If we can take up Inamgaon in some detail, the excavations reveal that this status can be accorded to it not merely on the basis of the fact that it is much larger than any other site in the Bhima valley. Unlike the average site, there is public architecture in Inamgaon, in the form of a fortification wall and a ditch around the site as also an irrigation channel and a massive embankment. This embankment was constructed for protecting the settlement from river floods. There is also a granary in the form of a mud walled structure divided into two parts by a low mud wall. It yielded no evidence of human habitation but contained many pit silos and round mud platforms for storage bins. What is significant is its location- in the central part of the principal habitation area, by the side of the largest house discovered at Inamgaon. This house was a five roomed structure and stands out in relation to the usual single room houses. It seems to have been the only multi roomed structure of the Early Jorwe culture here. Whether the persons or families who occupied this house were collecting taxes in the form of grain which was kept in the granary by the side of the house is something that can only broadly be speculated.

But perhaps, the most important evidence for a ranked society comes from the burials of Inamgaon. A unique burial was found in the courtyard of the house described above where in a deep pit was placed a four legged clay jar which contained the skeleton of an adult male, in sitting, cross-legged posture with the feet intact. The differential treatment is striking because the general pattern of burial, of which there is abundant evidence in



Symbolic Burial at Inamgaon, Maharashtra (After MK Dhawalikar et. al., *Excavations at Inamgaon*, Vol. I, p. 294)

the Jorwe phase, required that the feet of the dead be chopped off. Moreover, in the same place, but at an earlier point in time, another such burial was found. Here there were two four legged jars, placed side by side. But they did not contain any skeletal remains. There was only a painted globular jar containing an animal bone covered with a lid. Obviously, this constitutes a symbolic burial probably because the dead body could not be recovered, but the status of the person was such that

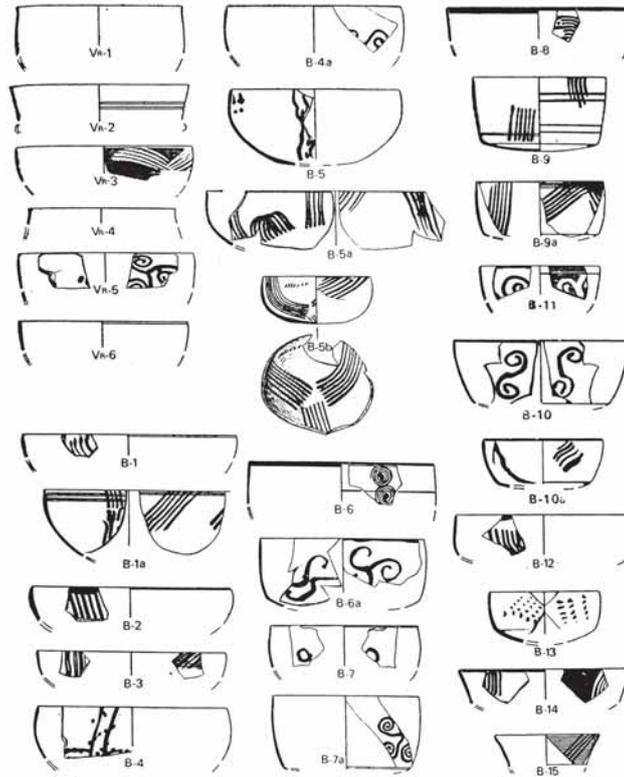
a ceremonial burial was thought to be necessary. On the basis of this evidence, it has been suggested that chiefdom in the early Jorwe phase was hereditary since there are two identical burials occurring in the same place, one in an earlier level and the other in the later.

In many other parts of India as well, there are similar indicators of social complexity. For instance, in West Bengal, the settlement sizes in the Black-and-Red Ware horizon resemble those of Maharashtra. While most of the sites are below one acre, there are a few that are as large as 8 or 9 acres. The presence of this kind of hierarchy suggests that some large sites may have been providing services to a number of small sites in their hinterlands. In Madhya Pradesh as well, during the Malwa culture phase, although most sites could be classified as villages and hamlets, Nagda and Eran appear to be structurally more complex. For instance, at Eran, an effort was made to defend the settlement on one side where it was unprotected by the Bina river in whose vicinity it was located. This was done by the construction of a massive rampart, combined with a ditch. What does this kind of structural construction tell us about the nature of settlement at Eran in relation to its immediate hinterland is a question that cannot be presently answered with any certainty but requires consideration.

6.4.4 Towards Socio-Economic Complexity in North India

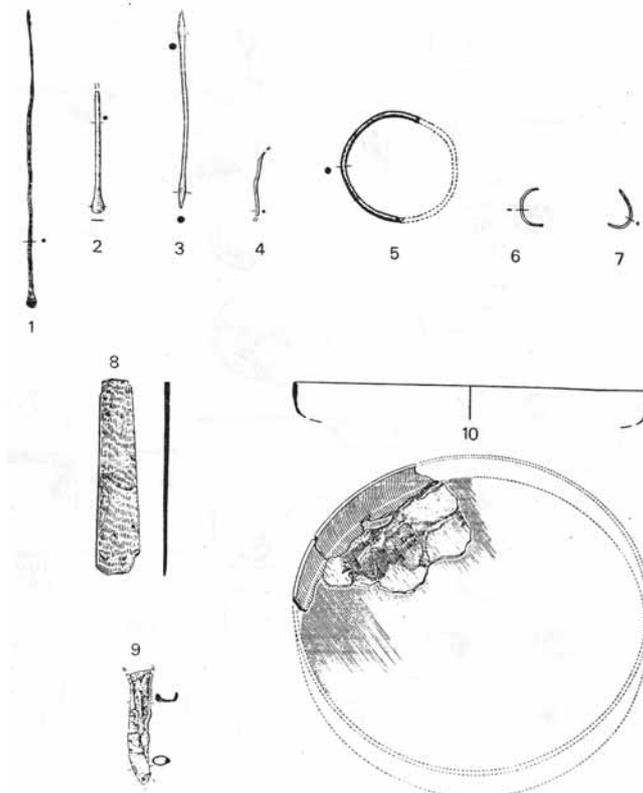
These cultural developments, in some parts of India, would eventually culminate in the creation of cities in what is called the 'second urbanization'. There were several phases of urban growth that made up this process which, starting around c. 600 BC or a little earlier, continued well into the early centuries AD. However, since early historical urban growth began along a belt that stretches from Uttar Pradesh and Bihar to Malwa, the manner in which the centuries prior to 600 BC contributed to this process, especially in north India needs to be briefly considered. One aspect that emerges clearly from the archaeology and geography of the chalcolithic and Iron Age farming communities of this antecedent phase is the growth in population and the evolution of a complex settlement pattern. In the Kanpur district, for instance, whereas there were only 9 Black and Red Ware sites, the number of sites of the succeeding Painted Grey Ware culture is 46. Moreover, there is a clear hierarchy in the settlement sizes. While as many as 38 of them can be considered as small villages, 4 seem to be large villages while four of them would be considered as regional centres. Generally speaking, this kind of multi-tiered settlement hierarchy with settlements that range below one hectare to a few that are around 5 hectares or so is considered as a reliable index of the evolution of a complex society.

Another key variable that one sees emerging in this period concerns the articulation of trade networks which brought various kinds of resources to the minerally poor Gangetic plains. This can be clearly seen in the Painted Grey Ware phase at several sites. The Painted Grey Ware phase, incidentally, is the phase of culture which provided the base for the emergence of urban centres in the upper Gangetic plains. An important site which reveals the kinds of raw materials that were used in this period is Atranjikhhera. Here, there are agate, carnelian, quartz and marble beads, also objects of ordinary stone like pestles and whetstones of red sandstone and limestone, a shell fragment, almost two dozen copper objects, as many as 135 iron objects including iron slag (which shows local metalcrafting/smelting) and *chir* pine (*Pinus Roxburghii*). None of these – stone, metals, pine wood – are locally available. It is likely that there was already a class of traders that was procuring such raw materials so that local manufacture could be sustained.

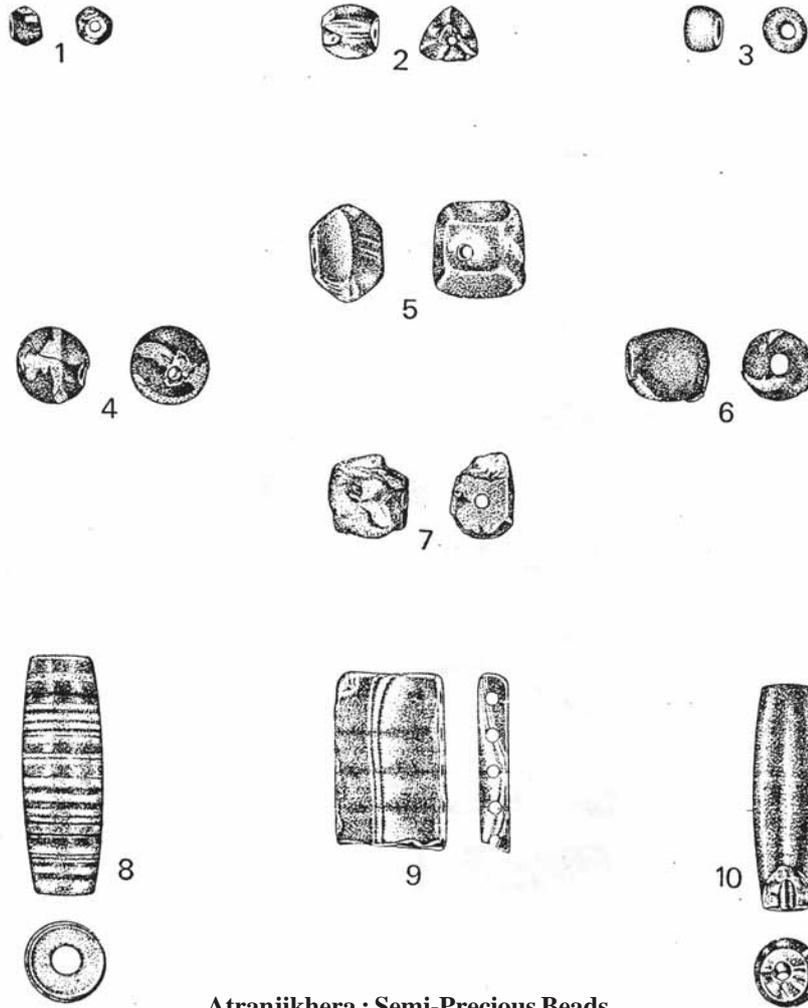


Atranjikhhera : Painted Grey Ware

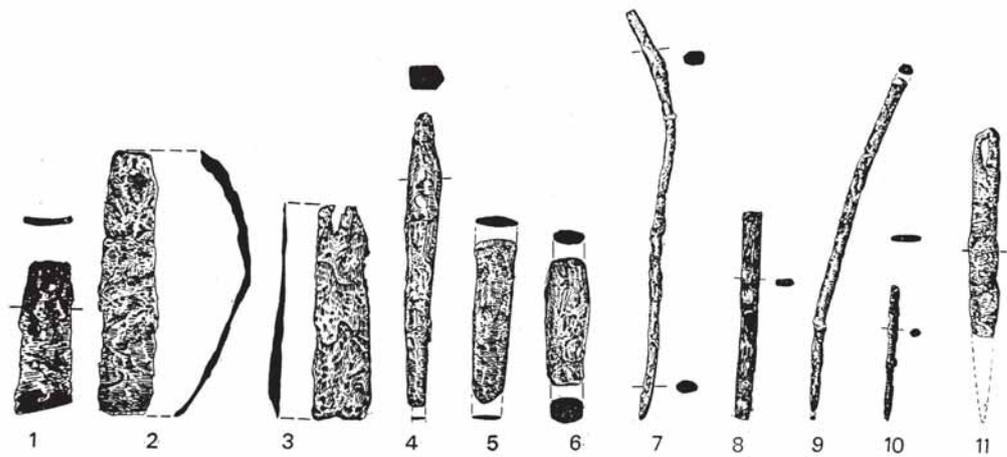
As mentioned in the text, Atranjikhhera has yielded a variety of raw materials. These include agate, carnelian, quartz, and marble beads, as well as ordinary stone objects like pestles and whetstones made of red sandstone and limestone. Additionally, there were almost two dozen copper objects and over 135 iron objects, including iron slag, which indicates local metalcrafting or smelting. The presence of *chir* pine (*Pinus Roxburghii*) is also noted. None of these materials are locally available, suggesting a network of traders procuring raw materials for local manufacture.



Atranjikhhera : Copper and Copper Alloy Objects



Atranjikhhera : Semi-Precious Beads



Atranjikhhera: Iron Objects

6.4.5 Issue of Iron Technology

Uptil now, we have identified population expansion, the presence of complex settlement patterns and the articulation of non-local raw material procurement as some of the variables that can be recovered from the archaeological record of north India. In this regard, it is also perhaps necessary to discuss the question of technology. Some scholars have considered iron technology as the key factor in the creation of a strong agricultural base which, in turn, was crucial to the birth of cities in c. 600 BC. The evidence that we have already cited from Harappan contexts as also from Ahar clearly shows that the first distinct phase in the development of a technology capable of producing metallic iron in

the Indian subcontinent coincides with the early chalcolithic cultures. There is no evidence that this knowledge led to any major changes in those early contexts. The cultural situation in the subsequent centuries in many areas is broadly similar. In eastern India, for example, the chalcolithic Black-and-Red Ware culture becomes iron using towards the end of the second millennium BC. Bahiri, Mangalkot and Pandu Rajar Dhibi in Bengal are examples of this and, as we know, the birth of cities in that zone is several centuries later.

Important new evidence of an early use of iron in Uttar Pradesh has also emerged. There is iron in the Black-and-Red Ware level at Jakhera (Etah district) and also in a similar context at Dadupur near Lucknow. The three calibrated radiocarbon dates from Dadupur hover around c. 1700 BC. Iron bearing levels at Malhar and Raja Nal Ka Tila are also fairly early. Malhar II which is iron bearing has early second millennium BC dates while Period II of Raja Nala-Ka-Tila in the upper part of the Belan valley has been dated to c. 1300 BC (C14-calibrated). Both these sites show extensive evidence of iron smelting and manufacture. Finally, the antiquity of iron at Jhusi near Allahabad has also been put to around 1100 BC (calibrated). The plethora of dates may seem to be confusing but the reason why they have been mentioned here is to show that the use of iron, at least in this part of the Ganga plain, seems to have been secure and widespread from the middle of the second millennium BC onwards. The abundant data on iron smelting which has been reported at Malhar and its surrounding area in the Karmanasa valley shows that these sites came up in the rich iron ore-bearing area at the fringe of Banaras mainly to supply smelted bloomery iron to this section of the Ganga plain. This also implies that by this time a distributive network was already in place for processed iron in the central Ganga plain.

Without some demands for the metal in the productive systems including agriculture, it is unlikely that iron would have made its appearance as early as this period at such widely separate sites as Dadupur and Jakhera, both located deep in the plains. Most importantly, this shows that the impact of iron technology was not revolutionary. There is a difference of roughly a thousand years between the first appearance of iron in the Ganga plains and the beginning of the early historic cities of the area. The consequences of the use of iron on the Gangetic valley was evidently a long drawn and slow process. Also, as in the case of eastern India, there is cultural continuity at places like Malhar between the chalcolithic and Iron Age phases. The main ceramic industries of its chalcolithic period were red ware, black-and-red ware and black ware. All these continued in the iron bearing phase with the addition of black-slipped and grey wares. Among the food crops, the most important cereal in the chalcolithic phase was rice but there were other grains and seeds as well such as barley, mung, field peas, lentils, khesari, etc. All these crops are found in Iron bearing Period II, along with the domination of rice. The new crops in this phase were wheat, varieties of millet, horse gram and sesamum.

In the light of such data, the notion of the Iron Age representing a major social and economic transformation, as much as it may appeal to our love of a neatly ordered succession of events working in tandem with technological change, does not stand to historical scrutiny. Iron technology certainly sustained the 'second urbanization' but the urban process itself was a consequence of multiple factors – a burgeoning population; a secure agricultural base which allowed the creation of centres of population where consumers rather than producers of agricultural surplus lived; trade networks, and; the formation of states of various kinds where the nucleus of political and institutional power came to reside in the urban form. Some of these elements will be discussed in greater depth in the subsequent Unit.

6.5 VEDIC LITERATURE – PROBLEMS AND ISSUES

The picture that has emerged in this module about the agricultural-pastoral settlements in non-Harappan India does not appear as a straightforward, unified picture but rather one in which there are multiple, dynamic cultures and multilinear lines of development. This is a framework that emerges from the material traces that have been left behind by the very communities whose past we seek to reconstruct. To put it another way, if we have described the ancient diet of chalcolithic Balathal or the iron using people of Malhar, it is based on the discarded refuse, the garbage that has been left behind by them: charred cereal, cut or burnt bone remains, ancient *chullahs* and storage pits, the straw of different cereals which, after the crops were threshed, was mixed with mud to make walls or even bricks.

However, apart from such archaeological data, there is a corpus of literature that has been frequently used for writing the history of India between c. 1500 and c. 600 BC. These are the *Vedic* texts which are ritual, religious compositions. The earliest of them is the *Rig-Veda* while the later *Vedas* are the *Sama*, *Yajur* and *Atharva Vedas*. There are four categories of texts which make up the corpus: the *mantra* or *Samhita* collections mentioned above; commentaries on sacrificial rituals or *brahmanas*; philosophical treatises or *Upanishads*, and; the instructions for rituals, etc. or *sutras*. Unlike archaeological data, these were put in their present form much later than the times when they were composed. They formed part of an oral tradition which was composed and elaborated over a very long time span and committed to writing many centuries later. Because of this, there are various and contradictory ‘facts’ that are contained in these texts and, depending on what one wants to prove, all kinds of histories can and have been constructed out of them. This variety is interesting in itself but hardly makes for a narrative that has won universal acceptance. This does not mean that all literary texts that are used for reconstructing the history of early India are of this kind. For instance, the *Rajatarangini* written by the Kashmir chronicler, Kalhana, is a more conventional historical text with details about dynasties, events, etc. which, incidentally have been corroborated by other historical sources. The *Vedas* do not fall within this category.

Apart from the peculiarities of their genre and composition, there is also the problem about when these texts were composed and compiled. The antiquity of the hymns of the *Rig Veda* has been traced variously to periods ranging from c. 6000 BC to 1200 BC. While the earlier dates are unacceptable, the later ones are also not based on strong evidence. Even if we were to accept a mid-second millennium BC date for the *Rig Veda* and fit in the later *Vedas* into the first half of the first millennium BC, the problems in using these as either a primary or a corroborative source for the economic history of the period under study requires to be tackled.

For instance, let us follow those interpretations of the Vedic evidence that have put forward an evolutionary framework of a largely pastoral economy, followed by large scale agriculture. The details of this two stage scheme of socio-cultural development are as follows. In the first stage, on the basis of the core books of the *Rig Veda*, the existence of a pastoral, cattle-based economy between 1500 and 1000 BC, is postulated. There is little doubt that there are numerous references to cattle in this text – *gau* occurs in different declensions about 176 times and there are different terms for various events that are derived from cattle. An example is the plethora of terms for ‘battle’ which include *gavisti*, *gosu*, and *gavesana*. The evidence, we are told, for agriculture is less strong and barley (*yava*) is the only cereal that is specified. The geography of the *Rig Veda* is

largely the lands east of the Indus – areas in Pakistan Punjab and Bahawalpur and in Indian Punjab and Haryana. In the second stage, from 1000 BC onwards, the geographical area of reference expands much further and includes the Gangetic plains within its ambit. In this period, a full fledged agrarian society is reflected in the Vedic texts where apart from barley, rice, bean-pulse, sesamum and millet are frequently mentioned.

The problems with this reading of Vedic texts are several and can only be briefly mentioned here. To begin with, as far as the *Rig Veda* is concerned, while there is no denying the numerically large references to cattle, there are also references to agriculture there. These may not be many but they strongly underline the existence of a plough based agriculture. An instance that can immediately come to mind is a hymn from a family book (Book 4, Hymn LVII) which is dedicated to *Kshetrapati* ('master of the field) and is devoted to ploughing. Two of its verses (numbers 7 and 8) read: "May Indra press the furrow (Sita) down, may Pusan gude its course aright. May she, as rich in milk, be drained for us through each succeeding year/ Happily let the shares (*phala*) turn up the ploughland, happily go the ploughers (*kinasa*) with the oxen." The other aspect that one needs to keep in mind is that of trying to dovetail the literary evidence with the archaeological picture. If we accept the picture of pastoral groups dominating the geography of Punjab, Bahawalpur and Haryana in the time of the *Rig Veda*, juxtaposing it with the archaeology of those regions remains a serious problem. In the archaeological landscape, it is not pastoral groups but agricultural communities that command attention and, among other things, this is amply highlighted by the crop patterns of the late Harappan cultures of this zone.

On the question of agriculture, it may also be pointed out that north India did not have to wait for a 'late Vedic period', if at all there was one, for the consolidation of a secure agricultural base. Thriving agricultural societies existed in the Gangetic plains much before the first millennium BC. For all the allusions in the *Satapatha Brahmana* about agriculture being carried to the banks of the Gandak river in Bihar by the putative Aryans in the first half of the first millennium BC, archaeology tells us that in that area, in the third millennium BC itself, they were rice cultivating agricultural communities.

This does not mean that in writing the history of early India, texts like the *Vedas* must be jettisoned altogether. In matters of ancient Indian philosophical and religious thought, they must be considered as an important source of information. But when we are dealing with more mundane aspects of the past such as the settlement patterns and subsistence strategies, if the *Vedic* corpus is treated as a primary source of information, this will lead to conclusions that fly in the face of well-documented archaeological data. Till the time that a greater precision is imparted to the chronology and character of *Vedas* as a historical source, if we are to meaningfully understand the geography and character agricultural-pastoral communities in north India, it is wise to follow archaeology rather than seek 'confirmation' for religious texts.

This is also necessary because unlike the Vedic texts which remain focused on north India, archaeology provides us a tool for understanding the subcontinent beyond the pale of 'Aryan' texts. 'Vedic India' may reflect a two stage-cultural development, but the Indian subcontinent as a whole witnessed a rich variety and depth in the evolution of farming cultures in this time period and our understanding of its economic history must reflect this diversity.

6.6 SUMMARY

The foregoing analysis of various food producing communities upto c. 600 BC reveal multiple lines of development. Economically, they represent a combination of agriculture and pastoralism, although in some instances, one aspect may be more defined than the other. These village cultures can be differentiated on the basis of the pottery they used, the technology they employed and, in some cases, over time, they developed culturally complex features that are observed in chiefdom societies.

India saw the emergence of the first rice producing cultures as early as the late sixth and early fifth millennium BC. From 3000 BC onwards, farming cultures can be encountered across a wide swathe of territory in regions like the Northwestern highlands and lowlands of Pakistan, Kashmir and Rajasthan. Many of the early farming cultures were marked by their own regional characteristics, depending upon the area where they were located. For example, in Kashmir, pit dwellings became an integral part of the residential pattern in response to the severe cold. Then, there is Rajasthan, with sprawling chalcolithic cultures that exploited the rich copper resources of the region. Another peculiarly peninsular phenomenon is the emergence in the third millennium BC of ash mounds in the Deccan, formed by the firing of accumulated cow-dung. Animal herding was an integral component of this farming culture.

As we move into the third millennium BC, a striking feature is simultaneous presence of village societies in large parts from India that were contemporaries of the Harappan civilization and their interactions with the Indus people. Another element is the beginning of iron technology in chalcolithic contexts. This can be seen at Harappan sites as also in Kashmir, Rajasthan and Uttar Pradesh. However, it is only from the latter part of the second millennium BC that iron usage becomes more common. This, though, did not trigger any dramatic social or economic transformation. The urban efflorescence which is described as the 'second urbanization' postdates the usage of iron by several centuries and is a c. sixth century BC phenomenon.

6.7 GLOSSARY

Culture and Civilisation

'Culture' in archaeology is used a kind of umbrella term to describe the cumulative character of a past human society. This is done on the basis of the evidence that has physically survived. Used in this sense, it can accommodate palaeolithic hunter gatherers, mesolithic fishers and foragers as also neolithic farmers and chalcolithic village and city dwellers. On the other hand 'civilization' is a specific type of a 'culture'. which is marked by literacy, cities and towns, monumental architecture, craft specialization and regional settlement hierarchies. it is accurate to describe the Harappan phenomenon as a 'civilization rather than a 'culture' because it directs attention to such elements which are concurrently present at its different sites.

Ochre Colour Pottery (OCP)

This pottery is made of medium grained clay, underfired and has a wash of ochre (which has a tendency to rub off) ranging from orange to red. Those sites associated with this ware are ascribed

to Ochre Colour Pottery Culture. OCP pottery sites are generally located along the river banks. This pottery type is largely concentrated in Upper Gangetic Valley.

Painted Grey Ware (PGW)

The pottery made out of well levigated clay and has a thin core. It has a smooth surface, grey to ash-grey in colour. It is painted in black and sometimes in a deep chocolate colour on the outer as well as inner surface.

Radio Carbon Dating (C14)

This is a method of archaeological dating which is based on the principles of radioactive decay. One of the forms of carbon - ^{14}C or radiocarbon is an unstable one. This leads to radioactive decay of ^{14}C at a regular date. The American chemist, Willard Libby, who first used this to calculate radiocarbon dates, estimated that it took 5568 years for half the ^{14}C in a sample to decay – its half-life – although modern research indicates that the more accurate figure is 5730 years.

Radiocarbon is passed on uniformly to all living beings through carbon dioxide. Only when a plant or animal dies does the uptake of ^{14}C begin to decline through radioactive decay. Thus, knowing the decay rate or half-life of ^{14}C , Libby recognized that the age of dead plant or animal tissue could be calculated by measuring the amount of radiocarbon left in a sample.

Libby's great practical achievement was to devise an accurate means of measurement. The traces of ^{14}C are minute to start with and are reduced by half after 5730 years. After 23,000 years, therefore, only one sixteenth of the original tiny concentration of ^{14}C is available to be measured in the sample. He discovered that each atom of ^{14}C decays releasing beta particles and he succeeded in counting these emissions using a Geiger counter. This is the basis of the conventional method still employed by many radiocarbon laboratories today.

Samples usually consist of organic materials found on archaeological sites, such as charcoal, wood, seeds, and other plant remains, and human or animal bones. The accurate measurement of the ^{14}C activity of a sample is affected by counting errors, background cosmic radiation, poor sampling techniques, etc. In spite of these limitations, it is still the main dating tool for organic materials that go back to about 50,000 to 80,000 years ago.

The civilization flourished between BC 4000-3000 on the rivers Tigris and Euphrates. It is also known as Mesopotamian civilization. Ancient Sumerians invented wheel and created mathematical symbols. Sumerian civilization was the first to bring writing to the world called 'cuneiform'.

6.8 EXERCISES

- 1) On a map locate cultures contemporary with the Harappan civilization. Do you find differences in the existing cultures vis-a-vis Harappan civilization?
- 2) Discuss the characteristic features of neolithic-chalcolithic sites of the northwest and Rajasthan. In what ways they differ from Ash Mound traditions of the southern Deccan plateau.
- 3) Analyse the growth pattern of early agricultural and pastoral communities in the subcontinent.
- 4) Examine the integration pattern of the late Harappan and local cultures in the subcontinent.
- 5) Discuss the possibilities in the neolithic-chalcolithic cultures of the existence of chiefdoms in the subcontinent.

6.9 SUGGESTED READINGS

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