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Antecedents

Prehistoric Beginnings

The interest in the archaeology of India is rooted in the activity of the late nineteenth century, focusing on the collection of historical remains to help in understanding the past and illumine the present. The search for antiquities that constituted pre-history was encouraged by comparative studies with other parts of the world, and the recognition of similarities or of deviances. To begin with, antiquities of the historical period were mainly objects that were later classified as art remains. Interpretations of excavated data became current during the last century and these have undergone change from time to time.

The excavation of the Indus cities in the 1920s and 1930s led to a re-orientation in Indian archaeology, their origin being initially attributed to possible colonial transpositions from west Asian civilizations. Even later, when the methods and techniques of excavating were altered and made more rigorous by Mortimer Wheeler, the shadow of this imprint did not disappear. The pendulum has now in part swung the other way, for some archaeologists would like to explain the Harappa culture as entirely indigenous and a lineal ancestor to subsequent cultures.

In the intervening half-century between these two interpretations, new ways of examining archaeological data were adopted by other archaeologists. The questions asked of the data have moved away from being confined to discussions of origins and chronology and have begun to explore the nature of various archaeological cultures and the changes manifested by them or by successor cultures. The context of the artefact demands attention more than just the artefact. Hopefully this approach will help shift the interest away from merely fuelling the search for origins. This will, however, require more empirical data, from a range of cultures, collected through controlled surveys and systematic excavations and motivated by questions that relate to explaining the various societies that created the Indian past.

The history and identity of human settlements in India goes back to prehistoric times, when there was a gradual spread from the sporadic settlements of the old stone age to the more densely distributed habitations of later stone ages, followed by the even later societies of a more complex kind. The question of the identity of the earliest settlers is linked to the evolution and early history of *homo sapiens* and their dispersal from Africa. The earlier geological conditions assume that the Indian subcontinent was linked to east Africa in remote times.

The contours of societies in India evidenced by archaeology broadly conform to those recorded for adjoining parts of the world, although of course there are differences that derive from specific environmental contexts. The tracks can be traced through the recognized patterns of the settlements and cultures that have been labelled as the palaeolithic, mesolithic, neolithic, chalcolithic and iron

ages. Not all societies evolved from one to the next in a series, nor were they uniform in time throughout the subcontinent. Nevertheless, a brief survey of what has come to be called pre-history and proto-history provides the antecedents to the earliest history.

Archaeological data is in the form of tangible, material remains. This becomes the basis for calculating chronology. Methods of dating have undergone impressive improvements in the last half-century and are among the many areas of archaeology in which modern scientific techniques have made enormous contributions. For many very early periods there are methods such as spectrometric dating, or measuring potassium or radioactive decay, for arriving at an early date. For periods of the last 10,000 years, the three most commonly used techniques are radio-carbon dating (Carbon-14), based on measuring the loss of carbon in organic material; dendro-chronology, which refers to the number of tree rings in wood; and thermoluminescence (TL), which can be applied to artefacts of particular materials that have been put through fire, such as pottery. Given the range of techniques, it is possible to calibrate chronology, as was done a couple of decades ago for Carbon-14. Dates for archaeological data therefore tend to be reasonably secure and can also help in ascertaining historical chronology, provided archaeological evidence is available.

Terms such as culture and civilization, when used in an archaeological context, have a somewhat different meaning from their general use. Culture refers to the pattern of life of a society, so there are multiple kinds of cultures. Such patterns would include the use made of the habitual environment, social relations, language and ritual. Typologies of cultures were earlier made on the basis of the tools used by human groups. These were largely of stone, changing from the older and larger tools of the palaeolithic to the smaller ones of the mesolithic, and the polished ones of the neolithic, to the use of both stone and metal in the chalcolithic. Tool typologies are sometimes added to or substituted by types of pottery (when it comes into use), characteristic of certain kinds of settlements. The pottery label is used to identify the people who made it. Labels such as hunter-gatherers, cattle-keepers and early fanning communities are also used, since they are more descriptive. Similarities in cultures do not necessarily indicate that they evolved from the same people. Patterns of life and the artefacts that go with them can take similar forms, even if those who make them are unconnected. But where there are connections, similarities have to be differentiated from imitations.

Civilization implies a pattern that is thought of as more complex and sophisticated, incorporating urban living and all that it connotes, a conscious aesthetic awareness, sophisticated religious beliefs and the use of texts. City societies are stratified and the wider context is the state, with its unequal social divisions. Ruling groups need not be based on kin connections. A civilization can cover a wide area, recognized by the similarity of artefacts, and its extent often arises from the interdependence of peoples who are affected by its systems in various ways.

Palaeolithic and Mesolithic

Evidence for hunter-gatherers of the palaeolithic comes from various parts of the subcontinent. The initial studies focused on the north-west, in terraces of the Soan River and in the Potwar Plateau. Since then sites have been found scattered across the subcontinent. Habitations tended to be in rock shelters, frequently located in Madhya Pradesh as at Bhimbetka but also found in other parts of India, or in caves such as at Sanghao (north-west Pakistan), or in Kurnool (Andhra Pradesh), or even sometimes as camps in the open, although there is less evidence for the latter type of settlement than

for rock shelters. Shelters in the open were sometimes made of foliage and would therefore not survive, but stone tools and signs of settlement provide clues to such shelters. Sites are generally located near water sources and where plants are readily available. Fossil remains are another source of information and fossil animals include some that were eventually domesticated, such as cattle, sheep, goats and others that remained in the wild, including the cat family and deer. In the earliest stage food was obtained by hunting animals and gathering edible plants and tubers. Settlements tended to be close to scrub jungles and watering places as, for instance, at Hungsi. The hunting of large animals would have required the combined effort of a group of people, whereas smaller animals could be more easily ensnared or hunted by individuals.

The sites date from before 30,000 to about 10,000 BC. Stone tools, hand-sized and flaked-off large pebbles, are among the more obvious characteristics of palaeolithic sites. Large pebbles are often found in river terraces, such as those of the Soan Valley or the upper reaches of rivers as in the Siwalik Hills of the north. A skull found in the Narmada Valley is likely to yield interesting evidence. Various techniques of analysing plant and animal remains help in the reconstruction of environment and climate. Variations in climate were an additional challenge to the small bands of hunter-gatherers. Their way of life moved gradually towards attempts to domesticate animals and plants and make some crude pots. Evidence of their perceptions of the world around them is rare. We know little about how they communicated and next to nothing about the languages they spoke, nor much about what constituted their concerns beyond the obvious. A few paintings on rock at Bhimbetka, discovered alongside other later paintings, are thought to be of this period and reflect a concern with success in hunting and with fertility. At Baghor I (Madhya Pradesh) a natural stone, shaped like a triangle, has been interpreted as a symbol of female fertility. Parallel to it, is the worship of a similar stone as a goddess in neighbouring villages today.

Improved technologies of obtaining food would have enabled some hunter-gatherers to settle. Sites of the mesolithic – the middle stone age that succeeded the palaeolithic – show the use of a different type of stone tool. These are tiny stone artefacts, often not more than five centimetres in size and therefore called microliths, consisting of flakes, blades, burins, points, scrapers, crescents and various geometrical forms. The technique of making these was also through flaking off pieces by striking the larger stone at an appropriate angle. The small microlith was used in a greater variety of ways than the bigger stone artefacts because it could be hafted to many more functional tools, for instance to make knives and sickles. An increase in small arrowheads points to the use of the bow and arrow. This meant that the close stalking of animals was becoming less frequent than shooting an arrow from a distance. This also reduced the fear of animals attacking the stalker. In order to make the small tools it was necessary to change from using pebble-stones to a different kind of stone, such as quartz, chert, agate, chalcedony and suchlike, which are easier to flake as small tools. This change indicates a greater confidence in relation to the environment and in controlling technology, but also points to a shift in habitat closer to the new raw material. River pebbles were now less in demand and the new kind of rock was more easily available in hills and forests. That the transition was extremely gradual is evident from the many centuries between the earlier and later patterns. The new technology introduced a change in living patterns, and hunting and gathering were initially supplemented by the use of wild grains and then by domesticated animals, horticulture and primitive cultivation. A tendency to settle for longer periods in an area can be surmised. Hunting and gathering continued to a lesser degree into later times, but dependence solely on these activities for food began to gradually decrease.

If the sites excavated so far are an indication, mesolithic activities took place away from heavy

monsoon forests and remained on the drier uplands. Ranging between the tenth and the fifth millennia, this period again witnessed variations of wet and dry climate. Many settlements were in or near rock shelters, as in Madhya Pradesh, but, judging by pestholes – in one case indicating circular huts – and habitation areas, some were more daring in venturing beyond the caves and shelters. Mesolithic remains have also been found in Langhnaj (Gujarat), Adamgarh (Madhya Pradesh), Rajasthan, Sarai Nahar Rai and Mahadaha (Uttar Pradesh), and in Bihar. Primitive querns and rubbing-stones at some sites suggest a more varied preparation of wild grains and plants as food. This is reinforced by the presence at one site of what seem to be potsherds of crude handmade pottery, together with an object identified as a storage bin. Animal bones in the habitation area become more frequent and include deer, boar and the now extinct ostrich, and some are bones of what were to become domesticated animals, such as bovines, sheep and goats.

Burials are occasionally within the habitation area and grave goods -such as microliths, shells and an ivory pendant – are placed in the grave. Some ideas of an after-life seem evident from the grave goods. The location may have developed from attachment to the person, but could have been due to more functional considerations, such as protecting the grave from animal predators. Very occasionally there are double burials, but not invariably of male and female. The skeletons suggest they were people who died between the ages of fifteen and forty, the average life expectancy being half-way. This would be usual for those times, but by our standards life expectancy was short. Some skeletons show evidence of osteo-arthritis.

Such early societies would have been organized as bands of people, with possibly some demarcation of families. Constant migration in search of food limited the numbers in a family, since children, tiring easily from walking long distances, could be an impediment to movement. Given that the population sizes were small, a disease could wipe out an entire settlement.

Rock shelters and caves in Madhya Pradesh and elsewhere that were habitation sites with paintings and engravings on the rock surface, continue to be found after careful exploration. Some are of the mesolithic period, but at other more extensive sites such as Bhimbetka the practice of painting continued into historical times. The latter can be dated from scenes depicting horses and elephants in processions and in battle. The themes of the earlier art focused on the life of hunters and gatherers. The hunting of animals, particularly varieties of deer, was a major enterprise. Both man and animal are represented in an abstract style, while the bodies of the animals often have cross-hatching and other designs. Presumably this was part of the ritual of the hunt, where the depiction of a successful chase became a talisman to ensure such a hunt, the assumption being that the representation would actually materialize. Such representation is the expression of cognition in which sympathetic magic is thought to be unfailing. Figures of men and women symbolizing fertility are also frequent. It would be interesting to speculate whether these communities scattered across the hills of central India shared cults and rituals.

The geographical extent of prehistoric rock art is impressive. Rock engravings, believed to be associated with the later stage of the neolithic, occur in the Edakal cave in the Western Ghats in Kerala and depict human activity in an unusual style of engraving. Recently, in the exploration of the Gilgit and Baltistan area in the far north, engravings of male figures and depictions of masks have been found, but the largest in number are of ibexes and others with highly stylized horns. It has been suggested that some of these engravings might link the upper Indus to central Asia, going back to the third millennium BC.

Neolithic

The change to a neolithic pattern, where the beginnings of agriculture and the domestication of animals becomes crucial, introduced what Gordon Childe once argued was a revolution through the practice of agriculture. This was not a sudden, radical change, and some activities of the earlier age had anticipated these developments. It may have been accelerated in areas experiencing a change in the environment as also by the ingenuity of men and women attempting improvements in their way of life. But its ultimate effect, inasmuch as it changed the processes of obtaining food and establishing new types of links between humans, animals and land, was revolutionary. A larger, and up to a point predictable, production of food may perhaps have been required by and resulted in a growing population. Together with this came the possibility of storing food – at least for a short time – which would have further encouraged the making of pots for storage. A higher density of population in places where agriculture was practised might also have brought about a more sedentary population. It is thought that gradually those practising settled agriculture may, on occasion, have overwhelmed hunter-gatherers and shifting cultivators. Habitats might have tended to encourage a concentration of people. This would eventually have made urbanization possible, but after a considerable experience of cultivation and sedentary occupations.

Neolithic sites occur in diverse parts of the subcontinent: in Galighai in the Swat Valley, Sarai Khola further to the south, and in the loess plateau of the Kashmir Valley that allowed pit dwellings; in Chirand in Bihar and in sites in the Belan Valley of Uttar Pradesh, such as Chopani Mando and Koldihva; eastwards to Pandu Rajar Dhibi, and further to Daojali Hading and Sarutaru; and in a cluster of sites spreading out from the Raichur doab and the Godavari and Krishna Valleys in the peninsula at Utnur, Piklihal, Maski, Tekkalakota, Brahmagiri, Hallur, Paiyampalli and T. Narsipur. Some of these sites were active into the historical period when a few had elements of urbanism.

Initially the cultivators are likely to have moved from place to place before more intensive agriculture made them sedentary. There may well have been confrontation between hunter-gatherers and shifting cultivators, some of the latter having only recently been hunter-gatherers themselves, although now wishing to subordinate other activities to agriculture. Ultimately, the dominance of the latter was established and the dependence on hunting and gathering would have declined. The suggestion that the transition to agriculture was made by women, who stayed home while the men hunted, is plausible. This gave women the opportunity to sow and then to tend what they had sown. But the more extensive change came with plough agriculture which was handled by men. Agriculture provided some predictability to the supply of food. The extension of cultivation required a sedentary society, and with technological advances it was possible to produce more food than the minimum required by the the band of people. This surplus food had the potential of being used, as it was in later times, for a variety of exchanges -some for other items or some even for obtaining labour. This use of the extra food gradually introduced stratification into a society where some controlled the food and used it for exchange, while others were left to produce the extra food.

Technologically there was a substantial improvement in tools, which were now polished. The removal of rough edges increased their functional effectiveness, as in the case of polished stone axes. The technological improvement of the polished axes as compared to the earlier ones is quite striking. Gradually, at some sites grass huts gave way to wattle-and-daub huts (constructed from branches of trees and foliage plastered with mud), and these in turn to mud-brick structures, small granaries and water storage. Hand-turned pottery later gave way to wheel-thrown pottery, and the production of a

few ornaments. Sites such as Mehrgarh, because of the extensive horizontal excavations, show a well-demarcated transition from early agriculture to the preliminaries of urbanization. The spread of agriculture has been explained as moving from west Asia to north-west India, but the evidence from sites in the latter area suggests that the transition to agriculture may have occurred more locally.

Wheat, barley, rice and millet began to be cultivated in different areas and at different times. The provenance of rice cultivation appears to have been in eastern India. Gradually, the domestication of sheep, goats and cattle was established. This provided dairy produce and some meat when required, reducing the dependence on hunting. Pastoralism and agriculture were interdependent at this stage, although the changes carried the potential of a bifurcation. The cultivation of crops permitted some predictability and control over obtaining food, but required permanent settlement to make a qualitative change. The domestication of animals provided food more readily. Larger animals were used additionally for traction and for transportation. The increasing use of pottery allowed for storage of food, which encouraged cooking, and the range in the size of the pots enabled their use in other ways. Where grave goods were buried with bodies, pots were sometimes included as items of ritual value. Large urns were also used as coffins for the burial of infants whose mortality is noticeable in these earlier cultures.

The increasing emphasis on farming in neolithic cultures draws attention to parallels observed by anthropologists studying similar societies. Farming anticipates the potentiality for chiefdoms where initially cultivation is carried out by family and clan labour. In many early societies the family as a unit, or as a constituent part of a clan, herded animals and cultivated crops. Younger members were expected to labour for the elders. This was labour performed because of a kinship link and is prior to the induction of non-kin labour, which marks a significant social departure but which probably becomes a resource in the more developed farming associated with later, socially stratified cultures. When societies became more complex and the system changed, non-kin labour was added or replaced kin-based labour. This was the labour of those who were not kinsmen but were willing to labour for recompense, or, possibly, if they were captives they could be forced to labour for those who had captured them. The use of non-kin labour also ushers in the possibility of an increase in produce and this would have raised the question of how the increase was to be distributed. Controlling and organizing labour in such situations, whether kin-based or not, would become a major source of authority and one of the functions of the chief.

Neolithic sites are scattered in various places and evolve at varying times. Among the early sites is Mehrgarh near Quetta in Baluchistan, one amid a number of village sites. This is a more impressive site than many others as it provides evidence of the continuity of the settlement over a few millennia and the gradual evolution of the settlement from agriculture towards urbanization. Some parallels are evident at sites in the north-west, which can be attributed to a cross-fertilization of ideas and activities in the region. Settlements were not isolated and the interaction between them could have been through an exchange of goods associated with even a minimal specialization in the production of exchangeable items, such as beads, through pastoral circuits and migrations and through confrontations. These would have created networks to channel exchange on a more regular basis, together with marriage circles and new ritual practices.

The origins of Mehrgarh have been dated to *c.* 7000 BC. The cultivation of wheat and barley, the herding of cattle, sheep and goats, habitation in mud-brick huts with hearths, a possible granary, pit burials with personal effects, beads of turquoise and lapis, and a scatter of clay figurines are aspects of a cultural pattern that was established by the sixth millennium. By the fourth millennium wheel-thrown pottery was introduced. Sites of the sixth to fourth millennia BC – also in the north-west at

Kile Gul Mohammad, Rana Ghundai, Sheri Khan Tarakai, Gumla and Rehman Dheri – were similarly centres of pastoral and agricultural activities, as well as being located along routes crossing the area. The Nal culture in Baluchistan and the Kulli culture to the south were also part of this scene. Some of these sites change from agro-pastoralism to farming, then to the beginnings of towns, and are therefore precursors of Harappan urbanization.

Close to the Indus River in the plains were the settlements at Kot Diji and Amri, with features which were the forerunners of some of the characteristics of the Harappa culture. The painted designs on the pottery at Kot Diji, for example, were based on the leaf of the *pipal/ficus religiosa* tree, and on fish and fish scales similar to those on Harappan pottery. Kot Diji features are also evident in some of the pottery from what have been called the Sothi sites in Rajasthan, such as the pre-Harappan settlement at Kalibangan. Further east, there are some similarities in artefacts from Kunal and Banawali (Haryana). The Aravalli Hills are rich in copper, and places essentially involved in the production of copper, such as Ganeshwar, were important. Practices in the alloying of metal were to become a legacy from the Harappans. Further south in Gujarat there is evidence of pre-Harappan settlements, some at places that were preludes to important Harappan towns such as Dholavira.

Some of the settlements in Rajasthan and Punjab also carried features associated with the Hakra Plain, particularly present-day Bahawalpur and Cholistan. The Hakra River, which gradually dried up, was once a substantial river although all that remains of its upper reaches now is the Ghaggar in the Punjab. The question has been raised whether the Indus-Hakra area was more pertinent to the rise of the Harappan cities, given the dense cluster of sites in the area, than was Baluchistan and the north-west; and, if this was so, perhaps the civilization should be called the Indus-Sarasvati civilization. However, the crucial factor is not the number of sites but the nature of the sites. Judging the nature of a site does not lie in merely listing artefacts, but assessing, in this case, the role of the site in encouraging the change from pre-urban activities to urbanization. Given the earlier and more widespread evidence for the evolution towards urbanization in the north-west, the initial impetus for the transition to urban centres lay, more likely, in the Indus plain and the north-west. In terms of access to the raw materials used in craft production and in controlling trade, which provided the impetus to urbanization, the centres in the north-west and the Indus Plain were certainly better situated than those in Cholistan. The former were more active, and with the potential of having connections beyond the borderlands.

Although the evidence from the north-west provides some indicators of the emergence of urbanism, in other areas, such as Gujarat, it has been described as a relatively sudden mutation accompanied by a notable increase in the size of urban settlements. This could have followed from the earlier Harappans reaching out into new areas and the latter adapting to the demands of the former. This might account for the seeming uniformity combined with a continuing presence of some regional features. It would also have allowed for the spread of Harappan material culture, which makes it the most expansive civilization of its time.

The evolution of cities in north-western India has to be viewed not only in the local context, but also in the context of archaeological change and the movement of peoples in the borderlands and beyond, with whom there had been earlier contacts. This does not, however, preclude the possibility of areas with a potential for urbanization, such as Kutch, coastal Gujarat or Cholistan, developing this potential on the heels of the first urbanization. The large urban site of Ganweriwala in Bahawalpur remains to be excavated and the stages towards urbanization in these parts have yet to be determined. It is more appropriate therefore to continue referring to the civilization as the Indus civilization or the Harappa culture, the latter name deriving from the initial site which was one of the earlier cities of

the civilization.

Chalcolithic

The innovation in the chalcolithic cultures was the use of copper and bronze, which forged the new technology of smelting metal ore and crafting metal artefacts. Obtaining raw material could now necessitate long-distance travel, which was encouraged due to the high value placed on the production of metal. The networks of chalcolithic cultures therefore widened. The use of stone tools was not abandoned and some of the microlithic forms, such as the parallel-sided blades, continued as essential items. Copper and bronze introduced yet another improved technology, which in turn encouraged a specialization in crafts in particular areas, often where the raw material was easily available and craftsmen would gather. The inclusion of metal technology introduced some complexities into the patterns of living, for instance determining who was to control the new technology, since those who were producing the artefacts were not necessarily the same as those in authority. Where the use of a script accompanies chalcolithic cultures, they are sometimes referred to as proto-historic and are differentiated from prehistoric cultures which were prior in form and lacking both metal and a script. When the incidence of the use of bronze increases perceptibly, some prefer to call it the bronze age.

The First Urbanization – the Cities of the Indus Civilization

The earliest excavations of the cities of the Indus civilization were at Harappa (Punjab) and Mohenjo-daro (Sind) and these remain the most important urban complexes, larger than the other towns. Many of the latter – large or small – have been excavated, some only partially, such as Kot Diji (Sind), Kalibangan (Rajasthan), Rupar (Punjab), Rakhigarhi, Banawali, Mitathal (Haryana) and the ports of Lothal and Dholavira, and Surkotada (Gujarat). Ganweriwala (Bahawalpur) awaits excavation. The larger cities are approximately a hundred hectares in size and the lesser towns come close to half that size. It has been suggested that if the extensions of the city are included Mohenjo-daro could cover an area of 200 hectares.

The time period of the civilization has in the past been divided into the pre-Harappan (starting in the late fourth millennium and continuing to 2600 BC), the Mature Harappan (from c. 2600 to 1900 BC) and the Late Harappan (to *c.* 1750 BC). There is sometimes a preference for the term Early Harappan rather than pre-Harappan, since it suggests continuity into the Mature Harappan. Other labels have also been used in recent studies but there is no final consensus. The cluster of sites in the Bolan area – Mehrgarh, Pirak and Nowshehra – as well as the settlement at Harappa, show an impressive continuity from the pre-urban to the mature urban, and finally the declining phase of the civilization.

The Indus civilization was the most extensive of the ancient riverine civilizations, with sites as far north as Shortughai in the Pamirs, and some activity across the sea southwards in Oman in the Arabian peninsula. It incorporated the north-western mountains and came as far east as the upper *doab,* although the actual area of control is likely to have been more limited. Southwards there was

much activity in present-day Gujarat, and some settlements going further into northern Maharashtra. In the first two instances the Harappans, as entrepreneurs in trade, were doubtless searching for valuable raw materials. Lapis lazuli from the Pamirs and the Chagai Hills of eastern Iran was much valued in the trade with Mesopotamia. Copper deposits in Oman were perhaps what attracted the Harappans, given that copper was much in demand further west. Trade with Mesopotamia is evident from the recovery of a few Harappan seals, beads and weights at Mesopotamian sites, and some, which are thought to be Harappan, at sites in the Persian Gulf. The Mesopotamian references to the land of Meluhha and its people might have been intended for the Indus civilization, the products of this land being listed as ivory, carnelian, wood, lapis and gold, all familiar to the Indus cities. Other areas to the east mentioned in Mesopotamian sources were Dilmun and Makan. Coastal shipping from western India along the Gulf to the Tigris-Euphrates delta has been continuously involved in the exchange between India and the Gulf. Contacts with Afghanistan and Iran were maintained through the passes in the north-west mountains, and particularly the Bolan Valley. Other contemporaries were the people of the Sothi-Siswal cultures in Rajasthan and Haryana, as well as the Kayatha culture in central India. The locations of the cities appear to have been chosen with an eye to the availability of resources and the transportation of goods by river or by sea.

Harappan artefacts, or artefacts influenced by Harappan forms, designs and functions, have been found over an extensive area. But this is not an indication that the area had a uniform culture and identical observances. It seems evident from the variations discovered that local cultures functioned and took shape beneath the Harappan system. This interface between the local culture and a wider ranging one is an aspect of the subcontinental cultural life throughout its history.

The cities were maintained from the surplus produced in the countryside, together with other resources gathered or mined in various regions. This process seems to have resulted from co-ordination in obtaining raw materials, working them into commodities and trading them in a systematic manner. Closer to home, copper would be mined in Rajasthan and Baluchistan. Semi-precious stones were available in large quantities from western India, lapis from the Chagai Hills or the Pamirs and were crafted into beads, some perhaps being traded as raw material. Timber such as teak was available in Gujarat, and other wood elsewhere; shell and chank came from the coast and were cut to make ornaments; and there was a range of other items. Harappan pottery is distinctive, with designs in black, of plants, birds and abstract forms, frequently painted on a red surface. Pottery is a clue to locating Harappan sites, but it is likely to have been made, after a fashion, in many local areas.

The cities were centres for the production of crafted items that were traded both overland and across the seas. This was not the work of casual craftsmen and required considerable skill and organization. Bead-making was an extensive industry, using gold, copper, shell, semi-precious stones, steatite, faience and ivory. Bronze and stone tools were largely functional but some were useful for exchange. Workshops for the production of beads and similar objects were located in Harappan cities and the etched carnelian bead was to become a characteristic Harappan object. Such workshops are often identified by the presence of a quantity of unfinished items. Carefully graded weights made of chert occur at Harappan sites, as well as rods for measurement, again suggesting functions linked to exchange and a sophisticated system of weights and measures. Lothal has evidence of a structure that has been described as a dockyard, although this description remains controversial. In its vicinity was a warehouse which was probably a hub of exchange and a place where the finished products of the craft workshops were gathered, stored and transported. Doubtless the profits from trade both within the northern and western areas of the subcontinent, and between the people of this culture and those of

the Persian Gulf and Mesopotamia, kept the cities economically viable.

The cities demonstrate a sophisticated sense of civic planning and organization. In most cases the city was divided into the smaller citadel area, frequently to the west, where the essential institutions of civic life were located, possibly together with some places used for public rituals, and the larger residential area to the east. This bifurcation was not continued in the planning of cities of the later historical periods, although the tendency in civic planning to concentrate professions in particular areas remained characteristic. The impression given by the Harappan cities is one of a concern with maintaining urban order and an efficient economic system managing land, labour and water.

Huge man-made brick platforms formed the foundation for the buildings of the citadel, possibly to make them secure against floods and other damage since most of the cities were on the banks of rivers, probably to facilitate the transportation of goods. These structures may also have given direction to the plan of the cities. City-planning roughly followed a grid pattern, with roads oriented approximately to the cardinal directions, which assisted civic facilities, particularly the carefully articulated drainage system where house drains were linked to those of the street. House-plans generally had a courtyard as the focus, with rooms opening on to it. Most houses had individual wells, bathing places and drains. Drains and structures of importance were largely constructed of kiln-fired brick, whereas the houses were of mud-brick. The brickwork shows experience and expertise. Stone was used more extensively in Dholavira. The quarrying, dressing and transporting of stone was more labour-intensive and would have required considerable management. The city-plan of Dholavira differed from that of the other cities. Elaborate arrangements were made, but less for the storage of food and more for the storage of water. Large water reservoirs were built within the fortified part of the city. Architectural requirements for the building of the Harappan cities would have included a knowledge of surveying and geometry. The making of a calendar was necessary for agriculture and this in turn incorporated some knowledge of astronomy.

The citadel area of the city generally had defence walls and bastions, with elaborate entrances that were no doubt appropriately guarded. Sometimes the city was also fortified. Was this demarcation from the surrounding countryside expected in early cities? As a new phenomenon, the city was the focus of wealth that was different in quantity from that of the village, and its management also differed. It required a distinctive way of life unfamiliar to non-urban societies. In comparison with other contemporary cities, the Harappan cities do not display any spectacular wealth in either the houses or the graves. A few impressive gold objects have recently been excavated from a Harappan site, but the totality of jewellery remains small when compared, for instance, to the volume from Mesopotamian cities. The demarcation between town and countryside may also reflect the management of the cities. Did the control over agricultural production, labour and raw materials require that those exercising this authority be protected? Such control would have been more extensive than that based on kinship connections and clan loyalties. This is not to suggest that those inhabiting the cities were aliens, but rather that they gave expression to the kind of authority that had not existed before, and that it was the concept of this authority that may have seemed alien to rural life.

Clearing the surrounding tropical savanna forest around each city may have been necessary in order to extend cultivation sufficiently to support the urban population. This may have resulted in fairly large-scale deforestation. A ploughed field of the period just prior to Harappan urbanization was excavated at the site of Kalibangan, with the field coming up to the edge of the city. Wheat and barley were the staple crops, although rice and millet were also grown where possible. Water conduits, some of which were underground in certain areas, and small-scale inundation canals

leading off rivers directed water to where it was needed. These would have required constant maintenance and supervision.

The monumental buildings of the citadel areas have been variously interpreted: granaries, warehouses, collegiate buildings and possibly a ritual centre at Mohenjo-daro, including a tank and its surroundings. The constructing of the platforms and the buildings would have required a large deployment of organized labour with an equally effective system of obtaining and controlling labour. Possibly this was done through regular labour services rather than a tax or tribute. The form that this may have taken remains uncertain, although some attempts have been made to reconstruct the foci of authority. Supervision and control involved many aspects of administration: agriculture to ensure food for the city population; the production of items for trade, such as copper ingots and beads, and seals for stamping goods; labour for the building and maintaining of cities; and above all the organization of the trade itself.

In describing the governing authority it was earlier suggested that it consisted of a single imperial system, with twin capitals at Mohenjo-daro and Harappa, a suggestion that has been superseded by others. The recent idea that the Indus cities were city-states and were the prototypes for the 'autonomous' cities of historical times carries little conviction, given the essential differences in the concept and planning of the early and later cities. It might be more plausible to consider flexible relationships between the cities, given their differentiated size and their authority systems that are apparent, for instance, if the city-plan of Kalibangan is compared with that of Dholavira or Harappa. Governed by chiefs of clans in the early phase, this system would have given way to a more complex one by the Mature period, when representatives of city authorities probably coalesced to ruling jointly in assembly to control a sophisticated system of obtaining labour and coordinating urban activities. The structures at Mohenjo-daro point to complex authority systems. Possibly a more centralized administration was adopted and adapted in various regions, interacting with city centres.

The kind of evidence that is associated with the archaic states of west Asia is hardly recognizable in the Harappan state or states. Distinctive buildings cluster in one area in most cities, and there is a striking absence of monumental graves or well-demarcated sacred centres. Even a palace is difficult to discern. The availability of weapons appears to have been limited, with little evidence of disturbed strata to indicate physical destruction arising from warfare. The usual supporting evidence for an organized administration in the form of designations, codes and accounting is unavailable, unless some of the pictograms when deciphered contain information on titles and formal functionaries. The seals may well be tokens of identity of such authorities.

Among the many remains of the Harappan culture, the most puzzling are the seals. They are generally small, flat, square or rectangular, often made of steatite, with a pictorial motif that depicts humans and/or animals or composite figures, and an inscription which remains undeciphered. If the script is pictographic or logographic and not alphabetic, as has been suggested, it could point to the use of more than one language. The possible languages that have been considered include Proto-Dravidian, Indo-Sumerian, Elamo-Dravidian, Indo-Aryan and Austro-Asiatic. Some systematic work in linguistic patterns suggested by the script has attempted to use Proto-Dravidian, but so far without success in decipherment. Attempts to read it as Indo-Aryan are as yet far from systematic. The one certainty is that the signs should be read from right to left. A perforated boss at the back of the seal helps in its handling. Seal impressions on clay indicate that among other uses seals were used to stamp packages. They could therefore have been tokens identifying civic authorities, supervisory managers of long-distance trade, merchants or those bringing raw materials to the cities, or clan affiliations. Signs of identification could relate to professions, religious associations or social

organizations. The script also occurs on objects thought to be copper amulets, apart from occasionally being scratched on pots, bangles and suchlike. A short inscription in large-sized letters was unearthed at Dholavira and has been described as a signboard.

Equally puzzling are some of the animals and the scenes depicted on the seals. The most common animal is one that is thought to be a mythical unicorn, although a more mundane identification describes it as a stylized rhinoceros. It is often depicted together with an object that has been variously interpreted, often described as an altar or even a brazier. Among single animals the bull and the elephant were popular. Tigers occur less frequently and more often as part of a scene. The depiction of the horse is absent on the seals. A few bones, said to be of the horse, and small terracotta forms occur in late levels at Pirak (Baluchistan) dating to the early second millennium BC. The claim that horse bones occur at Surkotada, and at a few other sites at earlier levels, has met with doubt, the bones being identified as those of the ass and the onager. The late arrival of the horse in India is not surprising since the horse is not an animal indigenous to India. Even on the west Asian scene, its presence is not registered until the second millennium BC. The horse was unimportant, ritually and functionally, to the Indus civilization.

A noticeable difference between the Harappan cities and those of other ancient civilizations is the absence of recognizable religious buildings and of elaborate burials. If there were temples they are difficult to identify, for there is neither the presence of magnificent icons nor specially decorated structures. Temples therefore were not the focus of social bonding. Traditions of ancestral rituals are also not apparent, for people tended to migrate away from the cities when they declined. The cities may not therefore have been the focus of religious worship. Female figurines from the more westerly sites have been viewed as icons for worship with a prevalence of a goddess cult. This possibility is based in part on the continuing worship of various goddesses later in Indian history. Some emphasis on fertility rituals seems evident, but whether these were elaborate ceremonies remains uncertain. Fertility rituals would not be unusual given the prevalence of these in other chalcolithic cultures of the subcontinent. Some small oval structures containing ash have been interpreted as fire altars, but they could equally well be hearths. A shamanistic religion has also been suggested, but the urban character of the civilization is unlikely to have been conducive to shamanism.

A few motifs continue from Harappan times into later history, such as the *pipal* - as a leaf decoration on pottery and as a tree on seals – which was revered by some later religious sects. Much speculation focuses on whether a seated figure on a seal represents a proto-Shiva. The identification of the figure is uncertain and the evidence for the link with Shiva is tenuous. It would perhaps be more apposite to regard these representations as contributing to the evolution of a later religious mythology and iconography, rather than insisting that a later icon be imposed on an earlier period. To explore the meaning of such an icon in its own context would perhaps be more meaningful than to give it an instant label derived from an icon of a much later period. The figure could equally well be identified as depicting a yogic position, as indeed female figures in trees on some seals could be linked to the evolving of the idea of *apsaras,* celestial maidens associated with trees.

Sculptures in stone and bronze have been found, but in sporadic locations not indicating an assembly of images in a temple. Such sculpture shows a refinement of technique and concept that is striking. A small bronze figurine, probably not a ritual object, has the pleasing stance of a young and spirited woman. One among the portrait heads sculpted in stone is evidently of a person of consequence, given the band around his head and the trefoil design on his shawl, together with his curiously semi-closed eyes. Popular interpretation describes him as a priest, but this remains unproven. Terracotta forms range from children's toys to larger representations of animals. There is a

noticeable absence of figures reflecting grandiose self-representations, in common with many other civilizations of this period.

Another striking contrast is the simplicity of the burials compared to the tombs of rulers further west. Grave goods are mainly the pottery of daily use with a scatter of other small items. Clearly, they did not expect huge demands on the dead in the after-life, nor were burials occasions for demonstrating status.

Post-Harappan burials of the late second millennium BC in what has been called the Cemetery H culture, largely confined to Harappa and the Punjab plains, were accompanied by pottery that was different from the Harappan. The ritual of burial continued even if the culture of these later people was not identical. These burials may point to new arrivals or the emergence of some new traits in the cultures of the region. Such suggestive links through a few items reflect similar hints from earlier times, although the artefacts differed. For instance, connections have been suggested between artefacts found in the Bolan Valley and in the Indo-Iranian borderlands, and still further in Afghanistan and Iran, in the area now being referred to as the Bactria Margiana Archaeological Complex.

The decline of the cities was once ascribed to invading Aryans. However, there is little archaeological evidence for the type of massive invasion that would have led to the collapse of a well-established political and economic system, resulting in a displacement of culture, although the denial of an invasion does not preclude the possibility of migrants bringing the Indo-Aryan language into India. The argument supporting an invasion was based on the subsequent culture of the Vedic corpus, using a language – Indo-Aryan – that had affinities with central Asian Indo-European, particularly with Old Iranian. That this language gained currency in northern India was thought to be the result of a conquest of the local population by Indo-Aryan speakers, the evidence being drawn from the hostility of the *arya* towards the *dasa* in the *Rig-Veda.* The reference to Indra attacking the *pur,* enclosed settlements of the *dasas,* was erroneously read as referring to the cities of the Indus civilization. However, there are alternative explanations for the introduction of Indo-Aryan into India and its gradual spread across northern India. These explanations have more to do with the historical context of urban decline, the coexistence of differing cultures or languages, and the filtering of Indo-Aryan speakers into north India through small-scale migrations, than with the overly simplistic theory of an invasion as a historical explanation; or for that matter with the current attempts being made by some enthusiasts to prove the indigenous origin of the Indo-Aryan speakers even though, as we shall see, the evidence points to the contrary.

The skeletons in habitation areas at Mohenjo-daro were earlier interpreted as demonstrating the massacre of citizens, which endorsed the theory of an invasion. But analyses of the skeletons revealed that most of these people had died of diseases such as severe anaemia, indicating a different set of reasons for urban decline. Violent deaths in a limited area do not necessarily mean widespread invasion and could be evidence of local disturbances. Diseases or severe environmental changes as factors in weakening a population have not been sufficiently examined in the context of early Indian history.

Other explanations generally advanced are that the cities declined largely because of environmental changes, such as the long duration of the severe flooding of the Indus in the vicinity of Mohenjo-daro, and climatic change leading to greater desiccation, deforestation and a more generalized de-urbanization with the dying out of trade requirements and a consequent political collapse. The extent to which the degradation of the environment caused the decline of the cities remains unclear. Urban decline can only be properly explained by multiple causes, and these were

not uniformly applicable to each region. This is also evident from the variant patterns that followed urban decline. Squatters from the countryside occupied some cities in the lower Indus Plain, bringing about a ruralization of the erstwhile urban system. Elsewhere there were migrations away from Harappan centres, as in the migration from the Hakra Plain towards the Ganges-Yamuna *doab,* or from Gujarat to northern Maharashtra. Some settlements in the nort-hwest and Punjab might have been subjected to raids and skirmishes, such as are described in the *Rig-Veda,* or for which there appears to be occasional evidence at some sites, for example Kot Diji.

The decline of the cities did not mean that the Harappan pattern of culture disappeared. Although many urban functions would have ceased, people in rural areas would have continued their activities with marginal changes. The Harappan system was a network linking the urban to the rural and some features could have been maintained in the rural areas, even if these areas suffered administratively and economically from the removal of this protective system. Some archaeological cultures were contiguous in time and space with the Harappan; at other places there were overlaps between the Late Harappan and subsequent cultures. Continuities would therefore not be unexpected, but it is more likely that these were restricted to mythologies, rituals and concepts of tradition, since the material culture does not show continuities.

The second millennium also saw activity along the Indo-Iranian borderlands, including the arrival in north-western India of the horse and the chariot with a spoked wheel, both of which were new to the subcontinent. Occasional comings and goings across these borderlands were gradually to accelerate, a pattern that remained effective until recent times.

Neolithic and Chalcolithic Cultures, Other Than in the North-West

The evolution of an urban culture in the north-west did not envelop or sweep away all other pre-urban societies. Those in the vicinity were incorporated into the Harappan system. There were still, however, large numbers of hunter-gatherers, pastoralists and farmers whose lives were either untouched or only marginally affected by the changes in north-western India. The potential for change now lay with the chalcolithic cultures, using artefacts of stone and metal – primarily copper, until the early first millennium when iron was introduced.

Chalcolithic societies of the second-first millennium BC emerged in many parts of the subcontinent, sometimes incorporating an earlier neolithic society. The sites of Burzahom and Gufkral (Kashmir), dating to the third-second millennium BC, feature pit dwellings cut into the loess soil of the plateau. Evidence of some carnelian beads, and the depiction of a horned animal on pottery, have both been taken as links with the Indus civilization. This need not imply a direct connection, since the artefacts could have come through a chain of exchanges. A stone engraving depicts a hunting scene. Stone implements for harvesting grain and approximating a sickle-shape are thought to have similarities with such harvesters from central Asia, but connections beyond this have not been established. Burials within the hut, sometimes together with an animal – such as a dog – occur both at these sites and elsewhere in India. Burzahom also has large upright stones or menhirs. Sites with some similarities are located in the hills of Almora (Uttaranchal). The more northern settlements of the Gandhara Grave culture in the Swat Valley were familiar with the horse by the late second millennium BC, and show evidence of the use of iron weapons in the early first millennium. The Swat Valley was one of the routes linking north-west India to Afghanistan and central Asia.

One tends to look at the Ganges Plain for a larger spread of settlements, since this was to be the location of the second urbanization. There is a different sequence of cultures between the western and the eastern parts of the plain. The earliest culture in the western plain is that of the Ochre Colour Pottery (OCP) also found in the watershed, and this has been excavated at sites such as Atranjikhera, Lai Qila and Hulas. This pottery was earlier linked to poor quality Harappan ware, but the link remains tenuous despite some evidence of Late Harappan remains in the early levels at Hulas. At some sites in Haryana and Punjab there is an overlap between Late Harappan pottery and that of the people of the subsequent Painted Grey Ware (PGW). This would suggest an introduction of the Painted Grey Ware somewhat earlier than the first millennium. The later phase of the Painted Grey Ware is associated with the use of iron. Perhaps the most significant aspect of this evidence is that it reveals a minimal continuity from Harappan ideas in this area, although the cultures of the western Ganges Plain show little similarity with Harappan artefacts. The notion of urban centres, however, remained unfamiliar to these cultures since the preconditions were absent.

Yet there seems to be a further connection eastwards as well. Copper objects with an impressive technical proficiency – spearheads, harpoons, celts, antennae swords and what are thought to be anthropomorphic figures – have been found buried as hoards in this area. Occasionally they occur in a stratified context, but more frequently in caches in fields. A link has been suggested with similar objects found in Chhotanagpur and further east, dating to the second millennium.

The Painted Grey Ware culture, of which some sites were located in the Hakra Plain in a post-Harappan context, was predominant in the western Ganges Plain in the first millennium BC, spreading from the Indo-Gangetic watershed to the confluence of the Ganges and Yamuna. Metal technology in this culture includes the early use of iron, which was more fully developed prior to and during the urbanization in the Ganges Plain, generally dated to the mid-millennium. Characteristic of many iron age cultures, the earlier use for iron was in weaponry but this gradually extended to other objects, particularly household ones. As agricultural communities they cultivated wheat and barley, although some rice was found and the domestication of cattle is attested. That cattle provided food other than milk products is evident from the proximity of cattle bones near domestic hearths, bearing marks of having been cut that indicate their flesh was eaten. Important settlements of the PGW include Ropar (Punjab), Bhagwanpura (Haryana) and Atranjikhera, Hastinapur, Ahicchatra, and Jakhera (Uttar Pradesh).

Some sites of the second millennium in the middle Ganges Plain emerge more definitively in the first millennium – such as Piprahwa and Ganwaria (associated still later with Buddhism), Sohgaura, Narhan and Khairadih. The cluster of sites south of the Mirzapur area could be explained by their access to the Son Valley and the route going southwards. Settlements in the Belan Valley, south of Allahabad, have yielded rice grains and it was claimed that the domestication of rice went back to the sixth millennium BC. However, this has been questioned and a later date is preferred. Domestication of plants and animals is evident at Koldihva and Chopanimando. Settlements in the Ganges Plain go back to about the third-second millennium BC, some having begun as neolithic sites, such as Chirand at the confluence of the Ganges and the Sarayu, which remained important until the early Christian era. Huts of wattle-and-daub contained functional artefacts, including polished stone axes and microliths, bone implements, pestles and querns for grinding grain, and terracotta animal figurines, among which the bull was common. The later phase included copper artefacts, and still later there is evidence of some iron objects. Chirand provides useful information on the evolution of cultures in the Ganges Plain.

The Northern Black Polished Ware, characteristic of the urban centres of the Ganges Plain, which

was also the area of its provenance, is thought to have developed from high-temperature firing techniques used in smelting iron and from the use of local haematite soil. Its extensive distribution as a luxury ware helps the tracking of exchange and trade in various parts of the subcontinent.

Further east in Bengal the chalcolithic sites seem to have been concentrated in the valleys to the west of the Bhagirathi, particularly in the Damodar and Ajay Valleys, perhaps because of access to the copper-producing areas in Chhotanagpur. Some settlements, such as Pandu Rajar Dhibi, Mahisdal and Mangalkot, began as neolithic sites but gradually began to use metal. Burials occur in the habitation areas. Further to the east, the Assam neolithic includes sites such as Daojali Hading and others in the Garo hills and the Cachar area. Neolithic settlements have also been found in Orissa at Kuchai and Golbai Sasan, and in Manipur. Connections with cultures in south-east Asia and eastern Asia have been suggested, but await further investigation. Similarities with neolithic cultures of these areas have been noticed in artefacts such as axes and harvesters, and in the stone used (such as jadeite), as well as in cord-impressed pottery.

There may have been a few indirect links between Harappan sites and those in southern Rajasthan, such as Ahar, Gilund and Balathal, where Harappan beads have been found. The proximity of copper ore in the Aravallis doubtless encouraged settlement and the links led to mining copper. A wide distribution in Gujarat, Rajasthan, the fringes of the *doab* and the middle Ganges Valley, extending to parts of Bengal, is recorded for a pottery technique that resulted in double colours of black and red which has been labelled the Black-and-Red Ware. This was not the pottery of a single, uniform culture, nor was it the sole pottery at these sites, although it often predominated. The earliest dates for this pottery range, according to region, from the second to the first millennium BC.

Beads of carnelian and lapis lazuli sometimes occur at sites of the Malwa culture in Madhya Pradesh, again hinting at links with the Late Harappan. Both the major sites of Kayatha and Navdatoli, going back to an earlier period, suggest a degree of complex living. Navdatoli faces Maheshwar across the Narmada, and these could have been crossing-points on the river. Salvage archaeology in Madhya Pradesh prior to the completion of the dam on the Narmada River has yielded evidence of sites with impressive chacolithic levels, such as Sabatpur, Peethanagar and Mandsaur. Some are linked to the Malwa culture and others appear to have been on a route going south through the Hoshangabad area, a route that comes into prominence in later times.

The curious and impressive find of four bronze objects, thought to be reminiscent of the Late Harappan style, has surfaced at Daimabad in northern Maharashtra. A rider driving a yoke of oxen, and three animals -a rhinoceros, a buffalo and an elephant, each on wheels – are unusual sculptures for a chalcolithic site. It could point to Harappan contacts through Gujarat, if the identity of the style is accepted. Such contacts have also been suggested for the chalcolithic site of Jorwe (Maharashtra), which was actively involved in the smelting of copper and the making of copper artefacts. Equally interesting is the chalcolithic site at Inamgaon (Maharashtra), dating to the second millennium BC, which was extensively excavated. It is thought to have been the hub of a chiefdom.

The people of Inamgaon practised both farming and livestock breeding, with barley and millet as commonly grown crops, in a system of crop rotation. Cultivation was not dependent on rainfall alone for there is evidence of embankments to hold water. Villages of round or square huts, built of wattle and daub, were surrounded by a mud wall. The nature of this barrier may not have kept attacks by other villagers at bay but could have acted as a defence against animal predators, of which there were plenty in the adjacent forests. The presence of predators is depicted in a scene on a jar. Female terracotta figurines were found, some curiously headless but with prominent breasts, emphasizing ritual and symbolic aspects, and some placed in clay containers. By comparison, male images are

fewer. The disposal of the dead was largely in the form of burial, often in a pit in the floor of the hut accompanied by some grave goods. Children were buried in urns. What is puzzling is that in some cases of adult burial the feet had been deliberately cut off. Vidarbha (Maharashtra) has provided evidence of cairn burials with Black-and-Red pottery, horse bits and copper and iron objects at places such as Junapani and Mahurjhari. These have links with some megalithic burials further south.

The river valleys of the Godavari, Krishna, Tungabhadra, Pennar and Kaveri were settled by farming communities as early as the third millennium BC. The Raichur *doab* between the Krishna and the Tungabhadra Rivers becomes a focus of attention. Hallur, Kupgal, Maski (Karnataka) and Nagarjunakonda (Andhra Pradesh) had farming communities. The semi-arid areas were suitable for cattle-keeping villages, and it is thought that the large ash mounds at Piklihal (Karnataka), Utnur (Andhra Pradesh) and Kupgal resulted from burning cattle dung. Budihal (Andhra Pradesh) was a cattle-keeping village where an abattoir was unearthed. Sheep and goats were also bred, with the later addition of buffalo. Millet was widely cultivated and rice was grown later, being confined to wet, low-lying areas. Initially, these cultures were not metal-using and were limited to a range of stone artefacts, some used for polishing and grinding and some for more refined work through sharp-edged tools. Hand-turned pottery was gradually replaced by the technically more advanced wheel-thrown pottery.

Towards the end of the second millennium there is some limited evidence of copper and bronze artefacts. This is developed further at Paiyampalli (Tamil Nadu), an earlier neolithic site, Hallur and T. Narsipur, with a bigger array of bronze and copper objects, beads, terracotta figurines and wheel-thrown pottery. A similar development is noticed at sites such as Sangankallu in Karnataka. Some among them are places for megalithic burials. Hallur and Kumaranhalli provide an early date for the use of iron, the sites going back to the late second millennium BC.

The study of chalcolithic cultures suggests certain common characteristics. The close connection between a settlement and the environment is now an established perspective in archaeology. The interplay of locality and region that underlines some of these settlements becomes an important feature of later historical change. The imprint of early settlements did not continue unchanged, but nevertheless this interplay remains a consequential feature.

Settlements occur in river valleys, although semi-arid areas may have been preferred for livestock breeding. Since stockbreeding and agriculture are interdependent, the semi-arid areas would have encouraged the cultivation of millet, apart from the northern plain where wheat and barley were more common, or in more eastern areas where rice was grown. It has been argued that areas given to the cultivation of wheat have different social patterns from those primarily cultivating rice. The latter tend to be associated with a more hierarchical authority and possibly greater stratification. This perspective has yet to be examined for the history of the subcontinent, but at an impressionistic level there does seem to be a difference, for example, between the north-west and the middle Ganges Plain in terms of social patterns. However, the difference need not have been caused by this one factor.

The organization of a village, and subsequently a hierarchy of villages within a cluster, required some form of authority and regulations of control. This could have evolved from social stratification, with families coalescing into clans which maintained a hierarchy or at least sustained the notion of a semblance of authority by a chief or by elders. The political and social structure would have been far more complex than that of bands. Chiefdoms would presuppose not just surplus food but the control of a few families over what was produced, demarcating the chief from the clan. The handling of what were thought of as luxury goods, such as beads and certain kinds of symbolic daggers, would mark the

status of such families. Their power would draw on their access to weapons, to maintaining stratification and allotment of resources, and on claims exercised through ritual.

The worship of female figurines is in some ways remarkable. It not only parallels the Harappan figurines, but almost anticipates the extensive worship of female cult figures and goddesses in later history. But this need not point to the prevalence of a matriarchal system. Matriarchies would have been unlikely to approve of headless female figures, even as objects of worship. But it does point to a greater social presence of the female than in later times, which may also have been a generally more assertive presence.

Burial within the hut is in some ways strange, although it occurs in many regions. Was this a sign of the status of the family, which treated the burial as a claim to that status? Or was it an attempt to keep those who had died close to the family, a sentiment known to some other societies, and suggested here by the cutting off of the feet? Or was there also a fear that wild animals would ravage the pit graves since the dead were not buried in coffins?

Megalithic Burials

The style of burial changed dramatically in the first millennium. Burials moved out of the habitation huts to be located in specially demarcated sanctuaries. These are the megalithic sites with a large variety of megalithic markers, and are most commonly located in the peninsula providing it with a distinctive cultural phase. Some sites go back to about 1000 BC or even a little earlier. Whether the megaliths are characteristic of a distinctively different cultural pattern, or are a burial fashion adopted in the first millennium as part of chalcolithic activity, had been a controversial question. The paucity of settlement sites that can be correlated with the burials makes the assessment less definitive. Nevertheless, attempts were made to identify them as a distinctive culture. It was even argued that because they were associated with the horse they might have been Indo-Aryan speakers settling in the peninsula. But such identities have found little support. Nevertheless the extent and range of megalithic burials are striking.

The forms and styles of megalithic burials are diverse and range from the single standing stone to rock-cut chambers. Simple cairns or a heaping up of stones were found in Baluchistan and Makran, in the Vindhyan region and parts of the peninsula. Other indicators were the marking of a location with a single, extremely large, stone marker or menhir. Such markers have led to the name *mega* + *lithos,* the large stone. The dolmen consisted of a number of large stones placed in formation. Or there could be a capstone balancing over upright stones, marking a pit. Pits often have what is referred to as a cist burial. This was frequently a circle demarcated with stones, enclosing a pit within which was constructed a cist, a rectangular box made of stone slabs to contain bones and grave goods. Sometimes there is a circular hole in one of the side slabs, referred to as a porthole. This would suggest that the burial chamber was used more than once. The more impressive range and forms of these burials occur in the peninsula where they are widely distributed. The cists occasionally contain pottery sarcophagi. Even more elaborate are the rock-cut caves in the Western Ghats, such as those in Kerala. The cutting of caves was difficult and required the softer laterite rock. The heterogeneity in form would suggest that the megalithic burials do not constitute a single culture, but settlements with cultural habits having similarities in concepts even though they were not identical in form.

The megalithic burials of the peninsula south of the Narmada, at sites such as Hallur, Piklihal,

Brahmagiri, Maski (Karnataka), Nagarjunakonda (Andhra Pradesh) and Adichannallur (Tamil Nadu), have characteristic forms similar to those of non-Indian megalithic cultures, but their origins remain somewhat unclear. It is feasible that they evolved from the earlier neolithic and chalcolithic cultures of the peninsula with some small intrusion of forms from elsewhere. Brahmagiri has a habitation site with megalithic objects. Parallels have also been drawn with practices among forest tribes, many of which have *sarnas,* sanctuaries, where large upright stones are erected to commemorate people, a practice which continues to the present. Similar megalithic burials also occur in Sri Lanka at approximately the same date, which would suggest links with south India.

Grave furnishings were primarily Black-and-Red pottery and impressive iron artefacts, such as hoes and sickles, small weapons and horse trappings. Were these ritual objects deliberately buried with the dead, or were they objects of daily use thought to be helpful to the dead in the after-life? Could this have been a cult of ancestor worship if the burial sites were the focus of rituals? Some of the graffiti on the pottery resembles the signs of the Harappa script, which provides yet another dimension to identification. The communities involved in these memorials appear to have depended on the cultivation of millet and rice, with some regional variation, and to have domesticated cattle, sheep and goats.

The categories of objects from megalithic burials are also often typologically similar, for instance artefacts of iron, and the question therefore is whether blacksmiths originating in a particular location traversed the peninsula, or whether there was an extensive network of exchange. The blacksmith clearly had an important function in the production of iron artefacts and, judging by the quality of the objects, could well have been a specialized craftsman. The presence of the horse would suggest an extensive network, drawing in suppliers of horses from northern and western India. This would endorse the idea that the control over the exchange would lie with heads of clans, who were most likely the ones buried under these stone markers. There appears to have been a continuing connection between burial and status.

The association of iron artefacts and the range of forms are striking. These markers are generally found in the vicinity of fertile land, which may have been irrigated from tanks specially built for storing water. This would suggest co-operative effort on the part of the builders, an effort that would have been required even for the setting up of the burial monuments. Yet there are few settlements linked archaeologically to the megalithic memorials. If the area designated for burials was associated with both status and continuity it could well be at some distance from the settlement. The status is further underlined by the fact that at some sites the top levels have early Roman imperial coins, thus providing a terminal date of around the turn of the Christian era. The presence of a coin links the archaeological evidence to the historical. It is also suggestive of the range of exchange networks in which the local societies were involved.

This all-too-brief survey of the archaeological evidence, prior to the textual, makes apparent the presence of multiple vibrant cultures in various parts of the subcontinent, particularly in the second and early first millennia BC. The nature of these cultures establishes that, whatever contemporary records there may be of a textual kind in later periods, the archaeological data has to be kept within historical vision. It also contradicts the idea of scattered primitive cultures that were easily edged out to the periphery when a superior culture came to establish itself. The history of the subsequent predominant cultures is modulated by both the continuities and the disjunctures underlined by the excavated evidence. The location of what is sometimes called the second urbanization shifts from the

Indus Plain to the Ganges Plain. The process leading up to the formation of states and the emergence of towns can be observed in some depth for the Ganges Plain, where there is literary evidence marking the process. However, the more detailed literary evidence relates to the mature period of urbanism, and here the archaeological evidence has to be teased out by the textual. One hopes there will be more excavation of sites in the Ganges Plain, particularly horizontal excavations, as this will provide the necessary evidence for observing the process of change. The nature and the formal plan of the cities in the Ganges Plain differed substantially from those of the Indus civilization. This was partly due to environmental differences, but also to the economic functions of the cities and their political roles.