CHAPTER VI

Craft Production and Urbanism

Craft production in a bronze age context must involve the phenomenon of urbanism. Cities with their marked social and economic differentiation and division of labour are particularly relevant to the central focus of this thesis. In this chapter, we will try to illustrate the nature of the earliest cities, and the changes that come about in production activities in an urban situation, keeping in mind that economic functions were one out of several in a city.

It is the city and all concomitants of city life that are embodied in a study of urbanism. In 1950, V Gordon Childe laid out a list of ten attributes for the city. Though they encompass most of the characteristics of urban life, it can by no means be said that in every urban context the city reflected all the ten criteria of Childe.

It has to be understood that the city arose in a particular social, economic and political milieu and that levels of society in which urban life are entirely absent are instantly recognizable from levels of a more complex nature. One means of initiating the discussion on urbanism could be through a better understanding of the type of society in which elements of urban life are absent. The primitive hunting and gathering level of
society is automatically deleted from the discussion and here we primarily focus on the simple egalitarian and chiefdom levels of socioeconomic achievement. Many of the elements that typify a tribal society do not make urbanism viable.

Urban societies are characterized by a significant density of population within a given spatial area. The fusion of dispersed settlements makes this possible. However it should also be clarified that fissioning in no way is obliterated from the urban pattern of settlement. Before we go on to the reasons for population nucleation, it should be emphasized that size is not a criterion of urbanization. Given raw population statistics it is difficult to draw an arbitrary line between what should be termed as urban and what is rural, solely on the basis of population. What should distinguish an urban centre then, is not its size, but the structure of the population.

Factors for Population Nucleation

One of the primary reasons for dense population growth is the defence factor. Living in dispersed settlements, communities find it hard to protect themselves and their means of livelihood. It is only when they are spatially compact, with a large number of individuals living in close proximity, that it would be possible to put up a united and formidable front to
external attacks. Moreover it would be easier to mobilize an attacking force from a compact settlement than from dispersed holdings. The element of leadership too would find it advantageous to live in a settlement with a large, dense population so as to enforce control by military power. Population nucleation also occurs when an area is environmentally particularly suitable: as, for example, when there is a limited source of water; or when a settlement is near a navigation point on a water course or body of water; or near a valued raw material source. In New Guinea, nucleation of individuals has been noted among the Tsembaga who periodically come together for ritual purposes, that is, during the kaiko which lasts for a year or more (Rappaport 1964 [1968]: 21). However this residence pattern is not a permanent one.

This coming together of population spatially makes possible relationships of exploitation and dependence which can result in differential degrees of control over the factors of production. Population nucleation facilitates a greater degree of exchange than that possible in a settlement pattern of dispersed holdings. This facilitation is primarily due to the elimination of difficulties of movement and transportation for the purpose of exchange. Individual production units would find it advantageous to live in a larger settlement so as to exchange their extra produce or obtain goods they need.
However exchange transactions are also controlled and facilitated by other factors which will be discussed later. A dense, compact population provides a large amount of labour and its increased availability due to the increased pressure on land in an urban society. Unlike in dispersed settlements where the more the number of hands available the more that can be cultivated, in an urban society with increasing pressure on limited land resources, the amount of labour that can be put into the same portion of land is limited and ultimately leads to decreased productivity. This available labour can be used to set up temporary settlements near distant fields during agricultural peak seasons but more important can be diverted to other tasks which hitherto had been undertaken on a part-time basis.

The Relation of Transportation Costs to Population Nucleation

What should be highlighted from the above paragraphs is the cost of transportation and its relation with the location of particular activities. One of the prime advantages of a dense population is that it provides an economy of transport costs. Transport costs are reduced when a number of activities required by the inhabitants of a number of sites are located at a 'central place'. A simple example is given of two sites, X and Y, situated some distance from each other. In the absence of a
central place, the inhabitants of both X and Y will have to be entirely self-sufficient or travel to the other to obtain needed goods and services. It would be far more convenient and time- and effort-saving to have a 'central place', Z, where goods and services needed by both X and Y would be concentrated resulting in a halving of travel time and energy for the peripheral communities involved.

Clark and Haswell (1966) have given extensive data (Table XXXIV: Pg 160-63) to show the relative costs of different means of transportation, expressed in a uniform relatable fashion, in terms of kilogram grain equivalent per ton kilometre. The highest transport costs are for movement of goods by human porterage and by pack animals and costs begin decreasing with mechanisation or where another source of power, such as wind for boats or fuel for power vehicles is used: for porterage, the median in Kg grain equivalent per ton Km was 9.0; by wheelbarrow 3.2; by pack animals 4.1; by wagons 3.4; by boats 1.0; by steam boats 0.5; by railways 0.7; and by motor vehicles 1.0 (Clark & Haswell 1966: 164). Thus as Drennan (1964) has also explained, where humans and animals are the transporters of goods without any mechanistic aids, the caloric costs of their sustenance will be viable only for a short distance and movement over a particular distance will result in increasing costs. This maximum distance
will be calculable on the basis of per diem caloric needs of the transporters and the cost of the goods transported.

Economy of transport costs will also occur when activities requiring heavy expenditures of time, labour and bulky inputs are located close to the inputs. In agriculture, for example, crops requiring heavy inputs of manure or water or needing particular care and attention will be grown near the settlement while crops requiring less care will be grown further away. In any case, in areas nearest the habitations, fields will be greatly benefited by periodic deposits of refuse and night soil; the keeping of small livestock near the habitations will also result in a zone of high fertility as seen in Africa (Morgan 1969: 303). Crops cannot be grown too far away from the settlement as daily travelling to the fields and transporting crops back to the settlement will result in increased costs in labour and time. Hence, in dense settlements, fields are usually near the settlement while more distant soils, even if agriculturally viable, are allowed to lie unused or are used for other activities such as grazing or as forest lands reserved for procurement of forest resources. Chisholm (1964 [1962]: 45-59) illustrates this pattern of land use as the infield-outfield system where the infield was the land nearest the settlement and most intensively cultivated while the further land was the outfield which was less
cultivated and given periodic respite. An instance given by Murra (1984: 121) of distantly located land being utilized in Mesoamerica to meet ecological threats such as unusually severe frosts does not in fact reduce the force of the argument above.

Non-agricultural activities are also best located at the source of bulky inputs such as fuel or water. Costs of transporting the finished goods may be lower than those involved in transporting the raw materials or fuel and so, it would be more viable for production to be carried out at a location where transportation costs of various factors are weighed and judged less.

Moreover the nature of goods transported is also important. It will be less easy to carry fragile objects where the risk of breakage is greater than durable goods with no likelihood of losses due to breakage. Thus manufacture of highly fragile objects will perhaps be located near the centres of consumption, so as to minimize losses. This could be the case with pottery production though there are instances where transport of pottery products are undertaken over considerable distances.

Physical barriers to movement such as rivers, mountains and deserts can result in increased expenditures in transport costs. In all these cases the longer time needed to surmount these barriers will have repercussions
in other increased inputs, such as fuel, food for humans and animals and effort, especially where river crossings are concerned.

But there are cases where economy of transport costs do not fit. This happens when bulky raw materials and fuels are carried to distant places for the manufacture of artifacts. In the Harappan case, we find the transporting in to urban sites, of non-local materials such as copper, semi-precious stones and shell. In this case the role of the objects to be manufactured is such that the disadvantages in the transportation costs of their raw materials will be outweighed.

Central Place Studies

The reduction in transport costs embodied in the location of a central place gained momentum with Christaller's Central Place Theory which assumes that to some extent every town acts as a focus for the surrounding countryside. Christaller worked under certain assumptions, some of which envisaged a uniform plain with no differentiating resources, population and purchasing power, incomes and transportation networks and a marketing system of perfect competition. The idea was that the central place exists to focus activities/services and production and enabled movement of goods to and from itself through its accessibility to a larger area which is
its hinterland. In Christaller's theory, at each central place, the range of a good/service was noted which denoted the maximum distance that people were willing to travel to obtain a good/service. Each good/service had a threshold level which denoted the minimum population required to make the offering of the good/service viable. Thus, each central place was found to have a circular complementary region, the hinterland, within which it provided some goods and services. To make the model more efficient, and to prevent any overlapping, hexagonal complementary areas were devised. For other goods and services, the range and threshold levels will be different requiring other central places. Thus, one can see an urban hierarchy where higher order centres will provide those goods and services available in lower order centres in addition to more goods and services commensurate with the increased size of the hinterland; those in the same level of the hierarchy will be equidistant from each other. However, it is not possible to arbitrarily delineate the area occupied by the hinterland for a city. Some large cities, such as Rome in the Classical period, had an extensive hinterland comprising Gaul, Spain, Northern Africa and Egypt.

In modern contexts, the relations between a city and its hinterland assume considerable significance due to the market economy. By selling excess agricultural goods, cultivators can purchase other required manufactured
goods. The advantage in marketing surplus agricultural goods in a town is that the cultivator, by purchasing other needed objects, frees himself solely for agricultural production and by concentrating on food production can increase productivity.

However in ancient periods, and in modern less complex societies, the absence of a market economy in many instances prevents the bringing of agricultural goods from villages to the city to be sold. In ancient periods what goods are brought to the city are not brought so as to increase profits but primarily through the political mechanism of tribute.

Social Aspects of City Life

One of the key differences between a tribal society and an urban society hinges on the social makeup of the respective types of communities. In a tribal society, settlements were small and dispersed, many occupied by closely related kin groups. Among the Tiv of Central Nigeria figures indicate that in a compound 15% were sister's sons and only 2% were distant kinsmen and strangers (L & P Bohannan 1953: 17).

In a tribal society all relations on social, economic and political levels revolve around kinship and kin relations. With growing complexity in society the significance of kinship does not diminish but becomes more
formalized. The determination of most relations on the basis of kinship is best brought out in the economic sphere, where exchanges are undertaken in the spirit of equal reciprocation, each party being fully aware of the close social links between them. Very often commodities are given to individuals in acts approaching the pure gift. One example is the matrilineal custom of an annual payment given to a man at harvest time by his wife’s brother, in the Trobriand Islands (Malinowski 1964: 180).

To take another context, whatever proportion of output of production is given to a chief is done so on the basis of perceived kinship and the social value of such gifts. Never is this movement of goods termed as compulsory giving or collected through coercion. What is also significant is that goods which come to the chief are distributed back through society and never finally appropriated. This carrying out of large-scale distributions made Fried (1967: 118) note that such persons (chiefs) were rich for what they dispersed and not for what they hoarded. Sahlins (1972: 147) in emphasizing the kinship aspect wrote—"the chiefly toll on the household economy had a moral limit consistent with the kinship configuration of the society. Upto a point, it was the chief's due, but beyond that, high-handedness."

In contrast in an urban society in a spatially limited area, day-to-day relations are not exclusively

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ordered by kinship but engaged in by a number of groups that can be specified as nonkin, perhaps even individuals coming from great distances to live in a city. Thus "residence, not kinship, became the qualification of citizenship" in a city (Carter 1983: 2).

In an urban society various activities become concentrated along kin lines. Adams (1966: 85-90) has carefully delineated the role of lineage groupings in Mesopotamian and Mesoamerican urban societies, showing landholding, craft production and other occupations grouped into lineage and clan modes of organization. However what also happened was that lineage groups lost much of their autonomy and were no longer liable to themselves but to a higher authority.

Social Stratification and the Division of Labour

A major difference between tribal and urban societies is the degree of stratification. Fried mentions stratification in society as one of the major reasons for growing complexity or as he sees it, with increasing complexity, there are fewer and fewer positions of rank than those individuals able to fill them. It is this horizontal restructuring of society which serves to increasingly differentiate the upper strata from the general mass of the population. Relations of power are not based on kinship, but on exactions. It is this extra-
kin basis of authority which gives the real permanence to such an office. Access to power results in many levels of stratification; access to resources in its turn is no longer assured to all. Thus by exercising control over significant resources in society, such as land and labour, dominant sections in society can extend hierarchical groupings by supporting and sponsoring other groups of people. One finds legitimization of political dominance through tangible material goods serving as status markers. This is, in effect, the result of restricting access to valuable resources as apart from basic resources such as land and labour, and in the display of these resources emphasizing superiority. In the urban context, the production of valuables will be largely directed towards demands or requirements of the elite. Barter of valuables would find a conducive climate in an urban society but for the fact that possession of valuables will become restricted and many valuables will go out of circulation.

From social stratification stems the division of labour. In an egalitarian society any perceivable distinctions are largely on the basis of skill. Besides that individuals do what others do. Every household is responsible for its own food procurement and its provision of other necessities such as clothing, shelter and tools. When some amount of differentiation comes in, occupational differences are not large. Chiefs may themselves engage
in subsistence pursuits. Their additional activities are concentrated in the sphere of redistribution or pooling which "stipulates a social centre where goods meet and thence flow outwards and a social boundary, too within which persons (or subgroups) are cooperatively related." (Sahlins 1972: 189). It is not really difficult to conceive of the situation where the community contributes a portion of its output on individual basis, all such contributions moving towards a social centre in the person of the chief. Chiefs in less stratified societies hold their positions more on the basis of their personal qualities than on any show of force. Any hint of force being employed would lead to the downfall of the chief, there being little permanency in such an office. Through his ability to gather to his side a number of supporters and dependents, a chief could build his status in which the prestige of the community was expressed. Despite the chief's added duties, he still has to engage in his own primary producing activities and can never coerce others to undertake such activities for him.

As society becomes more stratified, however, more and more people are removed from basic subsistence activities and are in turn provided their means of subsistence in exchange for the powers of governance, for maintaining the community as a political entity, for religious services and due to increasing coercion. No longer do social norms
or kin relations bind or restrict the growth of the elite into predominance. No longer is redistribution a system where the chief received tribute which is filtered back to the people. The paramount chieftaincy of Hawaii is an example where extreme social stratification, though never relinquishing the kinship relation, yet went beyond to coercion of tribute to the chief and the complete separation of the chief and direct subsistence production. "The Hawaiian makahiki, with its elaborate associated cult of Lono, and the Tongan inasi represent peaks within Polynesia of the transformation of first fruits to regularized taxation." (Kirch 1984: 167).

Thus with increasing social stratification some groups of people extricate themselves from subsistence production, but have access to subsistence goods from those sections of society engaged in agricultural production. This separation serves to reinforce the differences between rulers and ruled. So long as justification of the process through supernatural or other means can be given, or coercive control can be maintained in society, such a system is possible.

The Concept of Surplus and the Support of Non-Agriculturists

But for such a state of division of labour to arise, the society must be able economically to support non-food
producers; people must be willing to devote some measure of their agricultural output to support individuals engaged in specialized non-agricultural activities. This support of specialized individuals is viable only when a surplus of agricultural production is possible. The term surplus is often understood in the sense of output over and above the minimum required for subsistence. However, the doubt frequently arises that even where capacities for producing a surplus are present, there has to be some motivation for food producers to produce more and be willing to give up a portion of the fruits of their labours to support a group of non-food producers. In an early discussion on the concept of surplus, Pearson (1957: 323) wrote that the term "surplus" should be used in a relative sense in that "a given quantity of goods and services would be surplus only if the society in some manner set these quantities aside and declared them to be available for a specific purpose." Other writers have focused on this and instead of speaking in terms of "society" talk more specifically of an authority as responsible for mobilizing a surplus. Thus Orans (1966: 31) wrote that "it is... not unthinkable that the very first extra production per food producer which went to a full-time non-food producing specialist went via an hierarchical authority." Larger populations become more stratified due to the necessity to administer a more populous society requiring more layers of administrative
control. Also it would be "easier to establish and maintain wide differences in prestige and privilege in a large society than in a small one where all relationships tend to be based on kinship and/or face to face." (Orans 1966: 30). On the whole then it is through stratification that the mobilization of surplus can take place.

Apart from political authorities other specialists were the religious ones. Carter (1983: 7-8) has discussed the role of religion as a theory for the origin of cities but while acknowledging its significance has discarded it as resulting in the city as religious entities preceded the first cities. He is probably right in saying that the priests "became the first group to be detached, the first specialized sector of the population." (Carter 1983: 8). The significance of the temple in the Mesopotamian context must be acknowledged.

Support for other categories of non-agriculturists such as craftsmen is forthcoming when the produce of their labours is of such value that the demand for such production fulfils their subsistence requirements. Such non-food producers can be supported full-time for craft production by the potential elite of a society in which case they are engaged in the production of objects which are highly valued in the society and are used by a limited group of people. Such objects can form the bridge whereby
the elite of a community can communicate with a similar section in another community. In societies which are relatively less stratified there is no clear demarcating line between groups in which valuables are found and those in which they are not. There are ways and means for most members of the community to attain some portion of wealth in the form of valuables. It is only when valuables become highly restricted and form the basis of differentiation between groups that control over the means of acquiring such objects through controlling their source areas or means of production, attains significance. It is then that craftsmen producing such categories of objects which are valuables in that few individuals can exchange objects against them, largely become full-time workers and are supported in their endeavours by being provided for their subsistence requirements.

Another means whereby a society can support non-food producers is in politically complex societies with a distinct figure of authority backed by the use of force, who through exaction and conquest can have agricultural goods brought into their region through the appropriation of cultivable lands.

There is yet another alternative. When an area is agriculturally poor, or when a community is located close to a zone rich in a particular resource, this can induce the population of that region to marginalize agriculture
and concentrate on other kinds of production activities. As Rice (1984: 49) puts it, "environmental zoning or microzoning or agriculturally poor land may stimulate a search for economic alternatives." For this to happen, however, the products manufactured should be such that goods from other areas can be exchanged for them and avenues exist for the movement of such goods. One finds in the ethnographic literature, however, that such transactions between agriculturally poor and rich areas are not always "economic" in content and purpose. For this, one can take the example of Moala where social norms permit monopolistic specialization to sustain an island's trading potential (Sahlins 1962: 421-22). Similarly, Kirch (1986: 35) notes Firth's identification of exchange relationships between Anuta and Tikopia as one of symbiosis, where products offered by each island are not such that cannot be produced in the other island and "retention of specialization" enables such exchanges to take place.

**Specialization and Occupational Differentiation**

Division of labour on a community level implies occupational differentiation. Occupational differentiation and the ensuing specialization become marked in urban societies. Particular individuals and groups receive tribute and are increasingly divorced from basic food-
producing activities. One of the means through which occupational differentiation is emphasized is through labour services carried out by the rules for those sections of society which are dominant. Examples of such labour obligations are the cultivation of fields, non-subsistence production and so forth.

Another form of occupational differentiation occurs where different professions and activities are held or performed by separate individuals or groups. Thus one finds in a compact society, some individuals in whose hands religious activities are concentrated, others who comprise a decision-making authority; yet other individuals undertake separate pottery production, metal working, weaving and such crafts.

Increasing division of labour and the maintenance of distinctions between professions makes for specialization. When the labour potential of a community is divided into separate groups engaged in different tasks, this makes for specialization of these groups in their respective activities. Specialization whether part-time or full-time implies that certain individuals are undertaking certain tasks or activities which are not undertaken by other individuals.

Specialized personnel and craft producers attached to the elite strata or to a political authority are more
likely to be full-time specialists entirely removed from basic subsistence activities. This is largely because individuals in power are more able to insure the supply of subsistence goods and raw materials to attached specialists (Brumfiel & Earle 1987: 5) and provide the need for specialized articles. Whereas in the case of independent specialists, we find that even in the presence of a large demand, they may be less able to function if for their craft goods, they are unable to get goods in exchange. In early urban communities, production must have been in the hands of specialists who alone could undertake these activities, but whether they had any other source of livelihood is less clear.

The essential element underlying the organization of urban centres will be the utilization and control of labour. It is the excess labour resulting from spatial aggregation that will be utilized for non-agricultural activities and will be directed and sponsored by the figures of authority. Less significantly, restructuring of the control and use of land will result in people organized to work on lands other than their own.

Politically dominant groups base their power on differentiating themselves from others in society. This results in increasing differentiation between groups in society and with concomitant increase in amount of labour available in a limited area, different groups will
concentrate on separate activities. Hence the relevance here of craft production. Craft producers will find themselves in the urban situation, as primarily occupied in craft production. Depending on the value of the goods produced by them, their production may be sponsored by elite groups. Crafts may even be differentiated on the basis of some individuals being supported by the elite while others work for any orders among the rest of the population. Hence, weaving in certain Mesoamerican cities was, in some cases, sponsored by the political elite while the rest of the population would also have woven cloth. Certain craft objects would become restricted in use—only by the elite—and their sponsored production would lead to restriction in use. Distribution of these goods by the elite will be used to a large extent to sustain and retain the power base. Brumfiel and Earle (1987) have deliberated on the role of craft production in complex societies, the role played by craft production in the manufacture of wealth objects, the differences between independent and attached specialists and differences in the value of the products manufactured by them and the significance in the economy of subsistence goods and wealth goods.

Craft production in an urban context has the potential for considerable expansion through a growing demand group. For demand to be translated into real
exchanges, craft producers need consumers who can offer goods or services in exchange. In an urban centre, the potential for exchange is extensive with the differentiated groupings in society, the considerable demands by the upper levels of society and the constant striving for upward social mobility. But it should be noted that the elite stratum in any society is a small proportion of the total population. For the rest of the population, the reality still exists of the ability to provide goods or services in exchange for other required goods.

An understanding of urbanism through archaeological evidence needs to take into account a variety of indicators. The absence of textual evidence makes the explication of socioeconomic institutions and processes difficult. The best that can be done will be to study the archaeological data for the Harappan culture to glean some clues which will still remain conjectural.

A significant aspect in the earlier discussion on urbanism was the political factor in the makeup of urban societies. Delineating the presence of a political entity could be through residential structures or through large specialized non-residential structures associated with these elements. In the archaeological study of early urban communities, it is easier to distinguish the
presence of the elite strata of society and comparatively much more difficult to demarcate the overall political authority. A number of physical aspects of archaeological sites can help towards delineating a political power. These could be evidence of fortification, presence of public architecture and public storage facilities, provision of wells and civic and drainage facilities, variations in size and plans of individual residential structures. The presence of these features has implications going beyond the mere provisioning of facilities for the urban population. A number of these facilities require political or administrative control for their conception and direction, especially where uniformity is associated with the designing and construction of these facilities (see Table VI.1). But first, we will study the evidence for public architecture.

Public architecture generally comprises those large, specialized, possibly non-residential structures, though residential elements for the elite section of society are also included here. At Mohenjodaro such structures are largely located in the SD Area (or the Stupa mound). These are the Great Bath and a number of related structures to the south (Marshall 1931: 143) and southeast (Marshall 1931: Pl. XXVII) of the Great Bath; and to the east of the Buddhist stupa, Building MM, well-built, with a number of small paved bathrooms and well made drains
(Marshall 1931: 125). In Mackay's excavation (1938: Pl.1) the Middle Section of the SD Area appears to be a single large structure, about 69.8 x 23.7 m. Two other structures adjoining this Block were numbered Blocks 6 and 10. In Block 6, a number of bathing compartments were found and has been called a bathing establishment for priests in view of its proximity to the Great Bath (Marshall 1931: 18-20). Block 10 has not been fully excavated, but seeing its massive southern and western walls, it does appear to have formerly been a structure of significance. In the northern part of L Area, were found two pillared halls, one in Section C and a smaller one in Section D. However, not all public structures were found, only on the Citadel mound. In the HR Area, Marshall terms House XXX in Block 5, Section B as possibly having had some sacred character. Associated with this structure are 16 small dwellings, said to have housed retainers for the large structure. A large structure in Section E of the DK Area prompted Marshall (1931: 251-53) to consider it as a possible temple. Mackay's excavation brought to light a large structure (60.8 x 36.4 m) which has been termed a 'palace'. In the northern portion of the DK Area, Section G, Blocks 18 and 19, was another huge structure, measuring 67.5 x 33.7 m, raised on a mud brick platform. Its use is still unknown, and a smaller structure to its east was said to be occupied by the person in charge of the larger building on the west (Mackay 1938: 154). Though a number
of copper-bronze objects were found in Block 18, only one seal was found at a high level. In the VS Area, Block 1 in Section A too seems to have housed some large structures. House I was very large, its east-west measurement being some 43.7 m while the southern portion is destroyed. To the north of this structure, is another block divided into 4 structures, Houses II-V (Marshall 1931: Pl. LIII), but it is possible that the houses were all part of a single structure.

Apart from the granary at Harappa, the only other structures possibly serving some specialized purpose are those called "workmen's quarters" and the circular platforms and furnaces found in Mound F. The major part of construction of these structures was undertaken in the same period as the granary. The workmen's quarters consist of 14 small houses, measuring roughly 16.5 x 8.5 m and with two exceptions, Houses 5 and 9, are all on the same plan. Little was found associated with these structures, apart from a jewellery hoard in House 2. The circular platforms 12 in number, in two rows are laid almost equidistant from each other (about 20 ft). These consist of bricks laid in a circular fashion, sloping towards the centre which was hollow in which possibly mortars were used. In the hollow of one, a small amount of burnt wheat, husked barley and animal bones were found. 16 furnaces were found in the same area as the circular
platforms and the workmen's quarters. The number of circular platforms suggests a considerable amount of grain being husked here. However, it does appear that the occupants of the workmen's quarters did not belong economically to the weakest sections of society, as is apparent from the poorer constructions recovered at Harappa.

There is no evidence from Chanhudaro of any public architecture. Remains of complete structures are rare at Chanhudaro. It is very likely that the structure comprising rooms 215 and 286 may have been of a functionally special character. This is deduced not only from the heat facility that formed the major portion of the structure, but from the contents of the two rooms and the location of the structure in the context of Mound II as a whole. This structure is located on a main street of the site running in a northwest-southeasterly direction. The structure may have served a public purpose, providing a heat facility for a particular process of craft manufacture. It may also have served as a storehouse for partly processed artifacts, complete objects and tools, to be worked in and utilized by craft workers living all around the structure.

At Kalibangan, the southern portion of the Citadel area most probably served some special function, possibly
ritual in character. Though rooms with fire altars have been found in houses in the lower town, the provision here for fire altars, located in rows on mud brick platforms along with, in some cases, baths with pavements, suggests some sort of public functional character of the area (Lal 1984: 56-58). To the east of the two large mounds at Kalibangan, is a smaller one, KLB 3, on which four or five altars were found in a single room, each located individually, the whole within a thick enclosure wall (Lal 1984: 61).

The major evidence at Balakot for an "elaborate, perhaps monumental building" (Dales 1979: 260) is the extant floor of baked square tiles impressed with intersecting circle designs. No associated walls survive, but another well paved floor was found adjoining, plastered with white lime in which there was a circular depression with charred remains of a wooden column. Adjoining are small rooms with very large storage jars. This eastern sector of the High Mound appears to have anciently housed formal architecture; to the north of the above mentioned paving was found in a higher level, another paved floor enclosing a round ceramic tub 95 cm in diameter (Dales 1979: 260-62).

The 'Acropolis' at Lothal most likely served a specialized function. Block A comprising the Acropolis consisted of an artificially elevated rectangle of mud
brick platforms, the centre of which was further raised by additional courses of bricks. The platforms on all four sides of the interior raised area, along with the latter, were all built upon by structures which are however no longer extant. However, what does remain is a complicated system of drainage constructed of burnt bricks which does suggest the presence here of structures of significance. What is specially interesting is the probable presence of 12 baths indicated by the drains. It is conjectured that there were 12 houses in this area, as these would be too many for a single structure (Rao 1979: 102). It may be mentioned that at Mohenjodaro, in SD Area, a structure with 8 baths was found in Mackay's excavation. It does appear that the importance attached to water and ablutions attested at Mohenjodaro was noted at Lothal too. On the whole, the particular care taken to protect the Acropolis, its vantage point in overseeing operations at the warehouse and the dockyard and hints of rather exceptional structures within the Acropolis, all point towards special functions being undertaken here. At Lothal, other special structure were the dock and the warehouse. In the excavation of the dock itself, a considerable amount of labour must have been utilized and it is probable that the dock formed part of a preconceived plan for the construction of the town as a whole, in Phase IIa at Lothal. The earth excavated from the dockyard was
utilized for constructing the massive mud brick platforms and for filling in the interior of the base of the Acropolis with rammed mud. Otherwise, it is difficult to conceive what the Lothal inhabitants would have done with the huge amount of mud that would have been unearthed.

The presence of structures which do not appear to be fulfilling ordinary purposes such as residence are significant from the point of urbanism and suggest they were constructed for specific purposes, for the use by a possibly specialized task force. It can be accepted that if specialized personnel are working in special structures, then there is likely to be division of labour and specialization among the population. Similarly, the dockyard at Lothal not only is significant from the point of view of regular movement of goods being carried out here, but also from the probability of a labour force employed here, at least in the shipping season, for loading and other activities.

The association of religion in fairly specialized structures is probably attested to at Kalibangan, in the southern portion of the citadel. At Mohenjodaro, a number of structures are mentioned as probably having served a religious or ritual purpose in antiquity, such as the Great Bath, the priests' bathing establishments, but these remain at best conjectural. The poor quality of the remains at Harappa prevent any kind of analysis of this
aspect, while at Lothal, the absence of architecture apart from the drains on the Acropolis, also makes any conjecture impossible.

The presence of fortifications appears to be one means by which a plural, multifunctional society can spatially segregate itself from the rest of the population, both within the individual settlement and from other settlements. Masson (1988: 107) has mentioned the presence of fortifications as one of the traits of early cities, related to the role and place of the military function within social processes. One must also consider the labour involved in the construction and maintenance of fortifications, and the organization of this labour. Some amount of administrative authority would be required for the direction of this labour force. In the Harappan context, not only are massive enclosure walls involved, but in some sites also, huge mud brick platforms for certain areas of individual sites. One must also note the preparations required for the construction of walls and platforms— the immense quantities of sun dried bricks and stones required for walls and foundations.

Excavations in 1946 at Harappa revealed massive fortifications for Mound AB. The defensive wall overlay a rampart or bund, perhaps to raise the defences above flood level. A platform of mud brick helped to retain the
rampart and the lower part of the defensive wall (Wheeler 1947: 65). Lothal was surrounded by a mud brick peripheral wall which may have been an anti-flood measure rather than protection against external attack. This is because a number of structures on the Acropolis would have been unprotected, as they were built high on mud brick platforms and would have been prone to attack over the peripheral wall (Rao 1979: 87). This feature at Lothal is significant in view of the location and the nature of the settlement. Noting the extensive fortifications constructed at a site like Dholavira in Kutch, it is surprising that Lothal, located so far to the east in an area with few other Harappan sites, almost in what could be a frontier area, was not better protected. Moreover seeing the function of the site, as a base for collection of raw materials, manufacture of products and a dockyard arranging transportation of goods in and out of the settlement, the lack of defence against a non-Harappan population is inexplicable.

At Kalibangan, two of the three mounds were provided with fortification walls. Of the two larger mounds, the western and smaller was internally divided into two units, of which the southern probably was the original and the northern a structural addition. The 'Lower Town', was also fortified and right from the inception of the site (Lal 1984: 56-59). At Banawali, the settlement had an
internally differentiated citadel in the single mound, both sections with enormous defensive walls (Bisht 1984: 91). The settlement of Surkotada is fortified as a whole. Internally, a wall divided the settlement into two units, east and west, of which the western and slightly larger is the citadel, while the eastern is the residential area (Joshi 1979). Desalpur in Kutch also had massive stone fortifications, comprising a wall with corner towers and salients (IAR 1963-64: 11). Stone was also used for fortifying the Makran site Sutkagendor (Dales 1962: 4-5). At the other Makran site of Sotka Koh, Dales (1962: 10) found traces of one stone wall which was followed for over 486 m. At Ali Murad in Sind, a rampart wall of irregularly dressed stone blocks was traced (Majumdar 1934: 89-90). At Balakot, the presence of an encircling wall is conjectured on the basis of a stratigraphic study of the edges of the mound where the strata do not slope away but abruptly end, suggesting ancient enclosure within some sort of architecture. What is new at Balakot is that a line of structures facing inwards may have served as an encompassing "wall" (Dales 1979: 262-63). At the site of Dholavira, presently being excavated in Kutch, not only is there a fortification wall for the entire settlement, but it appears that the 'Castle' and the 'Middle Town' too were individually walled. The 'Lower Town' had no individual enclosure wall, but was enclosed within the general outer fortification wall (Bisht 1989: 388). It
should be kept in mind that smaller Harappan sites may have had mud walls surrounding the settlements which may not always be extant.

The interest which emerges from the above details is the degree of segregation within individual settlements. We find that some settlements were anciently divided into two units, in many instances the two being functionally very different. This has led to the general terminology adopted for the two units as the 'Citadel' and the 'Lower Town'. At Mohenjodaro, most (but not all) of the large, public architectural elements are located on the citadel mound. At Kalibangan, the citadel was divided into two segments, the southern one containing only fire altars and baths with pavements while the northern unit contained only residential buildings. The lower town contained only residential elements again. This delineation of settlements into two mounds has been noted in the case of Mohenjodaro, Harappa, Rakhigarhi, Surkotada, Amri, Balakot, Ganweriwala and Mitathal. Among settlements being composed of single mounds we have the sites of Allahdino, Banawali, Chanhudaro, Dabarkot, Kot Kori, Kot Diji, Lohumjodaro, Nageshwar, Desalpur, and Sutkagendor. As rare cases, we have three mounds in the case of Kalibangan and at Dholavira, where the intervening spaces were paved; this evidence is the first so far obtained in a Harappan site. The site of Surkotada has been indicated
as having two mounds, on the basis of Joshi's (1979: 64) exploration where a low mound, now mostly washed away, was noted beyond the present-day nullah about 500 m to the southeast of the site. This could be the city area or the lower town. The evidence seems to be similar to Kalibangan, except that at the latter site, the orientation of the two units was north-south, while at Surkotada, the two units lie east-west.

This spatial or physical segregation, so obvious in double-mound settlements, is apparent in settlements anciently composed of single mounds too. In single-mound settlements, walls were used to divide the areas of the settlement. Moreover the special nature of the citadel area is often reinforced by a physical elevation of this area of the settlement either naturally (by the citadel being situated on a naturally elevated area) or by building mud brick platforms on which structures were raised. Generally speaking, in double-mound settlements, the citadel area is smaller but higher, while the lower town is larger but not as elevated in height. This is also a reflection of the comparative populations of the elite and the non-elite, occupying the different parts of the settlement. In Lothal, the ancient settlement was a single unit and not internally divided by walls, but the Acropolis, the probable seat of political and administrative authority, was higher than the rest of the
settlement.

An indicator for the existence of a centralized authority can be the plan of each individual settlement as a single unit. Haphazard construction may to some extent indicate a lack of centralized control over planning. However it cannot be said that all haphazard or unplanned cities reflect a lack of centralized control as exemplified by Ur. "Colonies" on the other hand show preconceived planning on account of the nature of their origin. One of the features of the plan of Miletus is relevant here - "It is evident that the whole city was constructed in relation to a coherent and controlling plan. It was not the result of gradual and unorganized extension, but was conceived as one complete whole." (Carter 1983: 21).

Different patterns for modern urban growth based on land use are mentioned in the literature. Thus we find that cities could be organized on the pattern of concentric zoning or in sectors or in functionally multiple nuclei (Carter 1981: Figure 9-1: 173). Town plans are of three types-irregular plans, radial-concentric plans and the rectangular or grid plans (Carter 1981: 144-45). The third type has been studied by Stanislawski who put forward five conditions for the emergence of the grid pattern-1) a new town or a new part of town is considered; 2) there should be centralized
control; 3) when a town has colonial status; 4) should be a measured disposition of available land; 5) there should be knowledge of the grid. Basically then the question of centralized political control is of paramount importance in the context of a grid pattern of settlement (Carter 1981: 154). The right-angled crisscrossing of streets at Mohenjodaro is an example of the grid layout. The pattern is, however, not universal in Harappan sites. At Banawali, except for streets 5, 6 and 7, the others do not cross each other at right angles (Bisht 1984: Figure 9: 92). In ancient settlements, functional demarcation into areas is rarely attested and hence we cannot speak of concentric zoning or sectored planning in cities. The only Harappan example giving some evidence of strict demarcation of space according to functions is noted at Lothal where different activities of city life are separated into different parts of the settlement.

It needs to be discussed whether settlements reveal a gradual growth towards urban proportions and functions. At Lothal the earliest settlement (pre-Harappan and pre-urban) was a village settlement occupied by a Micaceous Red Ware-using people who surrounded their settlement with a mud wall (Rao 1979: 28, 53). The Harappans came along and lived with the original inhabitants until the destruction of the settlement at the end of Phase I which was followed by a completely planned settlement, its
various sections divided into different functions and provided with roads and civic amenities. The site is bordered on the west by the ancient nullah and on the east by the dock and the wharf. The warehouse is located close to the wharf to facilitate loading and unloading of cargo. The Acropolis occupies a central position on the mound and overlooks both the warehouse and the wharf on one side and the lower town on the other. The majority of craft activities are located in the lower town. Thus it appears from the available evidence that there was no gradual evolution towards urbanism at Lothal.

A similar picture is available for Chanhudaro, though less clear than at Lothal. This is primarily because the lowest levels have still not been reached at Chanhudaro due to the high water table. The evidence from Amri, as outlined in the previous chapter, indicates the probable Mature Harappan beginnings of Chanhudaro. Here too we find a completely planned settlement for the Harappan culture.

To return to other architectural elements, the existence of public storage facilities is a good indicator of urbanism. The presence of such structures is significant regardless of the commodities that would have been stored there. If these structures housed foodstuffs such as grain, this signifies that apart from individual storage facilities, there was a public structure for the
same purpose, undoubtedly being able to contain larger quantities and for a number of varied purposes, the presence of such a structure implies some kind of authority in charge of its contents, collection and disbursement. Collection of vast quantities of grain and other foodstuffs could not be solely for a hierarchical authority but must have been used to support other specialized sections of the population. The existence of such structures must also take into account the machinery involved in the collection and distribution of the contents. Even where objects and materials other than food are stored, the above implications arise, along with those of the producers of such goods and the possible uses of such goods in exchanges with more remotely located settlements.

It surely must be significant that out of the presently available evidence, only three sites have given evidence of storage facilities, namely, Mohenjodaro, Harappa and Lothal. At Mohenjodaro, the granary revealed by Wheeler (1968: 43-44; Figure 9: 45) consisted of 27 blocks of brick work with externally battered walls.

The granary at Harappa is divided into two blocks, each covering an area of 45.6 m north-south and 17 m east-west and divided by a corridor 6.9 m wide between them. Each block is composed of six halls (Vats 1940: 15, 18).
The warehouse at Lothal consists of a platform of mud bricks covering an area of about 48.6 x 41 m, on which in the north-western corner, 12 blocks as bases for wooden superstructures are still extant. Originally, 64 solid blocks would have been provided covering the entire platform (Rao 1979: 111-13). The location of the warehouse adjoining the Acropolis and near the wharf and dock gives evidence of a preconceived vision of the layout of the town by the settlement's authorities. Not only this, the size of the Lothal warehouse in comparison to the other two warehouses, in view of the much smaller size of the settlement of Lothal, surely is significant.

It is not quite clear what commodities were stored in the warehouses revealed at Mohenjodaro, Harappa and Lothal. In the Lothal structure, 65 terracotta sealings bearing impressions of packing material such as reeds, woven fibres, matting and cords twisted into knots on the reverse, were found in the extreme southeastern part of the extant structure (Rao 1979: 113). In view of the fact that all the sealings found in the warehouse were impressions of nonlocal seals (Rao 1979: 114), it appears that nonlocal goods were stored in this structure.

The provision of wells, drainage system and other civic amenities also gives information for an authority overseeing and responsible for aspects concerning
municipal details. We know for certain that the sites of Allahdino, Banawali, Chanhudaro, Harappa, Kalibangan, Mohenjodaro and Dholavira were provided with wells. At Allahdino, an artesian well may have been built as mentioned in Chapter I. According to Jansen (1989: 252, 253 f.n.), more than 700 wells probably existed in the settlement of Mohenjodaro, a figure calculated according to the existing density pattern of excavated wells. In interesting contrast, only 6 wells were found in the excavated portions of Harappa of which all were public wells (Vats 1940: 14) which was not the case at Mohenjodaro.

Considerable sophistication is noted in the case of the drainage system especially where the larger sites were concerned. At Mohenjodaro drains were constructed of burnt brick and were covered, provided with manholes and sullage pits which could be regularly cleaned. Drains led from most houses in the lower town to street drains. At Lothal, burnt brick drains are noted only in the Acropolis though the lower town had its own drainage system of soakage jars. At some sites, materials such as stone were utilized for constructing drains, as has been seen at the site of Allahdino. Harappan sites which have so far revealed some sort of drainage system are Allahdino, Banawali, Chanhudaro, Harappa, Kalibangan, Lothal and Mohenjodaro. At Banawali it appears that street drains
are absent but the presence of soakage jars points to a consciousness of hygiene (Bisht 1984: 96). At Mohenjodaro we find the evidence of the consciousness to provide other civic amenities such as garbage dumps, one revealed to the north of the DK area, H Section (Mackay 1938: 1).

Differences in plans and sizes of architectural elements such as residential structures gives us an idea of the existence or not of social stratification which is necessary for an urban makeup of society. Settlements where residential structures are largely undifferentiated give evidence of a relatively homogenous society and where there is considerable differentiation, the overall picture is suggestive of a large degree of social stratification. At Mohenjodaro, excavations have revealed significant differentiation in sizes and plans of houses. However, there is no spatial concentration of large as opposed to small houses and no one area was given over to a particular strata of society (apart from the citadel) if one looks only at house sizes. Examples of differentiation in house sizes can be noted from the following:

Table VI.2: Variations in Sizes of Houses at Mohenjodaro

<table>
<thead>
<tr>
<th>Small Houses</th>
<th>Large Houses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. House III, Block 3, DKG- 9.7 x 4.5 m</td>
<td>1. House I, Block 2, Section B, HR- 36.9 x 30.6 m</td>
</tr>
<tr>
<td>2. House IV, Block 3, DKG- 9.7 x 8.5 m</td>
<td>2. House IVI, Block 2, Section A, VS- 27.7 x 14.3 m</td>
</tr>
</tbody>
</table>

Contd.
Table Contd.

3. House I, Block 5, DK6- 12 x 11.5 m 3. House V, Block 2, HR- 42 x 26.6 m

4. House II, Block 4, DKB- 9.7 x 6.6 m

5. House II, Block 2, Section A, VS- 14.8 x 5.7 m

6. House III, Block B, Section B, HR- 9 x 5.6 m

7. House III, Block B, Section B, HR- 8 x 14.7 m

8. House III, Block 4, Section B, HR- 12 x 12 m

9. House IV, Block 7, Section B, HR- 11.4 x 9.9 m

House plans indicate some amount of differentiation. A large number of houses at Mohenjodaro are built using the courtyard as an open space generally surrounded by various other rooms. Interestingly, courtyards or open spaces are also used to separate individual structures or houses units as seen clearly in the Moneer site of Mohenjodaro in Block B (Jansen 1984: 81; Fig. 8.4: 80).

Such open spaces can also be seen in other parts of Mohenjodaro, as for example, north of House XXII in Block 4, VS, Section A and north of House XXIV, Block 5, Section B of HR (the measurements of the two open spaces are about 12.6 x 6.2 m and 12.3 x 7.8 m respectively). These can be compared to two courtyards in the Moneer area, ZV or BI which measures about 17.6 x 9.6 m and the courtyard between B III, B IV and B VI which measures about 11.5 x
7.5 m (Jansen 1984: Fig. 8.6).

Wells are often located so that they can also be used by those other than the inhabitants of the structure itself. The inner rooms were probably used for private purposes, while the rooms nearer the entrance were for more public purposes. A large number of activities were probably conducted in the courtyard. Remnants of staircases give evidence in a number of cases of the construction of upper storeys or the use of the roof. Generally each house had a bath with a carefully paved floor with drains connecting with those in the street outside. Some analysis of plans of private houses at Mohenjodaro has been undertaken by Sarcina (1979) where she has attempted to distinguish artisans' houses from those belonging to an extended family or elite members of society.

At Harappa there is really very little scope for a comparison of house plans and sizes on the basis of the widespread destruction of the site by the removal of bricks. However we do have some evidence of differentiation. House 1 in Trench VI of Mound F was a large domestic structure with a frontage of more than 30.4 m on the east, with more than 10 rooms in it and with a well (with public access) and two circular grain bins in one of the rooms (Vats 1940: 131). Possibly, House 2, adjacent to the above was also a large structure. In
contrast we have houses of mud and mud brick in Trench I, Mound D, Area J. Though the houses are average in size (House 1-14.7 x 8.4 m; House 4-11.4 x 8.4 m), the fact that they are made of mud brick and not of burnt brick should be significant. Besides these we have the evidence of reed and bamboo huts from Pit II in Mound AB (Vats 1940: 163) and of other mud huts in Trench I of Mound F (Vats 1940: 84). The workmen's quarters have been called so on the basis of their architecture which is identical; however despite their uniformity, their occupants were probably not the poorest inhabitants of Harappa as seen from the evidence given above.

Not much differentiation in plans and sizes of houses is noticed at Lothal though this is largely true of the lower town only. The constructions on the Acropolis were probably very differently conceived and executed. However, within the lower town the excavator notes differences for some structures as seen in the 'Merchant's house'. Here the size of the house - 14.2 x 7.1 m, along with its contents—sherds of Reserved Slip Ware, 2 steatite seals, 3 carnelian beads, 8 gold pendants with axial tubes, a copper bangle and 4 chert blades (Rao 1979: 91)—have contributed to such an identification. But the house immediately to the north of the merchant's house (Rao 1979: Pl. XL) too, is almost of the same size. However the merchant's house may have had a westward
extension, which is not entirely extant, and if so, the house would have been much larger. Some large structures are noted in Block G also, such as House 158 which would be about 12 x 9.5 m, but these belong to a late period of occupation at the site. The bead factory in Block F is also a large structure but has different implications which will be discussed shortly. All structures at Lothal are constructed of sundried brick and only drains in the Acropolis and wells were constructed of burnt bricks.

At Chanhudaro, any discussion of variation in plans and sizes of houses must be undertaken with a note of caution on account of the poor recoverability in the excavations of complete structures. On the available evidence, one of the largest houses at Chanhudaro of the Harappan period was in a later phase of culture at the site, termed as Harappa I. This structure filling almost the whole of Square 9/E was about 16.5 x 10.5 m. Another complete structure, rooms 176, 425 was roughly 7.2 x 3.9 m. In the Harappa II occupation, a house on Mound I in Square 12/K was one of the largest. Apart from this, structure 174, 139, 264 in Square 9/D on Mound II was also large. The measurements of the respective structures are instructive, as they are sizes comparable to the smallest at Mohenjodaro. The house in Square 12/K was about 11.5 x 8.8 m and the one occupying Square 9/D was about 8.5 x 6.2 m. The largest houses from Chanhudaro compare favourably
with those at Lothal, a site which equates roughly in its overall measurements too with Chanhudaro. Other house reconstructions are conjectural. A number of bathing places are noticed in the plan of Mound II (Mackay 1943: Pl. IV) but are devoid of walls indicating adjoining rooms. Hence the task for discussing variations in sizes and plans of houses is difficult.

At Kalibangan it is interesting to note that structures in the northern annexe in the citadel are not very different from those in the lower town area. However some differences are noted in structures in the unfortified area to the south of the citadel (where it is thought the poorest inhabitants lived) from those in other residential areas of Kalibangan (Lal 1984: 59-61). Published evidence is scarce from Desalpur but some indications exist to show a certain amount of differentiation in houses. In a report in IAR of 1963-64 (page 11), it is mentioned that towards the central portion of the site, a structural complex with massive walls and spacious rooms was partially exposed. If this indicates some sort of public architecture, the pattern in different from other Harappan sites where such architecture is generally towards the western portion of settlements. The report on Mitathal does not indicate much differentiation between individual houses, as no complete house plans have been recovered. The excavator
notes the difference between the Late Siswal and the Harappan occupations where the latter period reveals more massive structures of mud brick with metre-wide walls (Suraj Bhan 1975: 12).

An analysis of house plans and differences in sizes of residential structures should give some information relating to the existence of social stratification in individual settlements which is a key variable in the discussion on urbanism. Delineation of the urban character of a settlement necessitates finding evidence of a socially stratified society reflected in differential patterns of living, in consumption and in relation to other members of the society. We have already studied differential patterns of housing. It is not easy to make simplistic assumptions that larger residential structures belonged to wealthier sections of society. Members of large extended families could be occupying larger structures, testifying to the prevalence of strong kin relations. However, we do undoubtedly have small, in some cases, tiny houses which could not possibly be occupied by extended families (yet, sometimes we have doubts even about this assertion as seen in Mohenjodaro. In HR area, House LVIII in Block 8 of Section B, having a frontage of only 6.6 m has been seen to have two baths). It does appear then that differential living patterns are probably practised. The evidence of the working platforms on Mound
F at Harappa and the thatched huts nearby do suggest strongly that a particular social stratum occupied such structures and they probably had a functional and social status different from and lower than, for example, the occupants of House 1 in Trench VI of Mound F, the largest extant domestic structure at Harappa.

Construction patterns may be important. Structures with more massive walls could be thought of as belonging to those sections of society who are able to afford such constructions, especially when we have evidence of close juxtaposition of the two types of structures. Such can be seen from the differences between House XVIII as opposed to House XIX and XX in HR area, Section B and House XXII from House XXV and XXVI immediately to the north in HR area (Marshall 1931: Pl. XXXIX). However Jansen (1979: 446-47) suggests that thickness of the walls could also be due to the need to carry further storeys or to combat heat by constructing thick walls. The environmental factor can be discounted here as then most structures would be thick-walked. But on the whole we can say that thick-walled structures may have belonged to more affluent members of society on the basis that such structures would have required greater quantities of construction material and also because poorer members of society would make do with smaller, thinner walled structures. House XVIII in Block 4 Section B of HR appears to have belonged to members of a
higher social strata as seen in the large size of the structure, its being surrounded on three sides by lanes and its principal entrance being a raised causeway reached by a flight of steps from Street 3 (Marshall 1931: 201-2).

An analysis of the artifactual assemblage needs a foray first into the question of elite goods. From ethnographic evidence, we know that wealth/elite goods had a social, not a utilitarian or exchange value. These goods move in distinct spheres and are not directly exchangeable with utilitarian goods. Thus we find that when wealth goods come into an individual’s hands, they cannot be exchanged for consumable subsistence goods. Conversion of elite into utilitarian goods will only occur in a market situation (Brumfiel 1987: 106). We also know the forms of production and use of these goods. Wealth goods can be produced by specialists attached to the elite strata of society working under their sponsorship and direction. Hence they may be given subsistence goods for their maintenance in return for production of these goods. Or else, these goods could be produced by other craft specialists not necessarily attached to the elite. In this case social norms and restrictions will prevent generalized consumption of these goods. Another means of obtaining these goods is when they are brought by separate and/or subordinate polities to a city and its rulers as tribute.
What is also fairly clear are the uses to which such goods are put. Such goods are used by the elite as status markers, in exchanges with other elites and to reward loyal subordinates and personnel working for the elite. They could be used to reward clients, attract allies and to solicit favours from one's superiors (Brumfiel 1987: 112). They may also be given as offerings to religious institutions.

But the archaeological identification of such goods, in the absence of textual evidence, is not easy. We could discern the role of wealth goods in Aztec or Inca contexts in view of the textual material available. But in the Harappan context, we are dependent on the artifactual assemblages and their archaeological contexts. Firth (1965: 342) on the basis of valuables among the Tikopia, cautions that factors for delineating such objects may not be very obvious. Thus he gave the example of bonito hooks, saying that these objects are valuables, they had an utilitarian value, are made out of locally available materials and are made by a simple technology. However, we are constrained to accept some of these factors. Elite goods would probably be made out of exotic raw materials, would be generally produced by superior or difficult techniques, would have very few production centres and their findspots too would be restricted. They may have imitations in cheaper, locally available raw materials.
Apart from already prevalent difficulties, there are others, in that we cannot even begin to discuss objects made out of non-durable materials. The implications of leaving these out are obvious as is seen by the role of the fine *cumbi* cloth in the Inca state (Murra 1962). Peregrine (1991) on the basis of data from the North American chiefdoms has found a direct correlation between prestige goods requiring more labour input and more sophisticated production techniques and societies of greater political centralization. This is particularly relevant in the Harappan context too.

Elite goods and urban centres have a direct relation. These goods will be found in a much greater degree in these sites than in rural sites. These goods will be used for purposes including that of cementing already existing social relationships. In a dense clustering of individuals at an urban centre these goods will be used as expressions of dominance over other sections of society. Also in urban centres the production of these goods will be undertaken. These goods will be found at rural sites too as noted in Mesopotamia with copper, stone bowls and obsidian, stone maceheads and clay cones. Adams (1981: 78) has explained these finds as the work of part-time craft specialists in individual communities of different sizes, by the presence of elite consumers in small settlements and as ritual offerings being made in shrines.
It is very possible that production at rural sites will be for the purpose of exploiting a locally available raw material. This could be the case in the Harappan context. In the Harappan case, moreover, it should be realized that the sheer quantity and variety of craft goods will immediately give a pointer towards the urban character of sites as opposed to rural sites (see Table VI.3).

Differential patterns of consumption give some information in respect of differing social statuses. A variety of artifacts, the use of precious materials, substitutes of cheaper raw materials for more precious varieties of artifacts are all clues that can help to discern social stratification. At Mohenjodaro the variety of artifacts in the archaeological record, both quantitatively and qualitatively, is a significant feature. In a number of cases, we find imitations of objects in cheaper raw materials, as exemplified by terracotta imitations of long barrel-cylinder carnelian beads, of terracotta spindle whorls as cheaper substitutes of faience whorls. Gold and silver are rare in the Harappan culture and are used solely for ornamental purposes and for rare objects such as the silver vases (Marshall 1931: Pl. CXL 1, 2, 3).

The attempt to study objects in relation to their finds spots within a settlement in the context of
architectural elements, is easier in smaller sites where the variety and quantity of artifacts is less. Such has been seen in the case of Lothal where Rao (1979: 91) tried to identify a structure in the lower town as a merchant's house. In the case of Banawali also a merchant's house and the house of a jewellery dealer were tentatively identified on the basis of artifacts found within the structures (Bisht 1982: 117). At Chanhudaro too, the number and variety of artifacts found in room 215 on Mound II suggests some specialized non-residential function for the structure. The largest extant structure of the Harappa II occupation at Chanhudaro (in Square 12/K, Mound I), was studied in the context of the associated material assemblage and a list of the finds could be instructive:– 2 pottery stands; 1 large round stone; fragment of faience bangle; pottery grating; model cart wheel; gamesman; black steatite seal; white steatite seal; steatite button; etched carnelian bead; white steatite spacer; hornblende pendant; light blue faience bead; light green faience bead; grey faience bead. Among these there is no evidence of any artifacts such as terro-cotta beads suggesting occupation by a poorer section of society.

In larger sites such as Mohenjodaro and Harappa, distinctions as were made for the Chanhudaro structure are not easy to make. Spatially small structures which may suggest the residence of an ordinary occupant of the city
One indicator to discern economic and occupational differentiation is the presence of large, public architecture (such as granaries, the Lothal dock, large residences) requiring specialized personnel for manning them. The spatial demarcation of certain areas within a site such as the Citadel from the lower town brings a suggestion of specialized personnel and retainers coming from the lower town to work in the Citadel. The number of civic amenities such as drains, soakage pits, garbage dumps, streets and lanes would all have required a body of personnel responsible for cleaning and maintenance.

Within craft production, a study of the material assemblage should give an indication of differences between occupations, which is a hallmark of urbanism. In an urban context, not all members of a community undertake the same activities. Occupational differentiation leading to specialization in different economic lines is a significant feature of urbanism. On the basis of difficult technologies and rarity of raw materials utilized, it is possible to differentiate between separate craft traditions. The production of stoneware bangles or faience miniature jars or steatite seals require specialized producers and a considerable period of training and apprenticeship before engaging in production. The objects produced too are not those that are essential requirements for an ordinary domestic household. Thus
differentiating between technology, the use of artifacts, and the raw materials required for separate artifacts in the material assemblage, one can infer that there would be occupational differentiation between producers of different craft objects.

In this context it is necessary to note the presence of actual craft work indicators to reveal production. Simply finding artifacts requiring considerable expertise in their manufacture or of a valuable nature, does not mean that the society was divided on the basis of occupational differentiation. Thus, we do find differences between sites of the Harappan culture on the basis of the presence or absence of different craft working indicators. The information concerning the presence or absence of craft working indicators as also of the artifacts themselves is set out in Table IV.1. From the table it appears that, on the basis of presently available information, Harappa, Chanhudaro, Mohenjodaro and Lothal have shown evidence for working of the majority of crafts that have been studied, as discussed in Chapter IV. Other sites have revealed evidence of the working of one or two crafts such as Allahdino and Balakot for metallurgy and shell working and Shortughai; for bead making and metallurgy, Kot Kori and Kot Diji, Surkotada and Nageshwar for shell working.
The demarcation of particular areas within individual sites for craft working is a strong, positive indicator for the presence of a separate group of craft producers. The logic behind this statement is that an activity undertaken in every domestic unit will leave archaeological debris that will reflect a uniform pattern for the whole settlement. Thus activities undertaken at only specific loci, even if associated with evidence of domestic occupation, would indicate that only certain individuals engaged in those particular activities. Some sites give evidence of a craft undertaken in a particular area of the settlement. Such is the case with stone tool working seen at Surkotada and the separate pottery making area at Kalibangan to the south of the citadel in an unfortified part of the mound (Lal 1979: 86). [It should be clarified, however, that pottery making in a separate part of a settlement need not necessarily indicate a separate pottery making group as this activity could be purposely located in a distant part of the settlement to limit pollution; similarly we note the presence of kiln wasters, muffles and pottery debris lying all over the peripheral areas of Mohenjodaro (Bondioli et al 1984:27) and the initial processing of shell undertaken on a mound northeast of the Moneer site at Mohenjodaro (Kenoyer 1984b: 107)].

At Surkotada stone tool making debris was noted in a concentration in an area about 200 m away from the main
habitation mound (Joshi 1972: 132, 135). This is significant as stone tool working can be easily carried out in domestic contexts. A site like Nageshwar has given evidence of working of shell from almost all parts of the mound. At Chanhudaro, Mohenjodaro and Harappa, though we get evidence of the working of different crafts from all over each site, the data does not point to craft working undertaken in every residential structural unit, which could possibly be the case with the eastern part of Chanhudaro which is similar to the Moneer southeast area at Mohenjodaro. At Lothal, craft activities are concentrated in the lower town, with some dyeing done in the Acropolis.

At Mohenjodaro there is archaeological evidence to suggest that facilities were shared by various craftsmen. This is seen from the location of kilns. Kilns are generally located in areas which have access to the public and are not confined architecturally, suggesting their use only by certain individuals or groups. This is clear by the kiln located in an open area north of lane 2 between houses XXII and XXIV in VS, Section A, Block 4; and by the kiln in HR area, Section B, Block 2, in a courtyard between Houses VII and VIII. 2 kilns in DKG, Block 1 also were probably used by a number of people, as suggested by the size of the entire Block.
It is, therefore, interesting to see the contrary evidence from Lothal. Here, the bead factory is evidently segregated and restricted from general use by a surrounding wall. This pattern would fit in with the idea that urban features were introduced into Lothal with the Harappans. With the pattern of how an ideal city should be constructed, the inhabitants also reveal a mixture of occupations suggesting specialization.

Probably the clearest picture of craft producers working in separate areas may be revealed in the Cholistan area. The survey of the area has revealed that in the Mature Harappan period, 45.4% of 174 sites are purely industrial sites though sites giving evidence of residential and industrial functions also occur (Mughal 1982:92). The significance of pure industrial sites is unmistakable. They imply that craft workers are going out to a separate area to work at a particular craft which must entail workshop production. The crafts which were practised in separate industrial sites were the firing of pottery, bricks, small terra-cotta objects, the glazing of faience objects, and the melting and possible smelting of copper. The common feature in all these crafts is the use of heat facilities at some stage of the production process; the separate location of these crafts could have been primarily to avoid the effects of pollution in residential areas. The picture from the Cholistan could
give us some clues to explicate the scarce evidence for metal working at Mohenjodaro.

As outlined in the earlier part of this chapter, the presence of non-food producers is an important indicator of the urban character of a settlement. Archaeologically, the scale of individual production is not easy to decipher especially where craft working indicators largely comprise tools for manufacture or unfinished objects. In early excavations, rarely was debris from craft production retained during excavations. The surface survey at Mohenjodaro does give us a more complete picture of craft working in particular loci, but we have spatial rather than chronological information. The requirements for the products manufactured would largely determine the scale of working and requirement for products are governed by the value of the products. Another significant factor is also the concerned technology but not necessarily the raw materials involved in production. Rare materials such as lapis lazuli could be worked by any lapidary worker but materials such as gold combine rarity along with a difficult technological process.

The presence of non-food producers is also discernible by the degree of standardization, not only in the products manufactured, but also by tools utilized. Variety in artifacts in the form of sophistication of
basic types is possibly a result of requirement of these artifacts by social groups who are able to sponsor such production or able to afford such products. There is a considerable degree of standardization in Harappan artifacts clearly illustrated by the cubical chert weights and the steatite stamp seals. The functions performed by these two classes of artifacts requires a high level of standardization, accuracy and precision.

Among objects falling into other categories such as ornaments, utilitarian goods, tools also there is some standardization. Steatite microbeads are a Harappan marker while the variety of other shapes in steatite such as the inlaid beads, decorated steatite beads, zoned beads are indications of the advanced nature of the steatite bead maker's craft. Faience tubular beads are almost ubiquitous, while other types such as segmented, gadrooned varieties are also found. Faience is the material used for a large number of unusually shaped beads. Agate and carnelian short barrel cylinders are again ubiquitous, with the long barrel-cylinder beads being a distinctive Harappan artifact though not found at all Harappan sites. Thus, here we find that variety going beyond the basic could be a reflection of elite wants and requirements. Elite demands for artifacts out of the ordinary would spur craft production into innovation. This is amply reflected in the variety of craft goods revealed at Mohenjodaro (see
Craftsmen brought from other areas and made to work at their craft under centralized supervision would probably be full-time non-food producers. Archaeologically, they would be distinguished by their working and living areas situated close to the loci of a settlement's elite population. In Harappan sites, as noted in Chapter V, we have no clear-out evidence of a close relation between certain craft producing activities and elite supervision. Also we have no evidence of craftsmen coming from outside individual Harappan settlements due to the lack of literary data and the absence of information regarding the presence of different ethnic communities in a single settlement. Neither can we accept that craftsmen living near loci of raw materials would be the only experts in that material and would be brought to urban centres, as it is plausible for craftsmen living far from the source of a particular raw material to acquire expertise in the working of that material.

It remains to collate the preceding information to fit in the known evidence from Harappan sites into a framework elucidating the urban character of the Harappan civilization. Table VI.1 shows clearly that in the Harappan context, at least, size cannot be taken as a primary indicator for urbanism.

We can have no doubt of the true urban character of
sites like Mohenjodaro and Harappa. This is clearer in
the case of Mohenjodaro on the basis of the better
preservation of its remains. On the basis of size,
planned layout, provision of civic amenities, roads and
wells, differentiation not only between public and
residential structures but also between different
residential structures, the variety and quantity of the
artifactual assemblage, the presence of luxury goods and
exotic raw materials, the evidence for occupational
differentiation all lead to the conclusion of Mohenjodaro
as a significant urban centre. If we study the Harappan
culture as a whole, Mohenjodaro appears to stand out in
various aspects pointing to a predominant position for
the centre in antiquity. We find the city's structures
built entirely of burnt bricks of uniform sizes, revealing
an immense effort in production and supervision. The
ubiquity of seals points to a widespread literacy in this
city. The evidence of the working of all the major crafts
pointing to the immense requirements of this city and the
significant working of elite objects in close proximity to
their consumers. The transporting in of exotic raw
materials into Mohenjodaro implied that the value of the
goods manufactured far outweighed the costs of
transportation of the raw materials. It is very probable
that Harappa would give much the same information if its
structures were still extant.
It is likely that Chanhudaro was anciently a small city or a town. Chanhudaro has a number of urban features such as the functions that were carried out at the site and the provision of a number of civic amenities for its inhabitants. Though archaeologically it appears as if Chanhudaro primarily functioned as a craft working centre one cannot negate the role of agriculture as one of the means of subsistence for the inhabitants. For Chanhudaro it is more a case of introduced or instituted urbanism. Urban growth at Chanhudaro was probably not an evolutionary process, an organic growth from within; this assertion being primarily on the evidence from Amri. The role of Chanhudaro appears to have been enforced on it. Very likely, Chanhudaro was in the nature of a town, supervised by officials or an elite group sent from the cultural centre, perhaps Mohenjodaro. Hence we find not much evidence of craft working from the Mound I area of the site. Though the largest structure of the Mature Harappan period is on Mound I, there is no great difference between this structure and another on Mound II. Thus there may have been supervisory personnel located in the heart of the craft working area. The artifactual assemblage testifies to the significance of the functions undertaken in this settlement. The bringing in of non-local raw materials signifies the importance of the crafts being produced here. One cannot negate the links between
a village: and a city in an urban network, but the role of Chanhudaro appears to far exceed the envisaged role of village in an urban framework. A village in the territory of an urban centre would to a large extent retain its economic autonomy. Rather than materially provisioning the urban centre, it may provide the labour to work at certain activities in the urban centre. At Chanhudaro we find definite evidence for craft working, whose products must have had a final destination, some point of consumption. Hence the functional nature of Chanhudaro, with its implications of an extra-local link, must elevate the position of the settlement above that of a village.

Lothal is distinctly urban, but as with Chanhudaro, a case of instituted urbanism. The urban character of Lothal is clearly brought out by the evidence of planning in the layout of the settlement and the provision of various amenities, pointing to supervision and maintenance; the elevation of the Acropolis to denote occupation by special groups; by the construction of a warehouse; by the evidence of occupational differentiation in the spatial segregation of various crafts; by the indirect evidence for social stratification (administrative personnel or elites, craft workers and other inhabitants of the lower town, dock workers and warehouse personnel to name a few).

It is not at all easy to delineate rural Harappan sites and no single variable can be adopted to differen-
tiate between urban and rural. If we take size as a criterion, Allahdino one of the smallest Harappan sites with a size of 90 x 90 m would seem to be a good choice for a rural site. However this is belied by the presence of exotic raw materials such as silver and gold, by the evidence of craft working (metallurgy and shell working) and by the provision of amenities such as drainage channels and wells. If we take factors of social stratification and occupational specialization, then we would have to negate the character of Mitathal as an urban site—this site has only revealed very negligible traces of craft working [one unfinished bead and an agate nodule (Suraj Bhan 1975:7-8)], and very few raw materials brought from distant areas (a good example in the scarcity of shell at the site and the very few indeterminate metal pieces). Even a material as common as steatite is rare at Mitathal [only 5 beads in stratified Harappan levels and 11 from unstratified levels (Suraj Bhan 1975:75)]. Only faience bangles are attested in large numbers and in considerable variety (Suraj Bhan 1975:76). Thus the material assemblage appears to be particularly poor at Mitathal and houses are of mud brick, though no complete house plans are available. However what is interesting about the site is its division into two mounds, the higher and more prominent to the east and the lower and more extensive to the west. The two mounds are separated by a
gap of nearly 20m (Suraj Bhan 1975:3-4). Thus the layout of the settlement follows that of much larger, distinctly urban centres such as Mohenjodaro, with the perhaps significant distinction of the "citadel" area being in the east.

Though the site of Nageshwar is too disturbed for us to discern information of the layout and planning of the ancient settlement, the material assemblage according to Table VI.1 and VI.3 reveals a largely socially undifferentiated settlement. In the concentration of its inhabitants on shell working lies the role of the site. No attempt was made to transform Nageshwar into an urban centre; it remained physically a village settlement exploiting a locally available raw material. However we must note that if we take a lack of self sufficiency as a major characteristic of urbanism, then we really cannot consider sites such as Nageshwar as rural. The function of the site as a shell working centre made it dependent on others for consuming the products it manufactured. The probable Mature Harappan origins of Nageshwar may also indicate the deliberate settling of people here to exploit a particular raw material. The role of settlements such as Nageshwar in producing artifacts for the urban consuming centres will explain the incorporation of such settlements within the Harappan economic structure. It is very probable then that true rural villages will be those
that will be within the hinterland of a Harappan town or city, but will show no or very few Harappan markers. They may reveal other wares signifying the presence of other ethnic groups. It is very probable that these village sites if occupied for short periods compared to large urban centres will leave few archaeological traces and hence will not be recovered. But it must be realised that the finds of even a few Harappan artifacts will show the articulation of these settlements within the Harappan culture.

The relevance of urban centres in the context of craft production is valid from various viewpoints. The density of population makes for increased consumption. The variety of manufactured products is a reflection of the role of political powers in urban centres and of the presence of a number of diverse social groups in the community. The presence of elite goods requiring much labour in their production is a result of the excess labour that must be diverted to non-subsistence related activities and as mentioned earlier, of the political power and elite strata which utilize this labour for the production of goods which will be largely used by themselves. Economy of transport costs will also make it worthwhile to locate production in the proximity of consumers.

All craft production centres which focus on crafts whose products will be used by nonlocal consumers will not
be rural in character. The role of the inhabitants as producers will negate any self-sufficiency which must be a characteristic of rural settlements. Thus the weaving of craft centres with large cities and rural settlements into one economic structure will be fulfilled through the role of distribution where the large cities will display a greater consuming potential than small rural settlements in view of their internal structure.

From the viewpoint of this thesis, we may reiterate the relevance of craft production to urban centres. Social differentiation in urban centres is brought out by different consumption patterns of non-subsistence goods as seen by variations in craft products and the use of cheaper materials to substitute for the more exotic. In large urban centres as mentioned earlier, valuables may be found in smaller structures suggesting their use as rewards to subordinates. It is clear then that manufactured elite goods were exchanged to fulfill particular purposes. The smaller number of valuables found in smaller settlements in particular, concentrated loci could indicate the presence of limited elite personnel such as at Banawali. It is in large urban centres where sophisticated craft products are found in more diverse contexts that the potential of such settlements for consumption is realized.

The presence of valuables in a settlement is an indica-
tor of social stratification while evidence of production implies economic differentiation. Sophisticated crafts would have required trained craftsmen with skill that could only have been acquired over a long period. Skilled workers would not have comprised a very large section of the population as their activity could not have been sponsored at each settlement. The production of valuables must have been of primary interest to the elite who would ensure that such goods were produced in limited centres.

The bringing in of heavy inputs such as raw materials and fuel into urban centres overcoming transport costs would indicate the importance of craft activities. This pattern of engaging in production close to the consumers is particularly relevant for Harappan craft production. The value of the goods produced and the uses to which they were put would have dictated this pattern of production. Large Harappan cities as centres of political power must have been the main consumers of manufactured valuables. Ceremonial prestations by the elite, tribute offerings to the elite, ritual offerings in shrines would all have been more relevant in urban centres and must have had direct repercussions on the expansion of craft production. This expanded activity would have been centred in urban settlements to enable political elites to acquire control over the output.

We must consider craft production as significant,
even crucial, to the society and economy of the Bronze Age. In the absence of a market economy and the commoditization of resources, craft goods would have functioned as symbols of power, furthering political interests and cementing social alliances. The support of production specialists by political elites for the above purposes would have been one of the primary functions of the earliest cities.
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Site</th>
<th>Fortification</th>
<th>Number of Mounds</th>
<th>List of Urban Features</th>
<th>Variations in Plans and Sizes of Houses</th>
<th>Drainage and Civic Amenities</th>
<th>Size</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Public Architecture</td>
<td>Provision of Wells</td>
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<td>Aari</td>
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<td>✓</td>
<td>?</td>
<td>✓</td>
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<td>Dabartot</td>
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<td></td>
<td></td>
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<td>Desalpur</td>
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<td>1</td>
<td>?</td>
<td></td>
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<td>Dholavira</td>
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<td>✓</td>
<td>✓</td>
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<td></td>
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<td>12.</td>
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<td></td>
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<td>✓</td>
<td>✓</td>
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$ $ : Information Not Available
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<th>Gold</th>
<th>Lapis Lazuli</th>
<th>Minute Stone</th>
<th>Steatite Disc Beads</th>
<th>Long Barrel Beads</th>
<th>Cylinder Beads</th>
<th>Carneelian Beads</th>
<th>Ivory</th>
<th>Stoneware Beads</th>
<th>Decorated Bead</th>
<th>Statuette Bead</th>
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<th>Etched Carneelian Beads</th>
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