

# THE ORIGIN OF CITIES

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# The Origin of Cities

*The agricultural revolution ultimately made it possible for men to congregate in large communities, and to take up specialized tasks. The first cities almost certainly arose in Mesopotamia*

by Robert M. Adams

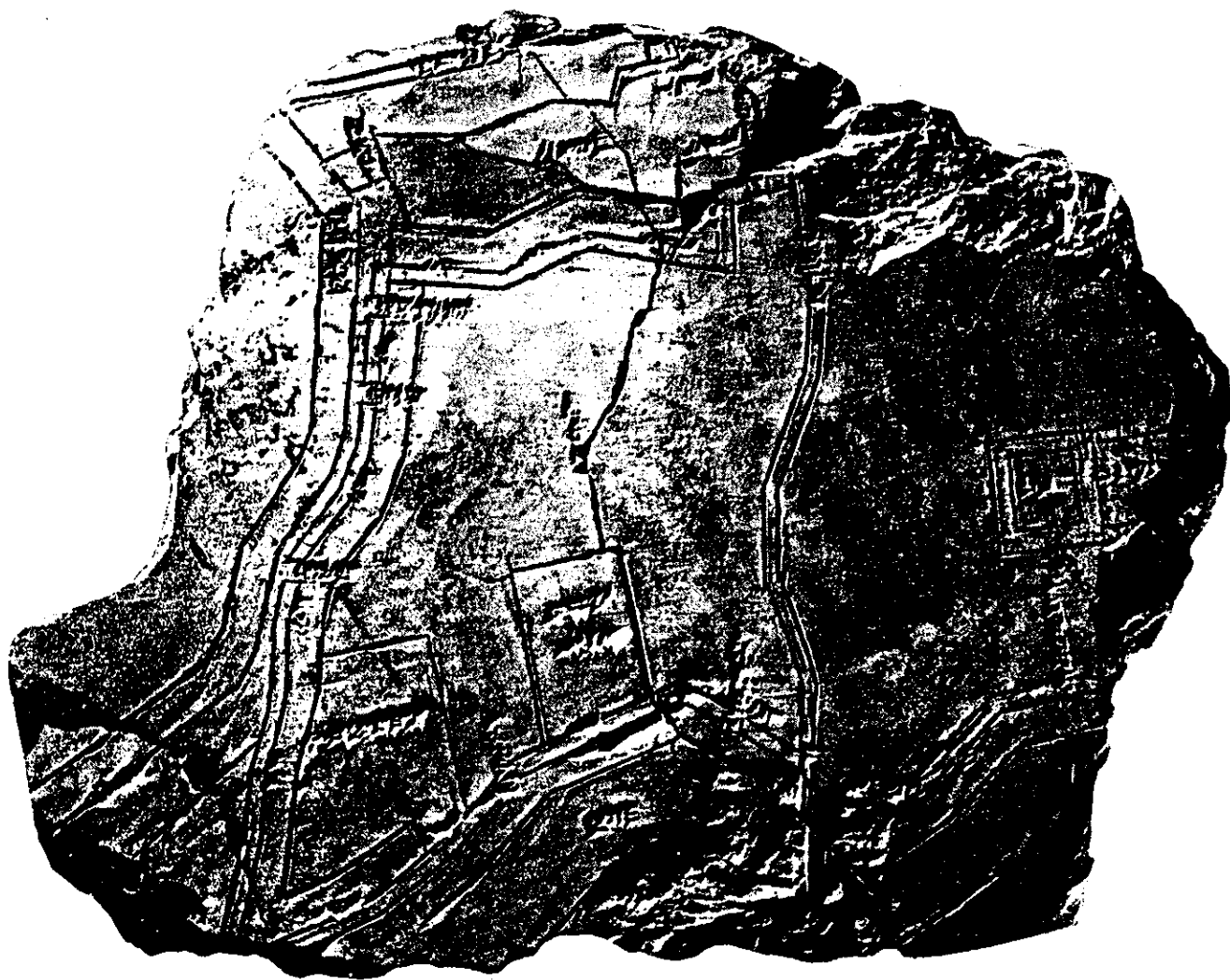
The rise of cities, the second great "revolution" in human culture, was pre-eminently a social process, an expression more of changes in man's interaction with his fellows than in his interaction with his environment. For this reason it marks not only a turning

but also a branching point in the history of the human species.

Earlier steps are closely identified with an increasing breadth or intensity in the exploitation of the environment. Their distinguishing features are new tools and techniques and the discovery

of new and more dependable resources for subsistence. Even in so advanced an achievement as the invention of agriculture, much of the variation from region to region was simply a reflection of local differences in subsistence potential.

In contrast the urban revolution was



MAP OF NIPPUR on a clay tablet dates from about 1500 B.C. Two lines at far left trace the course of Euphrates River; adjacent

lines show one wall of the city. Square structures at far right are temples; the two vertical lines at right center represent a canal.



EARLY GRAVE OFFERINGS from Mesopotamian tombs of about 3900 B.C. consist mainly of painted pottery such as two vessels at left. Vessels of diorite (center and right center) and alabaster (far right), found in tombs of about 3500 B.C. and later, reflect growth of trade with other regions and increasing specialization of crafts. These vessels and objects on opposite page are in the University Museum of the University of Pennsylvania.

a decisive cultural and social change that was less directly linked to changes in the exploitation of the environment. To be sure, it rested ultimately on food surpluses obtained by agricultural producers above their own requirements and somehow made available to city dwellers engaged in other activities. But its essential element was a whole series of new institutions and the vastly greater size and complexity of the social unit, rather than basic innovations in subsistence. In short, the different forms that early urban societies assumed are essentially the products of differently interacting political and economic—human—forces. And the interpretive skills required to understand them are correspondingly rooted more in the social sciences and humanities than in the natural sciences.

Even the term urban needs qualification. Many of the qualities we think of as civilized have been attained by societies that failed to organize cities. At least some Egyptologists believe that civilization advanced for almost 2,000 years under the Pharaohs before true cities appeared in Egypt. The period was marked by the development of monumental public works, a formal state superstructure, written records and the beginnings of exact science. In the New World, too, scholars are still searching the jungles around Maya temple centers in Guatemala and Yucatán for recognizably urban agglomerations of dwellings. For all its temple architecture and high art, and the intellectual achievement represented by its hieroglyphic writing and accurate long-count calendar, classic Maya civilization apparently was not based on the city.

These facts do not detract from the fundamental importance of the urban revolution, but underline its complex character. Every high civilization other than possibly the Mayan did ultimately

produce cities. And in most civilizations urbanization began early.

There is little doubt that this was the case for the oldest civilization and the earliest cities: those of ancient Mesopotamia. The story of their development, which we will sketch here, is still a very tentative one. In large part the uncertainties are due to the state of the archeological record, which is as yet both scanty and unrepresentative. The archeologist's preoccupation with early temple-furnishings and architecture, for example, has probably exaggerated their importance, and has certainly given us little information about contemporary secular life in neighboring precincts of the same towns.

Eventually written records help overcome these deficiencies. However, 500 or more years elapsed between the onset of the first trends toward urbanism and the earliest known examples of cuneiform script. And then for the succeeding 700 or 800 years the available texts are laconic, few in number and poorly understood. To a degree, they can be supplemented by cautious inferences drawn from later documents. But the earliest chapters rest primarily on archeological data.

Let us pick up the narrative where Robert J. Braidwood left it in the preceding article, with the emergence of a fully agricultural people, many of them grouped together in villages of perhaps 200 to 500 individuals. Until almost the end of our own story, dating finds little corroboration in written records. Moreover, few dates based on the decay of radioactive carbon are yet available in Mesopotamia for this crucial period. But by 5500 B.C., or even earlier, it appears that the village-farming community had fully matured in southwestern Asia. As a way of life it then stabilized internally for 1,500 years or more, although it con-

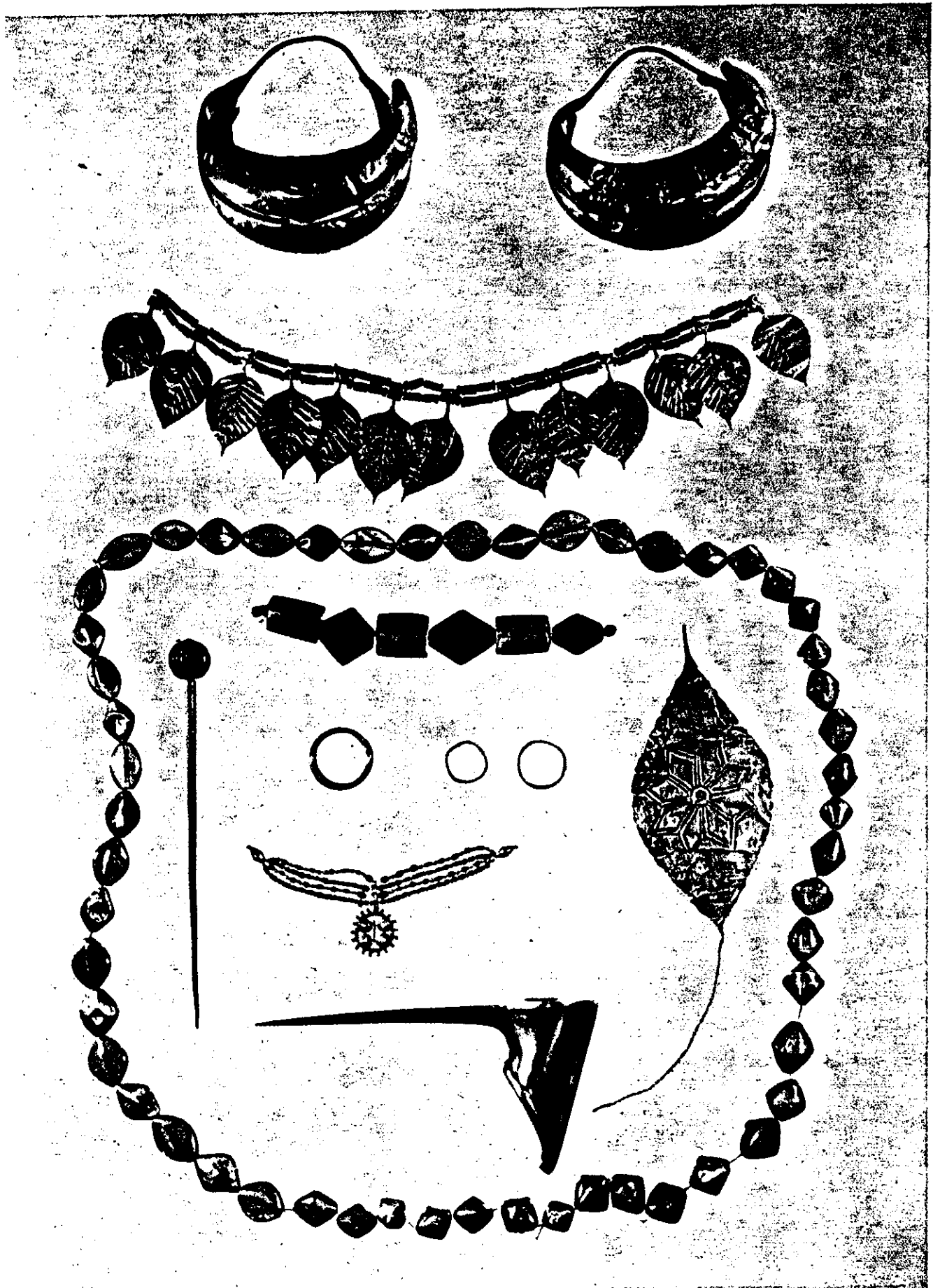
tinued to spread downward from the hills and piedmont where it had first crystallized in the great river valleys.

Then came a sharp increase in tempo. In the next 1,000 years some of the small agricultural communities on the alluvial plain between the Tigris and Euphrates rivers not only increased greatly in size, but changed decisively in structure. They culminated in the Sumerian city-state with tens of thousands of inhabitants, elaborate religious, political and military establishments, stratified social classes, advanced technology and widely extended trading contacts [see "The Sumerians," by Samuel Noah Kramer; *SCIENTIFIC AMERICAN*, October, 1957]. The river-valley agriculture on which the early Mesopotamian cities were established differed considerably from that of the uplands where domestication had begun. Wheat and barley remained the staple crops, but they were supplemented by dates. The date palm yielded not only prodigious and dependable supplies of fruit but also wood. Marshes and estuaries teemed with fish, and their reeds provided another building material. There was almost no stone, however; before the establishment of trade with surrounding areas, hard-fired clay served for such necessary agricultural tools as sickles.

The domestic animals—sheep, goats, donkeys, cattle and pigs by the time of the first textual evidence—may have differed little from those known earlier in the foothills and northern plains. But they were harder to keep, particularly the cattle and the donkeys which were needed as draft animals for plowing. During the hot summers all vegetation withered except for narrow strips along the watercourses. Fodder had to be cultivated and distributed, and pastureland was at a premium. These problems of management may help explain why the herds rapidly became a responsibility of people associated with the temples. And control of the herds in turn may have provided the stimulus that led temple officials frequently to assume broader control over the economy and agriculture.

Most important, agriculture in the alluvium depended on irrigation, which had not been necessary in the uplands. For a long time the farmers made do with small-scale systems, involving breaches in the natural embankments of the streams and uncontrolled local flooding. The beginnings of large-scale canal networks seem clearly later than the advent of fully established cities.

In short, the immediately pre-urban society of southern Mesopotamia con-



ROYAL GRAVE OFFERINGS from later tombs at Ur indicate the concentration of wealth that accompanied the emergence of a kingly class. Dated at about 2500 B.C., the objects include large

gold earrings (top); a headdress with gold leaves; beads of gold, lapis and carnelian; gold rings; a gold leaf; a hairpin of gold and lapis; an ornament with a gold pendant; an adz head of electrum.





CITY OF ERBIL in northern Iraq is built on the site of ancient city of Arbela. This aerial view suggests the character and ap-

pearance of Mesopotamian cities of thousands of years ago, with streets and houses closely packed around central public buildings.

ate between herdsman and cultivator; between fisherman and sailor; between plowmaker and plowman. Whether through a system of rationing, palace largesse or a market that would be recognizable to us, the city provided a logical and necessary setting for storage, exchange and redistribution. Not surprisingly, one of the recurrent themes in early myths is a rather didactic demonstration that the welfare of the city goddess is founded upon the harmonious interdependence of the shepherd and the farmer.

In any case the gathering forces for urbanization first become evident around 4000 B.C. Which of them furnished the

initial impetus is impossible to say, if indeed any single factor was responsible. We do not even know as yet whether the onset of the process was signaled by a growth in the size of settlements. And of course mere increase in size would not necessarily imply technological or economic advance beyond the level of the village-farming community. In our own time we have seen primitive agricultural peoples, such as the Yoruba of western Nigeria, who maintained sizable cities that were in fact little more than overgrown village-farming settlements. They were largely self-sustaining because most of the productive inhabitants were full-time farmers.

The evidence suggests that at the beginning the same was true of Mesopotamian urbanization: immediate economic change was not its central characteristic. As we shall see shortly, the first clear-cut trend to appear in the archeological record is the rise of temples. Conceivably new patterns of thought and social organization crystallizing within the temples served as the primary force in bringing people together and setting the process in motion.

Whatever the initial stimulus to growth and reorganization, the process itself clearly involved the interaction of many different factors. Certainly the institutions of the city evolved in different



SPEARHEADS of copper and bronze from the royal cemetery at Ur date back to the third millennium B.C. The workmanship of these weapons matches that of the jewelry shown on page 5.

directions and at different rates, rather than as a smoothly emerging totality. Considering the present fragmentary state of knowledge, it is more reasonable here to follow some of these trends individually rather than to speculate from the shreds (or, rather, sherds!) and patches of data about how the complete organizational pattern developed.

Four archeological periods can be distinguished in the tentative chronology of the rise of the Mesopotamian city-state. The earliest is the Ubaid, named for the first site where remains of this period were uncovered [see map on page 6]. At little more than a guess, it may have lasted for a century or two past

4000 B.C., giving way to the relatively brief Warka period. Following this the first written records appeared during the Protoliterate period, which spanned the remainder of the fourth millennium. The final part of our story is the Early Dynastic period, which saw the full flowering of independent city-states between about 3000 and 2500 B.C.

Of all the currents that run through the whole interval, we know most about religious institutions. Small shrines existed in the early villages of the northern plains and were included in the cultural inventory of the earliest known agriculturalists in the alluvium. Before the end of the Ubaid period the free-standing shrine had lost its original fluidity of plan



ROYAL WAR-CHARIOT carved on limestone plaque from city of Ur reflects increasing concern of Mesopotamian cities about methods of warfare in middle of third millennium B.C.

and adopted architectural features that afterward permanently characterized Mesopotamian temples. The development continued into the Early Dynastic period, when we see a complex of workshops and storehouses surrounding a greatly enlarged but rigidly traditional arrangement of cult chambers. No known contemporary structures were remotely comparable in size or complexity to these establishments until almost the end of the Protoliterate period.

At some point specialized priests appeared, probably the first persons released from direct subsistence labor. Their ritual activities are depicted in Protoliterate seals and stone carvings. If not immediately, then quite early, the priests also assumed the role of economic administrators, as attested by ration or wage lists found in temple premises among the earliest known examples of writing. The priestly hierarchies continued to supervise a multitude of economic as well as ritual activities into (and beyond) the Early Dynastic period, although by then more explicitly political forms of organization had perhaps become dominant. For a long time, however, temples seem to have been the largest and most complex institutions that existed in the communities growing up around them.

The beginnings of dynastic political regimes are much harder to trace. Monumental palaces, rivaling the temples in size, appear in the Early Dynastic period, but not earlier. The term for "king" has not yet been found in Protoliterate texts. Even so-called royal tombs apparently began only in the Early Dynastic period.

Lacking contemporary historical or archeological evidence, we must seek the origins of dynastic institutions primarily in later written versions of traditional myths. Thorkild Jacobsen of the University of Chicago has argued persuasively that Sumerian myths describing the world of the gods reflect political institutions as they existed in human society just prior to the rise of dynastic authority. If so, they show that political authority in the Protoliterate period rested in an assembly of the adult male members of the community. Convoled only to meet sporadic external threat, the assembly's task was merely to select a short-term war leader.

Eventually, as the myths themselves suggest, successful war leaders were retained even in times of peace. Herein lies the apparent origin of kingship. At times springing up outside the priestly corporations, at times coming from them.

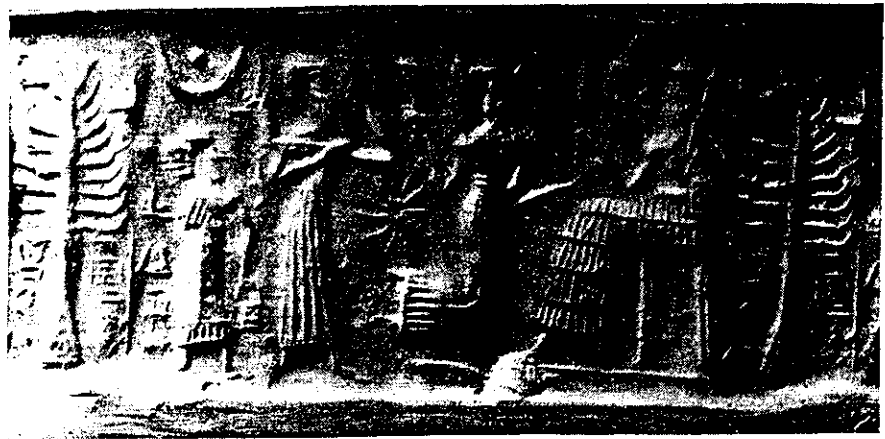


new leaders emerged who were preoccupied with, and committed to, both defensive and offensive warfare against neighboring city-states.

The traditional concerns of the temples were not immediately affected by the new political leadership. Palace officials acquired great landed estates of their own, but the palace itself was occupied chiefly with such novel activities as raising and supplying its army, maintaining a large retinue of servants and entertainers and constructing a defensive wall around the city.

These undertakings took a heavy toll of the resources of the young city-states, perhaps too heavy to exact by the old "democratic" processes. Hence it is not surprising that as permanent, hereditary royal authority became established, the position of the assembly declined. In the famous epic of Gilgamesh, an Early Dynastic king of Uruk, the story opens with the protests of the citizenry over their forced labor on the city walls. Another episode shows Gilgamesh manipulating the assembly, obviously no longer depending on its approval for his power. Rooted in war, the institution of kingship intensified a pattern of predatory expansionism and shifting military rivalries. The early Mesopotamian king could trace his origin to the need for military leadership. But the increasingly militaristic flavor of the Early Dynastic period also can be traced at least in part to the interests and activities of kings and their retinues as they proceeded to consolidate their power.

As society shifted its central focus from a temple to palace it also separated into classes. Archeologically, the process can best be followed through the increasing differentiation in grave offerings in successively later cemeteries. Graves of the Ubaid period, at the time when monumental temples were first appearing, hold little more than a variable number of pottery vessels. Those in the cemetery at Ur, dating from the latter part of the Early Dynastic period, show a great disparity in the wealth they contain. A small proportion, the royal tombs (not all of whose principal occupants may have belonged to royal families), are richly furnished with beautifully wrought weapons, ornaments and utensils of gold and lapis lazuli. A larger number contain a few copper vessels or an occasional bead of precious metal, but the majority have only pottery vessels or even nothing at all. Both texts and archeological evidence indicate that copper and bronze agricultural tools were beyond the reach of the ordinary



RELIGIONS of ancient Mesopotamia were dominated by the idea that man was fashioned to serve the gods. Here a worshipper followed by figure with pail brings a goat as an offering to goddess seated at right. A divine attendant kneels before her. This impression and the one below were made from stone cylinder-seals of Akkadian period (about 2400 B.C.).

peasant until after the Early Dynastic period, while graves of the well-to-do show "conspicuous consumption" of copper in the form of superfluous stands for pottery vessels even from the beginning of the period.

Early Dynastic texts likewise record social and economic stratification. Records from the main archive of the Baba Temple in Girsu, for example, show substantial differences in the allotments from that temple's lands to its parishioners. Other texts describe the sale of houseplots or fields, often to form great estates held by palace officials and worked by communities of dependent clients who may originally have owned the land. Still others record the sale of slaves, and the rations allotted to slaves producing textiles under the supervision of temple officials. As a group, however, slaves constituted only a small minority of the population until long after the Early Dynastic period.

Turning to the development of technology, we find a major creative burst

in early Protoliterate times, involving very rapid stylistic and technical advance in the manufacture of seals, statuary and ornate vessels of carved stone, cast copper or precious metals. But the number of craft specialists apparently was very small, and the bulk of their products seems to have been intended only for cult purposes. In contrast the Early Dynastic period saw a great increase in production of nonagricultural commodities, and almost certainly a corresponding increase in the proportion of the population that was freed from the tasks of primary subsistence to pursue their craft on a full-time basis. Both stylistically and technologically, however, this expansion was rooted in the accomplishments of the previous period and produced few innovations of its own.

Production was largely stimulated by three new classes of demand. First, the burgeoning military establishment of the palace required armaments, including not only metal weapons and armor but also more elaborate equipment such as chariots. Second, a considerable vol-



GILGAMESH, early Mesopotamian king and hero of legend, may be figure attacking water buffalo (right center). Figure stabbing lion may be his companion, the bull-man Enkidu.



ume of luxury goods was commissioned for the palace retinue. And third, a moderate private demand for these goods seems to have developed also. The mass production of pottery, the prevalence of such articles as cylinder seals and metal utensils, the existence of a few vendors' stalls and the hoards of objects in some of the more substantial houses all imply at least a small middle class. Most of these commodities, it is clear, were fabricated in the major Mesopotamian towns from raw materials brought from considerable distance. Copper, for example, came from Oman and the Anatolian plateau, more than 1,000 miles from the Sumerian cities. The need for imports stimulated the manufacture of such articles as textiles, which could be offered in exchange, and also motivated the expansion of territorial control by conquest.

Some authorities have considered that technological advance, which they usually equate with the development of metallurgy, was a major stimulant or even a precondition of urban growth. Yet, in southern Mesopotamia at least, the major quantitative expansion of metallurgy, and of specialized crafts in general, came only after dynastic city-states were well advanced. While the spread of technology probably contributed further to the development of militarism and social stratification, it was less a cause than a consequence of city growth. The same situation is found in New World civilizations. Particularly in aboriginal Middle America the technological level remained very nearly static before and after the urban period.

Finally we come to the general forms of the developing cities, perhaps the most obscure aspect of the whole process of urbanization. Unhappily even Early Dynastic accounts do not oblige us with extensive descriptions of the towns where they were written, nor even with useful estimates of population. Contemporary maps also are unknown: if they were made, they still elude us. References to towns in the myths and epics are at best vague and allegorical. Ultimately archeological studies can supply most of these deficiencies, but at present we have little to go on.

The farming villages of the pre-urban era covered at most a few acres. Whether the villages scattered over the alluvial plain in Ubaid times were much different from the earlier ones in the north is unclear; certainly most were no larger, but the superficial appearance of

one, largely unexcavated site indicates that they may have been more densely built up and more formally laid out along a regular grid of streets or lanes. By the end of the Ubaid period the temples had begun to expand; a continuation of this trend is about all that the remains of Warka and early Protoliterate periods can tell us thus far. Substantial growth seems to have begun toward the end of the Protoliterate period and to have continued through several centuries of the Early Dynastic. During this time the first battlemented ring-walls were built around at least the larger towns.

A few Early Dynastic sites have been excavated sufficiently to give a fairly full picture of their general layout. Radiating out from the massive public buildings of these cities, toward the outer gates, were streets, unpaved and dusty, but straight and wide enough for the passage of solid-wheeled carts or chariots. Along the streets lay the residences of the well-to-do citizenry, usually arranged around spacious courts and sometimes provided with latrines draining into sewage conduits below the streets. The houses of the city's poorer inhabitants were located behind or between the large multiroomed dwellings. They were approached by tortuous, narrow alleys, were more haphazard in plan, were less well built and very much smaller. Mercantile activities were probably concentrated along the quays of the adjoining river or at the city gates. The marketplace or bazaar devoted to private commerce had not yet appeared.

Around every important urban center rose the massive fortifications that guarded the city against nomadic raids and the usually more formidable campaigns of neighboring rulers. Outside the walls clustered sheepfolds and irrigated tracts, interspersed with subsidiary villages and ultimately disappearing into the desert. And in the desert dwelt only the nomad, an object of mixed fear and scorn to the sophisticated court poet. By the latter part of the Early Dynastic period several of the important capitals of lower Mesopotamia included more than 250 acres within their fortifications. The city of Uruk extended over 1,100 acres and contained possibly 50,000 people.

For these later cities there are written records from which the make-up of the population can be estimated. The overwhelming majority of the able-bodied adults still were engaged in primary agricultural production on their own holdings, on allotments of land received

from the temples or as dependent retainers on large estates. But many who were engaged in subsistence agriculture also had other roles. One temple archive, for example, records that 90 herdsmen, 80 soldier-laborers, 100 fishermen, 125 sailors, pilots and oarsmen, 25 scribes, 20 or 25 craftsmen (carpenters, smiths, potters, leather-workers, stonecutters, and mat- or basket-weavers) and probably 250 to 300 slaves were numbered among its parish of around 1,200 persons. In addition to providing for its own subsistence and engaging in a variety of specialized pursuits, most of this group was expected to serve in the army in time of crisis.

Earlier figures can only be guessed at from such data as the size of temple establishments and the quantity of craft-produced articles. Toward the end of the Protoliterate period probably less than a fifth of the labor force was substantially occupied with economic activities outside of subsistence pursuits; in Ubaid times a likely figure is 5 per cent.

It is not easy to say at what stage in the whole progression the word "city" becomes applicable. By any standard Uruk and its contemporaries were cities. Yet they still lacked some of the urban characteristics of later eras. In particular, the development of municipal politics, of a self-conscious corporate body with at least partially autonomous, secular institutions for its own administration, was not consummated until classical times.

Many of the currents we have traced must have flowed repeatedly in urban civilizations. But not necessarily all of them. The growth of the Mesopotamian city was closely related to the rising tempo of warfare. For their own protection people must have tended to congregate under powerful rulers and behind strong fortifications; moreover, they may have been consciously and forcibly drawn together by the elite in the towns in order to centralize political and economic controls. On the other hand, both in aboriginal Central America and in the Indus Valley (in what is now Pakistan) great population centers grew up without comprehensive systems of fortification, and with relatively little emphasis on weapons or on warlike motifs in art.

There is not one origin of cities, but as many as there are independent cultural traditions with an urban way of life. Southern Mesopotamia merely provides the earliest example of a process that, with refinements introduced by the industrial revolution and the rise of national states, is still going on today.

## The Author

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