

# The Graveyard of SHAHR-I SOKHTA Iran

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The ruins of Shahr-i Sokhta, an ancient Bronze Age town, are situated in the Sistan region of southeast Iran near the Afghan-Iranian border. This settlement, which flourished for more than a thousand years between the end of the fourth and the beginning of the second millennium B.C., reached the peak of its prosperity as a center of trade and raw materials around 2700-2600 B.C. Its decline was a consequence of localized environmental changes which began at the beginning of the second millennium B.C. with the drying up of the Hilmand River delta upon which the town rose. Indeed, not just the town but the entire southern portion of the Sistan region was gradually abandoned, and today Shahr-i Sokhta comprises the largest group of ruins in a territory measuring some 1,200 square kilometers along the course of the ancient delta between Chagar Burjak and Hauzdar.

The remains of the ancient delta distributaries and the terminal lagoons among which the town developed can still be made out. The soil is alluvial in nature with Pleistocene clays set on top of Pliocene marls and gravels; the latter often survive in the form of isolated hills carved by post-glacial rains and floods. As a whole Sistan is a huge landlocked basin, where Quaternary deposits have made the soil fertile. But from a climatic point of view, the region is very unstable—it has a long history of floods, droughts and fluctuating water supplies—and it is therefore heavily dependent on irrigation to make it flourish. Even today in the flood prone areas of northern Sistan, varieties of flora and fauna thrive in relatively small environmental subsystems. A thick swamp vegetation consisting mainly of reeds covers the shores of the freshwater terminal lakes, which are inhabited by migratory birds, wild boars, jackals, otters and other species. These zones are frequented still by cattle herdsmen whose way of life and material culture are highly specialized.

In addition, fields of cereal crops abound along the branches of the rivers, which were once flanked by a riparian forest of tall-trunked trees. Sheep and goats are raised on the outer perimeters of the irrigated areas and in the Pliocene ridges which cannot be cultivated. In the less hospitable zones and arid desert regions tamarisks, saltworts and other xerophile species



predominate; the fauna here includes gazelles, wolves, hyenas and in the winter months a great variety of birds. Thus despite its parched southern region, Sistan is a territory with sufficient resources to support a relatively high density of population, twelve inhabitants per square kilometer, the highest population ratio in eastern Iran.

Archaeological research began in this area in 1967 under the auspices of the Italian Institute for the Middle and Far East (ISMED). These investigations located twenty-four minor settlements as well as the site of Shahr-i Sokhta, where the Institute confined its excavations. They also confirmed that the ancient environment and economic system in the northern half of Iran were fairly similar to their modern counterparts. This confirmation as well as a great deal of knowledge is owed to the exceptionally good preservation of the finds, even the more perishable ones. Two main factors are responsible for this fortunate circumstance: the perennial dryness of Shahr-i Sokhta and the formation of salt crusts over the whole of the site. The crusts cement together both the alluvial gravels and the archaeological deposits in the upper layers to a depth measuring from thirty to fifty centimeters.

Today Shahr-i Sokhta rises roughly twelve meters above the surrounding dry plain. The top seven meters consist of archaeological deposits and the lower portion of Plio-pleistocene sediments; together they form an uneven mound. The ruins cover an area of 151 hectares or about 350 acres; they slope down hill from east to west and reach their lowest elevation in the vicinity of the graveyard. The higher northern and eastern sides of the tell are covered by potsherds coming from the buildings and upper levels of this area.

From surface surveys and trial trenches, we excavators learned that the northern and eastern portions of the settlement cover just over 75 hectares and consist of high concentrations of buildings, most of which were rectangular in plan. The most complete sequence for the lower layers, which can be dated to the end of the fourth millennium B.C., covers roughly 20

hectares on the eastern side of the mound. This was a residential area, portions of which were periodically abandoned, used as garbage dumps and then leveled out and built upon again. All the debris and rubbish uncovered here was sieved and subjected to flotation; the results yielded the most important data on the inhabitants' diet and on the settlement's general economy. No graves were found among the remains of the domestic buildings.

So far, the general sequence reconstructed for the entire mound comprises eleven structural phases. The material culture of each phase has well-defined characteristics, and

Period	Phase	Radiocarbon determinations
IV	0	never dated
	1	2000 – 1800 B.C.
	2	never dated
III	3	2300 – 2200 B.C.
	4	2500 – 2300 B.C.
II	5	2600
	6	2700 – 2600 B.C.
	7	2700
I	8	never dated
	9	never dated
	10	3300 – 3200 B.C.

Chronological chart for Shahr-i Sokhta. The radiocarbon determinations were provided by the Applied Science Center for Archaeology at the University Museum, University of Pennsylvania and the Tehran University Nuclear Center.

the sequence can be subdivided into four main periods. The major emphasis here will be upon the graveyard, which lies in the southwest sector of the tell. It appears to cover an area of 21.3 hectares, and it has an undulating surface, the result of erosion. Its surface is covered with gravel and almost totally devoid of archaeological material, quite unlike the residential area.

Prior to 1972, the area of the graveyard was believed to be sterile. The discovery of the first graves, the result of a happy accident, occurred during the digging of an exploratory shaft from which sedimentary samples were being taken. Campaigns were launched in 1972 and 1973 for the dual purpose of establishing the size of the





Excavation area IR/IW, from the west. Erosion cuts gullies through the area's gravel surface.

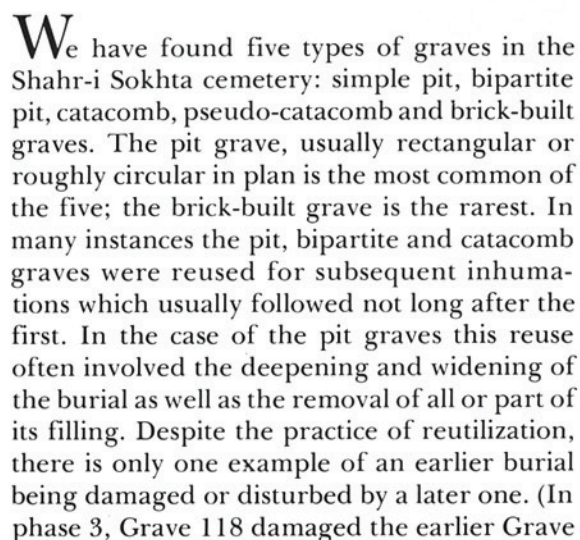
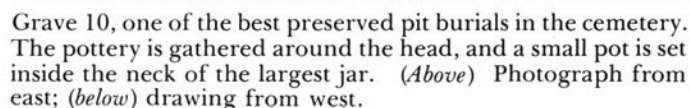
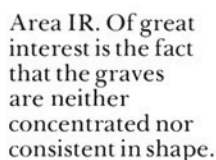
graveyard and of seeing if there existed any horizontal sequence in its stratigraphy. We excavated in four areas designated by the letters IR, IPV/IUB, HY and LS. In IR we discovered four distinct layers. Working downward, they are as follows: (1) the present surface layer, consisting of 15-20 centimeters of alluvial gravels mixed with sand; (2) a salt crust, which averages about 20 centimeters in thickness; (3) a loose, friable layer of clay of roughly the same thickness; and (4) a very compact layer of greenish clay over a meter thick. It is in this fourth and lowest layer that most of the tombs and all of the catacomb graves were dug.

An especially important feature is the salt-crust layer; it extends over the whole of the area so far excavated and forms thick, hard concretions in a number of zones. In most cases, the crust directly covers the top of the grave, which usually projects several centimeters above the surface of layer 3. The plane of the graveyard itself may be said to lie between layers 2 and 3. There are, of course, exceptions to this general rule, especially where wind and water erosion has done its greatest damage or where the graves themselves are shallower. In both such instances, the grave mounds protrude into the salt crust and are partly concreted by it. In the other excavation areas, a layer of alluvial gravel is found in place of layers

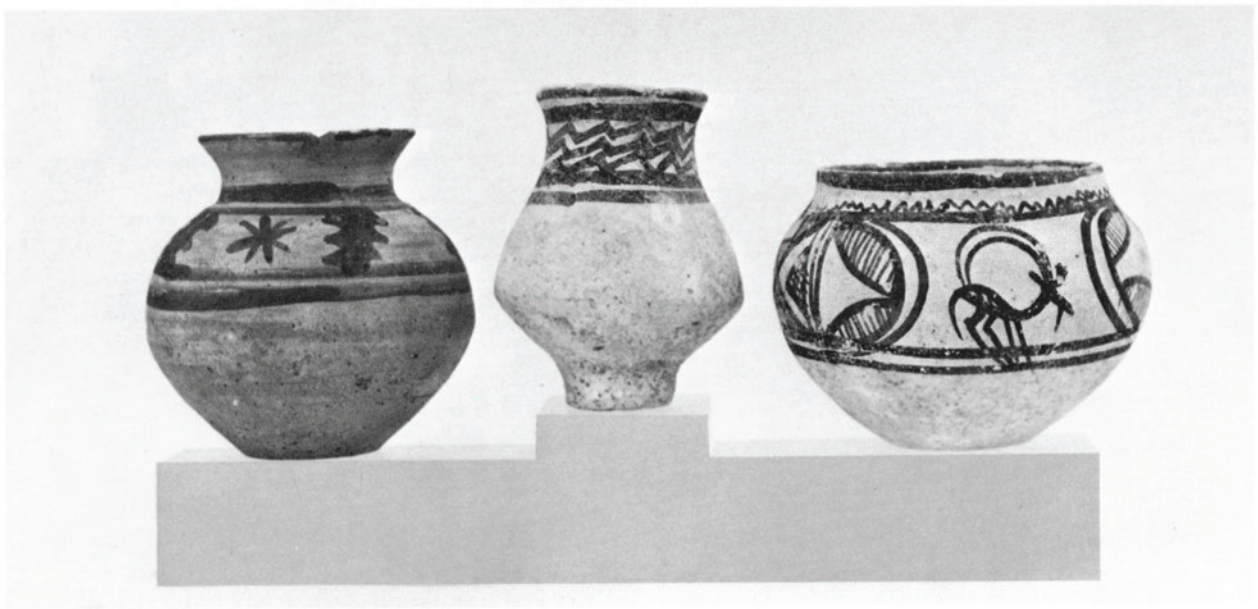
3 and 4. Here the tombs often had to be of different construction—either divided pit graves with a brick partition wall or simple pit graves, which were usually very shallow.

So far we have located one hundred tombs and excavated 87. Their average density is one grave per 12.75 square meters, a ratio which, if constant over the entire 21.5 hectares of the graveyard, would give a total of more than 19,000 graves. At first this seems like a staggering figure; in fact it is not so unreasonable if one bears in mind the size of the Shahr-i Sokhta settlement and the long period over which it flourished. On the other hand, there are factors which could significantly alter such an estimate. The town remained at its maximum size for a relatively short period (phases 5-7) during the mid-third millennium B.C., and even then the urban area probably contained open spaces that were not built up. In addition, examination of the ground and of aerial photographs indicate that heavy erosion has occurred along the southern edge of the plain and that at least one grave in section LS has been destroyed by this deterioration. Finally, there is an evident lack of uniformity in the distribution of the graves; this could mean that our calculations are wrong, especially since they are based on only a fragment of the cemetery. Barely half of one per cent of its entire area has been explored so far.









Pottery from Grave 2, a bipartite burial from the middle of the third millennium B.C.



Grave 2, a bipartite burial. Grave gifts were placed between the skeleton and the partition wall. Grave 2 is the only example of a bipartite burial in which the partition wall consisted of a base with stretchers topped by a row of headers.

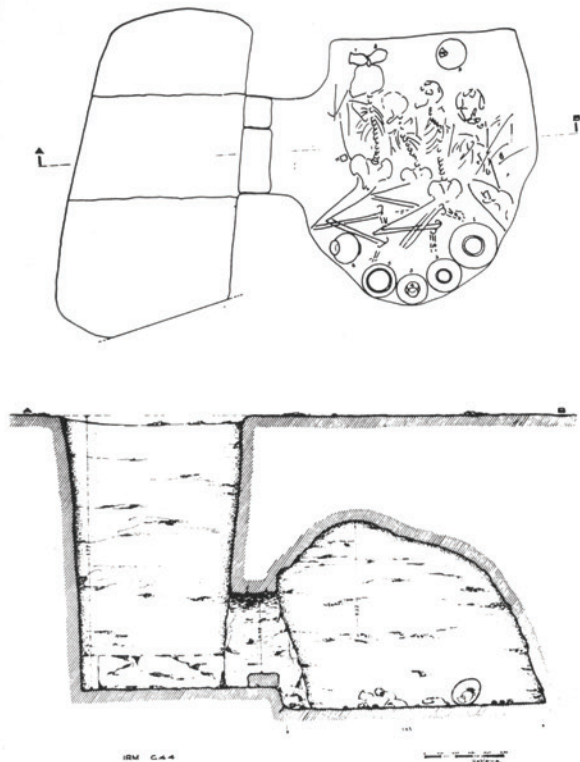
103.) This is an isolated phenomenon, and it seems clear that the graves were almost always dug in fresh ground both out of preference and because ample space was available.

The pit graves, dug mainly in clayey zones, vary in depth from a few centimeters to one meter. Erosion has rendered many of them almost unrecognizable. Often the skeleton occupies only half the pit, and most of the inhumations are single, although there are some double ones. In only one instance did we find this practice breached: in the rectangular Grave 32, two children were successively inhumed after an adult burial.

The bipartite pit graves are similar to the simple pit graves except that they are divided into two sections by brick walls. This type of burial was most commonly found in gravelly ground. The partition wall consisted of mud-bricks laid in one to five courses of alternating stretchers; the brick was the same sort used in the dwellings of the settlement. The deceased were usually interred in a crouching position on the north side of the partition wall, the south side was left empty or housed a share of the grave goods; in Grave 2, the body of a young sheep was placed there. All in all, this type of grave was usually larger than the simple pit graves and was used for original burials only.

The most sophisticated and interesting of the five grave types is the catacomb grave. A rectangular vertical shaft was sunk to a depth of about two meters, and off to one side, usually the northern one, an elliptical underground





Schematic plan and section of Grave 44, a catacomb burial showing reutilization. Sometime after a single adult was interred in the grave, the remains of two children and a second adult were added.

sequent burials. Grave 44 is representative of this type: first it served as the tomb for a single adult; at some later date the bodies of a second adult and two children were added. At the time of the latter burials, the bones of the first skeleton were piled against the back wall. While grave goods occasionally were found at the bottom of the entrance shaft, we believe that on the whole the shaft was an antechamber. The burial chamber could be dug only in the compact clay of layer 4, and the depth of the shaft was obviously determined by the thickness of this layer.

Only in their relative crudeness of construction are the so-called pseudo-catacombs different from the previously mentioned catacomb burials. In the pseudo-catacomb tombs, the burial chamber is reduced to a mere hollowing in the shaft wall, and the brick partition is more symbolic than anything else: rather than sealing it off, it merely delineates the area to be used for the burial.

chamber was dug. The shaft was about 1.80 meters deep; the chambers so far uncovered have an average height of 1.20 meters and a minimum diameter at the base of 1-1.10 meters. The entrance to the burial chamber was often only partially closed by a mud-brick wall, of exactly the same type as found in the bipartite graves. Since the chambers were not filled in, the graves could very easily accommodate sub-

The brick-built tombs, in contrast, show a greater degree of care. We discovered three sub-varieties: a rectangular tomb whose area is delineated by a course of bricks; a roofed rectangular chamber used for burying a small child; and a very large tomb of more elaborate construction. The latter, Grave 118, consists of a wall, 2.10 meters in length and 0.70 meters in width; it abuts on a semi-oval wall made of two



Grave 118, a constructed burial dating to the very end of the third millennium B.C. During its construction it damaged Grave 103, which dates to the early third millennium. As yet this is the only example in which two graves were superimposed.



	NORTHERN ZONE																																																		
	AREA IR/IW																																																		
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
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Synoptic table showing the location, dating and typology of the graves found at Shahr-i Sokhta during the 1972 and 1973 seasons. Eroded graves have been given numbers but not reported on.

stretcher courses. The chamber thus formed contains an area of about 3.70 square meters. Its interior surface is completely covered with plaster, and a niche was hollowed out of the structural wall. The heavy masonry seems to indicate that this wall is a true retaining wall meant to hold back the gravel in which the tomb was dug. The tomb contained the skeleton of a male adult, age fifty, lying on his left side; he was the oldest of the skeletons which have been uncovered and studied to date. Part of the grave goods were placed near the skull and the rest near the feet.

What are the dates of these tombs? And what is their relative distribution? Of the eleven urban phases in the Shahr-i Sokhta sequence, only phases 3 to 8 have been documented for the graveyard. This covers the period from roughly 2800 to the end of the third millennium B.C. Phases 5 to 7, comprising the period around the middle of the third millennium, are the best documented; they correspond to the period of the settlement's greatest expansion, when trading in semi-precious stones and other raw materials was at its height. A number of

tomb types seem peculiar to certain phases. This is true, for example, of the catacomb type, which is present in phases 6 and 7, and of the bipartite graves, which appear to have been predominant in the settlement's earlier phases. Moreover, distinct chronological differences among the zones of the graveyard are evident: there was clearly a gradual shift towards the northern end of the area as the ground was used up, and not until the end of the third millennium were more recent graves, of the phase 3 category, dug again in the older area.

The most eloquent testimony comes, of course, from the contents of the graves, both the skeletons and the grave offerings. Although E. Pardini of the Institute of Anthropology at Florence University is still in the process of studying the skeletons, he has kindly furnished some preliminary data concerning the sex and ages of these people. One is struck immediately by the short average life expectancy and the high death rate among children; only four of the deceased lived beyond the age of forty, and they were all men. Nearly all the skeletons were found lying flexed on one side, often in a sleeping position with their arms raised above the head. Less frequently, the dead were buried in







Grave 112, one of the best preserved bipartite burials at Sharh-i Sokhta. The skeleton of a man 40 to 50 years old poignantly leans toward the remains of a female some 20 years his junior.



extended positions; and these, with a single exception, were all supine.

One joint burial, Grave 112, deserves special mention. It contains two figures, a man about forty years old and a woman about twenty, lying face to face. The man is on his right side with his legs tightly flexed, his left arm is raised toward the woman's face. Clasped in his right hand, between his thumb and middle finger, is a bone wand, which he holds near his companion's chin. Each figure has been wrapped in a cloth shroud; but hers is made of finer material. Their heads are uncovered, and much of the woman's scalp and hair is exceptionally well preserved. The placement of the skeletons and the superior state of their preservation lend a sense of quiet sadness to this prehistoric couple.

Though the grave goods are plentiful, they are not particularly distinguished. The only apparent distinction in the richness of the offerings is the one that can be made between those intended for children and adults; the adults, quite naturally, occupy better-furnished tombs. Nor do the grave goods appear to be arranged in any order; they are often placed near the head or the legs, but sometimes they are placed directly on top of the deceased. They consist, in the main, of several sorts of ceramic vessels—beakers, jars, bowls—which cannot be

differentiated from normal household items.

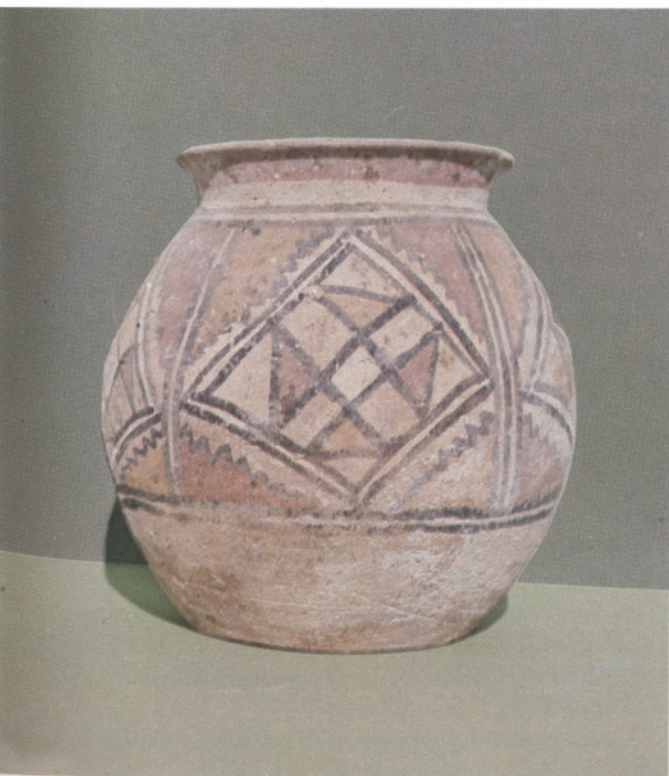
However, we often found that care was taken to furnish the tombs with two vases of identical shape and decoration. What this practice signifies cannot be said although conceivably such vessels were of a type preferred by the deceased during his lifetime. Polychrome vases are commonly associated with catacomb graves. At Shahr-i Sokhta such ware was typical during phases 4 to 7; it consisted of jars and infrequently bowls which are decorated after firing with panels painted in blue, red, yellow, black and white. The colors came from locally available mineral sources: chalk, charcoal, powdered lapis lazuli, limonite and red hematite.

Moreover, in their typological distribution the grave goods correspond almost exactly to the finds made in the residential area. Calcite vases with simple geometric shapes are common to graves and homes alike. This is not surprising, since calcite was abundant on the mountainous borders of Sistan and was used to make a variety of objects found among the grave goods: disk-shaped spindle whorls, necklace beads and hollow-based cones which, according to V.I. Sarianidi of the Institute of Archaeology at the Academy of Sciences in the Union of Soviet Socialist Republics, were probably used as candle sticks. A greasy substance was placed in the hollow which was topped by a flame restricting disk.

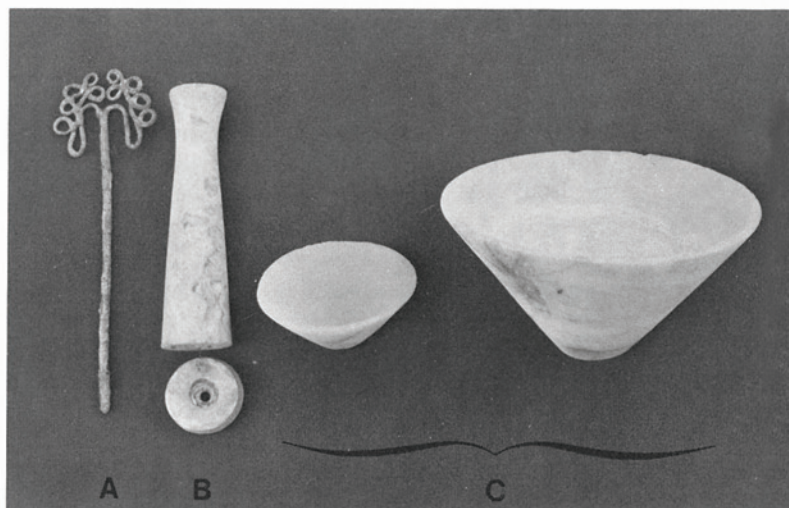




Pottery from Grave 32, a pit burial dating to middle of the third millennium B.C.



Polychrome pot from Grave 44.



Objects from Grave 200, an eroded bipartite burial in area LS. (A) a bronze spiral-headed "wand;" (B) a candle stick; (C) stone bowls.





Brown-on-buff ovoid jar with frieze of zoomorphic animals near the rim, from Grave 44.



Carved bone stamp seal from Grave 4, a pseudo-catacomb. The seal was found behind the left wrist of the skeleton.

Other sorts of grave goods were fashioned from metal, stone, wood, bone and reeds found in local swamps. Metal finds were few in number, not only in the graveyard but in the settlement as well. Still, some of them are interesting, especially a solid maneless lion with a curly tail, found near the head of the deceased in Grave 16. Near the head of the lion was a much smaller figurine representing an ox; it was so badly corroded that it was virtually unrecognizable without the aid of x-ray photographs.

The metal found at Shahr-i Sokhta is almost always a bronze alloy of either copper and lead, or copper and tin. Both compositions were produced in open crucibles without the use of molds. The smelted metal was then hammered into whatever shape was desired. Among objects found were bronze disks which probably functioned as mirrors and which were used in two graves (Grave 112 and Grave 114) to seal conical calcite bowls. The only weapon we found was a knife; it was discovered in Grave 14, associated with a bronze beaker, the single

metal vessel uncovered to date at the site. We also found two bronze "wands," a type of artifact common in northern and eastern Iran at Hissar IIIB and Altyn depe during the late third millennium B.C. Both have complicated snake-like heads. Finally, a small quantity of gold, all of it in the form of gold foil or coating, was uncovered.

Crescent-shaped combs and small vessels made of wood were also included among the grave goods, as were reed baskets shaped either like bowls or large truncated cones. The baskets were made of *Typha* or *Scirpus*, two locally common swamp plants. Stamp and cylinder seals were also in evidence; the workmanship of the two steatite cylinder seals found in the cemetery is very poor, probably owing to the greater popularity of stamp seals at the time (phase 7) of their use. Three stamp seals made of bone turned out to be perfect duplicates of seals made of stone.

Since Shahr-i Sokhta trafficked in precious and semi-precious stones, it is scarcely any wonder that the grave goods include personal or-



naments like necklaces and bracelets made of stone beads. The materials used depended on the chronological phase to which they belonged: in phases 7 and 8, crystal, faïence, calcite and chlorite were commonly employed; in phases 4 to 6, turquoise, lapis lazuli and chrysoprase were favored. That we have found so many objects (and rejects) made of semi-precious stone in phases 4 to 8 is one of the principal reasons for thinking that the site was then at its height, playing an important part in the international stone trade. From the third millennium on, the town declined in size and importance and judging from the grave goods which lack beads was apparently cut off from the mainstream of such trade. Phase 6 yielded the greatest number of beads from the graveyard. One young woman was buried with 320 beads, 201 of green turquoise and 115 of lapis lazuli; an adult male was buried with 220 beads, 121 of calcite, 98 of chlorite and one of turquoise.

Even more interesting to the history of this settlement and to its role in the processing of semi-precious stones is Grave 12. It dates from about 2500-2300 B.C. and contains an adult male who must have had an intimate connection with the processing of stones. The grave goods included a set of bronze and stone tools as well as three blocks of lapis lazuli already cut and ready for processing. The man's equipment consisted of more than fifty flint micro-blades, a tablet of grey schist with pestle, various smoothers made of jasper, a small bronze ax and a small square hammer. In addition, we found a twenty-four-centimeter-long necklace of cylindrical lapis lazuli beads, as well as bracelets and cylindrical turquoise and chrysoprase beads. Scattered throughout the grave filling were various other beads which brought the total number to 258.

This is a quite remarkable and instructive body of evidence. The tools are probably typical of those used for working stone between 2500 and 2300 B.C. It is certainly no coincidence that these types of furnishings were found in the royal cemetery of Ur; they were published by L. Woolley, the distinguished archaeologist, who recognized that such tools were used to process stone. The date of Grave P.G. 958—confirmed by H. Nissen, Director of the Department of Antiquities at the Freie University in Berlin—places it in the Sargon period (2340-2223 B.C.), a dating strengthened by the radio-carbon determinations of phase 4 at Shahr-i

Sokhta.

This brief review of the cemetery adjoining the Shahr-i Sokhta settlement makes clear that it is premature to draw any final conclusions about the inhabitants of this ancient town. It is equally clear that there is an enormous amount to be learned from this large and ancient site. Its research potential is indeed exceptional, especially given the number of goods which still remain buried in an excellent state of preservation. Further exploration will add a great deal to the knowledge of early civilization in the Middle East.

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FOR FURTHER READING: R. Biscione, "Dynamics of An Early South Asian Urbanization: The First Period of Shahr-i Sokhta and its Connections with Southern Turkmenia," *South Asian Archaeology* edited by Norman Hammond (Park Ridge, New Jersey 1973) 105-118; C. C. Lamberg-Karlovsky, M. Tosi, "Shahr-i Sokhta and Tepe Yahya: Tracks to the Earliest History of the Iranian Plateau," *East and West* 23 (1973) 21-57; M. Tosi, "Excavations at Shahr-i Sokhta: Preliminary Report on the Second Campaign," *East and West* 19 (1969) 283-386; M. Tosi, M. Piperno, "Lithic Technology behind the Ancient Lapis Lazuli Trade," *Expedition* (1973) 15-23.

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