

Treasures from the Sea

Shells and Shell Ornaments from Hasanlu IVB

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Shell is one of the most durable materials in the archaeological record. Shells and shellfish have been used by man in numerous different ways—as food, a source of medicine, lime, and purple dye, for personal ornaments, utilitarian objects, and votive offerings. Shells found far from their natural source are also indicative of trade and culture contact.

All but a handful of the shells recovered from the site of Hasanlu date to period IV, and most come from the burned Citadel of Hasanlu IVB. Most of the shells were used as ornaments. Quantities of shell beads and pendants were apparently in storage at the time of the destruction in the 9th century fire, but necklaces and bracelets that include shells have also been found worn by people buried in the cemetery or by victims of the battle left lying in the ruins of the Citadel. A few may have been attached to horse equipment or furniture (see de Schauensee, this issue).

Shell Species

Shells from Hasanlu studied by the author are in the collections of The University Museum (Philadelphia), the Metropolitan Museum of Art (New York), and the Royal

Ontario Museum (Toronto). The total sample in these institutions comprises 7,789 shells. Additional shell material in the Musée Iran Bastan in Tehran was not examined. Even without the material in Iran, the Hasanlu shells make up the largest marine shell collection that has been analyzed from any excavated site in Iran, Iraq, or Syria.

Most of the sample (7,616 or 97.8 percent) come from the remains of Hasanlu IVB, dated to the end of the 9th century B.C. An additional 150 shells are without a specific provenience, but probably come from period IV. Only 23 shells are

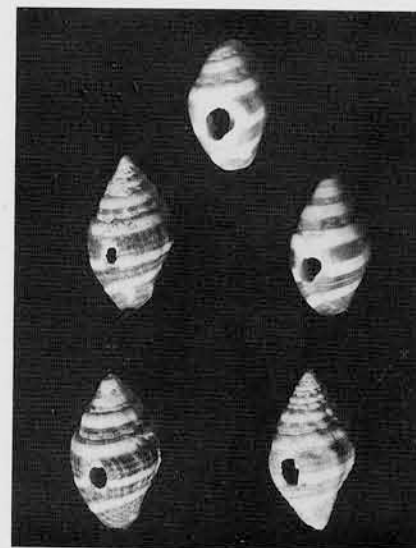
definitely from periods other than IV. For purposes of this discussion, therefore, the shell material can be considered to be contemporary, dated to Hasanlu IVB.

Of the 7,789 shells identified, 7,698 (99 percent) come from the Persian Gulf 825 km to the south of Hasanlu, and only 79 (1.0 percent) come from the Mediterranean Sea, 925 km to the west. There are also 10 freshwater bivalves (*Unio*), and 3 fossil bivalves with holes that are probably from local limestone deposits (Fig. 1a,b).

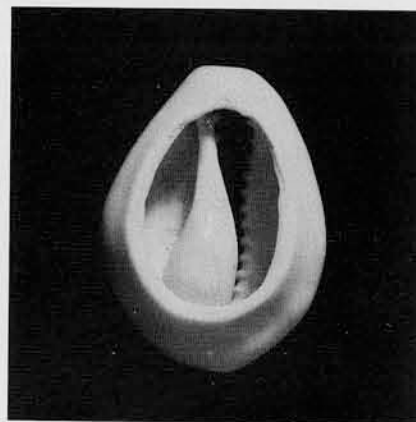
The most common species is the striped whelk (*Engina*, Fig. 2), representing 73 percent of the



1a,b
a) One of two fossil bivalve fragments. L. 29 mm, W. 28 mm, hole 3 mm. (Period IV, BBII, Rm. 5, Burial 25) b) Holed fossil scallop. L. 59 mm, hole 3.3 mm. (Period IV, Upper Court, just outside BBI West, Rm. 1)



2
Five *Engina* with pierced or ground-down holes. Max. L. 15 mm. (Period IV, BBII, Rm. 7)



3
Cypraea annulus Linnaeus, 1758 with ground-down dorsum. L. 22 mm. (Period IV, BBII, Rm. 7)

sample, followed by the cone shell (*Conus*, Fig. 11) and cowries (*Cypraea*, Fig. 3). These three forms together account for 95 percent of the shells studied, and all come from the Persian Gulf. The other most frequent forms account for only 3.5 percent of the sample. They include lettered miter shells (*Mitra litterati*), nassa or basket shells (*Arcularia gibbosula*, Fig. 4), dentalium or tooth shells (*Dentalium*, Fig. 6), dove shells (*Columbella*), dog-cockles (*Glycymeris*), and nerites (*Nerita*, Fig. 5). All but *Arcularia* come from the Persian Gulf. Mediterranean shells other than *Arcularia* occur in very small



4
Arcularia shells from the Mediterranean. Max. L. 15.3 mm. Top: ground-down and burnt; bottom left: holed; bottom right: unholed. (Period IV, BBII, Rm. 7)



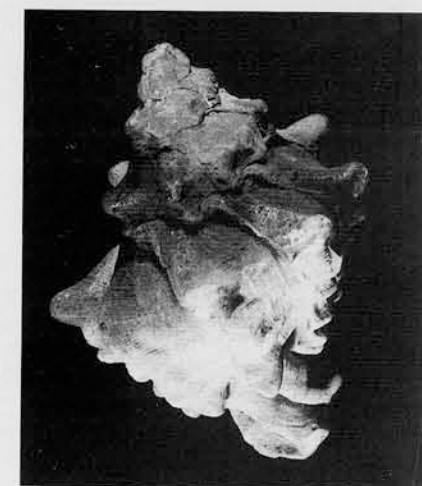
5
Nerita albicilla Linnaeus, 1758, ground down and holed at the apex. L. 18.5 mm, hole 5.3 mm. (No context)

numbers at Hasanlu. They include rock murex (*Murex trunculus*, Fig. 7), dye murex (*Murex brandaris*, Fig. 8), cerith or horn shell (*Cerithium vulgatum*, Fig. 9) and wedge shell (*Donax trunculus*, Fig. 10).

Given the geographic location of Hasanlu, it is not surprising to find that shells from both salt water seas found their way to the settlement. As has been pointed out elsewhere in this issue, Tepe Hasanlu lay at an important intersection of trade and transportation routes leading from Assyria to central and eastern Iran, and from the Lake Urmia basin to the south of Iran through the long, narrow valleys of the Zagros moun-



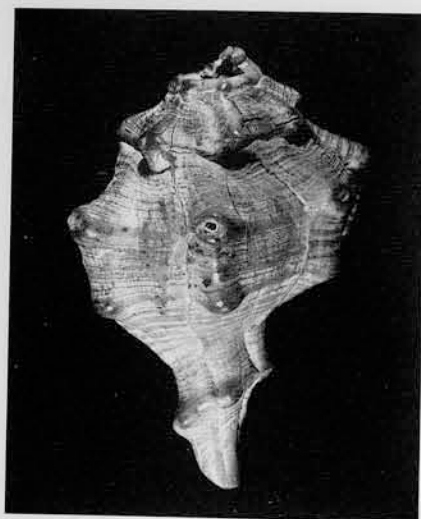
6
Dentalium. L. 27 mm. (Period IV, BBII, Rm. 7)



7
Murex trunculus from the Mediterranean. Apical half burnt. L. 60.5 mm. (Period IV, BBII, Rm. 6, fill, 2nd floor)

tains. From Assyria, there were relatively easy routes leading west to the Mediterranean Sea, or southeast along the Tigris River to the Persian Gulf.

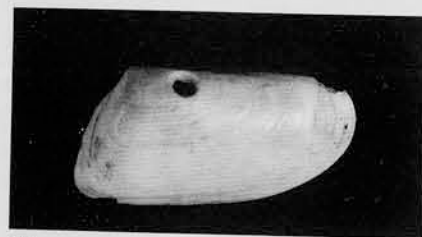
The large quantity of Persian Gulf shells suggests an active trade with a source or sources in this area, or with intermediate sites in the Zagros mountains or on the Iranian plateau (see below). The Mediterranean shells may have reached Hasanlu through various middlemen to the west, in North Syria or Assyria, a trade that is also documented by artifacts in ivory and other materials (see Marcus, Pigott, this issue).



8
Murex brandaris from the Mediterranean. L. 58 mm. (No context)



9
Burnt Cerithium from the Mediterranean. Broken lip, holed opposite mouth, burnt. L. 39 mm. (No context)



10
Donax from the Mediterranean with hole below umbo made naturally by a carnivorous gastropod. L. 23.3 mm, hole 1.5 mm. (Period IV, BBII, Rm. 6, fill, 2nd floor)



11
Conus ebraeus Linnaeus, 1758 with ground-down apical hole associated with copper ring. L. 22.25 mm, apex W. 17 mm, hole 5.25 mm. Ring dia. 15 mm. (Period IV, BBII, Rm. 7)

Types of Shell Ornaments and Methods of Manufacture

A small proportion of the Hasanlu shells (like the *Arcularia* in Fig. 4, right) are unworked and could not have been used as ornaments. These may have been raw material intended for later bead working, or they may indicate that shells had an intrinsic value to people at Hasanlu (see box). Other shells were collected already holed by a carnivorous gastropod, as in the case of the single *Donax* recovered (Fig. 10).

Most of the Hasanlu collection, however, show some evidence of working—a deliberate alteration of the shell's natural form. Several different methods were employed in shaping. Generally, for the smaller gastropods such as *Engina* (Fig. 2, middle left and bottom), *Columbella*, some *Arcularia* (Fig. 4, left), and small *Conus*, the body whorl is simply pierced or bored with a pointed tool. In a few *Engina* there is a slit hole on the body whorl, probably made with a file or saw. Some *Engina* and most of the *Columbella* have the apex purposely or accidentally broken off, which enabled them to be strung.

what more diverse than in the Lower Court buildings (excluding BBII).

The large quantity of shell found in BBII and the presence of at least four species that do not occur elsewhere in the Citadel underscores the special nature of this building. Some of these were found as ornaments worn by people trapped in the columned hall of the building when it collapsed. A necklace of unusually large shells was found on a person with other elaborate jewelry, including three lion pins and a number of copper or bronze bracelets. For the most part, however, the shells in BBII presumably represent offerings to the god or gods who resided in this temple

(see Dyson, "Architecture," this issue). Large quantities of shell ornaments (6,306 shells) were stored with other valuable items on the second floor in the southeastern corner of the building (above room 7; Dyson, "Architecture," (Fig. 18b). Hundreds of shells were also found in two other storage areas on the eastern and western sides of the building (above rooms 10 and 12, and in rooms 14 and 15); in the western rooms shell beads were associated with masses of amber, glass, and paste beads.

Perhaps the most interesting shell cluster in BBII was found in the collapsed second floor above the small room at the back of the

The Location of Shells in the Hasanlu IVB Citadel

Shells and shell beads were not randomly distributed within the period IVB settlement at Hasanlu. More than 90 percent of the entire shell collection came from BBII, including examples of 14 species (see Table 1). Smaller quantities were found in other buildings around the Lower Court, less than 100 shells in each case, predominantly *Engina*, *Conus*, and *Cypraea*. In the northwest quadrant, only BBIII yielded a similar number of shells (71); this sample, including eight species, was some-

building (room 6). Here were 32 shells, 18 of which were saved for identification. These 18 represented 8 species from both the Gulf and the Mediterranean, but not a single example of *Engina*, *Conus*, or *Cypraea*, the three most common species at the site; two species, *Cardita* and *Donax*, occur only in this context at Hasanlu. Only one of the 18 shells was holed. Unholed shells do occur elsewhere in association with (holed) shell beads, and it is possible that they were strung or used as ornaments in some way. Nevertheless, the almost exclusive occurrence of unholed shells in this context suggests that they had an intrinsic value, rather than value derived from their function as ornament.

If we look for other cases where shells are clustered in particular rooms or buildings within a site, there are three relevant examples from the mid to late 2nd millennium (slightly earlier and overlapping in time with Hasanlu IV). At the Assyrian capital of Aššur, deposits of shells and beads were found under one corner of the ziggurat (Andrae 1935). These offerings to the god Ashur are composed of species that do not occur at Hasanlu.

At Nuzi in northern Mesopotamia, worked and unworked shells were found in a temple dedicated to a female goddess, probably Ishtar (Starr 1939; see also Winter, this issue). Some of the shells were simply stored in the building, but in the cella of the temple (Temple A, room G29), small shell beads were found in association with glass beads, some of which retained bits of the copper wire on which they had been strung. The excavator has suggested that long festoons of beads, looped over glazed wall-nails, were used to decorate plain mud-brick walls. At Surkh Dom-i Luri in the central Zagros mountains (an area easily reached from Nuzi), complete shells and shell beads were found in a building interpreted as a sanctuary of another goddess, Ninlil (Schmidt et al. 1989). The beads, presumably dedicated to the temple and the goddess, include cone whorls with dots identical to examples from

Table 1
Major Deposits of Shells in Burned Building II, Hasanlu IVB

Floor:Room	Species	Number	
1: Rm. 5, columned hall (worn by victims)	<i>Engina mendicaria</i>	49	
	<i>Conus</i>	13	
	<i>Cypraea</i>	1	
	<i>Dentalium</i>	1	
	<i>Nerita</i>	1	
	<i>Glycymeris</i>	1	
	<i>Arcularia</i>	1	
	<i>Murex trunculus</i>	1	
	<i>Clanculus</i>	1	
	<i>Unio</i>	1	
	Unidentified	2	
2: Above Rm. 6	Fossil bivalve	2	
	<i>Glycymeris</i>	8	
	<i>Cardita</i>	3	
	<i>Nerita</i>	2	
	<i>Arcularia</i>	1	
	<i>Columbella</i>	1	
	<i>Strombus</i>	1	
	<i>Murex trunculus</i>	1	
	<i>Donax</i>	1	
	2: Above Rm. 7	<i>Engina</i>	4,992
<i>Conus</i>		700	
<i>Cypraea</i>		468	
<i>Mitra</i>		59	
<i>Columbella</i>		29	
<i>Dentalium</i>		22	
<i>Arcularia</i>		16	
<i>Pyrene</i>		9	
<i>Trachycardium</i>		8	
<i>Glycymeris</i>		7	
<i>Murex trunculus</i>		1	
Unidentified		34	
2: Above Rms. 10, 12		<i>Conus</i>	168
		<i>Cypraea</i>	123
	<i>Engina</i>	73	
	<i>Dentalium</i>	15	
	<i>Drupa</i>	4	
	<i>Columbella</i>	2	
	<i>Mitra</i>	2	
	<i>Glycymeris</i>	1	
	1: Rms. 14, 15b	<i>Engina</i>	228
		<i>Conus</i>	13
<i>Arcularia</i>		6	
<i>Dentalium</i>		4	
<i>Columbella</i>		3	
<i>Mitra</i>		2	
<i>Nerita</i>		1	

Hasanlu BBII.

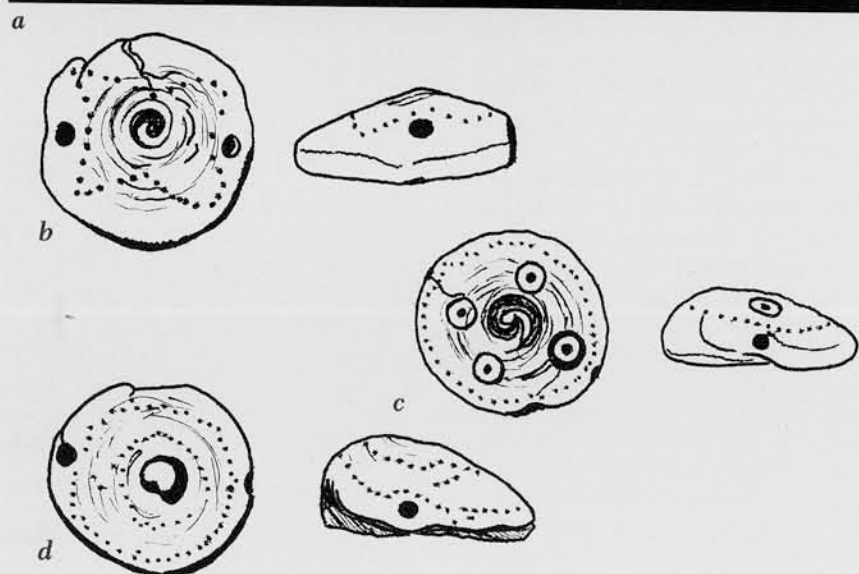
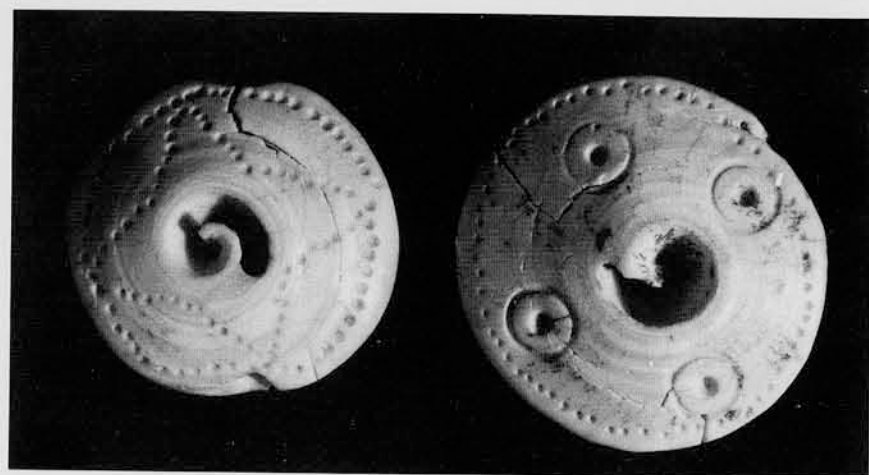
The religious buildings at Nuzi and Surkh Dom-i Luri, both dedicated to female deities, raise an interesting question for our understanding of BBII at Hasanlu. Were the shells from this building simply valuable items, suitable gifts to the

temple and its deity, or do they perhaps provide a clue to the kind of deity who resides there? The answer to this question will be sought as part of the rediscovery of Hasanlu.

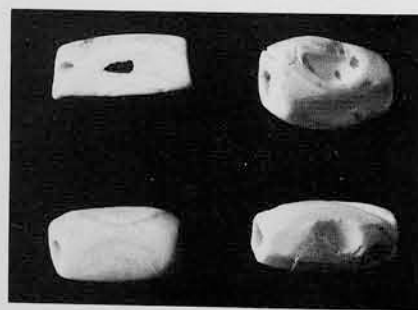
R.H. Dyson, Jr., and M.M. Voigt

Grinding or filing was done on the body of *Engina* (Fig. 2, top, middle right), *Mitra*, the dorsum of *Cypraea* (Fig. 3) and *Arcularia* (Fig. 4, top), and at the apex of *Conus* (Fig. 11) and *Nerita* (Fig. 5). In some examples of *Engina*, *Mitra*, *Conus*, and *Nerita* the thin, ground-down area was pierced to make a hole, whereas in other instances the hole was simply the result of the grinding operation.

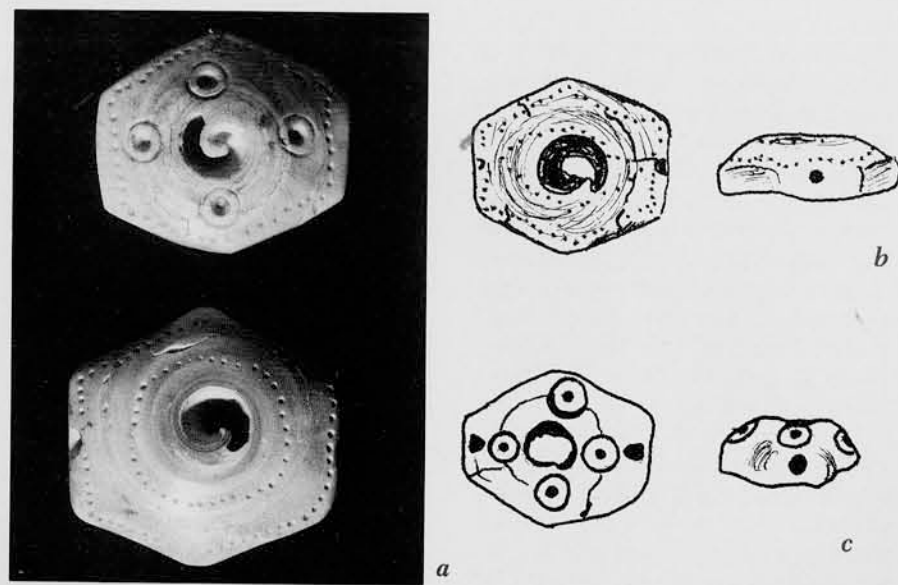
Several ornament types from Hasanlu IV are made of *Conus* shells. Thirty-three complete shells were found, 16 of which were holed at the apex, sometimes by careful grinding. There were also a few *Conus* whorl rings, with an internal diameter large enough to allow them to be worn on the finger. Far more common were *Conus* whorl beads and bosses with a central opening too small to permit use as a ring. Nearly 800 were found, shaped into circular, hexagonal, and rectangular forms. There were also 164 *Conus* whorl sections made into beads with lateral holes (Fig. 12) or worked into hexagons. *Conus* whorls and whorl sections were made by sawing the apex from the rest of the shell, probably using a small-toothed saw. None of the waste from this operation (columella, lip, distal end of shell) was recovered from the excavation. This absence of waste products indicates either that *Conus* beads were not made at the site but were instead imported, or that the area of Hasanlu where they were made was not excavated (see below).



13a-d
Circular *Conus* whorl beads. Max. L. 25 mm. (Period IV, BBII, Rm. 7)



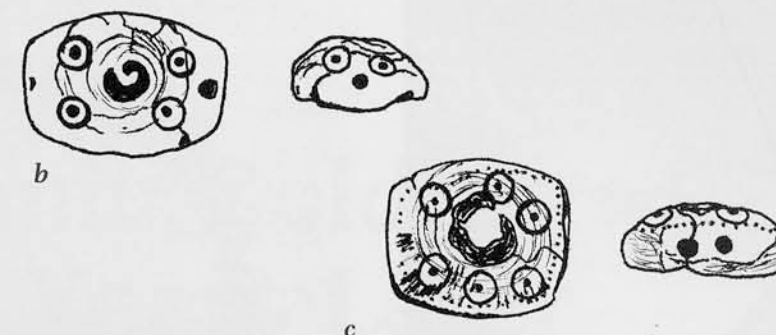
12
Conus whorl section beads. Max. L. 19 mm. (Period IV, BBII, Rm. 7)



14a-c
Hexagonal *Conus* whorl beads. Max. L. 24.3 mm. (Period IV, BBII, Rm. 7)



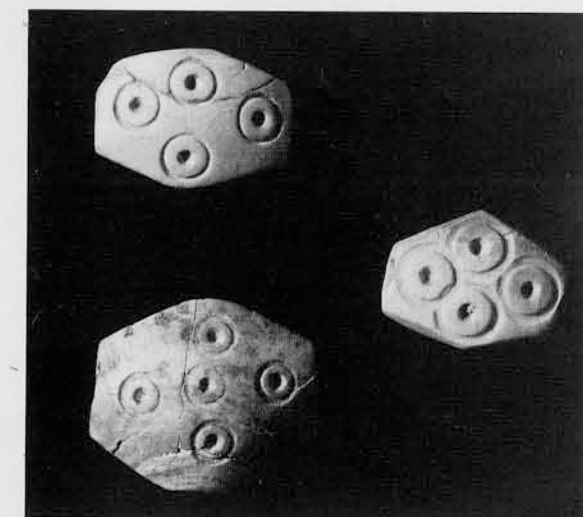
a



15a-c
Rectangular *Conus* whorl beads. Most have one lateral hole, but Fig. 15a bottom right and Fig. 15c have two holes. (Period IV, BBII, Rm. 7)



16,17
Hexagonal or lozenge-shaped *Conus* whorl section beads with four "ring and dot" motifs. Max. L. 20.5 mm. (Period IV, BBII, Rm. 7)



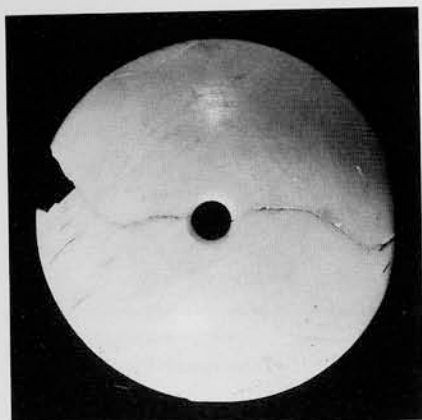
Most (88 percent) of the *Conus* whorls have one or more lateral holes; these holes were drilled from both sides of the whorl with a thin pointed object or drill of varying size. Many were then decorated with a pointed tool (dot pattern, Figs. 13a-d, 14a, b, 15a except lower right, 15c), or with a pointed tool and tube drill ("ring and dot" motifs, Figs. 13a right, 13c, 14a top, 14c, 15a except lower right, 15b,c, 16, 17). Finishing would have involved polishing the shell, probably with water and sand. This is especially evident on a finely finished circular disc (Fig. 18). Other smooth beads are water- and beach-worn, indicating that the shells were collected from the beach after the shellfish was dead.

Conus whorls with lateral holes

were easily strung, and were presumably used for bead bracelets, necklaces, or headdresses. Whorls without lateral holes could have been strung through the hole in the center of the shell, but many seem to have been attached to some other object as a decorative "boss." Indeed, 10 of the Hasanlu *Conus* whorls have a bronze nail or stud through the large central opening, providing firm evidence for their use as bosses; in two instances the head of the bronze nail or stud is covered with gold. Bosses with nails may have been attached to leather items such as horse gear, or to furniture.

The distribution of *Conus* whorl beads and bosses decorated with dots or dots and circles is quite widespread during the late 2nd and

early 1st millennium B.C. in Iran. Examples similar to those from Hasanlu have been found at the following Iron Age sites: Haftavan in Iranian Azerbaijan, and Lenkoran in the Caucasus; Marlik near the Caspian Sea; and Godin Tepe, Surkh Dom-i Luri, and Kazabad in the central Zagros. In Iraq, similar artifacts have been found at the Assyrian sites of Khorsabad and Nineveh, and in less precisely dated contexts at sites as far south as Bahrain Island. Thus beads made from Persian Gulf shells have been found in an arc stretching from the source to Azerbaijan. This distribution suggests a widespread trade in finished ornaments as well as shells, but the manufacturing center, or centers, remains unknown.



18
Unique within the Hasanlu collection is a circular boss or disc cut from the body whorl of a large gastropod that was carefully ground smooth on all sides. Dia. 21.5 mm, hole 5.5 mm. (65-31-228/HAS 64-526; Period IV, BBIV, Rm. 5 fill)

19
Over 90 percent of the shells from Hasanlu were in Burned Building II. Some were worn as necklaces by victims of the fire that destroyed this temple, but most were found mixed with beads of other materials in storage areas. This strand consists primarily of *Engina*, selected from a mass of beads found in a first floor storeroom. (UM 61-5-89j. Photo courtesy of the Hasanlu Project)



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