

FORGOTTEN CITIES ON THE INDUS

*Early Civilization in Pakistan
from the 8th to the 2nd Millennium BC*

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Shell-Working in the Indus Civilization

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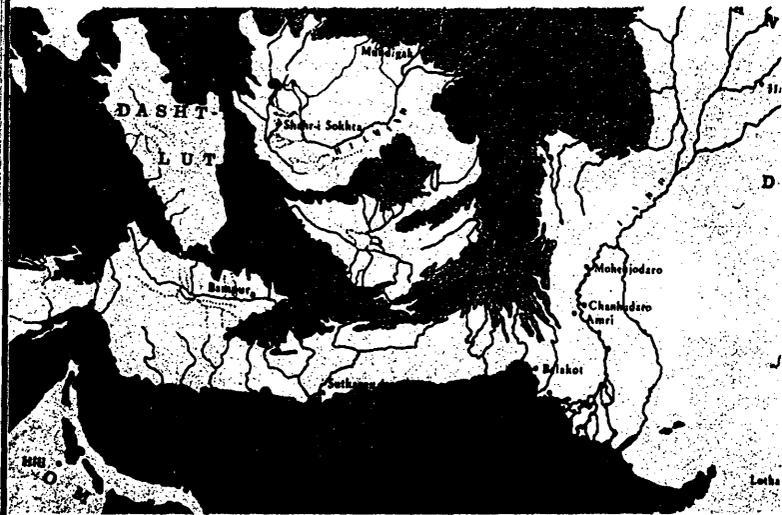
Although shell objects may seem relatively insignificant compared to other categories of objects, such as seals or sculpture, a detailed study of shell objects and shell-working has revealed important aspects of trade and craft specialization in the Indus Civilization.

Shell-working first developed in the Indus region as early as the 7th millennium BC, in the neolithic period. During the neolithic and early chalcolithic periods, shell-working became more specialized both in terms of manufacturing techniques and in the use of specific shell species as raw materials. By the mid-3rd millennium BC, with the rise of the urban centres of the Indus Civilization, there is evidence for shell workshops at important coastal and inland sites. These workshops produced a wide variety of ornamental and utilitarian objects and used several species of marine shell as raw materials. The standardization of certain manufacturing techniques and stylistic features of

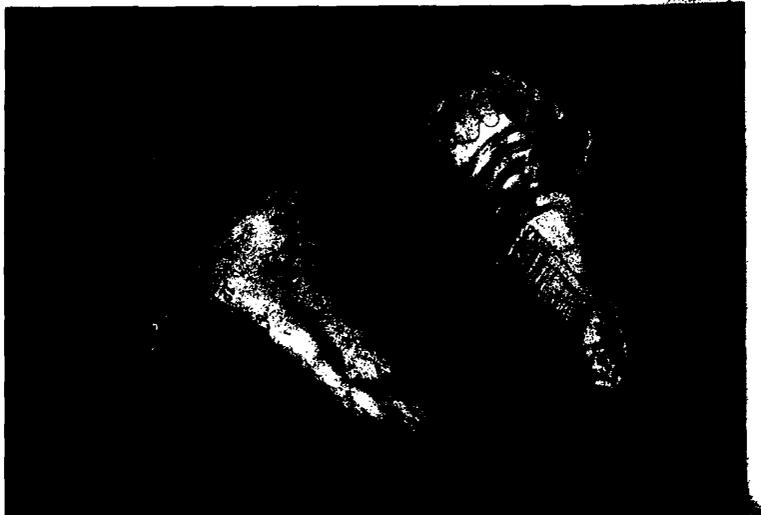
the shell industry at widely separated sites throughout the Indus Civilization suggests that shell-workers were connected by intricate networks of trade and kin relations. These networks were necessary to supply raw materials from distant coastal resource areas and to distribute finished artefacts to inland cities and remote villages.

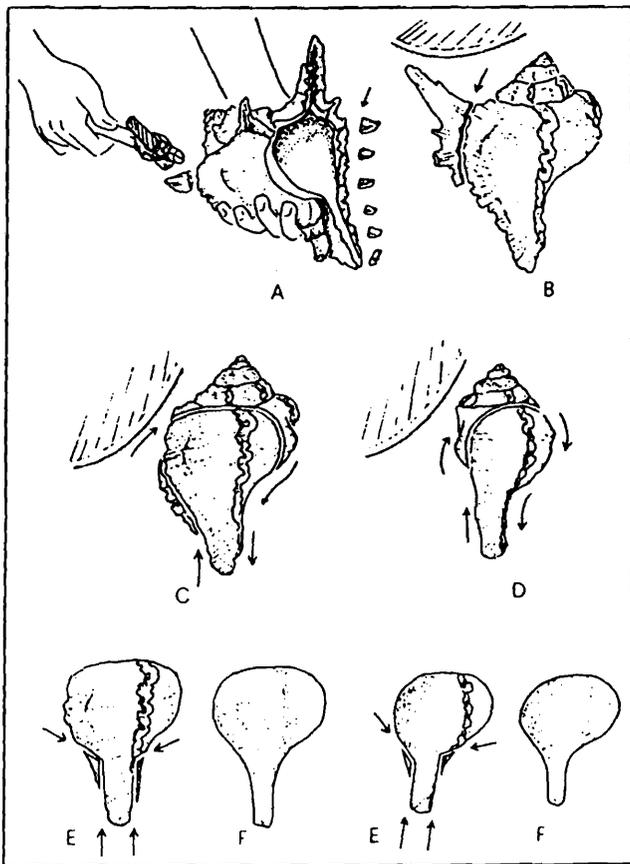
The coastal communities of the Indus Civilization collected many varieties of marine shell for use as raw materials as well as for consumption. While the smaller, colourful shells were simply perforated and worn as beads or pendants, certain species were collected as a raw material, to be cut and shaped into a variety of objects. Among the most important species are large gastropods such as *Turbinella pyrum* (Linnaeus), *Chicoreus ramosus* (Linnaeus), *Lambis truncata sebae* (Röding), and *Fasciolaria trapezium* (Linnaeus). The reason for collecting these large

Pl. 200 Extent of habitat of gastropods in the Arabian Sea and the Gulf of Oman



Pl. 201 Harappa: two worked shell columellae (HM 12742, HM 11954)





Pl. 202 Stages in the manufacture of shell ladles

gastropods is because of their unique structure which is suitable for manufacturing specific types of objects. *Turbinella pyrum* has a thick and well joined body whorl and a massive central columella. This species was used to make bangles and inlay from the body whorl, and large solid objects from the central columella. *Chicoreus ramosus* is covered with spikes or projections, yet it has a large body whorl that was used to make bangles and ladles or spoons. *Lambis truncata sebae* has a thick outer lip which was suited for producing large flat inlay pieces. *Fasciolaria trapezium* was used almost exclusively for making inlay from the thick body whorl.

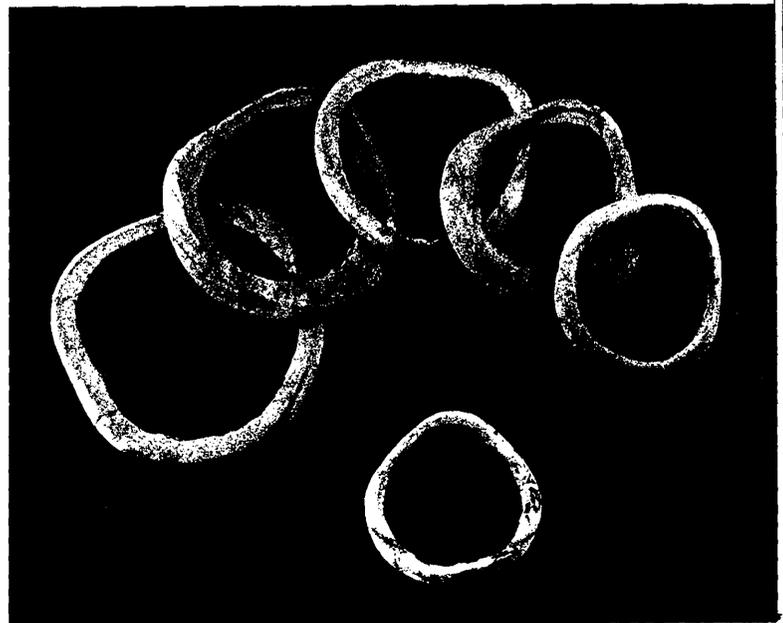
These species can be found only in specific coastal areas, and by locating these source areas it has been possible to reconstruct the major shell resource areas used during the Indus period. The Makran coast near Karachi was a major



Pl. 203 Harappa: bangles

source of *Turbinella pyrum* and possibly occasional specimens of the other species. The Gulf of Kutch, India, was an important source for both *Turbinella pyrum* and *Chicoreus ramosus*. A third source was the northern coast of Oman, which supplied *Lambis truncata sebae*, *Chicoreus ramosus* and *Fasciolaria trapezium* but not *Turbinella pyrum*. *Turbinella pyrum* is found only in the coastal waters of the southern subcontinent and, because of this restricted distribution, it is an important indicator for trade between

Pl. 204 Balakot: bangles





Pl. 205 Mohenjo-Daro: three shell ladles (NMK: DK 6743, HR 2528, DK 11318)

the Indus Civilization and contemporaneous civilizations to the west (Pl. 200).

A study of the habitats of these and other shell species indicates that the coastal communities were exploiting a wide range of marine zones. Some shells were collected from lagoons, estuaries or reefs, while others were obtained by diving in shallow bays, from reed or wooden boats. The diving season for species such as *Turbinella pyrum* was probably limited by seasonal weather conditions such as the monsoons. Based on modern diving seasons in Kutch, the Indus divers probably collected shells from April to June and then again from October to January.

The raw shells were traded inland to major workshops or worked locally by coastal shell workers. In some cases, the coastal workshops produced partially finished objects that were traded to inland centres. The shell workshops

at inland centres such as Mohenjo-Daro and Harappa produced the widest variety of shell objects, while rural centres produced only limited types of objects. This stratification in production is also related to a stratification in the use of specific shell species coming from the major source areas. The large urban centres, with their long-distance trade contacts, had access to shells from all three source areas, while rural or sub-regional centres only had access to the nearby source areas.

In contrast to the apparent stratification in trade and artefact production, the technology used to produce specific objects was quite standardized. Specific techniques for chipping and cutting the shells were used in all of the workshops, and even the thickness of the copper/bronze saw used to cut shell was standard between the different sites. The types of artefacts were also quite standardized, both in terms of style and even size. These similarities in manufacturing technique and style may indicate the presence of hereditary shell-working communities, as well as widespread cultural or socio-ritual norms regarding the use of shell.

Most of the shell objects can be ascribed to specific uses as ornaments, inlay or utensils (Pl. 206, 207), but the use of shell figurines is still not fully understood. Shell bangles or bracelets are perhaps the most common form of ornament. These were made primarily from *Turbinella pyrum* and occasionally from *Chicoreus ramosus* (Pl. 204). The process of manufacture was quite standardized and involved the use of a specialized saw for cutting the hard shell to produce rough circlets. These rough bangles were ground smooth and incised with a single chevron (>) design on the exterior edge (Pl. 203). Recent excavations at Harappa have revealed skeletons of two women who were wearing such bangles on their left forearms, with the chevron design directed away from the wearer.

A range of other ornaments were also produced, such as rings, beads, pendants and large perforated discs. Large beads and perforated cylinders were made from the central columella of *Turbinella pyrum*, while the other objects were made from the body whorl of any of the large gastropods.

Utensils made from shell include natural shells, usually marine or freshwater bivalves, which were used as containers for pigment or as scoops or scrapers. A more specialized spoon or ladle was made from *Chicoreus ramosus* (Pl. 205). To produce these ladles, it was first necessary to remove all the exterior spikes and then cut the ladle shape from the body whorl. These rough ladles



Pl. 206 Mohenjo-Daro: shell object/bead?



Pl. 207 Mohenjo-Daro: "gamepieces" (NMK: HR 5539, DK 4370, DK-I 955, DK 11292, SD 2703) of marine shell

were then ground and polished to produce a form of utensil unique to the Indus Civilization (Pl. 202, 205). Shell inlay was also quite popular as it does not yellow with age as do bone and ivory. Although any shell piece could be used for inlay, *Fasciolaria trapezium* and especially *Lambis truncata sebae* were the main species used. Inlay pieces were made in geometric and floral motifs that were evidently set into wooden furniture or other objects. Some stone sculptures also have shell inlay for the eyes. Special objects made from shell include figurines such as birds, gharials, bulls and possibly even a frog. Carved balls, pointed cones and wavy-edged cylinders are some

of the other unique forms. One of the most intriguing artefacts is a type of hollowed shell receptacle that was incised with deep grooves which were filled with red pigment. These elaborate vessels were probably used in some special socio-ritual context rather than as domestic containers. Similar vessels made from *Turbinella pyrum* are still used in India today for ritual libations.

We may never fully understand the specific role of shell objects in the Indus society, but it is quite evident that shell was available at all sites and that objects such as shell bangles, beads and utensils were an important part of the Indus culture.