Rouletting and Chattering

Decoration on Ancient and Present-Day Pottery in India

VIMALA BEGLEY

As the Periplus of the Erythraean Sea and other Classical accounts tell us, there was a thriving sea trade between the ports of the Red Sea and south India during the 1st century A.D. Unfortunately we know very little about when this trade first began or who the earlier traders might have been, since written records dealing with pre-Imperial Roman times are few and vague. For the reconstruction of the trade patterns of the late Hellenistic period we must therefore turn to the available archaeological evidence. My recent research indicates that the decoration on the distinctive Indian ceramic type called Rouletted ware may have been influenced by Hellenistic pottery techniques, perhaps introduced into India as early as the end of the 2nd century B.C. This hypothesis has far-reaching implications for the understanding of the formative phase of the overseas contact between south India and the west. While the problem of the dating of the Indian Rouletted ware was discussed by me elsewhere (1983), this paper deals more closely with the question of how Rouletted ware was made, where it might have been produced, and what were its possible sources of influence from the Mediterranean world. In addition to archaeological data, this paper also studies contemporary practices of pottery-making in an Indian village, since these furnish close parallels to the techniques used in ancient India.

Rouletting versus Chattering

The Indian Rouletted ware is named after its decoration, which, no doubt, is its most distinctive feature. Indian scholars borrowed the term rouletting from Classical archaeology where it is widely used to describe the process of making indented concentric or spiral linear patterns on pottery, by means of a small toothed wheel called a roulette. The patterns are produced by the continuous rolling motion of the roulette when it is held against the revolving clay vessel, and typically are arranged in narrow bands consisting of one or more rows of evenly and closely spaced small indented marks. Even among Classical archaeologists, however, the term rouletting is sometimes inappropriately used to refer to quite a different process that is more accurately called chattering (Peets 1963). Chattered designs are also arranged in concen-
trl or spiral bands made of tiny wedge-shaped indentations, and are produced by the continuous flicking motion of a tool with one or more fingers on the potter's wheel. Both techniques were used in Classical times, as was pointed out by B. A. Sparkes and L. Talbot in their description of the potteries from the Athenian Agora (1970:30-31). The spirals on Greek pottery were most likely made by the process of chattering, while on Roman wares typically a roulette was used.

In India, Rouletted Ware was first identified in 1945 during Sir Mortimer Wheeler's excavations at Arikamedu (see Fig. 2). A unique site situated on the southeastern coast that engaged in extensive regional commerce, and also traded with the Mediterranean world. Apparently, during both the late Hellenistic and Roman periods (Wheeler 1951, 1954). But, since neither pottery workshops nor potters' tools were unearthed in the limited area of these and later excavations, little is known about the local pottery industry. Since the time of excavations at Arikamedu, similar "rouletted" pottery has been found at numerous other sites in India and Sri Lanka, and all of this has been designated as Rouletted ware, irrespective of the technique of decoration.

In the present paper, it will be argued that the decoration on some of the Rouletted Ware at Arikamedu was most probably produced by the process of chattering (Figs. 4, 5), and that fine chattered or rouletted wares could have been produced by any skilled local potter; once the basic technique was understood. It will also be argued that although such technology was probably introduced from the Classical world, Arikamedu must have been one of the major centers for the production and distribution of Rouletted Ware. These arguments will be supported by evidence from the site, as well as from my recent observations of similar ceramic techniques used by a contemporary potter in the north Indian village of Bijnor.

**Rouletting or Chattering at Arikamedu**

At Arikamedu, "rouletting" occurs on simple footless bowls with interior ridges (Wheeler's Type 1: Fig. 3), but similar bowls without "rouletting" also exist at the site (Wheeler's Type 2 and 3). In the early levels, rouletted bowls are of fine quality, and in later levels both the fabric and the quality of decoration deteriorate and become coarse. In both cases, however, the decoration is always on the inner surface of the flat base. The patterns consist of one to three bands of concentric circles, each band containing three to ten rows of closely placed indentations which look like tiny dots, strokes, wedges, triangles, or other shapes.

**Disks of Rouletted Ware (Type 3 at Arikamedu) with two bands of rouletted or chattered decoration**

A **Varieties of decoration, most probably chattered, on Rouletted Ware at Arikamedu.** Experiments show that the grooved effect, as seen on these examples, may have been due to the wetness of the clay when the decoration was undertaken. (Photograph after Wheeler et al. 1946, pl. XXVA)

**3** Varieties of decoration, most probably chattered, on fine Rouletted Ware at Arikamedu. Numbers 1 and 2 show two concentric circles consisting of tiny dots, used a fragmentary comb as a chattering tool. (Photograph after Wheeler et al. 1946, pl. XXVB)

**6** Varieties of decoration, most probably chattered, on fine Rouletted Ware at Arikamedu. Numbers 3 and 4 show wedgeshaped dots occasionally turning into grooved lines. Similar irregularity occurred when the potter in Bijnar tried to make several rows of concentric circles consisting of tiny dots, using a fragmentary comb as a chattering tool. (Photograph after Wheeler et al. 1946, pl. XXVB)

Most scholars are agreed that the technique of "rouletting" was imported from some yet unidentified source in the Mediterranean region, but no precise place for the original manufacture of Rouletted Ware was ever determined. This interpretation is based on the apparently sudden introduction of this technique into the Indian context. Krishna Deva, who described the Arikamedu Rouletted Ware from Wheeler's excavation, felt that the coarse variety was made locally, but was not certain about the place of production for the fine variety (Wheeler, Ghosh, and Deva 1946). Wheeler considered that fine Rouletted Ware was derived from Argentine Ware—which he found at the site—since he believed that trade between Arikamedu and the west was essentially a Roman enterprise, dating from the time of Augustus on. J. M. Casal, who in his excavations discovered evidence for earlier trade, pointed out similarities between Rouletted Ware and earlier black wares in the Mediterranean (1949:37). He further noted that the fabric of Fine Rouletted Ware (Fig. 6) was different from that of earlier local wares at the site. But no precise place of production, in the west or in South India, was suggested. Some Indian archaeologists have confined the issue by sometimes referring to the fine variety as "Roman" and the coarse variety as an Indian copy. Since the fine variety occurs first, and is central to the question of origin, it will be the focus of our discussion on the source of the technique of "rouletting" and the production of Rouletted Ware. "Rouletting" certainly must have been introduced from the Classical world, since it was widely prevalent there and Arikamedu is known to have traded with the west. But Rouletted Ware, as we know it at Arikamedu, could not have been imported from any known source in the Mediterranean region, for it is quite different from Hellenistic and early Roman wares in fabric, shapes, and scheme of decoration. Even if we consider only the decoration for the moment, the differences are quite apparent. On Mediterranean pottery, "rouletting" is usually one part of the dec-
A n important question is even if the techniques of rouletting or chattering was introduced from outside, could the local potters have produced what is known as the fine Rouletted ware? To ascertain this, we must examine the other characteristics of the ware in the context of Indian ceramic traditions of that time. Other than the pronounced "beaded" rim profile, the most distinctive features of the pottery—such as the simple footless dish shape, the fine fabric, the reduced firing, and the intrusive black surface—exist in the various gray-black wares of the second half of the 1st millennium B.C., in northern and southern India. Even finer examples of the highly intri- cate type of dish represented in the earlier Northern Black Pol- ished ware, the nucleic area for the Neolithic dish ware was the Gaugte valley, but it had reached the coast north of Arika- medu by the 1st century B.C., for this was a period of rapid transmis- sion of ideas and technology in the Indian subcontinent. Therefore, the making of a dish of lustrous gray ware, and the diffusion of its technology, was not unique in early historical India, only 'rouletting' ware.

If only the technique of decora- tion arrived from the west, and in the pre-Roman period, the chances are that it was initially the method of chattering. A survey of the sherds from Arikamedu shows that this may have been the case, for some of the characteristics of the decoration—such as the wedge shapes of the indentations, the occasional change of indented marks into grooved lines, and the irregularity in spacing—are more likely to have occurred as a result of a flicking motion rather than the continuous forward motion of a rouletting tool. In addition, it is possible that some of the used for chattering must have had multiple points, similar to those used for making multiple concentric grooved circles. Furthermore, experiments with a simple roulet- ten show that a single tool could make a variety of indentations, depending upon where the decortion is under- taken. The gouging effect, quite striking on some Arikamedu sherds, or a thin vessel is quite wet, that is, the decoration is made at the time the vessel is formed from the wheel (Figs. 4, 5). On the other hand, the rows of almost round tiny dots are more likely to have been applied after the vessel had partially dried.

The above observations apply only to some of the sherds, for a vast majority are too fragmentary for satisfactory examination. Thus, the rouletted decoration is, whether any of the pottery is rou- letted, and whether the Roman rouletted pottery is Arikame- du. The use of the roulet, no doubt, would have made the task of decoration easier and the patterns more regular in appear- ance. There are a few sherds at Arikamedu that, because of the regularity and evenness of the inden- tations, were rouletted, but whether this was the case must be determined by fur- ther experimental study and observa- tion of contemporary examples of similar decoration.

Rouletting and Chattering in Bijnor

The difference between rou- letting and chattering was recently demonstrated for me quite unknowingly by a potter in the village of Bijnor near Lucknow, where one simple tech- nique of making fine lustrous black pottery with chattering is currently being practiced (Figs. 1, 8). In addi- tion to rouletting, the Bijnor black pottery production provides impor- tant insight into other aspects of technology which may be relevant to Arikamedu. It is therefore worthwhile to digress and describe the process and its discovery in some detail.

Upon a visit to Lucknow in Oc- tober 1964, I happened to see in a house a small black ware which has two striking similarities to the Arika- medu Rouletted ware. The first is its blackish-grey surface, and the second was its decoration, which included a band of rouletting consisting of evenly spaced strokes. I therefore decided to locate its source of production. After several inquiries, I found that at the fair of Gangasana, held once a year around November, a small amount of decorated black pottery is sold along with the predominant red wares. Further inquiries in the neighboring villages revealed the name of one potter, who was eventually traced to the village of Bij- nor, some 15 kilometers west of Lucknow by road.

At Bijnor, I found that there were several families of the tradi- tional Hindu potter caste, the kumbhars, who were making utili- tarian wares, and the vessel was still quite wet. The most valuable tool for decoration is a roulette (munka) made from a piece of black pot- tery, rumbled with a stone ball, and attached to a wooden handle. The family owned two of these. The roulette is held to

chiselled designs. Due to limita- tions of time, it was not possible to pursue the search in other villages around Lucknow, especially vil- lages to the east which are also known for pottery making. There- fore, it is quite possible that there may be other potters who make similar wares residing in the vil- lages around Lucknow.

The potter observed and inter- viewed was Abdul Haim, whose fa- ther, Musti Imam Ali, and uncle, Hasan Ali, are also practicing potters. The entire family is in- volved in the process of pottery making during the winter season. The male members of the family prepare the clay and work on the wheel, while the women assist by carrying the pots for drying, stacking them, preparing the slip, etc. The family lives in a modest house made of mudbrick walls and a thatched roof. The open yard in front of the house is the work area for all activities related to pottery production, including firing.

Although the family makes a va- riety of wares, the standard black pieces in black pottery are bowls and jars, and their lids. The vessels are not commonly kept in a household, but are supposed to be containers for special items in a household, and sold at the annual fair during the spring or summer season (ca. U.S. $8). The clay used for preparing this black pottery is different from that used by other potters for ordinary wares. Abdul Haim indicated that his family has the privilege of ob- taining fine grey clay from the neighboring river (irrigation reserv- oir), which is part of a Muslim dargah (shrine) complex main- tained by Muhammad Malik Omar Shariq Sayad. This exclusive right seems to be a cause of some tension in the village, but he believes that this source of clay is essential for making the black pottery produced by his family.

The pottery is thrown on a single-handled wheel (Fig. 7) and most of the decoration is added at the time the vessel is shaped, that is, when the vessel is still quite wet. The most valuable tool for decoration is a roulette (munka) made from a piece of black pottery, rumbled with a stone ball, and attached to a wooden handle. The family owned two of these. The roulette is held to

9 Dishes of Bijnor black pottery, with rouletted and stumped decoration, made on request. The tools used for decoration are a brass roulet with a detachable wooden handle and several terraced stamps

8 Bongs and lids of black pottery from the village of Bijnor. The height- ened button is due to an application of animal oil before firing. The pottery has a variety of decoration, including a band of rouletting on the lid.
The gouging effect, quite striking on some Arikamedu sherds, occurs when the vessel is quite wet.

Routed ware. I asked the potter to make a dish shape and decorate its mould surface. Furthermore, I asked if he could make several rows of concentric circles, consisting of closely placed dots. Consequently, two small dishes (plate- bins) were quickly thrown on the wheel with two types of decoration. In the first case, the dish was decorated with bands of rouletting interspersed with impressed modulations, using the roulette and stamps he already had as tools (Fig. 9). On the other dish, a band of four rows of modulated dots, which was made by the continuous flanking motion of a fragmentary comb held against the inner surface of the dish, rotating on the wheel. The important factor appeared to be the density with which the comb was held, for occasionally the dots became tiny wedges interconnected with grooved lines. Such a pattern can be seen on some sherds at Arikamedu as well. It is therefore quite possible that a similar tool for chattering may have been used by potters in ancient times. In addition to these two methods of decoration, the Bijapur pottery, which is still influenced by the Rouletted Ware tradition, has a simple technique of producing luster. It would be important to investigate the use of which of these was used as a method of heightening luster on Rouletted Ware and other similar wares, such as the Northern Black Polished Ware.

Arikamedu as a Production Center for Rouletted Ware

From the discussion in the preceding sections, if we draw the conclusion that the potential for producing Rouletted Ware existed in ancient south India, Arikamedu would appear to be the place most favored for its production and distribution. There are two main reasons for supporting this conclusion. The first concerns the spatial distribution of the ceramic type. Rouletted Ware is now known to occur in such a manner that it is distributed along all the eastern coast, including the entire coast from the Early Iron Age (Fig. 10). The decoration is on the outer surface, below the rim. It consists of stamped motifs of birds, peacock, or fish placed between two bands of grooved lines. The technique of stamping was commonly used in the Roman period, as well as the production of stamped motifs between grooved lines. The method of decoration on Type 18 and Type 20 has been inspired from such decoration, but the motifs are distinctive and suggest the work of local potters. An important point to remember is that Rouletting and stamping do not occur on the ceramic vessels at Arikamedu, as they do on Mediterranean pottery, although both techniques seem to have arrived from the Classical world.

Grooved concentric circles, on the inner surface of flat dishes, is yet another type of decoration that may have been inspired by western pottery traditions. At Arikamedu, such decoration appears on Wheeler's Type 3a and Type 5a, the most elaborate examples being Type 3a, where grooved concentric circles cover more than half the surface of the bowl (Fig. 11, 12). But the greatest interest are two fragmentary bases of bowls with grooved circles around a central motif, known as Knobbled ware at other Indian sites (Fig. 13). In the Classical world, such bases appear on moulded vessels that are considered to be copies of metal prototypes.

Another distinctive scheme of decoration is observed on Wheeler's Type 141 (Fig. 15), a small dish of grey ware with inscriptions black surface which is seen at the same time as Arretine ware and its copies (including Wheeler's Type 18). The dish has a flaring rim and a ring-foot base. The features are new at the site and things that were certainly copied from Roman wares, just as Type 18 was. The decoration is on the outer surface of the dish and consists of a row of indented 'nicks' between grooved lines at the rim, and a stamped leaf motif around grooved circles on the base (Figs. 10, 17). Like the shape, the decoration also seems to have inspired from pottery of the Roman period. The 'nicks' at the rim may have been made in a different way from Roman wares, but were indented with a thin tool and not made with a roulette.
Dish of gray ware with lustrous black surface: Type 141 at Archambedu. It has a flaring rim and a ring-foot base and is decorated with a row of nicks at the rim and a stamped leaf motif around grooved circles on the base. Both the shape and decoration seem to be influenced by pottery of the Roman world. The dish occurs at the same time as Arretine imports. (After Wheeler et al. 1946, fig. 36:141)

Fragment of a dish, probably of Type 141 but without the black slip. The decoration consists of a stamped leaf motif around grooved circles. The fragment is preserved in the Pondicherry Museum, and is from French excavations at Archambedu.

From these and other similar examples, we may infer that Archambedu must have had a dynamic local pottery industry that was assimilating new ideas and technology, and that Rouletted ware may have evolved here. The difference between Rouletted ware and these other new types is in their relative popularity. Sherd of Rouletted ware are far more abundant than any of these other types; for example, over four hundred sherd of Rouletted ware were seen by me in the preserved Archambedu collections, but less than forty of Type 141. In addition, Rouletted ware is distributed over a very large geographical area, while the other types are either confined to Archambedu, or appear in small quantity at a few other sites. Rouletted ware, therefore, must have been produced at Archambedu on a large scale both for domestic use and trade. It is quite possible that it was manufactured at other centers as well, where it could have survived for an even longer period of time. Nevertheless, the evidence so far indicates that Rouletted ware probably evolved as a distinctive ceramic type first at Archambedu, from where it was exported and perhaps copied at other places in the wide area of its distribution.

It now seems certain that trade in Rouletted ware was in the hands of merchants of southeastern India, operating both along the coast as well as on the island of Sri Lanka. We still do not know whether the trade to the Mediterranean region was direct, or was carried on indirectly through other traders operating in the Indian Ocean, nor can we demonstrate whether the routing was via the Persian Gulf or the Red Sea during the early formative period. But what is apparent from the ceramic evidence is that sea contact existed between the southeastern coast of India and the west from the close of the 2nd century B.C. on. We can also assume that this contact influenced the ceramic industry at Archambedu, and that such influence continued into the accelerated trade of Imperial Roman times.

Bibliography

Begley, Vimala
1983

Casal, J. M.
1949

Casal, J. M., and G. Casal
1956

Darenberg, C. F.
1936

Peets, O. H.
1963

Sparkes, B. A., and L. Talcott
1970
"Black and Plain Pottery. The Athenian Agora 12(1)." Princeton: The American School of Classical Studies at Athens.

Wheeler, R. E. M.
1951

1954
"India Beyond the Imperial Frontiers." London: Bell.

1976
"My Archaeological Mission to India and Pakistan." London: Thames and Hudson.

Wheeler, R. E. M., A. Ghosh, and Krishna Deva
1946

Vimala Begley is a Research Associate of the South Asia Section of The University Museum, University of Pennsylvania. Her archaeological training began with the Archaeological Survey of India at Lothal, a site of the Indus Valley Civilization. After receiving her Ph.D. from the University of Pennsylvania in 1966, she was Assistant Professor there for three years, as well as Assistant Curator in the South Asia Section at the University Museum. During 1967–68 she surveyed early historical sites in South India on a fellowship from the American Institute of Indian Studies. A resident of Iowa City since 1968, she has also been a visiting lecturer at the University of Iowa and the University of California, Berkeley. In 1970, she excavated two Iron Age sites in Sri Lanka. In recent years, using the site of Archambedu as a focus, she has been re-examining the ceramic evidence for ancient Roman sea trade with South India—in 1984, with support from the American Philosophical Society. In the fall of 1986, she expects to continue this research in India on a grant from the Smithsonian Institution. She has also organized an International Colloquium on Rome and India for the December 1986 meeting of the Archaeological Institute of America in San Antonio.