

Chapter VIII
CHULMUN ARTIFACTS AND SETTLEMENTS
FROM THE MIDDLE HAN

Pottery

The incised pottery is not only the "type fossil" for the sites of the Chulmun Period but also the most abundant artifact. Sherds represented 92 per cent of the artifacts from the soundings at Misari and 82 per cent from the sounding at Tongmak.

Although the Han River Chulmuntogi was known at least as early as 1925 when Yokoyama collected a great many sherds which had been exposed at Amsari by a flood (Arimitsu 1962), a type description as such was not made at that time or later. The site was considered "destroyed," and no further attention was paid to it.

The earliest type descriptions of Han River pottery are those of Chase (1964:144-149). Up to that time Korean archaeologists evinced very little interest in prehistoric sites. In the report of his pioneering survey of the Middle Han region, Chase describes two incised types, Soksil Incised and Misari Incised, both under the heading of Early Neolithic Types.

Soksil Incised is described from a handful of sherds found in the lowest layer of a site excavated by Kim and Chase (Kim WY 1966). The site is on the north side of the Han, on the north side of a hill between two villages. It happened that Chase named the site after the village to the east, Soksilli, while Kim called it by the name of the other village, Susongni. To compound the confusion, Kim transliterated the name as Susok-ri. This is a syllable-by-syllable transliteration which does not observe the euphonic changes in the

actual pronunciation. The usage "Susongni" follows the McCune-Reischauer system of Romanization.

The few incised sherds that were found at Soksilli/Susongni have some characteristics of Mumuntogi and some of Chulmun. The color of Soksil Incised is lighter than Chulmun, and the sherds are tempered with coarse chunks of grit rather than sand and mica. The thickness of the walls, however, and the exterior decoration, are consistent with Chulmuntogi. No sherds were recovered which could indicate the shape, placement of designs or sizes of vessel. Very little can be said of this pottery type, except that it is recognizably different from Misari Incised and may be transitional between Chulmuntogi and Mumuntogi. The radiocarbon date of 2340 ± 120 BP is rather late, but it corroborates such an intermediate position for the Han River Area.

Chase's description of Misari Incised is general enough to apply to all the Chulmun pottery on the middle Han. To Chase's description should be added the fact that a few sherds have been found with string impressions which form patterns similar to those made by incising. The pottery is all in the yellow-red hue. Most of it is reddish-brown (5/4 7.5 YR on the Munsell Soil Color Chart).

Chase remarks that not all parallel lines were comb applied. In fact, there are very few sherds with markings that could have been made with a comb-like implement, although there are some that might have been. The very name of Chulmuntogi may have arisen through a misunderstanding of the nature of Kammkeramik which is comb-impressed rather than comb-incised. Among those who objected to the misnomer of "comb-pattern pottery" in the past was Yokoyama who believed there was such a thing as "undecorated comb-pattern pottery" (Sample 1967:15). The name nevertheless persists; it is probably too entrenched in the literature to be changed.

Shape

In the Middle Han region the Chulmun pottery is overwhelmingly (99.9 per cent) of a single shape. This shape is an almost perfect cone, rounded off at the base, with the height very nearly equal to the rim diameter. A correlation was made of height with rim diameter using measurements of complete and nearly complete pots from Amsari. The coefficient of determination is 0.936 and the multiple correlation coefficient is 0.969. This is a very close agreement of the two variables. The one markedly divergent sherd was found at Tongmak. The large sherd consisted of almost half of a small, globular, narrow-mouthed jar which was broken at the rim but may have had a neck.

Volume

Because of the high correlation value of rim diameter with height, the volume can be calculated when only the rim diameter is known. Rim diameter was projected for each rim sherd by means of its curvature which was compared with a rim diameter chart. Then, using the formula for the volume of a cone ($\frac{1}{3}\pi r^2$), the approximate volume of the pot represented by each sherd was calculated (Appendix K).

Rim diameters range from 10 to 70 cm., volumes thus range from less than 1/3 liter to 90 liters. Both ends of the range are rare, however. For instance, at Amsari there are only four sherds (3 per cent) representing vessels with diameters of 10 cm. or smaller, and only four with diameters of 46 cm. or larger. Distribution, plotted in grouped data histograms (Appendix L), looks definitely trimodal at Amsari and less clearly trimodal at Misari, probably due to insufficient data. At Tongmak, where the sample is smaller still, only two of the three size ranges are represented. To test the trimodality an Analysis of Variance was run on the three groups

of diameters at Amsari. $F = 42$, which is significant at $p = .05$, therefore the trimodality can be accepted.

The group containing the largest diameters comprises only 3 per cent of the rim sherds at Amsari, while the middle range includes 20 per cent of the sample. The bulk of the pottery falls into the smallest range which peaks at 21-25 cm. diameter. Twenty-four per cent of the sherds fall into this group alone. This means that one-fourth of the pots held four liters, another 35 per cent from 1 to 3 liters, 20 per cent from 11 to 24 liters, and 3 per cent from 33 to 90 liters.

At Misari, with a much smaller sample, the most frequent diameter is the same as Amsari, and 45 per cent of the sherds fall into this grouping. Only one medium large and one very large sherd are represented in the sample. Tongmak has no very large diameters and only two medium large, from a very small sample. Again the 20-25 cm. group has the most sherds and represents 35 per cent of the sample.

Thickness

Sherds vary in thickness at the rim from 0.4 to 1.1 cm., while thickness at the base can be up to 1.6 cm. Most sherds showed no variation in thickness, but 26 per cent were slightly variable, with their thickest part 0.1 to 0.2 cm. greater than their thinnest part. This is not surprising in handmade pottery. The mean thickness of the sherds is 0.7 cm.

Paste and Temper

The clay from which the Han River pots were made is thought to come from the south side of the river adjacent to Amsari (Kim WY 1962a). This bright red clay is full of small particles of mica, as is the pottery. It is therefore assumed that this naturally tempered clay was used to make all the Chulmun pottery of the middle

Han region. There is some variation in the amount of mica in the sherds, but the clay also varies. No differences in the amount of mica tempering were noticed among the three sites.

Manufacture

The pottery was created by the coil method, using slightly flattened coils which were overlapped like shingles and then were smoothed with the fingers. Sherds are most often found with a slanting break rather than a straight one, which probably follows this line of weakness. The pots were formed from the base up, beginning with a thick, twisted coil. The same technique was used for all sizes; in order to make a larger container the potter had only to add more coils. The potters, however, apparently decided from the start whether a pot was to be large since the large and very large pots tend to have thicker walls.

The color of the sherds is a rather uniform reddish-brown. This indicates that the pottery was fired in an oxidizing atmosphere, probably on an open fire. The sherds are never smoky on the outside. A few sherds are darkish grey on the inside. The pots may have been stacked and fired upside down, thus causing reduction of the inner surface, or fired over a pit as in Kim Won-Yong's experiment (1960).

Eleven per cent of the sherds from Amsari have holes in the rim, usually single but sometimes in pairs. These were drilled after firing and bear no relation to the rim decoration in terms of placement. Therefore they seem to have been functional rather than decorative. They do not occur beside breaks and, therefore, were not used for repairs. As no ceramic lids have been found, a likely function would have been the securing of hide or basketry covers.

Decorative Techniques

All the decorative techniques used on this pottery involve roughening of the surface in some way. Among the Middle Han sites the decoration was almost exclusively executed by incising, gouging, grooving or punching with various instruments such as sticks, pointed stones, birdbones, fingernails, or shell. Multiple instruments or "combs" were possibly sometimes used. However, on 32 per cent of the Amsari body sherds, the decoration was applied with a multiple soft brushlike implement. In most cases single incised lines were made with a rather thin tool. The irregular intervals and converging lines make it quite evident that they were separately drawn.

One sherd from a Han River site is cord-marked on the band. This technique is found much more widely in the south, especially in the southern islands and the area near Pusan.

Shell rocker stamping was seen on the only sherd we found at Chagyak Do. Appliqued filets of clay are seen on some Chulmun pottery from sites in the south. Neither of these techniques was used on any Middle Han Phase pottery.

Placement of Designs

The Middle Han pottery tends to be decorated all over, with the motifs divided into two zones. The upper zone is a horizontal band around the rim, created by two or more parallel rows of the same design. Below this there is occasionally a row of punched dots which can be straight, wavy, or made of two lines crossing over each other. Below this, down to and including the base, the entire pot is usually covered with incised lines. These most often take the form of zigzags, either horizontal or vertical, frequently referred to as the herringbone pattern. Other designs that appear on body sherds are crossed lines forming diamonds and triangular areas of

slanting lines, both of which may have arisen as variants of the herringbone pattern. There is almost always a band, and the body pattern continues to the rim. No decoration is ever found on the inside or on the lip.

Decorative Motifs

There is a different inventory of design motifs for the band than for the body. Band designs are most frequently made up of rows of short incised lines which may be vertical or slant right or left. Rows of punched curved lines, such as might have been made with the fingernail, are also popular along the Han River. Rows of dots punched with a stick also occur, sometimes as the only band motif but more often in connection with the straight line or fingernail motif.

Stone Technology

All the stone tools found in the Middle Han sites were created by modifying cobbles from the riverbed. They include ovate digging and/or chopping tools ("hoe-axes"), end-notched net sinkers, grinding stones, small polished slate points, and miscellaneous flakes and cores with points or thin edges which may have been used as tools. The following description includes all the stone, both waste and artifacts, from Tongmak, and the artifacts from Misari. A description of points from Amsari, gleaned from the literature, is included since no points were found in the soundings at Misari or Tongmak.

Material

Only locally available stone was used for tools, and that was brought to the sites by the river in the form of rounded cobbles. A variety of stone is found along the course of the Han River,

including granite-gneiss, shale, mica schist, limestone, sandstone, and quartzite. There is, however, no source of stone that can be easily chipped, which partly accounts for the crudity of the tools.

Of the stone found at Tongmak, 90.8 per cent is granite-gneiss (Appendix M). This is not surprising, since the underlying granite-gneiss system is extensively exposed throughout Kyonggi Province. Granite was suitable for grinding stones, it could be chipped into rough hoe-axes, and small flat pebbles of granite were made serviceable as net sinkers by removing small chips from the long ends.

Mica schist was represented by about 7 per cent of the stone, most of this being unmodified, with some irregular blocks and three possible crude artifacts. It crumbles too readily to make useful tools. Possibly it was crushed to make tempering for the pottery, which contains much mica. However, there is micaceous clay at Amsari which has been suggested as a more likely source of the mica temper.

Slate, or siltstone, is represented in small quantities, less than 2 per cent. It was useful for flat objects since it fractures naturally into thin plates. The artifacts include several irregular points and one small butterfly-shaped object which had broken when holes were bored in the center. At other sites, notably Amsari, flat polished arrow points of slate have been reported.

Four irregular, roughly made possible artifacts comprise the only quartzite at the site.

It is evident, then, that no trade in stone or artifacts occurred, although the available stone was inferior for chipping. The stone did, however, possess the useful feature of being already well rounded by the river. These smooth pebbles were selected to be worked into artifacts by their size and shape rather than by the qualities of the stone. Granite was utilized most simply because most of the rock in the river bed is granite.

Grinding Stones

Long cobbles with round or slightly oval cross section, of a size suitable for holding in the hand, were selected for grinding stones and used unmodified (Appendix N). One was found with a battered end, as if it had also been used as a hammer.

Hoe-axes

"Hoe-axes" were made on cobbles of the same length range (9-13 cm.) as grinding stones, but the selected cobbles were always oval and quite thin. They were further modified by chipping the edges, usually on both faces. One end of the tool tends to be thinner and narrower than the other, possibly for hafting (Figure 25). From the sample of hoe-axes it can be seen that the range of allowable thickness was from 1.2 to 3.3 cm. (Appendix O(1)). Eight of the thirteen examples are 1.8 cm. or thinner, and all except one of the broken ones also fall into this category. This suggests that thinness was desirable, although it made the tool more fragile.

Uses of the Hoe-axe

Such a thin tool could not have chopped large hardwood trees but only small branches of softwoods such as pine. The tool was much too fragile to have been an axe for clearing large tracts of trees. If land was cleared (and this was probably not necessary because of the natural open habitat at the edge of the river), it must have been primarily by ringing trees and burning them. This method of forest clearance is practiced in some mountainous districts even now in spite of official discouragement.

The other use implied in the term hoe-axe, that of digging, is also possible. The implement would have made an adequate tool for digging roots, whether cultivated or not. A pointed stick, however, is probably an easier tool to use for this purpose and simpler to make. Some elderly Korean women were observed gathering mountain

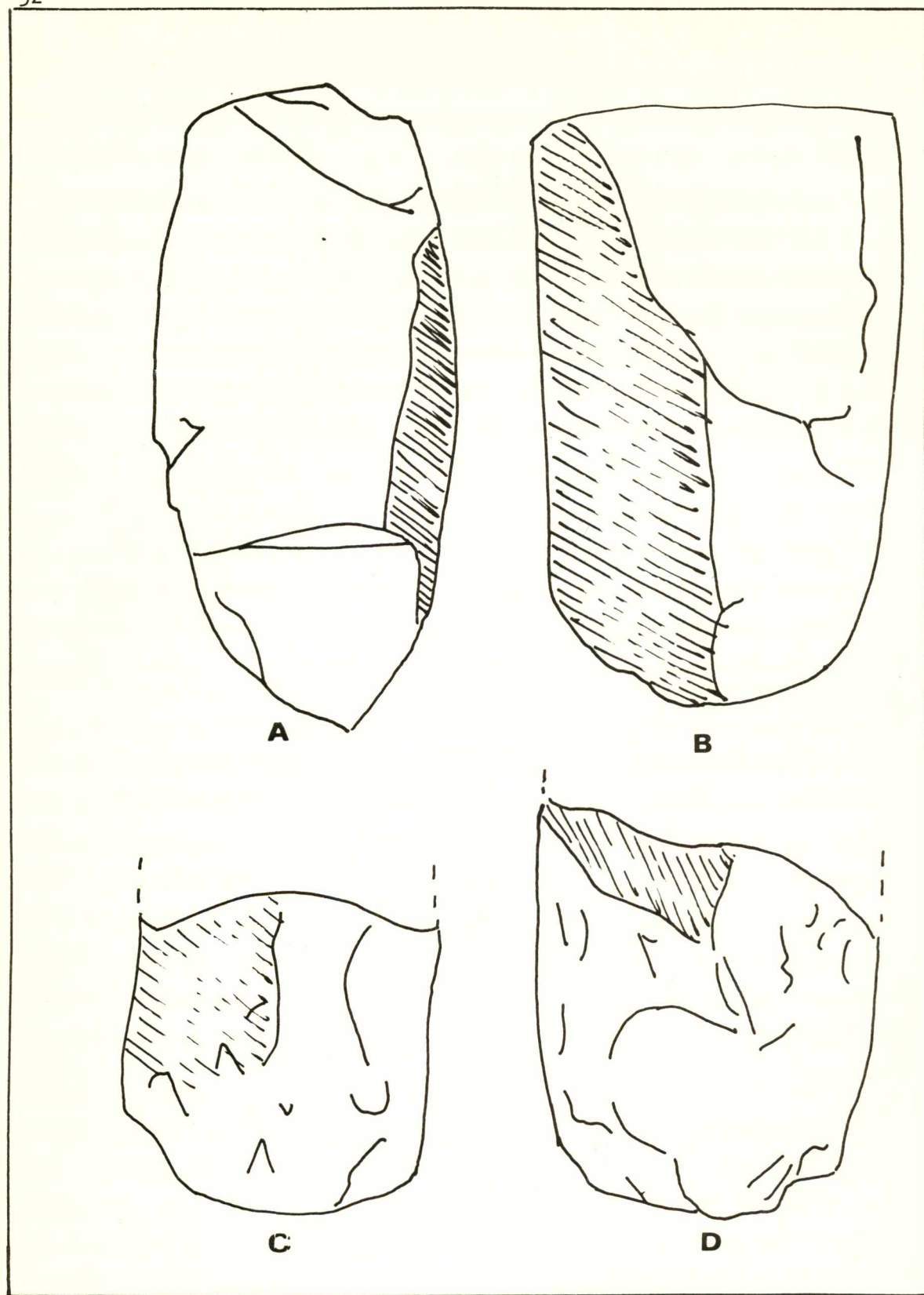


Fig. 25. Hoe-axes from Tongmak. Actual size.

garlic with the aid of such a stick which was procured after finding the garlic.

Consideration must be given to the use of the hoe-axe as a tool for chopping shrubs. Plant fibers were almost certainly used in the making of nets, and these would be needed in some quantity. A tool that was not strong but fairly sharp would be adequate for this. Hemp was much used in Korea before Western contact for rope, clothing, shoes, nets, and many other purposes. The hoe-axe could have been used to chop down hemp plants for processing.

For digging the semi-subterranean houses, a tool would also have been required. Inspection of the tools under a microscope revealed scratch marks about 4 cm. long on the broader and sharper edge, perpendicular to that edge, on the slate hoe-axes. Those made of granite were too coarse-grained to show scratches.

In an experiment using hoe-axes from Tongmak, the hoe-axe was found to be an inefficient tool for chopping even small branches. It was adequate for digging in sandy soil. A very crude form of hoe is still used in the Taklamakan oases of Sinkiang, "used not only for cultivation but for making irrigation channels and for all kinds of excavation work" (Lattimore 1951:156).

It is quite possible that the hoe-axe was indeed a multi-purpose tool, used for both chopping and digging. Whatever its use may have been, it was not used in the preparation of food, for not a single one was found at Amsari in an area that all evidence points to as a food processing area.

Net Sinkers

Pebbles for net sinkers were selected which were thin in one dimension (up to 1.6 cm.) and not over 6.5 cm. in length. They could be round, oval, or sub-rectangular. They were made serviceable by taking at least one chip out of each end, usually on

opposite faces, so that they could be secured to the net (Figure 26). All but one of the larger examples were found on the surface at Tongmak, the site nearest to the deeper pools with larger fish at the confluence of the North and South Han. The largest of the sinkers found in context was $4.8 \times 3.4 \times 1.4$ cm. (Appendix O(2)).

The distribution of length appears to be trimodal, of width bimodal, and of thickness unimodal and slightly skewed (Appendix P). A plot of length against width shows two distinct clusters (Appendix Q). This may represent two sizes of nets, one requiring larger but not thicker sinkers. The unimodality of the thickness dimension shows that 0.7 to 0.8 cm. was the preferred thickness.

Other Possibly Utilized Stone

The assortment of pointed stones (Appendix R), flakes (Appendix S), and other possible artifacts (Appendix T) lacks any regularity. Different sizes of flakes and pointed stones seem to have been selected for various tasks but not manufactured according to a pattern (Figure 27). No consistently manufactured knives or points were found in any of our soundings nor on the surface.

One small triangular projectile point is reported by Lim from Amsari (personal communication), and four with concave bases are illustrated by Kim Jong-Hak (1968:99). Two knives with edge re-touch from the same site are illustrated by Kim Jong-Hak (1968:13). The bulk of the stone tools from all these sites is represented by hoe-axes, sinkers, and grinding stones.

Cordage

There are no actual remains of cordage, but it is known to have existed by indirect evidence and inference. The inference is that if there were net sinkers there must have been fish nets. Nets could have been made of hair, but with ample appropriate plants they were probably made of plant fibers. Indirect evidence comes from

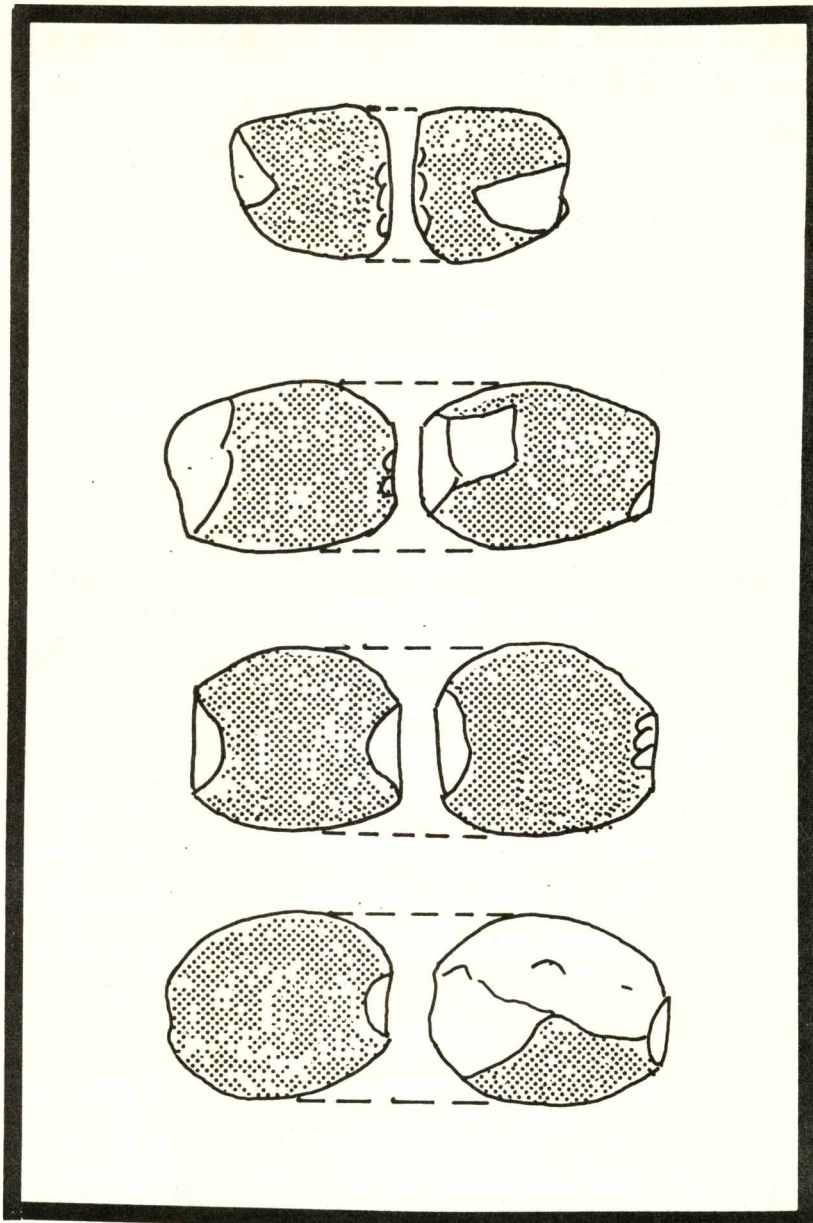


Fig. 26. Net Sinkers from Tongmak. Actual size.

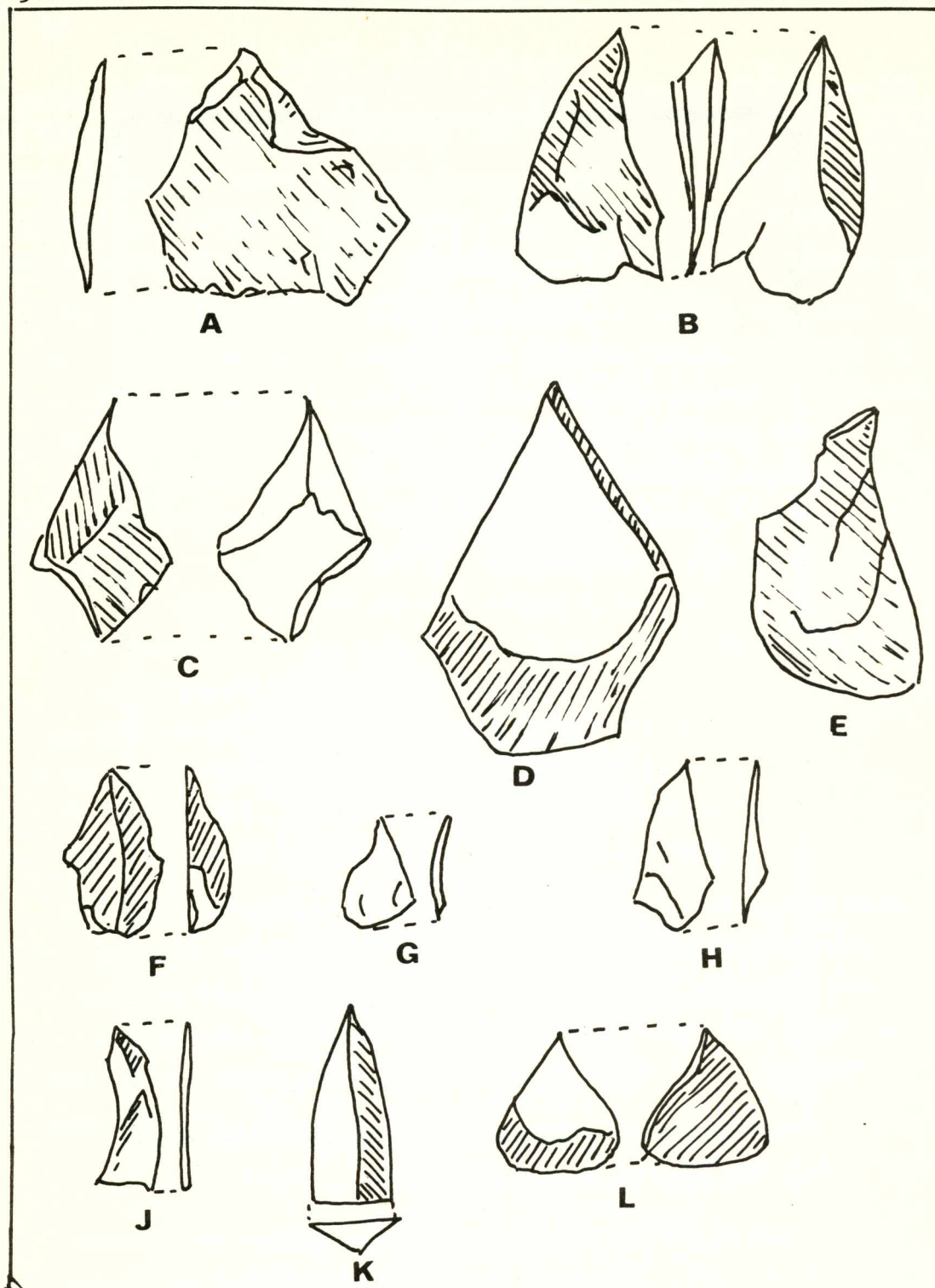


Fig. 27. Pointed Stones from Tongmak. Actual size.

a single shard with vertical cord markings around the rim. These were made with a narrow double cord twisted to the right. Probably many artifacts were made of perishable plant fibers. Sohn (Sohn et al., 1970:14) suggests that the earliest cultivation may have been of plant fibers because of the extensive use of nets for fishing and fibers for caulking canoes.

Settlements

So little information has been gathered about living floors, habitations, and settlement size that it still does not tell us much. Nevertheless, some patterns emerge.

Dwellings

At least twelve dwellings have been excavated at Amsari. They are semi-subterranean, with a single central hearth made of puddled mud and edged with cobblestones. They are all appropriate sizes for nuclear families, ranging from 6 to 25 square meters. Apparently the dwellings were grouped together, although data from the separate excavations have not been published to permit correlation of locations. An unknown extent of the site remains unexcavated.

Activity Areas

South of the dwellings at Amsari, on the side away from the river, an area of burned clay, charcoal, and smoke-covered stone was unearthed (Kim KS 1968). It is possible that this represents cooking fires, but it is not adjacent to what seems to be a food preparation area. Possibly it is the section of the site where pottery was fired.

Another activity area seems to be indicated by a collection of nine or ten very large pots, mostly intact or with all the broken pieces together (Lim Byung-Tae, unpublished site plan). This seems to be a group of storage jars which would hold enough turnip kimchi

to last an extended family through the winter.

Around the jars there is an empty space. An adjacent area contains many smaller pots. At least thirty-four such pots are represented in an area about 5 m. square. Small stones abound in this area, with two or more stones often associated with the small pots, which might indicate their use for stone boiling. Around the edges of this small pot area were found three grinding slabs, each with an associated grindstone, and two other grindstones. There are fairly abrupt edges to the small pot scatter. This is consistent with an outdoor food preparation area, perhaps with some kind of light roof or other delimiting structure. At any rate most of this part of the site seems to represent a community food preparation area, with storage jars in a group about half a meter away.

Site Size and Variability

At the present stage of investigations, the size of these settlements is uncertain. None has been completely excavated or systematically sampled. Amsari has been disturbed by floods, and an unknown part of Misari has been eroded by the river. Tongmak has not really been excavated at all. None of the sites seems to be larger than 10,000 square meters. On the basis of quantities of pottery recovered, Amsari is probably the largest site. There is little indication, however, that it had any special functions. The same artifact inventory is present in all the sites, and basically the same ranges of pottery size. A greater percentage of the potsherds from Amsari represent large and very large pots, but this probably reflects the very small size of the sample from Misari and Tongmak. There is more elaboration of decoration at Amsari. The only extremely deviant pottery shape, however, was found at Tongmak.

The only localized resource known to have been utilized in the Middle Han Phase is the deposit of red clay mixed with mica on the

south bank of the river adjacent to Amsari. The greater size of Amsari can possibly be related to the proximity of this intensively utilized resource.

No evidence of stratification or ranking was found, and only a few items of personal adornment have been reported. No burial has yet been discovered. Perhaps the dead were given secondary burial in family bone boxes, as was done by the Okjo tribe in the tribal period (Han 1971:31).

Contemporaneity of Sites

Detailed analysis of pottery design indicates that these sites were probably contemporaneous (see Chapter VII). The rather shallow midden layers at Tongmak and Misari seem to indicate that these sites were not occupied for long. However, since most organic matter has decayed, a great deal of other discarded material would not have accumulated rapidly, with no bulky bones or shell to form the midden and no permanent house materials to form a "tell." There is no evidence at any Middle Han site of abandonment and resettlement by Chulmun Period people.

No type changes in the pottery could be detected from the artificial layers at Tongmak. Indeed, chips that seemed to be from the same core of an unusual mottled pink and black granite were found in levels 3, 6, and 8. There is, of course, the possibility that the midden may be horizontally stratified; no evidence of horizontal stratification would appear in a small excavation. Collections made at Misari in 1961 and 1971 seem to show different percentages of rim designs. Since the bank is continuously eroding, the collections were made from different locations, and the differences may indicate horizontal stratification at this site. Amsari has more variability of surface decoration, but this is not necessarily an indication of longer occupation. There are neither visible multiple layers nor

evidence of style change through time.

Comparison of potter attributes shows that the three sites of Amsari, Misari, and Tongmak are closely related. There are differences among them, but compared with Naepyung, for instance, or the group of western islands, they can be grouped together as a single population.

Spacing

The sites are strung out along the middle Han valley at a distance of 2 kilometers or so apart. Each site represents a village of perhaps ten to twenty nuclear families, i.e., from fifty to one hundred people in each village. If the main subsistence were river fish, such spacing would not be reasonable. Other possible micro-environments, such as backswamps or islands, do not seem to coincide with the site locations. The need for fields along the narrow valley is one possible explanation for the spacing of the sites.