

# THE CERAMIC TYPOLOGY OF THE MILL REEF SITE, ANTIGUA, LEEWARD ISLANDS

By Charles A. Hoffman, Jr.

## Introduction

During the summer of 1961 archaeological investigations were undertaken on the island of Antigua in the Leeward Islands, as part of my master's degree program at the University of Florida. All the research and laboratory work was conducted under the guidance of Professor John Mann Goggin. The purpose was to learn something about the prehistoric cultures of the island and their relationship to other islands of the West Indies. An earlier version of this paper was read before the Society for American Archaeology in 1963. The complete report was submitted to *American Antiquity* during the editorial tenure of Edwin Wilmsen. He felt that his journal was not an appropriate forum for the presentation of regional pottery typologies, and rejected publication. Since that date there has been a renewal of interest in the archaeology of the Caribbean. Furthermore, the *Journal of the Virgin Islands Archaeological Society* now provides a forum for the dissemination of this sort of information. What follows here, somewhat awkwardly (like a cart before a horse), is the ceramic data base from which I drew in deriving and presenting broader areal integrations and chronological implications (Hoffman 1963, 1970, 1972, 1973, 1974).

Excavations were carried out in a site of aboriginal occupation at the Mill Reef Colony on the southeastern coast of Antigua (Fig. 1). The materials recovered from the Mill Reef site provide the basis for the descriptions presented in this study. Further, surface surveys of Antigua were undertaken to determine the spread of the Mill Reef-like prehistoric culture.

The Mill Reef site (also referred to by the Antigua Archaeological Society as the Brook Site) is located about 200 m. inland from the sea on a ridge that drops down to the coast, separating two small embayments, Little Deep Bay (on the north) and Great Deep Bay. A reef protects the bays. The ocean can not be seen from the site, since the ridge makes a slight rise before dropping away to the sea. A road bisects the site, with the greater part of the occupation area lying to the east.

The majority of the ceramic specimens recovered from the midden at Mill Reef comprise a group of potsherds possessing many similarities which, taken as a whole, are defined in this report as the Mill Reef Series. The Series is characterized by several identifiable structural traits, plus one or another decorative variation. It accounts for 85% of more than 13,000 sherds found. No one level yielded a significantly different percentage.

Following the methods of classification succinctly presented by Willey

(1949:6), I would give types in this series the 'designant name' of 'Mill Reef' after the geographical area in which the material was found. The term *series* groups together a number of types which bear an obvious relationship to each other. Usually, companion types in the same series have about the same temporal and spatial distribution, although minor differences may exist. The series is named for one of the prominent types which composes it. It may be conceptualized as a collection of potsherds having certain conformities, in temper particularly, but also in vessel form, paste, hardness, surface treatment, thickness and method of manufacture. Names for Mill Reef types within the series indicate variations in decoration. Mill Reef Incised would be the above designant name with all its combined traits and appropriate vessel form, plus the decorative treatment of incising.

There are two sets of types within the Mill Reef Series: Mill Reef and Marmora. The first has been explained above. The second is set aside because of an important decorative technique, that of incising the pottery with broad, shallow lines. The ware characteristics, however, are the same as those of Mill Reef types. Inasmuch as they were both in the same level of the same trench, I feel there is no question but that these two types are closely related in spatial and temporal distribution.

In addition to the Mill Reef Series, three other series are tentatively proffered: Deep Bay, Yorkstead, and a residual category. The chief characteristics of Deep Bay types are the extremely fine and very hard paste, and the burnished surfaces. Yorkstead Series comprises only one type; all sherds are chalk-like in appearance, but are much harder than chalk. The residual category has been set up because some sherds are too small to assemble enough diagnostic traits. They are characterized by a sandy paste or temper. Such temper is usually much smaller than that found in Mill Reef type paste (perhaps less than a millimeter in diameter).

The most inclusive classificatory term in Willey's system is the 'complex'. A complex is synonymous with culture period in that it represents the group of pottery types or the various series of types that occur together in the same general area at the same time (Willey, 1949:6). Thus, we could appropriately say the Mill Reef Series is part of a culture complex, when taken into consideration with other series that may be found within the same general area from the same temporal periods. As I have said above, minor series types of pottery found at Mill Reef are not to be classified under the Mill Reef Series. They are sufficiently different to be placed logically within their own category. This gives us more than one series from Mill Reef. All of these series and their component types taken as a whole comprise the Mill Reef Complex. The Mill Reef Complex is outlined in Table 1. The definition of types follows.

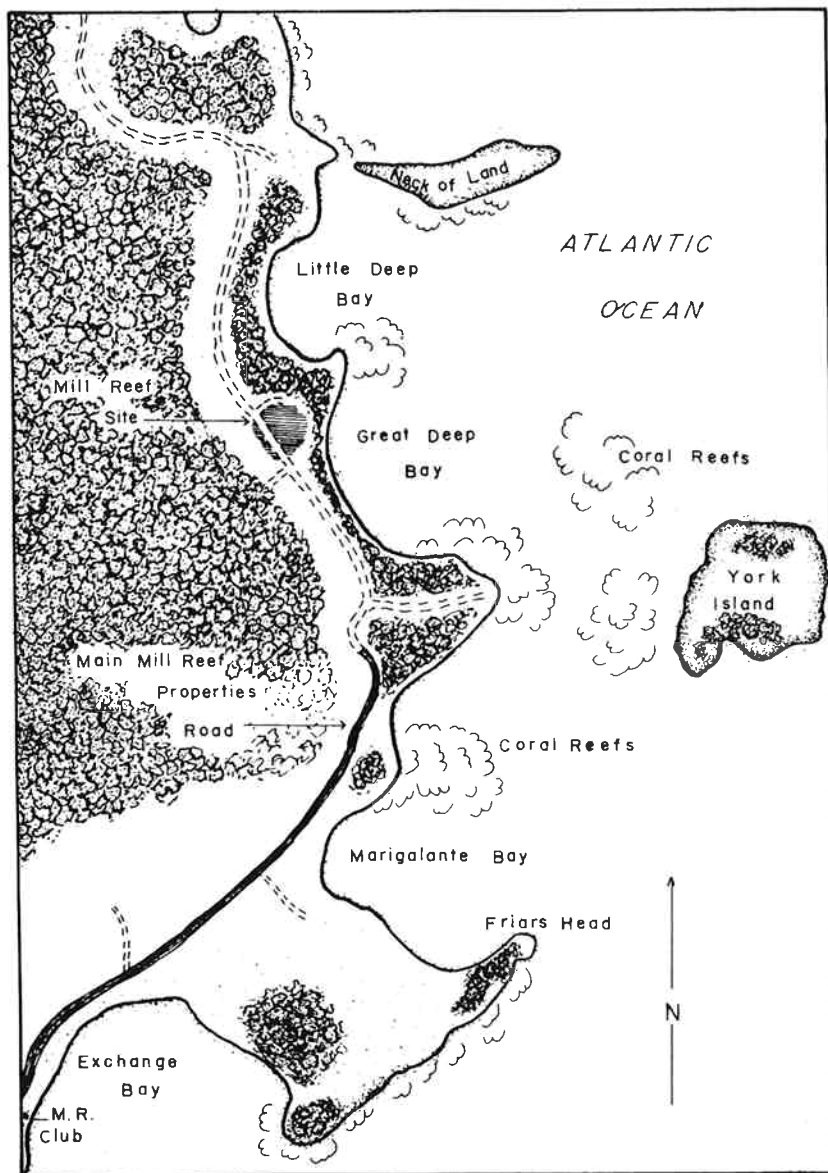


FIGURE 1  
 The Mill Reef site area. The Mill Reef Properties are on the eastern, windward side of the island.

TABLE 1

Mill Reef Series	Deep Bay Series (Tentative)
Mill Reef Plain	Deep Bay Plain (Tentative)
Mill Reef Incised	Deep Bay Scored (Tentative)
Mill Reef Red Incised	Deep Bay Incised (Tentative)
Mill Reef White-on-Red	Yorkshire Series (Tentative)
Mill Reef Red-on-Buff	Yorkstead Plain (Tentative)
Mill Reef Polychrome	Unclassified Sandy Paste Series
Mill Reef Brushed	
Mill Reef Zoned Red Incised	
Marmora Incised	
Marmora Red Incised	
Marmora Red Incised-Punctated	
Marmora Black-on-Red Incised	

### Mill Reef Series

MILL REEF PLAIN. (Fig. 2).

*Definition as a type:* From Mill Reef, Antigua, West Indies; this paper.

*Ware characteristics:*

*Method of manufacture:* Coiled.

*Temper:* Perhaps the chief diagnostic. Large chunks of grit, usually 2 or 4 mm. in thickness, and on occasion 7 or 8 mm. across. Frequently chert flakes, calling for careful examination as they may look very much like shell fragments.

In addition to grit tempering, inclusions of unknown substance, perhaps charred fragments of bone, wood, leaves, skin, etc. (See section 'Unusual Inclusions', below.)

Variations in temper. In addition to large grit particles there may be shell, limestone, crushed sherd and even broken bits of coral. I am not ignoring the warning note sounded by Shepard (1956: 164) that when there is a lack of uniformity in temper the pottery should be re-examined to determine whether or not it is completely homogeneous in surface features and style. There is still a uniformity, even in the grit tempering. But often a single particle of crushed sherd, or shell, was found in otherwise ordinary grit tempered sherds. There were not, in these cases, any other variations in ceramic styling, beyond the limitations being established here. Different types should not be set up for random inclusions of temper. It does not seem at all unlikely that the aboriginal potter should once in a while decide to add a few crushed shells or sherds to a large quantity of paste, or, perhaps decide not to bother picking these items out during the preparation of the clay.

*Paste texture and color:* Granular. Some tendency toward lamination and contortion of paste, although this does not seem to relate to hardness or compact quality of the paste. Fractures are firm but granular.

Color varies from dark brown to deep grey, although occasionally bright orange. May have buff surfaces with grey core.

*Surface texture and color:* Surface color varies according to the firing. Usually grey or grey-black. Many have firing clouds. May have buff surface.

All Mill Reef Series have been smoothed, or brushed, although exposure and rough treatment may have removed some of the original surface. They are carefully finished and typically have a sleek appearance, although even when well finished, they are usually quite dull. Surfaces are not lumpy, despite large chunks of grit. There are frequent tooling marks. Finish would include the first and third of Shepard's main surface types: 'unslipped and unpolished; polished unslipped; and slipped' (Shepard 1956: 187).

Occasionally it may be difficult to distinguish truly brushed sherds from those having marks made when the vessel was smoothed or scraped, and thus to determine whether the marks were put there purposely or simply not completely removed.

*Thickness:* Vessel walls average 10 mm. Rims may be thickened, particularly on the inside of shallow vessels. Bases vary according to shape from 5 mm. for concave bases to 15-20 mm. for flat bases.

*Form:*

*Total vessel:* Includes shallow bowls (Fig. 2a), griddles with walled rims, some vessels at least partly cylindrical (Fig. 2c), and medium-deep hemispherical bowls. Very shallow bowls, or deep dishes (Fig. 4c), may be boat-shaped (Fig. 2a)

*Rims:* Lips may be thick and/or beveled on the inside (Fig. 2a; also Hoffman 1970: Fig. 3a), rarely on the outside. Flanges, or extensions of the vessel wall perpendicular to the rim, are rare. A diagnostic feature is the characteristic flaring of the rims of some vessels (Fig. 2b, f, g; 4d). Griddle rims are the walled-rim type, these frequently being triangular or S-shaped in profile.

*Shoulder:* May be concave (Fig. 2g) or slightly convex, the former being a characteristic trait. The term shoulder is used here because it is already in use in the Caribbean (Rouse 1952). It is the same as 'neck' as used by Shepard (1956).

*Keel:* Frequently present generally in association with concave shoulders, rarely with convex. The term 'keel' is used here because it is already in use in the Caribbean (Rouse, 1952). It is apparently the same as 'corner point' as used by Shepard (1956).

*Base:* Both concave and flat. Occasional annular base.

*Geographical range of type:* Numerous sites on Antigua, present on St. Kitts, one sherd observed from St. Lucia.

*Chronological position of type:* Probably A.D. 550-1000. See Rouse, Alegría and Stuiver (1963).

*Relationships of type:* Similar to Ostiones and Cuevas of Puerto Rico (Rouse, 1952); similar to Troumassée B of St. Lucia (McKusick 1960b); similar to Botany Series of Virgin Islands (Bullen 1962).

**MILL REEF RED.**

*Definition as a type:* From Mill Reef, Antigua, West Indies; this paper. Basically same as Mill Reef Plain, except as noted below. A high percentage of Mill Reef sherds are slipped or painted red. Some may actually be Mill Reef Red-on-Buff, but specimens are not always large enough to permit finer breakdown than the partially residual category of Mill Reef Red.

*Ware characteristics:* (See Mill Reef Plain.)

*Decoration:* Surfaces of outside entirely covered with red slip or paint. Occasionally both sides are red. Outside may be entirely red, along with inside the lip. Color varies from bright red to light orange-red, though usually the former. Well smoothed or finished, but not polished.

*Form:* (See Mill Reef Plain). Red slipped sherds seem to tend more toward the characteristic thickened flaring rim and concave shoulder vessels.

**MILL REEF INCISED.**

*Definition as a type:* From Mill Reef, Antigua, West Indies, this paper. Basically same as Mill Reef Plain, except for differences noted below.

*Ware characteristics:* (See Mill Reef Plain.) Both size of temper and thickness of sherd may be smaller than Mill Reef Plain.

*Decoration:*

*Technique:* Combination of incised lines, of varying depths and widths, but not fine-line nor broad-line. Average incising about 2-3 mm. wide and 3 mm. deep, but somewhat box-shape in profile. Apparently made with a blunt instrument. Decorations all appear to have been made before firing.

*Design:* Frequently two parallel lines.

*Distribution:* Paralleling the rim, usually on inside bevel.

*Form:* Flaring rims and concave shoulders not as common as with Mill Reef Plain.

**MILL REEF RED INCISED. (Hoffman 1970: Fig. 3c-d).**

*Definition as a type:* From Mill Reef, Antigua, West Indies; this paper. Basically same as Mill Reef Plain and Mill Reef Incised, except for differences noted below.

*Ware characteristics:* (See Mill Reef Incised.)

*Decoration:* (See Mill Reef Red.) The lighter, orange-red accounts for larger percentage of these sherds than with the plain red type.

*Technique:* Very similar to Mill Reef Incised, incising being perhaps a millimeter or two wider in profile.

*Design:* Frequently two parallel lines, occasionally connected at ends to form rectangle.

*Distribution:* Paralleling rim, usually on the inside bevel.

MILL REEF WHITE-ON-RED (Figs. 2b, 4a, b).

*Definition as a type:* From Mill Reef, Antigua, West Indies; this paper. Basically same as Mill Reef Plain and Mill Reef Red, except for differences noted below.

*Ware characteristics:* (See Mill Reef Plain.)

*Decoration:* (See Mill Reef Red.) Designs painted in white on the red background.

*Technique:* May be applied after firing.

*Design:* May be large Xs (Fig. 2b), in stripes 12 mm. wide. May be line 5 mm. wide paralleling rim. Occasionally adjacent to and immediately below a bevel on the inside of a rim. May be negative in present appearance, that is, an area may be extensively covered with white paint, the unpainted spaces revealing the design. In any event, in this latter case, the design is basically curvilinear and flowery.

*Distribution:* Not limited to any particular portion of vessel. The thin lines are generally found on the inside or the outside, just below the rim, while Xs are always on the outside and not very small, but taking up a whole side of a vessel. Curvilinear negative designs on the outside.

MILL REEF RED-ON-BUFF. (Fig. 4c).

*Definition as a type:* From Mill Reef, Antigua, West Indies, this paper.  
Basically same as Mill Reef Plain except for differences noted below.

*Ware characteristics:* (See Mill Reef Plain.)

*Decoration:* Designs painted in red on buff or plain background (See Mill Reef Red).

*Technique:* Applied before firing.

*Design:* Usually simple bands, parallel if more than one.

*Distribution:* If not in bands about the body of the vessel, then confined to rim and lip, more frequently on the inside of the lip. On rims with inside bevel, the coloring may extend down below the bevel perhaps 20 mm. or so.

*Form:* Majority of the lips of this type are bevelled, with the thickening on the inside; characteristic of the flat, boat-shape vessel (Fig. 2a), and in these cases the decoration includes the simple lugs, if present.

MILL REEF POLYCHROME. (Fig. 2g).

*Definition as a type:* From Mill Reef, Antigua, West Indies; this paper.  
Basically same as Mill Reef Plain except for differences noted below.

*Ware characteristics:* (See Mill Reef Plain.)

*Decoration:* Designs, mostly linear, painted in white, buff or black, on red background. Usually involves at least white and red.

*Technique:* The red background is applied before firing, but this is not always the case with remaining colors. On some vessels white lines, 3-5 mm. wide, are applied after the surface is finished.

*Design:* Usually simple bands, paralleling the rim. White lines may be geometric.

*Distribution:* Varies, frequently on shoulder, just above keel. Narrow geometric lines over entire remainder of the vessel.

MILL REEF BRUSHED. (Fig. 4d).

*Definition as a type:* From Mill Reef, Antigua, West Indies; this paper.  
Basically same as Mill Reef Plain except for differences noted below.

*Ware characteristics:* (See Mill Reef Plain.)

*Decoration:* Brushing or scraping marks deliberately applied to unfired exterior of vessel.

*Technique:* Applied prior to firing with various objects, some sharp pointed, others blunt. Striations may be shallow and about 2-3 mm. in width.

*Distribution:* Random application.

MARMORA INCISED. (Fig. 2d, h, i, j).

*Definition as a type:* From Marmora Point, Antigua, West Indies; this paper.

*Ware characteristics:*

*Method of manufacture:* Coiled.

*Temper:* (See Mill Reef Plain.)

*Paste texture and color:* (See Mill Reef Plain.)

*Surface texture and color:* (See Mill Reef Plain.)

*Thickness:* Vessel walls average 10 mm. Rims rarely thickened. Bases concave, 5 mm. in thickness.

*Decoration:* The main diagnostic trait of this type is the broad, shallow line incised or pressed into the sides of the vessels before firing.

*Technique:* Lines are 5 to 7 mm. wide and 1-2 mm. deep. Method of application not certain, as raised edges along the incised lines (usually a result of incising in soft clay) are absent. Perhaps the lines were pressed into clay in plastic state.

*Design:* Series of rounded-corner rectangles or scroll motif (See Fig. 2d, h-j). Rectangles may have an unconnected line in the middle.

*Distribution:* Apparently limited to shoulder, paralleling the rim.

*Form:*

*Total vessel:* Uncertain. Reconstructed specimens indicate straight-shouldered hemispherical bowls.

*Rims:* Unthickened, may be flat on top, or slightly rounded.

*Shoulder:* Straight or slightly convex.

*Base:* Concave and thin, perhaps only 5 mm. thick.

*Geographical range of type:* Numerous sites on Antigua; present at several sites on St. Kitts; may be present on St. Lucia.

*Chronological position of type:* Uncertain, perhaps A.D. 900-1000. See Rouse, Alegría and Stuiver (1963).

MARMORA RED INCISED. (Fig. 2d, h).

*Definition as a type:* From Marmora Point, Antigua, West Indies; this paper.

*Ware characteristics:* (See Mill Reef Plain.)

*Decoration:* Outside surfaces entirely covered with red slip or paint. Color varies from bright red to orange, although usually the former.

MARMORA RED INCISED-PUNCTATED. (Fig. 2i).

*Definition as a type:* From Marmora Point, Antigua, West Indies; this paper.

*Ware characteristics:* (See Mill Reef Plain.)

*Decoration:* Outside surfaces entirely covered with red slip or paint. Color varies from bright red to orange, although usually the former.

Has row or rows of crude punctations paralleling the rim. Punctations are roughly circular, about 5 mm. in diameter and with uneven surfaces as though made with the end of a jagged stick. They appear to have been smoothed over slightly.

*Geographical range of type:* Found only at Marmora Point, Antigua; surface collection.

### Classification of Minor Series

Many of the ceramic specimens in the Mill Reef collection set themselves apart as distinct units that should be considered separately from the main group of grit-tempered, smoother-surface sherds. These sub-groups are obviously different, in paste, temper, decoration, etc., or a combination of these traits.

Some of the distinct sub-groups have not been reported from elsewhere in the Lesser Antilles. Since they occur at Mill Reef in rather limited quantities we cannot say they are typical of that site. Simply to assign them a permanent type name at this time, and later find that one of the sub-groups may dominate the ceramic content of a site elsewhere in the West Indies, will serve only to confuse future classification.

What seems best is to report these sub-groups, with full descriptions, as tentative types from Antigua. Thus a classification system has been set up that encompasses all the sub-groups, providing them with a nomenclature that is (for the time being) usable, but not binding them with type names that cannot be changed. When it is finally determined where the particular sub-group type site is, perhaps then a new type name can be assigned (if such is needed). It is obvious also that additional information regarding variations within each sub-group (which would normally be expected from such a type site) might serve to clarify or revise classificatory points for use in naming.

In summary, these sub-groups occur at Mill Reef in sufficient quantities to justify their being isolated into distinct categories. None is found in numbers sufficient to classify them permanently at this time.

### Deep Bay Series (*Tentative*)

#### DEEP BAY PLAIN (*Tentative*).

*Definition as a type:* Tentatively; from Mill Reef, Antigua, West Indies; this paper.

*Ware characteristics:*

*Method of manufacture:* Coiled.

*Temper:* Usually temperless, rarely with tiny flakes of shell. May be shell-tempered, may have shell inclusions (probably accidental), such as half a land snail in one sherd.

*Paste texture and color:* Chief diagnostic trait for this type. Paste is very fine and usually very hard. Slight tendency, particularly with thicker sherds, toward lamination and distortion of paste. Color varies, usually black inside, cream surface. With coil breaks, the cream color may be found along the break, indicating poor construction and/or high firing temperature.

*Thickness:* Varies around 5 mm.

*Form:* Uncertain. Perhaps hemispherical bowl. Rim is rolled slightly on outside, flat on top.

*Geographical range of type:* Known only from Mill Reef site, Antigua. Pottery from other sites in the West Indies has been studied particularly to see if Deep Bay Series sherds may be found elsewhere. With a single exception this has been without success, so far. Recently I had an opportunity to examine some sherds reportedly from St. Lucia, in a collection owned by Dr. Fred Olsen. In this collection were the fragments of a single crude, U-shaped, flat-bottomed, smoothed-surfaced bowl. The exposed breaks of the sherds suggested a close relationship to the Deep Bay type, particularly the Deep Bay Scored (noted below). The St. Lucia specimens were not as free of tiny particles of grit, and were a bit more vesicular, or, conversely, the Deep Bay types are more compact and of purer clay. Bullen, Goggin, and Haag have all examined sherds of this Series and informed me that they had never seen others like them in their Caribbean investigations.

*Chronological position of type:* Uncertain. Probably A.D. 550-1000. See Rouse, Algeria and Stuiver (1963).

*Relationships of type:* This particular type does not seem to be definitely related to anything else in the West Indies. (But see Deep Bay Scored 'Relationships', below.)



#### DEEP BAY SCORED (*Tentative*). (Fig. 2c).

*Definition as a type:* Tentatively; from Mill Reef, Antigua, West Indies; this paper.

*Ware characteristics:* (See Deep Bay Plain). Usually cream-colored surface; rarely black surface, usually black core. Usually considerably thicker than Deep Bay Plain; averaging 10-12 mm., particularly those with cylindrical shapes.

*Form:*

*Total vessel:* Usually cylindrical; may be hemispherical bowl. It is uncertain whether or not cylindrical form is that of a 'pot rest', *i.e.*, open at both ends, or part of a cylindrical vessel (Fig. 2c).

*Rim:* Lips usually thickened on outside, flaring out, flat on top. May be straight, unthickened rim.

*Base:* Uncertain. If these vessels include cylindrical pot rests, then basal portion is a duplicate of the top rim, perhaps a little more worn.

*Decoration:* Scoring or scraping marks deliberately applied to unfired exterior and interior of vessel, or only exterior.

*Technique:* Applied prior to firing, with various objects, usually sharp-pointed. Striations are 1 or 2 mm. in depth and width, frequently V-shaped in profile. Scoring may be smoothed over, presenting a scored surface, but with sleek overall appearance.

*Design:* There is no particular design, but distinct scrape marks that run in so many directions that they present a 'busy' appearance.

*Distribution:* Random application over entire surface.

*Geographical range of type:* (See Deep Bay Plain.) Known only from Mill Reef site, Antigua.

*Relationships of type:* Cylindrical form similar to other type styles on St. Lucia.

#### DEEP BAY INCISED (*Tentative*).

*Definition as a type:* Tentatively; from Mill Reef, Antigua, West Indies; this paper. Same as Deep Bay Plain, except as noted below.

*Decoration:* Curving or waving incised line applied prior to firing, with sharp, but not pointed instrument. Distribution probably limited to area roughly paralleling the rim. Incising is crude in appearance, perhaps being applied while clay was too wet.

### Yorkstead Series (*Tentative*)

#### YORKSTEAD PLAIN (*Tentative*).

*Definition as a type:* Tentatively; from Mill Reef, Antigua, West Indies; this paper.

*Ware characteristics:*

*Method of manufacture:* Coiled (?).

*Tempered:* Temperless. A diagnostic trait.

*Paste texture and color:* Paste is chalky in appearance but hard, white in color throughout.

*Surface texture, color and finish:* Surface color is white, the texture is smooth. Vessels were well finished, and present a sleek appearance.

*Thickness:* Averages 8 to 13 mm.

*Form:*

*Total vessel:* Probably hemispherical bowls.

*Rims:* Both straight and unthickened, slightly convex and thickened inside. Flat on top.

*Decoration:* All sherds are plain white. No decoration known.

*Geographical range of type:* Only Mill Reef site, Antigua.

*Chronological position of type:* Uncertain. Perhaps A.D. 800-1000. See Rouse, Alegría and Stuiver (1963).

## Unclassified Pottery

### UNCLASSIFIED SANDY PASTE WARE.

*Definition:* Not as a type, but unclassified category.

*Ware characteristics:*

*Method of manufacture:* Coiled (?).

*Temper:* Sand tempered. Occasionally small grains of grit, less than a millimeter in diameter. Rarely a large chunk of grit several millimeters in diameter.

*Paste texture and color:* Paste is granular, uniform, compact. Cores usually buff.

*Surface texture, color and finish:* Surfaces may be buff or grey-black. Probably smoothed, although surfaces present a granular appearance.

*Thickness:* Varies from 5 to 12 mm.

*Form:*

*Total vessel:* Unknown. One specimen from Hawks Bill Bay is typical of Mill Reef keel profiles. All other sherds are too small to be indicative of overall shape.

*Rims:* Probably both straight, unthickened rims, rounded on top; and rims with lips bevelled on the inside.

*Chronological position:* Uncertain. Probably A.D. 550-1000, but heaviest in earlier part. See Rouse, Alegría and Stuiver (1963).

*Relationships:* This pottery is very similar to some shown to me by Bullen at the Florida State Museum. The latter was recovered in the Virgin Islands and is called 'Coral Series' pottery (Bullen 1962).

Sandy paste wares may also be decorated as follows: one or both surfaces covered with a red slip, frequently worn off around edges of sherd; white paint on red slip background; red paint on buff sherd background; shallow, thin incising, either on plain sherd or red slipped; and slightly larger paste grains, paste blacker in color, coil lines on outside of vessel not obliterated (one sherd in this category).

### UNCLASSIFIED ZONED RED INCISED WARE.

*Definition:* Not as a type, but unclassified category.

*Ware characteristics:* Sherds are thinner than Mill Reef Series; temper is of slightly smaller grit, but of uniform size. No relatively large chunks of temper.

*Decoration:* Diagnostic. Very dull red confined within narrow incised lines.

*Technique:* Probably painted and incised prior to firing. Incising may be 2 mm. in width and 2 mm. deep, with V-shape profile.

*Design:* Zones of red outlined with fine, straight lines. Fragments are small and very little can be definitely stated about this ware. No sherds with curved lines were found.

*Relationships of ware:* Uncertain. Similar to design illustrated by Bullen (1962: Pl. XIV, d), found on pottery from the Virgin Islands.

## Conclusions and Projections

Several other sites on Antigua bore sufficient ceramic similarity to the one at Mill Reef to conclude that they were part of the Mill Reef Complex. Probably all the sites reported, excepting Freeman Bay (Pa 1), were part of the Mill Reef Complex.

One more noticeable difference between the Mill Reef site and all the others is the absence of minor series pottery from the latter. At no other site on Antigua was a single specimen of Deep Bay Series or Yorkstead Series pottery found. This is, of course, negative evidence, and should be accepted accordingly. I feel, however, that sherds of the minor series will turn up eventually on Antigua, and are probably present in extant collections there.

A second noticeable contrast to the Mill Reef site was the relatively greater number of types with broad line incision scattered about the surface at Marmora Point and the Long Island sites. Proportionately, more of these types were found at either of these two locations than at Mill Reef.

The following sites most closely resembled Mill Reef: Marmora Point, Long Island 1, Long Island 2, Hawks Bill Bay, and Antigua Horizons. It was difficult to determine much about Friar Hill from the earthenware because it was so badly weathered and pitted. There is no reason to believe it was not part of the Mill Reef Complex.

As for settlement patterns, very little can be surmised. All but one of the sites visited were on or near the water, the exception being Friar Hill. Although the Mill Reef site is back from the water's edge a bit, the very similar site across the island at Hawks Bill Bay is right on the beach. The same is true for Marmora Point and Long Island. Extensive search inland failed to reveal a single camp, village or midden (or at least a collection of artifacts on the ground), other than at Friar Hill.

I was informed of several areas inland where artifacts had been observed by Islanders in years past, but except for Friar Hill, these places could not be found in the time I had available in 1961. It might be well to note that they included the general area around and slightly southeast of Parham; a hill a mile or so south of St. James Church; a hill known as Green Castle in the southwestern section; and Guana Island off the northern coast.

As stated above, this paper has been concerned with ceramic typology. A more complete description and exploration both of data and ideas is available elsewhere (Hoffman 1963, 1970, 1972, 1973, 1974). Since the time of the Mill Reef research, much work has been done in the Leeward Islands, *e.g.*, Olsen (1974a, 1974b), Nicholson (1976a, 1976b), Davis (1974), Goodwin (1978a, 1978b), Goodwin and Heymann (1977), and Rouse (1952, 1974, 1976). Perhaps it is time now to get away from small scale testing of sites, and instead begin to test hypotheses about social and cultural systems. I am thinking particularly of approaches involving total site archaeology including definition of activity areas, study of behaviors associated with artifacts, analysis of intra- and inter-insular networks, and, research into prehistoric cultural ecology. I hope that by presenting this baseline data, I have helped to facilitate studies such as these in the future.

#### Acknowledgements

The archaeological investigations reported in this paper were made possible by funds provided in a Rockefeller grant to the University of Florida Anthropology Laboratory as a part of that institution's Caribbean Research Program. Further, without the aid of Dr. Fred Olsen, of Guilford, Connecticut, the entire project might not have taken place, let alone in such gracious accom-

modations or with such abundant assistance in the field. It was Dr. Olsen who first reported the finding of aboriginal remains on that island. For my stay on Antigua, not only did Dr. Olsen generously provide his Mill Reef home, but the necessary crew to assist me, items of equipment, and (of tremendous importance) introduction to Mr. Lance Delisle. In the absence of Dr. Olsen from Mill Reef during the summer months, Mr. Delisle cheerfully assisted in countless, immeasurable ways.

I am indebted to R. Christopher Goodwin, the late John M. Goggin, the late Ripley P. Bullen, Irving Rouse, and William H. Sears for their assistance in the research for and preparation of this paper.

### Bibliography

- Bullen, Ripley P.**  
1962 Ceramic Periods of St. Thomas and St. John Islands, Virgin Islands. *The William L. Bryant Foundation for American Studies Report* Number 4, 74 pages.
- Davis, Dave D.**  
1974 Some Notes Concerning the Archaic Occupation of Antigua. *Proceedings of the Fifth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 65-71.
- Goodwin, R. Christopher**  
1978a The Lesser Antillean Archaic: New Data From St. Kitts. *Journal of the Virgin Islands Archaeological Society*, no. 5, pp. 6-16.  
1978b The Prehistoric Cultural Ecology of St. Kitts, Leeward Islands: A Case Study in Island Archeology. Part 1, The Research Design. *Behavioral Sciences Foundation Occasional Paper in Archeology* Number 1.
- Goodwin, R. Christopher and Cyd Heymann**  
1977 St. Kitts Salvage Archeology. *Explorers Journal*, vol. 53, no. 1, pp. 20-23. New York.
- Hoffman, Charles A., Jr.**  
1963 *Archaeological Investigations on Antigua, West Indies*. Unpublished Master's Thesis, Department of Anthropology, University of Florida, Gainesville.  
1970 Implications from the Mill Reef, Antigua; Sugar Factory, St. Kitts; and Palmetto Grove, San Salvador, Sites. *Proceedings of the Third International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 95-106.  
1972 St. Kitts. Caribbean Research Notes, *American Antiquity*, vol. 37, no. 2, p. 272.  
1973 Archaeological Investigations on St. Kitts. *Caribbean Journal of Science*, vol. 13, no. 3-4, pp. 237-250.  
1974 Multilinear Evolution in the Prehistoric West Indies. *Proceedings of the Fifth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 143-152.
- McKusick, Marshall B.**  
1960 *The Distribution of Ceramic Styles in the Lesser Antilles*. Unpublished Ph.D. Dissertation, Yale University, New Haven.
- Nicholson, Desmond V.**  
1976a Artifact Types of Preceramic Antigua. *Proceedings of the Sixth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 264-268.  
1976b An Antigua Shell Midden with Ceramic and Archaic Components. *Proceedings of the Sixth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 258-263.
- Olsen, Fred**  
1974a The Arawak Ball Court at Antigua and the Prototype Zemi. *Proceedings of the Fifth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 11-12.  
1974b *Indian Creek: Arawak Site on Antigua, West Indies: Excavations by Yale University and the Antigua Archaeological Society*. Norman: University of Oklahoma Press.
- Rouse, Irving**  
1952 Porto Rico Prehistory. *New York Academy of Sciences, Scientific Survey of Porto Rico and the Virgin Islands*, Volume XVIII, parts 3-4, pp. 307-578. New York.

- 1974 The Indian Creek Excavations. *Proceedings of the Fifth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 166-176.
- 1976 The Saladoid Sequence on Antigua and its Aftermath. *Proceedings of the Sixth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 31-41.

**Rouse, Irving, Ricardo E. Alegría, and Minze Stuiver**

- 1963 *Recent Radiocarbon Dates from the West Indies*. MS on file, Department of Anthropology, Yale University, New Haven.

**Shepard, Anna O.**

- 1956 Ceramics for the Archaeologist. Carnegie Institute of Washington: *Publication 609*.

**Wiley, Gordon R.**

- 1949 Archeology of the Florida Gulf Coast. *Smithsonian Miscellaneous Collections*, Volume 113.

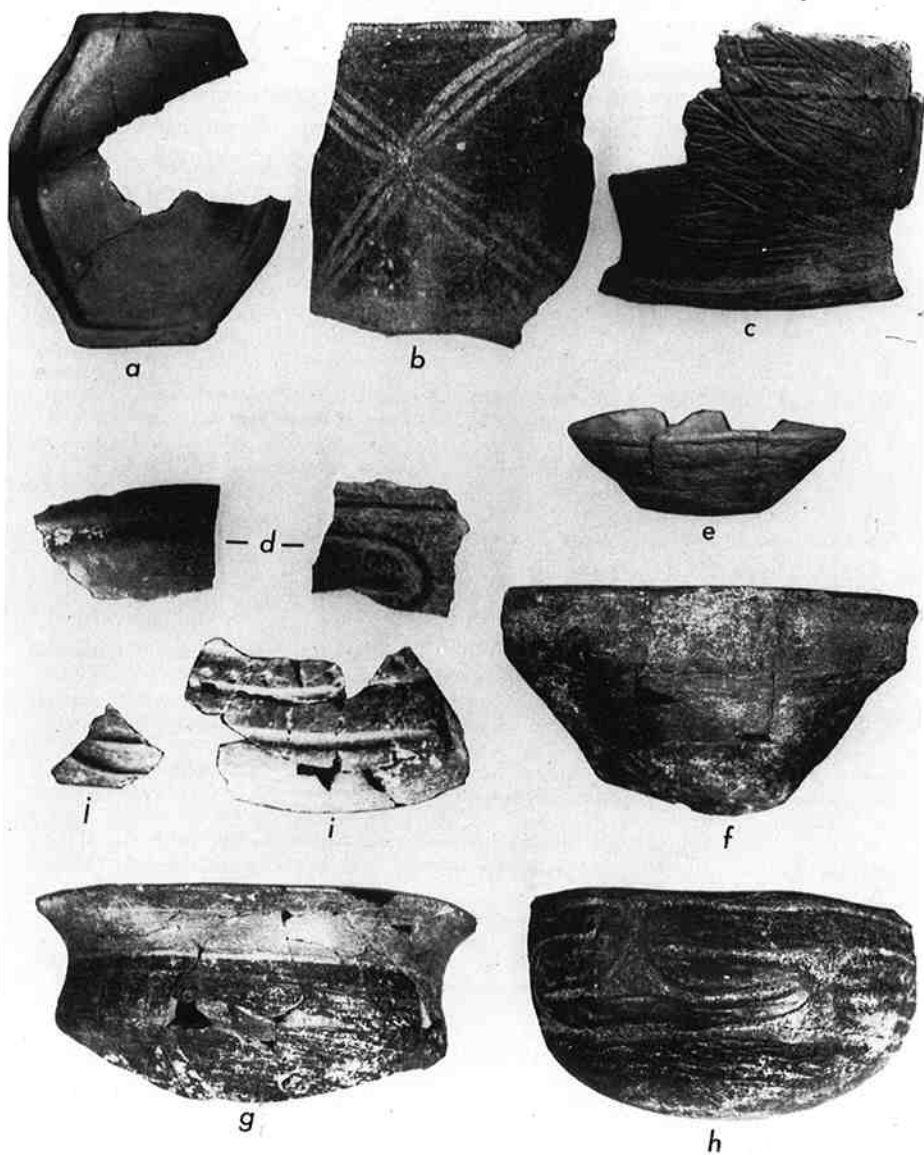


FIGURE 2

Mill Reef Pottery. a, Mill Reef Plain with bevel on outside of rim; b, Mill Reef White-on-Red; c, Deep Bay Scored; d, h, Marmora Red Incised; e, Unclassified Fannis-like bowl; f, Mill Reef Brushed; g, Mill Reef Polychrome, inverted bell shaped; i, Marmora Plain; j, Marmora Red Incised-Punctated.

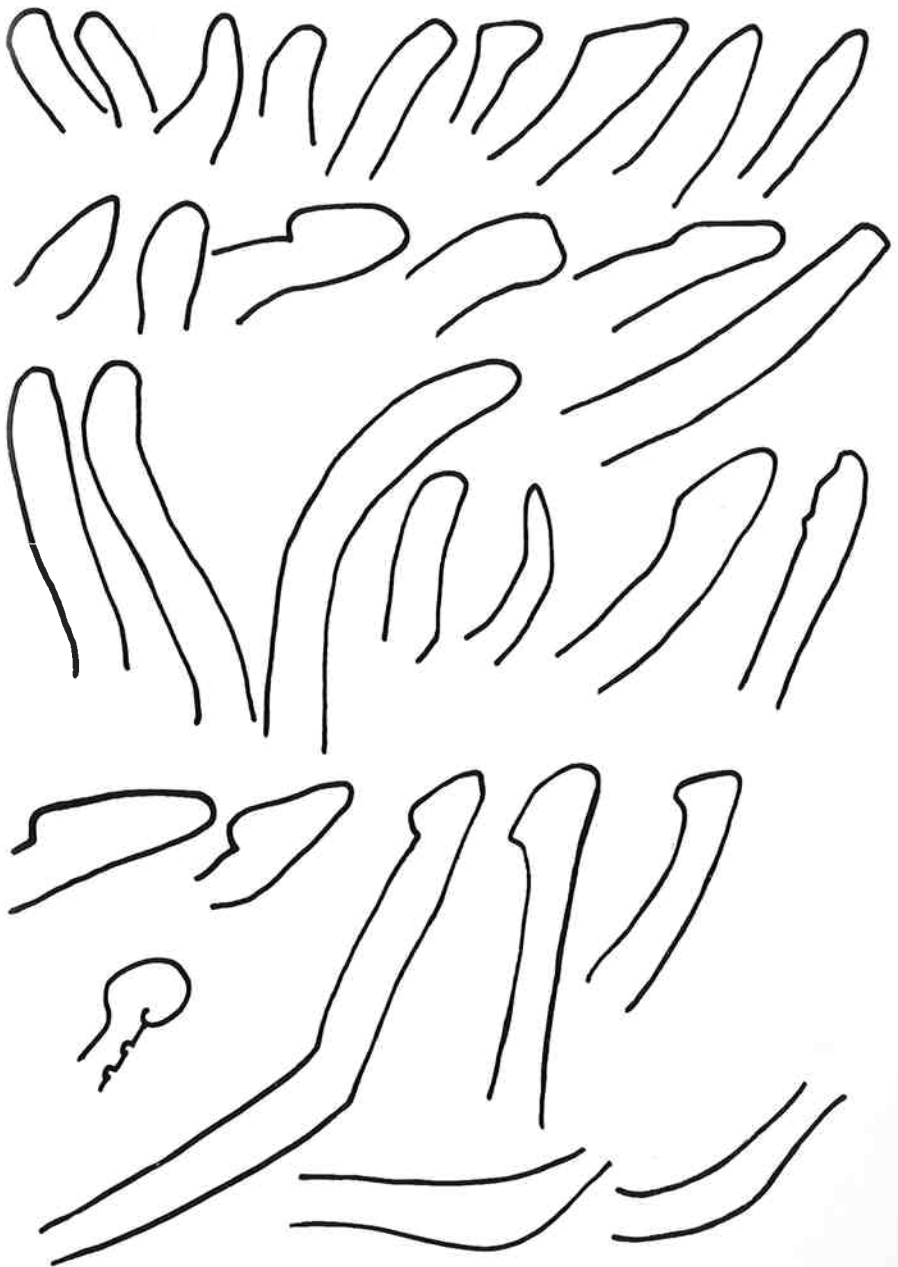


FIGURE 3  
Typical Rim Profiles from the Mill Reef Site.

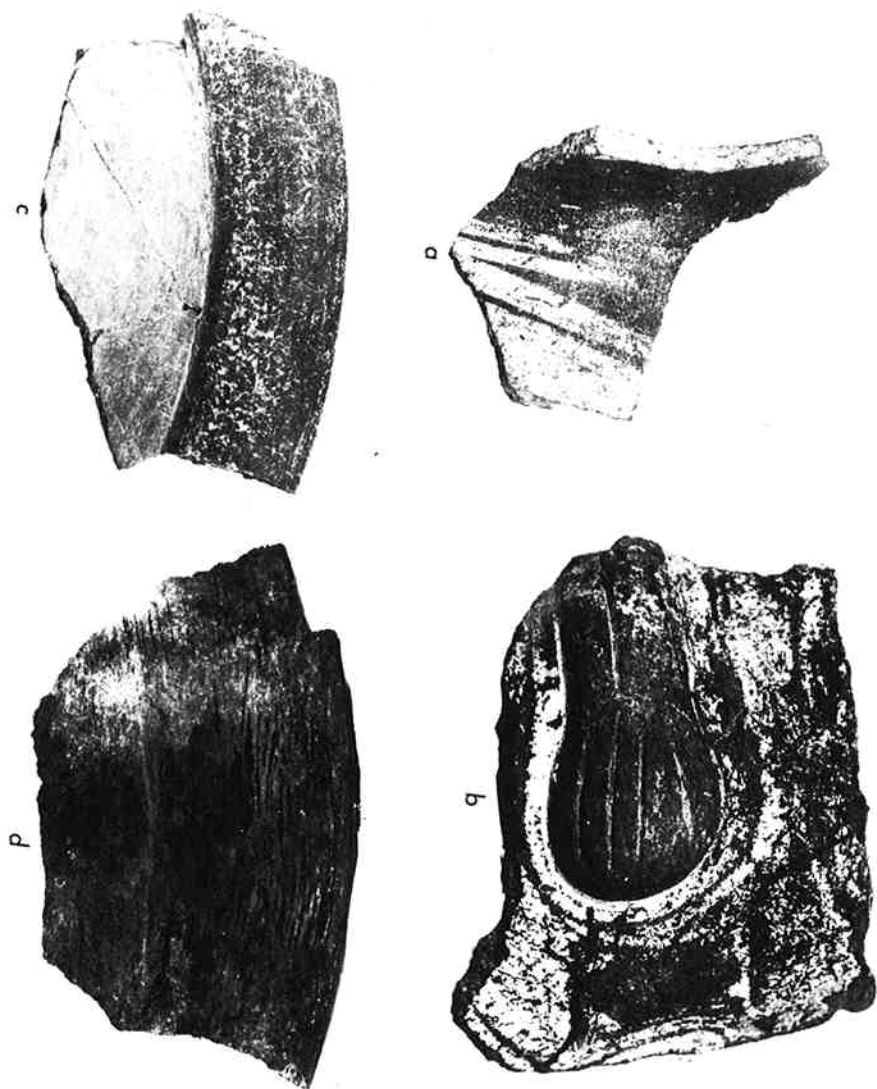


FIGURE 4  
Mill Reef pottery from the lower levels of excavation. a-b, Mill Reef White-on-Red; c, Mill Reef Red-on-Buff platter or dish; d, Mill Reef Brushed with 'notched' rim and concave shoulder.



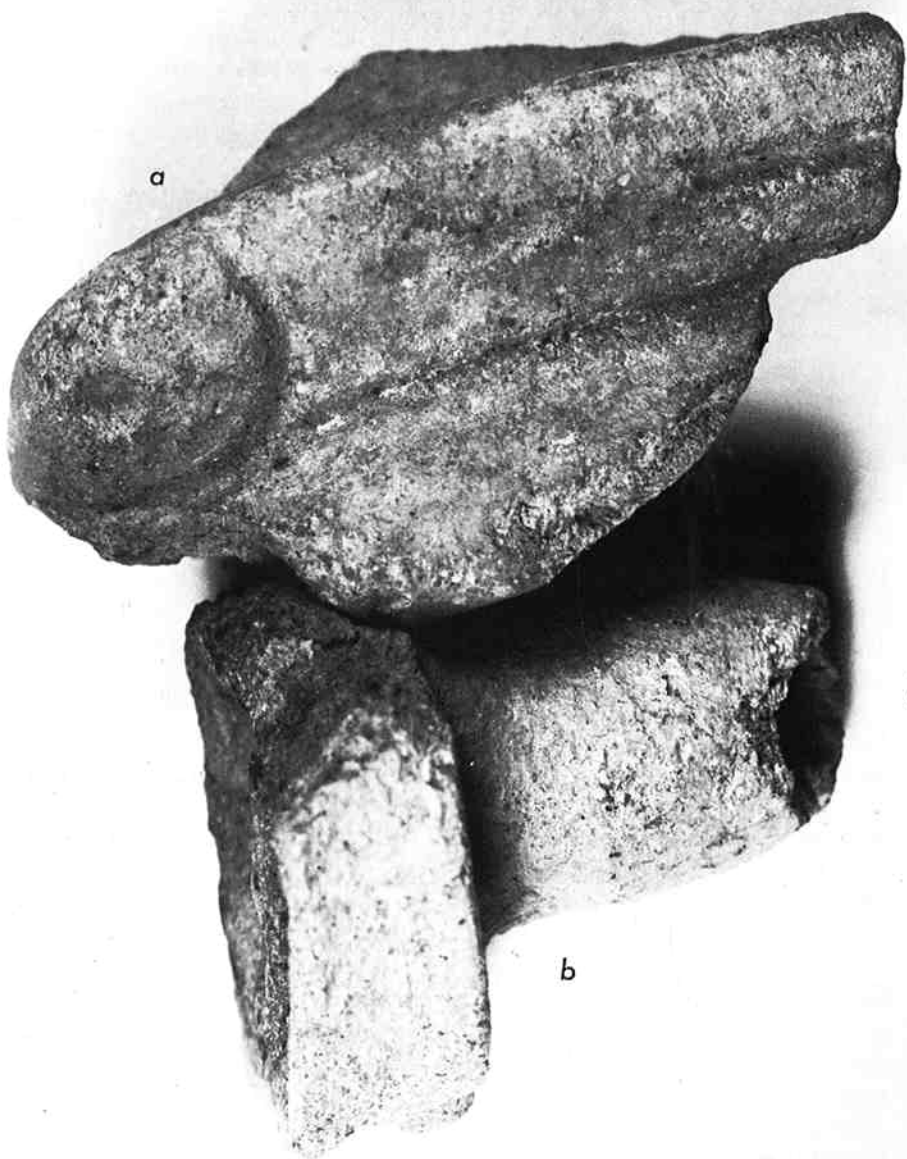


FIGURE 5  
Ceramic spout and incised rim sherd.