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The object for which this corporate society is formed is to bring together those persons having a serious interest in archaeology, history and related studies; to explore, excavate (under the aegis and direction of the appropriate authorities), chart and study the cultures of primitive peoples who once inhabited our Islands; to publish the Society's findings; to communicate with other archaeological and historical societies and disseminate knowledge acquired through such activities.

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BIOGRAPHICAL NOTES

WILLIAM FLEMING CISSEL is a tenth-generation native of St. Croix. He graduated with a B.A. in history from Brigham Young University, and is currently Assistant Curator of the Virgin Islands Museum at Fort Frederik, in this city. Mr. Cissel is the owner of Estate La Reine, King's Quarter, and lives in its secular Greathouse.

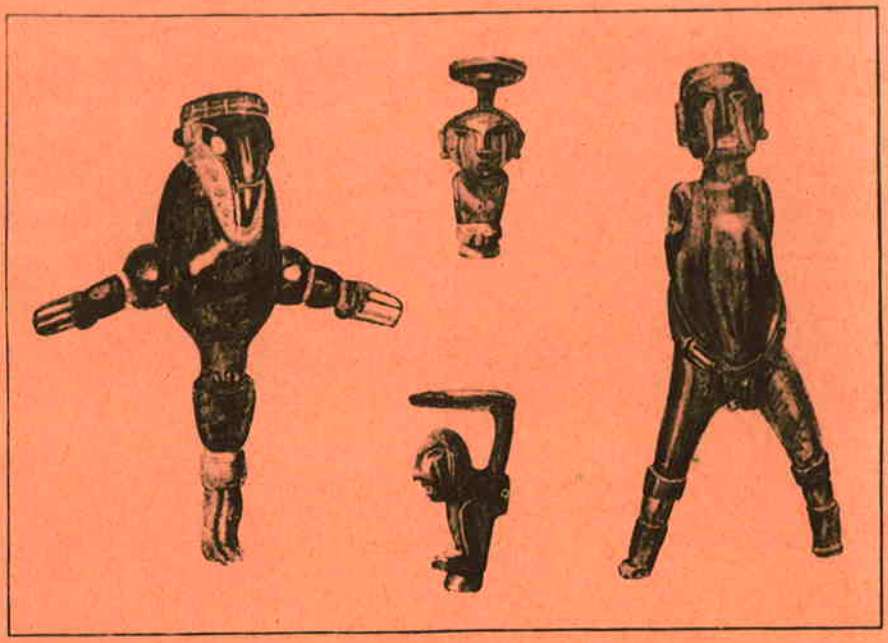
JEROME SYDNEY HANDLER earned his B.A. and M.A. in anthropology at the University of California, Los Angeles, and his Ph.D. at Brandeis University. He is Professor of Anthropology at Southern Illinois University, Carbondale. Author of *A Guide to Source Materials for the Study of Barbados' History, 1627-1834*, Mr. Handler is a respected authority in West Indian slave societies.

ALICK ROWE JONES is a native of Liverpool, England. He earned his B.Sc. and Ph.D. at Bristol University, and held a postdoctoral fellowship at the University, Los Angeles. His career as Lecturer in Zoology at the University of Reading, 1964-present, was interrupted briefly from 1975-1978 for a professorship of biology at the University of the West Indies, Barbados, where he headed the Department. Mr. Jones' research interests include the physiology of single-celled organisms, muscle physiology, crab biology, biological education, and zooarchaeology.

FREDERICK WILLIAM LANGE is interested in the prehistory of Central and Mesoamerica, and the ethnohistory and historic archaeology of Barbados and the United States' Midwest. Formerly Associate Curator of the National Museum of Costa Rica, San Jose, he earned his Ph.D. in anthropology at the University of Wisconsin and is currently Associate Professor in Anthropology at Illinois State University, Normal, where he is also Director of Historic Sites Research.

DAVID ROBERT WATTERS is a native of Natrona Heights, Pennsylvania. He graduated with a B.A. in history from Wake Forest University, a M.A. in anthropology from the University of Nevada, and a Ph.D. in anthropology from the University of Pittsburgh. Formerly a Battery Commander in the United States Army Field Artillery, stationed in Germany (1971-1972), he was awarded a Silver Star for valor (Vietnam, 1970), and a Bronze Star with two oak leaf cluster for service (Vietnam, 1969-1971). Besides his distinguished military career, Mr. Watters is the author of *Caribbean Prehistory: A Century of Researchers, Models and Trends* (1976), and he has done field work in Guatemala, the Great Basin of the North American West, and, in the West Indies, the islands of Barbuda and Montserrat.

For the biographical notes of Alfredo Ezequiel Figueredo *and* Bruce Errol Tilden, *please see the penultimate page of issue* number two; *for the biographical note of* Robert Stanley Brown, *please see the inside back cover of issue* number eight.



ANCIENT WOODEN FIGURES FOUND IN JAMAICA

The English journal *Archaeologia*, in the 'Appendix' to its volume XIV (1808), plate XLVI, published these illustrations of wooden figures found in Jamaica; the following explanatory note appears on page 269:

'April 11, 1799.

'Isaac Alves Rebello, Esq. F.A.S. exhibited to the Society Three Figures, supposed to be of Indian Deities, in wood, found in June 1792, in a natural cave near the summit of a mountain, called Spots, in Carphenter's Mountain, in the parish of Vere, in the island of Jamaica, by a surveyor in measuring the land. They were discovered placed with their faces (one of which is that of a bird) towards the east.'

A CHERT POINT FROM KRUM BAY, ST. THOMAS

By Alfredo E. Figueredo

Recent work by the eminent Polish archaeologist Janusz K. Kozlowski has brought a heightened awareness of stone tool analysis to Caribbean archaeology. Kozlowski's influence has been beneficial especially in helping local archaeologists to shed many preconceptions which held much valuable evidence trapped irretrievably. Modest efforts realized independently by other workers (*e.g.* Figueredo 1974) never could have attained the impact of the Kraków professor's monograph, 'Preceramic Cultures in the Caribbean'.

One important aspect of Kozlowski's morphological and technological exposition, is the presence of 'points' in West Indian preceramic contexts. Such 'points', when found formerly, by and large were glossed over in site reports and other germane literature. Workers with many years of field experience, and the *very* few newcomers who have read their predecessors' work, have, of course, come across the 'puntas de lámina simple' of the Cubans, Carrington's 'point' (in a MS account!), Olsen's 'point' from Antigua, McKusick's 'point' from St. Lucia, and the controvertible Scholander Collection, published eruditely by the great Lovén (1932). Those 'in the know' will add mentally scattered references by Branch, Harrington, Jimeno, Morales Cabrera . . ., but, to the wise, it is said, a few words are sufficient.

During the course of excavations at the ill-fated Krum Bay Site, St. Thomas, the author came across artifacts chipped out of exotic (*i.e.*, non-St. Thomian) chert. These occurred in strata VI and V, and coincided with feeble attempts made by the Krum Bay people to use local chert and hyaline quartz, before opting for the nearly exclusive use of basalt attested in strata III, II, and I. Peculiar in this small assemblage of artifacts chipped out of exotic stone, is a small 'point' of brown chert.

Out of the 1329 chipped stone artifacts analyzed and seriated by the author from his excavations at the Krum Bay Site during 1973 and 1974, 1134 (92.3%) were of local basalt, 59 (4.8%) of local felsite, 12 (1.0%) of local chert, 10 (0.8%) of hyaline quartz, 9 (0.8%) of other materials, and only 5 (0.4%) of exotic chert. All 1329 artifacts represent a core and flake tool technology properly Meso-Indian, as the 'blades' are clearly accidental. Only three stone artifacts chipped bifacially were found, two made of basalt, and one of brown chert.

The brown chert point from Krum Bay (*vid.* Fig.) comes from Trench A, Pit 3, Level J (= Stratum VI, thick shell midden with much gray ash, Munsell Soil Color Chart value 2.5 Y 5/0), at a depth from the surface of approximately 90

cm. The chipping is bifacial. There is no ready indication of use as a perforator, so that the term 'point' is descriptive and does not imply a *function*; notwithstanding, *morphology* and *technique* suggest, potentially, use as a perforator (*vid.* Figueredo 1974 for qualified alternative interpretations; *cf.* Kozlowski and Ginter 1975). The specimen is unique in the entire collection from Krum Bay, and also in the Archaic (Meso-Indian) of the Virgin Islands.

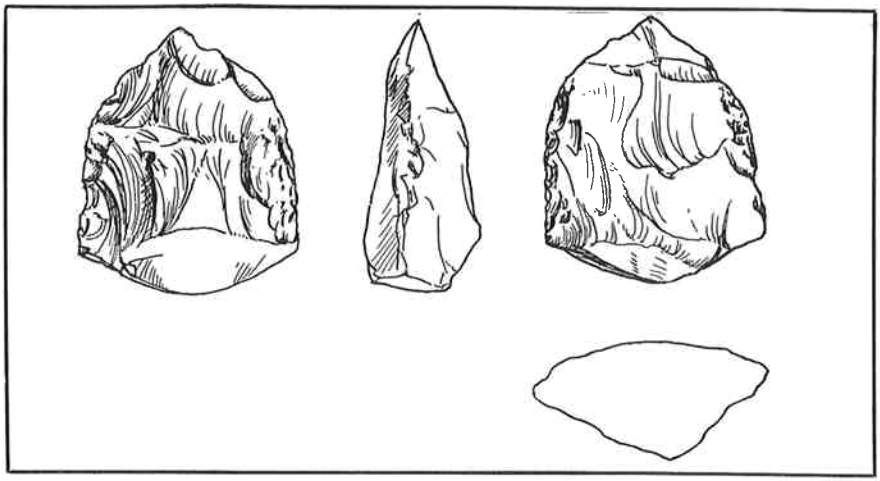


FIGURE
A Chert Point from Krum Bay, St. Thomas
Scale 1:1
Drawn by Jeffrey M. Gross

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THE ARCHAEOLOGY OF MAPPS CAVE: A CONTRIBUTION TO THE PREHISTORY OF BARBADOS

By Frederick W. Lange and Jerome S. Handler

Introduction

In 1971, 1972, and 1973 we conducted archaeological investigations at sugar plantation sites on the southeastern Caribbean Island of Barbados. These investigations were designed to fill gaps in written records on the Island's slave system and to recover patterned indicators of mortuary, domestic, and acculturative behavior of African slaves and their descendants from the middle of the XVII Century to 1834, the year slavery ended throughout the British Empire (Handler and Lange 1978).

Because our research focused on the historical period, prehistoric Amerindian remains were tangential to our interests. In fact, we found such remains at only one of the plantations that we surveyed and tested—in a cave at what in earlier times had been the Mapps sugar plantation (Fig. 1). We were originally attracted to Mapps because contemporary local tradition maintained that slaves had once inhabited the cave. Had the cave been occupied by slaves, we hoped its dry environment might have facilitated the preservation of organic materials, and that the patterns of archaeological remains within the cave might contrast with those at slave sites in non-cave contexts.

In this paper, our interest is simply to report on the limited prehistoric data we recovered from Mapps Cave; we also place these data within the context of what is known about Barbadian prehistory.

Amerindian artifactual remains have been known to Europeans on Barbados for many years (*vid., e.g.*, Hughes 1750; Chester 1870), but Fewkes (1915) provided the earliest modern attempt systematically to assess the Island's prehistory. In doing so he observed that 'Middens, or sites of aboriginal settlements, are found at various locations on Barbados, occuring inland as well as on the coast. We have records of archaeological material from every parish in Barbados,' and he listed many of the better known localities (1915:50). In many cases there appears to have been greater settlement density along the coasts, but this may have only been a result of agricultural disturbance in which many inland sites were destroyed by intensive sugar cane cultivation. The population density of modern Barbados is approximately 1500 per square mile, one of the world's highest; in 1834, the Island already had a density of 600 persons per square mile, so relatively dense human population has been a factor affecting the preservation of the archaeological record for some time (Handler and Lange 1978:13).

Antiquarians have long been interested in Barbadian prehistory, and persons such as Barton (1953) and Roach (1937, 1938) compiled summaries of artifact distributions and site locations. These and other earlier writers, such as Fewkes, often presaged modern themes—albeit sometimes not explicitly—in their discussions of artifact reutilization, trade in exotic materials, combined utilization of archaeological and historical records, the impact of subsequent behavior on the formation of archaeological contexts, settlement patterns, and the relationship between Barbadian prehistoric development and the Island's geographical and geological setting.

In the 1960's, Ripley and Adelaide Bullen were the first to conduct scientific research based on controlled excavations (Bullen and Bullen 1968; 1972). No other investigations of the Island's prehistory have been conducted, and the Bullens' work remains the broader context against which the data from Mapps Cave are presented.

Mapps Cave

Mapps Cave is geologically similar to a Yucatecan *cenote:* subterranean water has eroded a large subsurface area of limestone to form a cavern. At the eastern end of the cavern, part of the roof had collapsed and was open to the sky (Fig. 2). The floor at that end was covered with broken china, glass, crockery, roof tiles, conch shell fragments, and some white clay pipe fragments; a box from a recently opened Kentucky Fried Chicken outlet on the island was representative of more recent *dēbris.* The western portion of the cavern is much larger than the eastern part and forms the cave proper. The floor in the western portion had much less *dēbris*, primarily limited to conch shells, roof tiles, occasional china fragments, and sherds of Amerindian pottery.

In all, the cave floor was easily divided on the basis of content and concentration of surface materials. The edge of the cave floor under the western portion was shored up along its north side by coursed stonework (Fig. 2). We could not assign a date to this construction, but assume it is post-XVI Century and non-Amerindian.

Excavations at Mapps were conducted in the cave itself and in an adjacent open field. Within the cave a shallow 1-meter wide trench was excavated to bedrock for approximately two-thirds of the distance of the east-west axis (Fig. 2). Loose, powdery soil had accumulated over blocks of roof fall and the bottom of the excavation was quite uneven. Excavation usually terminated at 30 centimeters in depth and we did not observe a separation of strata between the historic and prehistoric materials. Excavation continued until the mixture of Amerindian and European materials became clearly evident.

In the field adjacent to the cave, a series of six 1 × 1 meter squares were excavated in an attempt to locate cultural deposits below the plow zone (in some

areas limestone bedrock was visible on the surface). The deepest of these test-pits terminated at 45 cm. below surface, and no undisturbed contexts were located. The majority of the adjacent area had been disturbed by deep plowing. No Amerindian material was found in the test excavations or in extensive surface collecting of plowed areas. Thus, the following discussion of artifactual material focuses exclusively on Amerindian data recovered from the cave.

Ceramics

All the Amerindian ceramics appear to be from the Suazey Complex (Bullen 1966) dating from A.D. 1000-1500 (Willey 1971:vol. II, 368), and is possibly associated with a Carib occupation. Bullen and Bullen noted that 'Sherds from the Suazey Series are recognizable in any collection from the Lesser Antilles as the "worst" pottery present. Classifiable as grit-tempered ware, crushed shell is sometimes present . . . . Walls tend to be very thick, 8-12 mm., with a range of 4 to 18 mm. (1972:144).' Red-painting can also occur and is present on some sherds from Mapps (Fig. 3). The Bullens also noted that while the Suazey Series is abundant in the Windward Islands, it thins out rapidly in occurrence north of St. Lucia and is unknown in the Virgin Islands. The series is common on Barbados and Tobago, but does not occur in Trinidad or northeastern Venezuela, except at the pearl diving center of Margarita where Caribs (and other Indians) were imported as slave labor (Bullen and Bullen 1972:151). The location of Mapps Cave also conforms to the Bullens' observation that 'on Grenada, St. Lucia, and Barbados, Carib sites producing Suazey Complex ceramics concentrate on the windward (eastern) sites . . .' (1972:150).

Shells

The queen conch (*Strombus gigas*) was the most common type of marine shell found at Mapps Cave (*vid.* Table). In addition to being utilized for food by the Amerindian population, conch provided raw material for shell tools. All of the conch shells recovered from Mapps showed evidence of alteration or butchering—either to form a tool, facilitate meat removal, or both (Fig. 4). The most common tool forms were celts, with the category of artifacts Armstrong recently referred to as '*Strombus* columella tools' (1979:29) also present. We did not look specifically for the latter in the shell analyses we did in 1972, and hence these appear tabulated under 'fragments' of shell artifacts in the Table. The nearest source to Mapps for *Strombus gigas* is about 9-10 kilometers southwest in the Long Bay area of the coast (personal communication received from local informants at time of field work).

The only other recovered shells that were probably important as food were the West Indian top shell (*Cittarium pica*); *Nerita* is also a food shell, but is

much less common in the inventory than either the conch or top shells. *Purpura patula*, also present in small quantities at Mapps Cave, is well known as a source for purple dye (Gerhard 1964).

In the late XIX Century, Chester already realized the technological implications which the lack of locally available hard stones presented to the aboriginal groups of Barbados: 'It was therefore a problem . . . of what substance they should form their weapons and implements for daily use, and it was solved by their employment of the hardest material to which they had access, the shell *viz.* of the surrounding sea, such as the *cassis* and *conus*, and especially the great *strombus*;' he described surface-collected shell chisels and celts which ranged in length from 1½ inches to 6½ inches (1870; *vid.* Roach 1937).

Lithics

Barbados' non-volcanic origin had a profound effect upon the technology and cultural development of its Amerindian populations. For example, Chester (1870:43) noted:

> There is not even a fragment of . . . primary or secondary rocks in the whole island . . . . Weapons of *hard* stone are . . . occasionally found . . . but they are comparatively of very rare occurrence, and were, of course, brought either from the other islands where primitive volcanic rocks abound, or from the mainland of South America.

Roach discussed two implications of the absence of hard stone resources for the prehistoric inhabitants of Barbados: their attempts to utilize poor quality local materials and their secondary reutilization of imported artifacts. He noted (1938:2) that

> . . . our aborigines' custom of putting damaged implements to secondary use was not confined to those of shell; for damaged *flattened* stone implements of South American origin, of both petaloid and oblong shape have been found, which bear marks of having been put to secondary use as hammerstones . . . .

While Roach's identification of the lithic materials as 'of South American origin' lacks contemporary petrographic or other geological analyses, his observations on re-use were significant in light of modern archaeological concerns.

No lithic materials were recovered from excavation at Mapps Cave. One dioritic celt (Fig. 4) was surface-collected, however, during research at another plantation.

Discussion

Writing in the early XVIII Century, Hughes (1750:6-7) mentioned the possible human habitation of Barbados' caves and described what has been called variously 'Indian Cave', 'Indian Temple', or 'Indian Castle', located northeast of Speightstown (Fig. 1). In 1902, Fewkes visited Barbados, and, inspecting the cave, concluded that 'there seems no good reason to doubt their aboriginal characters. They have from the earliest times been known as Indian excavations,

and it would be strange if, after having been so called for so many years, they are not of Indian manufacture or associated with aborigines' (1922:85-86). Structural details of the caves (such as the presence of an entrance with a keystone arch) suggest they were at least modified by Europeans.

Chester (1870) also mentioned the brief exploration of '. . . some curious rock-hewn chambers excavated in the limestone in the neighbourhood of Bridgetown, and designated by the inhabitants as "Indian caves" . . . . The "caves" in question are three in number, and are situated respectively at Lemon Grove, Mount Ararat, and on the Goodland Estate, all in the parish of St. Michael.'

In their carefully hewn walls, the caves mentioned by Fewkes and Chester are internally different from Mapps; moreover, these other caves contained niches carved in the walls (Chester 1870:49-51), features absent from Mapps (Fig. 5). Chester implied the caves were used by Amerindians and the niches used for placement of pottery idols. While impossible to decide without excavation and further documentary research, we interpret these caves as being of historic period, at least in many of the refinements such as arches. The linguistic confusion over the use of the term 'Indian' in conjunction with some of the caves is provisionally explained by historic period alteration, enhancement, and utilization of areas previously favored by Amerindians. The data from Mapps Cave clearly represent multi-component Amerindian and European use; in other specific cases closer attention to historical resources may resolve uncertainties.

The Bullens' excavations at numerous sites on different islands indicate to them that the Suazey Series is the last aboriginal ceramic complex prior to the arrival of the Europeans. The evidence for its late temporal position on Barbados is particularly clear at the Chancery Lane and Peak Bay sites (Bullen and Bullen 1968:137-138, 140-141), and 'Bullen notes that the Suazey Phase is more fully represented—in number of sites, and range of materials—on Barbados than on any other island' (Willey 1971:vol. II, 395). This suggested to Bullen a number of migration patterns related to the prehistoric development of the Caribbean. Willey also noted (1971:vol. II, 393) that 'West Indian archaeologists are by no means agreed on this identification of a Carib archaeological complex. In referring to the time when the Carib reached the Lesser Antilles, Rouse says: ". . . pottery may not be a good indicator of this event . . . when . . . the Carib killed the Arawak men and married their women, it was the women's language which survived. Since the women were potters, their ceramics should also have survived" (1964:514).' Haag (1965) also disagrees with Bullen's argument, to which Bullen has responded with further assessments regarding social implications of the probable mixing of Arawak and Carib populations and ceramic traits (Bullen and Bullen 1968:143). Basically, there does not seem to be enough systematic data from the Lesser Antilles to deal with this problem even now. Whatever the

cultural affiliation of Suazey ceramics, they seem to be very late in time. At Savanne Suazey in Grenada, Banana Bay on Baliceaux, and Indian Bay in St. Vincent, Suazey ceramic were found in association with sherds from Spanish olive jars (Bullen and Bullen 1972:166).

No Caliviny polychrome was found at Mapps although this pottery is known from other Barbadian sites. The Bullens believed that Caliviny polychrome immediately preceded the Suazey Series (and was of Arawak origin) or in some cases may even have been coeval with Suazey (Bullen and Bullen 1972:156-166). The absence of Caliviny suggests that Mapps Cave was occupied relatively late in the protohistoric period, apparently for a brief duration. It may also have been a specialized activity area and not a place of permanent habitation. Occupation of the cave itself is somewhat of a regional anomaly. From what is known of settlement pattern from limited surveys for prehistoric sites on Barbados and other islands in the Lesser Antilles, occupation seems to have been more frequent on terraces in front of caves or rock overhangs, and relatively rare within the caves themselves.

In reviewing the local and regional context for the Mapps Cave data, we see current limitations of archaeology in Barbados: high levels of site disturbance by agricultural practices and modern population densities, poor levels of artifact preservation due to a tropical climate, lack of architectural concentrations, and inadequate basic knowledge regarding aboriginal settlement patterns and subsistence practices.

Acknowledgements

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TABLE
MAPPS CAVE

Artifact Distribution	Surface	S1 W1					S1 W2			S1 W3			S1 W4			
		0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	0 - 10 cm	10 - 40	40 - 57	0 - 10 cm	10 - 20	20 - 30	0 - 10 cm	10 - 40	40 - 50	cm
Suazey Ceramics																
Body Sherds	19	6	20	6	6	10	8	36	24	3	2	8	4	4	6	
Bases	3	-	-	1	-	-	-	-	-	-	-	1	1	-	-	
Rims	6	3	3	1	1	2	5	3	3	-	-	1	-	1	2	
Legs	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Shell																
Conch *(Strombus gigas)*																
Whole	-	1	1	1	1	-	-	1	-	-	-	1	-	2	-	
Fragments	-	10	11	8	5	13	15	46	10	2	-	5	-	2	10	
Tools																
Celt	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	
Hoe	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	
Fragments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Cittarium Pica	-	-	-	-	-	1	1	9	3	3	-	2	-	-	2	
Nerita	-	-	2	-	1	1	-	6	1	-	-	-	-	-	-	
Purpura patula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conus (bead)	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
Other	-	-	-	-	-	1	2	3	1	-	-	-	-	-	-	

Artifact	S1 W5			S1 W6				S1 W7				S2 W7	NO W8
Distribution	0 - 10 cm	10 - 20 cm	20 - 30 cm	0 - 10 cm	10 - 20 cm	20 - 30 cm	30 - 40 cm	0 - 10 cm	10 - 20 cm	20 - 30 cm	30 - 40 cm	10 - 20 cm	0 - 10 cm
Suazey Ceramics													
Body Sherds	1	4	1	2	6	3	2	4	1	1	1	2	15
Bases	-	-	-	-	-	-	-	-	-	-	-	-	-
Rims	-	-	-	1	-	-	-	2	-	-	-	-	2
Legs	-	-	-	-	-	-	-	-	-	-	-	-	-
Shell													
Conch *(Strombus gigas)*													
Whole	-	1	-	-	-	-	-	1	-	-	-	-	
Fragments	-	3	1	-	2	-	1	-	5	-	-	3	12
Tools													
Celt	-	-	-	-	-	-	-	-	-	-	-	-	-
Hoe	-	-	-	-	-	-	-	-	-	-	-	-	-
Fragments	-	-	-	-	-	-	-	-	-	-	-	-	-
Cittarium Pica	-	1	-	-	-	-	-	1	2	-	-	-	-
Nerita	-	1	-	-	-	-	-	-	-	-	-	-	-
Purpura patula	-	-	-	-	-	-	-	-	-	-	-	-	-
Conus (bead)	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE
MAPPS CAVE

Artifact Distribution	S1 W8 10 - 20 cm	S1 W8 20 - 30 cm	S1 W9 0 - 10 cm	S1 W9 10 - 20 cm	S1 W9 20 - 30 cm	S1 W9 30 - 40 cm	S1 W9 40 - 57 cm	S2 W9 0 - 10 cm	S2 W9 10 - 20 cm	S2 W9 20 - 30 cm
Suazey Ceramics										
Body Sherds	1	11	1	2	12	9	9	4	5	5
Bases	1	2	-	-	-	1	-	-	-	-
Rims	-	4	-	-	3	1	3	1	-	1
Legs	-	-	-	-	-	-	-	-	-	-
Shell										
Conch *(Strombus gigas)*										
Whole	-	3	-	-	3	4	2	3	1	1
Fragments	-	1	1	3	9	4	3	3	1	1
Tools										
Celt	-	-	-	-	-	-	-	-	-	-
Hoe	-	-	-	-	-	-	-	1	-	-
Fragments	-	-	-	-	-	-	2	-	-	-
Cittarium Pica	-	1	-	-	2	-	1	1	-	-
Nerita	1	-	-	-	-	-	-	-	-	-
Purpura patula	-	1	-	-	1	-	-	-	-	-
Conus (bead)	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-

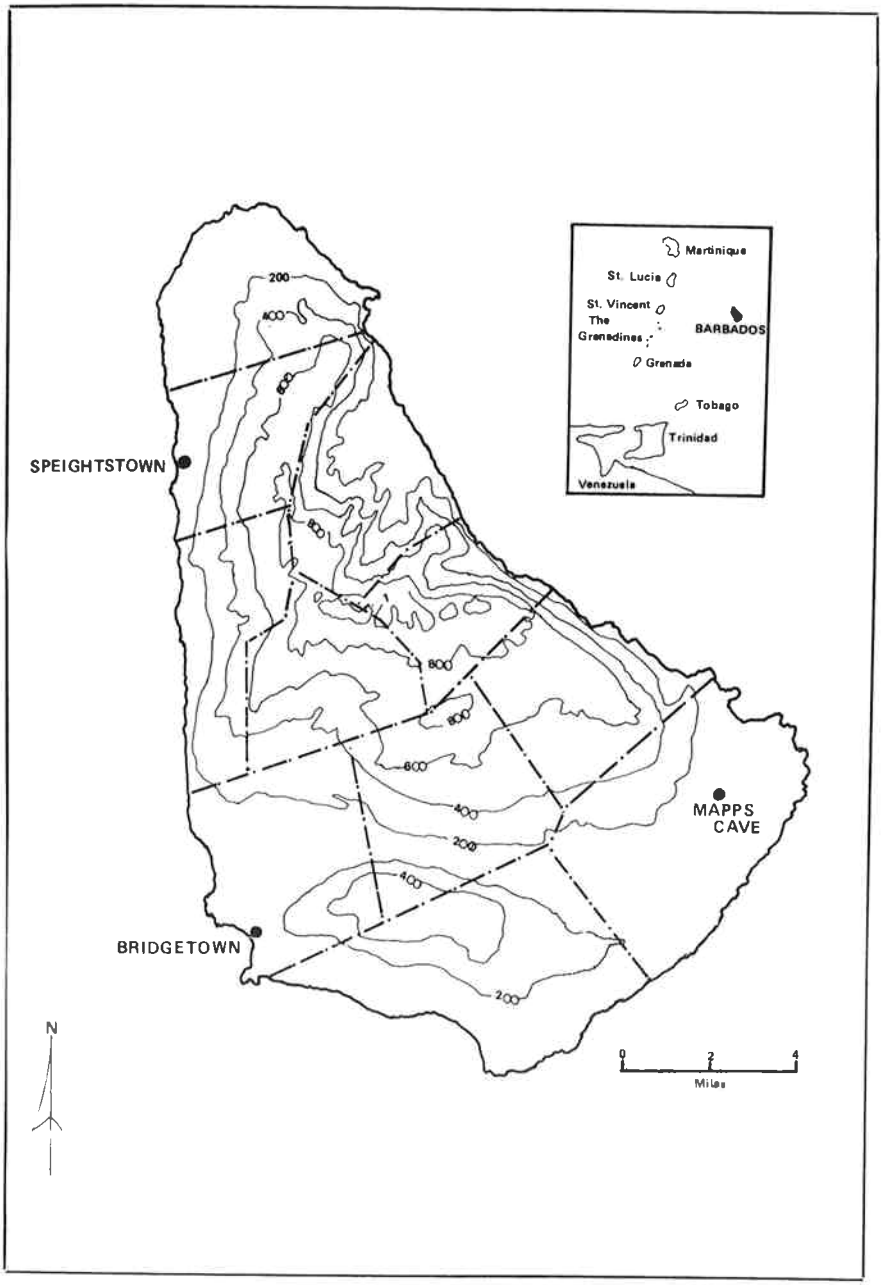
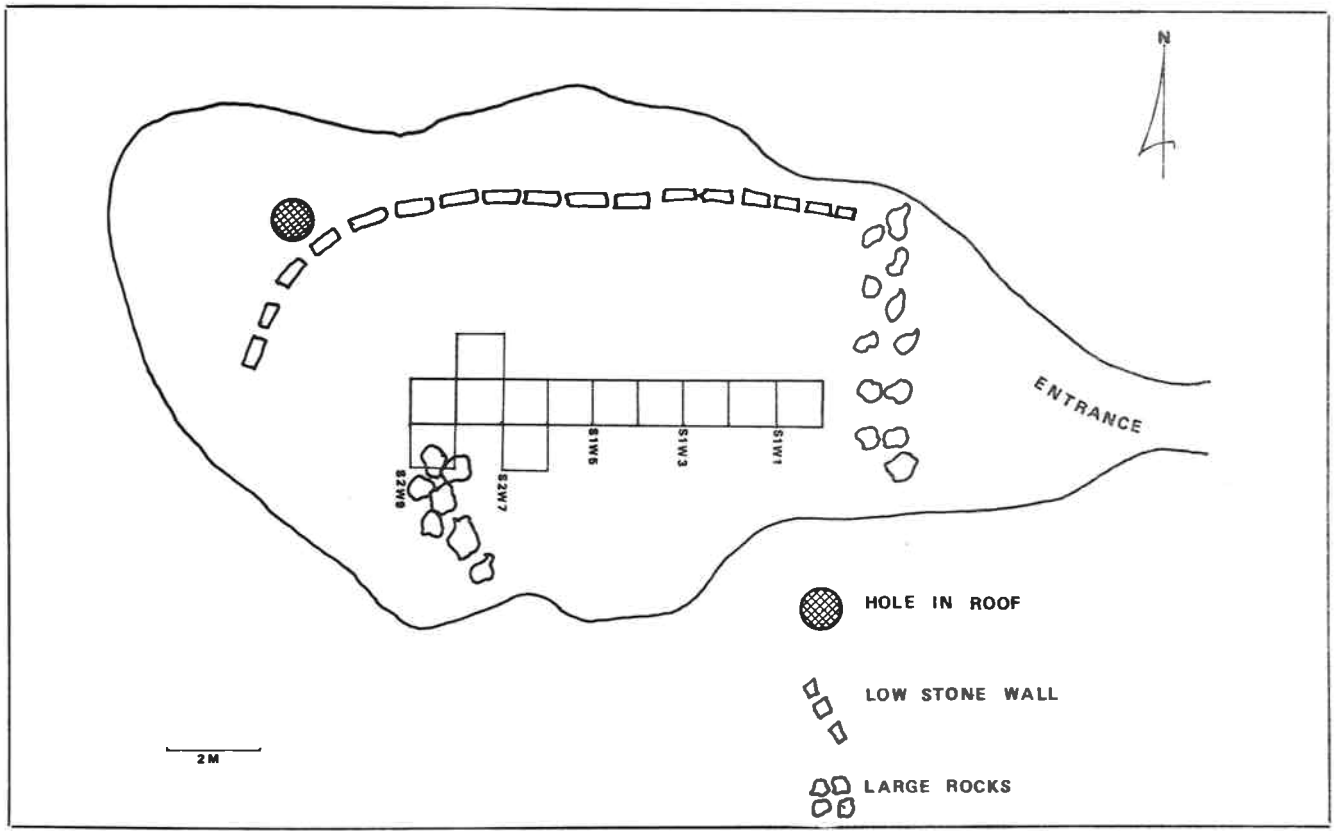


FIGURE 1
Barbados

FIGURE 2
Plan view of Mapps Cave; architectural details and excavated areas.



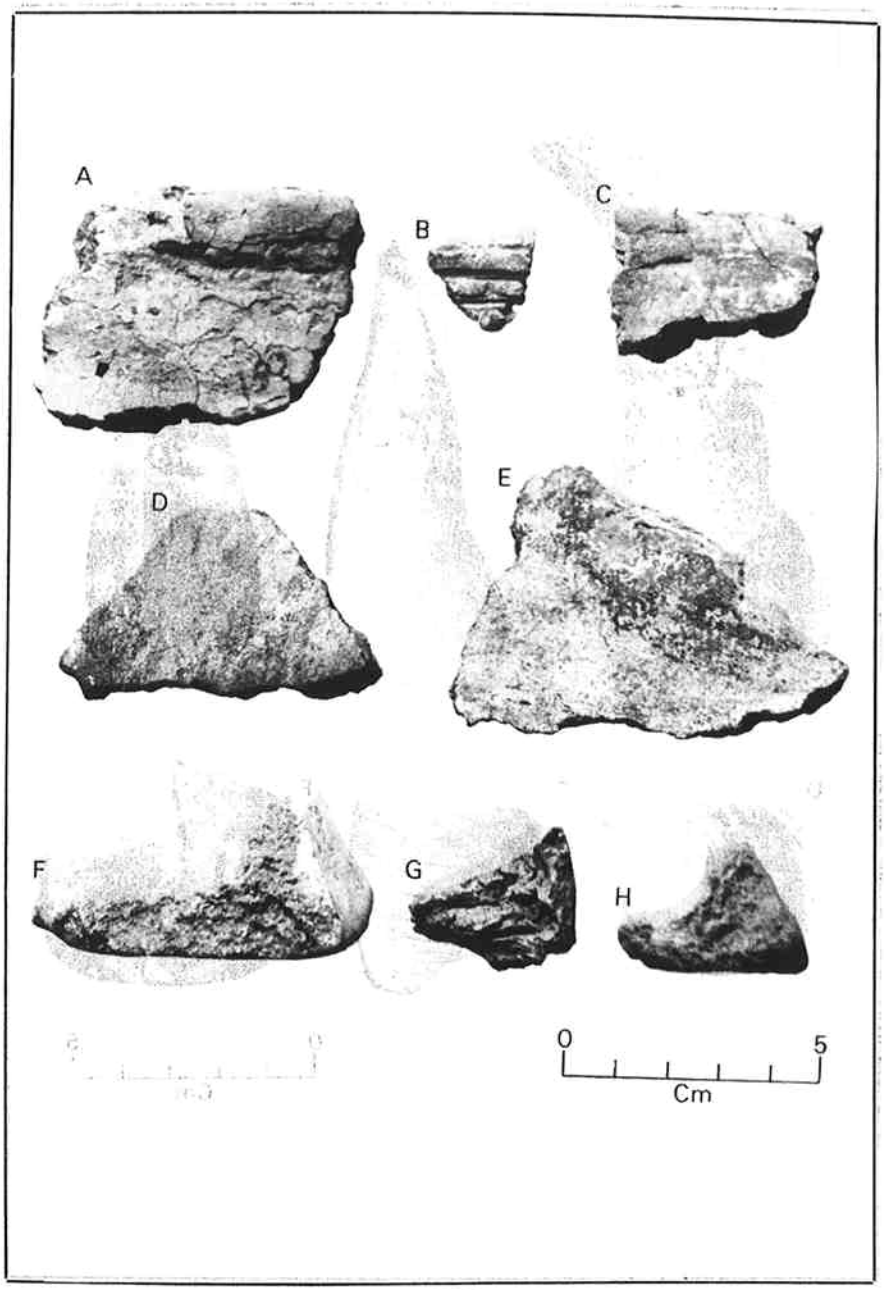


FIGURE 3
Suazy complex ceramics from Mapps Cave excavations.

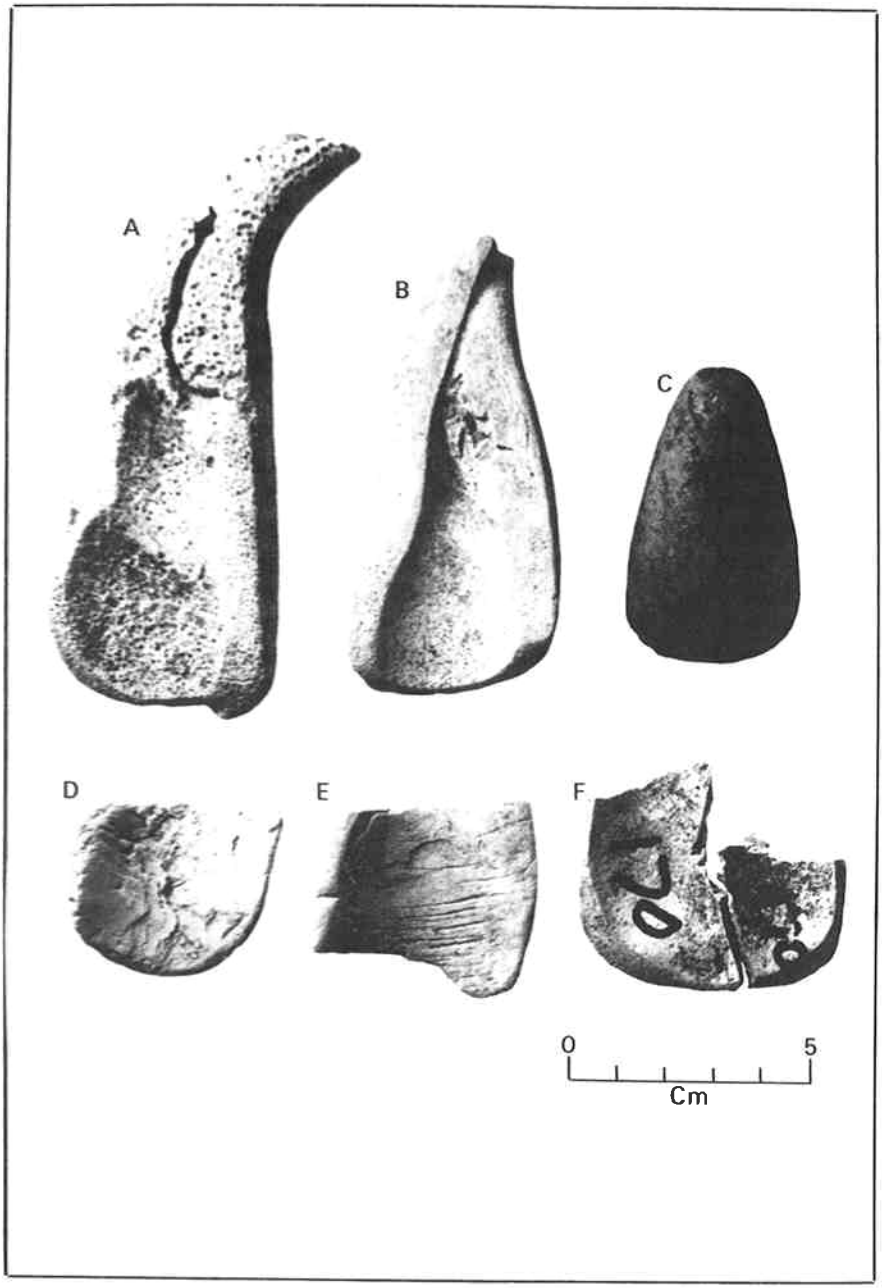


FIGURE 4

Shell tools and implements from Mapps Cave excavations (A-B, D-F); C-ground stone celt; surface collection, Kendal Plantation (St. John's Parish).

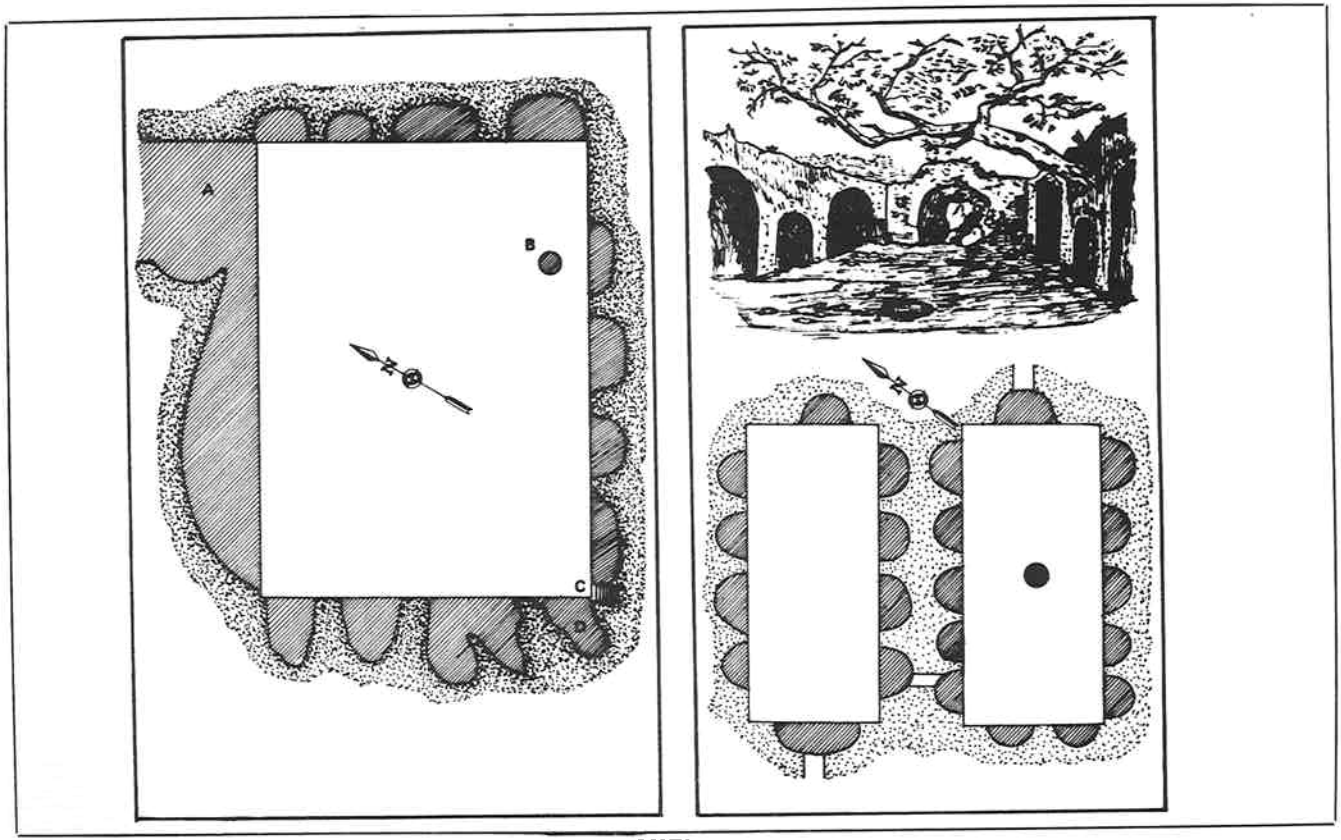


FIGURE 5

a) Lemon Grove Cave (A-entrance, B-well), re-drawn from Chester (1870); b) Mount Ararat Cave, re-drawn from Chester (1870).

A REPORT ON TWO TYPES OF MODIFICATION TO GASTROPOD MOLLUSC SHELLS FROM INDIAN CREEK, ANTIGUA

By Alick R. Jones

Introduction

Gastropod molluscs were an important part of the diet and general economy of the prehistoric West Indies (Fewkes 1922, Goodwin 1979, Jones 1980, Olsen 1975, Rainey 1940, Rouse 1948). The conch *Strombus gigas* was of particular importance as food on some islands whilst a wide variety of univalves were used for tools, utensils, jewelry, tinklers, three-pointed stones and so on. Shells of animals gathered for food usually do not show modification suggesting a 'chowder' type of culinary preparation. The shells used as utensils, *etc.*, however, were generally modified to a greater or lesser extent; a conch axe or a perforated olive shell are clear examples. This report describes two types of modification; one appears to be related to food preparation, the other is of unknown significance.

Site and Collection

The shells discussed in this paper were excavated from the Indian Creek midden site in Antigua during July 1979. The site and the Yale University/Antigua Archaeological Society excavations there in 1973 have been reported by Olsen (1974) and Rouse (1974, 1980). An earlier faunal excavation at this site also has been reported (Jones 1980). The present material was obtained from two pits (PA4/FA79 I and II) adjacent to those designated 6 and 5 respectively by Rouse and Olsen. Each pit was small, measuring 1 m. by 0.5 m., divided into horizontal levels of 12.5 cm. (half the depth of those dug by Rouse). Pit I reached virgin ground at a depth of 1.35 m., Pit II at 1.20 m. The material was passed through a screen having a mesh of about 4 × 4 mm. Along with other animal material, all the molluscan shells were retained for later examination.

Representative shells were radiographed using a Hewlett-Packard Faxitron X-ray machine.

There are relatively few remains of large gastropods (*Strombus, Cassis, etc.*) at Indian Creek and the marine gastropod shells recovered there fall into two major groups. Firstly, medium to large *Cittarium pica* (averaging about 35 mm. from umbilicus to apex) which were almost certainly used for food. Secondly, small (less than 30 mm. maximum dimension) shells representing a

wide variety of species and including some small *Cittarium*. Although some of this latter group may represent food organisms this is not true for all as some were beach worn specimens undoubtedly empty when collected.

Whorl Removal in *Cittarium pica*

The whelk, *Cittarium pica* is a common dietary element in the remains from Indian Creek. Jones (1980) reported that its shells constitute 39.7% by weight of the faunal remains and calculated that it represented 4.3% of the animal food. It is one of the few animals that is found commonly at almost all levels of excavation. In many cases the shells are intact. However, in other cases a consistent form of damage is to be seen (Figs. 1 and 3a) in which a portion of the body (final) whorl is removed from the region opposite to the aperture.

If a live *C. pica* is observed it will be seen that the body can retract a considerable distance into the shell protecting itself with the horny operculum. It is then almost impossible to gain access to the soft parts in such retracted animals without breaking the shell, and even after boiling the meat may be difficult to extract. Thus it seems likely that the shell damage was a deliberate attempt to open the shell behind the operculum to permit removal of the animal. Whether the breaking of the shell took place before or after cooking is not clear but live gastropods are firmly attached to their shell by means of columella muscle so that the latter is more likely.

Whorl removal as seen in archaeological material can be mimicked fairly easily by striking the base of the shell against a stone with the point of contact close to the umbilicus and opposite the aperture (Fig. 2). The blow should be directed slightly outwards from the axis of the shell. Fig. 3b shows a shell broken in this way by the author. The point of impact in both experimental and archaeological material is often characterized by a notch in the fractured line (Figs. 2, 3a and 3b).

Only a relatively small portion of the *Cittarium* shells recovered showed this type of damage. Of 148 shells whose umbilicus and opening were intact 12 showed whorl removal, or some 8.1%. The average height (from spire to umbilicus) of the damaged shells were 39.1 (S.D. $\pm$ 10.0) mm. whilst that for undamaged shells was 38.1 (S.D. $\pm$ 14.2) mm. Thus there appears to be no selection of individuals for whorl removal on the basis of size. The practice of whorl removal was acquired either prior to or soon after the arrival of the Indian Creek people in Antigua as modified shells have been found at the lowest levels of excavation II; the same level as that dated by Rouse (1980) at A.D. 200 $\pm$ 80. Further, the practice was a persistent one as such shells are found up to the shallowest level dated by Rouse at A.D. 1105 $\pm$ 80.

Columella and Inner Whorl Removal

Robinson (1978) has described a number of modifications to olive shells (*Oliva* spp.) from the Virgin Islands including the removal of the spire, either in part or entirely, and the removal, *via* the apex, of part of the body whorl. Hoffman (1970) has reported finding large *Cassis* and *Charonia* shells at Mill Reef, Antigua, from which most of the interior (columella and whorl partitions) had been removed. The modification described below, whilst bearing some relation to those of Robinson and Hoffman, appears to be distinct and characteristic. In its least profound form it is seen as an elongated hole in the upper surface inside the final whorl penetrating into the space of the whorl above (Fig. 4). More elaborate modification involves the removal of more of this inner whorl surface and a part of the columella (the central 'spine' of the shell), usually the part nearest the aperture. In nerites (*Nerita* spp.) the teeth and part of the parietal area are often removed (Fig. 5) while in *Cittarium pica* modelling of the shell *via* the umbilicus is not uncommon (Fig. 6). In one case an olive (*Oliva* sp.) was collected in which the spire had been removed and part of the columella removed from the top of the shell as described by Robinson (1977). Removal of the columella is difficult to show in photographs but the X-radiographs in Fig. 7 give some indication of its nature.

In all, 223 small gastropod shells were collected and of those 101 (43.3%) showed columella and whorl removal. The Table at the end of this article shows that at whatever level the gastropods were collected a portion of them were modified. However the distribution of gastropods as a whole was far from uniform. They were fairly common throughout Pit I, but in Pit II they were present at the top, virtually absent from the intermediate levels and very common at the lowest levels.

It is not clear how the modification was produced. The removal of part of the columella close to the aperture as well as wear and polish on the lip of the aperture of many shells suggests that internal whorl penetration was the result of a filing or rubbing action rather than a cutting process. This is confirmed by examination of the area of penetration into the upper whorl which often shows clear signs of wear around the hole suggesting that some sort of tool was pushed backwards and forwards through the aperture (Fig. 4). In some cases there is evidence of internal whorl and columella removal *via* a hole in the side of the spire. Coral files (*Acropora cervicornis*) are common at Indian Creek but would have been too large and soft for this purpose. However flint flakes, which are both small and sharp enough, are plentiful and could have been used. Why the Indian Creek people should have modified the shells in this way is not known. Examples of 22 species of gastropod have been collected which show signs of having been worked (*vid.* Appendix). The group is diverse including shells with a more or less round aperture (*e.g. Nerita, Tectarius, Natica*), shells with a

siphonal canal (*e.g. Murex, Strombus, Cymatium*) and shells with relatively small openings (*Oliva*). Curiously, the shells of *Turbo castanea* which were frequently recovered, were never found to be modified. Perhaps there is some significance in this. As stated, modification of this type was confined to small shells in my material, and is unlikely to be concerned with the removal of soft parts for food. Hoffman (1970) has reported large *Cassis* and *Charonia* which have had almost all of the columella and internal whorls removed and suggests that they could have been used as vessels, which, while it may be true cannot hold for these smaller shells. Whatever the purpose of the modification the practice seems to have been common and widespread in both time and space. Worked shells have been recovered from most of the levels at Indian Creek and are so plentiful that it is likely that the whole midden contains close to a million such shells. The author has been shown a typically modified specimen of *Collumbella meratoria* from the Virgin Islands and has been assured that such shells are relatively common there (Linda S. Robinson, personal communication). Similar material also has been collected from Barbuda (David R. Watters, personal communication) although a superficial examination of Watters' shell material from Montserrat failed to reveal this type of modification.

Acknowledgements

Thanks are due to Desmond V. Nicholson of the Antigua Archaeological Society for his help and encouragement and to his wife and family for their hospitality while I was in Antigua. Linda S. Robinson and David R. Watters supplied both non-Antiguan material and stimulating conversation. Financial assistance came from the British Academy and the University of Reading.

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Appendix

Species of gastropod recovered from Indian Creek showing internal whorl and columella modification.

Cittarium pica
Astraea caelata
A. tuber
Nerita peloronta
N. versicolor
N. tessellata
Cerithium algicola
Tectarius muricatus
Strombus gigas (immature)
Natica canrena
Cymatium poulseni
C. caribbeaum
C. nicrobaricum
C. pileare
C. parthenopeum
Murex pomum
M. brevifrons
Thais deltoidea
Nassarius albus
Leucozonia nassa
L. ocellate
Oliva sp.

TABLE

Numbers of gastropod shells recovered from Indian Creek Pits I and II (excluding *Cittarium pica*).

Pit I			Pit II		
Level	Total Shells	Modified Shells	Level	Total Shells	Modified Shells
1a	8	3	1a	8	2
1b	9	6	1b	5	1
2a	11	5	2a	0	0
2b	8	1	2b	0	0
3a	6	2	3a	0	0
3b	19	8	3b	1	1
4a	17	8	4a	1	0
4b	10	5	4b	1	0
5a	20	4	5a	25	20
5b	13	5	5b	52	27
6a	9	3			

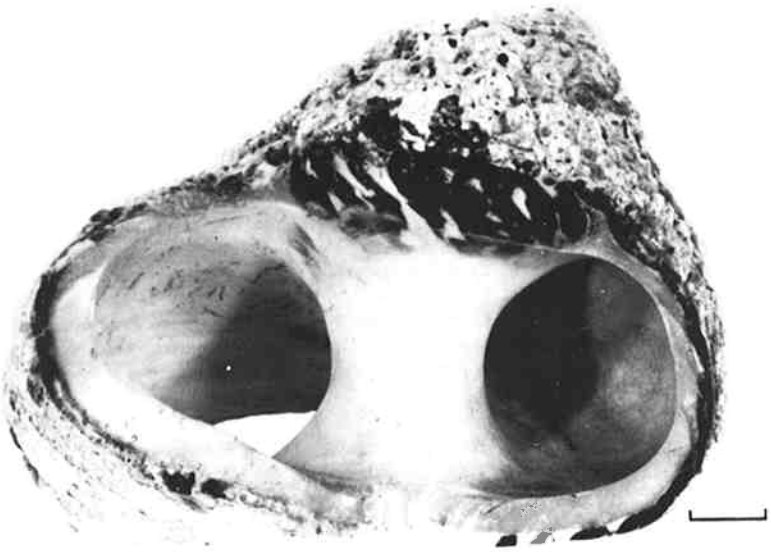

FIGURE 1.
Cittarium pica: a lateral view of a typical specimen showing whorl removal. Scale bar represents 10 mm.

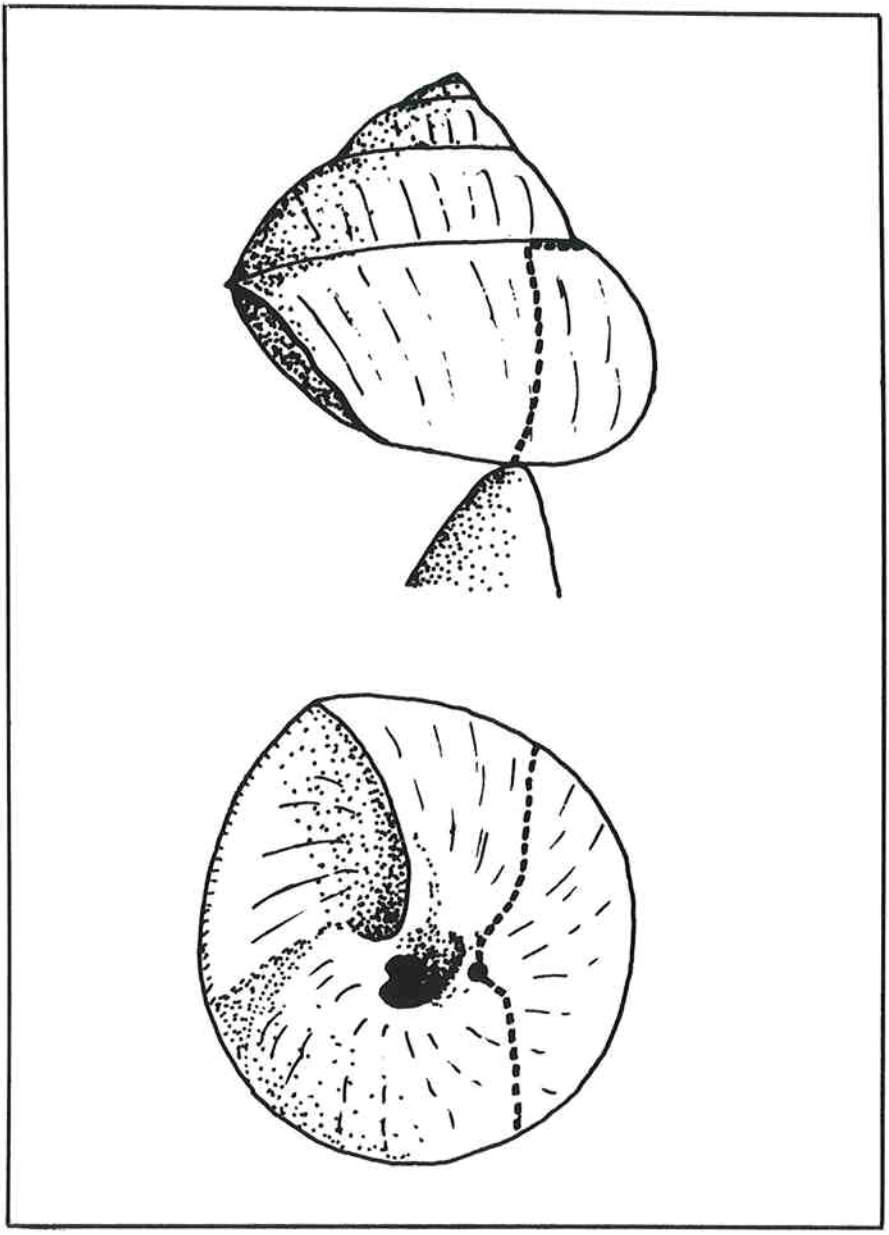

FIGURE 2.

The upper diagram shows the suggested method of whorl removal, striking the shell downwards onto a pointed stone. The portion marked by the dotted line breaks away. The lower diagram shows the breakage(dotted) line and the point of impact (black spot) from a ventral view.

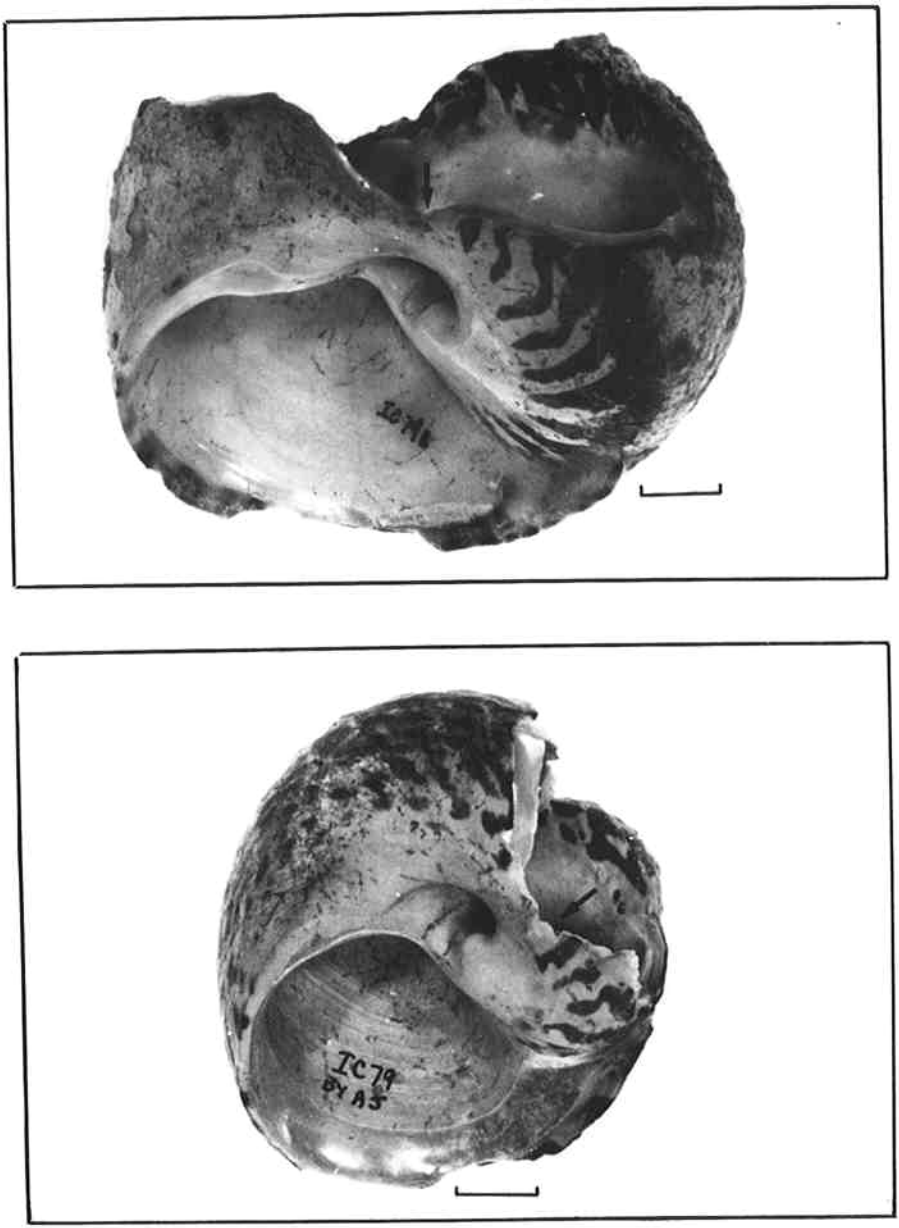

FIGURE 3.

a. Ventral view of the shell shown in Fig. 1. Point of impact shown by an arrow.

b. Shell broken by the author by method shown in Fig. 2. Point of impact showed by an arrow. Scale bar represents 10 mm.

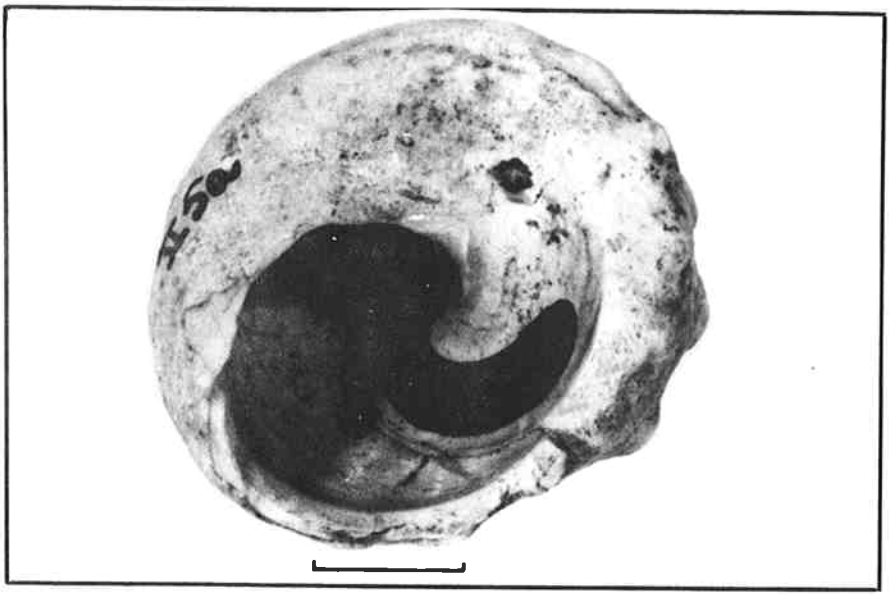

FIGURE 4.
Astraea tuber: inner whorl penetrated. Note the wear marks at the extremity of the penetration. Scale bar represents 10 mm.

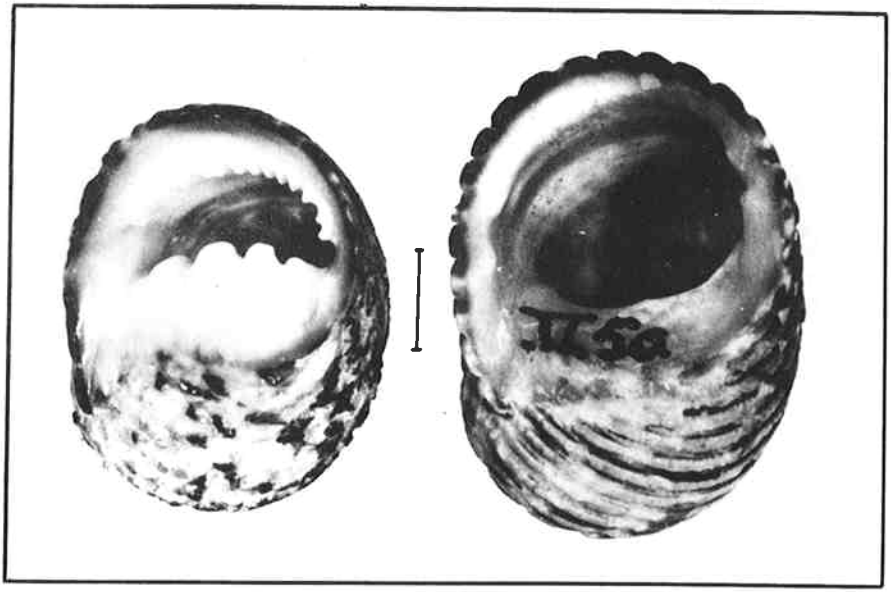

FIGURE 5.
Nerita versicolor: The left hand specimen is recent and intact. The right hand shell recovered from Indian Creek has had the teeth removed from the parietal area and around the aperture. Scale bar represents 5 mm.

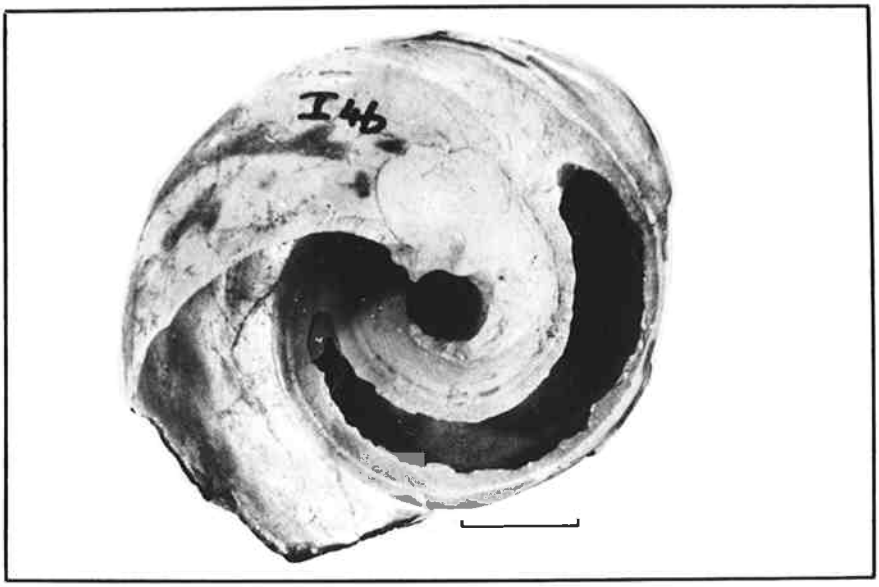

FIGURE 6.
Cittarium pica: showing (in a broken shell) whorl penetration and modification of the umbilicus. Scale bar represents 10 mm.

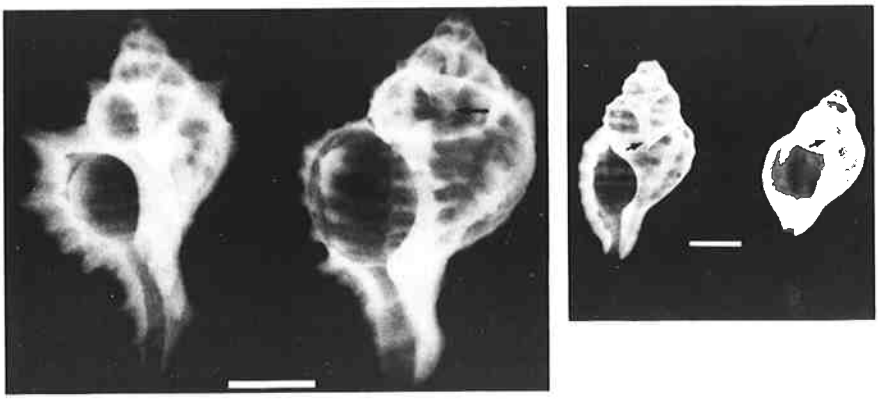

FIGURE 7.
X-radiographs of modified shells.
a. Left hand shell is an unmodified *Murex brevifrons*. On the right a modified *M. pomum* from which the columella has been removed as far as the arrow.

b. *Cymatium* sp. showing columella removal to the arrow. Scale bar represents 10 mm.

POTTERY FROM GUN CREEK, VIRGIN GORDA

By Alfredo E. Figueredo

The British Virgin Islands Archaeological Survey, which the author directed as a coöperative venture of the Museum of the American Indian, Heye Foundation, and the Government of the Crown Colony of the Virgin Islands, has been dormant since 1974. This has been due to the pressing duties and needs faced by the author, and it is unfortunate that much material which could be given to the printers with minimal effort has not been published. This note is an attempt partially to correct the situation.

Virgin Gorda, discovered by Columbus in 1493, is the easternmost of the volcanic Virgin Islands. It covers slightly over 8 square miles of surface area, and, in its central portion, rises dramatically to 1369 feet above mean sea level in a majestic, domed massif. From this central mountain project two long peninsulas, a southern one which contains the chief settlement of Spanishtown set against the jumbles of granodiorite boulders so impressive to visitor and native alike, and an eastern peninsula which ends in Punta de Pájaros, a name reputedly given to this wild promontory by the great Admiral himself. On the northern shore of the isthmus which connects Pájaros Peninsula to Virgin Mountain, and facing the excellent natural harbor of North Sound, is the small settlement of Gun Creek.

Gun Creek itself is an intermittent watercourse, or *gut*, with its source high on Virgin Mountain and a precipitous course parallel to the settlement, debouching into a small mangrove swamp fringed by tall manchenil trees. In more forested days, it may have been the 'river' of Virgin Gorda to which Spanish mariners repaired for water. Today, it is mostly a dry, sandy bed.

The precise location of the archaeological site whose pottery is the subject of this report, will not be divulged at present for the sake of its preservation; suffice it to state, then, that it is a small midden on the northern slope of the hilly isthmus, before the Creek which flows to the north-northwest of it. The site commands a telescoping prospect of the Gun Creek Estuary from a moderate altitude, and, though invisible from its side of the isthmian saddle, it lies a comfortable walking distance from the turtlegrass beds of South Sound and the fertile provision grounds of its deep Bottom.

The midden, discovered and excavated during the summer of 1973, is small, and represents no more than the *débris* of a single household—perhaps a communal house with about a dozen members. Despite the presence of relatively large quantities of bone and shell refuse, the soil remains highly acidic and the most careful excavation failed to disclose structural features. It is obvious, furthermore, that we were digging into what was, after all, only the dump or midden of

said household, and the building itself may be irretrievable now because modern construction has taken place upslope from the extant archaeological site. Evidence which need not detain us at present, suggests a single potter responsible for the bulk of the pottery exhumed.

The shallow midden, nowhere much over two feet in depth, contains a homogenous assemblage which probably indicates a brief occupation spanning at most the approximate limits of a single human generational effort. The bone and shell refuse, which, along with other particulars, will be detailed in the eventual site report, contains as expected moderate quantities of fish remains. More surprising is the large amount, relatively, of turtle and milk conch remains. Milk conch (*Strombus costatus*), in particular, is regarded by modern fishermen as rare in the surrounding waters.

The pottery fragments exhumed comprise the near totality of the artifactual assemblage, and are particularly instructive in the sense that they represent a circumscribed stylistic episode. Individual fragments, with some imagination, might be attributed either to a Saladoid or to an Ostionoid style. Viewed, as they must be, together, the impression is that of a very late Saladoid style.

Bell-shaped bowls and broad-lipped platters are well represented in the vessel shapes reconstructed, and a very fugitive red paint—possibly a vegetal dye applied after firing—is limited to the interior lips of vessels. Great care has to be observed in washing the painted fragments as the paint, of itself not particularly fast, and its preservation affected by the soil's acidity, decidedly tends to rub or to wash off.

An analytic mode easily isolated from the collection is a thumb-impressed rim, belonging to a type of vessel approximating a beaker's configuration, and, in its summary of traits, definitely concordant with the late Saladoid assemblage of which it is a distinctive part. The grayish-brown paste of all fragments of the Gun Creek pottery is compact and dense, lacking, however, the fine clang characteristic of so much early and middle Saladoid pottery, and missing also the high polish occasionally met with elsewhere.

A number of fragmented discoidal objects, ground out of pottery walls and perforated more or less centrally, were recovered at Gun Creek, and it is a fair conjecture that these represent spindle whorls, from which one may be tempted to infer a textile manufactory. For what it is worth, the neighboring South Sound Bottom grew fine cotton fields within living memory.

This note is not a ceramographic study, but in broad outline it is possible to postulate a late Saladoid style in the northeastern Virgin Islands, well on its way to a transformation into an Ostionoid style. The name of this late Saladoid style may be given with propriety as 'Gun Creek'. It is a Terminal Insular Saladoid style, placed temporally between the fifth and sixth centuries of our era. More details will be made available with the publication of a comprehensive site report. The drawings presented herewith are the work of Jeffrey M. Gross.

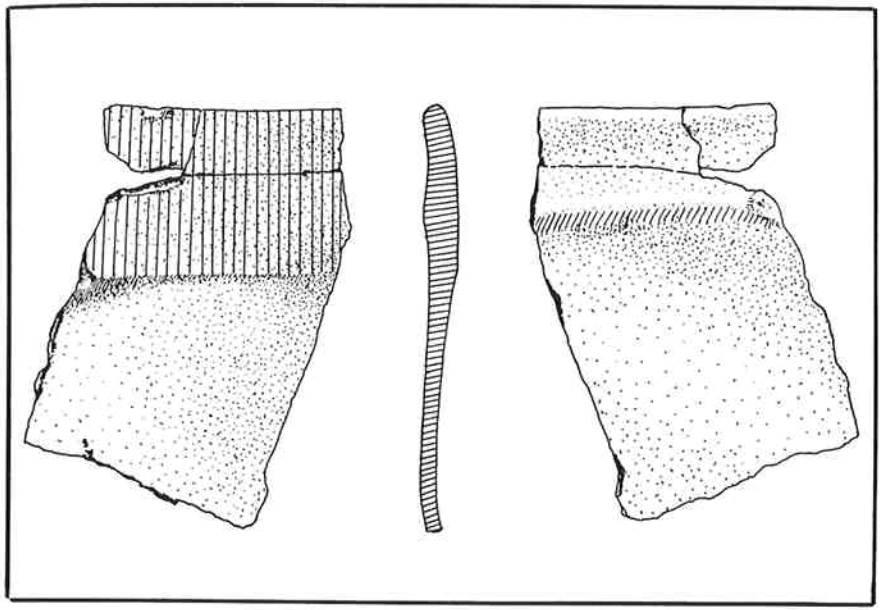

FIGURE 1
A platter or shallow bowl rim fragment with fugitive red paint (vertical hatching) on the inner lip zone. Scale 1:2.

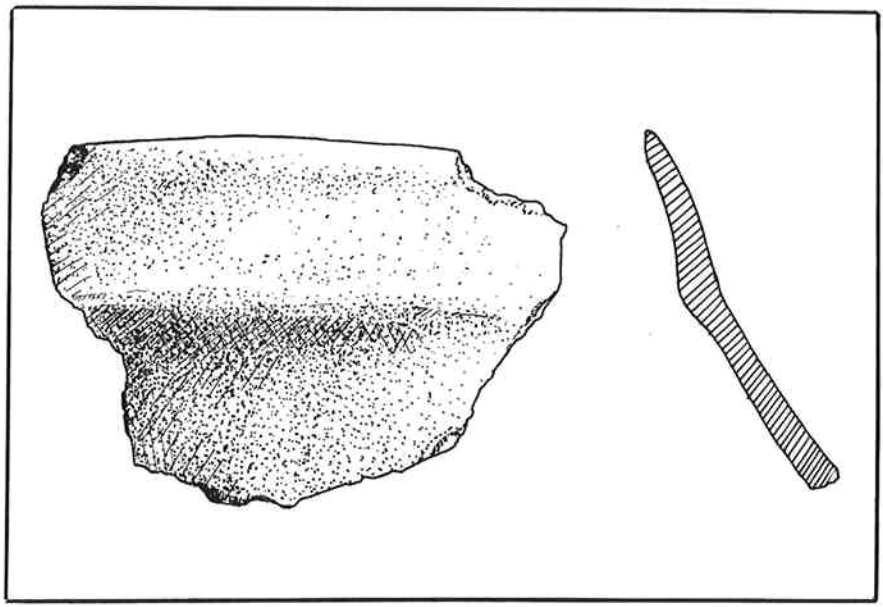

FIGURE 2
A bell-shaped bowl rim fragment of utilitarian ware. Scale 1:2.

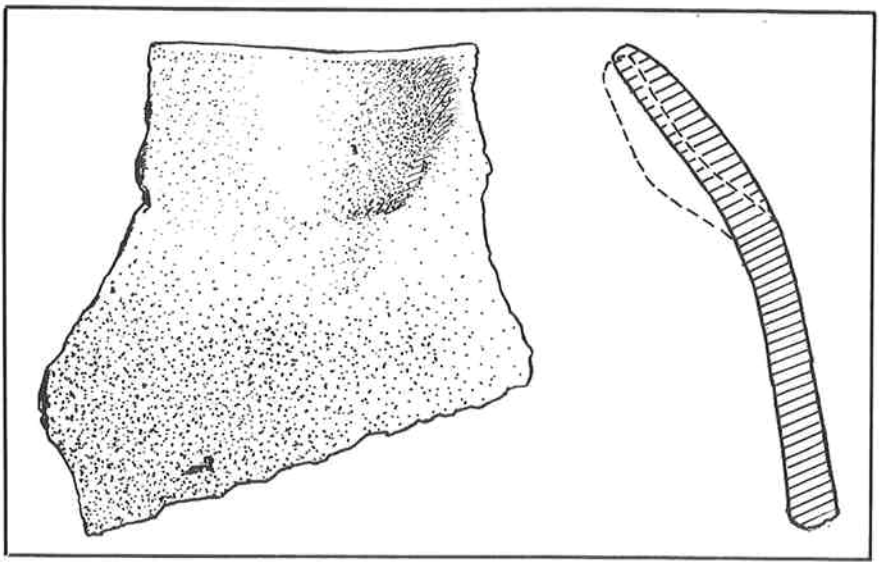

FIGURE 3
A thumb-impressed beaker rim fragment of utilitarian ware. Scale 1:2.

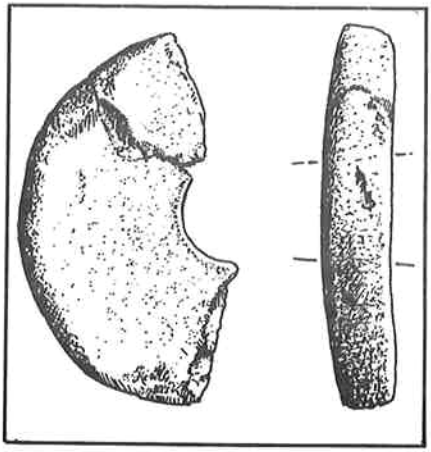

FIGURE 4
A centrally perforated discoidal fragment ground out of a pottery wall. Scale 1:2.

FIGURE 5
The author's younger brother (5'10") provides a scale against an area of the site exposed by a roadcut. Note the milk conch shells jutting out of the exposure. Photograph taken in 1973.

A REPORT ON TWO TYPES OF MODIFICATION TO GASTROPOD MOLLUSC SHELLS FROM INDIAN CREEK, ANTIGUA

By Alick R. Jones

Introduction

Gastropod molluscs were an important part of the diet and general economy of the prehistoric West Indies (Fewkes 1922, Goodwin 1979, Jones 1980, Olsen 1975, Rainey 1940, Rouse 1948). The conch *Strombus gigas* was of particular importance as food on some islands whilst a wide variety of univalves were used for tools, utensils, jewelry, tinklers, three-pointed stones and so on. Shells of animals gathered for food usually do not show modification suggesting a 'chowder' type of culinary preparation. The shells used as utensils, *etc.*, however, were generally modified to a greater or lesser extent; a conch axe or a perforated olive shell are clear examples. This report describes two types of modification; one appears to be related to food preparation, the other is of unknown significance.

Site and Collection

The shells discussed in this paper were excavated from the Indian Creek midden site in Antigua during July 1979. The site and the Yale University/Antigua Archaeological Society excavations there in 1973 have been reported by Olsen (1974) and Rouse (1974, 1980). An earlier faunal excavation at this site also has been reported (Jones 1980). The present material was obtained from two pits (PA4/FA79 I and II) adjacent to those designated 6 and 5 respectively by Rouse and Olsen. Each pit was small, measuring 1 m. by 0.5 m., divided into horizontal levels of 12.5 cm. (half the depth of those dug by Rouse). Pit I reached virgin ground at a depth of 1.35 m., Pit II at 1.20 m. The material was passed through a screen having a mesh of about 4 × 4 mm. Along with other animal material, all the molluscan shells were retained for later examination.

Representative shells were radiographed using a Hewlett-Packard Faxitron X-ray machine.

There are relatively few remains of large gastropods (*Strombus, Cassis, etc.*) at Indian Creek and the marine gastropod shells recovered there fall into two major groups. Firstly, medium to large *Cittarium pica* (averaging about 35 mm. from umbilicus to apex) which were almost certainly used for food. Secondly, small (less than 30 mm. maximum dimension) shells representing a

REVIEWS

Priceless Heritage. History and Lore of Estate St. George, Home of the St. George Village Botanical Garden of St. Croix, U. S. Virgin Islands, by Ben [jamin Robert] Kesler. Frederiksted: Published by Ben R. Kesler, First Printing, January 1980. (2) iii-x, (2) 1-55 (1) p. $7.00.

Priceless Heritage, Ben Kesler's history of Estate St. George's, joins briefer published accounts of Estates Bethlehem ('Plantage Bethlehem', *National Arbejdsmark 1968*) and Sion Farm (*The History of Sion Farm Estate*, Formerly Queen's Quarter 26, From 1776-1976, by the students of The Lew Muckle Elementary School [1976]) in the very limited field of histories of sugar plantations on St. Croix. With the increasing interest in local histories among practitioners of the profession, any emphasis on individual Cruzan estates would be most welcome.

Priceless Heritage incorporates a basically good, if sometimes speculative, interpretation of the dazzling cavalcade of Cruzan history as mirrored in Estate St. George's. Mr. Kesler has deftly incorporated a review of human habitation on St. Croix from A.D. 250 to the end of the Danish colonial period in 1917, and on up to the present. Further chapters deal with the early Danish colonization, and the owners and laborers of the estate. *Priceless Heritage* concludes with summaries of St. George's archaeological, historical, structural, zoölogical and botanical heritage. It is evident that this work was written largely to promote the interests of the St. George Village Botanical Garden, which presently occupies the greater part of the prehistoric and historic sites at the estate.

From the perspective of the professional historian, however, *Priceless Heritage* fails to live up to certain expectations. One deals with historiography, *i.e.*, the thorough documentation of sources, whether utilized *verbatim* or paraphrased, are due credit as the origin of particular hypotheses or interpretations. It is unfortunate that Kesler's work is undocumented; even where footnotes exist, they are explanatory in nature, and many of these should also be supported by references. Because of this, there are many intriguing statements made in *Priceless Heritage* whose significance as sources for future historical research currently is of questionable value.

Mr Kesler also makes some rather broad assumptions. For example:

> *Priceless Heritage*, using the evidence provided by the 1671 French map of St. Croix,[3] [[3]Map by F. Lapointe, 1671.] will claim that St. George was named from the English sugar works[4] [[4]Referred to as the *Sucrerie des Anglois*.] located adjacent to, or within St. George until proof is provided that this claim is wrong. (pp. 9-10)

This improperly attempts to place the burden of proof on the reader, rather than on the author.

Again, *Priceless Heritage* asserts that '. . . there is evidence that both Indians and the Africans made pottery in St. George . . .' (p. 42). The question begs to be asked as to the existence of material or documentary evidence for this important archaeological discovery.

Finally, as is frequently found in contemporary works, uncritical research techniques or novel phrases as incorporated in *Priceless Heritage* may result in the intrusion of myth or distortion beyond that to which this Island's history has already been subjected. One noticeable modern practice has been to drop the possessive form from the name of certain Cruzan estates. Thus, for example, 'Butler's Bay' becomes 'Butler Bay', and 'St. George's' is transformed into 'St. George'.

Mr. Kesler described Baron H. F. A. Eggers as being 'in charge of the Danish Militia during the 1878 "big trashing"' (p. 49). This is in error on two points. First, Baron Eggers held a regular commission as lieutenant in the *Dansk Vestindiske Haerstyrke* (the Military Force consisting of Danish Army personnel assigned to the Danish West Indies). Secondly, the Militia in the Danish West Indies was dissolved in 1852 and not reconstituted until 1907; therefore it was non-existent in 1878.

Can the village at St. George's really be classified as a 'Danish/African village' (p. 44) *sans* thatched roofs, storks, or wattle-and-daub huts? Was the Riot of 1878 ever called the 'big trashing' until now? (The Riot of 1878 was called the Labor Riot by the planters, the 'Fireburn' by the laborers, and *Oprør* by the Danes.) Is it not regrettably a consequence of Mr. Kesler's dependence on certain second-hand information in his compilation (*vid. The St. Croix Avis*, 29 May 1980, p. 11) that such comparatively and easily available data as the register for owners of St. George's in the late 1940's should include a person who never owned that estate at all?

Despite the shortcomings mentioned, Ben Kesler's *Priceless Heritage* serves several valuable functions.

Most important of these is an increased public awareness, and, hopefully, appreciation, of a heretofore frequently neglected aspect of Danish West Indian history that can not in all honesty be separated from other facets and still preserve a balanced picture. It is sincerely hoped that future editions of *Priceless Heritage* will incorporate those corrections and elaborations suggested herein, thereby upgrading the work to one of truly professional stature.

—WILLIAM F. CISSEL.

Three Towns. Conservation and Renewal of Charlotte Amalie, Christiansted, and Frederiksted of the U. S. Virgin Islands. Editor: Ole Svensson; English translation: Hanne Ringsted; Publisher: Danish West Indian Society, Copenhagen, 1980 [originally published by the Department of Town Planning, Royal Academy of Fine Arts, Copenhagen, 1965]. (2) i-x, 1-122 (2) p. $19.50

The former Danish West Indies (now the Virgin Islands of the United States) have held an attraction for many Danes long after their old colonies were sold in 1917. This attraction is due, in part, to the beautiful tropical scenery and climate, plus the memories of ancestors who lived in these Caribbean islands. For some Danes, however, there is a deeper reason: the realization that these islands contain many irreplaceable examples of XVIII and XIX century buildings, gems of the Danish colonial period.

Shortly after the end of World War II, professors Kay Fisker and Erik Herløw, of the Royal Academy of Fine Arts in Copenhagen, travelled through the Virgin Islands and were distressed to find that many of the colonial buildings were being destroyed or badly remodeled. Beginning in the latter part of the 1940's, a form of prosperity had reached the islands in the form of the American tourist, and new shops and hotels were hastily being set up to tap this new source of wealth. Some buildings were torn down while others were remodeled (often called 'restoration'), and little or no thought was given to architectural style, building techniques, or the cultural value of the structures.

Fisker and Herløw saw these dangers and, when they returned to Denmark, Herløw asked the Royal Academy to send an 'expedition' back to the islands. The expedition would be composed of professors and students from the Academy's architectural school—scholars with the ability to 'map out, register, survey and photograph towns, street-interiors and buildings in the same way that buildings of historical value . . . have been dealt with in Denmark.'

Herløw's proposal was well received, a commission formed and the project was funded through gifts from Danish and American corporations. The work in the islands began in 1961 and the final report was published in 1965, under the title *Three Towns*. Long unavailable in book stores, we are pleased to see that the current interests in restoration and good urban design have brought about its second printing.

It was impossible to compile all of the vast amount of data produced by the survey in one 122-page booklet, but *Three Towns* is an excellent reference book, perhaps the best that has been done on the architecture of the Virgin Islands of the United States. The book is not limited solely to architecture, but concerns itself with other problems which either have been ignored or neglected; parking in the towns, city-core planing, *etc.* Two sections of the book contain information dealing with the technical quality of the structures and conservation of the towns' buildings and their unique colonial styles.

An important feature of *Three Towns* is the suggested designs for modern structures, which could be constructed with modern materials and yet be fully compatible with the older buildings in the towns. This section could not be published at a more opportune time, when entire blocks in the town of Frederiksted are being completely levelled under an outdated Urban Renewal program.

Frederiksted residents, like those in other towns hit by poorly planned bulldozing errors, are asking local officials what type of new structures will be built on the razed land. It may be that, unlike the construction work of the late 1960's and the 1970's, architects will turn to *Three Towns* for the answer. If so, the town will indeed be fortunate, and it would prove to be one of the first times that the valuable information contained in *Three Towns* has been put to use.

The book is well researched in its historic content, clear in its aims and goals and as important today as it was fifteen years ago, when it was first published. It certainly would be an extremely fine addition to the library of anyone involved in the restoration and protection of West Indian buildings.

—ROBERT S. BROWN.

A PROBLEMATIC ARTIFACT FROM TRANT'S, MONTSERRAT

By David R. Watters

In June, 1979, Walter Connell, Curator of the Montserrat National Trust Museum, brought to the author's attention a curious artifact which had been uncovered shortly before at Trant's site (MS-G1). Exact provenience information for the artifact, unfortunately, is lacking; it was removed from its original context without benefit of even rudimentary controls. Apparently it was found at an unspecified depth, approximately 6 meters north of test pit 1 which had been dug the previous February by the author. Connell was unable to provide any specific information concerning artifacts definitely associated. Trant's, the most extensive prehistoric site yet recorded for Montserrat, is located upon a spacious expanse of relatively level land about midway on the windward coast near Blackburne Airport.

A cursory review of the literature has not disclosed any other Antillean artifact similar, in description or illustration, to the Montserrat find. The artifact ws made from an extremely fine-grained sedimentary shale or metamorphic slate having a hardness of about 4 on the Mohs Scale. Such rock may or may not be native to Montserrat. Despite some color variation the rock is predominantly dark brown (7.5YR3.5/4, Munsell Soil Color Chart). The maximum length is 64.8 mm., the maximum height is 24.3 mm., and the maximum width (*i.e.*, thickness) is 7.3 mm. Both slate and shale generally exhibit slaty cleavage and thus tend to split along parallel planes. Judging from the lateral sides (*vid.* Fig.), the person making the artifact took advantage of that inherent property of rock cleavage in shaping it.

The object appears entirely asymmetrical when viewed laterally. The anterior, posterior, superior, and inferior edges are neither parallel nor equal in length. All the constituent angles likewise are dissimilar. Quite distinct and carefully rendered bevels occur on both sides, along the anterior, posterior, and inferior edges. They seem to have been purposefully ground rather than having been worn through use. The superior edge is somewhat anomalous however, since it is not bevelled but instead is ground almost flat. A sheen or luster, present on all surfaces, is perhaps due in part to the fine-grained particles in the rock and in part to intentional polishing of the formation of a patina.

A number of inclusions, inherent to the rock, occur on the superior surface and right lateral side. The inclusion on the right side nicely 'fits' the forefinger when held in the right hand or, conversely, the thumb when held in the left. The object rests comfortably between the thumb and forefinger. Two grooves,

one on the anterior aspect and another on the inferior, are present slighly behind the tip. Unlike the inclusions, these grooves are not inherent to the rock; instead, they are the consequence of human modification or alteration of that rock. Each extends from the right side, across the edge, to the left side.

Several colleagues observed and commented on the artifact during the late archaeological Congress in St. Kitts. None indicated they had seen a similar object in Antillean collections. Several suggestions were made regarding possible functions of the object. One suggestion was that it had been an amulet or pendant with a string or other supporting device attached through the grooves. A second idea was that it had been a burnishing stone used to smooth the surface of ceramics or perhaps other materials. The presence of the bevels was the major consideration in this idea. The third suggestion was that the object had been a device used for reaming, boring, or perforating. The primary consideration here is the opposition of the grooves slightly behind the tip.

Such suggestions cannot be summarily dismissed. However, in at least some cases, the suggested functions do not account for all the attributes of the artifact. For example, if it were a burnishing stone, then why are there seemingly incongruous grooves on two edges? If it were a borer, reamer, or perforator, then why are there carefully rendered bevels on three edges? If it were a borer or reamer, then should there not be wear evident between the tip and the grooves? The artifact lacks such wear. That argument might be countered by contending that the tip had been inserted through a hole already punched in the material (*e.g.*, shell or wood). Only the grooves would have been in contact with the material; the tip would have turned in 'free space' (*e.g.*, the chamber of a shell) with no resultant wear being evident.

The preceding discussion has several implicit assumptions. The first is that the artifact indeed had a determinable function or purpose. The second assumption is that the artifact had a *single* function. Yet, if the object was in fact a multi-purpose tool perhaps used for disparate functions at different times, then the preceding discussion may be moot or at least inconsistent. If the object indeed was a multi-purpose tool, then the seemingly irrelevant attribute (*e.g.*, beveling on a borer) would no longer be in fact illogical, because it would be compatible with the presumed later function (*viz.*, burnishing).

The uncertainty that this is a complete artifact further confounds the discussion. At present it manifests one tang formed at the angle of the posterior and inferior edges. Perhaps at one time it possessed a second, similar tang (later broken) at the posterior and superior edge. If so, a slight notch evident on the posterior edge may be significant. This notch, as with the aforementioned grooves, extends from one side, across the edge, to the opposite side. A line drawn on a side between the tip and the notch would essentially bisect the artifact *if* there were two tangs present. The notch and grooves might provide three

points of attachment for a string or other supporting device used in bearing an amulet or pendant. Later, the tang in qustion presumably was broken. Perhaps the irregular surfact that resulted was then ground anew. This might account for the flat, ground surface which is shown by the superior edge at this time.

There are, undoubtedly, other possible functions beyond those discussed above. The author would be pleased to learn if anyone has observed a similar artifact or has suggestions regarding the Monserrat find. Several cautionary notes are warranted. The artifact was removed from its original context without controls. Trant's has been extensively and intensively cultivated for the past few centuries (even to this day), and there is a possibility the object may be from a historic period. Connell, who originally found the object, believes it to be prehistoric, because his 'test pit' yielded principally aboriginal materials. Regardless of whether it is of the prehistoric or historic period, the curious artifact is presently enigmatic. We hope the description and conjectures presented above will stimulate additional discussion about this puzzling artifact.

Acknowledgements

The object was brought to my attention while on-Island for othe archaeological research supported by a Fulbright-Hays (DHEW:OE) grant and an Andrew Mellon fellowship. I appreciate the permission granted by Walter Connell and the Montserrat National Trust to remove the artifact to the United States for additional study. Jack Donahue and Frank Vento (Department of Geology and Planetary Sciences, University of Pittsburgh) assisted with the lithologic studies. I am also indebted to the many colleagues who commented on the specimen. All errors in the article remain the responsibility of the author.

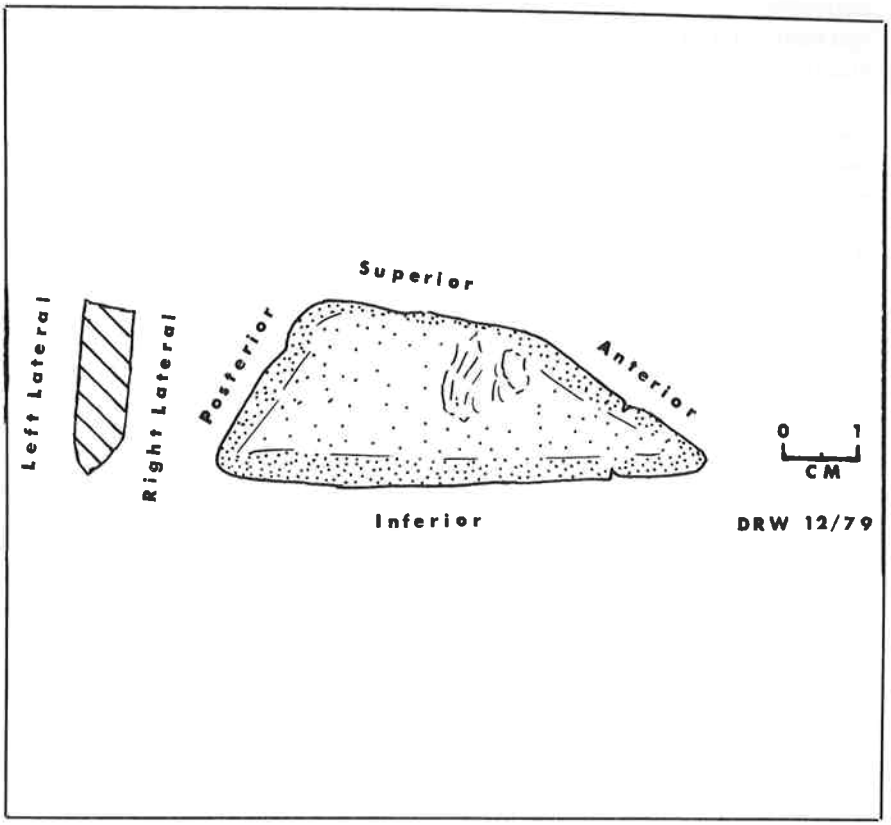

FIGURE
Cross section and view of right lateral aspect of problematic artifact from Montserrat.

COTTON GARDEN RED-ON-BROWN WARE: SOME PRELIMINARY OBSERVATIONS

By Bruce E. Tilden

Introduction

'Cotton Garden Red-on-Brown Ware' was encountered first during the course of excavations in the summer of 1975. These excavations took place under my direction at Cramer Park, St. Croix, and were sponsored jointly by the Virgin Islands Office of Archaeological Services and the Youth Conservation Corps. The Cramer Park Site is in the old Cotton Garden Estate, and is both a late prehistoric and XVIII Century historic site; Cotton Garden Estate is in Eastend B Quarter, Christiansted Jurisdiction, on the northeastern shore of St. Croix, Virgin Islands of the United States.

'Cotton Garden Red-on-Brown Ware' is a distinctive type of pottery which, since 1975, has been found elsewhere on St. Croix. It is known from Fair Plain (a late prehistoric site) and the Salt River Point Site (a multicomponent, prehistoric and historic site).

Cotton Garden Red-on-Brown Ware sherds appear to represent a variety of vessel shapes. Some vessels may have circular orifices while others may form oval or rectangular orifices. The distinctive diagnostic trait of Cotton Garden Red-on-Brown Ware is that the interior of its vessels have a red-painted zoned design motif over a plain brown paste. The exteriors of these vessels are always plain.

Description

Based solely on the material recovered from the Cramer Park Site, Cotton Garden Red-on-Brown Ware sherds are well-fired and grit tempered. The paste of individual Cotton Garden Red-on-Brown Ware sherds is, generally, of a uniform color; profiles of rim sherds indicate variation in shape and thickness (*vid.* Fig. 1). Rims are either tapering or rounded and vary from 5 to 9 mm. in thickness.

The red-painted design motif is limited always to the rim and interior surface of the sherds. The red paint always is applied to the orificial portions of the rim sherds. From the red-painted orifice, red lines extend inward toward the inside bottom of the vessels. These broad red lines or bands occasionally form obtuse angles (Fig. 2).

The insufficient number of sherds found renders the accurate reconstruction of the interior zoned red-painted motif difficult. Based on the fragmentary sections, it appears that the broad red lines or bands have a concave or slightly U-shaped line joining the red orifice at each end of the motif.

It is possible that the design motif of each Cotton Garden Red-on-Brown Ware vessel was composed of a set of mildly concave broad red lines, from two to three per set, which was opposed by another set of concave lines. Were one to look directly overhead into a Cotton Garden Red-on-Brown Ware interior, one would see the motif as a set of two to three concave lines covering one half of the vessel interior, opposed by a similar set (as in a reverse mirror-image) covering the other half of the vessel's interior, forming a simple symmetrical design (Fig. 3).

Were one to assume that the Cotton Garden Red-on-Brown Ware rim sherds belong to vessels with circular orifices, then, based on such an apparent orificial diameter, Cotton Garden Red-on-Brown Ware vessels appear to be large shallow bowls with rounded bottoms (Fig. 4).

Variations

Recovered also at the Cramer Park Site were sherds which seem to have a similar zoned red-painted motif on their interior surfaces; however, the sherds have a black interior surface paste, as opposed to the brown, plain surfaces found on Cotton Garden Red-on-Brown Ware sherds. It appears that a 'Cotton Garden Red-on-Black Ware' also exists. Cotton Garden Red-on-Black Ware rims are rounded or tapering as is the case with Cotton Garden Red-on-Brown Ware rims; however, there is a single, exceptional sherd with a rim point.

Cotton Garden Red-on-Black Ware has been found to date only at the Cramer Park Site. Due to its very limited known distribution and its shared traits, it is likely that Cotton Garden Red-on-Black Ware is a variation of Cotton Garden Red-on-Brown Ware.

Provenience

To date, Cotton Garden Red-on-Brown Ware sherds have been found at three prehistoric sites on St. Croix: the type site, Cramer Park, where it was discovered in 1975; Fair Plain, where Cotton Garden Red-on-Brown Ware sherds were found in the course of excavations in 1976, and the multicomponent Salt River Point Site.

What appears to be a whole Cotton Garden Red-on-Brown Ware bowl is in

the collections of the National Park Service, Christiansted, St. Croix; however, there is no provenience for this vessel.

Associations

In the case of both the Cramer Park and the Fair Plain sites, Cotton Garden Red-on-Brown Ware sherds were found in association with Chicoid sherds. At the Salt River Point Site, Cotton Garden Red-on-Brown Ware sherds have been found in surface collections and in excavations; however, these sherds can not be associated clearly with Chicoid material.

Cotton Garden Red-on-Brown Ware bears little or no resemblance to Chicoid ceramics. I have been unable to find zoned red-painted motifs similar to these in the interior of vessels from the Lesser Antilles. This leads me to believe that Cotton Garden Red-on-Brown Ware is unique to the Virgin Islands (and possibly eastern Puerto Rico as well).

Zoned, red-painted interior motifs have been found in the interiors of Ostionoid vessels within the Virgin Islands/Puerto Rico area. While these zoned, red-painted interior motifs are quite different from those found in the interiors of Cotton Garden Red-on-Brown Ware, possibly there is a connection.

What appears to be Ostionoid vessels with painted red scrolls in their interiors were found on St. Croix by Gudmund Hatt. While, admittedly, the red scroll designs found in the interiors of these vessels are quite different from the zoned, red-painted motifs found in the interiors of Cotton Garden Red-on-Brown Ware, several traits, it can be seen, are common to both.

The use of zoned, red-painted designs may indicate that during Chicoid times, vessels were being produced on St. Croix whose traits were of local origin, predating the introduction of Chicoid ceramics to the Virgin Islands.

Cultural Ramifications

Cotton Garden Red-on-Brown Ware may indicate the continuation of local, earlier traditions within a new, Chicoid context in the Virgin Islands. The purpose which these vessels served in an otherwise different assemblage is open to question.

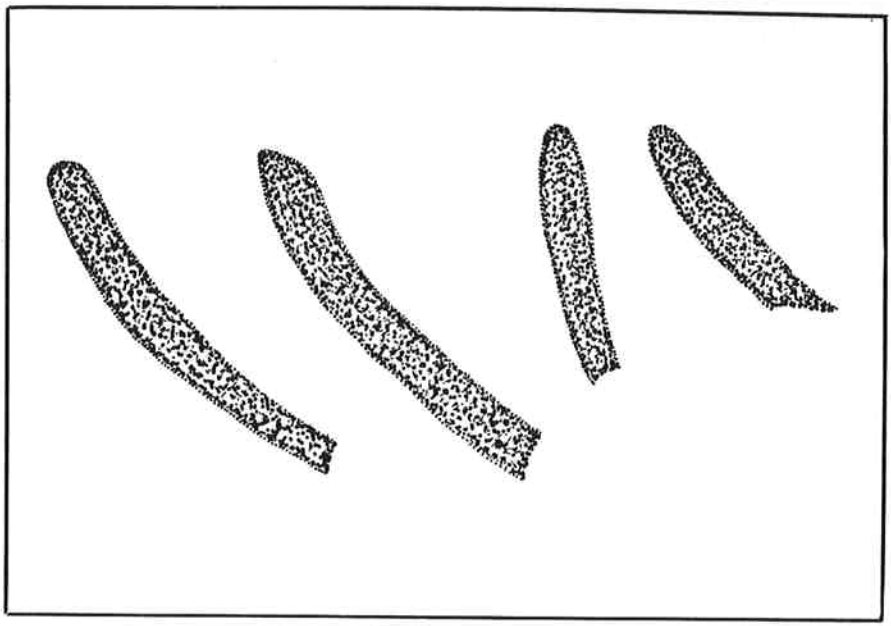

FIGURE 1
Scale 1:2

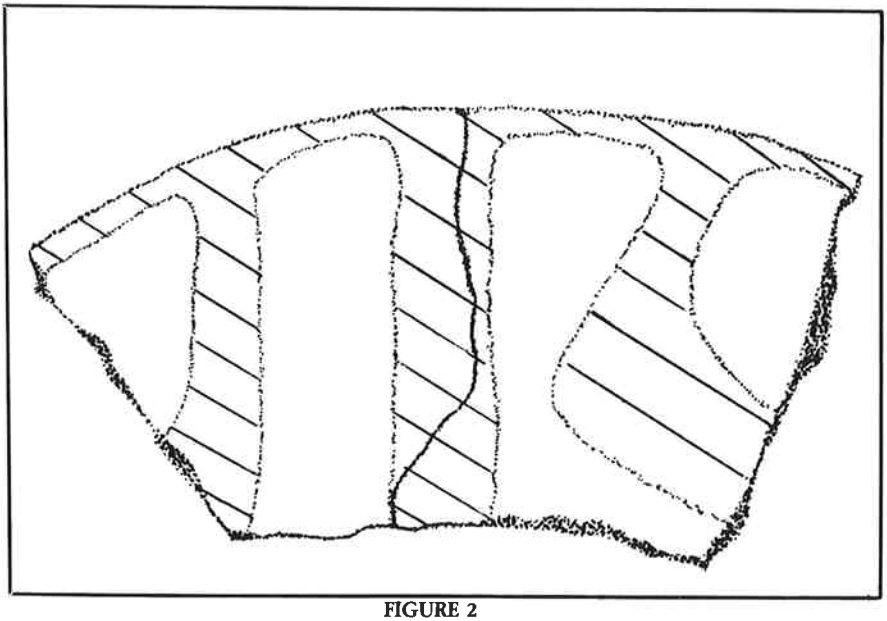

FIGURE 2
Scale 1:2

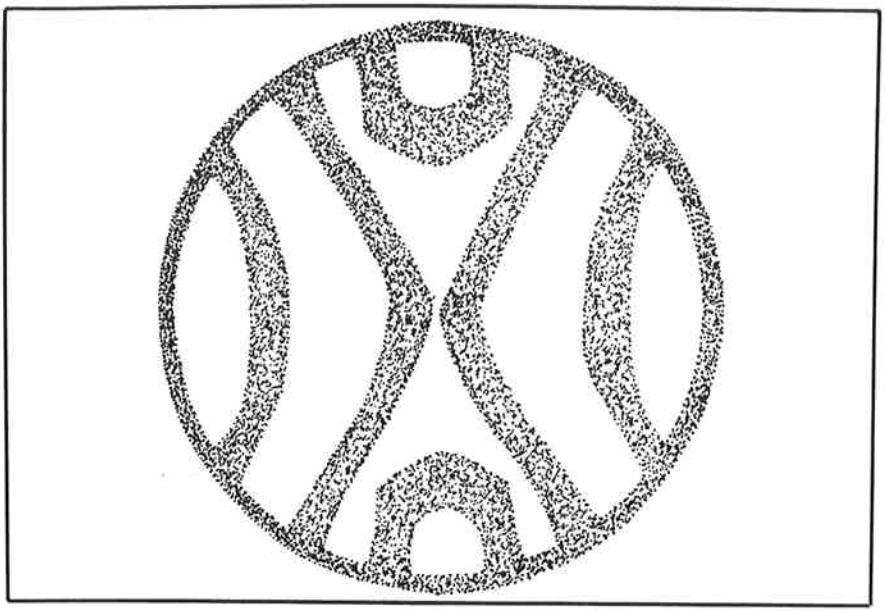

FIGURE 3
Scale 1:4

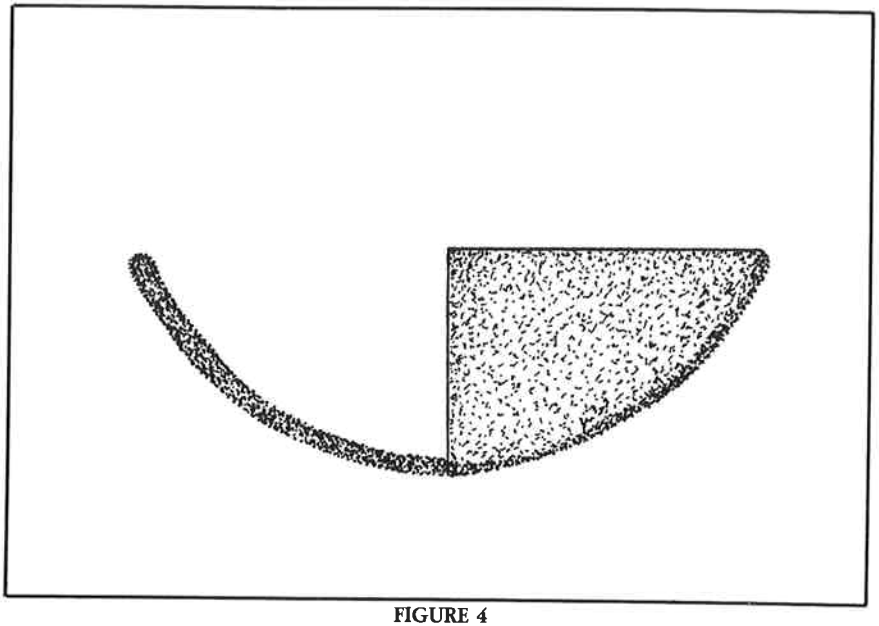

FIGURE 4
Scale 1:3