

'SCRAP' OR TOOLS: A CLOSER LOOK AT *STROMBUS GIGAS* COLUMELLA ARTIFACTS

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Introduction

There has been some question whether the *Strombus gigas* columella¹ fragments frequently found in archaeological middens in the Caribbean are tools or merely shellfish refuse, scrap, or casually deposited, water-washed shell. Archaeological data from the Sugar Factory Pier Archaic middens on St. Kitts (Goodwin 1978a; Armstrong 1978), along with studies by Hoffman (1963, 1970), Goodwin and Walker (1975), Figueredo (1976), Tilden (1976), support the hypothesis that gouge-like columellae found in prehistoric middens are probably tools. Furthermore, this seems to be the case regardless of the presence or absence of obvious grinding or manufacturing marks. The archaeological data are supported by documentation of conch shell breakage patterns (Hoffman 1963; Armstrong 1978), by frequency counts from modern *Strombus gigas* middens (Armstrong 1978), and ethnoarchaeological observation of conchs being smashed by conch gatherers at Dieppe Bay, St. Kitts (Armstrong 1978: 45-46).

Classification

The typological classification of columella artifacts in the Caribbean is bound by restrictive use of the term 'gouge'. As used by Rouse (1960: 10-11) gouges are diagnostic markers for local chronological units or complexes (*cf.* Rouse and Allaire 1978: 347-348). The meaning of the term is also limited because of the presence of bifacial beveling on *Strombus gigas* artifacts specific to the Manicuaroid Series of the northern Venezuelan Coast (Rouse and Allaire 1978: 452-455), and of unifacial beveling on artifacts from the Redondoid Series of Cuba (*id.* 472). Because recently documented *Strombus* columella tools from other areas in the Caribbean do not meet the morphological criteria of the type site artifacts, they have been relegated to a 'modified shell' classification (Rouse 1960: 15), or, alternatively, they have been described as 'gouge-like' (Hoffman 1970: *passim*), even though behaviorally they may have served as gouges.

As more detailed data on aspects of the archaeological record in the Caribbean (besides pottery) become available, it is clear that *Strombus gigas* columella artifacts are ubiquitous. Furthermore, they are present in ceramic, as well as preceramic period middens (Hoffman 1970: Pl. 4, m-r; Goodwin and Walker 1975:47, Pl. 9e). Typological classification of these artifacts (which is

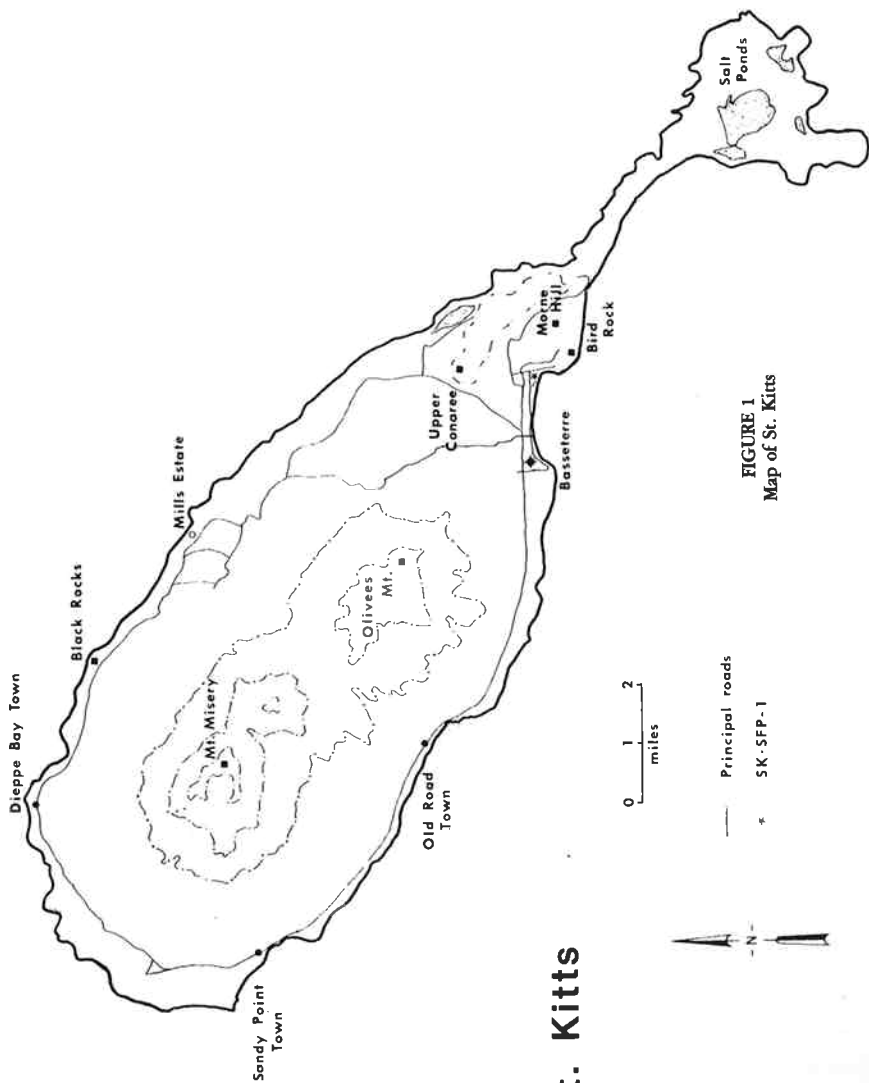
¹The thickened axes of conch shells about which the whorls are developed (after Abbott 1974:9)

tied to local chronological units) has led to confusion in describing common artifacts. Demonstrating the presence of these artifacts in much of the Caribbean area is hampered by current classifications. Since the term 'gouge' has such specific connotations, to avoid further confusion it is suggested that gouge-like artifacts be classified morphologically first as columella artifacts, with typological subclassifications developed to permit explicit description of form or function. At present I suggest '*Strombus* columella tools' as a cover term for artifacts made from the inner whorl, columella, and tip (a somewhat overlapping terminology). Included under this rubric would be tools which vary from the bifacially beveled tools of Manicuaire, Cubagua Island (Rouse and Allaire 1978: 454-455), to the shell tips, picks, and drills of the Virgin Islands (Figueredo 1976; Tilden 1976). Future studies should develop a flexible classification scheme to enable distinguishing the variability in these artifacts.

The Archaeological Data Base

Among the artifacts comprising the tool kit of the more recent Archaic midden at the Sugar Factory Pier site (dated 2175 ± 60 B.P.) were several ground columella artifacts of *Strombus gigas*. These occurred in a variety of forms, including one with little or no signs of manufacture (Fig. 2c). Five of these were clustered in a feature within a $2m.^2$ excavation unit (Fig. 2a-e). The majority of these columella artifacts have two ground working surfaces (Figs. 2a, b; 3; 4). They are ground to a point at the tip of the columella and have ground and beveled edges on the labial face at the other end. Hoffman (1970:11) indicates that gouge-like artifacts at the Palmetto grove site, Bahamas, have similar working surfaces. The broad beveled end may have been used much like an adze, while the tip could have been used for picking or drilling. A.E. Figueredo (personal communication) has indicated that the tips of some of the columella artifacts from the Virgin Islands exhibit wear marks suggesting use in gouging. Similar artifacts have been interpreted as evidence for woodworking and canoe building (Nicholson 1976: 264). The products of such activities have long since decomposed leaving a gap in the archaeological record. The identification of tools which were probably used in the canoe building process is an important step in reconstructing the behavioral patterns of these little-known peoples.

¹ Nevertheless, some Caribbean archaeologists have been hesitant to consider columella fragments from prehistoric Indian sites artifacts. This is probably due to the fact that often they do not exhibit obvious manufacture or use patterns which unquestionably would indicate their use. Most recently, Sears and Sullivan (1978:17) have questioned the classification of some shell 'scrapers, gouges, or spoons,' by MacLaury (1970: 35-36) and by Hoffman (1970: 11). Examining these artifacts under 10 to 40x magnification they found no signs of wear and suggested that these fragments appeared to be 'scrap' from the manufacture of celts (Sears and Sullivan 1978: 17).



St. Kitts

FIGURE 1
Map of St. Kitts

Sears and Sullivan approach the problem from a *typological* point of view. However, the *context* of Archaic middens indicates a very high probability that *Strombus* columella fragments were used as tools. Frequency data suggest that columella fragments are more common than other *Strombus gigas* fragments in middens. Tilden (1976) presents frequency data from the Arboretum site, St. Thomas, indicating a non-random association of 'pick-like' fragments in the midden. Those illustrated by Tilden appear not to be modified, yet their frequency in relationship to other fragments strongly suggests their probable use as tools. Figueredo (1976: 613) notes a similar high frequency of columella artifacts at Krum Bay by stating

Los picos de concha no siempre han sido considerados artefactos en otros lugares, pero por su preponderancia numérica dentro de los restos de gasterópodos exhumados, así los consideramos.

The *Strombus* columella implements found in the St. Kitts Archaic middens also occur in greater frequency than other portions of the *Strombus* shell. One in four *Strombus gigas* fragments was a columella fragment. Unlike those from St. Thomas, the St. Kitts columellae were undoubtedly ground (Armstrong 1978: 43), and as previously noted five of the Kittitian specimens were found clustered within the same small feature indicating a behavioral association in the use of a variety of forms of *Strombus* columella fragments.

Modern Conch Middens

While participating in an ongoing archaeological survey of St. Kitts in the summer of 1978 (Goodwin, 1978b), several contemporary conch shell middens were observed by the author. The shells in these middens are usually dumped in piles on the beach. However, at Dieppe Bay and Cockleshell Bay modern middens were found where the shells had been smashed open (Fig. 5a, b). These modern middens were seen as presenting an excellent opportunity to test the nature and frequency of *Strombus gigas* columella fragments in contemporary middens.

By counting the smashed shell debris in the two small middens at Dieppe Bay it was found that 1 in 21 fragments was a conch columella (Fig. 3). Shell fragments resulting from smashed conchs have a characteristic splintered pattern and rough edges, unlike the smooth surfaces found on the St. Kitts artifacts. This supports the inclusion of the latter as artifacts, regardless of their frequency. However, typology aside, the ratio of columellae to other conch fragments is noteworthy. The ratio of columellae to other fragments is in sharp contrast to that found in the Archaic middens at the Sugar Factory Pier site, where 1 in 4 conch fragments were from columellae. Such high frequency of occurrence in middens of Archaic context on St. Kitts, and at both the Arboretum site (Tilden 1976), and Krum Bay (Figueredo 1976) on St. Thomas strongly suggests that they were selected and served as tools, both in modified

and unmodified form. The fact that shell is not ground does not eliminate its usefulness as a tool.

With the coöperation of local conch gatherers at Dieppe Bay the author observed several conch shells being smashed (Fig. 5b). This was done to discern the fracture patterns of individual conch shells. The result was a duplication of the splintery, rough-edged fragments observed also in the modern middens. For these shells the ratio was one columella in 23 fragments. This supports the hypothesis that columella fragments are located non-randomly in Archaic middens; therefore, they are probably tools.

The survey of Cockleshell Beach provided some additional information on water-washing patterns on shell fragments. While several water-washed conch fragments on the beach looked vaguely gouge-like, they had relatively thick rounded edges rather than the tapered, ground edges found on gouges in the Archaic middens on St. Kitts.

Since Sears and Sullivan (1978: 17) have suggested that columella fragments represent 'refuse' from the manufacture of *Strombus* celts, some additional observations are warranted. The first pertains simply to the technique for manufacturing shell celts. These tools are shaped from the entire outer lip or wing of the conch, which is a component of the exoskeleton and may be shattered or fractured inadvertently if the shell is smashed. To prevent this from occurring, and to enable celt manufacture, the outer lip generally is cut directly from the corpus; in this form it constitutes a celt blank (R.C. Goodwin, personal communication). Contrary to the contention of Sears and Sullivan, then, this process yields no shell 'scrap' approximating the form of the aforementioned columella implements. Hoffman (1963: 87) has described shell celt blanks as crude and unsmoothed, 'representing stages in the production of the shell tools.' They are common in sites throughout the area. The point is that identification of 'scrap' from celt manufacture presupposes an understanding of the technique of manufacture, and this requires both replication by experiment and recognition of like contexts *in situ*, not *a priori* typology.

Summary

Recent archaeological studies in the Caribbean area show that *Strombus* columella artifacts are found throughout the area. Archaeological data from St. Kitts support the hypothesis that since *Strombus gigas* columella fragments occur in greater frequency than expected from the normal breakage of *Strombus* shell, they were probably used as tools. These data are substantiated by documentation of breakage patterns in modern conch middens and by observations of shell breakage characteristics. Problems encountered due to the specificity of the term 'gouge' are discussed, and the term '*Strombus* columella' is suggested as a cover term for the variety of gouge-like conch shell artifacts encountered in middens from a variety of time periods throughout the

Antilles. Finally, it is pointed out that viewing material remains as 'scrap' without a baseline of empirical observations may result in the destruction of behaviorally significant archaeological data. In this vein, there is clearly a need for future replication studies.

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Bibliography

- Abbott, R. Tucker
1974 *American Seashells* (Second Edition). New York: Van Nostrand Reinhold Company.
- Armstrong, Douglas V.
1978 *Archaic Shell Fish Gatherers of St. Kitts, Leeward Islands: A Case Study in Subsistence and Settlement Patterns*. Unpublished Master's Thesis, University of California, Los Angeles.
- Figueredo, Alfredo E.
1976 El Hombre en las Islas Vírgenes—Nuevas evidencias de su antigüedad y patrones de cultura arcaicos. *Actas del XLI Congreso Internacional de Americanistas*, vol. III, pp. 608-614.
- Goodwin, R. Christopher
1978a The Lesser Antillean Archaic: New Data From St. Kitts. *Journal of the Virgin Islands Archaeological Society*, no. 5, pp. 6-15.
1978b The Prehistoric Cultural Ecology of St. Kitts, West Indies: A Case Study in Island Archeology. Part I: The Research Design. *Behavioral Sciences Foundation Occasional Paper in Archeology* Number 1.
- Goodwin, R. Christopher and Jeffery B. Walker
1975 *Villa Taina de Boquerón*. The Excavation of an Early Taino Site in Puerto Rico. San Juan: Inter-American University Press.
- Hoffman, Charles A., Jr.
1963 *Archaeological Investigations on Antigua, West Indies*. Unpublished Master's Thesis, Department of Anthropology, University of Florida, Gainesville.
1970 The Palmetto Grove Site on San Salvador, Bahamas. *Contributions of the Florida State Museum: Social Sciences*, Number 16, pp. 1-26.
- MacLaury, James C.
1970 Archaeological Investigations on Cat Island, Bahamas. *Contributions of the Florida State Museum: Social Sciences*, Number 16, pp. 27-50.
- Nicholson, Desmond V.
1976 Pre-Columbian Seafaring Capabilities in the Lesser Antilles. *Proceedings of the Sixth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 98-105.
- Rouse, Irving
1960 The Entry of Man into the West Indies. *Yale University Publication in Anthropology* Number 61.
- Rouse, Irving and Louis Allaire
1978 Caribbean. Clement W. Meighan and Robert E. Taylor, editors, *Chronologies in New World Archaeology* (New York: Academic Press), pp. 431-481.
- Sears, William H. and Shaun D. Sullivan
1978 Bahamas Prehistory. *American Antiquity*, vol 43, no. 1, pp. 3-25.
- Tilden, Bruce E.
1976 The Arboretum Complex: A Preceramic Culture of the Virgin Islands. *Proceedings of the Sixth International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles*, pp. 239-246.



FIGURE 2

Gouge-like artifacts from the columella of *Strombus gigas*.
 These artifacts were found clustered in unit III (feature 17-602, artifact numbers 17-5074a-e).



FIGURE 3
 Columella artifact
 (17-5074b).

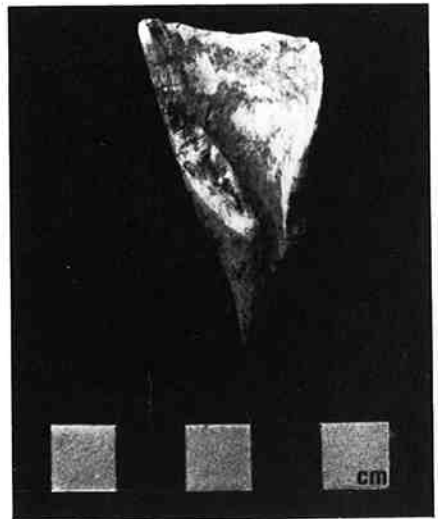


FIGURE 4
 Columella artifact
 (18-5030).

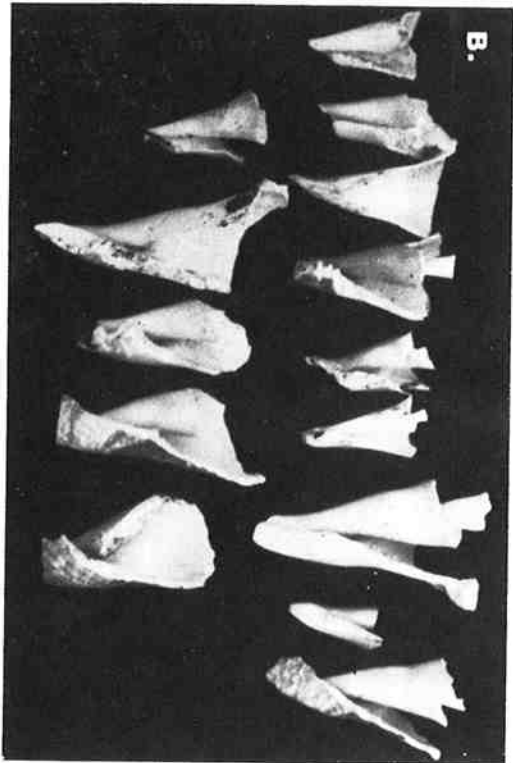
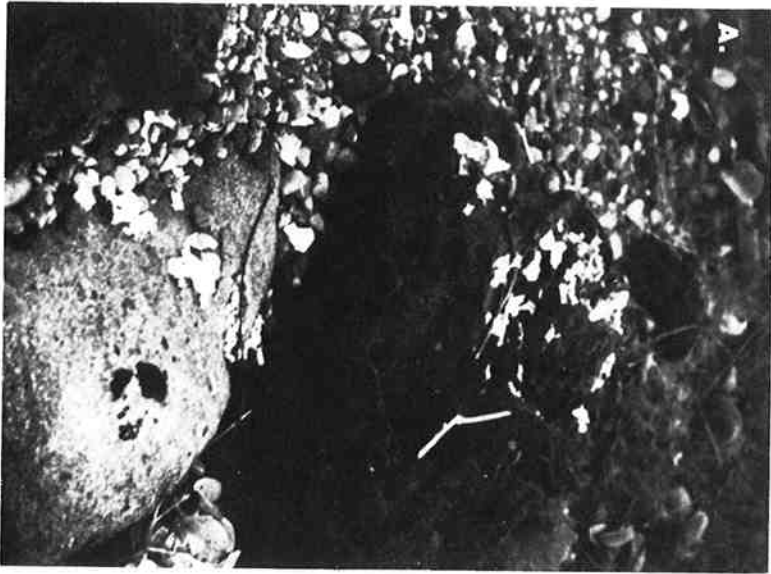


FIGURE 5
 Modern *Spondylus gigas* refuse dump located on the coast near Dieppe Bay, St. Kitts. A total of 325 conch fragments were counted (A). Of these 14 were columnella fragments (B). The ratio of columnella to other fragments is 1 to 23.