NEW DATA FROM OLD CARIBBEAN COLLECTIONS  
AT CARNEGIE MUSEUM OF NATURAL HISTORY

by

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ABSTRACT
Carnegie Museum of Natural History (CMNH) acquired archaeological collections from Guadeloupe, Barbados, and Puerto Rico through an exchange with the American Museum of Natural History (AMNH) in 1906. CMNH subsequently obtained small collections, donated by individuals, from St. Croix, Jamaica, Puerto Rico, and Dominican Republic. This paper examines the history of the AMNH exchange and the individual donations and discusses the limitations encountered when investigating older collections. The paper concludes that the limitations inherent in poorly provenienced collections constrain their usefulness, for research purposes, to descriptive analysis and comparative studies.

Resumen
El Museo Carnegie de Historia Natural (CMNH) adquirió colecciones arqueológicas de Guadeloupe, Barbados y Puerto Rico a través de un intercambio con el Museo Americano de Historia Natural (AMNH) en 1906. Posteriormente, el CMNH obtuvo pequeñas colecciones de St. Croix, Jamaica, Puerto Rico y República Dominicana, donadas por individuos. Este artículo examina la historia del intercambio con el AMNH y las donaciones individuales, y discute las limitaciones encontradas cuando se investigan colecciones más antiguas. El artículo concluye que las limitaciones inherentes a las colecciones con pobres procedencias constrinjen su utilidad, para propósitos de investigación, en el análisis descriptivo y estudios comparativos.

COLLECTIONS ACQUIRED

This paper discusses Caribbean archaeological collections acquired by the Carnegie Museum of Natural History (CMNH) prior to 1982, the year the senior author joined the CMNH staff. Table 1 provides basic information on the five accessioned collections (Accessions 4291, 8031, 12880, 23240, 31604). Three collections provided the groundstone implements from Guadeloupe, Puerto Rico, St. Croix, and Jamaica used in this study.

Exchange with AMNH (Accession 4291)
Carl V. Hartman, CMNH Curator of Ethnology and Archaeology, organized an exchange with the American Museum of Natural History (AMNH) in 1906. AMNH sent approximately 650 artifacts from the Caribbean, Peru, Bolivia, and Mexico in exchange for artifacts that Hartman had obtained in Costa Rica during fieldwork in 1903. The Caribbean materials AMNH sent were groundstone artifacts from Guadeloupe and Puerto Rico and shell implements from Barbados. The objects arrived in 1906, were accessioned in 1911, but were not labeled by CMNH until 1940. CMNH assigned accession number 4291 to all 650 items in the AMNH exchange, regardless of country of origin.

The Guadeloupe groundstone objects came from the collection of a monsieur Saint Croix de la Roncière. Henry Petitjean Roget (personal communication, 1999) informed us that de la Roncière was an historian interested in the history of Guadeloupe. He sent a rock with petroglyphs from the Trois-Rivières site to an exhibition in Buffalo, New York. Soon thereafter, apparently in 1902, AMNH purchased the petroglyph rock and, we believe, at the same time bought the de la Roncière collection including these groundstone implements.
The Puerto Rico groundstone implements exchanged by AMNH also were part of a much larger collection. Paola Schiappacasse (personal communication, 1999) informed us that the AMNH catalog numbers, still present on the groundstone objects now at CMNH, fall within the sequence (25/270 - 597) assigned by AMNH to the Dr. Agustin Stahl collection purchased by that museum in 1900.

Details about the AMNH exchange of the shell implement (or implements) from Barbados are confusing. Only one specimen is labeled with an AMNH catalog number (25/995). The exchange list provided by AMNH assigns that number to a single specimen (“995. Shell implement. Barbadoes W.I.”). A CMNH accession and piece number (4291/650) was assigned to this specimen in 1940. But 19 more shell implements, which lack AMNH labeled numbers and are not specified on its exchange list, were assigned CMNH accession and piece numbers (4291/858 to /876) and listed as being from “Barbadoes, West Indies.” We have indicated all 20 implements as being part of the AMNH exchange and as being from Barbados, but with the caveat that 19 of them are so attributed on a provisional basis only.

Donations by individuals

Four CMNH accessions of Caribbean archaeological materials were donated by individuals (Table 1). McKean donated two stone celts from St. Croix, U.S. Virgin Islands in 1927 (accession 8031). A stone celt from Jamaica, accessioned (12880/12) in 1941, had been found in W. J. Holland’s desk following his death in 1932. Holland, who was Director of Carnegie Museum of Natural History from 1896 until 1922, lived in Jamaica for part of his life. Accession 23240 are pottery fragments and lithic debitage collected by CMNH Research Associate Sydney W. Bergman in July 1957 (accessioned in 1968) near Loquillo Beach, Puerto Rico. Volunteer Andres Oliver recently examined these specimens and attributes the ceramics to the Monserrat site. The clay pipe bowl fragment (accession 31604) is an historic artifact found in a cave near Oviedo, Pedernales province, Dominican Republic in 1980 by Jose A. Ottenwalder, who donated it to CMNH the next year when he was a visiting scholar in the Section of Mammals.

“Missing” donations

Two donations of Caribbean artifacts could not be located in the CMNH collections. They include one stone celt from Jamaica, donated by James Miller (accession 15849 in 1951), and six sherds and shells from San Salvador island, Bahamas donated by Frederick B. Malvin (accession 23239) in 1968. The materials probably are misplaced in the collections rather than lost. A similar situation occurred when we first searched the collections for the Guadeloupe groundstone objects, and found that they were shelved incorrectly with materials from Guadalupe, Mexico.

Research Constraints

The focus of this study is the descriptive and comparative analysis of groundstone implements from four islands. The project is constrained in two ways: (1) by limiting factors inherent in old collections at CMNH (constraints that often are applicable to older collections at many museums) and (2) by decisions made on what to include and exclude in the scope of research.

Inherent limitations in old collections

Artifact provenience almost always is restricted to island level in the old CMNH collections. Both site provenience and excavation data are absent in the records, although occasionally a site or sector of an island can be deduced. As a result, the stratigraphic context for an individual artifact essentially is lost forever. Similarly, the relationship among artifacts within a collection is lost as well. In all instances it is a futile effort to attempt to draw together disparate individual artifacts in such a collection, to try to “reconstruct” or “reassemble” the original assemblage or grouping of associated artifacts. Poorly provenienced collections provide little information useful for establishing the spatial, temporal, and chronological parameters of their artifacts.

The primary research value of the old CMNH collections is at the level of artifact typology. That is, the systematic study of the individual artifact to obtain metrical data and non-metrical measures used to classify the object. These descriptive analyses can, in turn, lay the groundwork for a comparative study of the classified artifacts. Adequate sample size is fundamental to this process in order to
obtain statistically valid parameters. In no instance does a CMNH collection contain a large enough sample to meet the adequate size criterion. Moreover, in the case of the groundstone objects from Guadeloupe, variability in artifact form created a number of distinct categories, most of which contained only a few examples.

Limitations in the scope of research
Inadequate sample size limited the range of analyses that could be performed. Additionally, no geological analysis of rock types were attempted in this study and, hence, we do not address the issue of whether these are locally manufactured artifacts or imported trade items. Finally, we did not examine collections in other institutions for comparative purposes. We did review the publications about similar groundstone artifacts elsewhere in the Caribbean region (see Bibliography).

Materials and Methods
The 47 groundstone implements used in this study, from four islands, are detailed in Table 2. They include 44 objects from Guadeloupe and Puerto Rico obtained from AMNH (accession 4291), two celts from St. Croix (McKean, accession 8031), and one celt from Jamaica (Holland, accession 12880).

Once specimens were located in the collections, they were inventoried and their conditions assessed. Relevant information was compiled from accession records and donor files.

Procedures developed to describe the implements were based on our review of prior literature regarding Caribbean groundstone objects and by cross-reference to descriptive terms used. On the basis of form, we initially assigned groundstone implements to two basic categories — celt and axe. Following Harris (1983) we did not attempt to distinguish between axes and adzes; instead we lumped them under the term axe (note that Harris uses axe/adze). We defined terms as follows (Figure 1). The end lashed to a handle or held in the hand is the butt. The cutting edge is the blade edge. The body of the axe or celt between the butt and blade edge is the blade. The indentation between the butt and blade on an axe is the neck (a celt lacks this indented area and thus has no neck).

On a data sheet we recorded the artifact form; completeness of the object and a detailed description of breaks and fractures; weight in grams; caliper measured lengths, widths and thicknesses in millimeters; and Munsell Color Chart notations for exterior and, when breaks were present, for interior colors. Longitudinal and cross sectional outline sketches and color slides and black and white photographs were completed.

metrical data were generated to allow comparison within the sample as well as with published data. These data were used in statistical analyses of individual groupings of axes and celts.

Guadeloupe Materials
The 20 Guadeloupe objects were divided into two categories, four celts and 16 axes, based on overall form. The celt forms were so variable that each category contained only one example, and thus the decision was made to drop these four celts from the study. There likely is some degree of standardization in these forms, however, since similarly shaped celts are illustrated in papers by Haag (1970), Boomert (1979), and Mason (1885). Herrera Fritot’s (1964) paper does not illustrate any celts corresponding to those four from Guadeloupe.

The axes initially were segregated based on their overall shape, with longer and thinner ones separated from rounder and wider axes. We assigned them to separate classes based on typologies defined and illustrated by Harris (1983), the study that proved the most useful for classificatory and comparative purposes. Harris classifies initially on butt type and secondly on blade shape. The 16 axes (Figures 2-4) in the Guadeloupe collection include five of Harris’ (1983) butt types: Short Cutaway Beak (n = 8)(p.275); Flat Cutaway Beak (n = 4)(p.275); Cutaway Beak & Notch (n = 1)(p.274); Knob (n = 2) (p.273); and Narrow (n = 1)(p.279). The eight Short Cutaway Beak axes (Figure 2) have four blade types (round, spoon, pear, and trap); the four Flat Cutaway Beak axes (Figure 3) have four blade types (pear, trap, round, and rectangular).

Preliminary statistical analysis on the 16 Guadeloupe axes provided skewed results because of the variety of forms and the limited quantity in each class. The visual and analytical data were complementary in showing the Guadeloupe axe forms to be highly varied.
Overall, the CMNH Guadeloupe axes fit very well into Harris’ (1983) typology, although he has a much greater range of forms than was observed in our sample of 16 axes.

Puerto Rico Materials
The Puerto Rico groundstone collection includes petaloid celts and other celt forms but no axes. There are 24 specimens. We found Herrera Fritot’s (1964) publication to be especially useful in establishing the typologies and classifying the celts from Puerto Rico along with the three examples from St. Croix and Jamaica. It was soon observed that the CMNH collection contained both short and long examples but very few intermediate celts.

The Puerto Rican celts initially were classed by comparing them to celt forms categorized and illustrated by Herrera Fritot (1964) in four plates, termed Lamina I through IV. Eleven CMNH celts match Lamina I (Figure 5); 4 match Lamina II (Figure 6); 3 match Lamina III; and 4 match Lamina IV including the buril (Figure 7). Two celts (one decidedly chisel-like) not matching any celts illustrated in Herrera Fritot’s classifications were dropped from the study.

We decided to exclude from analysis the two celts from St. Croix and the one from Jamaica (Figure 8). One St. Croix celt (8031-1) had a distinctive form that was unique in the sample. Although the other two celts were similarly shaped to celts from Puerto Rico, we decided to exclude them as well. It was thought that their inclusion might have adversely affected the “Puerto Rico only” data, and our rationale for their exclusion was that incorporating data from only two more celts, especially when they originated on two other islands, was not warranted.

Analysis of metrical data therefore was restricted to the 22 Puerto Rico celts, all of which corresponded to celts depicted in the four plates of Herrera Fritot (1964). Herrera Fritot’s article incorporates data from collections from Puerto Rico as well as Cuba.

Statistical analyses completed for the Puerto Rico celts included stem and leaf plots, box and dot plots, means, medians, standard deviation, and analysis of variance. First, a stem and leaf plot of greatest lengths was compiled and the results showed this was double-peaked, indicating that there were two separate divisions in the data. Subsequent stem and leaf plots for Lamina II, III and IV showed them to be single peaked whereas Lamina I (11 petaloid celts) was double peaked. Visual observation of a preponderance of small and large celts in the sample was verified statistically.

The CMNH Puerto Rico celts sample has medians and means for length that differ from those determined for Herrera Fritot’s (1964) much larger sample. The CMNH sample ranges from 65.8 mm to 135.5 mm in length, with a mean length of 105.5 mm and a median of 92 mm. Herrera Fritot’s midrange is 60 mm. The CMNH sample has abundant representation of a category of celts called “anómalas muy estrechas,” a form constituting only 1% of his much larger sample of celts (Herrera Fritot, 1964: 95). Celts in the intermediate categories are what is largely absent in the CMNH collection.

Although of interest, these observations must be viewed with caution. The CMNH celts from Puerto Rico constitute a limited subset of a much larger sample of celts in the Stahl collection, and we know that AMNH retained many more of those specimens than were sent to CMNH in the 1906 exchange.

CONCLUSIONS
This project identified the limitations inherent in the old CMNH collections of Caribbean archaeological materials, including individually donated collections and those that were purchased (and then exchanged by AMNH). The overriding limitation is that such collections are poorly provenienced. These constraints are not unique to CMNH collections. Nonetheless, artifacts in poorly provenienced collections have research value for typological and comparative studies. We presented the metrical and non-metrical categories we chose to include, being guided by earlier studies of Caribbean groundstone implements in selecting those data to be recorded.

The Guadeloupe axes fit very well into Harris’ axe typology scheme, and his drawn outline forms facilitated the assignment of individual axes to his types and classes and promoted comparison among axes. The CMNH sample did not lend itself to statistical analysis because of the variable forms and limited number of axes in each class. Based on time expended, a visual assignment of axe forms, using
Harris' (1983) publication, was an efficient way of classifying the Guadeloupe axes.

Using outline form as a basis of classification, by visual comparison to Herrera Fritot's (1964) four “lamina” categories, was somewhat more difficult with the Puerto Rico celts. Shorter and longer celts predominated in the CMNH collection. It had few intermediate sizes and therefore did not match the continuous sequence of sizes reported by Herrera Fritot. The lack of a full range of celt sizes at CMNH probably can be accounted for by AMNH “selectivity” when choosing the celts from the Stahl collection for the exchange. We hypothesize that the entire original Stahl collection probably matched the full sequence of sizes reported in the Herrera Fritot (1964) study.

Groundstone is an artifact category that has received little attention by Caribbean archaeologists. In our view, study of the groundstone industry is currently at the same stage of “incipient research” that characterized the study of the Caribbean flaked stone industry twenty years ago. The small project we conducted indicates that an investigation of groundstone can be a fruitful endeavor, and it confirms that a useful literature on the subject already exists (see Bibliography), although the total number of publications is small compared to those for the flaked stone or ceramic industries in the Caribbean. Our knowledge of the flaked stone industry has advanced enormously in the past twenty years; we hope that equivalent progress in our understanding of the Caribbean groundstone industry is evident two decades hence.

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Rostain, Stéphen
Saville, Marshall H.  

Walker, Jeffery B.  

**FIGURE CAPTIONS**

Figure 1. Terminology for parts of an axe.

Figure 2. The eight Short Cutaway Beak axes (Guadeloupe).

Figure 3. The four Flat Cutaway Beak axes (Guadeloupe).

Figure 4. The two Knob (top), one Cutaway Beak and Notch (lower left), and Narrow (lower right) axes (Guadeloupe).

Figure 5. The eleven Lamina I petaloid celts (Puerto Rico).

Figure 6. The four Lamina II celts (Puerto Rico).

Figure 7. The four Lamina IV celts and burils (Puerto Rico).

Figure 8. The Jamaican (left) and two St. Croix celts.
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Figure 8. The Jamaican (left) and two St. Croix celts.
Table 1. Caribbean Collections Accessioned

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<td>1968</td>
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<td>J. A. Glasnawker</td>
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*Excludes Accessions 15489 (Jamaica) and 23239 (St. Thomas) not located in collections.

Table 2. Distribution of groundstone implements by artifact form and island.

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