

1-1-1990

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### Repository Citation

Haviser, Jay B. (1990). "Perforated Prehistoric Ornaments Of Curaçao And Bonaire, Netherlands Antilles." *BEADS: Journal of the Society of Bead Researchers* 2: 85-92. Available at: <https://surface.syr.edu/beads/vol2/iss1/8>

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# PERFORATED PREHISTORIC ORNAMENTS OF CURAÇAO AND BONAIRE, NETHERLANDS ANTILLES

Jay B. Haviser

*This paper describes some of the more distinctive characteristics of perforated prehistoric ornaments, primarily beads and pendants, found on the Caribbean islands of Curaçao and Bonaire. The production and stylization of these ornaments is briefly compared between the islands, as well as with specimens recovered from sites on the South American mainland.*

## INTRODUCTION

Curaçao and Bonaire, two of the six islands comprising the Netherlands Lesser Antilles, are located about 45 km north of the state of Falcon, Venezuela (Fig. 1). These are true oceanic islands, separated from the mainland by the over-1000-m-deep Bonaire Trench. They share similar climatic conditions, having an average annual rainfall of 270-855 mm per year and an average annual temperature of 27°C (Bruinenburg 1985). Thus, they have semi-desert environments with xerophytic vegetation, similar to northwestern Venezuela, and northeastern Colombia at Goajira.

Both islands were formed by deep-sea volcanic action producing basaltic bedrock which emerged above sea level. This rock was subsequently surrounded by various developments of coral growth which eventually formed into limestone terraces. Curaçao has proportionally more basalts over its 444 km<sup>2</sup> area, while Bonaire has proportionally more limestone over its 288 km<sup>2</sup> surface. There are no permanent rivers or streams on either island; however, seasonal watersheds and shallow groundwater locations are present.

## PREHISTORIC BACKGROUND

Noted on Curaçao, the earliest human occupation of the two islands has been established by radiocarbon dating at about 2500-1800 B.C. (4490±60 to 3790±50 years BP) (Haviser 1987: 81). On Bonaire, radiocarbon dates indicate that the first inhabitants appeared ca. 1400-150 B.C. (3320±55 to 2105±75 years BP) (Haviser 1990: 3). These were peoples with a level of technological development identified as the Archaic Age, which signifies that they had neither agriculture nor produced ceramics. Thus far, no perforated ornaments have been found associated with Archaic-Age sites on Curaçao or Bonaire.

Radiocarbon dates obtained from archaeological sites on the islands indicate that a major influx of Amerindian peoples from South America began about A.D. 450-500 (1480±25 years BP). These people were of the Ceramic-Age level of technological development, and thus had manioc/maize cultivation, produced ceramic artifacts, possessed a more complex social organization, and were probably of the Arawakan linguistic family. The Ceramic Age for these islands lasted until initial contact with the Spanish in 1499, and carried over as the Historic Age into the early part of the 16th century. It is during the Ceramic Age that beads and pendants manufactured of shell, ceramic, bone, and stone appear on Curaçao and Bonaire.

For this study, various artifact collections assembled by both professionals and amateurs were examined personally or via published sources. As recent archaeological studies of this region have generally neglected beads and pendants, several of the regional references in this report are from earlier professional publications. The primary sources for

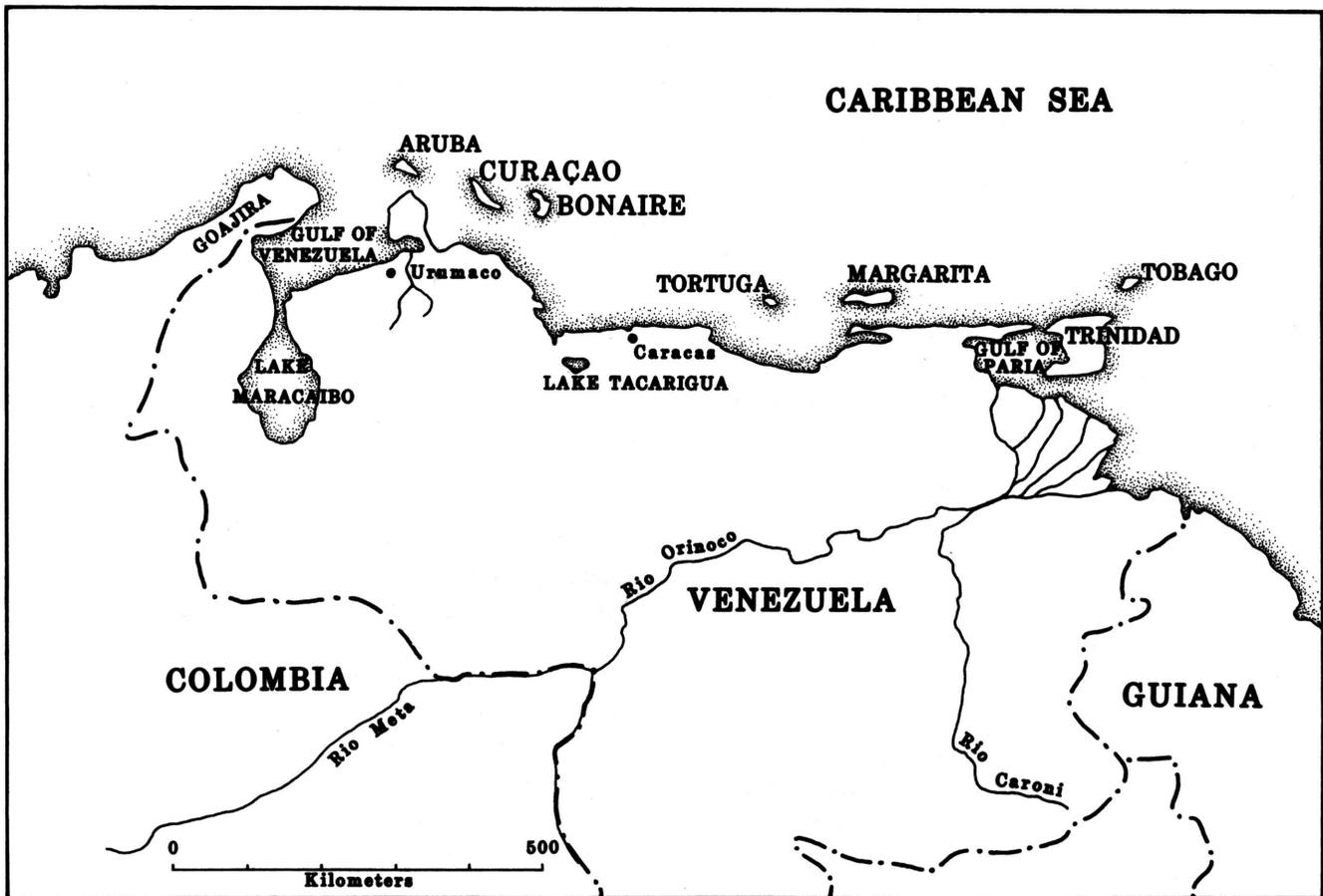


Figure 1. Location of Curaçao and Bonaire, off the northwestern coast of Venezuela (drawing by D. Kappler).

this study include professional reports by E. Boerstra (1982), J.B. Haviser (1987, 1990, n.d.), H.R. van Heekeren (1960), J.P.B. de Josselin de Jong (1918), and professional field observations made by the author from 1982-1990. A review of collections owned by amateur collectors Jose daCamara, Frans Booi, and others was also of assistance to the author, although these specimens have limited use for precise analysis.

#### BEAD DESCRIPTIONS

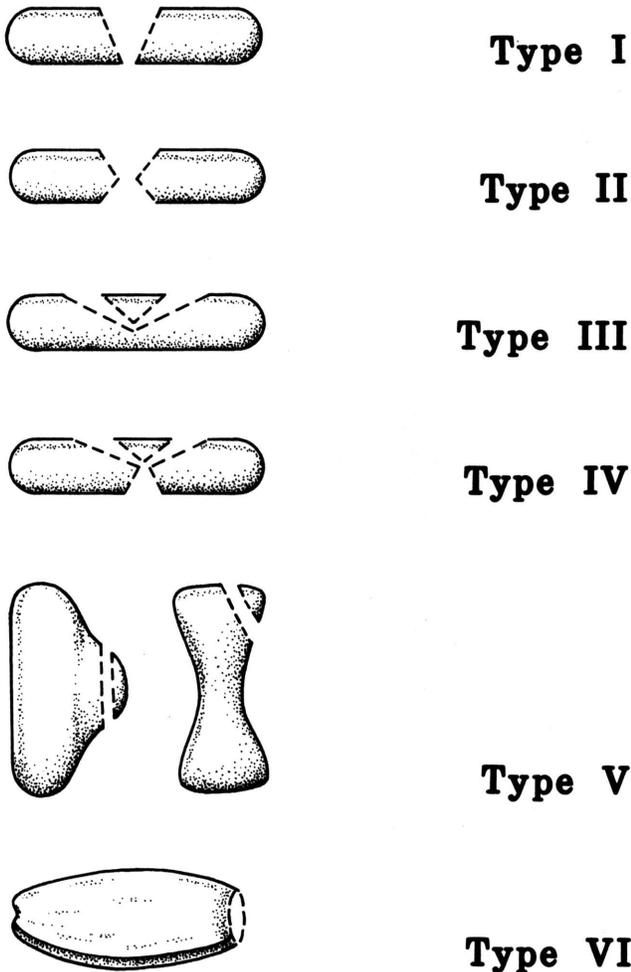
The materials used for the manufacture of prehistoric beads and pendants on Curaçao and Bonaire include marine shell, the most common, as well as ceramics, stone, and bone.

Beads and pendants of shell are primarily made from the outer lips or shoulder nodes of various species of conch (*Strombus*) shells. Other shells frequently found modified into beads and pendants are

olive shells (*Oliva*), flamingo tongues (*Cyphoma gibbosum*), oysters (*Isognomon*), and file shells (*Lima scabra*). All of these are indigenous to the islands. Pearls were also perforated for suspension.

Stone beads and pendants are most commonly composed of calcite or quartz (Pl. VE,f,g), also jasper (Pl. VE,h,i) and basalt, and less commonly nephrite and serpentine. The calcite, quartz, jasper and basalt can be acquired on the islands. However, the nephrite and serpentine are imported, most probably from the Venezuelan-Colombian border area (Wagner and Schubert 1972).

Ceramic beads are most often made of an untempered red clay (Pl. VE,a-d). Several specimens of perforated, tempered-ceramic discs (sherds of broken vessels) are too small (less than 3 cm in diameter) to have been used as spindlewhorls, and probably functioned as beads (Pl. VE,e).



**Figure 2.** Prehistoric bead-hole typology (drawing by D. Kappler).

Bone beads are relatively rare. They generally consist of hollow bird bones with polished ends. The species vary and are rarely identifiable. Also present are beads made of various fish bones (primarily the vertebrae of cartilaginous fish) which exhibit both enlargement of natural perforations and incising of the outer surfaces. Turtle bone and carapace fragments are also found modified into pendants (most commonly of *Chelonia mydas*), and longbone fragments of large mammals (species unknown, but possibly the deer *Odocoileus gymnotus* on Curaçao) occur with perforations.

Regardless of the material used, six basic types of bead holes were produced on Curaçao and Bonaire during the prehistoric period (Fig. 2). These are described here and correlated to those defined by H.C.

Beck (1928: Pl. IV) as an aid to future prehistoric bead studies in the region.

Type I. Conical: A single perforation drilled from one direction with an opening on either side of the artifact. Equivalent to Beck's "Type III, single cone" perforation.

Type II. Biconical: A single perforation drilled from opposite sides with an opening on either side of the artifact. Equivalent to Beck's "Type I, double cone" perforation.

Type III. V-Shaped: A V-shaped perforation whose two segments were drilled from one surface; two openings on one side of the artifact. Equivalent to Beck's "Type VIIIa, V-perforation".

Type IV. Y-Shaped: A combination of a Type I and a Type III perforation with two openings on one side and one opening on the other side of the artifact. Equivalent to Beck's "Type Xd, Y-perforation".

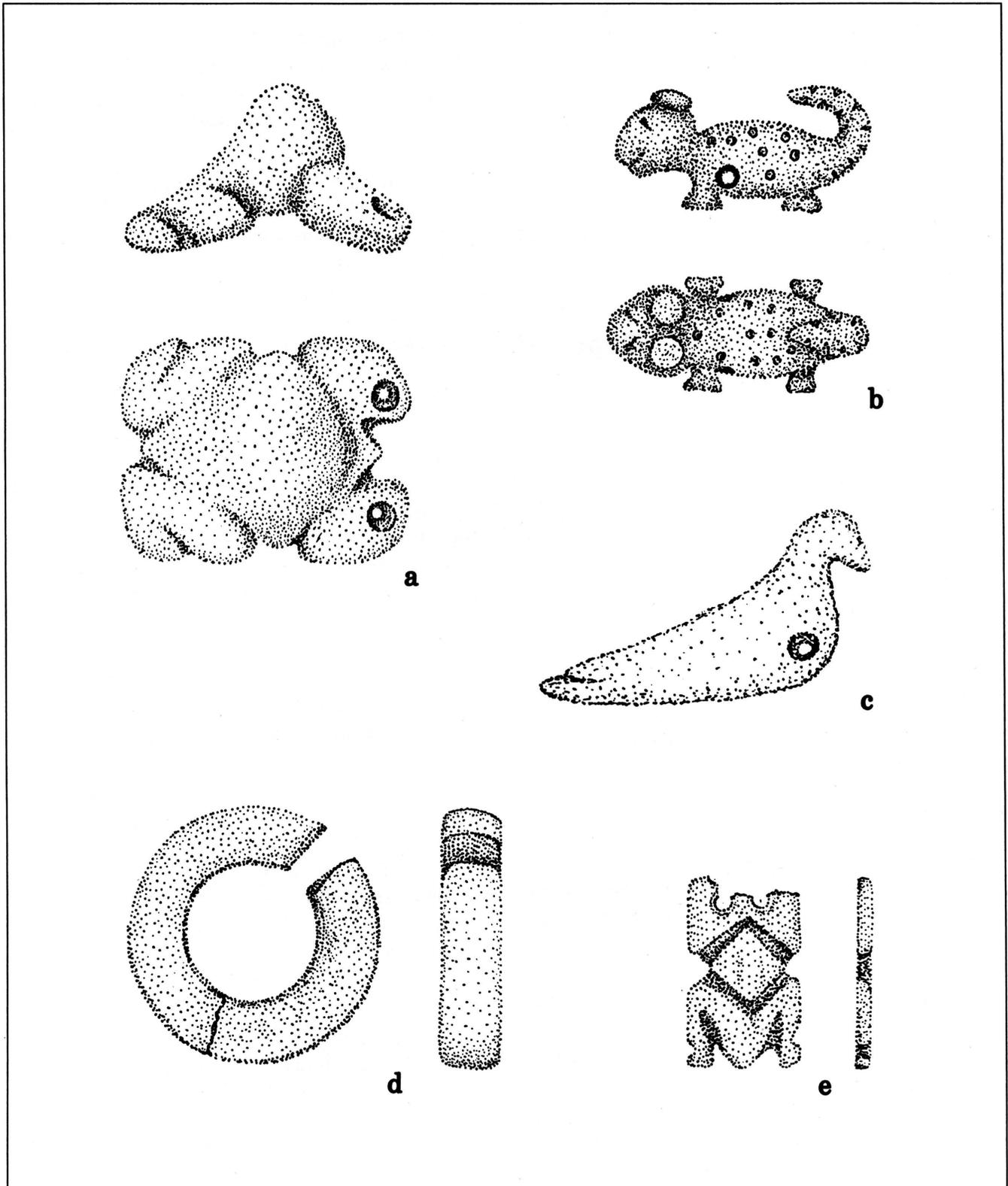
Type V. Offset: One or more perforations in an expanded edge or appendage of an artifact. Equivalent to Beck's "Type IXa, single perforation."

Type VI. Terminal: A perforation produced by removing the spire, apex, or an area of outer shell of gastropod shells. Most often equivalent to the "grinding" technique identified by Francis (1982: 714).

Holes of Types I-V were produced by small lithic drills worked in a rotary motion. The conical openings so produced were generally about 2-6 mm in diameter at the orifice. It is important to note that all Ceramic-Age village sites on both islands have produced small, chipped, chert drills 1-3 cm in length which exhibit distinctive rotary use-wear striae.

Bead shapes vary, but the most common one by far is a disc ranging from 2-90 mm in diameter and 2-12 mm in thickness. Disc beads of stone and shell tend to be barrel-shaped. They are equivalent to Beck's (1928: Pl. II) Type I.A.1.b. circular barrel discs with Type I, II, III and IV holes. It has been noted that as the diameter of the disc decreases, the sides tend to become straighter, approximating Beck's Type I.A.2.b. circular cylinder disc.

The majority of the untempered-ceramic beads are quite distinctive with Type IV holes and a rounded



**Figure 3.** Prehistoric shell ornaments: a, b, e, zoomorphic ornaments excavated by Haviser (1987) at Wanápa, Bonaire; c, bird ornament from F. Booi collection (Amboina, Bonaire?); d, nose-ring from Wanápa, Bonaire. Scale is 2:1 (drawing by E. Juliana).

conical shape; the single hole is always on the conical end of the bead. There are also some long cylindrical beads made of untempered clay which range from 2-4 cm in length and 60-90 mm in width and have elongated Type II holes. Some cylindrical untempered-ceramic beads are encircled by incised parallel lines. The tempered-ceramic-herd discs have only Type I and II holes (Pl. VE,e). Perforated pearls always have Type II holes.

There are numerous specimens of square or rectangular shell beads which range from 8-30 mm in length and 2-6 mm in thickness. The rectangular beads almost always have Type III holes.

Irregularly shaped beads and pendants can be separated into several different categories: zoomorphic representations; cones, rings, and hourglass shapes; amorphous forms; and natural-shell forms.

The zoomorphic representations include frogs (Fig. 3,a,e; Pl. VF,a-c), birds (Fig. 3,c), turtles, and one example of a jaguar (Fig. 3,b). Shell is the most common material for animal representations, although calcite, quartz, and bone specimens are also known. Hole Types I, II, III and V predominate on zoomorphic beads.

Conical objects (Pl. VG,c,f), rings (Pl. VG,e), and hourglass-shaped beads (Pl. VG,d) are also made of shell, and have Type I, II and V holes. Ethnohistorical accounts (Nooyen 1979) suggest that the cone-shaped artifacts may have been used as earplugs rather than beads, and the notched ring in Fig. 3,d and Pl. VF,d possibly served as a nose ring. The hourglass beads always exhibit encircling incised rings and have Type V holes.

The amorphous beads are primarily made of polished shell or stone with Type I and II holes. Some of these forms are probably stylized representations of animals that are not readily identifiable (Pl. VG,b).

Various beads are made of perforated, complete or nearly complete shells. Common examples include *Oliva*, *Conus*, and *Nerita* shells with Type VII openings, often with a Type I hole on the side; *Isognomon* shells with paired Type I holes; and *Cyphoma gibbosum* shells with two pairs of evenly spaced Type I holes (Pl. VG,a).

## LOCAL COMPARISONS

For the purpose of inter-island comparisons, the relevant artifacts excavated from two prehistoric archaeological sites by the author will be examined. On Curaçao, the De Savaan site (C-021) was excavated in 1984. This is a Ceramic-Age village site radiocarbon dated to about A.D. 900-1200 (1040±100 - 660±20 years BP). The excavated area consists of four 2x2 m units (104/98-100, 106/98-100) dug to bedrock at about 35 cm below the surface (Haviser 1987). On Bonaire, the Wanápa site (B-016) was excavated in 1987. This is a Ceramic-Age village site radiocarbon dated to about A.D. 450-1450 (1480±25 - 505±35 years BP). Four 2x2 m units (88-90/122, 88-90/124) were dug to bedrock at about 30 cm below the surface (Haviser n.d.).

Table 1 lists the relevant artifacts recovered from the excavated units. In both samples, unperforated shell discs are the most common artifacts, and probably represent preforms for the manufacture of perforated discs. The shell objects have a greater frequency of Type I and II holes, with considerably more Type II holes represented on Bonaire. A pearl bead with a Type II hole was found at either site. There are substantially more Type III holes in shell artifacts from Bonaire, with the previously mentioned focus on rectangular bead shapes (five from Bonaire and two from Curaçao) for this hole type. Type IV and V holes are less common, with only two specimens of shell discs with Type IV holes from either site. There is also a zoomorphic pendant from Bonaire and two hourglass-shaped objects from Curaçao with Type V holes. Type VI holes occur on *Oliva* shells from Curaçao and Bonaire, and on *Conus* and *Nerita* shells from Bonaire. All of the zoomorphic pendants are made of shell, with one frog from Bonaire, and four frogs and one jaguar from Curaçao. The frog pendants all have Type I holes, whereas the jaguar pendant has a Type II hole.

Perforated ceramic objects are primarily the untempered-clay beads with Type IV holes, with three examples from Curaçao and five from Bonaire. A single ceramic disc with a Type II hole and two unperforated ceramic discs are from Curaçao.

Lithic beads have Type II holes, and are of calcite (1) and nephrite (2) on Bonaire, and calcite (1), nephrite (1), red jasper (1) and basalt (1) on Curaçao.

Table 1. Perforated Artifacts from Curaçao and Bonaire.

Shell/Ceramic*/Lithic <sup>+</sup> Perforation Types	Curaçao (C-021)		Bonaire (B-016)	
	n	%	n	%
Type I	14	15.7	18	16.7
Type II	8*+	8.9	26+	24.1
Type III	2	2.3	8	7.5
Type IV	5*	5.6	7*	6.4
Type V	2	2.3	1	.9
Type VI	2	2.3	5	4.6
Unperforated discs	56*	62.9	43	39.8
Total	<u>89</u>	<u>100.0</u>	<u>108</u>	<u>100.0</u>

Bone artifacts which can be identified as beads or pendants primarily consist of polished bird longbones with two specimens from Curaçao and five from Bonaire. Two pendants from Curaçao, one of turtle bone and the other possibly of deer bone, have Type II holes. Also from Curaçao is a shark's tooth with a Type I perforation and a perforated shark vertebrae with a Type II hole. A possible example of the latter is also in the Bonaire collection.

As can be seen, the assemblages from the two islands are relatively similar, each having about 50-60% of all perforated objects with Type I or II holes. Other similarities include the close correlations between rectangular-bead shape and Type III holes, and Type IV holes and untempered-clay beads. Zoomorphic representation of frogs are present at both sites.

### REGIONAL COMPARISONS

The disc beads of shell with Type I and II holes are ubiquitous to the entire Caribbean region, and thus are of little help for comparative purposes.

Frogs, the most common zoomorphic representation noted on Curaçao and Bonaire, are reminiscent of frog motifs (often called *Muirakitās*) found over South America (Wassén 1934) including

Venezuela (Kidder 1944: 137; Nomland 1935: 93). The bird representation shown in Fig. 3,c is similar to specimens from the Greater Antilles (personal observation: Museo del Hombre, Santo Domingo, Dominican Republic). However, the artifact is from a personal collection on Bonaire, and its origin on Bonaire cannot be verified. It is curious that no other similar specimens have been excavated on Curaçao or Bonaire. The jaguar pendant from Bonaire is identical to one found near the Urumaco River, Falcon, Venezuela (José Oliver 1990: pers. comm.).

The manufacture of untempered-ceramic disc beads with Type IV holes seems to be restricted to northwestern Venezuela and the coastal islands, including Curaçao and Bonaire (Boerstra 1982: 44; Cruxent and Rouse 1958: Pl. 13; Haviser 1987: 52; van Heekeren 1960: Pl. 24; Kidder 1944: 75; Nomland 1935: 97). The extensive use of Type III and IV holes on beads of a variety of materials is also distinctive of these islands.

Rectangular beads with Type III holes, earplugs, and *Cyphoma*-shell beads have regional correlations with Aruba (Boerstra 1982: 44; van Heekeren 1960: Pl. 24) and northwestern Venezuela (Cruxent and Rouse 1958: Pl. 13; José Oliver 1990: pers. comm.). The shell "nosering" from Bonaire is unique in the islands.

## INTERPRETATION

There are direct and indirect correlations related to perforated objects found on Curaçao and Bonaire. Clearly, trade with the mainland is evidenced by the presence of nephrite, serpentine, and pearls. Yet, it is also evident that a particular animal species does not have to be present on the islands for its representation in the iconography of pendant design; e.g., the jaguar image carved in marine shell in this semi-desert region where jaguars do not live. The composition of the jaguar ornament is indicative of local manufacture (marine shell), with a conceptual importation (the jaguar), which correlates with Levi-Strauss' totemism theory that an animal representation focuses on the mythical association of the animal, and only indirectly relates to the actual animal itself (Levi-Strauss 1962: 29). Another example is the use of frog representations, a very wide-spread concept over the Antilles and South America (Wassén 1934), which are made of various materials depending on the local resources. It is interesting to note that frogs are reported to have been introduced to Bonaire only in 1928 (Brongersma 1948: 94), and yet they are very common in prehistoric zoomorphic representations. Maybe there was a prehistoric frog species on Bonaire that became extinct, or perhaps it is an example, like the jaguar, of a concept being imported and expressed on local materials.

Some specific zoomorphic motifs are directly associated with specific areas, such as the "bat pendants" common in the Valencia area of Venezuela, and the "condor pendants" of the Guianas and Antilles. These two specific motifs are not found on Curaçao and Bonaire. Interestingly, the jaguar pendants from Bonaire and Falcon have a closer correlation with the greater Amazonia region (Roosevelt 1987) than with the Antilles. The frog pendants, common to Curaçao and Bonaire, are very wide-spread and thus are generally associated with the entire South American and Caribbean area.

Some localized patterns can be identified based on bead-manufacturing techniques. For instance, the red untempered-clay beads and Type III and IV perforation techniques are distinctive of Curaçao, Bonaire and northwestern Venezuela.

The foregoing data suggest that the physical manufacturing techniques of the ornaments discussed

herein are more indicative of local associations with northwestern Venezuela, while the conceptual inspiration for the images represented may perhaps relate to more ancestral connections with Amazonia.

## ACKNOWLEDGEMENTS

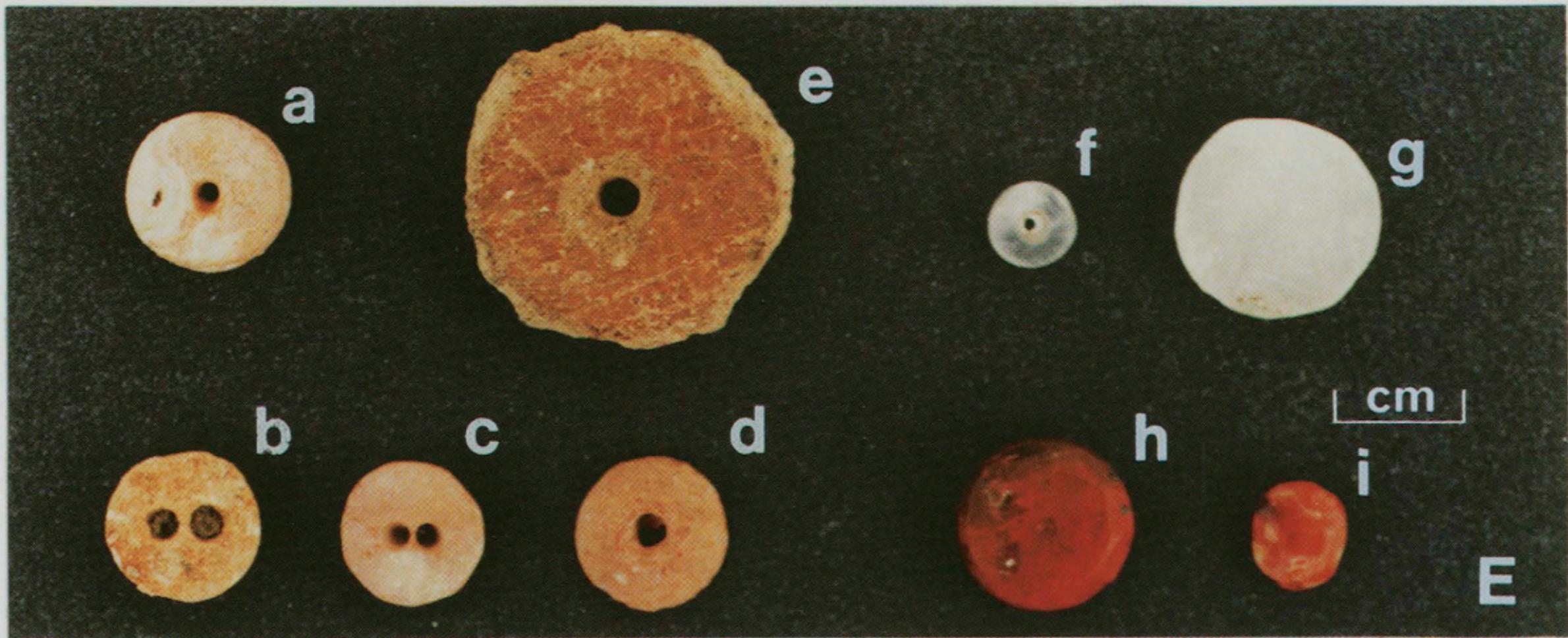
I would like to thank Edwin Ayubi of the Archaeological-Anthropological Institute of the Netherlands Antilles, Curaçao, and Frans Booi of the Department of Culture, Bonaire, for their cooperation in the investigation of the prehistory of these islands. My gratitude is expressed to Elis Juliana for the drawings in Fig. 3, and to José daCamara for allowing me to observe and photograph his collection. I would like to thank Erica Wagner for bringing the Wassén article to my attention, and to Karlis Karklins for his interest in this paper.

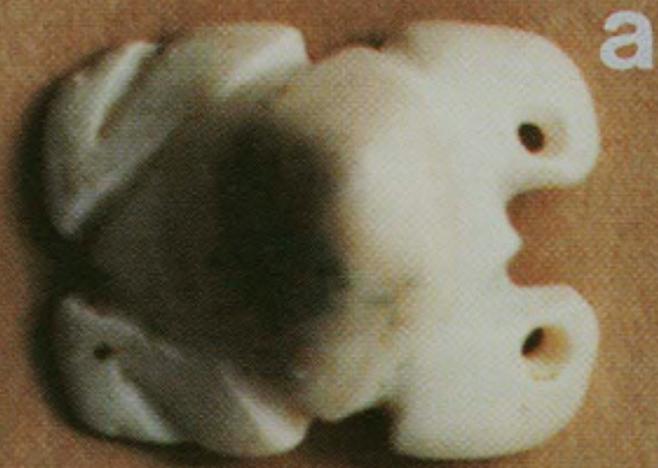
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