

## AREAS AND PERIODS OF CULTURE IN THE GREATER ANTILLES

IRVING ROUSE

IN PREHISTORIC TIME, the Greater Antilles were culturally distinct, differing not only from Florida to the north and Yucatan to the west but also, less markedly, from the Lesser Antilles to the east and south (Fig. 1).<sup>1</sup> Within this major province of culture, it has been customary to treat each island or group



FIG. 1. Map of the Caribbean area.

of islands as a separate archaeological area, on the assumption that each contains its own variant of the Greater Antillean pattern of culture. J. Walter Fewkes proposed such an approach in 1915<sup>2</sup> and worked it out seven years later.<sup>3</sup> It has since been adopted, in the case of specific islands, by Harrington,<sup>4</sup> Rainey,<sup>5</sup> and the writer.<sup>6</sup>

1 Fewkes, 1922, p. 59.

2 Fewkes, 1915, pp. 442-443.

3 Fewkes, 1922, pp. 166-258.

4 Harrington, 1921.

5 Rainey, 1940.

6 Rouse, 1939, 1941.

Recent work in connection with the Caribbean Anthropological Program of Yale University indicates that this approach is too limited. As the distinction between the two major groups of Indians in the Greater Antilles—the Ciboney and Arawak—has sharpened, it has become apparent that the areas of their respective cultures differ fundamentally, with only the Ciboney areas corresponding to Fewkes' conception of distribution by islands. The Arawak areas cut across the islands instead of enclosing them and, moreover, are sharply distinct during only the second of the three periods of Arawak occupation. It is the purpose of the present article to illustrate these points and to suggest explanations for them.

#### INDIANS OF THE GREATER ANTILLES

Columbus encountered three groups of natives in the West Indies: Ciboney, Arawak, and Carib. The first are poorly known, for they were restricted in colonial time to the western tip of Cuba, to the keys off the northern and southern coasts of that island, and to the southwestern corner of Hispaniola, regions which the Spaniards rarely penetrated before the Indians became extinct. The Ciboney are said to have lived in caves or camps; obtained their food by hunting, fishing, and gathering rather than agriculture; and to have had a relatively simple social and religious life. Since Columbus' Arawak interpreters could not understand their language, it is assumed to have been non-Arawak, although it might instead have been a different Arawak dialect.<sup>7</sup>

The Arawak occupied most of the rest of the Greater Antilles at the time of historic contact. They were agricultural, pottery-making Indians and lived in permanent villages rather than camps. According to the Spanish sources, they had a hereditary aristocracy; elaborate songs, dances, and ceremonies; and an emphasis upon religion, centering in the worship of spirits known as *zemis*. They were peaceable and did not practice cannibalism.<sup>8</sup>

By contrast, the Carib were cannibals and emphasized warfare. They spoke a language different from that of the Arawak; may have relied more upon fishing than upon agriculture; lived in semi-permanent villages; had less of an interest in religion; and chose their leaders for their prowess in fighting rather than on the basis of inheritance. They centered in the Lesser Antilles, and, by the time of Columbus, had established advanced bases in the Virgin Islands and on

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7 García Valdés, 1948. Some Cuban anthropologists, e.g., Cosculluela (1946), have substituted the term "Guanajatabey" for "Ciboney" on the assumption that the latter more properly applies to an Arawak sub-group. Alegría (1948) proposes the use of an archaeological term, "Archaic."

8 Roth, 1887; Krieger, 1930; Rouse, 1948, pp. 522-539.

Vieques, an islet off the east coast of Puerto Rico, whence they conducted periodic raids on the Arawak of the larger islands, farther west.<sup>9</sup>

It is generally agreed that the Ciboney were the first to settle the West Indies, but whether they originally came from North America, as seems likely to us, is still a matter for dispute.<sup>10</sup> The Arawak arrived next, migrating from South America by way of the Lesser Antilles and driving the Ciboney back into the peripheral positions in which they were found by the Spaniards.<sup>11</sup> The Carib were the last to move in, again from the South American mainland. To judge from the Indian traditions, they took over the Lesser Antilles from the Arawak shortly before the arrival of Columbus.<sup>12</sup>

#### SPACE AND TIME SCALES

For the purpose of surveying the archaeology, it will be convenient to divide the Greater Antilles into a series of geographical units, which are represented by the vertical columns in the body of the accompanying chart (Fig. 2). From west to east, these include: (1) western Cuba, (2) central Cuba, (3) eastern Cuba, (4) Jamaica, (5) the Turks and Caicos Islands, (6) Haiti, (7) the Dominican Republic, (8) the western half of Puerto Rico, (9) eastern Puerto Rico, and (10) the Virgin Islands. The Bahamas colony, north of Cuba and northwest of the Turks and Caicos Islands, has been omitted because so little is known of its archaeology.

These particular units have been selected because they are the largest regions which appear to have been geographically homogeneous in culture during each successive period of prehistory. Nevertheless, they should not be considered culture areas, but, rather, segments thereof. In order to form areas, we have had to proceed period by period and to combine those units which are similar in culture. As will be shown, the combinations vary from period to period.

Seven arbitrary periods of time, comparable to the units of space, have been recognized in the Greater Antilles. They comprise the horizontal columns in Figure 2, where they are numbered I, IIa, IIb, IIIa, IIIb, IVa, and IVb. The

9 Ober, 1895; Joyce, 1916; Rouse, 1948, pp. 547-565; Taylor, 1949. The last disagrees with several of the above statements, particularly that the Carib relied so much on sea food.

10 Rouse, 1949. For the alternative theory, that the Ciboney migrated from South America, see Harrington (1921, vol. 2, pp. 424-426) and Herrera Fritot (1943, p. 268).

11 Osgood, 1942; Rouse, 1947b.

12 Gower, 1927; Lovén, 1935, pp. 51-53. Disagreeing with the latter's interpretation of the documentary evidence, Taylor (1949, pp. 381-382) doubts the recency of the Carib migration. However, it is substantiated for the areas under consideration here by the archaeological sequences discussed below.

evidence on which these temporal units are based has been presented elsewhere;<sup>13</sup> suffice it to say here that they are the result of stratigraphic analysis of refuse deposits, combined with cross-dating in terms of trade objects. Like the units of space, they are not entirely distinct in culture or style: in many cases it is necessary to combine two or more of them in order to arrive at cultural or stylistic periods, and the combinations vary from region to region.

Period	Western Cuba	Central Cuba	Eastern Cuba	Jamaica	Turks and Caicos Islands	Haiti	Dominican Republic	Western Puerto Rico	Eastern Puerto Rico	Virgin Islands	Period
IV b										?	IV b
IV a			PUEBLO VIEJO	BANI-LIKE	CARRIER-LIKE	CARRIER	BOCA CHICA	CAPA	ESPERANZA	ESPERANZA-LIKE	IV a
III b			BANI				OSTIONES-LIKE		SANTA ELENA	SANTA ELENA-LIKE	III b
III a					MEILLAC		(Anadel-Sanjuan sites)	OSTIONES (Shell sites)			III a
II b			CAYO REDONDO and GUAYABO BLANCO				?	CUEVAS (Crab sites)		CUEVAS-LIKE (Coral Bay-Longford sites)	II b
II a					?	CABARET and COURI	(Railroad Cave, etc.)				II a
I								?	(Coroso sites)	?	I

FIG. 2. Preceramic cultures and ceramic styles in the Greater Antilles.

No adequate way has yet been found to convert the units of time into the Christian calendar. Some indication of their duration, however, may be obtained from the following estimates, obtained by applying the rate of refuse accumulation in Puerto Rico during the historic period (IVb) to the average depth of the deposits on that island assigned to each of the prehistoric periods:<sup>14</sup>

Period IVb	1509-1584 AD
Period IVa	1437-1509 AD
Period IIIb	1317-1437 AD
Period IIIa	1193-1317 AD
Period IIb	1089-1193 AD
Period IIa	929-1089 AD
Period I	-929 AD

13 Rainey, 1940; Rouse, 1939, 1941, MSa.

14 Rouse, MSA. Since these calculations project the historic rate of accumulation back in time, they are probably more reliable for the later than for the earlier periods.

## PHASES AND STYLES

The spatial and temporal units just outlined provide a scale upon which to lay out the archaeological remains of the Greater Antilles, as in Figure 2. The solid black line running diagonally across the middle of this chart marks the appearance of ceramics and agriculture; all the remains indicated below this line lack pottery and agricultural utensils, while those above the line have both.

The names below the solid black line refer to cultural phases, i.e. to complexes of type of artifacts which recur from site to site. The names above the line refer instead to ceramic styles, i.e. to similarly recurring complexes of pottery traits. This difference of treatment is a concession to the nature of the data: in the sites represented below the line, implements are practically our sole source of information, while in the sites above the line, over ninety-five percent of the artifacts found are ceramic. Since what is known of the burials, ceremonial structures, and stone, bone, and shell artifacts associated with each style indicates that they varied in correlation with the pottery,<sup>15</sup> it is thought that the shift from non-ceramic phases to ceramic styles will not affect our conclusions.

As is customary, we assume that all the phases below the solid black line are Ciboney, although this identification cannot be proven for lack of a detailed chronology of the non-ceramic phases and is rejected by some Cuban archaeologists.<sup>16</sup> Similarly, we consider all the styles above the line to be Arawak. Here we are on firmer ground, since stratigraphic studies in Puerto Rico indicate a continuity of stylistic and cultural developments through Periods II, III, and IV.<sup>17</sup>

It is not possible to correlate any of the remains so far discovered in the Greater Antilles with the third ethnic group, the Carib. To judge from the documentary evidence, Carib remains should eventually be found in the Virgin Islands and on the islets off the east coast of Puerto Rico, dating from Period IVb, at least. For the sake of completeness, therefore, we have added a dashed black line to the chart to mark off the section which is potentially Carib, even though this will not figure in the present discussion of the archaeological remains.

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15 Cf., for example, Rouse (1948, pp. 510-517), where the Arawak material is presented in terms of cultural phases rather than ceramic styles.

16 E.g., Pichardo Moya (1945), where it is assumed that the less advanced non-ceramic cultures, such as Guyabo Blanco, are pre-Ciboney.

17 Rouse, MSA. Rainey (1940) concluded that there was a break in the cultural sequence at the close of Period IIa, but this was subsequently filled by the discovery of remains dating from Period IIb.

## CIBONEY PHASES

In order to examine the geographical variation in Ciboney culture, and thereby provide a basis for distinguishing areas within it, we shall discuss briefly each of the non-ceramic phases, beginning in the west and working eastward. Two phases are recognized in Cuba: Guayabo Blanco and Cayo Redondo.<sup>18</sup> As indicated in Figure 2, both are restricted to that island and apparently extend throughout it, but their relative chronological position is unknown.

The Guayabo Blanco phase is represented by small shell deposits, either in caves or in the open, especially in swamp areas. Its artifacts include gouges, plates, and cups, made from the outer whorl of the conch (*Strombus* sp.); deeper vessels, consisting of conch shells from which the columella and inner whorls have been removed; unworked or slightly retouched flakes of flint; and crude hammerstones.<sup>19</sup> Because of the absence of stone grinding, this phase has been termed "paleolithic,"<sup>20</sup> although the emphasis on shellwork is atypical of that stage of cultural development.

The Cayo Redondo sites are similar. Gouges, plates, and cups of shell are again found, but the deep shell vessel is missing. In addition to hammerstones and flint flakes, there are grinders, dishes, balls, and peg-shaped ceremonial objects known as *gladiolitos*, all of which have been ground of stone. These are said to give the phase a "mesolithic" cast.<sup>21</sup>

Two parallel phases of Ciboney culture have been distinguished in Haiti: Cabaret and Couri. These also appear to have an overlapping distribution (Fig. 2). It is not known whether they extend into the Dominican Republic.

The small Cabaret shell heaps have so far yielded only irregularly shaped, unworked or slightly retouched flakes of flint, comparable to those in Cuba, together with the cores from which these flakes were struck. The shell work so characteristic of Cuba is missing.<sup>22</sup>

The Couri shell deposits are the richest of all Ciboney sites. They are characterized by daggers, knives, and scrapers of flint, all made by finely rechipping the edges of large lamellar flakes, which contrast strongly with the smaller, more irregular Cabaret flakes. Ground-stone work is well developed; the types include dishes, single- and double-bitted axes, balls, beads, and *gladiolitos*, as well as

18 As already noted, some Cubans use other terms to refer to these phases (e.g., Cosculluela, 1946).

19 Cosculluela, 1946, pp. 11-12.

20 Ortiz, 1943, p. 137.

21 Osgood, 1942; Ortiz, 1943, p. 137.

22 Roumain, 1942; Bastien, 1944.

mortars and pestles, and milling and polishing stones. A chisel and an elaborately carved pendant are the only objects of shell yet found. It is noteworthy that the shell pendant and an ax, pestle, and two fragmentary dishes of stone are decorated with rectilinear incised designs, which foreshadow some of the designs of the Meillac and Baní ceramic styles discussed below.<sup>23</sup>

Non-ceramic strata have been found underlying ceramic refuse in two caves of eastern Santo Domingo<sup>24</sup> and one in Puerto Rico,<sup>25</sup> but their contents are not known. Puerto Rico and the Virgin Islands also contain a series of non-ceramic shell deposits, the cultural affiliations of which are uncertain. Excavation in four of the Puerto Rican middens, of which Coroso is typical, yielded no definitely worked artifacts but simply pieces of stone and shell which might have been used for grinding, hammering, and splitting other materials.<sup>26</sup> In the Virgin Islands, the only specimens found were rectangular stone adzes, red ocher, clam shell scrapers, and a few potsherds limited to the surface.<sup>27</sup>

#### CIBONEY PERIODS AND AREAS

It will be apparent that we know little of Ciboney culture except in Cuba and Haiti. Even in these two countries, it is not yet possible to establish a Ciboney chronology, although one is tempted to assume on typological grounds that the "palaeolithic" cultures in each country are earlier than the "mesolithic."

Cuba and Haiti may each be said to constitute a distinct culture area, in that all three of the geographic units into which we have divided the former island have yielded the same phases and these differ from the phases recognized in Haiti (Fig. 2). The Cuban area is characterized by an emphasis upon shell artifacts—particularly the gouge—while the Haitian area has a contrasting emphasis upon stone implements—particularly flakes and blades of flint. It is not known whether the Dominican Republic is linked with Haiti, but, to judge from the little available evidence, Puerto Rico and the Virgin Islands are culturally distinct.

Future work may change the above picture, but at present it must be concluded that the distribution of Ciboney remains corresponds to Fewkes' conception of island culture areas. While the various islands are linked together by negative traits, such as the absence of pottery, of agricultural implements, and of ceremo-

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23 Rainey, 1941; Rouse, 1941, 1947a.

24 Gabb, 1881, pp. 146-147; Krieger, 1929, pp. 5-7.

25 Alegría, personal communication.

26 Rouse, MSa.

27 Hatt, 1924, p. 31.

nial structures, each differs in its more common positive traits and thereby constitutes a separate cultural unit.

#### ARAWAK STYLES

*Periods IIa and IIb.* In examining the Arawak styles, we shall proceed by groupings of periods and from east to west, in accordance with the time and direction in which the Arawak entered the Antilles. The only style so far defined for Periods IIa and IIb is the Cuevas, found in the "Crab culture" sites of Puerto Rico<sup>28</sup> (Fig. 2). This pottery is technologically the best in the Greater Antilles; its sherds are thinner and finer than most subsequent specimens, so that many ring when struck with metal. The vessels are highly variable in shape, encompassing almost all subsequent forms. Bowls in the shape of an inverted bell are typical; many are provided with a pair of plain, rectangular lugs or with vertical, D-shaped strap handles. Lugs, handles, or a well-defined section of the vessel surface, such as the lip or shoulder, are characteristically decorated with a red or, more rarely, black slip, or else these areas are set off by a high polish of the surface. White-painted designs, situated on the red-slipped areas, constitute a more obvious part of the decoration, but are relatively rare and are limited to Period IIa, the Cuevas pottery of Period IIb being decorated only with red or black paint.<sup>29</sup>

While a comprehensive stylistic classification has not yet been worked out for the islands east of Puerto Rico, it is apparent that the pottery of Hatt's<sup>30</sup> Coral Bay-Longford group of sites in the Virgin Islands closely parallels the Cuevas style (Fig. 2). Cuevas-like ceramic complexes have also been identified in the Lesser Antilles,<sup>31</sup> on Trinidad,<sup>32</sup> and at Barrancas, Venezuela, in the delta of the Orinoco River.<sup>33</sup> On the other hand, there is no such pottery in the rest of the Greater Antilles, west of Puerto Rico, so far as is known.

In all places where a chronology is available, the Cuevas and Cuevas-like complexes occur at the beginning of the ceramic sequence. Hence, they would seem to mark the progress of the original Arawak movement out from the Orinoco Valley through the Lesser Antilles into Puerto Rico. It is assumed that the Ciboney continued to occupy the rest of the Greater Antilles during Periods IIa and IIb (Fig. 2).

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28 Rainey, 1940.

29 Rouse, MSa.

30 Hatt, 1924.

31 Josselin de Jong, 1947, pls. 8-11.

32 Rouse, 1947b, pl. G, 1-4.

33 Rouse, MSb.

Among the types of artifacts associated with Cuevas and Cuevas-like pottery are clay griddles, used for baking cassava; adzes, celts, and hammers of stone; and a variety of stone, bone, and shell ornaments. These have been found only in refuse, never in association with ball courts or the other ceremonial structures of the historic Indians. Representations of the *zemis*, which the later Indians worshipped, are also lacking, and it is therefore inferred that the Arawak came into the Antilles without the elaborate ceremonial complex which characterized them in the time of Columbus.<sup>34</sup>

*Periods IIIa and IIIb.* Four ceramic styles have so far been defined for Periods IIIa and IIIb: Ostiones and Santa Elena in Puerto Rico, Meillac in Haiti, and Bani in Cuba (Fig. 2). Ostiones potsherds are technologically almost as good as the previous Cuevas ceramics, and they retain many of the latter's distinctive traits, such as rectangular lugs and the painting or polishing of restricted surfaces. On the other hand, bowls are mainly straight-sided instead of bell-shaped; handles are looped over the rim rather than D-shaped; and, on the sherds of Period IIIb, the decoration is enriched by the addition of modeled head-lugs and curvilinear incised designs. It is difficult to distinguish the earliest specimens from Cuevas pottery, but as one proceeds upwards through the refuse of Periods IIIa and IIIb, the differences intensify, as if a gradual local development had taken place.<sup>35</sup>

Santa Elena sherds are coarser and thicker than the Ostiones specimens, painting is not so common, and incision is largely limited to simple, straight-line designs, the most typical of which is a series of vertical grooves on the outer surface of the vessel wall. The grooves are often bordered on one side by a vertical strip of clay, which appears to be a vestigial handle. Large, modeled head-lugs are also present. Santa Elena pottery resembles closely that of the Magens Bay-Salt River group of sites in the Virgin Islands, and there is reason to believe that it may have been introduced into Puerto Rico by people coming from that island group and replacing the local, Ostiones Indians on the eastern end of Puerto Rico (Fig. 2).<sup>36</sup>

In the Dominican Republic, to the west of Puerto Rico, the pottery of the Anadel and San Juan sites, which appear to date from Periods IIIa and IIIb, has close resemblance to the Ostiones ceramics of Puerto Rico.<sup>37</sup> Similar specimens occur as a minority ware in both Haiti<sup>38</sup> and Jamaica.<sup>39</sup> Since these specimens

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34 Rouse, MSa.

35 Rouse, MSa.

36 Hatt, 1924; Rouse, MSa.

37 Krieger, 1929, pl. 25; 1930, pl. 31, top.

38 Rouse, 1939, pp. 94-95; 1941, pl. 25: 18-25.

39 Personal communication from Mrs Marian de Wolf.

are at the beginning of the ceramic sequence in Haiti and presumably also in the Dominican Republic, it is assumed that they mark the extension of the original Arawak migration westward from Puerto Rico at the expense of the Ciboney (Fig. 2).

Contrasting sharply with the Ostiones-like pottery just discussed is the bulk of the Period IIIa-IIIb ceramics of Haiti to which the name of Meillac has been given.<sup>40</sup> This material is rather poorly made and, in particular, lacks the smooth surfaces of Cuevas and Ostiones potsherds. The shapes are comparable, but decoration is characterized by fine-line incision and appliqué work, without the painting and modeling of Ostiones pottery. Hatched and cross-hatched designs incised on inturned shoulders are typical, as are face designs applied to cylindrical lugs. Similar pottery occurs in the Turks and Caicos Islands, perhaps indicating northward diffusion of the Meillac style from Haiti.<sup>41</sup>

Baní pottery, which was made in Cuba from Period IIIa or IIIb through IVb, is comparable to Meillac but has simpler decoration. During Period IIIb, before it became subject to influences from the styles of the subsequent periods, its designs consisted primarily of straight parallel incised lines and simple face lugs.<sup>42</sup> The contemporary pottery of Jamaica is very similar.<sup>43</sup>

Considered as a whole, the ceramics of Periods IIIa and IIIb divide into two groups: (1) the Ostiones, Santa Elena, and Ostiones-like pottery of the eastern and central islands, which appears to have developed locally from the earlier Cuevas ceramics; and (2) the Meillac, Baní, and Baní-like pottery in the center and the west, which resembles the first group in technology and shape but differs radically in decoration. The fact, noted above, that the hatched and cross-hatched designs of the second group are reminiscent of Ciboney art has led to the suggestion that the Arawak with pottery of group 1 obtained these designs from the Ciboney as they pushed westward into the latter's territory during Period IIIa.<sup>44</sup>

So far as is known, the pottery of Period IIIa has never been found in association with ceremonial structures or artifacts. With the pottery of Period IIIb in Puerto Rico, however, there are several ball courts,<sup>45</sup> and in both Puerto Rico and Haiti a few objects connected with the worship of *zemis*, such as stone amulets carved in the form of flexed human figures which, in historic times, the Indian

40 Rouse, 1939, pp. 42-43; 1941, pls. 6-23.

41 Booy, 1912, figs. 2, 13-15.

42 Rouse, 1942, p. 164.

43 Harrington, 1921, pp. 395-396; Booy, 1913, pls. 32, 34.

44 Rouse, 1949, p. 130.

45 Rouse, MSa.

warriors wore on their foreheads to ensure victory in battle.<sup>46</sup> It is therefore assumed that the worship of *zemis* had begun to develop during Period IIIB.

*Periods IVa and IVb.* Five new styles are known to have made their appearance during Periods IVa and IVb: Esperanza, Capá, Boca Chica, Carrier, and Pueblo Viejo (Fig. 2). The most elaborate of these is the Boca Chica, in the Dominican Republic.<sup>47</sup> Both bottles and bowls are included in this style, and the latter are commonly provided with an inturned shoulder, decorated with elaborate curvilinear incised designs. The outturned shoulder, which had been characteristic of the previous Cuevas and Ostiones styles, is now rare, as are also painting and loop handles. On the other hand, large modeled incised anthropomorphic head lugs become common, and similar designs are modeled on vessel walls.

Since the other new styles of this time are variations on the Boca Chica, they will not be described, except to say that they exhibit an increasing simplicity as one moves east and west from the home of the Boca Chica style in the Dominican Republic, as if they were derived from there. It is probable, indeed, that Pueblo Viejo, the Cuban style, is the result of a late migration from Haiti, which is mentioned in the sources.<sup>48</sup> The development of the two Puerto Rico variants—Capá and Esperanza—may have been touched off by a similar migration from the Dominican Republic, for we have found several intrusive Boca Chica sites in a part of Puerto Rico where the development is likely to have taken place.<sup>49</sup>

It is with the new ceramic styles of Periods IVa and IVb that most of the datable ball courts and other ceremonial structures and artifacts of the Antilles are associated. They appear in greatest variety in the Dominican Republic and western Puerto Rico, where they include ball courts, dance grounds, and single stone columns, often marked with petroglyphs; carvings of *zemis* in stone, bone, and shell; swallow sticks, used to induce vomiting; carved stools (these were a sign of rank in historic times); and such problematical artifacts as stone collars, elbow stones, and three-pointed stones.<sup>50</sup> The carvings are similar to the modeled head lugs of the various ceramic styles, and it is probable that both represent *zemis*; in fact, the historic sources indicate that the Arawak of Hispaniola portrayed *zemis* on their household utensils as well as on ceremonial objects.<sup>51</sup>

As in the case of the pottery, the ceremonial complex appears simpler the farther one moves east and west from its center in western Puerto Rico and the

46 Rouse, 1941, fig. 7; Lovén, 1935, p. 580.

47 Herrera Fritot and Youmans, 1946; Krieger, 1931.

48 Las Casas, 1875, vol. 3, p. 474.

49 Rouse, MSA.

50 Fewkes, 1907, pp. 53-58.

51 Rouse, 1939, pp. 58-59.

Dominican Republic.<sup>52</sup> Stone collars, elbow stones, and three-pointed stones, for example, are largely restricted to the center, while ball courts and the other ceremonial structures are limited to the area of distribution of the new ceramic styles of Periods IVa and IVb, none having been found in the peripheral regions where the Period IIIb styles survived.<sup>53</sup> On the other hand, swallow sticks, amulets, and wooden figures of *zemis* do extend into these peripheral regions.<sup>54</sup>

The picture which emerges from the foregoing synthesis is one of development of a new ceramic complex and of the cult of *zemis* in the central part of the Greater Antilles, viz., the Dominican Republic and western Puerto Rico, and of diffusion of both the ceramic complex and the cult east and west into the peripheral regions, with each becoming increasingly simple as it spread. It is significant that neither is found in the Lesser Antilles nor in western Cuba, adjacent to the South and North American mainlands respectively.<sup>55</sup> They appear to be local developments in the central islands.

#### ARAWAK PERIODS AND AREAS

We have seen that the Arawak passed through three periods of development after entering the Antilles: (1) An early period, corresponding to IIa and IIb on the general time scale, when these Indians first settled the Lesser Antilles, Virgin Islands, and Puerto Rico, bringing with them pottery and agricultural implements but not the ceremonial complex of historic times. (2) A middle period, IIIa and IIIb, when they spread into the rest of the Greater Antilles, driving the Ciboney back into the peripheral position in which Columbus found them. Contact with the Ciboney apparently produced some acculturation at this time, and the cult of *zemis* made its appearance in a simple form. (3) A late period, corresponding to IVa and IVb on the general scale, which was marked on the central islands by the development of a new ceramic complex and elaboration of the cult of *zemis*, both of which spread towards the peripheries.

Conditions during the first and third of these periods were not suitable for local variation. During the first period, the Arawak were newcomers and restricted to a relatively small part of the Greater Antilles, while during the third the spread

52 Hart, 1924, pp. 40-41; Rouse, 1942, pp. 163-166.

53 Fewkes, 1922, p. 169; Rouse, 1948, p. 516.

54 E.g. Rouse, 1942, pl. 6; Joyce, 1916, pl. 16.

55 The above distinctions form the basis for an often-used, three-fold division of Insular Arawak culture: (1) Igneri, in the Lesser Antilles, where there are practically no traces of ceremonialism and the pottery resembles that of Barrancas on the mainland; (2) Taino, in the central islands, with its Boca Chica-like pottery and developed ceremonialism; and (3) sub-Taino, in the western islands, with Bani-like pottery and fewer traces of ceremonialism (cf. Lovén, 1935, p. vi ff; Alegría, 1948; Rouse, 1949, fig. 6).

of the new ceramic complex and of the cult of *zemis* to the peripheral regions apparently tended to obliterate local differences. In examining the areal distribution of Arawak culture, therefore, we must concentrate on the middle period, when variation was most evident.

As Figure 2 will indicate, the ceramic styles of the middle period (IIIa and IIIb) tend to cluster around the passages between the islands rather than the islands themselves. Thus, the Santa Elena pottery of eastern Puerto Rico, on the western side of the Vieques Sound, resembles closely that of the Magens Bay-Salt River group of sites in the Virgin Islands, east of Vieques Sound. The two are more similar to each other than either is to its neighboring style on the other side, and hence they may be said to define a single ceramic area.

Similarly, the Ostiones pottery of western Puerto Rico resembles most closely that of the Anadel sites in the Dominican Republic. These two regions therefore constitute a second area, centering around the Mona Passage, which lies between the two.

Finally, Haiti, Jamaica, Cuba, and the Turks and Caicos Islands, facing each other around the Windward Passage, all have the related Baní or Meillac styles or variations upon them. There is, therefore, reason to conclude that the land north, south, east, and west of the Windward Passage formed a third ceramic area.

The three ceramic areas, which have been named after the passages around which they center, are mapped in Figure 3. It will be seen that they contrast sharply with the Ciboney areas, defined above, which correspond with the island masses, as given in Figure 1.

#### CONCLUSIONS

This contrast between Ciboney and Arawak areas suggests that, whereas Ciboney culture may have been oriented towards the land, Arawak culture was instead oriented towards the sea. The traits of Ciboney culture seem to have spread by land and to have halted at the water barriers, whereas the Arawak traits apparently diffused mainly across the water passages, with the mass of each island forming a barrier against their further extension. While, therefore, the Ciboney may have been more adept at traveling by land, the Arawak were probably seafarers. It is even possible that the Ciboney obtained the greater part of their livelihood from the shore and the Arawak from the sea.

The Ciboney customs in this respect cannot be determined for lack of ethnographic information. On the other hand, the Spanish sources indicate clearly that the Arawak were seafarers and that they traded from island to island.<sup>56</sup> We have

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<sup>56</sup> Lovén, 1935, pp. 68-69.

seen, too, that local migrations from one island to another were not uncommon. While there is no evidence that the historic Arawak relied more on fishing than upon agriculture, it is significant that the prehistoric sites tend to be concentrated on the lee sides of the islands, which offer shelter for fishing.<sup>57</sup> Moreover, sites in the interior are definitely less common than those on the coast.<sup>58</sup> Our recent survey of Puerto Rico has indicated that the original, Period IIa Arawak settled

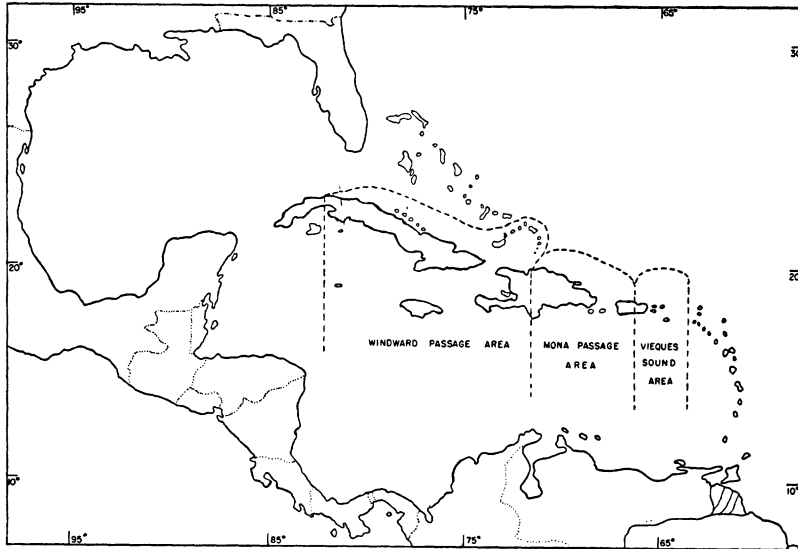


FIG. 3. Arawak culture areas in the Greater Antilles.

only the coast of that island and did not really begin to penetrate the interior until Period IIIb. Although the interior has several times the area of the coast, it was not until Period IVa, with the rise of ceremonialism, that the population of the former exceeded the latter.<sup>59</sup>

Despite these circumstances, it is not surprising that Fewkes and subsequent authors, including the writer, have overlooked the effects of Arawak orientation towards the sea. In part, we have probably been misled by the situation during Period IVa, when the Arawak had adapted to life in the interior of the islands and the previous areal differences were obscured by the spread of ceramic and ceremonial traits from the central, Mona Passage area (Fig. 3). We were probably also influenced by present conditions in the Greater Antilles. Except

<sup>57</sup> Fewkes, 1914, p. 663.

<sup>58</sup> Hostos, 1941, pp. 50-53.

<sup>59</sup> Rouse, MSa.

for the division of Hispaniola between Haiti and the Dominican Republic, the distribution of contemporary civilization is entirely insular. Fishing is now relatively unimportant and, before the advent of the airplane, there was little inter-island communication. It would be a mistake, however, to assume that conditions like these necessarily held true for both the Ciboney and the Arawak.

The apparent orientation of the Ciboney towards the land has a bearing upon the problem of their origin. Such an orientation is more compatible with the short over-water passage from Florida (or Yucatan) to Cuba than with the long maritime voyage from Venezuela, and to this extent it favors the theory that the Ciboney came from North America.

On the other hand, the maritime orientation of the Arawak is more consistent with the theory that these Indians migrated from South America. It further implies that Arawak culture originated in a maritime or fluvial environment, and to this extent collaborates the recently discovered evidence, cited above, that the Arawak took off from the Orinoco basin when they settled the Antilles.

An important problem for future research is the extent to which the Arawak's maritime orientation enabled them to maintain contacts with the mainland during the middle and late periods of their habitation of the Antilles. We have seen that the cult of *zemis* and the accompanying styles probably developed locally in the Antilles. It is hardly likely, however, that this development was unaffected by influences from the mainland.

Certain theories have recently been advanced in connection with the Circum-Caribbean concept which would in effect derive both the cult of *zemis*<sup>60</sup> and the accompanying ceramic complex<sup>61</sup> from the South American mainland. These are in conflict with the archaeological evidence from the Greater Antilles, as interpreted above. Nevertheless, they do reflect certain general similarities between the islands and the mainland. In the writer's opinion, these resemblances are best interpreted as the result of secondary influences from the mainland, the exact nature of which remains to be determined.

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60 Steward, 1948, p. 14; 1949, map 22.

61 Willey, 1949, p. 195, map 3.

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