ANCESTRIES OF THE TAINOS: AMAZONIAN OR CIRCUM-CARIBBEAN

INTRODUCTION

Caribbean anthropologists have been attracted to problems of origin by the configuration of the West Indies. Its islands extend like stepping stones between the Yucatan Peninsula in Middle America, the Florida Peninsula in North America, and Trinidad and Tobago at the mouth of the Orinoco River in South America (Fig. 1). The natives of the West Indies could have come from any or all of these sources, and could have subsequently acquired traits from all of them.

This paper is concerned with the origins of the Taino Indians, also known as Arawaks, whom Columbus encountered in the Bahamas, the Greater Antilles, and possibly also in the northern part of the Lesser Antilles (Fig. 1). They were separated from Yucatan an Florida by the Guanahatabeys of western Cuba, also known as Ciboneys, and form Trinidad, Tobago, and the rest of South America by the Island-Caribs, who inhabited the southern part of the Lesser Antilles.

PRE-WAR RESEARCH

Before World War II, most scholars interested in the problem of Taino origins studied the diffusion of their cultural, linguistic, and racial traits from the mainland to the islands (e.g., Brinton 1871, Gower 1927, Lovén 1935). They traced the traits individually and, in the absence of a chronology that would have enabled them to proceed period by period, drew their conclusions solely from the geographical distribution of the traits.

Since most of them appeared to have originated in South America, they concluded that the Tainos must have come from there (Lovén 1935: 2). They assumed in the absence of time perspective that the migrants had reached the islands too recently to have developed a new culture, language, and/or race after their arrival. If the migrants had arrived early enough to have evolved in any of these ways, they would have had to be considered ancestors of the Tainos rather than the Tainos themselves.

Only linguistic and physical anthropologists went on from the study of traits to investigate ancestries. Linguists classified the Tainos' language in the Arawakan family, named after the Arawak Indians of Trinidad and the Guianas (Goeje 1939). They inferred from the distribution of this family that it had originated in the Amazon Basin (Noble 1965: 105-6). Thus they traced the linguistic ancestry of the Tainos back into the heart of lowland South America.

Physical anthropologists reached a similar conclusion. In the most recent classification, Imbelloni (1938) assigned the native West Indians to an Amazonid race, which he contrasted with an Isthmid race in the western half of the Caribbean area (Fig. 2). In effect, Imbelloni traced the biological ancestry of the Tainos back through the Guianas and the Orinoco Valley into Amazonia.

The results of the trait studies were summarized in the Handbook of South American Indians, edited by Julian H. Steward (1946-59). Impressed by the resemblance between the Andean and Circum-Caribbean Indians and influenced by evidence that cultural traits had spread from the Peruvian Andes to the coast, Steward (1947) postulated a parallel diffusion from the Colombian Andes to the Caribbean coast and a radiation along that coast: westward into Central America; eastward into Venezuela, the Guianas, and Amazonia: and northward through Trinidad and Tobago into the West Indies (Fig. 3). Followers of Steward have deleted the spread into Amazonia from this so-called Circum-Caribbean theory and have added one from Central America through Mexico into the southeastern United States (Meggers and Evans 1957, Fig. 206; Ford 1969: 184-5).

Steward disregarded the conflict between his Circum-Caribbean theory and the conclusion of the linguists and physical anthropologists that the ancestors of the Tainos had migrated from Amazonia through the Orinoco Valley into the West Indies. He explicitly limited himself to cultural evidence and thought of it solely in terms of traits. He did not attempt to trace the ancestry of the Tainos and the other ethnic groups of the Caribbean area in terms of whole cultures, comparable to the languages and races that were being studied by linguistic and physical anthropologists respectively.

POSTWAR CULTURAL RESEARCH

After World War II, archaeologists became interested in the cultural ancestry of the Tainos. They split into two schools. One, impressed by the linguists' success in tracing the ancestral languages back through the Orinoco Valley into Amazonia, has attempted to show that the ancestral cultures also came from there (Lathrap 1970). The other school has argued that the cultures spread along Steward's Circum-Caribbean route (Meggers and Evans 1983).

In effect, the two schools have used the linguists' conclusions and the Circum-Caribbean theory as competing models. Each had attempted to show that the geographic distribution of key elements of culture, including complexes and traditions, better fits its model, and has supported its position with ecological arguments. The Amazonists have claimed that the ancestral cultures could easily have developed in the lowlands, while the Circum-Caribbeanists have argued that they could only have arisen in a more favorable highland environment.

With the advent of radiocarbon dating, each school has also sought to demonstrate that key elements of culture appeared earlier along its route. The results of this research, too, have been inconclusive. For example, the Amazonists have obtained relatively early dates for elements in the Orinoco Valley, while the Circum-Caribbeanists have found reason to reject these dates in favor of later ones more consistent with their model (Rouse 1978, Sanoja and Vargas 1983).

Elsewhere (Rouse 1986), I have concluded that the best way to resolve the argument is to move from the level of elements of culture to that of whole cultures. We ought to be working with chronological charts, because they delimit peoples and cultures, comparable to the speech communities and languages through which linguists trace migrations and the races and their morphologies that physical anthropologists use for the purpose.

Since World War II, I have been constructing detailed charts for the Caribbean area, modeled after those for Mexico, Peru, and other parts of the world (e.g., Lumbreras 1974). I revise these charts as new evidence comes in and use them to trace the movements of peoples and cultures.

The latest version of my West Indian chart is shown in summary form in Figure 4a. The areas across its top are named after the passages between islands, because the remains on either side of each passage resemble each other more than they do the remains elsewhere on the same islands (Rouse 1982: 52, Fig. 2). This distribution reflects the fact that the Tainos were expert canoeists, who interacted more closely across the water passages than overland, contrary to the present inhabitants of the islands.

The periods along the side of the chart have been obtained by studying stratigraphy and seriation, and the dates, through radiometric analysis. The dotted lines within the body of the chart indicate a succession of ages, each defined by the appearance of new cultural traits. The Lithic age is marked by stone chipping and food gathering, the Archaic age by the addition of stone grinding, the Ceramic age by the arrival of pottery and agriculture, and the Formative age by the first public monuments. A parallel social development from bands in the Lithic and Archaic ages through villages in the Ceramic age to chiefdoms in the Formative age is also inferred from the remains.

Within the Historic period, it is common practice to differentiate a Classic Taino people and culture, centering in Hispaniola, from a surrounding Sub-Taino people and culture, who were less developed (Figs. 4a and 5). The classic Tainos are distinguished by earth- and stone-lined plazas, which were used as ball courts and in public ceremonies, by monumental carvings of their deities, who are known as zemis, and by evidences of chiefdoms. Hence, those Indians were in the Formative age, whereas the Sub-Tainos had not left the Ceramic age (Fig. 4a).

The temporal and spatial distributions of the prehistoric peoples and cultures of the West Indies are depicted in the chart beneath the historic groups. In tracing the cultural ancestry of the Tainos back through these peoples and cultures, we rely primarily upon their pottery, since it comprises the bulk of their remains. The tracing is done in terms of a classification of the pottery into local units called styles, complexes, or phases, each of which is fleshed out by reconstructing the rest of its people's culture. We have recently begun to make the classification hierarchical in order to empress the degree of difference between individual cultures and to facilitate comparison with languages and races, which are also organized hierarchically (Rouse 1986: 126-51, Oliver 1989: 319-22). The ceramic styles, and the peoples and cultures they define, are grouped into subseries, whose names end in the suffix -an, and series, whose names end in the suffix -oid (this taxonomy was introduced into Caribbean archaeology by Vescelius 1980).

All the Tainos made pottery belonging to a single Ostionoid series of local styles. The ancestry of the Classic Tainos can be traced back into prehistory through a Chican Ostionoid subseries; the ancestry of the western Sub-Tainos, through a Meillacan Ostionoid subseries; and the ancestry of the eastern Sub-Tainos, through an Elenan Ostionoid subseries (Fig. 4a). The three ancestries converge in the Cedrosan Saladoid subseries of Puerto Rico and the Lesser Antilles. From there the trail leads back to similar deposits on the Guianan and Venezuelan coasts (Fig. 4b; for further information, see Rouse 1986: 134-49).

The progress of the ancestors of the Tainos as they moved along this trail can be seen in the charts by following the dotted line that marks the start of the Ceramic age (Fig. 4b, a). The jogs in this line indicate successive frontiers, where first the Saladoid and then the Ostionoid peoples halted long enough to develop new series. The final jog marks the frontier where the Taino Indians confronted the Guanahatabeys in the time of Columbus. The frontiers are mapped and numbered in Figure 6.

If we knew only pottery, we could not be sure whether the Saladoid peoples actually entered the West Indies or merely passed their ceramics on to its Archaicage inhabitants. There is good evidence, however, that Cedrosan Saladoid pottery was accompanied into the West Indies by the first sedentary villages, by greater dependence upon riverine resources than in the preceding Ortoiroid cultures, and by the introduction of agriculture and the worship of zemis. The last is attested by the presence of small, three-pointed objects of stone, shell, coral, and pottery (Rouse 1986, Fig. 27b).

Less progress has been made in tracing the Tainos' cultural ancestry back from the coast to the interior of South America because chronological research has lagged there. At present, we can only move from the Cedrosan Saladoid subpeoples on the coast through Frontier 1 to the Ronquinan Saladoid subpeoples in the Lower and Middle Orinoco areas (Figs. 6, 7). According to present knowledge, the Ronquinan Saladoids extended from the head of navigation on the Orinoco River, just above its juncture with the Río Apure, to the top of its delta.

The precursors of the Ronquinan Saladoids could have come either from Amazonia via the Río Negro and the Casiquiare Canal or from western South America via the Río Negro and the Casiquiare Canal or from western South America via the Río Meta or Apure (Fig. 7). Lathrap (1970) has consistently advocated the former route, while Meggers and Evans (1983, Fig. 7.11) now favor the latter. We should eventually be able to decide between the two by searching for a downward sloping horizon along the upper Orinoco, Meta, or Apure River and by seeking a frontier at the end of that horizon, behind which the original makers of Ronquinan Saladoid pottery could have developed prior to their spread down to the Orinoco Delta.

POSTWAR LINGUISTIC RESEARCH

The Taino language is a member of the Arawakan family. According to the *Handbook of South American Indians* (Steward 1946-59, 6, Map 18), the Island-Carib language belongs to the Cariban family. Linguists, however, had already found that, despite its name, it is also Arawakan (Goeje 1939: 2-4).

Island-Carib men also spoke a pidgin language, which was basically Cariban (Taylor 1977: 26-7). They considered themselves to be descendants of Mainland-Carib warriors who had conquered the local Igneri (Eyeri) population and had married into it. Taylor and Hoff (1980) hypothesize that the warriors adopted the local language but retained their previous pidgin as a symbol of their mainland origin.

Working back from Taino, Island-Carib, and the other historic Arawakan languages, linguists have constructed and refined the phylogeny shown in Figure 8 (Noble 1965: 108, Rouse 1986, Fig. 22). If this phylogeny is correct, the original,

proto-Arawakan language developed in the middle of the Amazon Basin. Speakers of that language moved up the Río Negro, passed through the Casiquiare Canal, and descended the Orinoco River (Fig. 9). Along the way, they produced a new, Proto-Maipuran language, which evolved into Proto-Northern after they reached the Orinoco Valley.

Speakers of the Proto-Northern language subsequently spread into the Guianas and the West Indies. Those who remained behind in the Guianas developed the Arawak language, also known as Lokono (Fig 8). Those who settled in the Lesser Antilles similarly produced the Igneri language, which later became Island-Carib. Some Proto-Northern speakers continued into the Greater Antilles and, in this remote and isolated position, evolved the Taino language. They carried the new language into the Bahamas.

The Proto-Northerners who colonized the Greater Antilles pushed its previous speech community back into western Cuba, where it survived until the time of Columbus, as is attested by the fact that the Admiral's Taino interpreters could not converse with the Guanahatabey Indians who lived there (Granberry 1987). Linguists have been unable to determine the affiliations of the Guanahatabeys' language because it is known only from local place names.

The dates along the side of Figure 8 have been obtained by glottochronological research. They indicate that the Proto-Northern language developed before the time of Christ and the Arawak/Lokono, Igneri/Island-Carib, and Taino languages, during the Christian era. The first of these conclusions agrees with the archaeologists' radiocarbon dates for the Ronquinan Saladoid peoples' movement form the Orinoco Valley to the coast; and the second, with their dates for the Cedrosan Saladoid invasion of the West Indies. Linguists, therefore, have independently confirmed the archaeologists' conclusions.

POSTWAR PHYSICAL ANTHROPOLOGICAL RESEARCH

Gam (1965: 12-22) makes a distinction between local races, which are equivalent to the cultures and languages discussed above, and geographical races, which correspond to series of cultures and families of languages. Caribbean physical anthropologists have implicitly used his taxonomy as follows:

1. Comparing the skeletons associated respectively with Saladoid and Ostionoid pottery at the Maisabel site in Puerto Rico, Budinoff (1897) has found them enough alike to be assignable to a single local race. She noted that this racial continuity supports the archaeologists' hypotheses, cited above. of local development from the Saladoid to the Ostionoid series of cultures.

2. Several authors have differentiated Indian skeletons, which in Garn's terminology belong to the American geographical race, from slave skeletons, which belong to his African geographical race (Goodwin 1978: 491-2).

Imbelloni's prewar classification divides the American geographical race into units corresponding to subseries of cultures and subfamilies of languages. I shall call these units lineages. Newman (1951: 73-8) considers them "unproven" because Imbelloni did not fully exclude cultural criteria, failed to take local races into consideration, and was unable for lack of time perspective to proceed period by period. The assemblages of human skeletal material excavated and dated by archaeologists since World War II provide ann opportunity to test Imbelloni's classification. They may be grouped into local races, each occupying its own spatial and temporal niche as in the case of a culture or a language. The local races may in turn be classified into lineages. The units of the Imbelloni classification that correspond to the new lineages would be validated by this procedure; the remaining units would have to be modified or replaced.

Pending such taxonomic research, some idea of the validity of the Amazonid-Isthmid dichotomy, which concerns us here, may be gained by generating hypotheses from the results of the archaeological and linguistic research and testing them against the skeletal record, as follows:

1. Archaeologists have traced the cultural ancestry of the Guanahatabey Indians, who are the Archaic-age survivors in western Cuba (Figs. 1, 4a) back through the earlier Archaic-age peoples of Hispaniola and Cuba to those of Middle America (Coe 1957, Hahn 1960: 268,80, MacNeish 1983: 46-7, Rouse 1986: 129-34). Consequently, the Guanahatabeys and their ancestors should have belonged to Imbelloni's Isthmid lineage, if his classification is correct (Fig. 10). This hypothesis may be tested by determining whether the Archaic-age skeletal assemblages from Hispaniola and Cuba resemble the corresponding Middle American assemblages and differ from the Ceramic- and Formative-age assemblages in the islands.

2. The Warao Indians of the Orinoco Delta are also a relict of the Archaic age (Fig. 4b). Unlike the Guanahatabeys, they have retained their cultural, linguistic, and racial heritages. Greenberg (1960: 793, 1987: 382) has classified their language in the macro-Chibchan family of Colombia and Central America. It is more likely to be derived from the lowland than the highland branch of this family (Granberry 1980: 55, Wilbert 1980: 5-6). The ancestral speakers may have moved eastward along the north coast of South America, colonizing Aruba, Curaçao, and Bonaire prior to the arrival of Arawakan speakers, who brought the Ceramic age to those islands ca. 450-500 A.D. (Jay B. Haviser, personal communication). If so and if Imbelloni's Isthmid-Amazonid dichotomy is correct, the Warao Indians and the Archaic-age inhabitants of the Dutch Islands should belong to his Isthmid race and the subsequent Ceramic-age peoples, to his Amazonid race.

Versteeg and Tacoma report elsewhere in this volume that the Archaic- and Ceramic-age assemblages from cemeteries on Aruba and Curaçao do indeed differ cranially. I would suggest that their comparison be extended to the Waraos and expanded to include the study of other parts of the human body in an effort to find out whether the Isthmid-Amazonid dichotomy hypothesized for the West Indies in Figure 10 is also applicable to northern South America.

In undertaking both (1) and (2), special attention might be paid to dental morphology, since teeth have a high survival rate (particularly among the Tainos and their ancestors, who used them as fetishes) and are complex enough to exhibit significant differences. Dental morphology has been successfully used to trace biological ancestries in other parts of the world (e.g., Turner 1976, 1983).

It would also be desirable to test the results of the proposed research on the Guanahatabeys' racial ancestry (1) against conclusions about their linguistic ancestry and to compare the results of the research on the Waraos' racial ancestry (2) with conclusions about their cultural ancestry. Unfortunately, we know relatively little about both subjects.

CONCLUSIONS

The question posed in my title may be answered as follows. Three different lines of research - cultural, linguistic, and biological - all support the Amazonian rather than the Circum-Caribbean model. The cultural ancestry of the Tainos had been traced back as far as the Orinoco Valley and the linguistic ancestry, into the center of the Amazon Basin. A similar origin has been hypothesized for the biological ancestry but needs further testing.

This does not mean that the Circum-Caribbean model must be abandoned. Because its protagonists work with elements of culture rather than whole cultures, they have been able to identify complexes and traditions that the ancestors of the Tainos borrowed from the neighboring peoples with whom they came into contact. These foreign traits are comparable to loan words in the study of languages and gene flow in the study of races.

Some foreign traits, such as urn burial, do seem to have diffused along the Circum-Caribbean route (Meggers and Evans 1983: 328). Others appear to have originated in the Caribbean part of the route. For example, three-pointed zemis are limited to a Malambo-culture assemblage from northern Colombia (Veloz Maggiolo and Angulo Valdés 1981), a Valencia-culture assemblage from north central Venezuela (Kidder 1944: 166, Pl. XI, 6, 7), and isolated finds from Curaçao and northwestern Venezuela (Josselin de Jong 1924). Still other traits, like the frog amulet and the tradition of decorating pottery with zoned incised crosshatched designs, are thought to have spread from Amazonia by way of the Guianas (Petitjean Roget 1987).

Such research on the spread of traits from one local population to another should not be confused with studies of the movements of the populations, carrying their cultural, linguistic, and/or racial heritage into new areas. The Circum-Caribbean model is applicable only to the former case.

ACKNOWLEDGMENTS

The original version of this paper was submitted to, and rejected by, the *American Anthropologist.* The revision has benefited from comments by its anonymous reviewers, especially regarding the need for greater focus. Louis Allaire, Marie Borroff, Stephen P. Carini, Jay B. Haviser, José R. Oliver, Miguel Rodríguez López, Birgit F. Morse, Anna C. Roosevelt, and David R. Watters have also made helpful comments.

REFERENCES CITED

Allaire, Louis

1985 The Archaeology of the Caribbean. In: *The World Atlas of Archaeology*. Christine Flon, ed. Pp. 370-371. Boston: G.K. Hall and Co.

Brinton, Daniel Garrison

The Arawak Language of Guiana in its Linguistic and Ethnological Relations. 1871 Transactions of the American Philosophical Society, new series, 14 (4): 427-444.

Budinoff, Linda C.

An Osteological Analysis of the Human Burials Recovered from an Early 1987 Ceramic Site Located on the North Coast of Puerto Rico. In: Proceedings of the Twelfth International Congress of Caribbean Archaeology, Cayenne, French Guiana. In press.

Coe, William R., II

A Distinctive Artifact Common to Haiti and Central America. American 1957 Antiquity 22 (3): 280-282.

Ford. James A.

A Comparison of Formative cultures in the Americas: Diffusion or the 1969 Psychic Unity of Man. Smithsonian Contributions to Anthropology 2.

Garn, Stanley M.

1965 Human Races. Second edition. Springfield, Illinois: Charles C. Thomas.

Goeie. C.H. de

Nouvel examen des languages des Antilles, avec notes sur les langues 1939 Arawak-Maipur et Caribe et vocabulaires Shebayo et Guayanna (Guyane). Journal de la Société des Américanistes de Paris 31: 1-120.

Goodwin, R. Christopher

The History and Development of Osteology in the Caribbean Area. 1978 Revista/Review Interamericana 8 (3): 463-494. Inter American University Press, San Juan.

Gower. Charlotte

The Northern and Southern Affiliations of Antillean Culture. Memoirs of the 1927 American Anthropological Association 35.

Granberry, Julian

West Indian Languages: A Review and Commentary. Journal of the Virgin 1980 Islands Archaeological Society 10: 51-56.

1987 Antillean Languages and the Settlement of the Bahamas: A Working Hypothesis. In: Proceedings of the Bahamas 1492 Conference, Freeport, Bahamas, November 1987. Charles A. Hoffman, ed. In press,

Greenberg, Joseph H.

1960 The General Classification of Central and South American Languages. In: Selected Papers of the Fifth International Congress of Anthropological and Ethnological Sciences, Philadelphia, September 1 - 9, 1956. Anthony F.C. Wallace, ed. Pp. 791-794. Philadelphia: University of Pennsylvania Press.

1987 Language in the Americas. Stanford: Stanford University Press.

Hahn, Paul G. 1960 The Cayo Redondo Culture and Its Chronology. Doctoral dissertation at Yale University, New Have, Connecticut.

Howells, William 1954 Back to History. Garden City, New York: Doubleday and Co., Inc.

Imbelloni, José 1938 Tabla clasificatoria de los indios: Regiones biológicas y grupos raciales humanos de America. Physis: *Revista de la Sociedad Argentina de Ciencias Naturales* 12: 229-249.

Josselin de Jong, J.P.B. de 1924 A Natural Prototype of Certain Three-pointed Stones. In: *Proceedings of the Twenty-first International Congress of Americanists.* Pp. 43-45. The Hague.

Kidder, Alfred II 1944 Archaeology of Northwestern Venezuela. *Papers of the Peabody Museum of American Archaeology and Ethnology*, Harvard University, 26 (1).

Lathrap, Donald 1970 The Upper Amazon. Ancient Peoples and Places 70. New York: Praeger.

Lovén, Sven 1935 Origins of the Tainan Culture, West Indies. Göteborg: Elanders Bokfryckeri Akfiebolag.

Lumbreras, Luis G. 1974 The Peoples and Cultures of Ancient Peru. Translated by Betty J. Meggers. Washington: Smithsonian Institution Press.

MacNeish, R.S.

1983 Final Annual Report of the Belize Archaic Archaeological Reconnaissance. Boston: Center for Archaeological Studies, Boston University.

Meggers, Betty J. and Clifford Evans 1957 Archaeological Investigations at the Mouth of the Amazon. Bureau of American Ethnology, Bulletin 167.

1983 Lowland South America and the Antilles. In: *Ancient South Americans.* Jesse D. Jennings, ed. Pp. 287-335. San Francisco: W.H. Freeman and Company.

Newman, Marshall T.

1951 The Sequence of Indian Physical Types in South America. In: *The Physical Anthropology of the American Indians.* William S. Laughlin, ed. Pp. 69-97. New York: The Viking Fund, Inc.

Noble, G. Kingsley

1965 Proto-Arawakan and Its Descendants. Indiana University Publications in Anthropology and Linguistics 38.

Oliver, José R.

1989 The Archaeological, Linguistic and Ethnohistorical Evidence for the Expansior of Arawakan into Northwestern Venezuela and Northeastern Colombia. Doctora dissertation at the University of Illinois. Urabana-Champaign.

Petitjean Roget, Henri

1987 A propos d'un collier funeraire, Morel, Guadeloupe: les Huecoids sont-ils ur mythe. *Proceedings of the Twelfth International Congress of Caribbean Archaeology, Cayenne, French Guiana.* In press.

Rouse, Irving

1979 The La Gruta Sequence and Its Implications. In: Unidad y Variedades, Ensayos en Homenaje a José M. Cruxent. Erika Wagner and Alberta Zucchi, eds. Pp. 203-229. Caracas: Ediciones del Centro de Estudios Avanzados, IVIC.

1982 Ceramic and Religious Development in the Greater Antilles. *Journal of New World Archaeology* 5 (2): 45-55. Los Angeles: The Institute of Archaeology University of California.

1986 *Migrations in Prehistory: Inferring Population Movements from Cultura Remains.* New Haven: Yale University Press.

1987 Origin and Development of the Indians Discovered by Columbus. In *Proceedings, First San Salvador Conference on Columbus and His World*. Donald T Gerace, compiler. Pp. 293-312. Fort Lauderdale: College Center of the Finge Lakes.

1989 Peopling and Repeopling of the West Indies. In: *Biogeography of the Wes Indies.* Charles A. Woods, ed. Pp. 119-135. Gainesville, Florida: Sandhill Crant Press.

Sanoja, Mario and Iraida Vargas

1983 New Light on the Prehistory of Eastern Venezuela. Advances in Work Archaeology 2: 205-244. New York: Academic Press.

Steward, Julian H. 1947 American Culture History in the Light of South America. Southwestern Journal of Anthropology 3 (2): 85-107.

Steward, Julian H., editor 1946-59 Handbook of South American Indians. 7 vols. Bulletin of the Bureau c American Ethnology 143. Taylor, Douglas

-- -

1977 Languages of the West Indies. Baltimore and London: The Johns Hopkins University Press.

Taylor, Douglas and Berend J. Hoff

1980 The Linguistic Repertory of the Island-Carib in the Seventeenth Century: The Men's Language - a Carib Pidgin? *International Journal of American Linguistics* 46 (4): 301-312.

Turner, Christy G, II 1976 Dental Evidence on the Origins of the Ainu and Japanese. *Science* 193 (4256): 911-913.

1983 Dental Evidence for the Peopling of the Americas. In: *Early Man in the New World.* Richard Shutler, Jr., ed. Pp. 147-157. Beverly Hills: Sage Publications.

Veloz Maggiolo, Marcio and Carlos Angulo Valdés 1981 La aparición de un ídolo de tres puntas en la tradición Malambo (Colombia). Boletín del Museo del Hombre Dominicano, 10 (17): 15-20.

Vescelius, Gary S.

1980 A Cultural Taxonomy for West Indian Archaeology. Journal of the Virgin Islands Archaeological Society 10: 38-41.

Wilbert, Johannes and Miguel Layrisse, editors 1980 Demographic and Biological Studies of the Warao Indians. UCLA Latin America Studies 45.

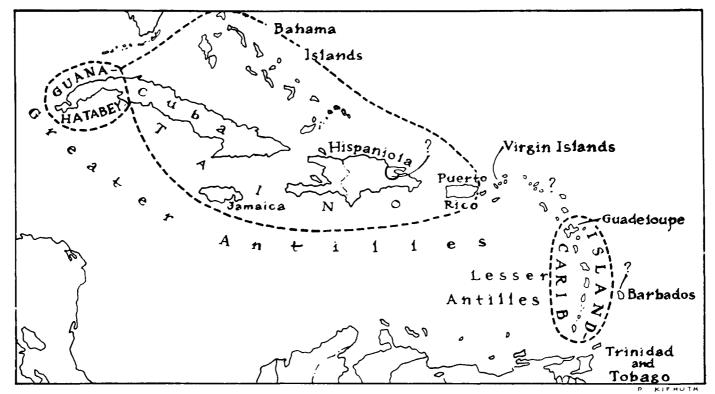


Fig. 1. Ethnic groups encountered by Columbus in the West Indies (after Rouse 1987, Fig. 2.).

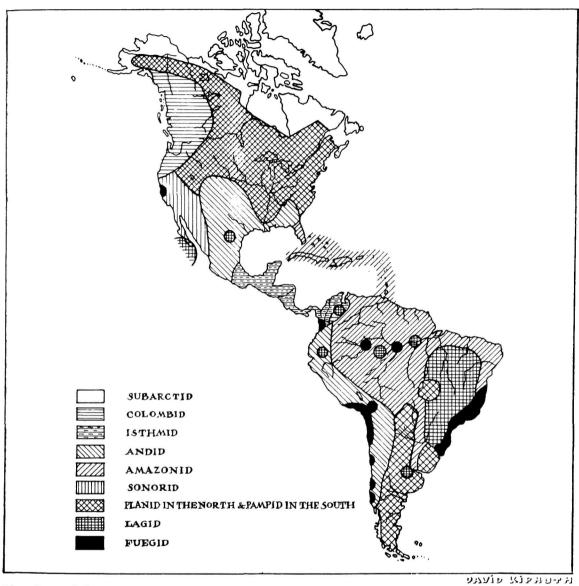


Fig. 2. Racial groups in South America (after Newman 1951, Pl. 9).

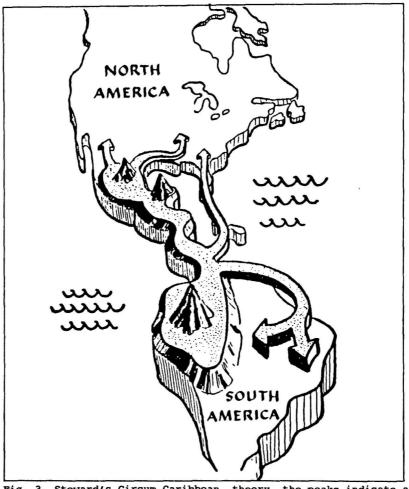


Fig. 3. Steward's Circum-Caribbean theory. the peaks indicate a major civilization (after Howells 1954: 198).

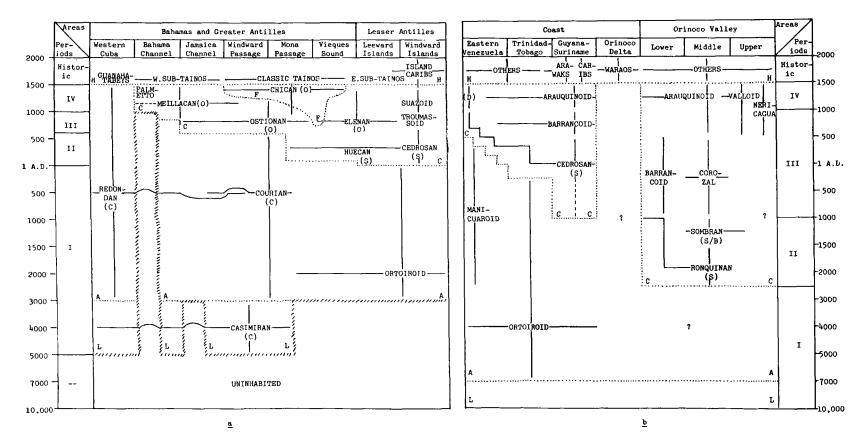


Fig. 4. Chronology of the peoples and cultures in the Caribbean area (after Rouse 1986, Fig. 23) :(a) West Indies, (b) the adjacent mainland. Ages: L = Lithic, A = Archaic, C = Ceramic, F = Formative, H = Historic. Series: (C) = Casimiroid, (S) = Saladoid, (B) = Barrancoid, (O) = Ortoiroid, (D) = Dabajuroid.



Fig. 5. Peoples and cultures of the Historic age in the West Indies (after Allaire 1985).

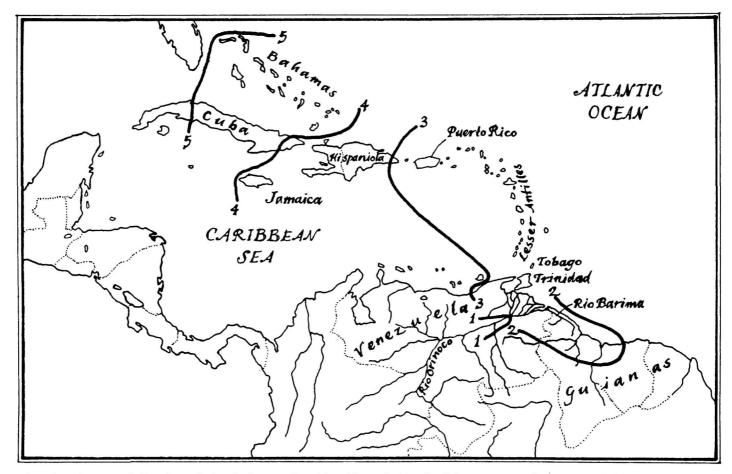


Fig. 6. Advance of the Ceramic/Archaic-age frontier through the Caribbean area (after Rouse 1986, Fig. 24.).

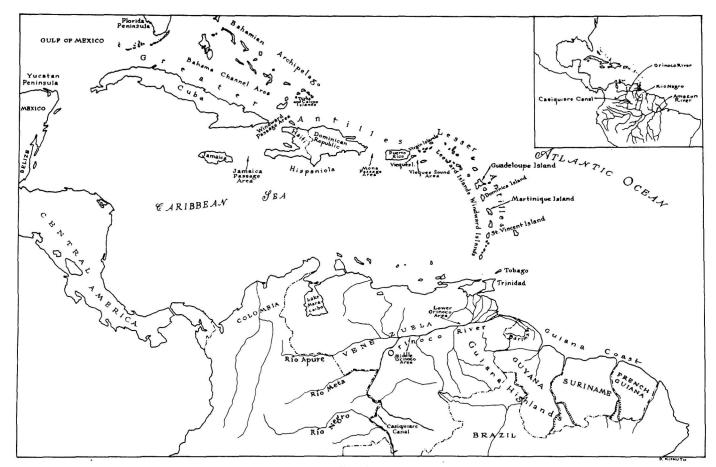
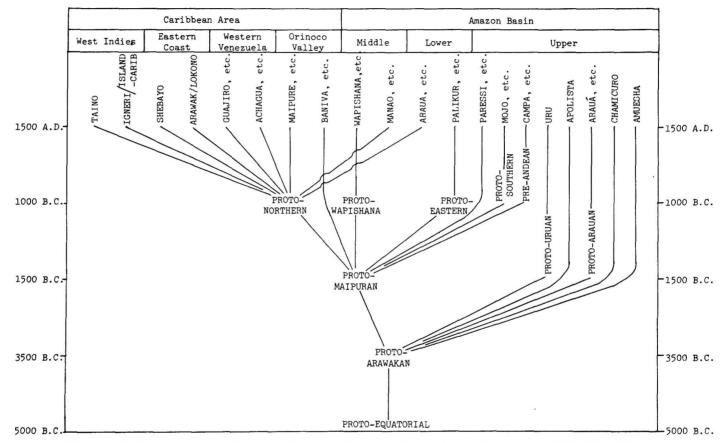


Fig. 7. Possible migration routes (after Rouse 1986, Fig. 1.).





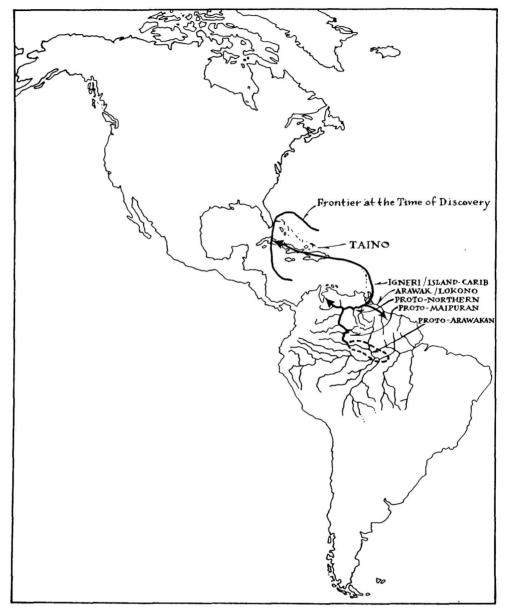


Fig. 9. Advance of Arawaken speakers from Amazonia into the West Indies (after Rouse 1989, Fig. 6.).

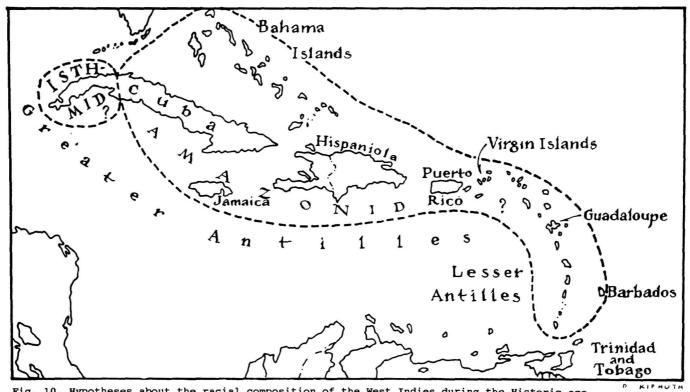


Fig. 10. Hypotheses about the racial composition of the West Indies during the Historic age.