



## Arawakan phylogeny, Caribbean chronology, and their implications for the study of population movement

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### Introduction

A new study of the expansion of Tupian speakers south of the Amazon River by Brochado (1984) has clarified my thinking about the expansion of Arawakan speakers north of that river.<sup>1</sup> It has made me realize that the two movements are mirror images. This is not surprising, for the Tupian and Arawakan families presumably shared a common origin in the middle of the Amazon Valley and each encountered similar geographic conditions when it moved out of the valley: a large central mass of highlands bordered on the east by the Atlantic coast and enclosed on the west by a river system that curves around the highlands from the middle of the Amazon Basin to the coast. The Tupians expanded around the Brazilian Highlands to the south and the Arawakans around the Guiana Highlands to the north. Both of them proceeded along the coastal plains and the interior river systems (Fig. 1).<sup>2</sup>

Brochado begins his study of the region south of the Amazon by presenting a phylogeny of the Tupian family, which he takes from Lemle (1971). He infers movements of the Tupian speech communities and their languages from the phylogeny. Then he uses his inferences as a model through which to investigate the movement of archeologically defined peoples and their cultures. He does not, however, simply match the speech communities with the peoples; instead, he draws a separate set of conclusions about the movements of the two kinds of population groups. In effect, he has developed an hypothesis of pincer

<sup>1</sup> I wish to thank Professor Donald W. Lathrap, under whom Brochado carried out his study at the University of Illinois, for calling it to my attention.

<sup>2</sup> The illustrations to this article are taken from a book of mine on *Migrations in archeology* (Rouse 1986).

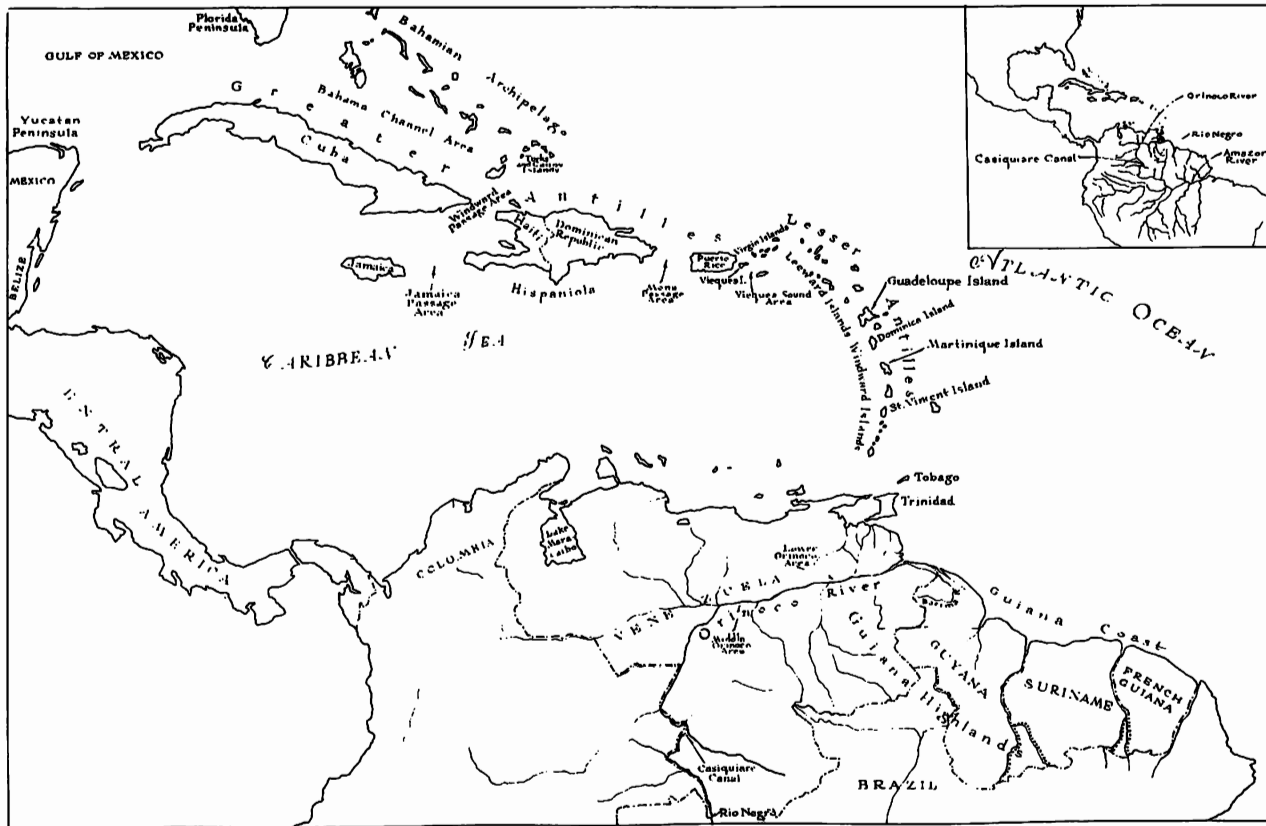


FIGURE 1  
MAP OF THE CARIBBEAN AREA

movement from the results of linguistic research and has independently tested it against the archeological evidence.

As he points out, his archeological test is weakened by deficiencies in the procedures the local archeologists have used to classify their finds. These deficiencies make it difficult, if not impossible, to construct a chronological chart through which to delimit and define peoples and cultures and to trace their movements. One cannot adequately follow the movements of peoples—or any other kind of population group—if one is uncertain who they were and when and where they lived (Rouse 1973: Fig. 6).

In this paper, I shall approach the problem of population movements north of the Amazon Basin in the same way that Brochado did. I shall infer a pincer hypothesis from the results of linguistic research and shall test this hypothesis against the archeological evidence. In conducting the archeological test, however, I shall limit myself to the northern half of the study area, because only there has sufficient chronological research been done to permit a definitive test.

### Arawakan phylogeny

Noble (1965: 108) constructed the original phylogeny of the Arawakan family. His version is difficult to use in tracing migrations because he did not arrange its languages in geographical order. I have made this change in Figure 2.

Upon so doing, I found that the Taino language, which was spoken by the Indians whom Columbus encountered in the Greater Antilles, does not fit the pattern of distribution of the other languages. Noble had considered Taino to be an offshoot of the original, Proto-Arawakan language, which was otherwise limited to the Amazon Basin. If Noble is correct, the Indians who subsequently became Tainos would have been the only Arawakan speakers of their time to have left that basin and they would have traveled all the way through the Orinoco Basin and the West Indies without leaving any trace behind them. This hardly seems likely.

Checking the linguistic literature, I found that Taylor (1977: 58) had already questioned Noble's placement of the Taino language on comparative grounds. Taylor derives Taino from Proto-Maipuran "if not" from Proto-Northern. My Yale colleague, J.J. Arrom, informs me that Taino resembles the languages known to be descended from Proto-Northern as much as they resemble each other, and accordingly I have reassigned Taino to the Northern line.<sup>3</sup> I have also made Shebayo a descendant of Proto-Northern; Noble had derived it from Proto-Maipuran but this derivation does not fit the overall pattern of the phylogeny either.

Proto-Equatorial, the earliest language in Figure 2, is considered to be the common ancestor of both the Tupian and Arawakan families. After it broke

<sup>3</sup> I am indebted to Professor Arrom for prodding me to question Noble's placement of the Taino language, which I was reluctant to do because I am not a linguist.

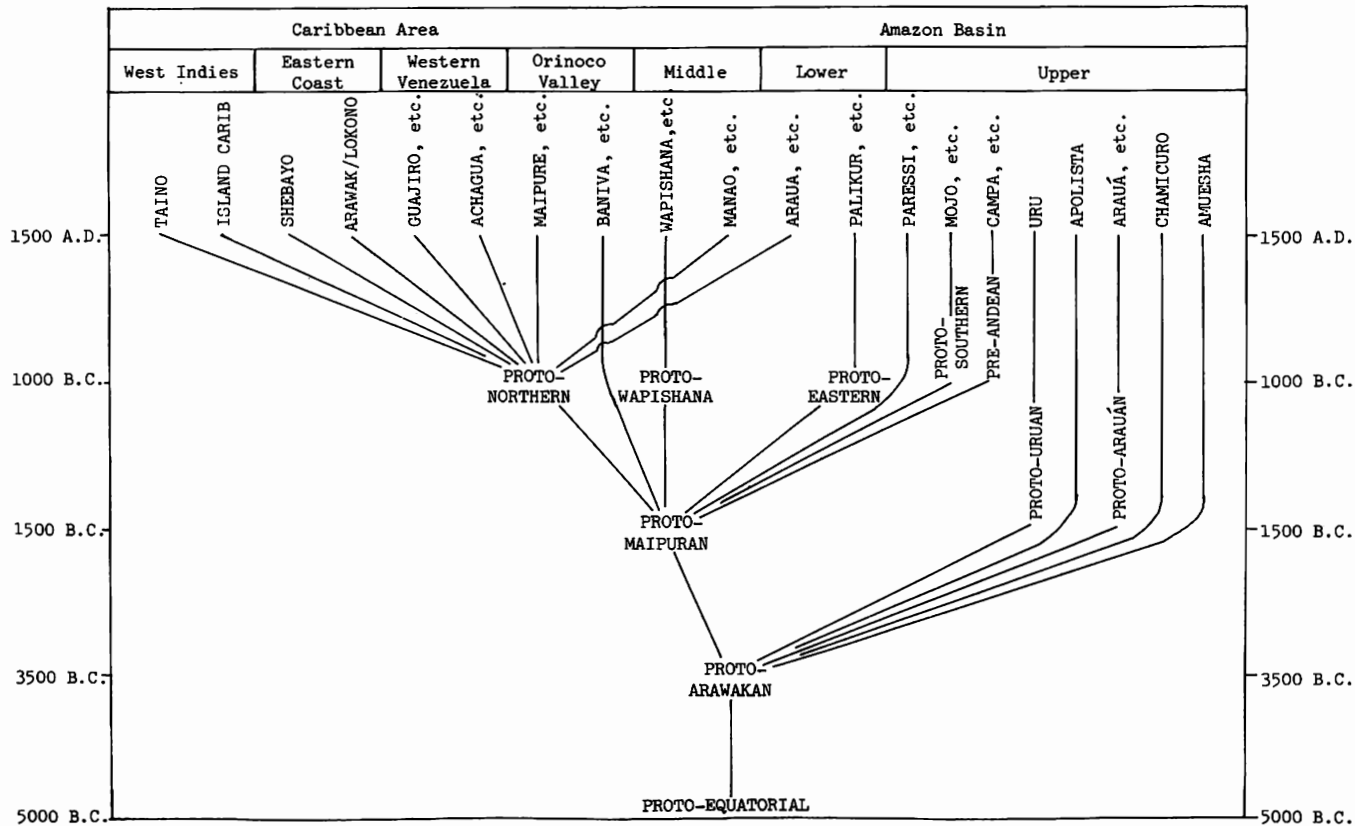


FIGURE 2  
PHYLOGENY OF THE ARAWAKAN SPEECH COMMUNITIES  
AND LANGUAGES

up, the speakers of Proto-Arawakan, its successor to the west and north, expanded up the Amazon and Negro rivers. On the latter river it developed into Proto-Maipurán, the speakers of which initiated the pincer movement around the Guiana Highlands.

One group of Proto-Maipurans retreated down the Negro River to the Amazon and descended it to the Atlantic coast. In the process, it developed a new, Proto-Eastern language, which it carried along the Guiana coast. Its modern descendants include the Palikur Indians of Brazilian Guiana.

Other Proto-Maipuran speakers advanced through the Casiquiare Canal into the Orinoco Valley, where they developed a Proto-Northern language. Some of the Proto-Northern speakers descended the Orinoco River to its delta. From there, they turned to the right onto the Guiana coastal plain and moved south to, or close to, the Proto-Eastern speakers coming up from the south. Early historic descendants of the Proto-Northern speakers include the Arawak (now called Lokono) in what later became British and French Guiana.

Somewhere along the Proto-Northerners' route into the Guianas, a group of them split off and colonized the West Indies. There they developed the Island Carib language in the Lesser Antilles and the Taino language in the Greater Antilles. Only the Island Carib language still survives, among the so-called Black Caribs whom the British transported to Central America during colonial time.<sup>4</sup>

The Proto-Eastern speakers and their descendants, and the Proto-Northern speakers and their descendants, may be considered separate subfamilies within the Arawakan family. If the calendric dates along the sides of Figure 2 are correct, these subfamilies began their pincer movement around the Guiana Highlands during the second millennium B.C. and had completed it around the time of Christ. The dates can only be considered approximate, however. They are glottochronological estimates made by Noble (1965: 107, 111) and, like all such estimates, assume a constant rate of divergence in languages when in fact there was variation.

### Caribbean chronology

An updated summary of the chronological charts archeologists have constructed along the routes of Arawakan expansion is given in Figure 3. Its mainland part (b) is less reliable than its West Indian part (a), because less research has been done on the mainland, especially in the Guianas which are crucial to the hypothesis of pincer movement.

In Figure 3, I have followed the lead of the late Gary Vescelius in replacing

<sup>4</sup> The Island Carib and Black Carib languages are misnamed. Only the special language of the Island Carib men can be assigned to the Cariban family -if, indeed, it was not a pidgin language, originally used by the Mainland Carib warriors who conquered the Windward Islands to communicate with the Arawakan-speaking Igneris among whom they settled. Taylor and Hoff (1980) suggest that the men preserved the pidgin language as a means of retaining a separate identity while being absorbed in the Igneri population.

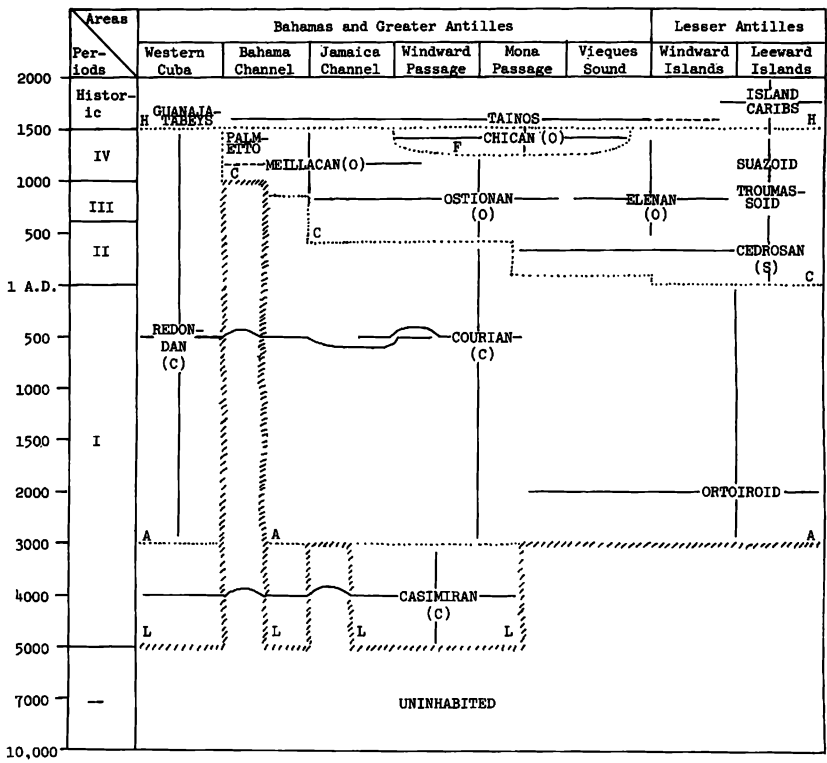


FIGURE 3  
 CHRONOLOGY OF PEOPLES AND CULTURES IN THE CARIBBEAN AREA,  
 AS DEFINED BY THEIR PRECERAMIC COMPLEXES AND  
 CERAMIC STYLES

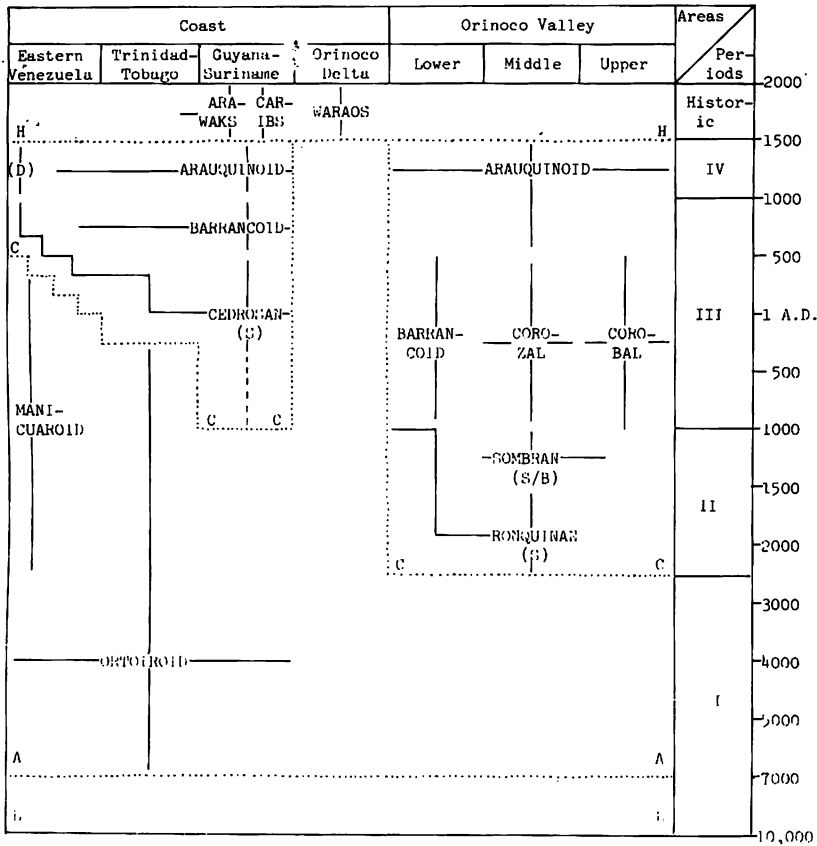
Ages: L = Lithic, A = Archaic, C = Ceramic, F = Formative, H = Historic. Series: (C) = Casimiroid, (S) = Saladoid, (B) = Barrancoid, (O) = Ostionoid, (D) = Dabajuroid.

the current one-level classification of Caribbean peoples and cultures into series with a two-level classification into subseries and series.<sup>5</sup> The subseries correspond to subfamilies of speech communities and languages. For reasons of economy, I have only reclassified the series that are directly pertinent to my hypothesis of pincer movement.

Figure 3 is divided into five ages, Lithic, Archaic, Ceramic, Formative, and Historic. The first three are alternatively termed Paleo-, Meso-, and Neo-Indian respectively. The Ceramic and Formative ages have also been called Village and Temple Formative.

Only the boundary between the Archaic and Ceramic age concerns us here. It is the time of first appearance of pottery-making, agriculture, and settled

<sup>5</sup> Since Vescelius did not publish his classification, I have had to develop my own version of it. In so doing, I have had the benefit of advice from Louis Allaire and Aad Boomert.



**FIGURE 3**  
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**AS DEFINED BY THEIR PRECERAMIC COMPLEXES AND**  
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Ages: L = Lithic, A = Archaic, C = Ceramic, F = Formative, H = Historic. Series: (C) = Casimiroid, (S) = Saladoid, (B) = Barranoid, (O) = Ostionoid, (D) = Dabajuroid.

villages throughout the Caribbean area. This was such a sharp break from the previous way of life that archeologists believe it to have been the result of population movement.

Let us follow the course of the movement. We pick it up archeologically in the middle of the Orinoco Valley, where it is marked by a Ronquinan subseries of ceramic styles belonging to the Saladoid series (Fig. 3b). The makers of Ronquinan pottery expanded downstream to the head of the Orinoco Delta, where they established a frontier with the coastal Indians, who still lived in the Archaic age. This frontier remained in existence for a remarkably long period of time (indicated in Fig. 3b by a jog in the Archaic-Ceramic boundary).

Eventually, the Ronquin Saladoid potters broke through the Orinoco Delta to the coast, where they developed a Cedrosan Saladoid subseries. They carried

the new pottery eastward to the middle of the Guiana coast, thereby completing the pincers movement around the highlands. In addition, they moved westward along the Venezuelan coast to Margarita Island, and northward through the Lesser Antilles to Puerto Rico and eastern Hispaniola, on either side of the Mona Passage. The passage area became a second frontier, across which the migrants faced an Archaic-age population belonging to the Courian subseries within the Casimiroid series of preceramic complexes (Fig. 3a).

While stopped at the new frontier, the Cedrosan Saladoids produced a new, Ostionoid series of ceramic styles. Back from the frontier, in the Windward Islands and the Vieques Sound area —the Virgin Islands and eastern Puerto Rico— this took the form of an Elenan subseries. On the frontier —the Mona Passage area— the pottery belongs to an Ostionan subseries, otherwise known as redware because of its extensive use of an overall red slip. People making Ostionan pottery eventually resumed the advance into Archaic territory, proceeding in two directions: along the south coast of Hispaniola into the Jamaica Channel area, which includes the southwestern peninsula of Haiti and the island of Jamaica; and through the northern part of Hispaniola into the Windward Passage area, that is, into northern Haiti and the eastern tip of Cuba. The migrants established a new frontier in the Windward Passage area (Fig. 3a).

On the new frontier, they developed a third Ostionoid subseries, which is known as Meillacan. Its potters subsequently succeeded in occupying central Cuba and the Bahamas. Thus, they moved the Ceramic-Archaic frontier into the position it occupied in the time of Columbus, across Cuba east of the present city of Havana. Subsequently, Ostionan potters in eastern Hispaniola, who had survived the Meillacan development, produced a final, Chican subseries, which spread widely through the central part of the Greater Antilles (Fig. 3a).

In short, the advance of the Ceramic-age Indians at the expense of the Archaic-age Indians is marked by four successive frontiers, each with its own distinctive subseries. The people who halted at the head of the Orinoco Delta made Ronquinan Saladoid pottery; those who subsequently stopped in the Mona Passage area had Cedrosan Saladoid pottery; those who paused in the Windward Passage area produced Ostionan Ostionoid pottery; and those who ended the advance in eastern Cuba were characterized by Meillacan Ostionoid pottery.

Time does not permit me to discuss the changes in ceramic traits upon which the foregoing discussion is based. Suffice it to say that with two exceptions the original Ronquinan subseries contains within itself all the distinctive traits of the ensuing subseries that mark the movement to the coast and into the Antilles. We must, therefore, be dealing with an internal development, comparable to that within the Northern Arawakan subfamily of languages.

One of the exceptions is a brief appearance of zoned incised crosshatching at the very beginning of the Cedrosan subseries. Cruxent and I raised the question whether it was intrusive from Colombia, where it is widespread (1982: 79). Recent discovery of Cedrosan Saladoid pottery decorated with this design concept in Suriname, halfway down the Guiana coast (Boomert 1983), suggests that it



may instead have originated in Brazilian Guiana, where it was also present at an early date.

According to present evidence, the Ronquinan Saladoid potters became Cedrosan after they broke through the Orinoco Delta and reached the Guiana coast. One wonders whether they may have borrowed zoned incised crosshatching from Amazonian potters whom they met when they descended the Guiana coast while completing the pincer movement around the Guiana Highlands.

The other exception is the presence of incised hatching in the Meillacan and Chican Ostionoid subseries. The most economical explanation for this intrusion is that Ostionian potters, about to become Meillacan, borrowed the new motif from Courian artisans whom they encountered while establishing their frontier in the Windward Passage area. The Courians used the motif to decorate stone vessels and stone and shell ornaments (Rouse 1983b: 32).

Recent research on settlement and subsistence patterns is also pertinent to the question whether there was a pincer movement around the Guiana Highlands. It has been generally assumed that the Saladoid people moved down the left side of the Orinoco Delta to the island of Trinidad and continued from there into the Antilles, if they did not stop first along the east coast of Venezuela (Olsen 1974: Map 3). This route, however, would have been difficult for them to traverse because it would have required a change in adaptation from a riverine to a coastal environment and from the resources of gallery forests to those of the sea. If, on the contrary, they had moved down the east side of the delta, they would have come to a network of streams leading directly into the heart of the Guiana coastal plain, where the environment was similar to that in their Orinocan homeland.<sup>6</sup> The Saladoid migrants may well have preferred to follow the latter route because it required no change in their previous settlement and subsistence patterns. If they did, it would have led them down the coastal plain to their presumed rendezvous with Amazonian Indians moving up from the south.

The nature of the settlement and subsistence patterns of the Cedrosan Saladoids who colonized the Lesser Antilles indicates that they did indeed take off from the Guiana coastal plain rather than Trinidad and eastern Venezuela. Upon reaching each new island, they searched out a major stream, moved inland, settled on its natural levees if there were any, and exploited the resources of its gallery forests (Boomert 1983; Goodwin 1979). They did not pay much attention to seafood, as they would have done if they had come from Trinidad and Venezuela, where the sites with Saladoid pottery are mostly coastal shell heaps. This type of site does not appear in the Lesser Antilles until post-Saladoid time.

The direction of the prevailing winds also favors movement from the Guianas into the Lesser Antilles. The trade winds blow from southeast to northwest,

<sup>6</sup> Boomert was the first to point out these facts and discuss their significance (Rouse, Allaire and Boomert, in press). He also notes geological evidence that the channel along the west side of the Orinoco Delta may have been closed during the time of the Saladoid migration.

for which reason escapees from the penal colony in French Guiana used to end up in Trinidad.

The calendric dates along the sides of Figure 3 are based upon radiocarbon analysis and are subject to the potential errors inherent in that method. Like the glottochronological dates given along the sides of Figure 2, they must be considered rough estimates rather than exact calculations. Nevertheless, it is surely significant that the glottochronological dates for the development of the Proto-Northern language and its modern descendants are consistent with the radiocarbon dates for the Ronquinan Saladoid subseries and its successors.

To sum up, the pattern of development of Saladoid and Ostionoid pottery, the nature of Saladoid settlement and subsistence patterns, and the direction of the prevailing wind all support the hypothesis of a pincer movement around the Guiana Highlands, followed by a migration from the northern part of the Guianas into the West Indies. So also do the radiocarbon dates for these events. Archeological research therefore confirms the linguistically derived hypothesis that we set out to test.

## Conclusions

In studying a population movement, it is advisable to begin at its end and work back towards its beginning, because the end provides the best correlation of language and culture, especially if the movement continued into historic time as was the case within the Arawakan family. For this reason, West Indian specialists have taken the lead in interrelating linguistic and archeological research in the Caribbean area.

In 1955, Douglas Taylor and I published a joint article comparing the linguistic and archeological conclusions at the time about the peopling of the West Indies (1955: 105-115). We found ourselves in complete disagreement. Taylor hypothesized two migrations, an earlier invasion of the Lesser Antilles by Island Carib speakers and a later movement into the Greater Antilles by Taino speakers. He thought that the Tainos had somehow by-passed the Island Caribs in the Lesser Antilles. I hypothesized an earlier migration of people making Saladoid pottery, a subsequent development to the historic pottery in the Greater Antilles, and a late movement of mainland potters into the Lesser Antilles. The two of us decided to return to our respective disciplines and do further research there in the hope of reaching new conclusions that would be more compatible.

In 1970, after Noble had published his phylogeny of the Arawakan languages, Lathrap used it to develop a new hypothesis about the peopling of the West Indies (1970: 112, 127). Noble's phylogeny had indicated two movements of Arawakan speakers into the West Indies, an earlier one by Proto-Arawakans who were developing into Tainos and a later one by Proto-Northerners who were soon to become Island Caribs. Lathrap correlated the first movement with the Saladoid series, as I had done, and the second with the Barranoid series, which succeeded the Saladoid series in the Orinoco Valley and on the Guianan

and Venezuelan coasts (Fig. 3a). I accepted the latter correlation, but with some reservation because the ceramic evidence in the Lesser Antilles indicates Barrancoid influence on Saladoid pottery, not replacement of the Saladoid series by the Barrancoid series.

My reservation was strengthened by the subsequent discovery of evidence that the Barrancoid people were great traders (Rouse 1983a). This made it seem more likely that their influence on late Saladoid pottery in the Lesser Antilles was the result of contact rather than population movement.

The revision of Noble's phylogeny has resolved my doubts. It now appears that there was indeed a single movement of Arawakan speakers and Saladoid potters into the West Indies and that this was followed by local development in both the Lesser and Greater Antilles, producing a divergence of languages and ceramic styles within the two island groups. Barrancoid influence on Saladoid pottery may now be viewed as the result of interaction with or immigration from the mainland, and there is no need to postulate a second population movement.<sup>7</sup>

It is gratifying that 30 years after Taylor and I agreed to disagree about the correlation of linguistically and archeologically defined population groups in the West Indies, it has finally been possible to reconcile the differences. Now we need to apply the same approach to the other branches of the Northern Arawakan subfamily, especially in western Venezuela. We should cease our current efforts to match speech communities and their languages with peoples and their cultures, should set up an archeological chronology along each presumed route of migration, and should compare its lines of development with those in the Arawakan phylogeny, as I have done in tracing the ancestors of the Taino back to the mainland.

### *Abstract*

*The latest revision of the phylogeny of the Arawak family indicates that its speakers expanded in a pincer movement around the Guiana Highlands from a presumed source in the center of the Amazon Valley. One part of the family advanced north through the river systems of the west side of the highlands, turned right when it reached the Caribbean Sea, and proceeded south along the Guiana coast. Another part descended the Amazon River, turned left, and proceeded north until it met the first group in the middle of the Guiana coast. The most recent revision of the archeological chronology confirms the existence of this pincer movement. Both the phylogeny and the chronology also demonstrate*

<sup>7</sup> By immigration is meant any intrusion of individuals, acting singly or as members of a social group, that was too weak to cause replacement of the indigenous language, culture, and/or race by the language, culture, and/or race of the intruders (Rouse 1986: 9). The conquest of the Igneri by Mainland Carib men, discussed in Note 4 above, is an example. The Igneri language and race survived, and the resultant culture was a blend of its Igneri and Mainland Carib predecessors (Allaire 1980).

*that participants in the pincer movement subsequently made a single entry into the West Indies, rather than a dual entry as previously supposed, and that they took off from the northern end of the Guiana coast, not from the mouth of the Orinoco River as assumed until now.*

### **Resumen**

*La revisión más reciente de la filogenia de la familia Arawaca indica que sus hablantes se expandieron con un movimiento en forma de tenazas alrededor del Macizo Guayanés desde su presunto lugar de origen ubicado en la zona central del valle del Amazonas. Una parte de la familia se dirigió al norte a través del sistema fluvial situado al occidente del macizo y, al llegar al Mar Caribe, siguió hacia el sureste a lo largo de la costa de las Guayanas. La otra parte descendió por el río Amazonas y luego se dirigió al norte hasta encontrar al primer grupo en la parte central de la costa guayanesa. La revisión más reciente de la cronología arqueológica confirma este movimiento. Tanto la filogenia como la cronología indican que los participantes en este movimiento de tenazas posteriormente hicieron una sola entrada a las Antillas en vez de la doble entrada que se suponía previamente y, también, que esta gente partió de la costa guayanesa y no de la desembocadura del río Orinoco como se había asumido hasta ahora.*

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