

OUT OF FLORIDA: EXAMINING THE SOUTH AMERICAN MODEL OF ARCHAIC
CARIBBEAN SETTLEMENT

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SETTLEMENT

The following faculty members have examined the final copy of this thesis for form and content, and recommend it be accepted in partial fulfillment of the requirement for the degree of Master of Arts, with a major in Cultural Anthropology.

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ABSTRACT

The US model of primary migration to and throughout the Caribbean originated in the 19th Century, based predominantly the work of J. Walter Fewkes in 1903, and maintained by Irving Rouse until his final work in 1992. Both scholars presumed water was a barrier to travel. Archaeological remains of dugout canoes on the northern Gulf Coast and the Mississippi River watershed, burials and stone artifacts found in the Northern Caribbean, and recent genetic studies of human and plant remains, cast significant doubt on those founding assumptions. A mostly land-based, late-arrival settlement scheme moving northward from South America cannot accommodate those discoveries. Further, a northward migration depends on the oldest materials found at the southern-most point of the island chain. In most US literature, the Banwari Trace site of Trinidad island has been used, which dated no earlier than 7,000BP. This paper demonstrates a southward migration from North America predating 7,000BP cannot be excluded from Caribbean settlement and migration. It also identifies non-English researchers whose models already account for the data. It concludes the Caribbean should be placed at the center of overall migration throughout the Americas, rather than its current role in US literature on the periphery of mainland populations.

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Chapter 1: The Northward Model

1.1 J. Walter Fewkes

In 1902 a zoologist with a growing interest in ethnology began a journey to rewrite US anthropology's understanding of the Caribbean. He succeeded so dramatically that by 1914 Jesse Walter Fewkes, and his technique of archaeological analysis through fieldwork-informed modal and typological comparisons, formed the foundation of several modern techniques. However, in his zeal to apply his methodology to various locations he was also an aggressive generalist (Hough 1931:94). His over 30 publications on art and excavations occurred from 1895 to 1928 and spanned New Mexico, Arizona, The West Indies, Cuba, Trinidad, Florida, and a brief trip to Egypt.

His first fieldwork was among the Zuñi tribe and that work shaped much of the rest of his practice. From working closely with tribal members and learning their ceremonies he was able to identify a previously undocumented style of Pueblo pottery art as well as some stylistic similarities to Hopi works (Hough 1931:92). That experience with Zuñi symbolism and its cross-relatability gave him unique insights but also formed the basis of much of his later work. Because of his broad and thoroughly documented fieldwork, Fewkes was well respected at the time of his death. He was made a Knight of the Royal Order in Spain, he received a gold medal from King Oscar of Sweden for his work in anthropology, he was a fellow of the American Academy of Arts and Sciences, and a member of the National Academy of Sciences. His accolades and his having been one of the few researchers in his time to have detailed scholarship on the Caribbean gave him a unique authority, and it meant his work and ideas had a profound effect on research and theories of the settling of the islands. Because of his unwillingness to test his speculations against statistical approaches available to him, those theories would prove to be significantly flawed.

Fewkes had three works focused on Caribbean archaeology. His, *Preliminary Report of an Archaeological Trip to the West Indies* was published in 1903, *Certain Antiquities of Eastern Mexico* in 1907,

and finally, *Relations of Aboriginal Culture and Environment in the Lesser Antilles* in 1914. Through these works Fewkes asserted and refined a Northward Migration Model for the Caribbean. He theorized that proto-Amerindian populations crossed from Siberia, traveled south and east across the northern continent, arrived in South America overland through Mexico, traveled through South America along the western coast, then north to the northern coast of Brazil, for the final settling of the Caribbean beginning at ~5,000BP.

The influence of Fewkes on early models of Native migration cannot be overstated. As early as 1920 works such as the multi-volume *The Mythology of All Races*—an encyclopedia of compiled world ethnographic information—already relied heavily on his research and conclusions.

Volume XI of this compendium is titled *Latin-America*, and of the Antilles it states definitively,

The Caribbean, on the other hand, was a true obstacle to the primitive intercourse of the western continents, having its proper Old World analogue in the Sahara Desert rather than in the Mediterranean Sea. In fact, we can carry this truer analogy a step further, pointing out that just as Old World culture went southward, from Egypt into Ethiopia, by way of the comparatively secure route of the Nile, so New World civilization found its securest path by way of the solid land of the Isthmus, while the islets of the Lesser Antilles and the isle-like oases of the Sahara were alike unfriendly to profoundly influence intercourse. In one striking particular the analogies of the Old World are reversed in the New: at least in recent periods, the migration of native races and culture has been from the south to the north (Alexander 1920:16).

The author of that volume was Hartley Alexander who, at the time of that writing, was the professor of philosophy at the University of Nebraska. He does not cite the origin of his assertions directly but provides a very thorough bibliography which shows his was a comprehensive statement on the available research. He cites a variety of academic sources such as the Proceedings of the American Antiquarian Society. In that same section he cites Walter Fewkes over a dozen times (Alexander 1920:383).

Moreover, what Alexander proposes is consistent with what Fewkes believed of the tribes and cultures he was studying. In Fewkes' model, the settling of the Caribbean relative to the continental Americas is largely an afterthought, a unique region but one whose indigenous population and culture was fully extinct and "swept almost without record from the islands during the early years of Spanish colonization" (Smithsonian 1903:36). As such he positioned himself as the primary authority on Caribbean realities exclusive of the local population.

Writing on behalf of the American Anthropological Association, Walter Hough summarized Fewkes' method and body of work as "Almost exclusively his work is the record of personal observation... It is true that his methods were largely tinged with those of the pioneers of anthropology, and he found it difficult to coincide with the processes of modern expanded science, preferring, for instance, to omit researches in stratigraphy from the study of culture" (Hough 1931:96). As demonstrated by Alexander's distillation of current research, the position of Fewkes within so many respected organizations meant his exclusion of contradictory conclusions based on stratigraphic analysis had tangible consequences in the available literature for decades following.

1.2 Irving Rouse

The work of Fewkes was further refined by Irving Rouse who also preferred a more and form technique for identifying material remains. As with Fewkes, he drew on his undergraduate work in biology, specifically the taxonomic method for work with plants. Through programs from the National Academy of Science, he excavated throughout the Caribbean including Haiti, Puerto Rico, Cuba, and Trinidad. His work was prodigious and spanned from *Prehistory in Haiti: A Study in Method* in 1939 to *The Taíno: Rise and Decline of the People Who Greeted Columbus* in 1992. He identified two primary migrant groups to the Caribbean—which he named the Ortoiroid for the Ortoire site in southeast Trinidad, and Casimiroid for the Casmira site in Hispaniola—who he tied to South

America through the Arawak and to the exclusion of any other primary cultural groups (Rouse 1992; Keegan 2007:320-321).

Rouse, as Fewkes before him, based this conclusion on early Spanish chronicles and comparisons of stonework and pottery (Rouse 1992:63; Keegan 2007:315). His reaffirmation of the exclusively northward migration model was questioned by contemporaries. His reliance on typology and modality as the foundation for his theories was less often addressed. When it was, he frequently rejected it out of hand. Writing for the National Academy of Sciences William Keegan was significantly less circumspect than Hough had been of Fewkes,

Ben never liked the messiness of anthropology... Ben may have claimed to be “open to other points of view,” but he really was not. He ruled the Caribbean with an iron fist for many years and if your grant proposal or peer-reviewed article did not fit with his approach (and he seems to have reviewed them all), they were not funded or published... I know of a similar exchange during fieldwork in Antigua in 1974, during which he told his graduate student to just do the best job he could. When he found out that this student was applying the theories and methods of the “New Archaeology,” Rouse was outraged. I relate these stories not to chastise Ben. He was always a gracious host and gentleman when I visited him at Yale. But it is important to recognize that he had a very particular mindset, and that he spent his career trying to develop the one correct way (Keegan 2007:311-312).

Rouse depended heavily on Fewkes for his initial theories, and Fewkes was already a recognized authority on the Caribbean within the academy. Like Fewkes, Rouse’s undergraduate was in biological science, like Fewkes he focused on taxonomic categorization augmented by Spanish account rather than local cultural information. Most significantly, like Fewkes, by the time of his death he was a recognized authority on the Caribbean in several key academic institutions. He was an assistant professor of anthropology at Yale by 1943, full professor from 1954 to 1970. He received a Guggenheim Foundation Fellowship and was hosted by the Institute of Archaeology at the University of London in 1963, elected to the National Academy of Sciences in 1964, and served as President of the American Anthropological Association from 1967 to 1968. Clearly Keegan is not

exaggerating when he suggests that a rejection from Rouse could prevent material from being published.

As such, Rouse replaced Fewkes as the primary authority on the Caribbean within the academic literature. This represented a perpetuation of Fewkes' model into the 1990s. Their work and positions combined to ensure stylistic comparison of ceramics and chipped stone from within the Caribbean islands, exclusively to South American material remains, would be regularly advocated and reified for a century with little interruption. Due to its dominance within available literature this model and method has perpetuated into the present, as have the flaws of depending on that incomplete data (Keegan 2007:321; Fitzpatrick 2015).

This is not to say Rouse was as willing as Fewkes to reject less artistic methods. He regularly employed carbon-dating results and stratigraphy, but only when it served to refine the model he'd already identified in one of his first comprehensive works, *Handbook of South American Indians* in the 1940s. In the multi-volume set he first proposed the Caribbean was settled by South Americans and afterward "the borders were hermetically sealed such that new migrations were not accepted." (Keegan 2007:321) Identification of materials on the island of Trinidad at the Banwari Trace site in 1969 pushed his original date of northward migration back to ~7,000BP, but otherwise the model for settlement from the south almost entirely after ~6,000BP remained fundamentally unchanged in US archaeology into the 21st century. Perpetuation became proof as various researchers have continued to quote Fewkes as a primary source relative to archaeological materials found even after both men had died (Fitzpatrick 2015).

This essay will demonstrate that though Fewkes' original Northward Migration Model may have been the best answer available in his time, significant data in the intervening century has made this model fully unsupportable. It will demonstrate any model into the Caribbean cannot exclude a southward migration from the North American tribal populations at least 7,000 years before present.

Chapter 2: A Flawed Explanation

2.1 *One Answer Among Many*

Contemporaneous to Fewkes, researchers were already identifying material remains that suggested his model was flawed. One of the first to propose a reform in the understanding of Caribbean migration and settlement was Charlotte Gower's *The Northern and Southern Affiliations of Antilles Culture* in 1927. She was a fellow University of Chicago graduate student with Cornelius Osgood. Rouse credits Osgood both with bringing Rouse into the study of archaeology, and with originating their collective interest in the Caribbean (Siegel 1996:682). Gower wrote her dissertation on the West Indies, including a potential connection between the Caribbean and Florida stating, "...traces of South American-Antillean culture in the southeast [United States] are too great to be purely fortuitous" (Gower 1927:48). Her traces were not further examined.

Twenty years after Gower, Julian Steward proposed a "radiating pattern" for Caribbean settlement moving from west to east from Central America in overlapping circles. He identified two primary origins, one from the Andes to the West Indies, and a parallel radiation into Central America to Guyana, Venezuela, and the Amazon Basin (Steward 1947). Though this theory still focused on a predominantly Northward move into the central Caribbean islands, unlike Rouse, it depends on a continuous network of movements out of Central America utilizing coastal and open-sea routes. It also happened Steward was an editor for the 1940s *Handbook* to which Rouse contributed his northward migration model.

Accordingly, Rouse paid specific attention to discounting Steward's theory. Rouse states Steward utilized ethnographic information for his conclusions as little archaeological work had been performed when Steward first started in 1941. Rouse concludes this was a shortcoming for the theory, and meant Steward was unable to give accurate dates for his various movements and

migrations (Rouse 1953:189). It's an odd assertion given that Rouse was only writing a decade later and to contradict Steward he cites such research as the cave shrine analysis by Lovén in 1935 (Rouse 1953:195), Valencia excavations by Bennett in 1937 (Rouse 1953:192), and the pottery horizon research by Rainey in 1940 (Rouse 1953:193). Meaning Rouse and Steward were working with research from the same time period.

Fewkes is significant here again as Rouse cites him both in the original critique of Steward in 1953 and in Rouse's comprehensive retrospective on Caribbean archaeology in 1992. This is despite Rouse being forced to concede there is no other explanation for the movements between specific locations Steward gave as the centers of his various diffusions and migrations. The best he can manage is quoting Fewkes from 1914 that local ocean and wind currents are hard to row against (Rouse 1953:197). In the same section Rouse also notes the ball game common in Central America has antecedents in South America and only where the Caribbean Islands are nearby. Rouse states,

Finally, there are a number of specific resemblances between the rubberball game in Meso-America and the Greater Antilles (Alegría, 1951, p. 349). Stern (1950, p. 101) and Alegría (1951, pp. 348-9) have suggested that these are the result of diffusion from Mexico to the Greater Antilles via the Circum-Caribbean route along the north shore of South America. So far as is known, however, the ball game does not occur along this route in any form, even among the Circum-Caribbean people of northwestern Venezuela. If, therefore, diffusion did take place, it is more logical to conclude, as Lovén (1935, pp. 694-5) has done, that the ball game passed directly from Mexico to the Greater Antilles (Rouse 1953:197).

Rouse is suggesting both that diffusion southward from the Antilles is unlikely for wind and current, and diffusion southward is likely for archaeological and ethnographic data. Incorporating southward mobility from North America resolves both concerns and is not offered as a possibility. North American tribes had several versions of the ball game. Further, the prevailing sea and coastal winds and currents move predominantly northward for the southern and central coasts but move southward along the coasts of most of the Antilles through a pattern of eddies created by the islands

themselves. The cumulative effect of this is the Gulf Stream itself creates a direct link between the coasts of the Yucatan Peninsula, Louisiana, Alabama, Georgia, and Florida, back to Cuba (Fig. 7). Historically, water levels were lower as one goes further back in time, as such eventually the Gulf becomes almost an isolated sea and the Caribbean Sea forms a loop carrying watercraft all throughout the islands with minimal caloric investment. With current oceanic data, the Fewkes-Rouse anecdotal records of Caribbean wind-speeds are fully obsolete and misleading.

Even excluding the lower water levels of the early Archaic, the model would still require incorporating the Florida and Loop Currents and a mean average of 90 miles between individual islands of the Lesser Antilles. Those factors make travel and exchange between the various Caribbean islands, and the mainland throughout the Gulf of Mexico and the Caribbean Sea, significantly more feasible than Fewkes or Rouse stated.

Rouse himself, when critiquing Steward, cites archaeologists who were already pushing back against Rouse's conclusions and overall timeline. He cites Cruxent repeatedly for specific archaeological data, but in footnotes indicates Cruxent's actual conclusions were omitted for the sake of "simplification" or due to insufficient knowledge (Rouse 1953:198). At the same time, Rouse's critique of Steward is that Steward over-simplifies. This demonstrates Rouse preferred the northward-migration model to the exclusion of contradictory information, as Fewkes before him, and his arguments and conclusions must be understood to favor that theory and therefore originate with what was available to Fewkes fifty years previously in 1903. Ultimately it was force of will rather than a preponderance of evidence that perpetuated the Northward Migration Model.

2.2 Gaps in Burial Practice

Attempts have been made to trace the likely centers of cultural exchange based on what Fewkes and Rouse proposed. One such effort was performed by Angus Mol, a postdoctoral

researcher at the University of Stanford, and his work is illustrative of the difficulties an exclusively Northward Migration Model creates.

Mol attempted a Network Theory analysis of pre-Hispanic Caribbean populations. Though he begins discussion at 5,200BP and broadens his scope to include non-weapon trade goods, he limits his conclusions in the same way as previous work by focusing entirely on lithic and pottery remains relative to a South American or South-Central American origin. He states directly, “As a result, the dates for the earliest sites in the case-study refer to a period lasting for several of thousand to several hundred years. Faced with the disparity of dates we cannot be certain of or even guesstimate whether sites dating from the earliest periods were contemporaneous or not.” (Mol 2014:135) In other words, because there are gaps in the data several sites are simply excluded from the dataset under consideration.

Curiously for a Network Theory analysis of intertribal relationships in the Caribbean, Mol excludes items such as canoes from his analysis except as a generic reference to transportation. This occurs because Mol’s network does not depend on the type of boat or their durability for his conclusions. In fact, though he goes into detail regarding the likely caloric requirements for paddling a canoe between the various islands, the time it would require, and the prayers involved in their construction (Mol 2014:50-51), he states the boats necessary were probably quite rare and dependent on complex expeditionary teams of extended kin to construct and launch (Mol 2014:52). For many of these summaries he quotes Rouse directly. The justification of his assertion is not explained given the cultures involved would have required several boats to maintain the trade network he is ostensibly diagramming. Even without North American dugout canoes, counter-examples are readily available to challenge the idea boats are both rare and gracile, such as the Aleutian kayak or even the smaller Ancient Egyptian reed boats. Both of which could travel in a variety of conditions and were crafted in a variety of sizes.

His analysis emphasizes how unwieldy a strictly northward migration from South America is by attempting to incorporate the Archaic remains discovered in locations such as the Maruca and Angostura sites in Puerto Rico. Among the lithic artifacts recovered were stationary milling stones, items which would not be commonly found among more transitory and nomadic populations who would have, at most, only rudimentary horticulture (Parry and Kelly 1987; Rodríguez-Ramos 2010). Though Mol quotes Rodríguez-Ramos in his lithic analysis section, and the assertion mill stones would not be present in non-agricultural societies, Mol reasserts the populations were predominantly nomadic and unlikely to be anything more than partially settled as that conforms to Rouse's model.

Attempting to rectify the inconsistency Mol concludes there were overlapping but separate networks between the islands, from agricultural and non-agricultural cultures, which interacted with the mainland nearly exclusively at Trinidad and significantly later at Florida, but otherwise did not interact with Central America at all. It places the ends of the networks at the farthest physical points, despite his already having asserted canoes would be too labor intensive.

Mol also cites analysis of the Kelbey's Ridge 2 site on the island of Saba in the North Antilles between Puerto Rico and Antigua. He states this is to establish an "ego-network perspective" (Mol 2014:173) for confirmation of his proposed networks and nodes approach. The archaeological remains indicate a tiny settlement with individuals whose skeletons show significant degeneration from stress (Hoogland and Hofman 1993). A population which would require significant outside support. Mol does not entertain the possibility of a larger and more robust network throughout the Caribbean, with regular travel even to the smallest of islands, but affirms this was a border outpost on the "fringe" of the Antilles (Mol 2014:173).

For that statement he quotes the timeline of Rouse's migrations. He also abruptly switches from anchoring his discussion on polished stone jewelry and moves to pottery, likely because Rouse's primary evidence was pottery remains. Mol further states the bulk of the human remains

were combination burials of infants and children with adults, and primarily in open pits with some parts being removed after burial to “anchor” the dead with the living (Mol 2014:180). He ties this to the burial practices of tribes in South America.

It is necessary to separate out specific elements of what Mol is saying to contextualize those burials within the broader Caribbean and surrounding cultures. Mol notes only a single cremation. This burial method is divergent from practices in Arawakian South America from the same period. Arawakian bodies were much more frequently buried in urns, cremated, or ritually cannibalized and covered by the remains of their funerary feast and the ashes of their burned possessions. Practices which were common and pervasive enough they were represented in remains dated before and after colonization (Farbee 1918:100; Schwerin 1972:43; Conklin 2001:172; Iriarte et al. 2015).

Mol further states some bones appear to have been removed and he speculates they were kept as memorials to the deceased. Though he justifies this with the assertion Native populations believed spirits resided in remains after death, and gives several citations to confirm his statement, he does not discuss any findings of human-bone jewelry or the possibility these graves had been desecrated by enemy populations rather than family members.

Citing Rouse to support such a conclusion is also odd as those same burials were dismissed by Rouse as the remains of semi-transitory interlopers in keeping with his own overall settlement timeline (Rouse 1992:66). Rouse’s assertion is quoted by Rodríguez-Ramos’ in a similar lithic analysis discussion (Rodríguez-Ramos 2010:77) to narrow which mineral deposits are viable candidates for comparison. A comparison which runs contrary to the one performed by Mol, even though Mol cites Rodríguez-Ramos as well. This confusion of dates and materials is never resolved. Whether one accepts Rouse’s or Rodríguez-Ramos’ assertion on the likelihood Saba’s population was impermanent, Mol cannot be correct. He is asserting both this island was populated inconsistently by Southern nomads on the edge of the territories, and by settled arthritic migrants burying their

dead and carrying their bones as talismans rather than destroying them as they would have often done on the mainland.

Likely the reason Mol and Rouse focus on cremation so readily is it was not common in the Americas. Although at the time Rouse was writing, cremation burials were not noted in North America, sites have since been found on the Georgia barrier islands of Ossabaw and St. Catherines off the coast of Savannah. Tom Gresham, an Athens archaeologist who worked on the excavation has been quoted specifically for saying “The way Indian tribes over time buried their dead varied tremendously. But cremations are fairly rare” (Bynum 2008:1) Because of that rarity and the pit having square sides rather than rounded, Georgia State Archaeologist Dave Crass originally assumed the discovered burial was modern (Bynum 2008). Such an anomalous burial in the north further broadens the possible ties between North and Caribbean America rather than restricting them. This finding exacerbates Mol’s inconsistencies rather than resolving them. With cremation being present at both the northernmost and southernmost tips of the Caribbean, alongside burials, it is even harder to affirm which tribal group contributed to the burial practices present on Saba.

This is not meant to challenge Mol’s approach. His methodology is consistent, but his data is flawed. Mol is not an anomaly in his modern perpetuation of the Fewkes-Rouse model. A specialist in Caribbean watercraft, one of Scott Fitzpatrick’s few concessions to the possibility of a migration from outside Venezuela was stating migration to the northern Caribbean occurred “...in multiple waves that show strong linkages to South America, but possibly originated from more than one source location.” (Fitzpatrick 2015:305) Even with the archaeological data available to him, excluding the Manasota Key site discussed later in this paper, Fitzpatrick is still unwilling to acknowledge a southward population contribution as anything but speculative. So much so he includes a map of the demonstrated and speculated migrations and none originate in the north despite the dates he gives making little sense without a northern contribution (Fig. 5).

This identification of cremation practices on the north end of the Caribbean is significant for another reason. After subsequent excavation and using laser ablation to identify key elements, copper artifacts in South Carolina and Georgia were dated to before 5,000BP which originated in the Great Lakes (Sanger et al. 2018). This will be discussed in detail in the next section, but it further demonstrates burials of the style used by Rouse to exclude northern populations from the central Caribbean islands were present among cultures on the south coast of Georgia with ties even further north along the Mississippi River Valley. Moreover, those populations were trading near waterways, at ~5,000BP, traveling farther than would be required to reach central Caribbean islands. Even without those discoveries, the Windover Site near Cape Canaveral was identified in 1982 and contained several skeletons with enough tissue preserved to sequence DNA. The archaeological and biological remains dated reliably to ~7,000BP (Hausworth et al. 1994) Such dates place a human population complex enough to be engaging in burial practices on the coast of Georgia and Florida, coincidental with material remains of dugout canoes in Florida, 5,000 years before Rouse suggests it was even possible humans were making inroads to the Bahamas 40 miles off the coast, and well documented a decade before he was wrote his final work on the subject.

2.3 Central American Lithic Remains

Material remains in Central America also lend credence to an established population already existing in the Caribbean at the time the Casimiroid people were theorized to be appearing at ~6,000BP. Direct comparisons between Clovis and El Jobo points have been made by Gordon Wiley of Harvard and the Smithsonian, and a team headed by Richard Cooke of the Smithsonian Tropical Research in Panama. Willey found similarities significant enough to tie the two directly and suggest they were from the same parent group (Willey 1971). Cooke and his team used a

Panamanian site where such points were found to revise migratory timetables of Central America overall (Cooke et al. 2013).

Cooke's team focused on Paleoindian artifacts including Clovis and Fishtail fluted projectile points found at the early Holocene Vampiros-1 rock shelter site in Herrera Province, Panama. The dating of the Vampiros points was possible as they were found buried in deposit which had been radiocarbon dated. The date yielded ~11,500BP – ~9000BP. Those points were compared to an El Jobo point workshop in Panama and gave an overall picture of Clovis bands in Central America as early as 11,050BP (Cooke et al. 2013:3). The team notes in their conclusions that lake sediment data has yielded evidence of habitation, suggesting not only a coastal route for migration but future sites are likely still undiscovered as they are currently submerged.

They focused on the Pacific Coast for their analysis, but their overall findings correspond to Kendra McSweeney's model of the Gulf Coast as a boat-based network (McSweeney 2004). It interlaces the finding of similar dugout canoe styles in locations remote from one another by land. Cooke's team ends by citing mtDNA research such as that discussed in this paper, as further evidence of their conclusion Panama and the surrounding region was a long-term settlement which Clovis populations joined, and not a temporary land-route southward which various groups simply traveled through as the Fewkes Model required (Cooke et al. 2013:20).

When combined with El Jobo points found at the Taima-Taima mastodon kill site in Venezuela (Bryan 1978) it seems to have been simply assumed populations traveled southward through Central America then back northward through the islands, rather than following a variety of routes simultaneously. One reason Cooke's team performed their analysis relative to cultural affinities is a long-standing academic debate surrounding whether El Jobo points are a unique South American item which traveled north through the mainland and met Clovis cultures, or developed as

Clovis traveled southward (Scheinsohn, 2003). The justification for assuming a strictly land-based pattern for either case is never provided.

Chapter 3: Canoeing Toward A New Model

Nearly every historic and pre-historic cultural group which has inhabited the North Gulf Coast had boats. The word ‘canoe’ itself originated with the Caribbean name for a small watercraft, translated into Spanish by European explorers (Callaghan and Warwick 2007). Several well-known sites demonstrate this reality. For example, the ~4000BP Poverty Point Culture of the Mississippi River valley is named for a site which was prominent specifically for its accessibility by boat (Sassaman 2004). Unfortunately, Poverty Point is not often coupled with the Gulf, as will be demonstrated, or the western coast of Florida despite its being less than 10mi from the Mississippi River.

Available research on prehistoric canoes in the Caribbean is limited. This is due in large part to the mainland and island coasts experiencing a substantial shift in sea level between the common ~14,000BP dating of inland sites such as the Gault Site (Williams 2018:5) and the 6,000BP dates for non-submerged island middens and excavation sites (Olsen 1974; Carratala and Díaz 2010). Between those dates the sea level rose at least 5m in many locations, significantly higher in others (Largent 2015; Loper et al. 2005). As will be discussed, it is notable several significant finds have been the result of occasional large artifacts washing up on a beach or bank following a storm, being uncovered accidentally in a swamp following a drought (Wheeler 2003), or—as the recently identified 1,500BP dugout canoe in Assumption Parish, Louisiana—found by a man digging a pit (Harris 2018).

Despite this limitation, underwater archaeology exploring the cenotes of Central and South America have already revealed a wealth of information from cultural and ceremonial complexes (López 2008), regional responses to drought (Lucero et al 2017), and Caribbean dugout canoes (Tapper 1996). With information changing so rapidly, suggesting an upper limit for likely migration dates is not possible, but demonstrating it challenges the original model and suggests a viable alternative model's foundation is not.

3.1 Dugout Canoes in Southern North America

Because of their researched reliability in traversing distances such as the Orinoco River and the Lesser Antilles, identifying ancient dugout canoes in North America and the Caribbean is significant. Kendra McSweeney has documented this and identified watercraft, specifically dugout canoes, as the most consistent evidence of trade and movement between locations normally separated by large bodies of water in the region. As she argues, the geography of the Gulf Coast is best viewed as a water road with dugout canoes its primary vehicle. While she focuses on rural locations in Honduras and Nicaragua (McSweeney 2004), others have identified potential ties to Mississippi River-based dugouts as far north as the Great Lakes Region and as far southeast as central Florida, as they are stylistically similar, and the relative nautical distances are comparable (Merriman and Olson 2014). As a direct contradiction of Alexander's assertion, water was not an impediment but an aid to travel.

One such dugout was identified in the Long Lake region of Minnesota in 1934 (Fig. 2). It was originally dated to the 1700s, but subsequent testing has shown it to date before 1000BP. As with other dugout canoes, it was found by accident and identified by a family building a dock on their property. It remained in storage for several decades due to not being recognized for what it was

(Murphy 2014). The canoe was found in the mud of Lake Minnetonka, 4mi from the Mississippi River.

This in and of itself does not speak to the settlement of the Caribbean, however when coupled with the discovery of a ~1500BP canoe uncovered in Assumption Parish Louisiana, a pattern begins to emerge. The Assumption Canoe was also less than 4mi from the Mississippi River. It bore stylistic similarities to the Stargate Canoe discussed later in this paper as it was also a dugout that had a triangular taper to a platform fore and aft. Louisiana State Archaeologist Chip McGimsey noted that at 16ft long and 3ft deep it is shorter than other later dugouts found in the bayou region but would be more than adequate for carrying trade goods throughout (Harris 2018). The canoe was taken to Texas A&M for further study and preservation (Fig. 3). Such Mississippi delta canoes have proven so stylistically reliable they have served as references for dating other canoes and pre-Hispanic wooden objects in the area (Ostapkowicz et al. 2012).

As stated previously, identifying a potential trade and stylistic relationship between island populations and their mainland counterparts is necessary as direct comparisons between the Caribbean and the north are not well documented specifically because their relationship has so often been discounted. The dearth of research on methods and materials between the various cultural groups is clarified in works such as analysis performed by Scott Fitzpatrick of the University of Oregon related to Caribbean watercraft, physical boundaries, and their effect on isolation and cultural exchange. Fitzpatrick, much like McSweeney, has repeatedly identified dugout canoes as the primary necessary technology to maintain direct ties between the various communities of the Caribbean and the Mainland. Unlike McSweeney he has used Rouse and Fewkes as a guide and relied on Spanish records to confirm his data to the point of excluding watercraft which are suggestive but not historically documented.

Though he analyzes sites and artifacts as far north as Cuba, Fitzpatrick's works mostly verify the overall design of dugout canoes was reliably consistent, persistent, and ubiquitous (Fitzpatrick 2013). Interestingly, he does not extend his boundary to the Stargate Canoe 80mi north. Omitting the Bahamas from his analysis is telling as fellow researchers Richard Callaghan and Stephanie Schwabe include Stargate specifically to analyze the overall capabilities of ~2,500BP Caribbean-style dugout canoes (Callaghan and Schwabe 2001:308-309). Fitzpatrick quoted Callaghan's research in his own analysis of potential Caribbean trade networks, but pointedly excluded the canoes Callaghan used for those conclusions. Fitzpatrick justifies this decision by stating Spanish chroniclers did not record it (Fitzpatrick 2013:109). Such a specific exclusion is significant as the dates of the materials, regardless of Spanish confirmation, were thus clearly known at the time Fitzpatrick was writing. Returning to the ~4000BP Poverty Point Culture, the fact of boat travel throughout the Archaic period is an established reality. Spanish conquerors are not reliable against a proximal and potentially direct material relationship between Florida and the Yucatan Peninsula by water when datable items are readily available, any more than they are against genetic analysis. They are not an unbiased source; physical evidence should be the standard.

Such conclusions are stranger still as the largest cache of seaworthy dugouts currently documented was identified in Florida, it is one of the oldest currently available, and Fitzpatrick refers to it in the introduction to his discussion of isolation and Caribbean trade. Known collectively as The Newnans Lake Canoes, they consisted of 55 mostly complete canoes—out of 100 partial or fragmented—found in Newnans Lake Florida. They were revealed when the water level of the lake dropped during a drought in the summer of 2000.

Of those analyzed the majority, 41 of them, dated ~2,300BP and several as early as 5,000BP using radiocarbon dating coupled with stratographic analysis. Subsequent digs in nearby Putnam Hall have revealed several more canoes of identical design (Fig. 4 – a, b, c). Though the wood was

too waterlogged to safely transport, individual wood samples were analyzed in a nearby lab, and the Newnans Lake canoes were analyzed in situ (Wheeler 2003). Many of the canoes were complete enough primary excavation was performed using trowels and hand tools (Wheeler 2003:536). They had an average length of 7m and the longest was incomplete at ~9.5m (Wheeler 2003:541). When tested most of the canoes were pine and cypress. These canoes were comparable to the much later designs found in Louisiana and up into the Great Lakes, but also throughout the coastal region of the Gulf as far south as the Callaghan analysis designs in Central and South America (Newsom and Purdy 1990:164).

Most importantly, the study notes a revisit to the Newnans Lake site in 2001 revealed canoes further south from the original location. The authors state this means there are potentially dozens more throughout the lakebed. This is a site within 40mi of the St. John's River and 70mi from the coast. The site contained several shaped chert fragments, aiding in the dating of the site and suggesting the reason the canoes were there in the first place was sinking during use as trade and transport vehicles (Wheeler 2003:544). When coupled with the Putnam Hall find 8mi east of the initial location in 2012, these artifacts identify a canoe complex throughout central Florida, within 12mi of the St. John's River, and dating to at least ~6000BP.

This data confirms there were seaworthy vessels, at the northern limits of the Caribbean, with a design like those found at the northern end of the Mississippi, dating to the same time the Northward Settlement model indicates the first permanent populations were just establishing themselves in Trinidad. This means northern populations had ready and sustainable access to the Caribbean starting at 6000BP if not earlier. This, coupled with the genetic research currently available, demonstrates an exclusively north-moving population from South America cannot be assumed.

The only reliable way of resolving this inconsistency and verifying if there is ~5,000BP pre-Casimiroid evidence in the Northern Caribbean would be investigation of submerged regions. Isabel Rivera-Collazo stated as much in her speech, *Looking at the 'Continent Divided by Water'*, at the Acoustics in Underwater Geosciences Symposium in July of 2015. Her presentation focused on the fact that there is more than adequate technology to begin searching underwater locations in the Caribbean for archaeological remains, but it isn't being pursued.

She was not being predictive, from Newnans Lake to Windover to Stargate, North American sites relevant to refining circum-Caribbean migration models have been regularly uncovered below the water throughout the Gulf Coast beginning in the 1980s. Ignoring them reinforces an erroneous model. Further confirming her admonition, in February of 2018 the Florida Department of State, in conjunction with National Geographic, announced Underwater Archaeology Supervisor Ryan Duggins had identified the Manasota Key site. Located 300ft from shore and only 21ft underwater, it has yielded human, animal, textile, and wooden remains, which date to at least 7,000BP. Considered with inland sites such as Gault and Page Ladson, this places advanced cultures throughout the Northern Gulf Coast at a minimum of ~6,000BP, some within 100 miles of the Bahamas where dugout canoes dating to at least 2,000BP have already been identified.

3.2 The Northern Caribbean

Cenote research has occurred in the Caribbean as well as Central America, only to a much more limited degree, and the findings potentially tie the Caribbean directly to the cenote rituals of the Maya. The so-called Stargate canoe—due to its origin in the Stargate Blue Hole burial assemblage—was found in the Bahamas off the coast of the primary island (Fig. 1a and 1b). Its style is like that used by the Ye'Kwana tribe of Venezuela (Callaghan and Schwabe 2001). Stargate was in a waterfilled cave tied to the Lucayans, a tribe known for their deep-diving tradition, by

archaeologist Rob Palmer 1987 while he was excavating a regional burial site (Tapper 1996:24).

Palmer reported it was identified based on a small fragment of wood found near its eventual location, and with bones nearby suggesting it may be part of a burial. Before Palmer died the canoe was partially excavated and preserved in polyurethane for analysis (Gillison 2004:56).

Stargate corresponds to similar finds in the Cenotes of Central America and shows whether the caves were dry when the placement occurred, or they already contained water, the tribes themselves placed the materials. Palmer's initial research indicated the canoe was 800-1000 years old and due to the presence of a skull it potentially is part of a larger ceremonial complex. Because Palmer passed away, the initial research was not well publicized until it was photographed by National Geographic in 2010 as part of a tourism and interdisciplinary research project including Keith Tinker of the National Museum of the Bahamas and Kenny Broad of the University of Miami (Todhunter 2010).

Due to its verified antiquity Stargate canoe was used, along with a second 'platform style' canoe documented in Spanish chronicles, throughout the Caribbean up to present, for comparison in research to identify pre- and post-contact island and mainland vessels (Callaghan 1993). These comparisons eventually lead researchers to identify potential travel patterns based on how they're utilized historically and by contemporary tribes, relative to their primary characteristics including draft and stability. These characteristics revealed vessels that could readily traverse the relatively small distances between several islands of the Lesser Antilles (Callaghan 2001).

Adding to those findings Cooke, in his lithic analysis, speculated the debate surrounding the various migration models, including those related to the Bering Land Bridge, can only be resolved with under-water archaeology. Coastal water levels were as much as 130m lower in some areas, and both central America and the Caribbean islands were therefore much larger (Largent 2015). This is worth noting not only for the increase in habitable zones which are now fully submerged, but

significantly the area of the Newnans Lake dugout canoes in Florida was still roughly equidistant from the coasts as it is today.

3.3 Copper, Trade, and The Gulf Complex

Moreover, the copper originating from the Great Lakes during the period of ~6,000BP coincides readily not only with dugout canoes in Florida and Louisiana, but with a peak in copper production which itself utilized boats to access the islands where the bulk of the copper was found. Sediment analysis of Lake Superior by David Pompeani, a Ph.D. student at the University of Pittsburgh, was originally presented in a poster session at the American Geophysical Union's Fall Meeting in 2014. Pompeani's work centered on mining and smelting run-off around Isle Royale's McCargoe Cove, and nearby Keweenaw Peninsula, Michigan. Spikes in potassium, copper, and lead were dated at 6500-5400BP (Pompeani et al. 2015). That copper was identified in St. Catherines Island, Georgia using "Elemental data produced through laser ablation inductively coupled plasma mass spectrometry shows the copper originated from the Great Lakes, effectively extending Archaic copper exchange almost 1,000 km beyond its traditional boundaries" (Sanger et al. 2018:E7672). It is the same island where the cremation burials were identified, and the Great Lake nearest—only 150mi—the Long Lake dugout canoe. With a network spanning the length of the Mississippi and across to the eastern coast of North America at 6,000BP, and contemporaneous dugout canoes and burials in Florida, water was clearly a benefit not a barrier to tribes for thousands of years surrounding the north Caribbean, Eastern US, and Mississippi River Valley to the Great Lakes.

3.4 Bannerstones

Apart from ocean levels, sinkhole bifaces become significant when discussing what have come to be called 'bannerstones' in North American archaeology (Fig. 6a). Beginning in the 1930s

with William Webb of the University of Kentucky, bannerstones have been excavated throughout the Ohio and Mississippi River valleys. Webb first found them in shell mounds in Kentucky's Green River Valley. He published his findings in 1957 and since then the stones, coming in a variety of sizes and shapes but predominantly resembling rounded double-headed hand axes, date from ~8000-3000BP. Because they are regionally unique and well enough known they received a full-color article in *Archaeology Magazine* (Powell 2017:186).

Bannerstones are also significant to Caribbean lithic artifacts as they were noted and pictured by Fred Olsen in his 1974 book *On the Trail of the Arawak* (Fig. 6b). Because Olsen was an explosives expert who had retired to the Caribbean and pursued archaeology predominantly as a hobby, he did not call them bannerstones, he called them "polished celts" and "double-bitted axes". The name he gave them is not significant, their description is. He states, "Many are of such sensitive design that they have been considered ceremonial objects rather than useful tools." (Olsen 1974:189) He compounds the conclusion they were not useful as direct tools when noting on the islands of the Greater Antilles the 'axes' are occasionally polished to a glass finish (Olsen 1974:190). Because he includes images of the stones in his book, visual comparison to bannerstones from North America is possible against the physical description and pictures from *Archaeology* and they are easily fitted into the bannerstone complex. Their dates also coincide. Olsen states "...in light of Professor Cruxent's date of 3000BC for their presence on Trinidad it is conceivable that they may have been on the islands a thousand or more years before the Arawaks arrived there." (Olsen 1974:187)

The inclusion of José Cruxent, and a date of 5,000BP in his analysis, is not accidental. Cruxent was a Spanish archaeologist who specialized in Venezuela. It was Cruxent who first identified the Nueva Cádiz site and discovered El Jobo points at Taima-Taima, dating those sites to ~13,000BP. He also worked with Irving Rouse but disagreed with him on key points of South American archaeology (Canby 1998:123). Cruxent discussing dates older than 5000BP for materials

found on the central Caribbean islands, which are similar in design, execution, and material to bannerstones in the Ohio River Valley, is significant. Olsen further stating Cruxent's work "may" put the artifacts over a millennium ahead of the Arawak, without disputing the estimate, challenges Rouse overtly, and leaves a hole into which an interdependent network of trade and migrations from North and Central America can easily fit. Olsen concludes his discussion of these axes by saying "I am uncomfortably aware that I have raised more questions about... lugged axes than I have answered." (Olsen 1974:191)

The most telling piece of information in Olsen's analysis is provided by way of an introduction to the region and how easy it is for archaeology to be performed if one is simply willing to get their feet wet,

I contacted my friend Edgard Clère, president of the Historical Society of Guadeloupe, and he invited me to visit their principal site at Morel. It is a large site, a few miles east of the town of Le Moule on the east coast of Grande Terre which, with the contiguous island of Basse-Terre, comprise Guadeloupe. The site lies right on the beach, and the lowest layer of Arawak occupation is now only a few inches above high tide line. In this latitude the daily tide is only about a foot, so except during storms the midden is above the action of the waves. The land has been slowly sinking for the past two thousand years, Clère said, adding that he had found artifacts on the flat rocks in sea water thirty feet or so from shore. (Olsen 1974:95)

Olsen's anecdote is informative, it punctuates excavations that have occurred in other locations, and variable water-levels provide further valuable insight into the materials and their potential dates. One such reanalysis is of materials relative to the surrounding water were those first uncovered in 1983 at the Page-Ladson Site near Tallahassee, FL. Located at the mouth of the Aucilla River where it joins the Gulf of Mexico, the site originally yielded mastodon remains and stone artifacts in sediment carbon-dated to 14,400 years (Dunbar 2006:414). Such a date would indicate a pre-Clovis site, as well as placing the site at a period when ocean levels were more than 20m lower.

This places the sinkhole between 100-150mi inland, and there was difficulty demonstrating the material had originated at the site and not further upstream. However, the site was revisited and reexamined from 2012-14 and yielded several additional insights. Radio-carbon dating of wood samples deposited contemporaneous to the sediment and artifacts, including chert bifaces, confirm the site was the origin of the butchered megafauna remains (Halligan et al. 2016:e1600379). Significant deposits from the Bølling-Allerød warm period from ~14,500-14,000BP, and the subsequent pause of the Younger Dryas stadial from ~12,500-11,500BP, confirmed previous stratigraphic analysis which suggested a hydrologic relationship between the site and overall sea rise was indicated through the karstic topography (Loper et al. 2005:86).

Such information further clarifies how the Caribbean must be understood at the time the Fewkes-Rouse Model places initial migration from the south. With water levels significantly lower, and coast lines hundreds of miles further out, the bulk of the distance between the southern tip of Florida, the Bahamas, and the northern coast of Cuba, could be traversed on foot (Fig. 8). It is difficult to say if Rouse had the water level and ocean current information available to him at the time of his primary research, but Mol did and he discussed it at length. Yet Mol defaulted to Rouse's research and conclusions despite it. Fitzpatrick certainly knew of the research into currents and ocean levels as he also quotes it extensively, but he then also defers to Rouse and Fewkes as well.

By depending on an exclusively South American model Rouse is stating semi-nomadic tribal groups traversed both the Atacama Desert and the Andes, but not the 100mi between Cancún and the western tip of Cuba, or the 100mi between Havana and Key West, let alone the 40mi between Miami and South Bimini in the Bahamas. The Bahamas is significant for several reasons. It is the site of the over 1,000-year-old Stargate canoe, and though it is currently a chain of small islands the water level of the early Holocene period was low enough it was one much larger island, and Trinidad was connected to the mainland while the Yucatan was less than 100mi from Florida.

This fact is discussed by Fitzpatrick, but he does not mention it would also mean the Bahamas was two much larger islands [a northern Island of Grand Bahama and Great Abaco, and a southern island from Bimini to nearly the West Indies]. When combined ‘Bahamania’ was less than 5mi from Cuba, 30mi from Miami Beach, and larger than Hispaniola and Puerto Rico combined (Fig. 8). With dugout canoes found in Florida that were more than enough to traverse such tiny distances before ~6,000BP. Excluding traffic from the north into the Caribbean does not hold with the geological and archaeological data available. The Stargate Canoe then cannot be excluded from a wider complex of material remains tied to the Mississippi River Valley but also potentially now submerged on the greater Bahamas Platform.

Given such information, Fitzpatrick becomes a proxy for much of the American archaeological literature surrounding the settling of the Caribbean. His discussion of the Cayman Islands south of Cuba is a good example,

Strangely, the Cayman Islands seemed to have remained undiscovered until the arrival of Europeans (Scudder and Quitmyer 1998), and there is no hard evidence for contact with North America either that seems unusual given its closeness, though many scholars have alluded to such based on geographical proximity, similarities observed in language, burial customs, agricultural practices, pottery designs, and stone artifacts, for example (Helms 1988; Marquardt 1990; Rouse 1986). (Fitzpatrick 2015:315)

The bulk of the current settlement model for the Caribbean has been based on excavation and comparison of pottery designs and stone artifacts identified in shell middens. Both the Ortoiroid and Casimiroid Complexes were named for similarities of pottery, and the Banwari Trace site in Trinidad was identified based on stone artifacts. Suggesting pottery designs and stone artifacts are an insufficient basis for demonstrating pre-Contact tribes on the Cayman Islands is nonsensical. More importantly, given the Newnans Lake canoes were an established fact a decade before Fitzpatrick

wrote that or Mol published his theory, suggesting there is no hard evidence in the region is equally baffling. Rather than incorporate the new information, Fitzpatrick defaults to quoting Fewkes again.

Here as well it is worth noting the Florida Keys and The Bahamas have the highest underwater elevations, predominantly at 3m or less. They would be some of the last locations of the Caribbean to achieve their current sparse configuration. Trinidad would have separated from the mainland several meters, and therefore years, before.

Lastly, much of these ideas are already present in non-English publications on Caribbean archaeology. It is necessary to quote the relevant section in its entirety to demonstrate the lack of doubt on the part of the researchers. It is quoted in translated English, but with the original Spanish included:

English –

Appropriation Economy Stage: Socioeconomic Formation of Pre-Tribal Ownership in the Archaic Period:

The earliest dating for these men is found in Levisa I, Mayarí, Holguín, with 5140 ± 170 years BP [adjusted by dendrochronology to 6000 years BP], in the site Mordán, Barreras, Azúa, Dominican Republic, dates of the order of 4580 ± 80 years have been obtained BP for a similar complex (Tabío 1988). In the last 15 years, several sites have been found, with similar characteristics in Central Cuba, mainly in the north of Villa Clara and north of Matanzas. Sites with a cultural component assignable to this work have also been reported in the southern province of Cienfuegos and in Fomento, Sancti Spíritus (Rodríguez Matamoros, personal communication, 2008).

The earliest reported site in the circum-Caribbean area is Banwari Trace, in Trinidad and Tobago, with 7180 ± 80 years AP; but the trousseau described there corresponds to stone in volume, not at all similar to the previous ones. Apparently, the hypothesis of early settlement to the Antilles from the south of Florida seems the most probable, at a date immediately close to 8,000-10,000 years BP, when the sea level was about 18 meters below the current and uncovered extensive portions of land in the circum-Caribbean area, which undoubtedly facilitated transit. (Carratala and Díaz 2010:11)

Original –

Etapas de la economía de apropiación. Formación económica social de los Apropiadores pretribales del período temprano

El fechado más temprano para estos hombres, se encuentra en Levisa I, Mayarí, Holguín, con 5140 ± 170 años AP (ajustado por dendrocronología a 6000 años AP), en el sitio Mordán, Barreras, Azúa, República Dominicana, se han obtenidos fechados del orden de los 4580 ± 80 años AP, para una industria similar (Tabío 1988). En los últimos 15 años, han sido encontrados varios sitios, con similares características en Cuba Central, principalmente en el norte de Villa Clara y norte de Matanzas, también se han reportado sitios con un componente cultural asignable a esta industria, en la sureña provincia de Cienfuegos y en Fomento, Sancti Spíritus (Rodríguez Matamoros,

comunicación personal, 2008).

El sitio más temprano reportado en el área circuncaribe es Banwari Trace, en Trinidad y Tobago, con 7180 ± 80 años AP; pero el ajuar allí descrito corresponde a piedra en volumen, para nada similar a los anteriores. Al parecer la hipótesis de poblamiento temprano a Las Antillas, desde el sur de La Florida, parece la más probable, en una fecha inmediatamente próxima a los 8 000-10 000 años AP, cuando el nivel del mar se encontraba unos 18 metros por debajo del actual y estaban al descubierto, extensas porciones de tierra en el área circum caribeña, lo que indudablemente facilitaba el tránsito.

The model of a southward migration from Florida as early as 10,000BP is already familiar to archaeologists and anthropologists outside of the US. It has been discussed openly for at least a decade, and they have fitted it to an overall migration scheme complete enough to be mapped and presented with the document (Fig. 9).

The Fewkes-Rouse Model of the Native migration patterns of the Americas depends on a land-based scheme which in turn depends on the settlement of the islands of the Caribbean only after the near total populating of South America (Kemp et al. 2005:37). This model demands water serve as a barrier to expansion into the West Antilles and Hispaniola. As a result, many authors whose analysis is integral to contextualizing the archaeology of the Caribbean are simply no longer able to account for the available data (Fewkes 1914; Alexander 1920; Rouse 1953; Rouse 1992; Fitzpatrick 2015). As a result, the overt isolation within the available English-language and specifically US literature becomes a hinderance to theorizing an alternative to the Northern Migration Model. Its dominance has dramatically limited investigation into other possibilities. Several potential ties between disparate locations must be inferred because they cannot be directly demonstrated. Challenging the prevailing Fewkes-Rouse Model cannot merely be a matter of speculation, but specific archaeological items on which to fit a new framework. Watercraft, bannerstones, copper, and burial sites are that foundation.

Chapter 4: Reviving an Afterthought

4.1 Unanswered Genetic Questions

Much DNA analysis of the Caribbean population has stayed limited to the Gulf Coast tribes and has not expanded much beyond Florida to the North, and Venezuela to the South. However, one population further north has been extensively studied, this is the Gullah population. Due to that research, their genetic data has helped to highlight just how little genetic research has been performed to identify overall population movement within the Caribbean. They have been extensively studied because of their cultural exclusivity, but the genetic information they have provided has called into question the dependability of the South to North settlement pattern of the Caribbean.

The populations of the Caribbean are highly genetically diverse. Beginning with the utilization of the Native population for slave labor, which was eventually replaced by European slaves, which were eventually supplanted by African slaves, and concluding with laborers from the Indian sub-continent and SE Asia. This has resulted in the ancestry of the Caribbean collectively being difficult to summarize but it has also allowed assumptions like that of Fewkes that pre-Contact tribal identity has been erased from the region. One study found the identified Afro-Brazilian population of São Paulo was 26% African, 62% European, and 12% Amerindian. But some populations such as the Gullah of the Southern United States has maintained as high as a 96% African population (Brucato, et al 2010:314).

Their isolation is why they can provide insight. The Gullah population lives predominantly off the coast of South Carolina, which is a significant distance from the bulk of Caribbean islands. Comparatively speaking, the Garifuna of Southern Central and Northern South America are quite close to the Caribbean islands. Yet both originated with the same slave population introduced to the Caribbean. Because of this diversity and separate locations, it has been possible to determine through the commonalities of Y-chromosome and mtDNA, the dominant haplogroupings of the

regions relative to the Gullah, and to infer locational shifts between populations for comparison for how the Gullah may have maintained admixture independence while the Garifuna did not.

To establish the differences between the Gullah and the remaining Caribbean populations it is first necessary to define the general haplogroup trends throughout the Caribbean islands to exclude those general trends. Once excluded it became possible to identify if the Gullah have remained as a stable group independent of the Caribbean by geography or if they sexually selected among populations which resemble their own and incidentally maintained a predominantly African group. That same information was then used, along with other limited studies, to determine if there are Amerindian populations which remain in the Caribbean and if they could have employed similar strategies to maintain genetic lineage.

First, mitochondrial DNA [mtDNA] analysis can take several forms. One technique which has met with success is focusing on “hypervariable segments I and II of the D-loop, [which] has several general features that make it valuable for studying closely related populations” (McLean 2003:147-148). Also useful for analysis is uniparental lineages traced through non-recombinant Y chromosome [NRY] haplotyping. There have been large numbers of Africans typed through that system and even updated to recently include the Ivory Coast and Benin, allowing the information to be more precise when comparing to the Gullah who are no longer in direct contact with their African ancestor populations. While many studies focused on precise questions such as prevalence of Sickle Cell Disease, they were comparative studies between populations in African and the Caribbean for inter-tribal information, and intra-tribal data (Ndugwa et al. 2014). Which is why the information is useful here.

Such testing and comparison are necessary because cultural information alone is not useful for determining the lineage of predominantly dark-skinned presumptively Afro-descended populations in the Caribbean. As the Gullah demonstrate, their culture is independent from their

region, but their mtDNA is not. The 'Black Carib' or Garifuna of Guatemala are the other primary example of genetic information clarifying cultural stereotypes. Which means, tribal populations with a strong genetic tie to pre-contact lineages themselves become groups which can be compared to other populations to identify cross-relation.

Both the Gullah and Garifuna were established by analysis, as early as 1975, to have a significantly higher admixture of Amerindian and European erythrocyte antigens, with only 70% of their heritage being directly identifiable as African (Crawford 1981:87). Those numbers have since been refined, but it demonstrates they were known to have ties to Native tribal groups for decades. Authors such as Thomas Young in 1947 and E. G. Squire—writing under the pseudonym Samuel Bard in 1965—recorded the Black Caribs as having characteristically black and curly African hair and dark complexions, which set them apart from their lighter-skinned counterparts. With 1/5th of their antigens being demonstrably non-African despite such a description, their ascribed characteristics did not collectively mesh with their actual biological information. In other words, it was well known at the time Rouse was first defending his theory against Steward that overt phenotypic analysis is unreliable for establishing lineal descent and therefore automatically excluding local populations from possessing pre-contact information.

It also means sexual selection based on predominantly phenotypic characteristics alone would not have reliably preserved the Gullah's significantly higher African genetic profile. In fact, knowing the populations are interrelated means even slave-descended individuals might have preserved pre-contact cultural information from a parent or grandparent along with preserving that ancestor's genetic data and geography was the more significant factor in their homogeneity.

However, there has been a persistent theory among many researchers that both the Gullah and Garifuna populations color selection relative to neighboring populations has resulted in external forced homogeneity which would exclude them from possessing cultural knowledge. Originally

consisting of fleeing slaves who interbred with native populations the Garifuna have been present for hundreds of years and experienced forced homogeneity, so the theory goes, as their Spanish language excludes them from the wider Black population, and their Black color excludes them from the Latino/Hispanic population (Johnson 2015:75). That theory is subverted by the fact they predominantly speak Spanish, indicating a cultural desire to integrate with the local population.

Comparatively, while the Gullah population is also descended from fleeing slaves, it was established on the coastal islands of South Carolina and Georgia and did not attempt to make significant inroads to the general population. A clear indicator of this cultural isolation is their language is not related to the dominant English, Spanish, or various native languages of the region but is instead “Creole” and related to the Krio of Sierra Leone (Hair 1965:80).

It can be concluded from a comparison between the Gullah and Garifuna that culturally there can be both internal and external stressors to maintain homogeneity. Yet when tested for admixture the populations both still have contributions from neighboring populations. The fact the Garifuna are less physically distant from their neighbors than the Gullah further suggests it is more physical barriers than cultural preventing integration. Also, the general admixture of Native contribution to predominantly African-descended populations may be due to the simple fact that at the beginning of the slave trade labor was sexually biased. Males were favored for agricultural and industrial labor while females were preferred for domestic tasks (Higman 1984:24). This artificial sexual segregation may have resulted in an early inclusion of admixture to the Native or European populations—‘house slaves’ being forced to have children with their owners, field slaves being mated with captured Natives—which was then resolved in later generations and did not recur. In short, what genes they carry may be less dependent on who they chose to pair with than who their ancestors were forced to pair with.

Through comparison between mtDNA and NRY it was possible to establish if there is sex-biased gene flow among those populations. Which then determined if it is possible to roughly establish continuous gene flow over subsequent generations, or if that can be clearly excluded from the available data. Studies have been performed on the Gullah population to determine their rough groupings relative to neighboring populations. Esteban Parra has been the lead on several of these examinations and the findings are generally similar.

We studied the pattern of pairwise allelic associations between the FY locus and the nine other autosomal markers in our samples. In the combined sample from the Low Country (N = 548), a high level of linkage disequilibrium was observed between the linked markers, FY and AT3. Additionally, significant associations were also detected between FY and 4 of the 8 unlinked markers, suggesting the existence of significant genetic structure in this population. A continuous gene flow model of admixture could explain the observed pattern of genetic structure. (Parra et al. 2001:18)

The establishment of a possibility for consistent gene-flow over time into the Gullah population, an ongoing relationship between Native and African groups, then requires establishing potential relationships between other populations in the Caribbean which might clarify a pattern or indicate an area of influence. Several studies have confirmed there is a high degree of admixture between Caribbean populations of both European and Native lineages.

...Genetic diversity using mitochondrial and Y-chromosome markers for 501 individuals from Dominica, Grenada, Jamaica, St. Kitts, St. Lucia, St. Thomas, St. Vincent, and Trinidad... [showed] nearly 10% of the individuals belonged to a non-African mitochondrial haplogroup. In contrast, Y-chromosome admixture estimates showed that there was nearly 30% European contribution to these Caribbean populations. (Torres et al. 2007:782)

Consistent with those findings was the E.J. Parra AJPA report which found in the Gullah population, “With respect to the Native American influence, there is evidence of female Native American contribution in these southeast African-American populations. In the Gullah, we

observed two individuals with haplogroup B, and in the Low Country all the Native American haplogroups (A, B, C, and D) were present... (Parra et al. 2001:23)”

This genetic inclusion is noteworthy as, unlike the Mexican Native population which was significantly larger following first contact, the island populations of Arawak, Taíno, and the South Eastern Woodland Tribes of the US had extreme population drops. Some have speculated the overall drop in child-bearing women was as high as 50% on the mainland (O’Fallon 2011:20444), but as high as 90% for the populations of Cuba and Haiti/Dominican Republic (Cook 1998:22). A Taíno or Arawakian contribution to contemporary Caribbean populations, specifically cultural isolates such as the Gullah or Garifuna through mtDNA, indicates there was a high degree of interbreeding between island groups almost immediately upon contact. This would be difficult if those same populations were predominantly extinct or not even present at the time the founding Garifuna and Gullah populations were arriving. Yet precisely such a relationship has been established by Parra and is discussed in a very specific way in his article,

The West African contribution was higher around the Gulf Coast (Campeche, Yucatan, Tabasco, and Veracruz) and areas of southwest Mexico (Oaxaca, Guerrero), regions where the largest Afro-Mexican communities in Mexico are located today. In the Caribbean Colonies (Cuba and Puerto Rico), the Native American population was far smaller than in Mexico and was decimated by slavery and disease soon after first contact with the Europeans. Nevertheless, the rate of admixture during the initial phases of the colonization was high enough to result in an appreciable genetic contribution from the Arawaks (Taíno) and Caribs, the original inhabitants of the Hispanic Caribbean. (Parra 2007:3)

That Parra expands his summary to include Cuba and Tabasco is also significant as collectively the potential region he has created fills the bulk of the Caribbean from Florida to the north, Puerto Rico to the West, and Guatemala to the South. Since the Gullah population is predominantly off the coast of South Carolina and Georgia, a clear genetic line can be traced from the Tuscarora Tribal regions of the now United States, the Zapotec regions of Mexico, the Kuna

region of southern Central America and the Taíno inhabited islands. It suggests, rather than displacing the Native population, the Gullah and Garifuna were combining. Parra's conclusions are at least partially supported by a genetic comparison performed on Puerto Rican citizens regarding Native, African, and European genetic markers.

The recent development of high-density SNP markers now allows for accurate ancestry estimation on a global, genome-wide scale.¹¹ This allows us to revisit the question of ancestral selection in admixed populations. To do so, we employ a recently proposed statistical approach for locus-by-locus ancestry estimation... 192 Puerto Ricans were recruited from six primary-care clinics in Puerto Rico... All study participants were aged 8–40 years. Individuals of European (from the United States), West African (from Nigeria), and Native American (Pima and Mayan) descent were included, to approximate the ancestral populations... Averaged over 192 Puerto Ricans, the genome-wide mean estimated European ancestry was .67, African ancestry was .18, and Native American ancestry was .15. (Hua 2007:628)

As there is clearly a genetic relationship between the present-day Puerto Rican population and the present-day Maya, and present-day Nigerians, it should be possible to determine the degree of relationship in mitochondrial DNA between those groups. Precisely such a comparison was performed by National Geographic's Genographic Project and published in the *American Journal of Physical Anthropology*.

The study concluded that, while agreeing with a Martínez-Cruzado et al. study from 2001 that over 60% of those Puerto Ricans who reported Native lineage carried Taíno ancestry, none of their Y-chromosome information was Native (Vilar 2014:352). Such a lopsided result shows the Amerindian contribution to the Puerto Rican population was likely entirely women. This is consistent with the severe reduction in population indicated by other sources, and the policy of labor segregation and the method of resettlement utilized by the Spanish where, "During the early years of conquest and colonization only Spanish males were permitted to sail to the mainland of the New

World.” (Cotton 1988:82) However, it also proved there was a significant pre-contact Amerindian genetic presence within existing populations.

Examined apart from the non-Native information, Vilar found “Three A2 sublineages were unique to the Greater Antilles, one of which was similar to Mesoamerican types, while C1b haplogroups showed links to South America, suggesting that people reached the island from the two distinct continental source areas” (Vilar 2014:352) With only that data, the genetic information excludes Fewkes entirely and calls into question several key assumptions of Rouse. However, studies of the non-Native contribution to Caribbean populations have yielded significantly more mixed results and have caused researchers to assert the question of origin and migration are even less settled than might be supposed,

In the case of Puerto Ricans, the only way that one can reconcile greater African ancestry on the X chromosome vs. what would be expected on mitochondrial data would be through transmission of X chromosomes independent of mitochondrial transmission, which is plausible biologically only via males. Caution, however, should be exercised before considering such conclusions as concrete; a larger mtDNA sample would be necessary compared with X chromosomes to have similar confidence that a cohort would accurately reflect the presumed diversity of ancestry in the population as a whole. (Katarzyna et al. 2010:162)

Relating to the other Caribbean populations the Katarzyna study results are complex enough they eventually conclude, “we find subtle but reproducible differences in subcontinental ancestry among Hispanic/Latino individuals, suggesting that even a three-way admixture model may not be sufficient to accurately model the dynamic genetic history of these populations.” (Katarzyna et al. 2010:163)

The Native populations of the Caribbean islands are demonstrably related to Mesoamerica and South America throughout their history and before introduction of slave populations from Africa. The Gullah and Garifuna prove that there is a direct relationship between Mesoamerica and

the Caribbean. Now data from Puerto Rico has caused researchers to hesitate limiting themselves to a three-way migration model as they are unsure if it would sufficiently account for the genetic markers they found.

Moreover, the populations of the Gullah and the population of Puerto Rico contain mtDNA Haplogroup A, a haplogroup not found in the normally considered South American ancestral populations of the Caribbean such as the Yanomamo (Martínez-Cruzado et al. 2001). Excluding the Garifuna momentarily, the Gullah are not suggested to have ever established a foothold in South America, their culture is distinct from the Garifuna in both not speaking Spanish and having a significantly smaller admixture to their African genetic profile, yet the Gullah and the Garifuna share a haplogroup not normally found in South America. This is cause for reconsideration of any migration model of a Caribbean population originating exclusively from the South American coast.

We analyzed admixture in samples of six different African-American populations from South Carolina: Gullah-speaking Sea Islanders in coastal South Carolina, residents of four counties in the “Low Country” (Berkeley, Charleston, Colleton, and Dorchester), and persons living in the city of Columbia, located in central South Carolina. We used a battery of highly informative autosomal, mtDNA, and Y-chromosome markers... The sample from the Low Country [Gullah] is composed entirely of women, so in this case it was not possible to test for male-specific gene flow. With respect to the Native American influence, there is evidence of female Native American contribution in these southeast African-American populations. In the Gullah, we observed two individuals with haplogroup B, and in the Low Country all the Native American haplogroups (A, B, C, and D) were present, although at very low frequencies. In Columbia, we found one Native American A haplogroup. (Parra 2001:23)

The maternal presence of haplogroup A within an extremely isolated population of non-Native individuals whose collective population contains an average 4% admixture, coupled with the research of Katarzyna and others, draws a picture of Native tribal groups who were interrelated to both the North and South to such an extent their genetic contributions continue through to the present. They share haplogroupings with highly homogenous groups such as the Gullah, and

haplogroupings with extremely heterogeneous groups such as the population of Puerto Rico. The potential for founder effect genetic results among the remaining dominant Taíno groups has also been acknowledged (Lalueza-Fox 2001:137), and yet the potential for lost data which would require broadening the sample sizes to include groups outside the immediate area of the Gulf Coast has only barely been acknowledged and not adequately performed.

With the information available it is possible to conclude there was likely partial to substantial genetic flow between the tribal populations of the southern and eastern continents of North America, the island populations of the Arawakian Tribes, and the Northern coastal tribes of South America before, during, and after primary European contact with the Americas in 1492AD. This genetic flow did not cease with the tremendous influx of African descended populations during the slave trade, or the tremendous reduction in Native populations due to disease and warfare.

Yet, the primary Native mtDNA haplotypes—designated A, B, C, D, and X—are repeatedly discussed relative to the Caribbean almost dismissively. As recently as 2005 David Kemp and his colleagues asserted,

... A significant amount of haplogroup A has been reported in admixture populations from Puerto Rico (Martínez-Cruzado et al. 2000),” but immediately explains, “The clustering of these two populations is consistent with the hypothesis the Caribbean was populated from South America (Lalueza-Fox et al. 2001), but it cannot rule out the possibility of some Caribbean founders originating in Mesoamerica (Martínez-Cruzado et al. 2001)”. (Kemp 2005:36-37)

Kemp’s characterization of the findings of Martínez-Cruzado et al. is misleading because it defaults to Rouse’s assumptions. In their abstract the researchers were much more specific and again showed that a non-South American haplogroup had been found repeatedly. In fact, much of the basis for the current migratory model is ignoring biological realities,

The sample set collected from people who claimed to have a maternal ancestor with Native American physiognomic traits had a statistically significant higher frequency of Native American mtDNAs (69.6%) than did the unbiased sample set (52.6%). This higher frequency suggests that, despite the fact that the native Taíno culture has been extinct for centuries, the Taíno contribution to the current population is considerable and some of the Taíno physiognomic traits are still present. Native American haplogroup frequency analysis shows a highly structured distribution, suggesting that the contribution of Native Americans foreign to Puerto Rico is minimal. Haplogroups A and C cover 56.0% and 35.6% of the Native American mtDNAs, respectively. No haplogroup D mtDNAs were found. Most of the linguistic, biological, and cultural evidence suggests that the Ceramic culture of the Taínos originated in or close to the Yanomama territory in the Amazon. However, the absence of haplogroup A in the Yanomami suggests that the Yanomami are not the only Taíno ancestors. (Martínez-Cruzado et al. 2001:491)

These contradictions require further research. With a population having been so significantly reduced following primary European contact, it is not surprising some less predominant haplogroups would have somewhat or completely disappeared and their antecedents on the mainland—either north or south—would not have reestablished themselves within the mtDNA of the current inhabitants. At nearly 70% accuracy rate in reported Native ancestry by Puerto Ricans, DNA analysis should move further afield in its comparisons. It is also likely with current technology the molecules themselves hold information not yet available through present methods.

When expanding their initial 2012 study of Caribbean tribal genetics, Torres, Vilar, and Schurr found even the southernmost populations of Trinidad who held Native mtDNA could not be readily affiliated to a specific population or exclusively to South America. They state, “the indigenous Caribbean populations were somewhat distant from each other, with several South American populations interspersed between them. In this regard, the Santa Rosa First Peoples’ Community Trinidadians appeared closer to some Brazilian, Colombian, and Central American populations, whereas the Vincentian Garifuna showed greater affinities with Colombian and a different set of Brazilian populations” (Torres 2015:8). These results were found after eliminating known African and European groups from their sample. They conclude by saying even with a

sample size of less than 100 individuals in their study, they could not exclude a MesoAmerican relationship for pre-contact indigenous groups in the southern Caribbean (Torres 2015:21).

Coupled with the previous Vilar analysis it may be possible the ‘missing’ contribution Martínez-Cruzado alludes to is the Y-chromosome now lost following Spanish conquest. It’s equally possible they’re to be found among the Seminole, there simply is not enough data to draw any meaningful conclusions beyond knowing the Caribbean was not nearly as isolated as Rouse would have it believed, and Fewkes’ Taíno extinction is wholly unsupported by the available data. Each of these researchers stated they are having to expand rather than contract their list of potential contributing populations. Devoid of genealogical and historical context, DNA is highly unreliable for establishing an independent timeline of events or specifically cultural ties (Marks 2017:107), so it is not used for that purpose here. What it can confirm is a population of slave-descended Africans are present on a series of islands where copper material from the Great Lakes and dugout canoes from Florida intersect, and who are genetically related to tribes which were once present throughout the Caribbean but were not present in South America, at the time those fleeing slaves first paired with those Natives. Their genetics also suggest they had ongoing contact which may well have facilitated cultural transmission, but that is not why their genetics are so significant. Their DNA and haplogroupings are discussed in detail in this section to establish direct biological tie between populations which would not have been possible in the exclusively northward migration model, and researchers who have attempted to limit the scope of their comparisons to an exclusively Fewkes-Rouse Model specifically state they couldn’t reconcile the results.

4.2 Pan-Caribbean Economic Evidence

Originally rising to prominence ~3,200 before present, the Olmec were one of the first organized civilizations of Central America, including a clearly stratified hierarchy with kings who

ruled from various capitals (Diehl 2004). Olmec sites are identifiable by a variety of stone figurines, jade burial masks, cities organized around a central square, and colossal carved head-statues (Pool 2007).

The Olmec site of Tres Zapotes in the southern region of Veracruz was a more northern city in their civilization and persisted as an economic hub after the primary Olmec civilization fell into decline. Archaeologist Christopher Pool with the University of Kentucky has theorized this survival was due to the abrupt collapse of the southern capital of La Venta and the leadership of Tres Zapotes subsequently adopting a more egalitarian wealth structure to preserve their economy (Pool and Laughlin 2015).

Pool noted in an article for *Archaeology Magazine* that Tres Zapotes represented a significant departure from previous Olmec cities in several ways including having more than one city square. The differences are significant enough Brigham Young University archaeologist John Clark is quoted in the same article as considering the city “epi-Olmec” (Wade 2017:27). The article continues with Pool stating his original conclusion was it represented several powerful families vying for power, shifting the ceremonial center between them, but the radiocarbon dates and the style of the various ceramics were all from the same period suggesting all areas of the city were occupied simultaneously.

The materials were also of the same quality throughout, indicating no group had significantly more wealth than another. He is quick to say this does not prove Tres Zapotes was a democracy, only that it clearly was not a monarchy in the same way as all the other capitals had been. Purdue University anthropologist Richard Blanton is quoted as well, noting that decline of the nobility frequently follows economic collapse (Wade 2017:28).

Blanton is further quoted to say declines in nobility are also indicated in shifts of art form where individual rulers are diminished and the idea of leadership itself gains prominence in temples and iconography. Pool confirms precisely that depersonalized art is present in Tres Zapotes. In

neither the *Archaeology* article or the essay with Laughlin does Pool speculate a reason for the dramatic change, only that it clearly occurred. This dramatic shift in Olmec economy and civic engagement following the collapse of a capital further east and south at 2,400BP is significant.

In the Ortoiroid-Casimiroid Model of Caribbean settlement, the culture group originates in Belize at ~7,000BP and moves slowly northward and westward to cross Cuba and Hispaniola between 5,000-3,000BP, with almost no contact to either North or Central America. This original population was slowly supplanted by the final Ortoiroid population which became the ancestors of the cultures of the Greater Antilles. The evidence of these dates and origin is the first established site of Banwari Trace in Trinidad at ~7,000BP. It is significant as it places an extant population in the north-central Caribbean overlapping with a southern group, before the rise of the Olmec and continuing into the Olmec period. Most importantly, the Ortoiroid population is generally stated to have disappeared by 2,400BP (Saunders 2005). Placing a primary Central American empire, on the Yucatan Peninsula, which was experiencing a complete economic shift at a time when a dramatic artistic and cultural shift is occurring in the Caribbean. With copper appearing from the Great Lakes as far south as the Gulf Coast, and dugout canoes being manufactured consistently in Florida, a Northeastern population already settled in the Caribbean becomes a possibility.

The conclusion such events are unrelated would require substantial evidence. At this point it should be noted, a final reason the Fewkes-Rouse Model has been questioned is the starting Casimiroid population has been variously reported as a group with no formal pottery style to transition into Ortoiroid, and one which Rouse never clearly defined. University of Massachusetts anthropologist James Delle notes this of Rouse's *The Taíno* in a review for *Archaeology Bulletin* in 1993, discussing how such an unresolved question further compounds the confusion of his migration model.

4.3 Promising Areas of Future Research

There are other areas of research which may modify the perception of the northern contribution even further than the Cuban archaeologists currently argue. Analysis of food plants in Polynesia have suggested extensive boat-based travel was well known and utilized by populations throughout the Gulf Coast and Polynesia for thousands of years. In attempting to identify genetic abnormalities and lexical similarities between various species of sweet potatoes throughout New Zealand, Hawaii, and Easter Island, researchers found contact between those populations and the Americas.

This contact was potentially as far north as Colombia and would have occurred semi-regularly at least ~1500BP (Roullier et al. 2016). This does not speak directly to migratory patterns of the Caribbean, but does further demonstrate existing boat technology was already maintaining trade networks with distances hundreds of times those of any Gulf location, at a time many US scholars argue The Bahamas and Jamaica were still being established and the Caymans had yet to support a population at all.

Another potential area of research is comparisons of artistic complexes. Isla de la Juventud off the southern coast of Cuba contains numerous ideograms (Fig. 10) which have been attributed to a variety of cultural complexes from the Ciboney tribal groups and Floridians to the proto-Arawak of South America (Hayward et al. 2009:24). Though the Ciboney themselves are of disputed origin, in most cases detailed analysis has identified formations which suggest a lunar calendar and the lobed crosses of southern North American tribal art (Hayward et al. 2009:25). It may also be charts of local currents and eddies to aid navigation, or something else entirely. Regardless, it is clearly deliberate and detailed and deserves no less scrutiny than art on the continent.

With further analysis it may be possible to identify correspondences to astronomical data. This could be used to more accurately date those ideograms and identify potential uses as has been

done with other ancient locations such as Stonehenge (Ruggles 1999:6) or Teotihuacan (Šprajc 2018). Here too the language barrier and a lack of interest from US archaeology have been the primary roadblock. This issue is well enough known among the Caribbean anthropological community that multi-lingual researchers discuss it openly in their texts. “While archaeological interpretation is, by its very nature, provisional and therefore subject to continuous revisions, the general lack of Cuban-North American archaeological interchange over the past few decades has been particularly problematic for Cuban researchers attempting to reconcile pre-revolutionary models—including those developed by North Americans—with mounting contradictory archaeological data.” (Curet et al. 2005:88)

Similarly, underwater archaeology has made significant strides in establishing coastal migration patterns and uncovering cenote burials while, as demonstrated, being mostly ignored for modifying established models of migration overall. Those techniques will hopefully further expand into the Caribbean and allow more detailed analysis of currently submerged sites already identified, and discovery of new locations.

Historical Analogy

Historical comparisons may also be informative. Alexander suggests that the Caribbean represents an inversion of the Mediterranean. His conclusions were flawed and therefore the Mediterranean analogy deserves reexamination. Populations settling the Caribbean earlier than 8,000BP conforms to the model of Neolithic European migration such as the Cardium Pottery Culture where nearby land is settled despite, or even aided by, nearby bodies of water.

Notably research into carbon dates for the Cardium culture in 2001 used the Pacific Islands as an analogy as was done by the food plant analysis cited previously in this essay (Zilhão 2001:14181). That Cardium analysis concluded the expansion rate occurred regardless of population

density. This further contradicts the Fitzpatrick, Rouse, Mol, and Fewkes model of slow progression throughout the Caribbean as islands became densely populated,

The 2σ range for the Cisterna dates (5477–5321 cal B.C.), for instance, falls inside that for the Pendimoun burial (5613–5316 cal B.C.), which is in turn virtually identical to that for La Falguera (5616–5321 cal B.C.). Therefore, the rapidity of spread mentioned above for Iberia applies to the dispersal of the Cardial and related cultures as a whole: 2,000 km from the gulf of Genoa to the estuary of the Mondego in probably no more than 100–200 years at most, that is, at a rate of at least 10–20 km/year... In fact, under reasonable estimates of annual population growth, the observed rate of spread across such a large area requires the operation of long distance relocation episodes. It also implies such low population densities across the whole of the settled range that large voids must be postulated between nodes of the farmers' settlement network. (Zilhão 2001:14184)

This is not to suggest the Zilhão analysis is a direct corollary. It was attempting to resolve discrepancies in domesticated animal and plant locations and not watercraft, for example, but the reality of population expansion not being directly tied to population density or convenience is relevant. As cited in this essay, Kemp, Steward, Rivera-Collazo, and others have repeatedly challenged the assertion water was a barrier of last resort utilized primarily to relieve population density. If the population could move as swiftly across water as it did across land and irrespective of overall density, specifically with voids shown to naturally appear between settlements, it resolves several inconsistencies in Rouse's critique of Steward and the overall southward movement of the proto-Amerindian population. It also opens new areas of research by recalculating maximum distances for direct contact.

Additionally, Zilhão was focused on food procurement rather than overall diet. Though several archaeological conclusions regarding tribal migration have been drawn based on Caribbean shell middens, giving an artificial consistency to conclusions despite over a century of additional research (Fewkes 1914; Fitzpatrick 2015), very few studies have been performed on the cultural history of fishing and related traditions among the current indigenous island populations. The few exceptions have found stylistically comparable materials beyond pottery including fishhooks crafted

from turtle shells, use of fingerlines from dug-out canoes, wooden lures, and fishpots for both small stream fishing and large sea fishing (Price 1966). Kalinago populations, previously called the Island Carib, “either had spear-fishing already, or took to it easily, and by the 1660s were using them both for shark and turtle fishing, in tandem with netting sharks with quilts and capturing mating turtles on the beach or digging up turtle eggs” (Labat 1742). Examinations of zoological remains could be a useful addition to current theories.

Chapter 5: The Lonely North

It is telling that so many of the early researchers defaulted to Spanish chroniclers when gaps appeared in their data. The narrative of the Discovered New World is compelling, but it is also shortsighted. The Caribbean tribes should not be held to account for what the Spanish decided to record of them. Caribbean and North American burials, and canoes able to traverse the distances between various islands and the mainland, combine with the Cuban and European findings to further contradict the Northward Ortoiroid-Casimiroid Model. Pottery from the Ortoiroid and Casimiroid populations verify habitation by those groups, but its absence does not confirm an absence of any other population whose materials could still exist under the current waterline or in accessible but unexplored locations. Yet oddly, rather than using the comparison techniques honed on Caribbean pottery and lithic remains to discuss a potential ‘canoe complex’, several authors—Fitzpatrick and Rouse in particular—have pointedly excluded such inquiry.

A comprehensive review of all inconsistencies in the current literature which could be potentially resolved is beyond the scope of this text, as a result it is not possible to propose a detailed migration model to replace the Northward Model. However, that is not the intent. It is enough to say the Northward Model cannot account for existing flaws which have perpetuated within US archaeology. Flaws which should not continue to hamstring investigations and theories

regarding pre-Archaic migration patterns. Excluding a southern path into the Caribbean from what would become the Northeastern Woodland tribes is not supported by the available information.

The geography, archaeology, genetics, and sociocultural data of the region cannot exclude a southward migration from North America at or before the Early Archaic. It does not suggest the Ortoiroid-Casimiroid populations did not exist or were misidentified, it confirms the Caribbean cannot be restricted to only an Ortoiroid-Casimiroid population based on pottery from known inland middens leading to the inference of isolated atypical burials. Tribes traveling two and from Hawaii deserve more than a single hermetically sealed series of migrations.

The northern tribes possessed the technology and seafaring expertise for the journey, and they had the material culture to support regular transit to the Caribbean, at least 7,000yrs before the arrival of Columbus. That technological and cultural sophistication deserves scrutiny. It is an equally viable conclusion relative to the substantial times between Ortoiroid-Casimiroid settlement of successive islands—nearly 2000 years between the Banwari Trace culture of Trinidad and the Coroso culture of Puerto Rico—to suggest a large and existing population which the Ortoiroid-Casimiroid population slowly grew from or migrated and integrated to.

Rather than a peripheral location only settled as an afterthought and now home to little more than relics of an extinct people, the Caribbean could be a primary location of population movement and dispersal throughout the Archaic. These islands should not persist in the literature as a series of cultural isolates continuously reinventing the dugout canoe, rediscovering each island of the Lesser and then Greater Antilles as they occasionally ventured beyond sight of their house. Rather, evidence suggests the Caribbean has been and continues to be a tapestry of interconnected groups influencing and affecting one another throughout the Mississippi, Gulf Coast, Caribbean Sea, and Orinoco. Charlotte Gower was correct, the linkages between the Caribbean and Florida are too great to be easily dismissed, and the amount of evidence has grown since she first suggested it.

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Figures



Stargate canoe - South San Andros Island - Bahamas - photo credit Richard Callaghan
1a. (top) – excavation but before preservation, 2a. (bottom) – after preservation



2 – Long Lake Canoe displayed at Western Hennepin County Pioneer Assoc. Museum Long Lake, MN



3 – Assumption Parish Canoe partially excavated – credit Jamie Ponville, The Louisiana Advocate



4a. – Initial Newnans Lake Excavation Canoe 2001, Florida Museum of Natural History



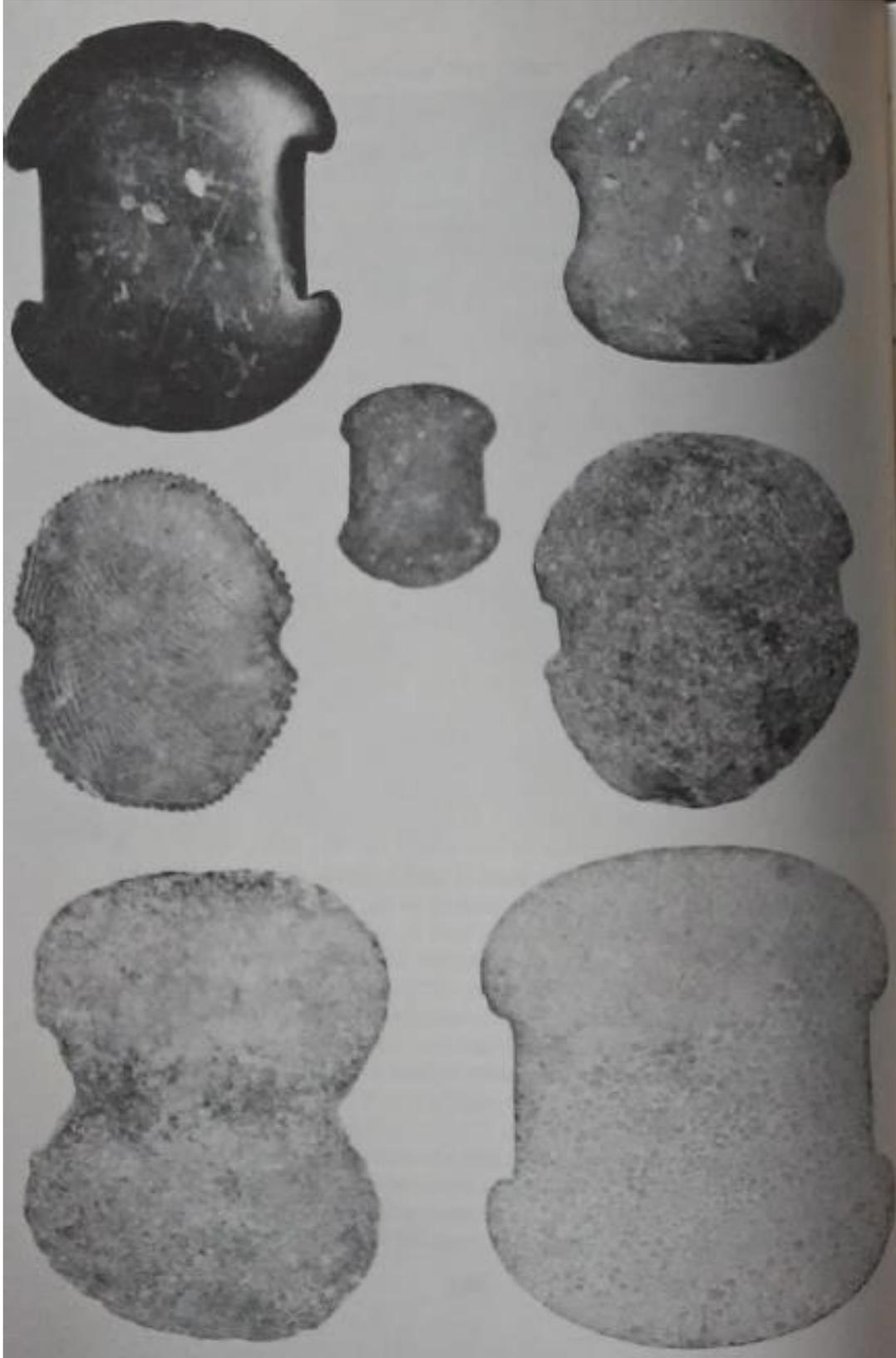
4b & 4c – Putnam Hall, FL Excavation 2012, Florida Museum of Natural History



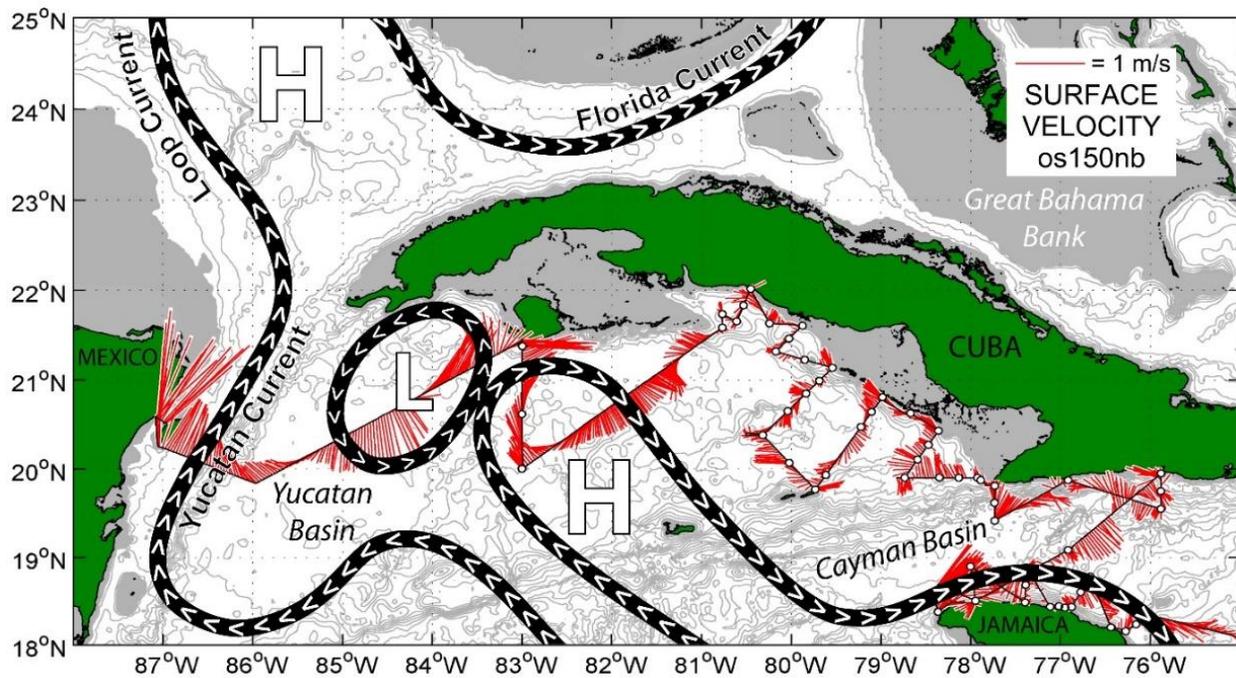
5 – Caribbean migration model and some ceramic style zones as drafted by Fitzpatrick and Joshua Keene. Fitzpatrick states, “bold are years before present and indicate the earliest known dates or ranges for settlement” (Fitzpatrick 2015:307)



6a – Photos included with article “Set in Stone” (Powell 2017:44-48)



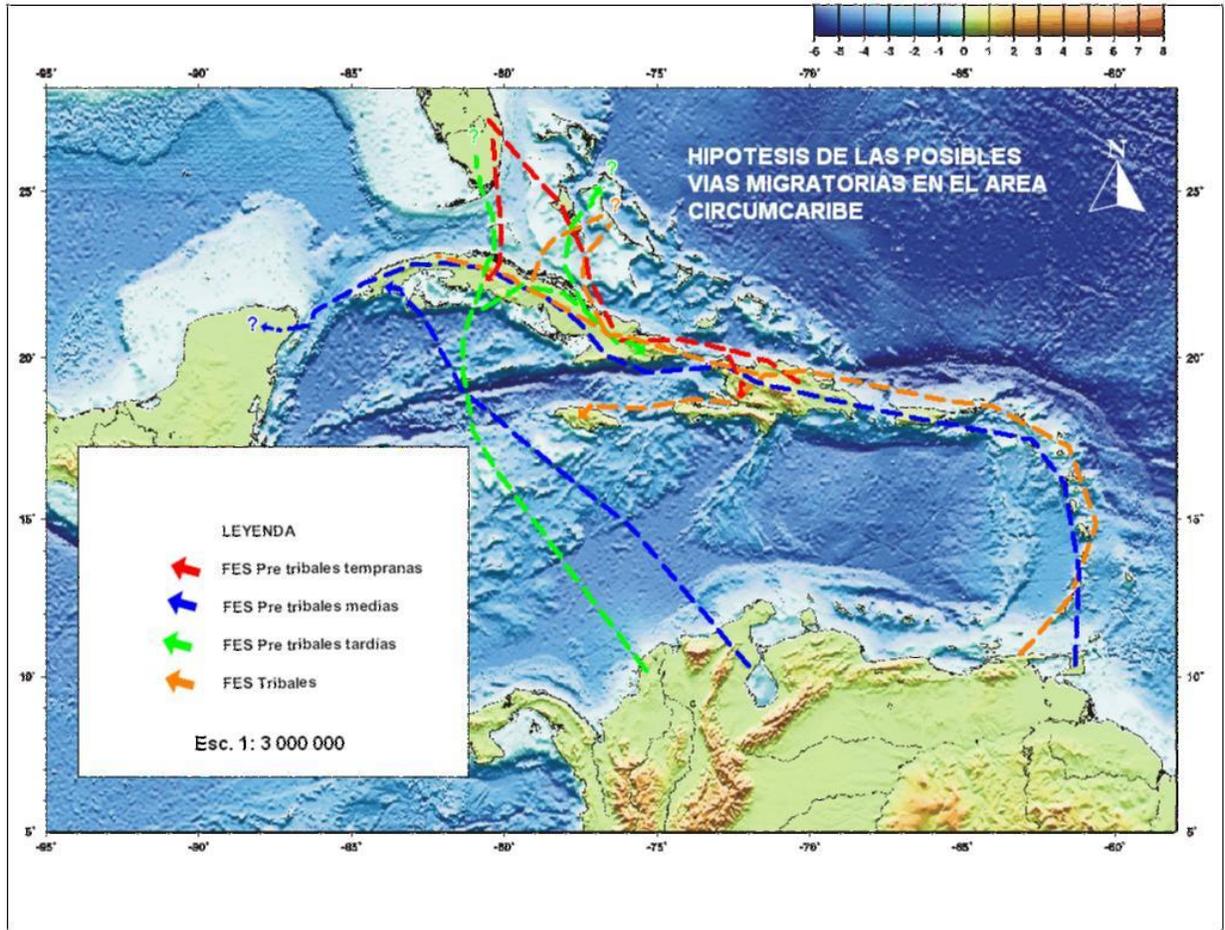
6b – Listed by Olsen as “Fig 77. Ciboney double-bitted axes (Haiti)” (Olsen 1974:188)



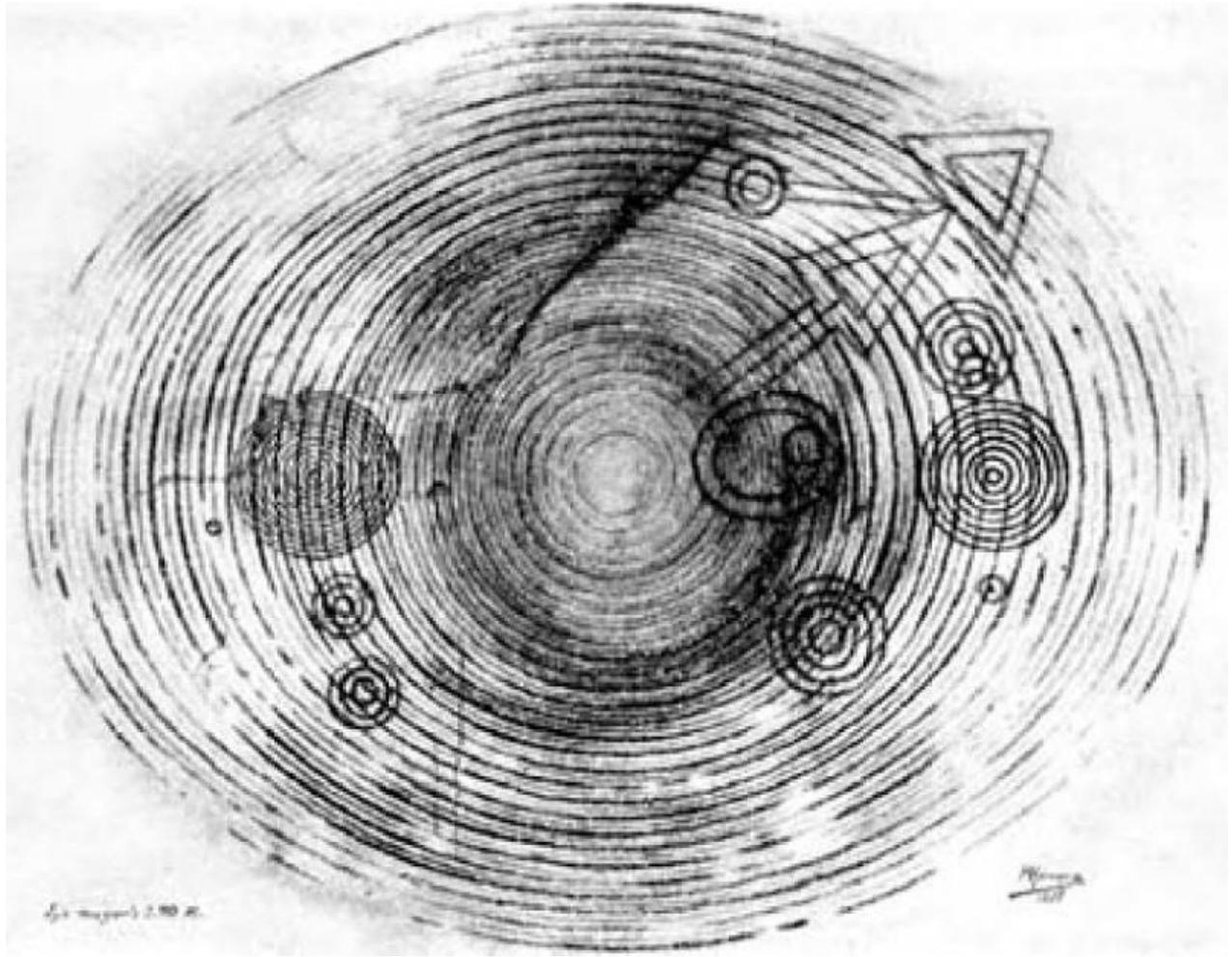
7 – This map shows surface current velocity vectors (in red) measured with the NOAA Ship Nancy Foster's hull-mounted acoustic Doppler current profiler (ADCP) between April 26 - May 5, 2015. A schematic of the currents is also presented (based on satellite altimetry for the period).



8 – The Bahamas relative to the Florida and Cuba at current ocean levels and 3m lowered



9 – Migration to Cuba ~8,000-10,000BP from S. America, Yucatan, and Florida (Carratala & Díaz 2010:10)



10 – Drawing of the “Motivo Central” of Cueva 1, Puenta del Este, Isla de Juventud from Herrera Fritot’s report in 1939 (Curet et al. 2005:76)