

**MANIOC DETHRONED AND MAIZE TRIUMPHANT: INTERPRETATIONS ON THE  
ETHNOHISTORY AND ARCHAEOLOGY OF THE BAHAMAS (WITH SUNDRY NOTES  
ON RELATIONS OF PRODUCTION)**

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*Traditionally, the literature on the ethnohistory and archaeology of the Bahamas has emphasized the role of manioc in the prehistory of the islands; theories have been proposed regarding the settlement of the archipelago based upon this premise. Evidence is set forth to show that the ethnohistoric and archaeological sources for the Bahamas argue for manioc not being all that important and also point in the direction of maize as a major staple. This agrees with the historical sources as to the relative importance of manioc and maize locally. Additional ethnographic material elucidates the relations of production in Bahamian prehistory, particularly in connection with the cultivation of maize and its elaboration for human consumption.*

*Tradicionalmente, la literatura acerca de la etnohistoria y arqueología de Las Bahamas ha hecho énfasis en el papel desenvuelto por la yuca en la prehistoria de las islas; teorías se han propuesto acerca del asentamiento humano en este archipiélago basado en esta premisa. Evidencia se produce para demostrar que las fuentes etnohistóricas y arqueológicas de Las Bahamas proponen que la yuca no era tan importante, e indican que el maíz era de gran importancia. Esto está de acuerdo con las fuentes históricas localmente en cuanto a la importancia relativa de la yuca y el maíz. Material etnográfico adicional clarifican las relaciones de producción en la prehistoria de Las Bahamas, particularmente en conexión con el cultivo del maíz y su elaboración para el consumo humano.*

*Traditionnellement, la littérature concernant l'ethnologie et l'archéologie des Bahamas attire l'attention sur le rôle du manioc dans la préhistoire de ces îles ; des théories ont été proposées sur l'établissement et population de l'archipel fondées sur cette notion. Nous proposons que l'évidence ci-après présentée démontre que les sources ethno-historiques et archéologiques pour les Bahamas que le manioc n'était pas si important et suggère que le maïs était la denrée alimentaire principale. Ceci donne raison aux sources historiques quant à l'importante relative du manioc et du maïs sur le plan local. Du matériel ethnographique supplémentaire éclaire les relations de production dans la préhistoire des Bahamas, particulièrement par rapport à la production du maïs et sa préparation pour la consommation humaine.*

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**“Another trait which clearly came from South America is the cultivation of manioc (*Manihot utilissima*), since that crop is believed to have been used first in the eastern slopes of the Andes Mountains. We know definitely that the Coral Bay people planted manioc because clay griddles for baking cassava (a manioc flour bread) are always found in their sites” (Figueredo 1974b:3).**

## Introduction

I begin this paper with the quote above, so that you may all have a good laugh at my expense. *That* is how we all thought, until recently. Our minds began to change, first on the significance of griddles for the inference of manioc cultivation — after a “cautionary note” in one of these meetings 38 years ago by Warren de Boer (1975), and later, slowly, upon the apparent paucity of evidence for manioc cultivation, or its consumption, in the Caribbean archaeological record (Mickleburgh and Pagán Jiménez 2012).

Manioc, however, was an important crop in the prehistoric West Indies and also in South America (Lathrap 1970; Sturtevant 1966). Historically, it was of great importance in South America; so important, that the link of the islands with the mainland represented by the great family of Arawakan languages was assumed somehow to be behind the spread of manioc in the Caribbean (Lovén 1935:350). There are two basic kinds of manioc, “sweet” and “bitter”, but even in any given varieties these attributes are on a sliding scale. Even the “sweetest” manioc may by several circumstances be somewhat “bitter”, and *vice versa*. “Sweet” manioc is consumed much like any other tuber, mostly roasted or boiled, sometimes fried. “Bitter” manioc has so much toxic “bitterness” that it is subject to industrial processes to make its meal edible (Las Casas 1951, 1967).

The tool kit that sometimes goes with this industrial process I once referred to as “Tupian accoutrements” when discussing their lack among the Gê-speaking peoples (Figueredo 1984). Figure 1 shows a whimsical drawing by the artist Francisco Henares on the steps in the industrial process used to make manioc meal (Morales y Morales 1904:34). The ceramic griddles, we have seen, were sometimes used to bake *cassava*, or the unleavened bread made from

manioc flour. Lately, we have learned that these same griddles were used to cook maize and other crops (Rodríguez Suárez and Pagán Jiménez 2008). Conversely, as may be seen in my article on Gê horticulture, some cultures that grew manioc did not bake it on griddles; instead, they used other means, such as earth ovens to cook manioc flour cakes (Figueredo 1984). This may have taken place in the Antilles, as well, since manioc cultivation is dated before the introduction of ceramics (Pagán Jiménez 2009, 2011; Pagán Jiménez and Oliver 2008).

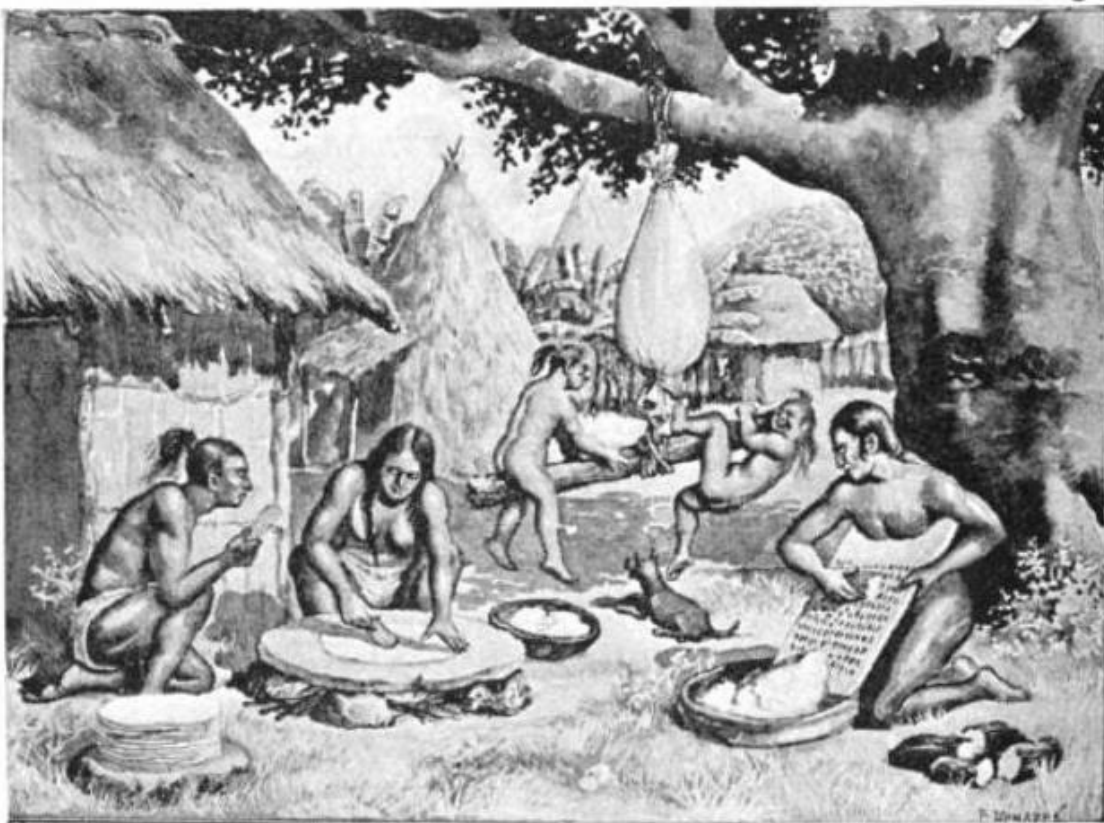
The cultivation of manioc, as practiced often by late prehistoric peoples of the Caribbean, was in artificial mounds (Figueredo 1982). This agricultural technique is found in both the Greater and Lesser Antilles and also the mainland (Iriarte et al. 2012). These mounds have been recognized archaeologically, particularly on the island of Hispaniola (Hatt 1932: 12; Veloz Maggiolo et al. 1981). To my knowledge, they have not been observed in the Bahamas. I suggest that the cultivation of manioc, where present on the Bahamas would have been similar to the one observed at Contact in the other karst regions of the West Indies. It was done in the solution holes covered with fertile soil known locally as “pots” or “banana holes” (Figueredo 1982, 2011b). Nonetheless, diligence may be rewarded in an archaeological search for agricultural mounds in the Bahamas.

Although evidence of manioc cultivation has been found throughout the Antilles (Pagán Jiménez), and has been found in the Bahamas during the Early Lucayan period (Berman and Pearsall 2008), manioc, and its resulting bread, were not focal to the agriculture or diet of the prehistoric West Indies. It will be seen below, that this is particularly true of the Bahamas.

Why have we thought for so long that manioc was focally important? I think it has to do with the vicissitudes of European contact, and later, European conquest and settlement. The Europeans were great consumers of bread; *cassava* was the local bread, which lasted longer, and could be eaten at need. I submit that after the conquest, the European settlers emphasized and promoted the cultivation of manioc and the making of *cassava*. A similar view has been recently set forth by Mickleburgh and Pagán Jiménez (2012).

Witness the preoccupation by Velázquez to plant “montones de yuca” at the beginning of the Conquest of Cuba

(Velázquez 1514; Figueredo 1971). The first thing Ponce de León did upon “converting and pacifying” the natives of Santa Cruz (1509) was to make a *conuco* for the King (Figueredo 1978b). The island of Mona, between Hispaniola and Puerto Rico, was one of the places, under the administration of sundry Spaniards, providing *cassava* to the settlements and the fleets (Dávila Dávila 2003; Figueredo 2011b). Much later, when the French were settling new islands in the Lesser Antilles, one of the first tasks was to plant 5000-6000 mounds of manioc to ensure their colony would survive; *cassava* often was used as ballast for their ships (Highfield 2012).



**Confección del casabi ó casabe (F. Henares).**

Figure 1. Drawing by the artist Francisco Henares on the steps in this industrial process to make manioc meal (Morales y Morales 1904:34).

I would like to point out, as will be explained further below, that specific groups in the West Indies may have favored manioc just as we have believed all along. When American cultigens were introduced into Africa, their fortunes varied with the places of introduction. Some groups favored manioc, others maize, others peanuts, others sweet potatoes, and some, understandably, favored them all equally (Murdock 1959). I submit that something similar may have taken place in the prehistoric Caribbean

The Bahamas, at least the northern islands, are poorly suited to the cultivation of manioc. Temperature is critical to manioc growth, as all growth ceases at about 10° C (Moore and Lawrence 2003). As Sears and Sullivan (1978:4) have noted: “temperatures in the December-March period range below an agriculturally significant level of 10° C 10-20 days a year and below an economically critical level of 8° C with a frequency ranging from annually to slightly more than once a decade, depending on the island in question.” Such temperatures would have constrained the growth of manioc. Sears and Sullivan (1978) have given this as a reason for the alleged sparse prehistoric population of the northern Bahamas. However, of the several crops grown by the generalized Taíno groups, manioc indeed has climate problems in the northern Bahamas, but the other major cultigens, such as maize, sweet potato, and peanuts for example, distinctly do not; about the only other cultigen that might face difficulties in the northern Bahamas is yam. Remarkably, our “received knowledge” as to the cultigens of the Lucayans is largely unconfirmed in the historical sources. The major narratives for Lucayan ethnography are Columbus’s *Diary* [as edited by Las Casas 1967], followed by the *Decades* of Peter Martyr (1912) and some material presented by Fernández de Oviedo (1535) and Las Casas (1961, 1967). The only crops

specifically mentioned by these authors are cotton and maize. The only edible crop is maize, as cotton is an industrial crop for obtaining fabric. The one passage by Columbus regarding a Lucayan edible cultigen (as paraphrased by Las Casas 1556), mentions only “*panizo*” (millet). This was on the land he called “Fernandina”, now Long Island (Ferro 1987), called by the natives *Yuma*, which, according to Granberry (1991) means “Higher Middle [Land]”. The text is as follows:

“De la isla dice ser llana, muy verde y fertilísima, y que no ponía duda que todo el año sembraban panizo y lo cogían y así todas las cosas, y bien atinaba a la verdad, porque todo el año en aquéllas [las Lucayas] y en esta Española y en todas las de los alrededores y aun lejanas, o la mayor parte del año, o al menos dos veces, se sembraba y cogía el grano de maíz que aquí el Almirante llamaba panizo.”

---- Lib. I, Cap. XLII.<sup>1</sup>

It is well known that the Lucayans were removed from their islands by the Spaniards to labor as slaves on Hispaniola and the pearl islands, off the coast of Venezuela. Here is Peter Martyr (1912: II, 249) on a Lucayan trying to escape home from Hispaniola, and what food he brought with him: “This [Lucayan] man undertook an almost incredible task. Cutting a trunk of jaruma [*Ceiba pentandra?*], he took all the pith from the inside. He then filled it with maize and pumpkins full of water, as supplies for his journey, and sealed up the ends of the tree. Throwing this trunk into the sea, he, and two of his relatives, a man and a woman, who knew how to swim, embarked upon it.” However, these fugitives were captured 200 leagues out at sea by a Spanish ship returning to

Hispaniola from Chicora (South Carolina). I think MacNutt (the translator), should have used “calabashes full of water” rather than “pumpkins full of water”.

About the cultivation of maize by the contact period West Indians, we know a fair amount, thanks largely to Fernández de Oviedo (1535), who grew maize on his estate on Hispaniola. I outline the major features of this cultivation in an earlier paper (Figueredo 1982).

Lovén (1935: 372) remarked that Columbus observed, on Hispaniola near Point de Môle St Nicholas “un valle grandisimo y vido que estaba todo sembrado como de cebadas, y pareciole que debia de haber por el grandes poblaciones...” [a very big valley and he saw that it was all planted with something like barley, and it seemed to him that there should be great towns in it...] The expression “como de cebadas” [like barley] probably refers to maize. This is Meillacoid territory, like the Bahamas. Veloz Maggiolo and his associates place the jumping off place of the Meillacoid “people” to the Bahamas, Cuba and Jamaica, in northern Hispaniola (Veloz Maggiolo et al. 1981). The inference of cultivation in *várzeas* [flood plains] posited is perhaps more suitable for maize than for root crops. It may be that the several Meillacoid “peoples” cultivated maize extensively and it accompanied them as they colonized the Bahama archipelago from northern Cuba and Hispaniola. Berman and Pearsall (2008) and Berman (2013) argue, for example, that maize was one of several plants, including chilis and manioc that constituted the early Lucayan’s “transported landscape” of the central Bahamas.

Lovén began to see the importance of maize in the West Indies: “Although maize was to the Taínos a culture-plant of far less value than manioc, nevertheless, it had attained among them a more important position than it had held with their kinsmen in Guiana and in tropical Brazil. The Taínos

had real *maizales* and carried on a more regular cultivation of maize than was practiced in the tropical lowlands of South America. This came to pass under influence from Yucatan” (Lovén 1935:370-371). He believed that Taíno maize cultivation originated elsewhere, “The resemblance to Central America cultivation appeared particularly in the *organization and technique of the sowing*” (Lovén 1935:373). However, as Hathaway (1957) points out, the same “organization and technique of sowing” was observed among South American groups by Gumilla (1741). Increasingly, maize is seen as important to at least several groups in Lowland South America, and, as I stated (Figueredo 1984) among the Gê, and by Iriarte and others (2012) about prehistoric groups in the Guianas.

“According to Oviedo the Hispaniolan Indians always selected wooded areas for planting [maize], land covered with herbaceous vegetation being considered less fertile. After cutting and burning the trees, shrubs, and canes and waiting for the new moon to appear, five or six Indians placed themselves in a row a step apart. Each made a small hole with a planting stick, threw in it four or five grains of maize taken from a small sack tied around the waist or slung around the neck, covered the hole with earth [using his feet], then moved forward a pace and repeated the process” (Hathaway 1957:6).

Maize cultivation in the West Indies, particularly the Greater Antilles, dates to at least 2000 B.C. in the Puerto Rican area and western Cuba (Pagán Jiménez 2007, 2009, 2011; Pagán Jiménez and Oliver 2008). Starch grain analyses have yielded evidence of maize at an Early Lucayan period site on San Salvador (Berman and Pearsall 2008), while carbonized maize dating to the Late Lucayan period has been recovered from the Pigeon Creek dune 1 site on San Salvador (Berman 2013) and Preacher’s Cave on

Eleuthera (Carr et al. 2006). Evidence for maize is inferred from stable carbon and nitrogen-isotope ratios of bone collagen from Lucayan human remains (Keegan and DeNiro 1988).

Lovén (1935 *passim*) and others have maintained that the Taíno only had soft maize, eaten tender. However, increasingly, the evidence from starch grains trapped in human dental calculus points to hard maize eaten as bread (Mickleburgh and Pagán Jiménez 2012). Newsom and Deagan (1994) found evidence for a variety resembling popcorn and another flour-endosperm race at El Bas Saline, a Chican Ostionoid site dating ca. cal. A.D. 1250-1510 (Deagan 1987) located in northern Haiti, while Berman and Pearsall (2008) found evidence of hard and soft varieties at the Three Dog site, an Early Lucayan period site on San Salvador, Commonwealth of the Bahamas.

Writing about the kinsmen of the Lucayans in Cuba, Hathaway (1957:7) states: “[...] there is no good reason, botanical, ethnological, or culinary, to believe that the Taíno Arawak had only soft corn. In fact, botanical and historical evidence presented below suggest that the Sub-Taíno group possessed only hard corn, and that the Taíno had both hard and dent varieties.” Hathaway’s “Sub-Taíno” is the ethnic group properly known as Ciboney, whom Las Casas (*passim*) and others regard as practically the same people as the Lucayans; therefore, by extension, the Lucayans may have had only hard maize. Carbonized remains from En Bas Saline indicate that two varieties of maize, a pop-type maize and a floury-endosperm grain, were present in northern Hispaniola during A.D. 1350± 50 (Newsom and Deagan 1994; Newsom 2008:176).

Is all this information new? Surprisingly, not so. We have seen that the only two cultigens mentioned by Columbus’s *Diary* from the Bahamas are

cotton and maize, and that maize was worthy of a special mention on Long Island. Looking abroad further, we see that in the 1540’s the Italian Girolamo Benzoni lived briefly among the natives of Hispaniola; he clearly states that their main bread (besides *cassava*, which he also mentions later) was baked of hard maize meal. “Questo è il pane della gente commune, dura due giorni, poi si mussa” [This is the bread of the common people, it lasts two days, then it spoils] (Benzoni 1572: 57-59). Obviously, a bread that lasts only two days is next to useless for provisioning ships or laying away food supplies. That is why the Spaniards were attracted to manioc and *cassava*!

Lovén and other scholars were aware of Benzoni and his statements about the importance of maize, but they glossed it over stating that by 1540 the Taínos had doubtless been influenced by immigrants from the continents. However, if you read Benzoni carefully, there is no trace of this influence; he stayed with natives basically living a traditional life, as far as their servitude would permit it. I have referred to similar modern examples of glossing over the importance of maize as cases of “manioc in the brain” (Figueredo 2009). Figure 2 is taken from Benzoni (1572: 57), and it shows graphically the steps involved in making maize meal bread. This task, as illustrated, was performed by women.

An interesting thing has been remarked by me before (Figueredo 1982). The sowing of maize, at least on the places attested, such as Hispaniola, was done by men (*indios* not *indias*). The care of the crop (to shoo birds away, for instance) was entrusted to boys (Hathaway 1957: 6). There is no evidence as to who brought in the harvest, but it may have been a community affair.

According to the ethnohistoric record, the local Lucayan ruler was pretty

absolute, and seemingly goods and services were alienated wholesale. Peter Martyr (1912: II, 252) states as follows in his *Seventh Decade*:

“The kings occupy themselves in planting and fishing. Whatever is sown or planted or fished, and whatever has to do

with hunting, or is manufactured in any way whatsoever, is done in accordance with the king’s order. He distributes these tasks among his people according to his pleasure. Harvests are stored in royal granaries, to be divided during the remainder of the year, and are distributed among the different families according to their needs.”

### Modo di fare il pane.



Figure 2. Graphic depiction of the steps involved in making maize meal bread (after Benzoni (1572: 57).

Las Casas (1556: Capítulo CCV) echoes the same statement. MacNutt translates Martyr's Latin term *regulus* as "king", a better translation would be "petty king". These are the *caciques* (lords over land) of the Taínos, themselves ordered in the three descending grades of *matunherí*, *baharí* and *guaoxerí* (Las Casas *passim*; cf. Figueredo 1971). About an island which the natives called *Samoeto*, and Columbus named Isabela, today known as Crooked Island, Las Casas (1559: Lib. I, Cap. XLIII) states "Entendían también que aquel rey señoreaba todas aquellas islas" [They also understood that that king <of Samoeto> lorded it over all those islands].

In summary, it may be stated that maize was more important as a cultigen and in the diet of the ancient Lucayans than the current literature reflects. Also, taking into account the fortune of the several American cultigens in Africa, one may suspect that the relative importance of the various cultigens was not the same everywhere. This seems to be supported by mounting archaeological evidence. Manioc is definitely dethroned as *cacique* of the Lucayan cultigens, for the reasons alluded to above, and maize, increasingly, seems to have taken manioc's place.

### Note

<sup>1</sup> Of the island he says that it is flat, very green and very fertile, and that he had no doubt that the whole year they planted millet and harvested it, and thus with all other things, and he told the truth, because the entire year in those (the Lucayas) and in this Hispaniola and in all the surroundings and even far away, either the greater part of the year, or at least two times, the grain of maize was planted and harvested, which here the Admiral calls millet.

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## APPENDIX I

### *Original Text*

“Le donne Molandaie, che lo macinano, pigliano una quantità di questo grano, & la sera inanzi lo bagnano con acqua fredda; la mattina con due pietre à poco à poco lo infrangono; chi stà in piedi, & chi con la ginocchia in terra; nè guardano se bene ci andasse dentro capelli, ò pidochi loro. Fata la massa, che à poco à poco hanno / <p. 58> con la mano spruzzata d'acqua, fanno certi panmetti, ò lunghi, ò tondi, & messogli in foglie di canne, con manco acqua che sia possibile lo fanno cuocere. Questo è il pane della gente commune, dura due giorni, poi si mussa. I Signori lo mangiano così; mettono in molle in grano, le molandaie lo rompono con le pietre, & lauatolo con acqua calda, gli spiccano la scorza, & vi resta il siore, & quanto sia

possibile lo macinano, & fattone la massa ne fanno fugaccine piccole, & in vn testo ritondo le cuocono, dandogli sotto pian piano il fuoco. Questo pane è di gran trauglio, con ciosia che bisogna fresco; perche non vale come stà fatto assai, & poco freddio; ma il mezo è buono, nè caldo, nè freddo. [...] Fanno ancora vn'altra maniera di pane detto cazabi, di una radice nominata iucca, di grossezza d'vn napo. [...] & le piantano in certi mon- /<p. 59> toni di terra detti conuchi, [...]" (Benzoni 1572: 57-59).

### *English Translation*

"Women grinders grind it, taking an amount of this grain, and the evening before placing it in cold water; in the morning, with two stones they grind it into small pieces slowly; some are standing, and some kneeling; they do not look out if their hair or lice falls within the flour. The flour being made, which little by little they spray with water, by hand they make certain loaves, whether long or round, and they place them inside cane leaves, and with as little water as possible they cook the same. This is the bread of the common people, it lasts two days, and then spoils. The lords eat it in this way: they grind the grains, the grinders break it with stones and wash it with hot water, they decorticate it and leave the naked grain, and when possible grind it, and they make the flour into small baking loaves, and cook it in a round vessel, slowly in the fire. This bread is a lot of work, and it needs must be fresh; because it is not good if it is a little cold, but it is good if in the middle, neither hot, nor cold. [...] They also make another kind of bread called cazabi, from a root called iucca, of the size of a turnip. [...] and they plant it in certain mounds of earth called conuchi [...]"

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## APPENDIX II

Two carbonized maize kernels that have been recovered from the Pigeon Creek dune 1 site on San Salvador (Berman 2013):

cal. A.D. 1460-1650 (cal. A.D. 1520, 1580, 1630) (2 $\sigma$ ) (carbonized maize kernels).

cal. A.D. 1490-1640 (1 $\sigma$ ).