5 THE ARCHAIC AND "EARLY FORMATIVE" OF NORTHERN BELIZE: WITH SPECIAL REFERENCE TO SAN ESTEVAN AND PROGRESSO LAGOON

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In this paper, I discuss what is known of the Late Archaic occupation in northern Belize. The second millennium BC is the "Early Formative" for most of Mesoamerica but the subsistence and residential adaptation of the Maya lowlands residents up until ~1100 BC consisted of mixed foraging-horticulturalists with no ceramic containers or permanent villages. This means that an "Archaic" strategy persisted in the Maya area for almost a thousand years longer than elsewhere in Mesoamerica. I review evidence from the site of San Estevan where first ceramic-using (i.e., Swasey phase) villagers are documented with little evidence of their predecessors. Next, I review evidence of Archaic-period occupation on the west shore of Progresso Lagoon where maize, squash and chili peppers were cultivated by mobile foragers. Finally, I present plans to thoroughly document and date the second and third millennium BC occupation of Progresso Lagoon and explore how the global climatic change impacted the adaptation of forager-horticulturalists.

Introduction

The early occupants of the Maya lowlands were not as unusual as scholars once thought. Like the rest of Mesoamerica, maize and other domesticates were being consumed by the mid-Holocene (~5000 BC, all dates calibrated) before assuming a greater importance during the first millennium BC. However, one difference was that prior to ~1100 BC occupants of the Maya lowlands did not use ceramic vessels or live in sedentary villages while their neighbors made this transition as early as 1900 BC (Clark and Cheetham 2002). This means that an "Archaic" adaptation persisted for almost a millennium longer than elsewhere in Mesoamerica, during what elsewhere is called the Early Formative period. Rather than see these inhabitants of the Maya lowlands as laggards, the persistence of a Late Archaic lifeway indicates how well-adapted peoples were in this region (Lohse 2010; Rosenswig 2015:136-141). Ceramic-using villagers and those with more residential mobility who did not employ this container technology therefore co-existed for many centuries. Envisioning second millennium BC as a time when Mesoamerican peoples with different adaptations and mobility patterns interacted with each other is only recently being considered a realistic reconstruction of this era (e.g., Inomata et al. 2015; Lohse 2010; Rosenswig 2010, 2011, 2016). Ceramic vessels used at early sedentary communities provide disproportionately abundant evidence of past occupation compared to more mobile peoples using perishable container technologies. As a result, the former have been much better documented than the latter. However, the adoption of ceramic containers did not correspond to a change in diet in the Maya lowlands (van der Merwe et al. 2000; Powis et al. 1999) or elsewhere in Mesoamerica (Arnold 2009; Clark et al. 2007; Killion 2013; Rosenswig 2006, 2015). Ceramic use and increased sedentism did not therefore correlate with the foods eaten in Mesoamerica during the second millennium BC (Clark et al. 2007; Rosenswig et al. 2015).

In this chapter, I review work undertaken by my colleagues and I over the past twenty years to document the Archaic period occupation at San Estevan on the New River as well as at Progresso Lagoon in the Freshwater Creek drainage (Figure 1). I then outline plans to expand on what is known of the Archaic-period occupation in the area during the next decade. This planned research will address the relationship between climate change, the origins of Mesoamerican agriculture and evolving tropical forest ecology. How might drying environmental conditions affect human subsistence practices and how might intensified food production in turn change local vegetation patterns? Human occupation and forest species diversity in the tropical lowlands of northern Belize will be reconstructed. This will be accomplished by combining archaeological excavation and lake sediment coring to reconstruct changing patterns from before and

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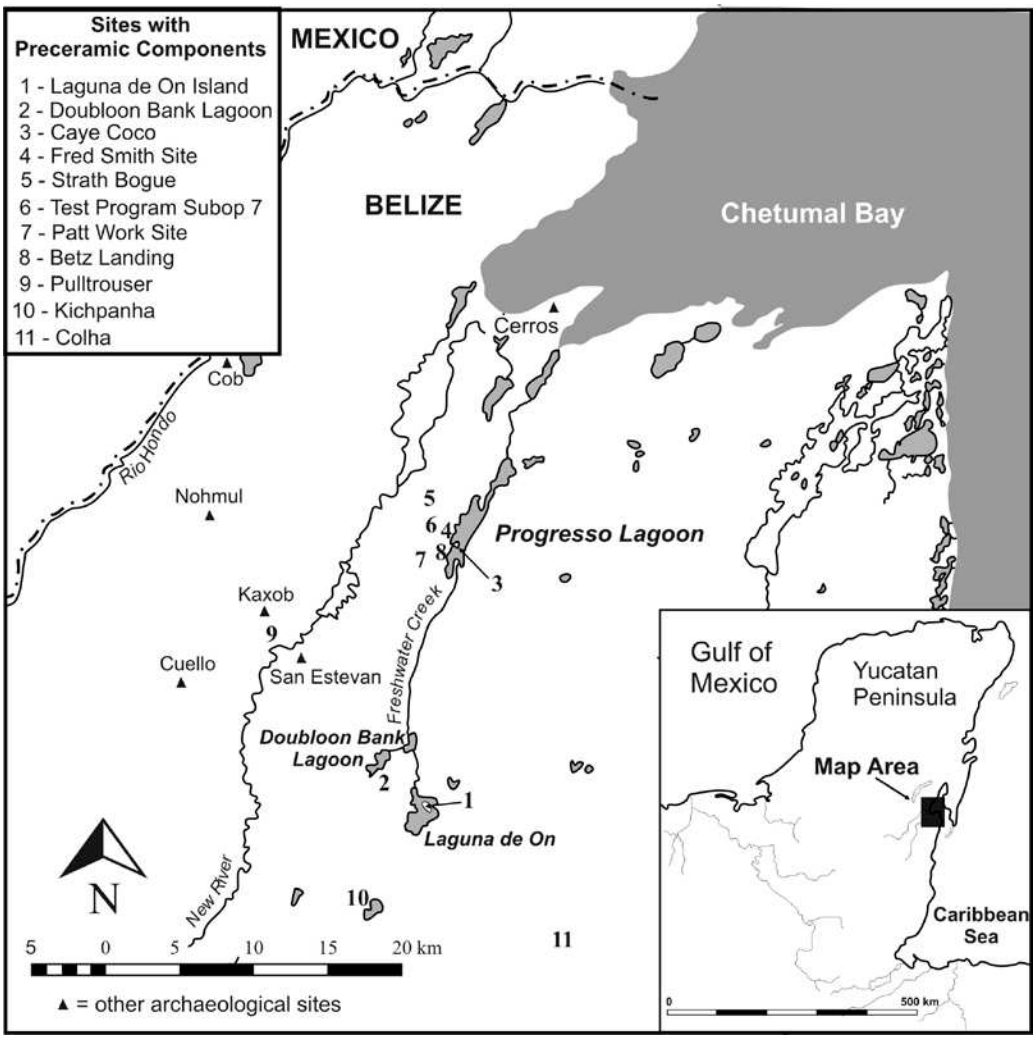

Figure 1. Northern Belize and sites mentioned in the text.

after the so-called "4.2k BP event" (see Carolin et al. 2019; Weiss 2016) that caused three centuries of drought between 4200-3900 BC.

San Estevan and the New River

San Estevan, located on high ground east of the New River and south of the modern village of San Estevan, has a long history of archaeological investigation. Thomas Gann (1911:86-87) excavated at three of the site's mounds in the early twentieth century. In 1962, William Bullard (1965) mapped the civic-ceremonial center, dug test trenches and restored two Early Classic structures. Norman Hammond (1973, 1975) expanded Bullard's map and excavated at Plaza D as part of the British Museum Corozal project. The ceramic collections from the excavations at San Estevan formed the bulk of data employed by Duncan Pring (1977) to establish the Swazey, Bladen, Lopez Mamom and Cocos Chicannel ceramic phases (Kosakowsky 1987:9; Kosakowsky and Pring 1998). Laura Levi (1996, 2002, 2003) then mapped outlying house groups at San Estevan and excavated several domestic structures.

During the late 1990s, much of the monumental architecture in San Estevan's site core was bulldozed and a large crater excavated for the underlying limestone marl to be used as road fill. The damage to San Estevan was truly unfortunate but provided extensive access to the earliest occupation at the site's center (Rosenswig 2007, 2008a, 2008b). Work at San

Estevan by the author began in 2002 with the goal of documenting deposits left by Archaic-period peoples and early ceramic-using inhabitants in stratigraphic association (Rosenswig 2004). We never accomplished this task as intact Archaic-period deposits were not encountered. We have, however, documented extensive Middle and Late Formative deposits (Rosenswig 2009; Rosenswig and Kennett 2008).

Lack of intact Archaic-period deposits, however, does not mean that evidence of Archaic-period peoples' presence was absent in the area. Figure 2 shows some of the heavily patinated, Archaic-period unifacially worked macroflake tools documented in the course of excavating Formative period architecture and middens. Redeposited Archaic tools confirm that people were present in the area prior ro the first ceramic-using villagers. Formative-period occupation seems to have destroyed all intact deposits at San Estevan as it did at Colha where Archaic-period tools were also only recovered from Formative occupation levels (Iceland 1997). In retrospect, Hammond (2005) has likewise suggested that his very early radiocarbon dates from Cuello originated from Archaic-period residents in the area of the site prior to the arrival of ceramic-using villagers early in the first millennium BC (Andrews and Hammond 1990). Late Archaic peoples were clearly present in the area around the New River but the trick is finding intact archaeological deposits from which to document them.

Across the New River from San Estevan, paleoecological work and test excavations in Pulltrouser Swamp also revealed clear evidence of Late Archaic occupation. Pohl (1996) et al. documented maize and manioc pollen beginning by 3000 BC and the first signs that these people affected their environment 600 years later. High proportions of tree pollen indicate that cultigens were initially grown in an environment dominated by high tropical forest with minor disturbance (Pohl et al. 1996:362-363). Pollen analysis documented an increase in grasses and particulate charcoal remains from Cobweb Swamp near Colha that forest disturbance was extensive only after 1500 BC (Jacob 1995; Jones 1994). The lithic assemblage from Pulltrouser Swamp is similar to the larger and better-known

Figure 2. Patinated macro-flake tools recovered in secondary contexts at San Estevan.

lithic assemblage from Colha (Iceland 1997, 2005), with the diagnostic complex of unifacially worked macroflake tools (Pohl et al. 1996:366). Environmental data are thus consistent with small-scale horticultural societies initially planting crops in northern Belize by 3000 BC, and then, not until a millennium and a half later was there evidence of reduced proportion of forest tree species and increased proportion of grass species along with maize pollen as areas of the forest were open up for agriculture. With no ceramic-using villagers documented until ~1100 BC, all of these human impacts to local vegetation regimes occurred when mobile Archaic-period foragers occupied the region. Unfortunately, no intact deposits of Archaic-period occupation were ever encountered at Pulltrouser or San Estevan to document their adaptation and distribution across the landscape.

Freshwater Creek Drainage

The Freshwater Creek drainage, approximately 10 km east of the New River, has provided us with just such intact Archaic-period occupation (Rosenswig 2004; Rosenswig and Masson 2001). My colleagues and I have undertaken excavations at two sites on the

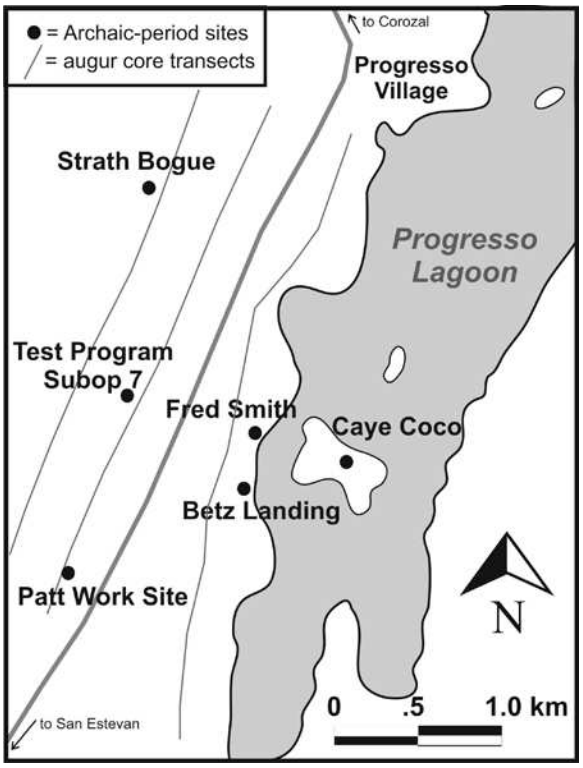

Figure 3. Map of the west shore of Progresso Lagoon with known Archaic-period sites.

western side of Progresso Lagoon (Figure 3). At Caye Coco, a distinctive orange soils containing patinated, Archaic-period lithics were documented near two pit features and a single posthole (Rosenswig et al. 2014). Excavations at the nearby Fred Smith site on the western shore of Progresso Lagoon, facing Caye Coco, produced many more heavily patinated tools from orange soils, including a variety of expedient and formal bifaces, unifacial tools made from macroflakes (see Figure 4), and abundant utilized flakes. Radiocarbon assays of carbon from the orange soils at Caye Coco date to the sixth to fourth millennium BC (Rosenswig et al. 2014:Table 1). Two dates reported by Zeitlin (1984) from an orange soil stratum at Betz Landing, 500 m south of the Fred Smith site (see Figure 3), are from the early second millennium BC. Different lithic reduction patterns at island and shore sites provide a glimpse of regional land-use patterns; tools were broken and resharpened on islands where crops were planted, but they were made at camps on the shore (Rosenswig et al. 2014:318). Therefore. Progresso Lagoon has archaeological

Figure 4. Patinated macro-flake tools recovered from surface contexts in the Freshwater Creek drainage.

sites with intact human occupation that span the 4200 BC climatic event that the Belize Archaic Project (BAP) is targeting. From seven patinated tools recovered from Caye Coco, Fred Smith and other nearby sites, Pearsall has documented starch grains of domesticated maize, manioc and chili peppers (Figure 5) as well as squash and wild beans (Rosenswig et al. 2014). So, there is also archaeological evidence of the consumption of domesticated plants by these Archaic-period peoples. Late Archaic occupation was extensive at Progresso Lagoon and has been detected by virtually everyone who has looked for it.

Orange soils and patinated lithics

Archaic period deposits around Progresso Lagoon are found in a distinctive orange soil that appears to have been formed in situ and not through sedimentary processes. This orange soil horizon is always located directly above limestone bedrock. We do not yet fully understand why this orange soil is associated with Archaic occupation but when modern construction activities expose it we have consistently found patinated lithics in the absence of ceramics. Eight Archaic-age sites are currently known from the Freshwater Creek drainage, six of which are from orange soils on the west side of Progresso Lagoon (Rosenswig 2004; Rosenswig and Masson 2001), and provide a glimpse of the buried universe of Archaic period settlement in this area of

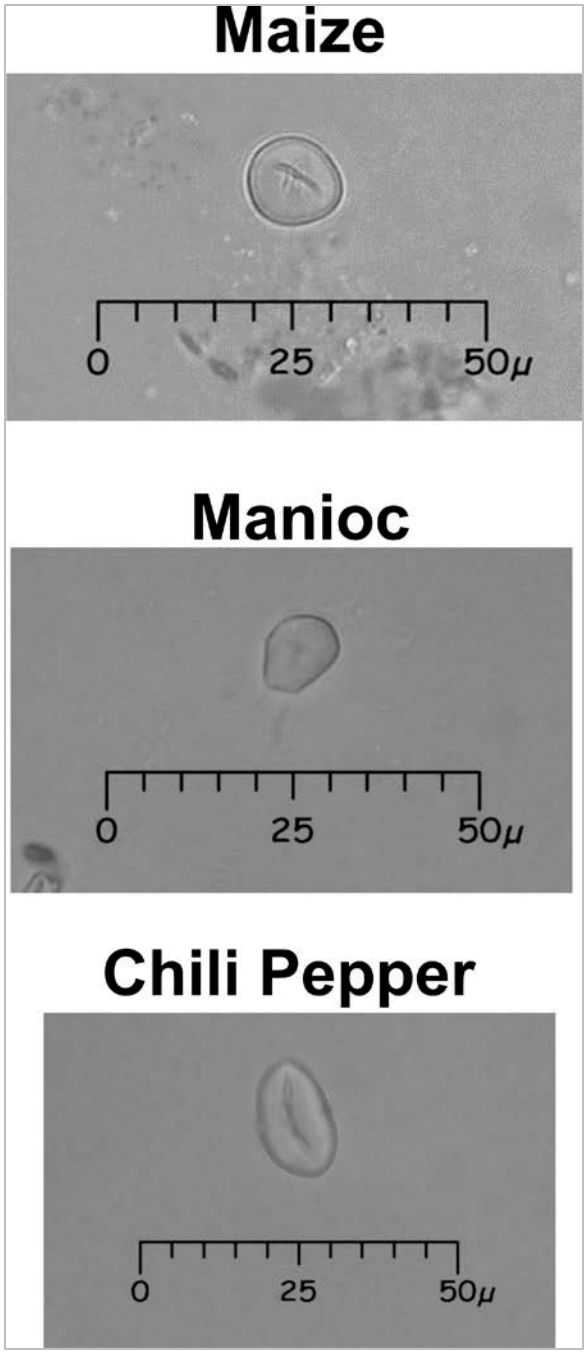

Figure 5. Starch grains of domesticated crops documented from Archaic-period tools in the Freshwater Creek drainage.

northern Belize. Settlement locations include island sites at Laguna de On Island and Caye Coco; shoreline sites at Doubloon Bank Lagoon as well as Fred Smith and Betz Landing at Progresso Lagoon, and upland sites including Strath Bogue, Patt Work Site and Progresso Test Program: Subop 7 (Figure 3). At all of these sites, heavily patinated stone tools were recovered with an assemblage dominated by unifaces. Patination results from the chemical exchange of calcium carbonate from the underlying bedrock to form an outer rind on the surface of stone tools. The patina ranges from 1 to 5 mm in thickness and gives these Archaic tools a distinctive clean, white appearance that obscures the natural color of the chert from which they were made. The bulb of percussion and striking platform are generally discernable when these macro-flake tools are complete, as is indicated by the arrows on the three examples in Figure 4. Together, distinctive orange soil and patinated lithics make identification of Archaic-period sites easier at Progresso Lagoon than any other location I am aware of in Mesoamerica.

Caye Coco

At Caye Coco, the distinctive orange aceramic soil stratum is approximately 15 cm thick over an area of at least 150 m^2 (Rosenswig et al. 2014). Pit Feature 1 originated 60 cm below ground surface on the west side of this aceramic deposit; underlying a Terminal Classic-age artificial terrace. Pit Feature 2 was documented 24 m to the west of Pit Feature 1 and right next to a posthole documented within the orange soil. Radiometric dating at Caye Coco is enigmatic. Two carbonized wood samples were AMS radiocarbon dated from Pit Feature 2. Samples were hand floated and wood was hand-picked from light fractions using metal forceps. The calibrated two-sigma ranges of the Pit Feature 2 dates are 6320-6180 BC (UCIAMS-17908) and 4730-4560 BC (UCIAMS-17909). The two dates from Pit Feature 2 are earlier than those from other Archaic sites known from the area. This is not surprising given the small number of Archaic-period sites known. A fourth to sixth millennium BC occupation of Caye Coco with maize-use is roughly contemporaneous with patterns reported from the Gulf Coast (Pope et al. 2001). While bioturbation may also be responsible for the Gulf Coast dates (Sluyter and Dominguez 2006; but see response by Pohl et al. 2007), maize use on the Gulf Coast and in northern Belize during the seventh millennium BP is consistent with maize cultivation reported in the Balsas by 6700 BC (Piperno et al., 2009),

coastal Chiapas by at least 4500 BC (Kennett et al. 2010).

Fred Smith

Excavations were also undertaken at the Fred Smith site on the west shore of Progresso Lagoon, 400 m across the water from Caye Coco and 500 m to the north of Betz Landing (Figure 3). When we encountered the site during the summer of 2001, when an area of approximately 800 m^2 had been stripped of topsoil by heavy machinery in preparation for house construction (Rosenswig et al. 2014). The bulldozing had exposed orange soils and heavily patinated lithic material was abundant in the disturbed area. Systematic surface collections at the Fred Smith site recovered a total of 358 patinated lithic objects, including ten unifacial tools, two expedient bifaces and two formal biface fragments, as well as numerous flakes and shatter (Figure 6). Excavations of an undisturbed portion of the site documented more of the orange, aceramic soil horizon in which patinated lithics were recovered and ceramics were absent. Unlike Caye Coco, the aceramic orange soil of this site began directly below the active topsoil, at 20 cm below current ground surface and approximately 30-40 cm above bedrock. In the undisturbed zone of the Fred Smith site there is no indication of a buried orange soil visible from the surface.

Summary

Based on work undertaken during the late 1990s as well as field seasons at San Estevan in 2002, 2005 and 2008, the stage is set to document Archaic-period sites at multiple open-air contexts. This would provide a unique regional context for early Mesoamerican horticultural adaptation. During the summer of 2019, The BAP began a new phase of the project. With National Science Foundation support, this phase of research is set within a context of forager-horticulturalists adaptation to climate change.

New Research Plans

Food production was one of the most significant changes in the history of our species. Cultural selection replaced natural selection as the determining force in the evolution of a select

Figure 6. A constricted uniface photographed in April 2019 on newly developed property between the Fred Smith and Betz Landing sites (see Figure 3) (a) and a sawmill point from the property next to the Fred Smith site.

number of plant and animal species. This transition has long been known to have set the stage for all subsequent cultural developments by increasing the carrying capacity of land, degree of sedentism as well as population density and the establishment of urban life (Childe 1936; Willey and Phillips 1958). Food production is tightly tied to climate change and likewise climate change is also often posited as resulting in cultural collapse among Old World civilizations (Weiss and Bradley 2001). The "4.2k BP event" is recognized as a period of widespread mega-drought, which led to societal collapse of the Akkadian Empire in Mesopotamia, the Old Kingdom in Egypt, the Levant and Indus Valley (Bar-Matthews and Ayalon 2011; Carolin et al. 2019; Welc and Marks 2014; Weiss 2016). However, climatic disturbances can have different impacts on peoples with different adaptive capacity and levels of social and political complexity (Middleton 2012). Very little is currently known about the societal response to this period of abrupt climate change in the Americas, motivating our renewed research in northern Belize.

As reviewed in this paper, seven Archaic-period sites were identified around the Freshwater Creek drainage in northern Belize (Rosenswig and Masson 2001; Rosenswig

2004). Initial analysis produced evidence of early domesticates and stone tool assemblages from different site locations and dates from the Late Archaic period (Rosenswig et al. 2014). Northern Belize also has numerous closed-basin ponds that preserve paleoecological records stretching back to these millennia (e.g., Pohl et al. 1996). Both hard-to-find datasets exist together in the project area – a rarity in Mesoamerica (see Rosenswig 2015). The groundwork is thus set to make a transformational contribution to understanding the dynamics of climate change, tropical forest ecology and human food production. This research began in 2019 and will continue for the next five years. I look forward to presenting yearly updates of our efforts in forthcoming issues of the *Research Reports in Belizean Archaeology*.

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