



3rd Marianas History Conference

ONE Archipelago, Many Stories: Milestones in Marianas History

Ancient Marianas History and Early Colonial History

Two of Three



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and

Early Colonial History

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3rd Marianas History Conference

Ancient Marianas History

Two Approaches to Marianas Rock Art: Culture History and Anthropology

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Abstract: *Within Micronesia, the southern Mariana archipelago stands out for the quantity and variety of its rock art, images painted and incised on the dark walls of caves and rock shelters. The small images colored red, brown, black and white have attracted scholarly and popular attention for decades. Most archaeological accounts of these sites take the historical narrative form, about events in the Chamorro past. This approach to the archaeological record serves an important function, affirming the legitimacy of Chamorro identity. Anthropological archaeologists have a different purpose and “identity”: explaining cultural variability, locally and globally; as scientists. Both approaches generate stories but the anthropological framework involves stories that are subject to empirical test, while the structure of culture histories precludes direct falsification and encourages ad hoc accommodation, or complete ignoring, of inconsistent findings. Both approaches co-exist but have different implications for understanding prehistoric rock art in small scale, non-literate societies generally.*

Hafa adai and si Yu’us ma’ase’ to the conference organizers!

I appreciate the opportunity to share my thoughts on how rock art has been studied by archaeologists here in the Marianas. And on what you as consumers of the information (and I as a practitioner) may be learning from our efforts.

First, some questions:

Do you care whether the claims made by archaeologists are true according to scientific standards of proof?

Is it even possible to learn much of anything about past cultures by studying old remnants left behind many centuries ago?

Perhaps you just prefer a good story about what happened in the past and never mind the science. How about a *good* story based on *good* science? Ideally, these go together.

But this is what is troubling me: the ancient Chamorro origin story, the one locally promoted in the mass media, the scholarly literature, and even at this conference. Too simple and likely wrong.

Does this matter? If it does, then archaeologists need to ask different questions. Not just “who,” “what,” “where,” “when,” and “how” questions basic to archaeological research. I am talking about the “why” questions, the ones that animate and motivate the work of scientists.

Is archaeology a science? Is it history? Can it be both? Your answer reflects how you think about culture and its causes. Many historians, prehistorians, and others assume that culture is a set of ideas – a “mental template” or cognitive guide for how to behave as a member of society. If you assume that culture is a set of ideas, then clearly the human mind, with all its quirks and capriciousness, is the reason for cultural differences and similarities. This assumption makes discovering the causes of variability between cultures a daunting task for culture historians, who often resort to “interpretive possibilism,” a term of mine meaning scholarly indecision and a retreat from explanation. It is expressed in phrases like “well, anything is possible...” “your guess is as good as mine...” “maybe so, but we will never know for sure.”

Others (including anthropological archaeologists) assume the human past is knowable through scientific method. To them, culture is a non-linear, open, “living system” of adaptation characterized by organized flows of matter, energy and information (Miller 1965). Ideas are important aspects of cultural systems, but the causes of cultural variation are external to the human mind. They lie at the dynamic intersections between components of the system and its effective environment or ecological community (Allee *et al.* 1949) and are therefore accessible to scientific inquiry. In contrast with the “interpretive possibilism” of culture history, anthropological archaeology requires empirical testing to evaluate explanations for prehistoric cultural phenomena represented in the archaeological record. Such tests can be decisive by eliminating wrong ideas that retard progress in understanding.

Each view of what culture is and what it does carries a different approach to the archaeological record, including its rock art (Hunter-Anderson 2012). Judging from the popular and scholarly literature, Marianas prehistoric archaeology is firmly in the history, rather than science, camp. An obvious problem for culture historians, however, is the lack of written records, the keys to the thoughts and motivations of people who made history. The inaccessibility of the mental states of long-dead individuals

discourages culture historians from making explicit explanatory statements. Nonetheless, I will show below that culture history accounts can be evaluated (and improved) by examining their underlying propositions and internal logic.

Stories in Archaeology

I have nothing against stories; we live by them, and we often think in terms of them. However, in prehistoric archaeology as culture history, the story confines the focus of research. This reminds me of the joke about the man who was searching for his wallet under the street lamp at night. A policeman asked him why he was looking only there, and he said, “...but this is where I can see!”.



The Street Lamp Effect. Source: <http://first-the-trousers.com/hello-world/>.

Using a story to guide research in archaeology is like looking only by lamplight, otherwise known as observational bias. Observational bias can be overcome by looking for problems wherever they occur, even in one's own stories. An anthropological approach to the archaeological record involves not just fact-gathering and analysis but paying attention to anomalies, to unexpected facts. While pursuing the implications of unexpected facts, we give ourselves a chance to learn something new.

Like all stories, culture history accounts have an image base and a verbal report (Zan 1983). Through the verbal report, the image base emerges in the reader's mind, a

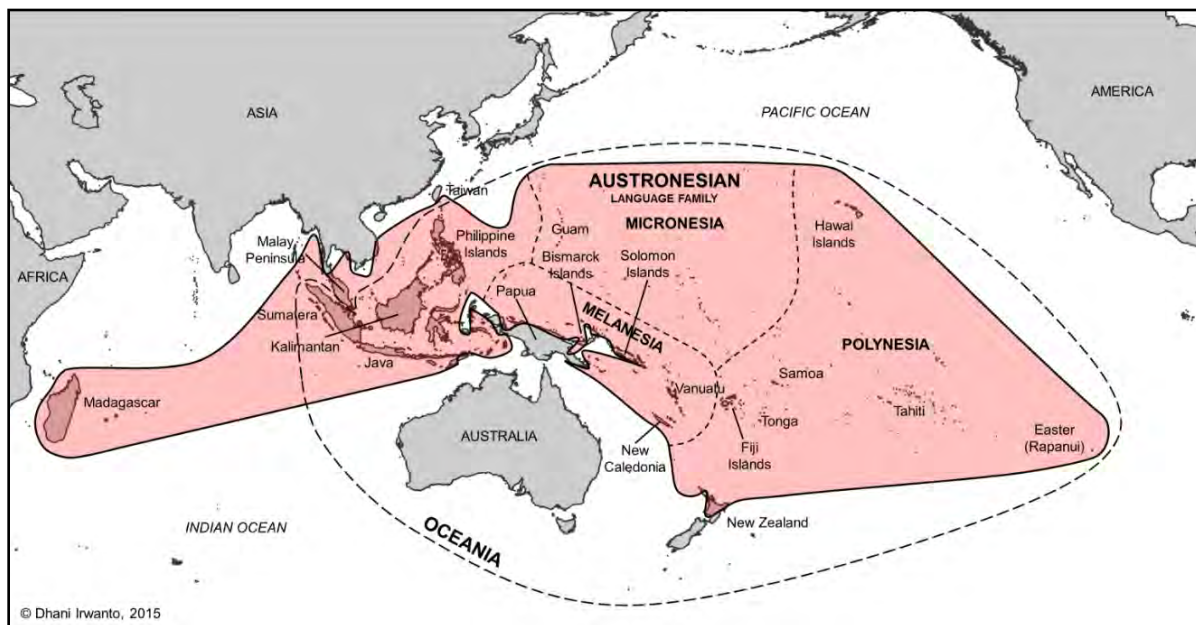
dramatization of important events and their sequence of occurrence. The characters in the story are faceless ancient people collectively portrayed as members of a named group (Bell Beaker People, Lapita People, ancestral Chamorros). One recognizes a culture history narrative by the kinds of facts that are presented in the verbal report; they illustrate purported actions and signal the ethnicity of the ancients. Typical artifacts and features are highlighted in the verbal report. For example, a fish hook shows that people went fishing; a hearth shows people made fires. In addition, the account emphasizes the iconic (some use the term diagnostic), special artifacts or features that identify the ethnic group. In the Marianas, stone pillars and capstones (*latte*) are “diagnostic” of the period and clearly identify the makers as ancestral Chamorros. Notably absent from culture history accounts is systematic, quantitative information, such as an inventory of all artifacts, describing their condition (e.g., broken, whole, modified) and other information potentially useful to other researchers. Since the image base of a story is composed of images, quantitative data would be superfluous, even disruptive to the smooth flow of events.

In anthropological archaeology, stories come after the research has been done. As such, they are really “after-stories” that justify the research direction and procedures taken. They tell what motivated the researcher, what the problem to be solved was, how the researcher went about seeking a solution, and what new research directions may have emerged from the investigation. After-stories legitimize past research or call it into question through objective testing of ideas.

Why the Chamorro Origin Story is Too Simple and Likely Wrong

The culture history account of Chamorro origins enjoying current popularity (e.g., Carson *et al.* 2013) is a direct methodological descendant of a culture history “meta-narrative” in circulation since the 1970s. This master story is an historical linguistics-derived account of how the islands of Oceania came to be inhabited only by speakers of Austronesian languages (Bellwood *et al.* 1975). The meta-narrative depicting the history of Austronesian languages expansion incorporates selected archaeological observations that seem to “fit” the plot, which goes something like this, paraphrasing Bellwood *et al.* (1975):

During the early Neolithic era, a single proto-Austronesian language (PAN) was spoken in coastal southern China. People were growing crops (millet and rice) rather than hunting and gathering, as they had done during the Paleolithic era. By about 5,000 years ago, population had increased, and farming land was becoming scarce, so they all migrated to uninhabited Taiwan. We know they migrated en masse because there are no Austronesian languages spoken in China today. The newcomers occupied the coasts of Taiwan and PAN eventually differentiated into several languages, just as their original culture became differentiated into several cultures, according to the local geographic settings they occupied. The population continued to grow and some groups migrated south into the Batanes Islands that lie between southern Taiwan and northern Luzon, Philippines and thence into northern Luzon itself. Wherever they went these migrants brought their “Austronesian traditions,” mainly iconic jewelry and red-slipped pottery with tiny incised decorations. As the growing population filled up the new homelands, some groups journeyed farther south into Melanesia and Indonesia. From eastern Melanesia these intrepid migrants, known as the Lapita Peoples, began to quickly conquer the Remote Pacific, and eventually sailed west to Madagascar in the Indian Ocean. By about 1000 C.E. all the formerly uninhabited islands of Micronesia and Polynesia were occupied by speakers of one or another language in the Austronesian family.



Pink color shows the geographic extent of Austronesian languages today: (<https://atlantisjavasea.files.wordpress.com/2017/01/austronesian-language-family.jpg>)

According to Carson *et al.* (2013), the ancient Chamorro portion or subplot of this “Austronesian” migration history began c. 3,500 years ago; paraphrasing here:

It was a geographically lateral migration of Neolithic people from northern Luzon who sailed directly east to the uninhabited Marianas. Chamorro, an indigenous Austronesian language is spoken today in the Marianas and derives from the language spoken by the northern Luzon migrants. The reason for the move was the same as before: over-crowding in the homeland. Artifacts that support this inference are small fragments of red-slipped pottery, some decorated with fine-line incisions, that are consistently found in the oldest archaeological sites in the Marianas. The visual similarities between these ceramics and those from sites in northern Luzon are the evidence for a bio-cultural connection spanning 1,500 miles of open ocean.

A coherent story that accommodates the facts, such as they are. But is it true?

One way to find out is to evaluate its underlying propositions, such as that the Marianas redware pottery was made by people from northern Luzon, who brought it with them when they came to settle the empty islands to the east. Archaeologist Olaf Winter and colleagues (2012 and *cf.* Hung *et al.* 2012) conducted a microscopic analysis of cross-sections of pottery fragments from an early site in Saipan and a similarly ancient “parental” site in northern Luzon. Their study revealed significant differences in manufacturing technique between the two ceramic samples. Assuming that migrants retain their traditional ways of doing things, even in a new location, such a fundamental difference in manufacturing technique casts doubt on the Marianas connection with northern Luzon. Moreover, red-slipped pottery with fine-line incised decorations is actually common throughout Island Southeast Asia and coastal New Guinea at sites of the same time range, suggesting several possible source areas for the people who had left redware pottery (and other materials) at early Marianas sites.

However vexing the revelations of Winter and colleagues may be to archaeologists in the Marianas culture history camp, an important question to ask of this story is: Why would land-hungry farmers decide to come to these islands? At the time, sea level was about six feet higher than today, and there was no coastal land suitable for agriculture; nor was there room to build settlements on the few narrow beaches. Another discrepancy in the story is the proposed motivation for the so-called migration overcrowding in the homeland.

Excavations in northern Luzon sites with red-slipped pottery indicate these sites were occupied by a low-density population of hunter-gatherers – not farmers. While reconstruction of PAN include terms for rice, and rice husks embedded in pottery fragments at one of these sites suggest that rice cultivation occurred in the area, cultivation by whom is not clear (Amano *et al.* 2013; Snow *et al.* 1986). Rice husks have not been observed in early Marianas redware fragments, which derive from small pots. No starch residues from cooking rice or any other material have been observed on the interior surface of these fragments, nor any mark of cooking fires on their exterior surface.

Further problems for the migration-of-farmers story include the fact that the early Marianas sites contain no agricultural implements or other evidence for farming, such as agricultural soils or botanical remains of crops. All the artifactual and faunal evidence points to marine foraging. Marine foraging groups were widely distributed in Island Southeast Asia during the middle-to-late Holocene, and this ecological niche persists even now although in reduced numbers (Nimmo 1972). Recently conducted studies of contemporary Chamorro DNA suggest that the general region of Island Southeast Asia is a more likely source for early sea-going Marianas people than northern Luzon, a large continental setting. These studies indicate a late prehistoric and historic Philippine connection, however (Vilar *et al.* 2013; Soares *et al.* 2016). Complicating the search for Chamorro origins via genetic data is the 1,000-year-long gap between initial “migration and settlement” of the Marianas and the beginning of human burial practices (DeFant and Eakin 2009, Walth 2013). If they were here to stay, why did the ancestral Chamorro “migrants” wait ten centuries before burying their dead in the new homeland? The factual inconsistencies in the image base of the simple Chamorro origin story based on historical linguistics provide a powerful hint that it sorely needs a re-set, as I have argued elsewhere (Hunter-Anderson 2013).

Despite the inconsistencies, what I would term intriguing anomalies, the Chamorro origin story persists and has been reiterated in this conference (Carson and Hung 2017). Keeping with a favorite narrative, despite numerous discrepancies, is characteristic of culture history accounts. Let us admit that archaeological stories are not the most compelling of narratives, not without some enhancements, some drama. For example, in the origin story critiqued here, only the typical, attractive and iconic artifacts are selected for illustration, like well-formed shell ornaments and decorated pottery fragments, even though only about 1% of the pottery bears any decoration. Show-casing these items enhances the story by implying artistic sensibility and technical prowess on the part of the ancestors. They were super-achievers too, having

made the longest canoe trip ever undertaken at the time, 1,500 miles straight across the western Pacific Ocean. And they were the first people to reach Remote Oceania, at least 500 years before the “Lapita Peoples” reached Remote Oceania from eastern Melanesia eventually to become the Polynesians of today (Kirch 1997). Such enhancements valorize Chamorro heritage, but does this make the story true?

Please consider the following observations from anthropology. Covering 1,500 miles of ocean in a sailing canoe without modern navigation technology is impressive to a Western audience. However, the proposed straight-line sailing route from northern Luzon to the Marianas is highly unlikely, given the indigenous seafaring practices of Island Southeast Asian and Pacific Islanders (Hunter-Anderson 2013). Simply put, a canoe is not an airplane. Indigenous navigators incorporate their knowledge of local astronomical configurations with known seasonal winds and currents to determine the best sailing route over long distances. These trips seldom follow a straight line; rather, they are short segments, island-hopping to repair, rest, and replenish supplies. Prehistoric sailing to the Marianas from Island Southeast Asia was probably accomplished in this way too; the northeast-trending islands of Palau and Yap offer such a possibility. Well-acquainted with the dangers of open-ocean sailing, indigenous navigators are brave but not foolish; furthermore, they often have relatives on board and so take the safest routes possible.

Small-group migrations have been studied ethnographically, and it is clear that they are far from super-achievement contests. The conditions under which people migrate in small groups include critically high population density, accompanied by local strife and expulsion of families. Other conditions that prompt a group to move away for good are armed invasions and environmental disasters. In Oceania, the latter might include long-term drought, major sea level rise or fall, and other severe climate fluctuations that adversely affect the availability of resources and even of land itself. If the alleged migration of Neolithic farmers to the Marianas did occur as in the Chamorro origin story, then one or more of these conditions should have obtained in the northern Philippines. In fact, none of these conditions has been met.

I have offered some reasons to question a particular origin story but surely not everyone will agree with me. It depends upon what criteria are applied. The validity of a culture history account is judged by the coherence of the plot and how selected facts contribute to that coherence. Inconvenient facts, ones that don't fit, are easily ignored. Importantly, the story's image base must fulfill the culture history belief-criterion: it

must comport with the listener's beliefs about how the world works, especially about what culture is and where it comes from.

Speaking of beliefs, I cannot easily forget what happened at an archaeology conference a few years ago. I presented my paper, which invoked principles of cultural ecology and after the session, a small group of attendees was standing near me. Among them was an eminent archaeologist of the culture history persuasion. Clearly bothered by my paper, he looked straight at me and said, "Roz, I just don't believe you." Evidently my model did not comport with his beliefs about the way the world works and about what culture is and does. Invoking a cultural ecology framework, instead of the human mind, my presentation had failed the culture history belief criterion.

Over the last several decades, many of the Chamorro story's details have been filled in by field work (e.g., Moore 1983; Kurashina 1991; Hunter-Anderson (Ed.) 1994; Carson (Ed.) 2012; Dixon and Schaefer 2014). In brief, archaeologists have documented many cultural changes over prehistoric time, including in ceramic types, settlement patterns, and burial practices, as well as changes in lifestyle and diet (e.g., Amesbury 1999). These changes culminated in the Latte Period starting about a thousand years ago. Latte Period sites have iconic ethnic identifiers too: pots with thick-walls and rims, large basalt mortars, and pillar-and-capstone house foundations called *latte*. Human interments are common at residential sites and in some inland rock shelters. The many excavations conducted over the years, particularly at Latte Period sites, have yielded an enormous amount of material – so much that the Guam Museum has a problem of what to do with it. My ears are still burning from when an exasperated historic preservation official remarked to me, "We already know all about the Latte Period, so why do we need any more excavations?" Why indeed?

First, we don't have answers to many of the questions that should be asked, questions raised by inconsistencies in current interpretations. What we have are lots of unexplained facts and patterning in the data. Theory-building has been late to arrive in the Marianas, but we are getting there (e.g., see articles in Carson [Ed.] 2012). Second, it must be acknowledged that stories about the ancient past in the Marianas serve another contemporary societal function besides valorizing Chamorro heritage; they satisfy public curiosity. Archaeological research, mandated by historic preservation laws, can educate the public, as well as boost tourism when presented effectively. In the present political milieu, the Chamorro story, enriched by archaeological findings and historical documentation not only serves as a source of

local pride – it can be used to exert political influence. Accurate archaeological stories support legal positions in favor of protection of cultural landscapes and cultural heritage sites.



A street protest in Hagåtña, Guam. Credit: Manny Cruz, Guam Post Aug. 10, 2017

In the context of conflicts with government and private interests, culture histories can be empowering. The downside of a culture history approach to archaeology is its dependence upon an already existing narrative. The story's underlying assumptions and vocabulary are freighted with particular connotations and meanings and thus tend to narrow and confine archaeological research programs (remember the man searching under the lamplight). When a story drives research, there is little chance for what scientists call “happy surprises” that can lead to new knowledge.

Some Contributions from Anthropology

Anthropology has generated a wealth of knowledge about small-scale, indigenous island societies like those of the Pacific Islands (e.g., Schneider 2012), and these help inform us about what to expect archaeologically in the Marianas. Also helpful are the findings of ethno-archaeological research. Ethno-archaeologists observe and record on-going cultural activities at chosen study sites throughout a yearly or longer observational cycle. Later, with the permission of the former occupants, they excavate the study sites. Analysis of the finds results in a processual model that generates the

cultural system's "archaeological signature." An example of this method is the work of Richard Engelhardt and Pamela Rogers, who conducted ethno-archaeological research among marine foragers whose territory includes the waters and selected shorelines near Phuket, Thailand (1998a, 1998b). Could their findings have any relevance for early Marianas sites?

Different kinds of cultures create distinctive archaeological signatures, and a working acquaintance with this information can help archaeologists to design research that anticipates the kinds of data likely to be encountered during excavations. Mismatches between the expectations and the findings then allow research problems to emerge. Solutions to problems of this kind contribute to culture history stories, as well as to science, by making the stories more interesting and compelling than artificial enhancements. Co-existence can be a good thing!

Two Approaches to Marianas Rock Art

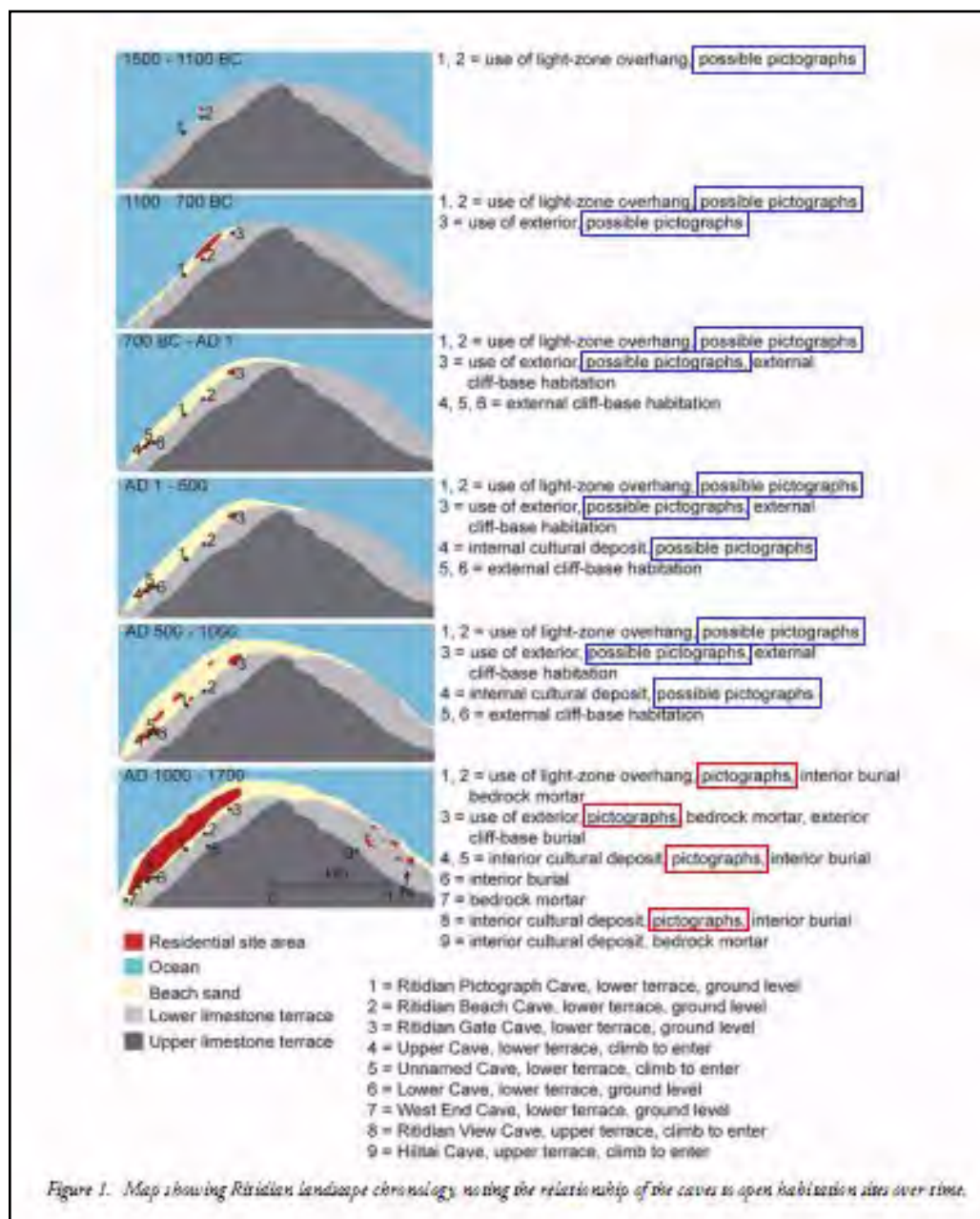
Now, what about recent archaeological approaches to Marianas rock art? Is there a story yet? More than one? Has a research problem been identified? I think so (see below).

The rock art at Ritidian/Litekyan in northern Guam has rightly come to the public's attention for its great variety in form, color, and location in dark caves (see http://www.guampedia.com/chamorro-cave-art/#Ritidian_Caves_Guam; accessed 10/12/2017). The hard disconnect between Guam's prehistoric cultural past and the cultural present makes Marianas rock art as enigmatic to Chamorros today as it is to everyone else. The lack of continuity in this aspect of Chamorro culture seems to encourage rampant speculation about the meaning of the images. Some suggest some images signify "ancestor worship" (Cabrera and Tudela 2006); others see celestial phenomena and events recorded on the cave walls, as well as picture writing and a lunar calendar (<http://ns.gu/icons/jack.beanstalk.chamoru.pictographs.jpg>; Iping 1999).

Archaeologist Mike Carson (2017) recently studied the Ritidian/Litekyan caves and their rock art in detail, along with archaeological features in and near the caves. The goal of his research was to "understand the significance of these caves fully" (Carson 2017:421). Carson wisely declined to attribute specific past meanings to any of the images. His concern was to "contextualize" the ancient uses of these caves through detailed descriptions of the changing shoreline and archaeological features inside and outside but close to the caves. On the basis of marine geological observations and

archaeological evidence, Carson concluded that the Ritidian/Litekyan caves had been accessible throughout prehistory and were always “special places.”

Carson’s Figure 1 summarizes the results of his study. During the first 2,000 years of human occupation at Ritidian/Litekyan, pictograph production was a “possible” culture trait, while during the last 1,000 years (the Latte Period), painted images were definitely made during late prehistoric times. I have circled the pertinent text in the labels to the right of the drawings, to show when the shift from pictographs being “possible” (blue) to when the term “possible” is no longer present in the labels (red).



Carson’s Figure 1. My blue and red boxes enclose his pictograph statements.

Although it involves systematic observations and utilizes radiocarbon dating and marine geology, this figure is not a scientific model. Rather, it is a succinct culture history account. It describes a temporal progression of selected cultural phenomena, a periodized sequence of key events in a mostly geological story of sea level decline. Historians often use periodization to organize the sequence of events that occurred within each period, and Carson's divisions reflect this scholarly convention. Yet cultural phenomena do not occur in neat time segments; they are processual in nature, and cultural processes operate at different rates. For example, some changes occur gradually while others appear to have occurred more abruptly. Periodization in 500 year-long segments masks these differences, reducing accuracy and hiding potentially informative facts.

The inadequacy of the Ritidian/Litekyan story, as summarized in Fig. 1, is that it asks no "why" questions, such as the reason(s) the cultural phenomena listed in the figure arose, persisted or ceased. Especially puzzling is the author's certainty that pictograph production occurred throughout the Latte Period. Interpretive possibilism in the two prior millennia has become interpretive certainty by 1000 C.E., even though no direct dating of the images was undertaken "for reasons of preservation" (Carson 2017:439). As will be shown below, modern dating techniques can be employed without damaging or destroying painted images.

Despite insisting that caves should not be studied in isolation from "their larger social context," Carson fails to specify that larger social context at any point in the 3,000 year-long occupation of Ritidian/Litekyan. His "contextualization" of the caves amounts to standard descriptions of archaeological features and their uses: hearths were used to cook something, rock walls defined house shapes, pits were for storing materials, mortars and pounders were for crushing things, etc. At the end of the article we know what was there, but not why, and certainly not when this intriguing rock art was created:

The unique and mysterious qualities of the Ritidian caves are best understood when integrated with greater knowledge of the communities who used them. If caves are studied in isolation, then their material records remain either *hopelessly puzzling* or else susceptible to erroneous interpretation as evidence of routine daily practices. The Ritidian caves are indisputably extraordinary places, where people used unusual artifacts, consumed rare meals, created distinctive artworks and generally behaved in ways atypical of their ordinary lives at other sites. In other words, caves should not be

interpreted in isolation from their larger social context, just as societies as a whole should not be characterized without acknowledging the ritual significance of caves (Carson 2017:440; *italics added*).

Thanks to Carson's study, we have more facts but no new knowledge, if that means the ability to explain. Whether these facts ultimately increase our knowledge and understanding of Guam's human past will depend upon how they are approached by future researchers. Culture historians can add archaeological findings to an existing narrative (or make a new one). Alternatively, one can take the scientific (anthropological) approach and assume, for example, that cultural phenomena, like pottery making, dancing, fishing, even pictograph creation, manifest the operation of natural and cultural processes, which can be discovered through explanatory model-building and testing.

Cultural Processes

Anthropologists recognize that culture is our species' "extra-somatic means of adaptation" (White 1949), a complex system with several inter-acting components. The main ones are technology, sociology, and ideology. None of these components is under genetic control; all function together because of our unique ability to "symbol," to assign arbitrary meanings to things that exist and even things that don't. Intuitively we recognize this trait in ourselves; we know that H₂O from the tap is just plain drinking water but in another cultural context, say in the church, the very same H₂O is holy and thus inappropriate for casual drinking – even though there is no physical difference in the water itself. Unlike other animals, we have our reasons, and they are all cultural.

Technology is a primary system component because it is the means by which free energy from the environment is captured and transformed for human use.

Archaeologists pay special attention to the technological means of energy capture and processing because these are clues to the rest of the system, and to the kind of environment in which it operates. For example, cultural systems dependent only on human labor to capture the energy necessary for the system to function tend to be relatively simple and small in spatial scale compared to those that utilize animal labor (White 1943). Globally extensive cultural systems control more concentrated ("power-dense") sources of energy, such as hydropower, and in modern times, fossil fuels, which enable the system to expand greatly (Smil 2017).

By definition, a cultural system's components support and affect each other, sometimes drastically. If the already uneasy balance exceeds normal tolerances, the system is likely to change—oscillate between two or more phases, or evolve in a directional manner. System stability can be regained by the adoption of new practices that reduce the stress on the system but failure to overcome a serious perturbation, through innovation or other appropriate response, can result in system collapse, reorganization, or even extinction.

In systemic terms, rock art is the material expression of sociological and ideological processes always present in a culture. Like other cultural processes, they are best viewed as organized responses to factors in the cultural system's effective environment, its adaptive context. Since the interactions among system components and the effective environment are dynamic and can change over time, rock art iconography can also change. Local, inside meanings (what anthropologist Marvin Harris [1976] called "emic" understandings) depend on the iconography in use at the time. A dancing image painted on a cave wall might represent the personal spirit of a shaman, or a potent warning for others to stay away, or something else entirely. Just as technology can predict something about the rest of the system, its iconography reflects the kind of system in which it arose and persists. In other words, even religious beliefs are shaped by cultural processes. Strict monotheism arose and persists among large-scale and complex cultural systems, whereas ancestor worship and belief in many gods and spirits is more common in smaller-scale, less complex cultural systems, all else equal. Ideas play a supporting role in a culture but not the controlling one. In systemic terms, ideas follow rather than lead.

One of the challenges for anthropological archaeology in the Marianas, as elsewhere, is to discover the systemic conditions, the adaptive context, that favored the creation and persistence of rock art and conditioned its particular iconography. What conditions favored Marianas rock art's particular characteristics at various times in the prehistoric sequence, such as geographic location, abundance, styles, etc.? Were these conditions always present, or only at certain phases in the evolution of the system? What are the material correlates of such conditions, so that archaeologists can test their ideas?

A comprehensive inventory of Marianas rock art sites is still only a goal, but we know already where rock art tends to occur—mostly in dark caves where people didn't normally live. The "specialness" of caves with rock art is well-demonstrated at Ritidian/Litekyan, where Carson's study showed that people normally had lived near but not inside the caves, and that the activities inside the caves were unusual and infrequent.

Less well-known is that some rock art occurs far from settlements in Guam's southern highlands. Cave walls are the most common image location but at least one open rock art site is known, a beach rock exposure along the shore at Unai Dangkulo in Tinian. The images have been incised into the rock and resemble some seen on cave walls. Are there more of these open-air sites?

These kinds of variability in the location of rock art are provocative to an anthropologist like me. For example, why are some caves far removed from settlements and others close by? What was it that make remote caves "special" in a different way from non-remote caves? Ethnographers working throughout the world have provided hints about adaptive conditions and rock art in remote locales.

In aboriginal Australia, for example, paintings in remote rock shelters are renewed every generation by clan members as part of initiation ceremonies (Layton 1992 and references therein). One anthropological interpretation is that these overlapping images are mnemonic devices. They help clan elders remember, and young initiates retain and pass on when they become elders, important and privileged clan knowledge. This knowledge is expressed in legends and illustrated by painted imagery. These illustrated stories recount detailed insights into the environment and its challenges. Reciting these stories while making rock art and performing associated rituals affirms long-held claims by the clan to the natural resources critical to its survival.

Why did this practice develop and continue through many generations? What might be its adaptive value or benefit to its users and to the system as a whole? One possible answer is that these Australians live under conditions of "demographic packing" (Binford 2001) and long ago worked out a way to avoid overt and destructive competition through sociological and ideological practices. This cultural solution to an adaptive problem has been codified in group ritual behavior and attitudes. Performing the appropriate rituals surrounding rock art, including the recitation of legends, helps to maintain territorial integrity through shared respect for tradition. While this is not necessarily what was going on in the Marianas, it suggests a research direction that might be productive.

At the time of my rock art research in Guam, I hadn't thought about the range of variation in where rock art caves are located within the island. This kind of variation was new to me, but I was aware that Marianas rock art includes many different forms, paint colors, and media. Rock art is rare and less varied in other Micronesian islands

(except for the rock islands of Palau; see Liston and Rieth 2010). I was also aware that no direct dating of painted images had been done, although most researchers had assumed they were made during the Latte Period (c. 1000-1700 C.E.). The earliest effort to determine the chemical composition of white paint involved samples from Gadao's Cave at Inarajan, Guam (Hendrickson 1968). The white pigment was found to be calcium carbonate.

I wondered about the common assumption that rock art was definitely a Latte Period practice; if so, why did no early historic account mention cave painting as a practice? Chamorro rituals and other kinds of image-making had been observed and documented by the padres (see Driver 1989; Garcia 2004). Was cave art here performed in secret, unobserved by Europeans, or was it no longer practiced by the time these foreigners arrived in the 16th century?

I Embark on a Search for Answers

The first step in my research was to select a study site, one that might yield some dates as well as information about the paints used. I knew of two large rock art caves with a high diversity of images; both are in Guam in different geographic settings. One was the limestone cave complex at Ritidian/Litekyan, the other Mahlac Pictograph Cave in the southern highlands. As at many Marianas rock art sites, some of the images in these caves overlap others, suggesting repetitive acts of image creation. Ritidian/Litekyan was off limits for a variety of reasons, and so I focused on Mahlac, informally known as "Bird Cave" (after the endangered Guam swiftlets that nest there).



The red dot marks the location of Mahlac Pictograph Cave in southern Guam. Source: WERI.

Mahlac Pictograph Cave formed beneath the sea millions of years ago and now sits at 650 ft. above sea level, a limestone outcrop atop a volcanic ridge. The cave is nearly equidistant from Guam's east and west coasts. It is on Navy land and protected by Federal environmental laws due to the birds. This protection has helped prevent the kind of vandalism that plagues more easily accessed rock art sites. Above is a map showing the cave's location in southern Guam and below is a photograph of the north entrance that leads down into the dark pictograph chamber.



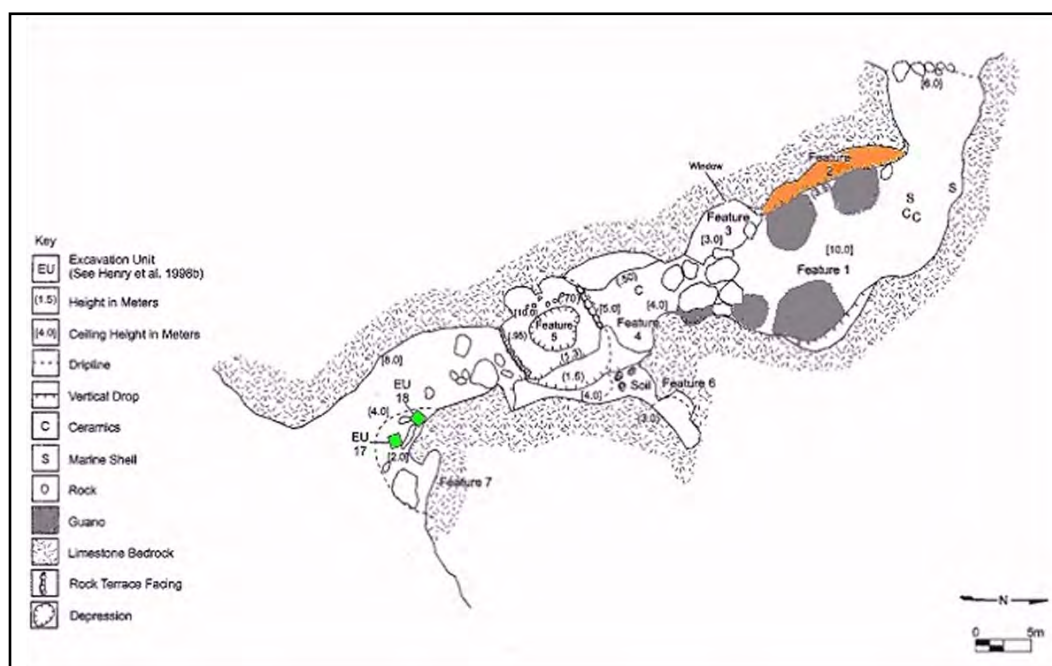
The north entrance of Mahlac Pictograph Cave (Dr. Boyd Dixon photo).

Previous archaeological investigations at the site had noted at least 25 differently colored pictographs at the cave, some of them unique in design (Henry *et al.* 1998; Dixon *et al.* 2003). My questions were basic: what were the paints made of, and when were the images created? I needed a geochemist to assist with radiocarbon dating and elemental analysis of ancient pigments. In 2008, I got lucky. While visiting colleagues at the Department of Earth and Planetary Sciences at the University of New Mexico, I met Dr. Marvin Rowe.

Marvin is internationally respected for inventing a powerful analytical technique for the elemental analysis and radiocarbon dating of ancient pigments on cave walls. The beauty of his “cold plasma” technique is that it needs only tiny paint samples for good results. I described Guam pictograph sites, our lack of basic knowledge about the images, and my wish to learn more about the images at Mahlac Pictograph Cave. Marvin was intrigued and agreed to show me how to remove tiny samples from painted images without losing their integrity. He would analyze the samples at his lab at Texas A&M-Qatar and, astonishingly, he would charge nothing for his time since this was to be a low-budget, pilot project. What a kind and generous man!

Obtaining funding and local permits for the Mahlac project took awhile but finally the far-seeing and scientifically astute Guam Preservation Trust (GPT) provided a small grant for the fieldwork phase in 2011 and another in 2012 for the analysis phase. In 2013, the Trust provided a third grant for scholarly publication, conference papers, and the preparation of an educational brochure for use in island schools and libraries. The brochure is available at the GPT offices in Hagåtña. We presented our findings at an international rock art conference and later they were published (Hunter-Anderson *et al.* 2013).

Below is a plan of Mahlac Pictograph Cave. It is tubular, with a rock shelter at the south end, a WWII Japanese soldiers' hideout in the central portion, and a pictograph panel on the west wall of the north chamber.



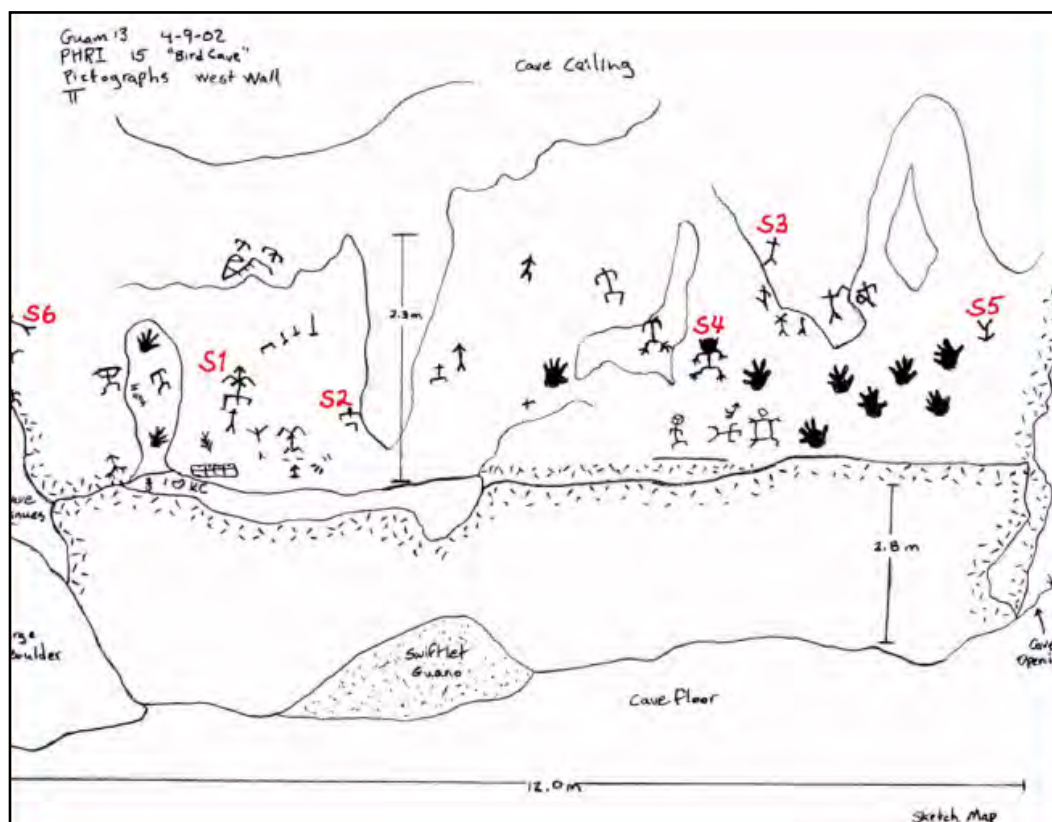
Plan of Mahlac Pictograph Cave; orange area indicates the pictograph panel (after Henry et al. 1998).

Previous visits to Mahlac by archaeologists surveying Navy lands had established that there were no cultural deposits on the floor of the north (pictographs) chamber, only bird guano piles. However, beneath the limestone overhang at the south end of the cave were 1-meter-deep prehistoric cultural deposits. Two test excavations into these deposits (EU 17 and 18 on the plan) yielded artifactual evidence for short-term encampments during the late Latte Period. Radiocarbon dates indicated the cultural deposits were created c. 1405-1604 C.E. (Henry *et al.* 1998). Given these dates, I

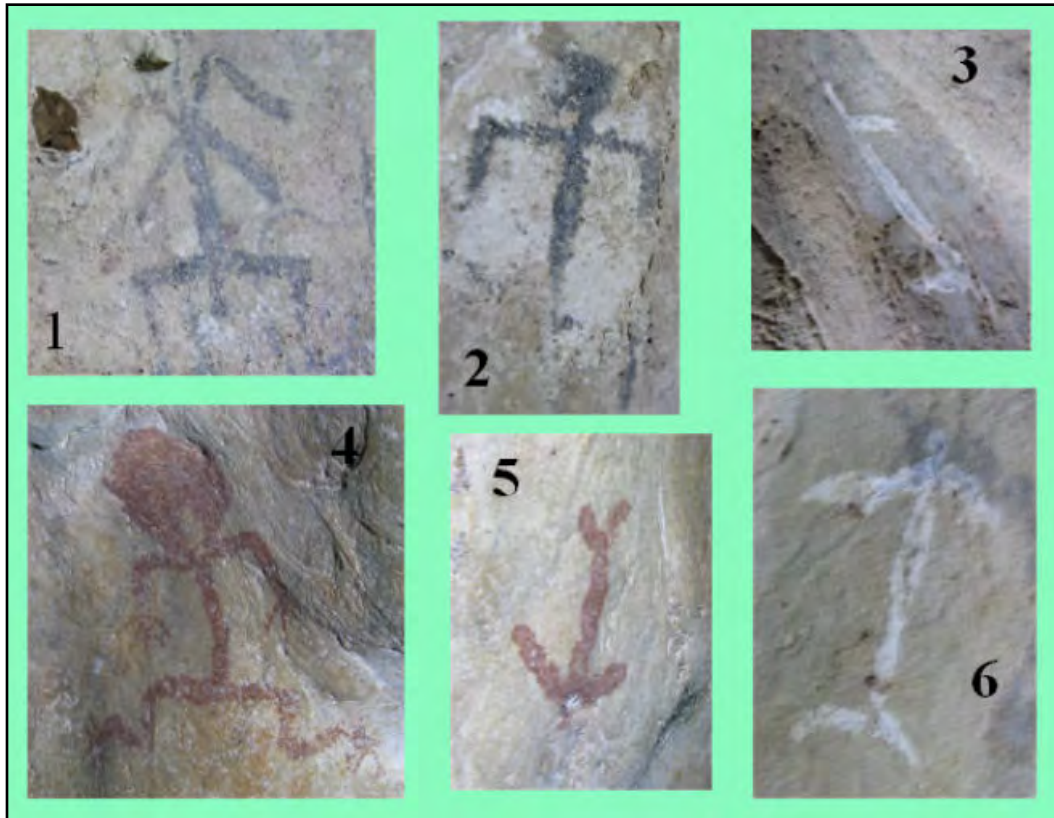
expected that the images at the north end of the cave had been created at that time. I was wrong, in a good way.

Fieldwork began one fine morning in November 2011. Two Navy escorts, biologist Paul Wenninger and archaeologist Lon Bulgrin, and I hiked for about an hour uphill to the site, and then we entered the dark northern chamber. The lights from our flashlights revealed the pictographs. At the time I did not have a sketch of the pictograph panel, but it was evident that the images covered a large area of the upper wall and adjacent ceiling.

There was no natural light in the cave, so the images had been painted while using artificial light, such as coconut frond torches. A ladder likely had been used to reach the high parts of the wall and ceiling. The air inside the chamber was cool and dry, which likely helped preserve the images from damaging algal growth, a problem at coastal rock art caves such as those at Ritidian/Litekyan.



Sketch of pictograph panel wall; not all images are depicted (courtesy Dr. Boyd Dixon).

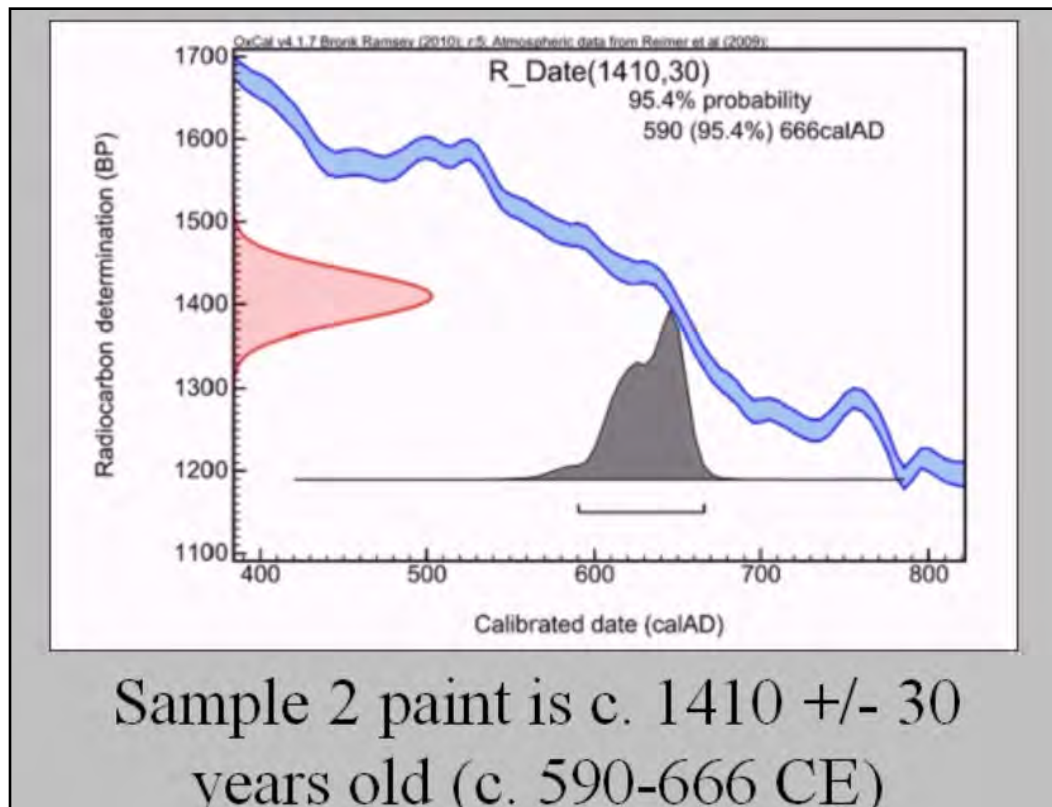


The six sampled images (Hunter-Anderson photos).

While precariously balanced on the high, narrow ledge along the west wall, I carefully removed small bits of paint from six different pictographs numbered on the sketch in red: two faded black ones (Images 1 and 2), two red-brown ones (Images 4 and 5), and two white ones (Images 3 and 6). Here are photos of the images that were sampled.

Results

Dr. Rowe's laboratory analysis found that the red-brown pigments (Samples 4 and 5) were made from various soil components, consistent with different soil types on Guam, and that the white pigment (Samples 3 and 6) was probably slaked lime, *afok* in Chamorro. Samples 1 and 2 contained bits of charcoal, the only samples with organic material likely to yield a radiocarbon date. Unfortunately, Sample 1 contained too little carbon for a reliable date, but Sample 2 did yield enough carbon, using accelerator mass spectrometry. Here is the calibration graph of Sample 2's dating result.



Radiocarbon calibration graph, Sample 2.

To my happy surprise, the Sample 2 result was much older than expected. Its calendar date is 590-660 C.E., placing its creation within the Transitional or Huyong Period (c. 400-1000 C.E.; Hunter-Anderson and Moore 2001) in Guam's prehistoric sequence. Here was an intriguing anomaly, a fact that didn't fit expectations: Sample 2's radiocarbon date is about 800 years older than the cultural deposits beneath the rock shelter overhang at the south end of the cave. Those late Latte Period campers had not created this image after all! Stranger still, archaeological sites similar in age to Sample 2 do not occur in this rugged area. Settlement expansion into Guam's interior had begun by this time, but not here in the rugged central highlands.

The Puzzle

Why did someone create this once-black image, now a faded grey, and possibly others like it, so far from the coast where most if not all of the people lived at the time? What were the adaptive conditions that prompted coastal-dwelling people to create rock art at a remote highland site such as Mahlac Cave? Here was an anomaly that has turned into a research problem, a cave puzzle to be solved (but not "hopelessly").

First, it is important to know if the Sample 2 date is a one-off result or part of an archaeological pattern, perhaps indicating an established practice at this time. More black images at Mahlac should be dated to confirm or disconfirm this idea. Next, it is important to determine the range of dates of other black pictographs on Guam, including at Ritidian/Litekyan. Were they all made during the Huyong Period or do the black images span a wider time range? If confined to the Huyong, what were the circumstances that favored this behavior? For that matter, what about the dates of the black images at Chugai Cave in Rota? Were they made at about the same time as those on Guam? Would this finding support the idea of a single, multi-island prehistoric cultural system, as seems to be the case judging by sharing a common language and similar pottery traditions (Graves *et al.* 1990)?

The range of variation of Marianas black-painted images in time and space is still unknown. We need a comprehensive rock art site inventory for Guam and the other Mariana Islands and comparative analyses of the images. We already know something about geographic locations: rock art occurs in dark caves in coastal locations near settlements (Ritidian/Litekyan), in a dark cave in Guam's mountainous interior (Mahlac), and in coastal caves that are not so dark, such as Talagi Pictograph Cave, Guam (April 2006). While Gadao's Cave is coastal too, the images are in a small, very dark chamber. In interior Saipan, Kalabera Cave's rock art occurs near the entrance (Cabrera and Tudela 2006). At Chugai Cave in Rota, the images mainly occur far back, in the darkest parts of the cave (National Park Service 2005).

McKinnon *et al.* (2014) propose another way to think about the location of rock art in caves, as integral components of marine/shoreline habitats or "seascapes." These authors present new considerations of Marianas iconography, pertaining to marine activities and associated environmental knowledge and practices. Modern local community input regarding the latter relationships is yielding potent suggestions for how to re-imagine past uses of and customs associated with coastal archaeological sites and features, including rock art. The present can inform the past if the right questions are asked and answers sought.

Some Concluding Thoughts

In this paper I have been critical of a culture history approach in prehistoric archaeology, long a favorite mode of interpreting Marianas prehistory. The result of this effort has been an accumulation of observations and a few simple stories that feature iconic artifacts or identifiers of ethnicity. Wanting to know more about one's

origins is natural, and local culture historians have catered to this desire. But the emphasis on Chamorro origins and achievements narrows the research focus to what is already known, i.e., the “streetlight effect.” Facts that don’t fit the story line tend to be ignored as inconvenient, or are not seen at all. Yet if recognized, these facts potentially lead to new knowledge.

Compiling a few facts into simple stories masks the variability in the many observations archaeologists have made during surveys and excavations.

Anthropological archaeologists welcome and explore this variability, looking for patterns and seeking clues to their causes. What factors external to the human mind, such as demography, climate, competing groups in the area or other circumstances, were impinging upon the culture system? Do the patterns reflect systemic responses to these adaptive conditions? Culture historians would say people changed their minds, decided to do things differently and so produced changes that are observed in the archaeological record, but why they did so is “anybody’s guess.”

Despite differences in underlying assumptions about what culture is and does, anthropological archaeologists and culture historians can productively coexist, thanks to mutual interests in a shared human past. I told my after-story about a little study of images at Mahlac Pictograph Cave to show how an anthropological approach toward rock art enabled a “happy surprise” to be recognized and a new research direction indicated. Another benefit of the project is that its new facts about pigments and dating at Mahlac can be incorporated into culture history accounts, enriching making them more accurate.

Other discoveries in anthropological archaeology can contribute to stories about the Chamorro past, for example, by suggesting new ways to think about the cultural and biological origins of prehistoric populations in the Marianas. Many decades of field and laboratory analyses by physical anthropologists (also called biological anthropologists) have delineated intriguing patterns in Latte Period burial populations, such as the practice of co-interring “family groups” in or near house floors (Stodder *et al.* 2016; Dega *et al.* 2017). Additionally, the graves and treatments of the deceased in Late Pre-latte burials from the Naton Beach Site differ from Latte Period burials at Naton and elsewhere in Guam. The early Naton burials also are physically different from Latte Period individuals, calling into question their biological affinities and geographic origins (DeFant and Eakin 2001). Were these earliest burial populations on Guam directly ancestral to Latte Period populations, despite their apparent differences in biology and cultural practices? Did they come from the

Philippines? Ancient DNA studies may reveal some answers, enabling a more complicated and more interesting story (Hunter-Anderson and Eakin 2015).

Archaeology's sister sciences have helped us imagine various aspects of the effective environments in which past cultural systems functioned and the adaptive problems faced and solved by local prehistoric populations. These data, collected within an anthropological framework, can add meaning to culture histories too. Marine geological studies have established baseline data on sea level and landscape features (Dickinson 2001; Carson 2016). It is now clear that only after sea level had declined enough from its mid-Holocene highstand, c. 3,500 years ago, did the just-emerging coastal areas become a possible destination for sea-going peoples. Climatologists at the University of Guam have clarified regional weather patterns and their controls applicable to the Marianas, particularly the islands' vulnerability to droughts and typhoons (Lander 1994a, 1994b). Paleo-climatology and other paleo-environmental studies are revealing longer natural cycles that were part of the adaptive contexts for past populations on Guam, such as precipitation, temperature, and vegetation changes and (Athens and Ward 2004 ; *cf.* Hunter-Anderson 2009).

Additional examples of ancillary studies contributing to models of prehistoric adaptation in the Marianas, and potentially to culture history accounts, include the earliest botanical evidence for rice in the Marianas. Charcoal associated with rice husks embedded in Latte Period pottery sherds was radiocarbon dated to c. 1450 C.E. (Hunter-Anderson *et al.* 1995). Microscopic analyses of organic residues in pot interiors can indicate what was stored or cooked in them, such as taro and protein sources (Loy 2000; Moore 2012; Horrocks *et al.* 2015). Advanced field and laboratory analyses of archaeological site soils and features is another way to find evidence for past agricultural practices (Moore 2005). Such specialized studies, often instigated by archaeologists, promise to bring more surprises as new investigative techniques are developed.

By themselves, facts are mute. In order for them to “speak,” they need interpretation within a meaningful, realistic framework that defines their significance. Contrary to the culture history approach, which assigns meaning through simple stories, I have suggested that anthropology is a more appropriate framework for assigning meaning to the facts of prehistory. Culture history stories interpret the past but the best of these stories are informed by science rather than a pre-existing narrative, especially ones whose chief purpose is to serve contemporary political interests. Children of today and tomorrow need better, scientifically more accurate stories because these listeners are

likely to be more curious about what really happened in the past, and why it happened the way it did, than were their parents and grandparents. Who knows, some may even grow up to be archaeologists!



The next generation?

Source:
Guampedia.com

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Naton Beach Site, Guam: A Look Back in Time

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Abstract: *Excavation at Naton Beach Site on Guam resulted in the recovery of the largest sample of Pre-Latte burials, as well as a large sample of Latte period burials. Today's talk will discuss key elements regarding the social, cultural, and genetic aspects of the two groups. Genetic information is suggested from the characteristics on the dentition. Social and cultural aspects of the two groups are indicated by characteristics of the dentition and by mortuary patterns. Similarities in the positioning and placement of the individuals suggests a similar world view. Horizontal social positioning indicates that both groups are primarily kin based with the Latte having some residence based groups. Vertical social positioning, or status, suggests some individuals had a higher status. There is much yet to learn from these data including a better idea of their relatedness on a local and regional scale.*

Introduction

The excavation at Naton Beach Site on Guam, resulted in the recovery of the largest sample of Pre-Latte human remains found on Guam, as well as a large sample of Latte period human remains. My presentation will focus on the characteristics of the burial population that relate to social, cultural, or genetic aspects of the two populations. Information for this presentation was taken from the final report prepared for the Guam Historic Preservation Division (HPD) (Walth 2016).

The Naton Beach Site is on the north end of Tumon Bay, Guam. Data recovery, monitoring, and burial recovery were conducted in 2006, 2007, and 2008 associated with the construction for Guam Hotel Okura (Figures 1 and 2). At the conclusion of the field effort, 370 human burials had been identified, recorded, and excavated. Primary inhumations identified in the field were assigned a field burial number, but many of these included the remains of one or more individuals. The final MNI is 430 burials with 170 Pre-Latte and 260 Latte. This represents the largest sample of the earliest inhabitants, the Pre-Latte that has been found to date.



Figure 1. View of the site and existing hotel.



Figure 2. View of the site looking towards Tumon Bay.

Chronological information for the Pre-Latte was obtained by radiocarbon dating of shell ornaments collected in direct association with burials. The radiocarbon dating returned a range of dates from approximately 800 to 400 B.C. (2-sigma calibrated), placing these individuals in the middle phase of the Pre-Latte period. Radiocarbon dating was not conducted for the Latte individuals, but ceramic artifacts found in the matrix with the burials indicate that these remains likely span the entire Latte period. One Latte period child was found with glass beads, a trade item that suggests at least one individual was buried there during the Post-Contact period.

As the photos and map illustrate (Figures 3, 4 and 5), affiliation in the field was assigned based ‘primarily’ on the differences in the location within the site and with the soil strata where the burials occurred. The Pre-Latte burials clustered in the north and northeast portion of the site, and the Latte burials were generally more south and west. The Pre-Latte deposits were deeper than the Latte deposits, and the Pre-Latte burials were placed in a white sand layer below the cultural deposit. The white sand was the sterile subsoil that had been dug into to place the remains. Latte burials were shallower and placed in a cultural stratum that was brown to dark greyish brown.

Figure 3 on the following page.

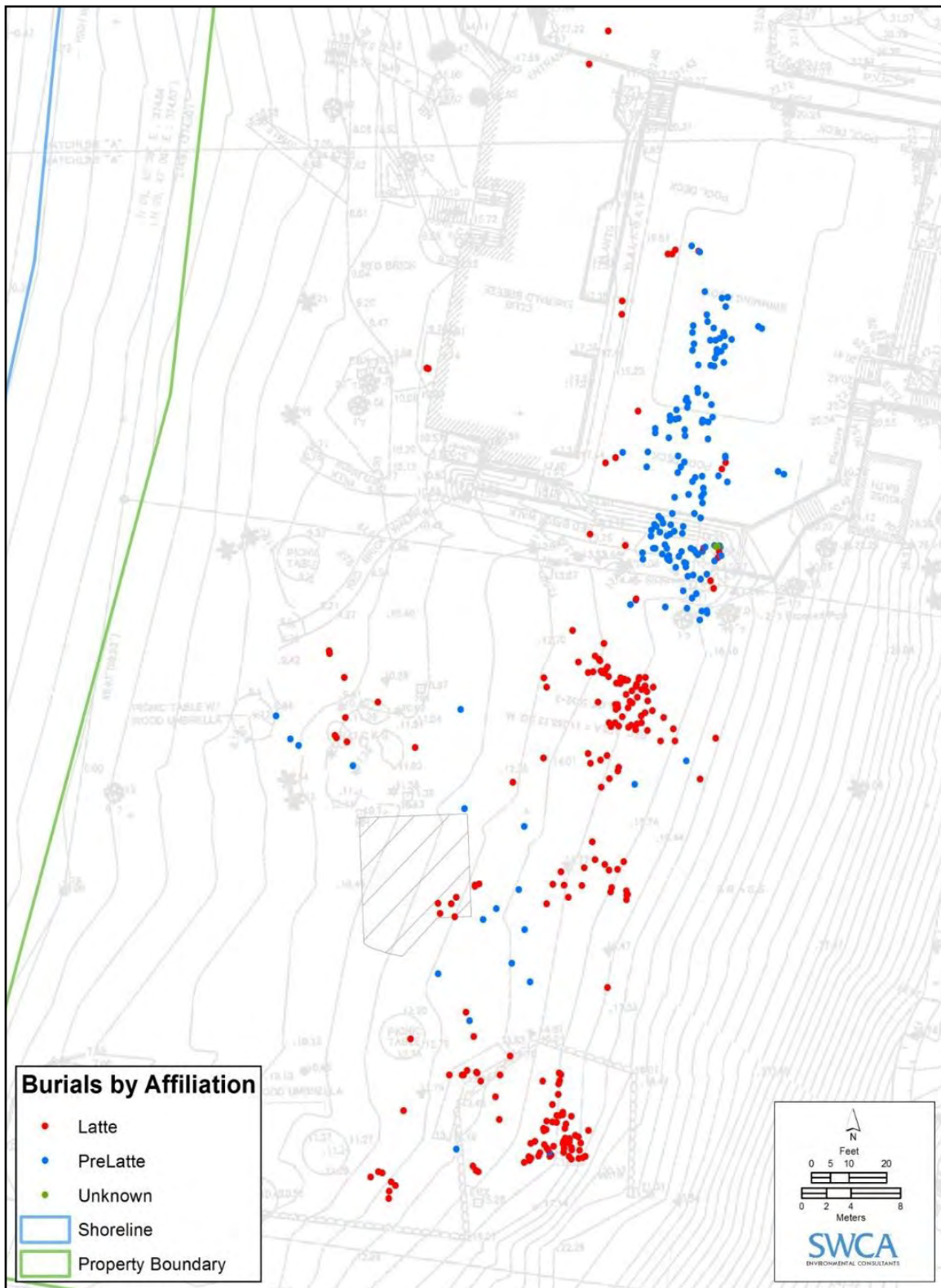


Figure 3. Blue dots are Pre-Latte and red dots are Latte.



Figure 4. Latte Burial 18 in situ.



Figure 5. Pre-Latte Burial 53 in situ.

Preservation varied for both groups, but overall was poor. The elements exhibited degeneration in situ that was a result of leaching of organic content. Evidence of action from plant roots, crabs, insects, and animals was observed on many of the elements. Further impacts were a result of human activity prehistorically and historically, as well as in modern times.

Relatedness of the Pre-Latte and Latte

One of the questions that I have explored with this collection is whether the Pre-Latte and Latte are related? Are they essentially one population that came to occupy Guam at different times? Or are they two different groups of people? To answer this question, I used the dental characteristics recorded on all adult teeth. The dentition preserves fairly well and provides a wealth of information.

Nonmetric dental traits have been used around the world on many different populations to understand the relationship between human groups. When recording the dental morphology, I used the Arizona State University (ASU) Dental Anthropological System (DAS), which offers a means of standardizing the recording of dental traits (Turner and Scott 1991). The frequency of occurrence of these traits in a particular population has been shown to represent the gene-pool. Dental trait analysis has been used successfully on various scales including global, regional, and local.

Regional Scale

Regionally, analyses of dental patterns in the teeth of Southeast Asians, Northern Asians, Polynesians, Micronesians, and Australians have been completed over the last few decades (see work reported in Turner 1987, 1990a, 1990b; and Scott and Turner 1997). Two major dental divisions have been identified and independently confirmed by other research such as evidence from cranial metrics (Pietrusewsky 1990a, 1990b, 2005). The two dental groups are referred to as Sinodonty and Sundadonty (Turner 1990a). Sinodonts are represented by major populations in China, Mongolia, Japan, Korea, Northeast Asia, and North and South America. The name Sundadonts was coined from the Sunda Shelf, a geological feature that is now submerged but once connected much of Southeast Asia with the archipelago of islands in the region. Sundadonts include populations on mainland and insular Southeast Asia as well as Polynesians and Micronesians. The two groups are identified by a difference in the expression of a suite of dental traits in these various populations. A study by Turner in 1990 (Turner 1990a) found that there were 8 key traits in the dichotomization between these two groups: 1) shoveling UI1; 2) double shoveling UI1; 3) one-rooted UP1; 4) enamel extension UM1; 5) reduced, peg, or absence UM3; 6) deflection wrinkle LM1; 7) three-rooted LM1; and 8) four-cusped LM2.

Table 1 displays the mean and standard deviation of the Sundadonts and Sinodonts, which reflects the frequency of occurrence for the 8 key traits. The comparison of this

with the Naton Beach Pre- Latte and Latte groups indicate that both are more closely related to the Sundadonts (Island Southeast Asia). However, for the Pre-Latte there are two traits that are more closely aligned with Sinodonts, and one trait (One-rooted UP1) that is not similar to either.

Table 1. Comparison of Pre-Latte and Latte with Sundadont and Sinodont Key Dental Traits

TRAIT	Pre-Latte	Latte	Sundadont*		Sinodont*	
	%	%	Mean	SD	Mean	SD
Shoveling UI1	58.9	17.6	30.8	15.8	71.1	11.5
Double shovel UI1	20.0	11.3	22.7	18.2	55.8	21.9
One-rooted UP1	37.3	69.0	70.6	11.8	78.8	11.4
Enamel extension UM1	21.3	12.7	26.4	16.5	50.1	9.5
P-R-CA** UM3	15.0	24.4	16.3	10.0	32.4	10.3
Deflection wrinkle LM1	16.3	35.1	25.5	18.3	44.1	19.7
Three-rooted LM1	1.3	2.1	8.8	5.8	24.7	7.7
Four-cusped LM2	11.7	39.1	30.7	14.1	15.5	6.9

* From Turner 1990a Table 9
 ** Peg, reduced, congenital absence was combined to determine this frequency;
Bold indicates the group to which Pre-Latte and Latte are closest **Red** text indicates the group to which the Pre-Latte are different from the Latte in comparison. Yellow highlight indicates the trait that does not compare to either group.
 SD = standard deviation.

Other Regional level information on the relatedness of the Pre-Latte and Latte, comes from the study by Vilar et al. (2012); in this study, mitochondrial DNA (MtDNA) was obtained from 105 Chamorro living on Guam, Rota, and Saipan. These samples were examined to assess the possible origins and gene flow of the Chamorro people. The results showed that the majority of Chamorros share a haplogroup that is found in Island Southeast Asia but is rare in Oceania. There were a small percentage of individuals who indicated Chamorro mutations unique to the Mariana Islands, and more specifically to Guam and Rota. Vilar concluded that a small founding population settled the Mariana Islands from Island Southeast Asia and developed unique mutations in isolation. This founding group was likely the Pre-Latte, who settled the area 3,500 years ago. A second, subsequent migration from Island Southeast Asia may have arrived around 1,000 years ago, and that would be the Latte people. Given the MtDNA evidence and the dental morphology data, Pre-Latte peoples likely came from Island Southeast Asia, but perhaps from a different originating homeland than the Latte. The one trait that is different from both the Sinodonts and

Sundadonts, may represent a trait developed in isolation while on the Marianas Islands. Future research could test that hypothesis. Other future work could take dental data from around the Pacific region and compare it with the Pre-Latte and Latte peoples from Naton Beach to estimate a potential homeland for both. In a 1990 study by Turner (Turner 1990b), he suggested that potential homeland for the Latte was Borneo.

Local Scale

On a local scale the frequency of 15 (out of 35) dental traits from the Pre-Latte and Latte groups are significantly different (Table 2). These differences may relate to local genetic changes or reflect a different founding population. If a different founding population, it would support the idea of two groups and the two-prong colonization theory by Vilar.

Table 2. Dental Non-metric Traits that Are Significantly Different Between Pre-Latte and Latte

TRAIT	Breakpoint / Total Range	Pre-Latte %	Pre-Latte n/N	Latte %	Latte n/N	P
Maxillary Traits						
Winging I1	1/1–4	0.0	0/7	37.5	6/16	<0.000001
Labial curve I1	2–4/0–4	8.3	2/24	20.3	13/64	0.024
Shoveling I1	2–6/0–6	84.9	62/73	69.1	47/68	0.005
Root No. P1	1/1–3	37.3	22/59	69.0	40/58	<0.0001
DAR C	2–5/0–5	42.0	21/50	70.0	28/40	0.0001
Hypocone M2	3–5/0–5	92.9	78/84	68.8	53/77	0.0002
Cusp 5 M2	1–5/0–5	32.5	27/83	11.0	8/73	0.01
Carabelli's M1	2–7/0–7	61.7	50/81	23.9	22/92	<0.00001
Peg-reduced M3	1–2/0–2	13.3	6/45	28.9	11/38	0.009
Mandibular Traits						
DAR C	2–5/0–5	5.6	4/76	23.5	8/34	0.0002
Tome's root P1	2/5/0–5	43.1	31/72	19.2	10/52	0.0004
Groove pattern M2	Y/Y,X,+	18.7	14/75	36.5	31/85	0.005
Cusp No. M2	4/4–6	11.7	9/77	45.8	38/83	0.00002
Deflect. wrinkle M1	1-3/0–3	16.3	7/43	35.1	13/37	0.003
Cusp 5 M2	3–5/0–5	77.9	60/77	48.2	40/83	0.00002
P is from Fisher's exact test and is significant at 0.05 (5%) or less. Breakpoint indicates the score when the trait is considered present. n = number present, N = number scorable.						

Social and Cultural aspects of the two populations

Another set of research questions that I explored with this data, relates to social and cultural aspects of the two populations. What can be inferred socially and culturally about the two populations based on the archaeological and bio-archaeological data? To answer this there are two main areas that I will discuss. One relates to the cultural differences expressed in the dentitions and the second will focus more on mortuary analysis and the patterning of the burials within the site.

Cultural differences between the two groups were particularly evident in the dental remains. And, these cultural characteristics clustered by time period. Labial abrasion is almost exclusively restricted to the Pre-Latte, whereas samples with dental incising and betel nut staining are primarily in the Latte period.

Labial Abrasion

Abrasion of the labial surface of the upper anterior dentition was observed primarily in the Pre-Latte sample. This modification is created by a back-and-forth motion across the tooth, resulting in a concave surface. This abrasion ranged from slight to extreme, and in some cases, complete obliteration of the crown (Figure 6).

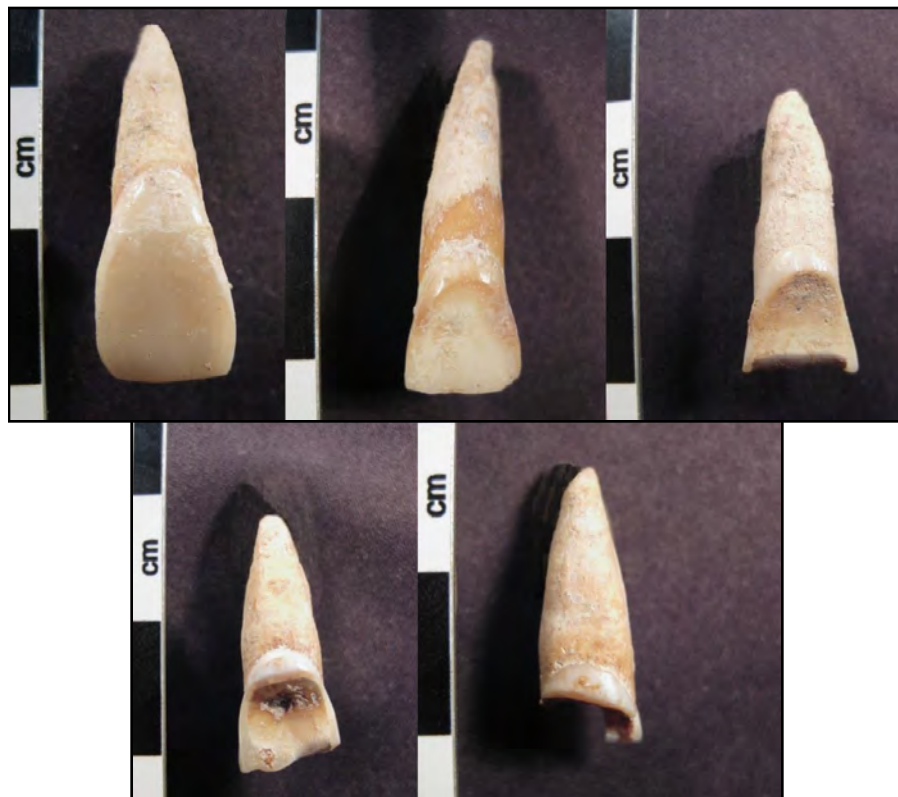


Figure 6. Range of labial abrasion.

There were 93 individuals with maxillary anterior dentition from the Pre-Latte sample, of these, 53 individuals, (57%), display labial abrasion. Only one Latte individual displays this modification. The abrasion was most prominent on the central and lateral upper incisors and in some individuals was found as far posterior as the premolars. It occurs on the adult dentitions and equally between males and females. This type of abrasion is rare in populations around the world; however, it has been noted in prehistoric skeletal assemblages across the Mariana Islands and in modern Micronesians and Polynesians living on Ocean Island (Banaba) in the Republic of Kiribati. The exact cause for the abrasion is unknown, but given the abundance of this characteristic in the Pre-Latte sample; it is not incidental. The most likely explanation is for the processing of some material. Particular behavioral and task-related activities, such as food preparation or cordage production/use, may explain the dental patterns observed.

Betel nut Staining and Dental Incising

Betel nut chewing results in a light to dark brown stain on the dentition (Figure 7). The habitual use of the areca nut is common throughout Southeast Asia and the Marianas Islands. The areca nut is usually combined with the betel leaf and slaked lime.



Figure 7. Examples of betel nut staining.

Paleoenvironmental evidence shows that the areca nut was a native plant on Guam and was thus present during the Pre-Latte period. Betel nut staining is extremely rare in the Pre-Latte sample, with only three individuals displaying this characteristic, and they may be in the later or transitional stages of the Pre-Latte to Latte period, during which the cultural phenomenon of betel nut chewing was just beginning. However, betel nut staining is commonly observed in the Latte sample. Purposeful coloring

of the teeth is also possible but hard to segregate incidental staining from betel nut chewing.

Also observed primarily in the Latte sample is dental incising. Dental incising is rare in the Pacific and found only in isolated instances in Guam. Incising patterns on the upper incisors were found on eight individuals from Naton Beach. Only one of these is from the Pre-Latte period, the other seven individuals are from the Latte period (Figure 8).



Figure 8. Examples of dental incising.

Social and Cultural Aspects of Mortuary Practices

Next, I'd like to discuss some of the social and cultural aspects of the two groups as evidenced by the mortuary patterns. In general terms, mortuary analysis is an examination of the patterns of the burials that may provide indications of the actions, behaviors, rituals, symbols, and ideology of a specific community or culture. The difficulties lie in finding meaningful ways to bridge the gap between the actions, behaviors, rituals, symbols, and ideology with the material remains. There are no easy generalizations that can be drawn upon and any bridge would need to be specific for the culture that is being studied. Different theoretical approaches have been described and applied such as using the data to generalize underlying social complexity, inherited status, and overall social organization. One of the underlying assumptions in this approach is that the burial is adequately representing the funeral ritual and social organization. The obvious problem with this assumption is that the archaeological remains do not preserve the entire rite of passage. What we are left with is the portion of that ritual that is tangible and has survived through time.

Horizontal Social Position

Carr (1995) used the human relations area files to understand the social organization and philosophical-religious, physical, and circumstantial factors that affect mortuary practices. This global study of mortuary practices by Carr found that local grave location and formal demarcation of the cemetery most frequently indicated the horizontal social position of the deceased, including his/her lineal descent group. Horizontal social position is based on where the burial is located within the cemetery (Carr 1995). The variable, "horizontal social position," pertains to kinship groups, residence groups, or to sodalities (non-kin groups organized for a specific purpose). Examination of the patterning of the location of the individual burials could then inform us of potential social groups for the Pre-Latte and Latte.

A cluster analysis was performed to identify spatial units using a k-means algorithm in the ArcGIS program. The first step was to separate the two culture groups. The k-means algorithm is set to minimize the average squared distance between points in the same "cluster." This was run to show how the data clustered using two to 15 groups, and was run multiple times. This program is a heuristic tool and does not have "one" correct result. Further, the program puts all points into a cluster, creating some spatially large groups. The end result was arrived at by looking at what groups routinely clustered together and removing some of the points (burials) that were too distant to be meaningful (Figure 9).



Figure 9. Results of the cluster analysis, Pre-Latte on the left and Latte on the right.

Prehistorically, individuals were buried under or near structures, and these were primarily residential (habitation) structures. Pre-Latte are buried in clusters with all ages and sexes represented. These are likely to represent kinship groups, and likely suggest habitation structures.

For the Latte, kinship groups are likely for most of the clusters except for two. One cluster consists of primarily females and one primarily of males (with a few undetermined sex in both). These gender-specific clusters may be residence groups (as defined by Carr 1995).

Previous research has hypothesized that prehistoric Chamorro villages included structures for ordinary households, high-status households, and men's houses (Davis et al. 1992; Graves 1986, 1991; Hunter-Anderson and Butler 1991; Reinman 1977). Ordinary dwellings consisted of pole-and-thatch dwellings raised on wooden posts, with high-status structures raised on limestone pillars (*latte sets*). Burials could be interred beneath or near the dwellings and particularly *latte* structures.

Burials buried under structures that represent households or kinship groups is a hypothesis that I am currently working to test. My goal is to determine whether the clusters of Pre-Latte and Latte burials are kin-structured. This has been done by other researchers from various locations around the world and is best when a cemetery has physically distinct burial areas, interment types or archaeological indicators of social divisions that can be used to generate hypotheses about social structure. In the case of Naton Beach site, for both the Pre-Latte and Latte groups this is represented by the clustering of burials. For the Latte, burial clusters have been used to indicate the presence of structures, *latte* structures. Individuals were thought to have been buried under or around these structures. And the underlying assumption is that these latte structures would indicate kinship groups. This same assumption could be applied to the Pre-Latte.

So the hypothesis that I will test is that individuals within the groups (clusters) are more phenotypically similar to each other than to non-related individuals (outside of the clusters). If the groupings represent family plots then biological affinity should be greater within clusters than between clusters. Using dental morphological (nonmetric) traits, the frequency of occurrence within and between burial clusters can be tested using the standard Fisher's Exact or chi-square tests (Stojanowski and Schillaci 2006). Currently, I am working to get the data together so that the statistical tests can be run. Once done, I will publish the results.

One other hypothesis that I am working to test is determining the post-marital residence for Pre-Latte and Latte groups. As with the kinship hypothesis, I will be using dental morphological traits and will examine the males and females for both groups. If the frequency of occurrence of these traits is greater in one sex or the other, it will indicate who moved (Konigsberg and Frankenberg 2016). For example, if the husband moves to the wife's residence, then there will be more variation in the males versus the females, and visa-versa for the wife moving to the husband's residence.

Vertical Social Position

Another aspect of social organization is vertical social positioning (status). Vertical social organization is reflected by several factors including the variety of grave goods (Carr 1995). If this is true, then for the Pre-Latte there are those that have no grave items, some that have one type of grave item, and a few that have multiple types of grave items. This may suggest three different tiers of vertical social organization. The type of grave items found with the Pre-Latte include: a variety of shell items (beads,

bracelets, adzes, gorges, other worked shell, and whole *Pinctada* shell), shark teeth, stone items (adzes, slingstones, ground stone, other stone tools), bone tools, ochre, and ceramics (Table 3 and Figure 10). There were ~44 percent of the Pre-Latte burials that had at least one grave item. Shell ornaments were the most common grave good placed with the Pre-Latte burials; shell beads were especially abundant and found in greater quantity with the females. Grave items were found with males, females, and subadults.



Figure 10. Pre-Latte burials with grave offerings.

Table 3. Pre-Latte Grave Goods Correlated with Sex

Grave Good	Female	Indeterminate	Male
Shell beads	1,261	141	101
Shell bracelet	8	1	2
Pinctada shell	2	0	1
Shell adze	7	2	8
Shell fishhook	4	1	3
Shell gorge	1	2	0
Other worked shell	3	0	3
Shark teeth	12	0	0
Stone adze	0	0	3
Slingstone	0	1	0
Ground stone	1	1	2
Other stone tool	4	2	3
Bone tool	0	2	0
Ochre	7	2	3
Ceramic	0	1	0
Total	1,310	156	129

For the Latte, in general there are fewer numbers of grave items with the burials when compared to the Pre-Latte. The type of grave items is similar, but the quantity that varies greatly. The grave items with Latte burials include: shell items (beads, adze, fishhook, other worked shell), shark teeth, stone items (adze, slingstone, ground stone, other stone tool), coral tool, bone tool, sea urchin tool, and ceramics (Table 4 and Figure 11). There were ~48 percent of the Latte burials that have at least one item as a grave offering. For the Latte there are those that have no grave items, some that have one type of grave item, and a few that have multiple types of grave items; suggesting differences of vertical social positioning. As with the Pre-Latte, grave items were found with males, females, and subadults. In the Latte period sample, a greater number of subadults were preserved; in the Pre-Latte sample the subadults did have grave items, but the numbers of subadult burials were considerably fewer.



Figure 11. Latte Burial 361 with shell beads, gorge, stone adze, glass beads, coral tool, and worked bone.

Table 4. Latte Grave Goods Correlated with Sex

Grave Good	Female	Indeterminate	Male
Shell beads	5	9	1
Shell adze	27	12	22
Shell fishhook	4	7	2
Other worked shell	0	3	6
Shark teeth	0	1	0
Stone adze	1	2	0
Slingstone	2	2	2
Ground stone	2	1	0
Other stone tool	3	1	4
Coral tool	1	6	2
Bone tool	0	2	3
Other worked bone	1	3	7
Ceramic	0	0	2
Sea urchin tool	1	0	0
Total	47	49	51

Concluding Statement

In summary, the Naton Beach site provides us with a look back in time to better understand the Pre-Latte and Latte peoples. It appears, that these are two separate groups (genetically speaking) and likely came from two different originating homelands although both are from the greater regional Island Southeast Asia area.

Besides the genetic differences, both groups have some unique social/cultural practices such as the practice of labial abrasion by the Pre-Latte and the betel nut chewing and dental incising by the Latte. Mortuary analysis suggests that the clusters of burials may indicate kin or residence groups (and that hypothesis will soon be tested). Grave items are placed with individuals in both groups suggesting at least some differences in vertical social organization. The inclusion of grave items with subadults for both the Pre-Latte and Latte, suggests that social position was likely ascribed and not achieved. There is much that we have yet to learn about these peoples, and I look forward to bringing it to you.

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Archaeology and Questions about Cultural Origins in the Mariana Islands

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Abstract: *Any framework of cultural history must build from a starting point of when people first lived in the Mariana Islands, what happened during that time, and then what occurred over the next several centuries until modern historically recorded times. Here we clarify the archaeological dating of first cultural presence in the islands at 1500 BC if not slightly earlier, and we summarize the evidence about what people did at that earliest time period. Next, we consider briefly about the extended archaeological record leading up through historical accounts of the late 1600s, specifically considering what aspects of cultural origins have persisted or have changed through time. This review concentrates on the contributions from archaeology, although other studies have offered supporting narratives.*

Keywords

Archaeology, Mariana Islands, initial settlement evidence, cultural origins, Austronesian

Archaeology as a way to learn about cultural origins

While preparing for the Third Marianas History Conference in 2017, we considered the questions that people most often ask of us as archaeologists working in the region. Especially concerning issues of cultural origins, archaeology can offer valuable material evidence directly from the past. Indeed, much of our work has addressed exactly these issues in the Mariana Islands and cross-regionally.

Here we focus on seven questions, followed by a summary conclusion for further thoughts.

- 1) What were the dates of the earliest known sites in the Mariana Islands?
- 2) What were the physical settings of those earliest sites?
- 3) What did people do at those sites?
- 4) How does the earliest material signature compare with findings cross-regionally?
- 5) What happened after the initial settlement period?
- 6) How does the archaeological evidence compare with findings from linguistics?
- 7) How does this picture compare with findings from genetics?

What were the dates of the earliest known sites in the Mariana Islands?

For the last several decades, radiocarbon dating has clarified the calendar ages of archaeological layers now buried beneath the ground. Some of the world's first radiocarbon dates in archaeology were obtained for deep layers in the Mariana Islands, reported at least as old as 1000 BC by Alexander Spoehr (1957). Since then, the technology of radiocarbon dating has been refined vastly, while archaeological studies have clarified more about the oldest site layers.

Currently, the oldest site layers in the Marianas can be accepted as dating at least as early as 1500 BC (Figure 1), and the outer limit of oldest dating could reach perhaps another few centuries at the most. So far, this age has been confirmed most robustly at the Ritidian Site in Guam (Carson 2017), at the area just inland of House of Taga in Tinian (Carson 2014a:119–134), and at Unai Bapot of Saipan (Carson and Hung 2017). Other sites have produced similarly early dating results, in total adding confidence about people living in several sites since 1500 BC.

Today with dozens of radiocarbon dating results throughout the islands, those results can be evaluated critically, with strict protocols about their original contexts in archaeological layers, about the dated material substances, and about other issues potentially affecting the results. One such critical review concluded that the oldest Marianas site layers were around 1500 BC (Carson and Kurashina 2012). A more thorough review clarified that 1500 BC was the oldest confident age for the material signature of the initial occurrences of pottery and other artifacts, while the door remains open for slightly older dating yet to be validated (Carson 2014:21–43; Carson 2016:133–168).

Three alternative claims about earliest Marianas dating should be noted as factually untenable. First, dating potentially around 2000 BC or even older has been interpreted on the basis of preserved botanical indications of ancient forest-burning episodes (Athens and Ward 2004, 2006; Athens et al. 2004), but in fact those same records just as well could be interpreted to refer to a dating closer to 1500 BC (Carson 2016:99–102). Second, a partial review of radiocarbon dating ignored anything older than 1300 BC without giving any reasoning for this exclusion (Rieth and Athens in press). Third, the technicalities of dating shells have been questioned as possibly skewed by in-built old age of a “hardwater” effect or other factors, again refusing to accept dates older than 1300 BC (Petchey et al. 2017), ignoring the fact that a local marine reservoir correction (or ΔR) specifically for ancient *Anadara* sp. shells of the Marianas has been calculated and verified at multiple sites (Carson and Hung 2017:33–40).

A serious challenge for earliest Marianas dating has been to obtain reliable carbon from the materials that have survived in ancient shoreline settings after more than 3,000 years. We will present more about those ancient contexts, but first we should clarify that the ancient shoreline settings were less than ideal for preserving carbonized wood or charcoal. In those places affected by tidal action, pieces of charcoal only rarely have been preserved at all in their original contexts, and those scant particles often have become unreliable for radiocarbon dating due to chemical interactions in these unique settings through time.

In a critical evaluation of radiocarbon dating results, the most important factor is the context of the material being dated in each layer. Ideally, the specific materials are obtained from secure features such as rubbish pits or hearths that have been in fixed positions and resistant against later disturbances, wherein their constituent pieces of charcoal, shells, and other items confidently can be linked to the age of the cultural action of using the rubbish pit or hearth. In the absence of such fixed features inside the window of an archaeological excavation, other concentrations of materials can offer suitable secure contexts for dating. In any case, multiple dating results should cross-corroborate one another, and moreover the results from each layer should appear in chronological order.

In the oldest archaeological layers in the Marianas, the surviving secure features and concentrations have tended to include marine shells as the most reliable objects for radiocarbon dating. In these ancient shoreline settings, charcoal has been poorly preserved and apparently depleted of reliable carbon for dating. Where individual shells can be identified as past food items, they can be regarded as more reliable for

dating purposes of specific cultural events, and in fact these oldest Marianas site layers often include impressively dense concentrations of discarded shellfish remains.

Among the earliest shellfish refuse in the Marianas, the shells of *Anadara* sp. clams apparently were the most popular food, as has been documented in many sites of the western through central Pacific prior to 500 BC. In this larger geographic view, the large amounts of *Anadara* sp. clams in the earliest Marianas sites can be accepted as suitable materials for radiocarbon dating of the archaeological layers in which they were deposited. As noted, the ideal dating samples would come from dense concentrations, rubbish pits, or hearths and then cross-checked with multiple dating results.

Radiocarbon dating of *Anadara* sp. shells in the Mariana Islands now has been refined through multiple cross-corroborating samples, including matching with short-lived charcoal specimens in different contexts for establishing a material-specific correction factor of the dating results. In the Marianas, paired contexts of *Anadara* sp. shells and charcoal samples have been dated as old as 1437–1288 BC at Unai Bapot in Saipan, and therefore the deeper and older layers without reliable charcoal can be dated solely by *Anadara* sp. shells in confident contexts. The specific correction factor for the *Anadara* sp. shells provides a “marine reservoir correction” (or ΔR), applied to the global marine calibration curve for radiocarbon dating, and importantly it has been calculated as a rather minute factor of -49 ± 61 . Equally important, the multiple samples going into this calculation were obtained from confident contexts in three different sites of separate islands, all producing extremely similar results all within statistical range of one another. Full details of the dating technicalities have been published elsewhere (Carson and Hung 2017:33–40).

The radiocarbon dating of 1500 BC for earliest Marianas settlement has been well substantiated, based on materials obtained from secure contexts, refined ΔR correction, multiple cross-confirming samples, and consistent chronologically ordered results. A slightly older date may yet be authenticated, but for now the age of 1500 BC can be accepted as extremely confident as the time when people were living in a number of sites of different islands in the Marianas. Alternative views of younger dating, closer to 1300 BC or even later, have been based on ignoring the body of evidence as summarized here.

What were the physical settings of those earliest sites?

The sites of first Marianas settlement originally had been situated at seashores of 1500 BC, although now they have become buried deep beneath the ground and far inland from today's shorelines (Figure 2). The modern-day shorelines are considerably different from the contexts of more than 3,000 years ago, due to change in global sea level plus the accumulation of thick layers of sediments through time (Carson 2014b). Sites on today's ground surface are several thousands of years more recent than the oldest cultural layers now found deep beneath the ground.

The oldest known archaeological layers have been found at places that had been directly at ancient seashores bordered by lagoon settings. In these cases, people lived in houses within the range of tidal surge or sometimes inside the inter-tidal zone, and those houses evidently were raised on wood posts. The site layers contained dense shellfish remains, reflecting how people had accessed a range of nearshore habitats including lagoons, swampy locales, and rocky exposures.

The site settings began to transform around 1100 BC, and accordingly we can frame the oldest site layers within the range of 1500 through 1100 BC. Global sea level began to fall to a lower elevation at that time, due to global-scope and long-term climate change, and the coastal settings in the Marianas and elsewhere underwent a number of transformations evident in the stratigraphic layers. As a side note, global sea level now is rising again. Along with the clear physical change in around 1100 BC transitioning into a different kind of coastal environment, the next impositions of new archaeological layers reflected this different new environment. Those same upper layers showed changing aspects of pottery and other artifacts, as well as different compositions of shellfish remains and other aspects of the archaeological record.

What did people do at those sites?

We cannot reiterate everything that we know about the oldest site layers in the Marianas, but we can highlight the major points about the period of 1500 through 1100 BC. Within this time range, the ancient site layers can be defined by their inventories of pottery, stone and shell tools, shell and other ornaments, food remains, and remnants of ancient housing structures. We offer a few illustrative examples here (Figures 3 through 5), while more details have been published elsewhere (Carson 2016: 133–168; Carson 2017; Carson and Hung 2017).

The oldest site layers show that people were well established in formal housing at ancient seashores by 1500 BC. We do not yet know the full spatial extent of each site, currently observed only through sample windows of deep excavations, but we can expect at least a few houses along the ancient seashores of each site. Each housing area or community must have included enough people to satisfy necessary tasks of building houses, obtaining food, caring for children, preparing meals, and more.

Beyond the technical requirements of basic living, the ancient site layers reveal definite engagement in artistic expressions and probably in ritual activities as well. In particular, decorated pottery forms and personal ornaments were consistent among the different sites of separate islands, and they persisted from 1500 BC through 1100 BC.

Additionally, the Ritidian Site in Guam has shown that people used at least two cave settings for peculiarly different kinds of actions than otherwise had occurred at the shoreline residential habitation of the same age (Carson 2017). We cannot know for sure about the possible ritual or religious associations of these ancient sites and specialized artifacts, but we can acknowledge that some specific contexts involved noticeably different sets of artifacts and foods that otherwise were rare or absent in the routines of daily life at the residential housing areas.

How does the earliest material signature compare with findings cross-regionally?

At the time when people first were living in the Mariana Islands around 1500 BC, no other remote-distance islands of the Pacific had yet been settled successfully (Figure 6). The next instances of remote-distance island settlement were after 1100 BC, most famously in the Lapita-associated expansion into Southern Melanesia and West Polynesia (Kirch 1997), as well as apparently in Palau (Fitzpatrick 2003). In this context, the initial Marianas settlement at 1500 BC must have come from a different overseas area, where people had made the kinds of pottery and other artifacts seen in the Marianas but at the same age or earlier.

The Lapita-associated sites of Melanesia and West Polynesia need to be clarified in comparison with early Marianas settlement, both developing from a similar origin but with observably different outcomes. Lapita sites are known for their pottery with highly distinctive dentate-stamped decorations, definitely related with the repertoire of dentate-stamped designs and other decorations seen in the Mariana Islands around the same time. The decorations were made with the same or similar toolkits, but the

full artistic motifs and vessel shapes were notably different and extremely elaborate in the Lapita sites.

Lapita sites have been discerned in two major geographic areas, crossing the boundary between the Near Oceanic and Remote Oceanic world. The Near Oceanic portion of Lapita was in the islands east of New Guinea, for example in the Bismarck Archipelago, where the oldest Lapita pottery-bearing sites have been dated about 1400–1300 BC or perhaps as early as 1500 BC at the oldest yet to be confirmed (Kirch et al. 2015; Summerhayes 2007). Slightly later, people crossed the wide ocean gap into the Remote Oceanic islands of Southern Melanesia and West Polynesia, where the oldest Lapita pottery-bearing sites have been dated no older than 1100 BC (Denham et al. 2012).

Given the chronological parameters cross-regionally, the first settlement in the Mariana Islands by 1500 BC could not have originated from Lapita-associated areas. Instead, the inventory of decorative pottery and other elements of the earliest Marianas material signature must have come from a different overseas source where similar traditions existed at 1500 BC or earlier. Very few such candidates of these ancient homeland areas so far have been discovered.

At 1500 BC or earlier, the only place outside the Mariana Islands bearing the distinctive decorated pottery forms was in Island Southeast Asia. So far, the only confirmed sites in this regard have been in the northern through central Philippines (Hung et al. 2011). Dating there could be as early as 1800 BC for the specific tradition of red-slipped pottery with decorations made by dentate-stamped, circle-stamped, and white lime-infilled designs as seen in the Mariana Islands by 1500 BC (Carson et al. 2013).

The distinctive decorated pottery findings in the northern through central Philippines must be recognized as a local development there, following some centuries after the oldest appearance of pottery in this region (Hung 2008). The oldest pottery in the Philippines appeared abruptly as a new archaeological horizon for the first time about 2200–2000 BC as plain red-slipped pottery and other variants, and it can be traced to an ancestral homeland in Taiwan. The pottery records in Taiwan extend much older, but the tradition shared with the northern through central Philippines started in Taiwan around 2500 BC and then apparently was expanded overseas after 2200 BC. Within the Philippines, the diagnostic decorative tradition emerged later, around 1800 BC, and it became much more popular by 1500 BC.

Around 1500 BC, the specialized decorative pottery tradition in the Philippines was expanding in its geographic scope, and the first Marianas settlement needs to be understood in this context. By this time, the pottery trail in the archaeological record shows that it was spreading through much of the Philippines, parts of Indonesia, and even as far as the Mariana Islands. People evidently were migrating and establishing new communities cross-regionally at this time, including the first Marianas settlement as one of those outcomes.

When this cross-regional view is combined with chronological information (see Figure 6), we can see that people incrementally expanded in their settlement of the Asia-Pacific region. In this “incremental growth model,” we can notice an oldest settlement in coastal China and then in Taiwan, next expanding into part of Island Southeast Asia, then spreading into more of Island Southeast Asia plus the Mariana Islands, and continuing in more steps thereafter (Carson 2018). We can attach measured radiocarbon dating to each step in the growth model, plus we can describe the material signature of pottery and other artifacts in each component.

For any particular step or component of the “incremental growth model,” people expanded into new overseas territory. If people in different villages or islands had communicated with one another, then any or all of those places could be viewed as parts of the potential homeland region for the people who eventually settled into a new overseas territory. In the case of first Marianas settlement at 1500 BC, the potential homeland may have included a number of contributions from different parts of the pre-1500 BC territory. The decorated pottery tradition definitely had involved the northern through central Philippines at that time, but other contributions may have come from elsewhere.

What happened after the initial settlement period?

The archaeological record in the Mariana Islands now has clarified a continuous presence of people ever since 1500 BC. The sequences of site layers have shown gradual change in some aspects, concurrent with more rapid or radical change in other aspects. Those transformations occurred in the physical environment, forms and styles of artifacts, dietary food compositions, housing formats, choices of site settings, and numbers of sites through time.

Overall, the Marianas archaeological record has revealed increasing numbers of people living in more areas through time. This trend is expected in most models of population

growth, and it mirrors the trend seen in a broad view of the Asia-Pacific region (see Figure 6). As people gradually expanded into more and more overseas territories, other people continued living for successive generations within the Mariana Islands.

According to the “incremental growth model” (see Figure 6), people at any time could have been in contact with any other part of the inhabited world of the Asia-Pacific region. People from the Marianas may have travelled overseas to numerous other destinations, and people from those other destinations may have travelled to the Marianas. Through time, the population within the Marianas must have changed, just as happened in every other island setting in contact with external groups, but the descendants of the original inhabitants still persisted. The opportunities for new contacts must have increased through time, as more areas of the Pacific became inhabited, and eventually the different groups developed divergent languages, biological features, and artistic expressions that would make the instances of inter-island contact appear more distinctive, especially after AD 1000 with maximum population expansions throughout Pacific Oceania.

The descendants of the initial settlers in the Marianas of course can be seen in today’s indigenous Chamorro people of the Marianas. Many aspects of life have changed since 1500 BC, as seen in the transformations of artifacts and other elements of the archaeological record. The multi-generational continuation ever since first settlement can be obviated in at least three factors: 1) the archaeological record was continuous without interruption; 2) the apparently old features of an ancient Malayo-Polynesian or possibly Proto Malayo-Polynesian language still can be traced in the Chamorro language of today (Blust 2013); and 3) the highly genetics lineages of the Chamorro people today have retained an set of ancient genetics markers not shared with any other Remote Oceanic groups, and instead they point to older origins in Island Southeast Asia that still persist today (Vilar et al. 2014).

Within the long-term archaeological record of the Mariana Islands, the emergence of the stonework housing sites of *latte* can be compared with the emergence of other formalized stonework sites throughout Pacific Oceania, all appearing after 1000 AD (Carson 2016:221–257). This timing had coincided with the most widespread population expansion throughout the islands of the Pacific (see Figure 6). The investment in formalized stonework expressions could imply that communities were concerned with establishing their specific territories, not only in the Mariana Islands but rather everywhere in the Pacific Islands after 1000 AD. Meanwhile, people had

expanded to inhabit all of Pacific Oceania, thus creating a maximum potential for population movements and inter-group contacts.

How does the archaeological evidence compare with findings from linguistics?

The Chamorro language of the Marianas clearly is within the large Austronesian language family (Bust 2013), and specifically it appears to have developed from an early branching at the oldest Malayo-Polynesian level of the Austronesian family (Figure 7). The linguistic chronology provides a relative ordering, with two important points of reference for the Chamorro language. First, this early Malayo-Polynesian branching occurred after a group of people already had diverged from older Austronesian language origins, linked with the communities now living in Island Southeast Asia. Second, the Chamorro language had split from its homeland prior to the development of the Oceanic grouping within Malayo-Polynesian, seen everywhere else in the Remote Oceanic islands of Micronesia, Melanesia, and Polynesia.

If we compare the linguistic chronology with the archaeological record, then we can notice a close correspondence with the trail of pottery traditions and the overall “incremental growth model” (see Figure 6). Regarding the oldest split of Malayo-Polynesian from its Austronesian origins in Taiwan, this event can be linked with the spread of a pottery traditions from Taiwan into the northern through central Philippines about 2200–2000 BC. The divergence of the Chamorro language in the Marianas must have post-dated this event, and it must have pre-dated the next linguistic episode of the development of the Oceanic grouping. This later Oceanic language development can be linked with the spread of Lapita pottery traditions, definitely occurring by 1100 BC but with immediate roots perhaps as early as 1500 BC in the Near Oceanic island portion of the Lapita world.

In this combined view of linguistics with archaeology cross-regionally, the earliest Marianas settlement can be understood as a branching from Island Southeast Asian origins, prior to the separate movements of people into other parts of Pacific Oceania. The timing of this early branching can be situated after 2200–2000 BC and then already in effect by 1500 BC. Within this maximum potential window of opportunity, a dating of 1800 BC so far is the oldest known for the distinctive decorative pottery tradition in the Philippines that eventually appeared in the Marianas by 1500 BC.

How does this picture compare with findings from genetics?

Based on genetics analysis of modern-day Chamorro people of the Mariana Islands, Vilar et al. (2014) confirmed the retention of an apparently ancient genetics lineage, known as Haplogroup E, seen frequently in Island Southeast Asia but not in the Remote Pacific Islands other than in the Marianas. This finding strongly matches the picture in linguistics, situating Chamorro origins as an early split from Island Southeast Asian populations prior to the separate movement of people into other parts of Pacific Oceania. Likewise, all of this information corroborates the narrative from archaeology about an early settlement in the Marianas around 1500 BC prior to any other Remote Oceanic settlement (see Figure 6).

In Island Southeast Asia, many different communities today possess Haplogroup E in their genetics signature. No single place can be identified as the unique origin of Haplogroup E, but rather it appears to have spread broadly throughout the Philippines and much of Indonesia. By the time of first Marianas settlement at 1500 BC, the possible homeland sources of Haplogroup E could have been in many different locations of Island Southeast Asia.

Given the fact that the ancient marker of Haplogroup E still is found among modern-day Chamorro populations, today's indigenous Chamorro people of the Marianas can be regarded as having retained the unique genetics heritage of the original inhabitants at 1500 BC. If the population had been replaced by newcoming migrants or waves of people from overseas, then the ancient Haplogroup E would have been lost within the Marianas. Instead, we see low levels of other haplogroups occurring in the modern-day Chamorro populations, reflecting small numbers of later-aged influx of groups who migrated into the Marianas at different points in time.

Conclusions and further thoughts

We would like to encourage further thoughts about cultural origins and developments in the Mariana Islands, and accordingly several possibilities can be pursued on the basis of the information as summarized here. This summary has been greatly abbreviated, and considerably more detail and substance can be found in the cited literature. Here we can highlight a few key points that may serve as launching points or guiding parameters for more consideration.

We now can be extremely confident that people were living in formalized housing in separate shoreline sites of different islands in the Marianas by 1500 BC if not slightly

earlier. A maximum older date has not yet been confirmed, but potentially it could be entertained back to 1800 BC and perhaps older if new evidence can be discovered and authenticated. For now, the most secure and verified dating points to an age of 1500 BC.

The dating of 1500 BC in the Marianas pre-dated any other successful settlement anywhere else in the Remote Oceanic region of the world. The first Marianas settlers therefore must have come from a different overseas homeland outside the Remote Pacific Islands, and the diagnostic archaeological signature of pottery and other material so far points to an origin in Island Southeast Asia. The findings from linguistics and from genetics furthermore corroborate this picture.

At 1500 BC or earlier, the initial homeland region may be viewed in a regional sense as the extent of territory inhabited by people knowledgeable of seafaring, pottery-making, and other factors that were involved in the initial settlement of the Mariana Islands. While the strongest evidence in the form of decorated pottery points to the northern through central Philippines, any number of other places within the large homeland region may have contributed as well. The initial founding settlers in the Marianas may have included people from a number of different places who acted together for the successful settlement.

Following the initial settlement of the Marianas by 1500 BC, the archaeological record has confirmed a continuous presence of people. The natural environment and social context underwent many transformations, but the record was continuous. Some aspects of life changed more quickly than others, and some were more radical than others, much as has been the case throughout human evolutionary history in every part of the world. Furthermore, the Chamorro people today in the Marianas have retained ancient features linguistically and genetically, reflecting a continuity between the original settlers and the present-day populations.

Life certainly has changed since 1500 BC, and knowledge of this long chronological sequence can substantiate stronger narratives of cultural origins, developments, and history. As outlined here, the material facts from archaeology provide the necessary starting point for further considerations. This body of evidence has found congruence with linguistics and genetics studies independently, thus supporting that the overall outline as depicted here has been accurate in its major components. Some of those components may yet be refined through new evidence, but for now the key points and parameters can be accepted as confident and accurate.

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Figures

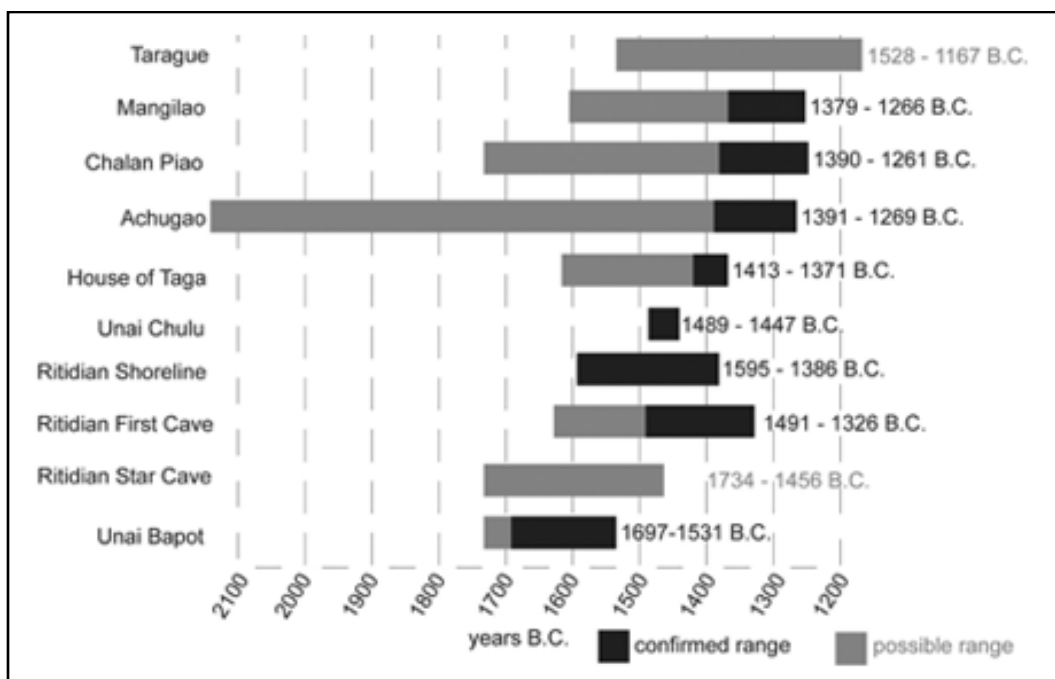


Figure 1. Results of critical review of earliest radiocarbon dating of earliest Marianas archaeological sites. Updated Carson (2016).

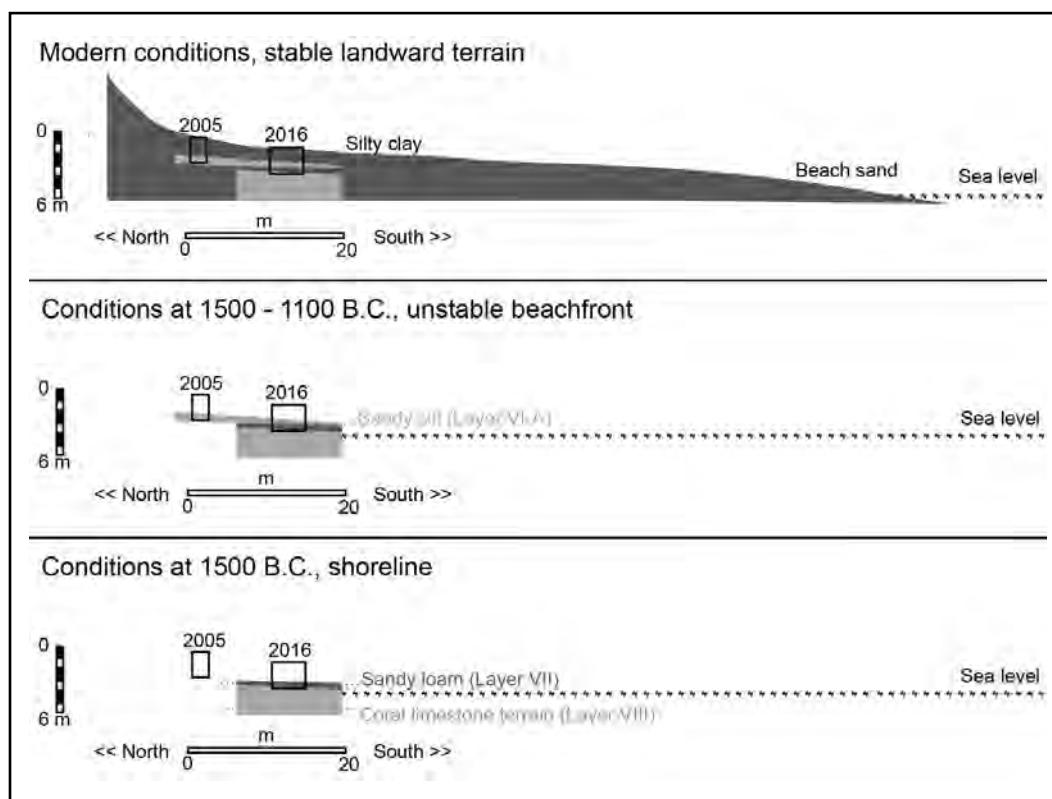


Figure 2. Example of earliest Marianas site setting at 1500–1100 BC, compared with modern-day setting, as seen at Unai Bapot in Saipan, according to 2005 and 2016 excavations. Based on Carson and Hung (2017).

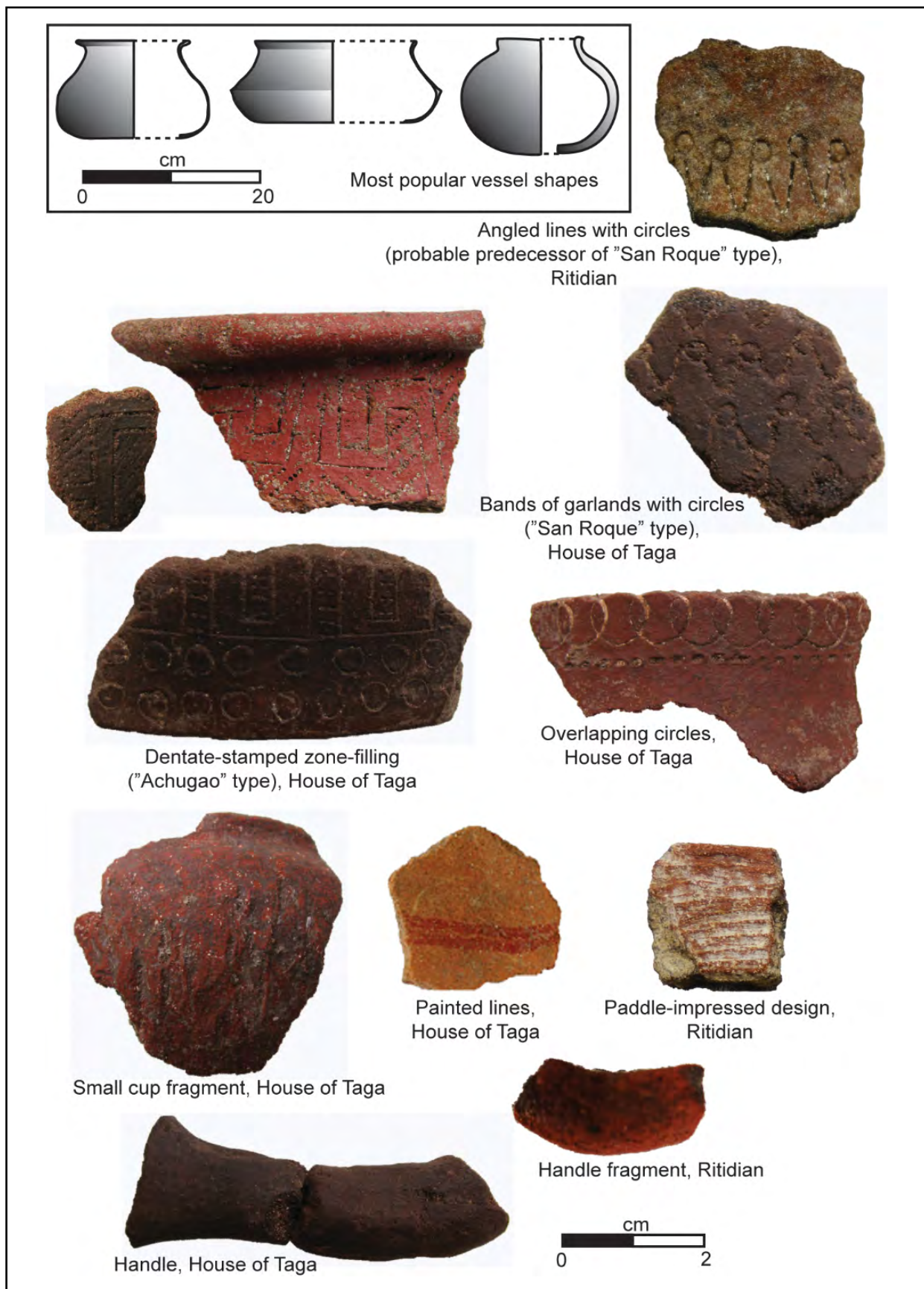


Figure 3. Examples of earliest Marianas pottery at 1500–1100 BC Based on Carson (2016).



Figure 4. Examples of earliest Marianas stone and shell artifacts at 1500–1100 BC Based on Carson (2016).

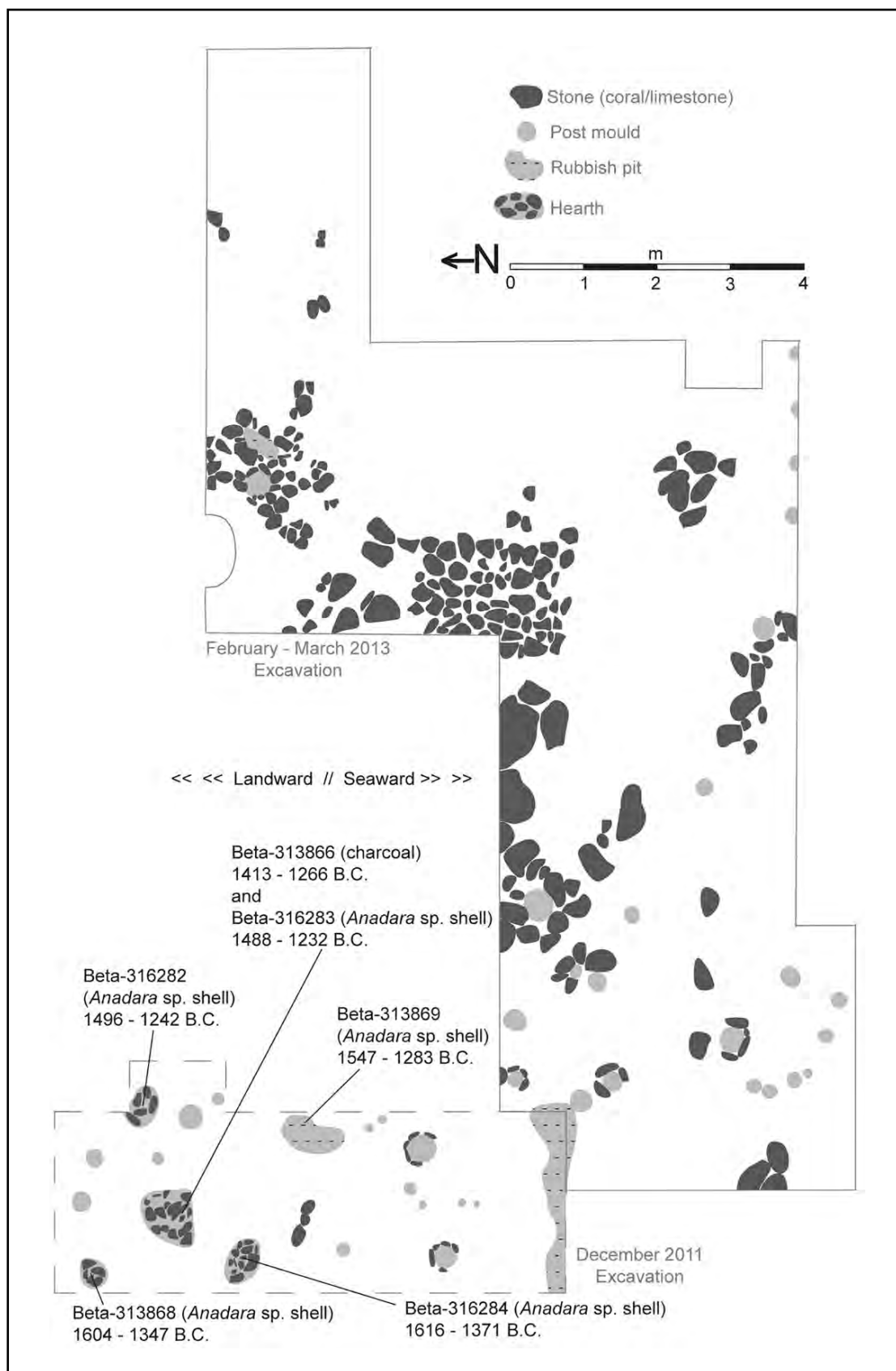


Figure 5. Plan view of ancient habitation at 1500–1100 BC, landward of House of Taga in Tinian, showing arrangement of ancient housing structural remnants with radiocarbon dating. Based on Carson (2016).

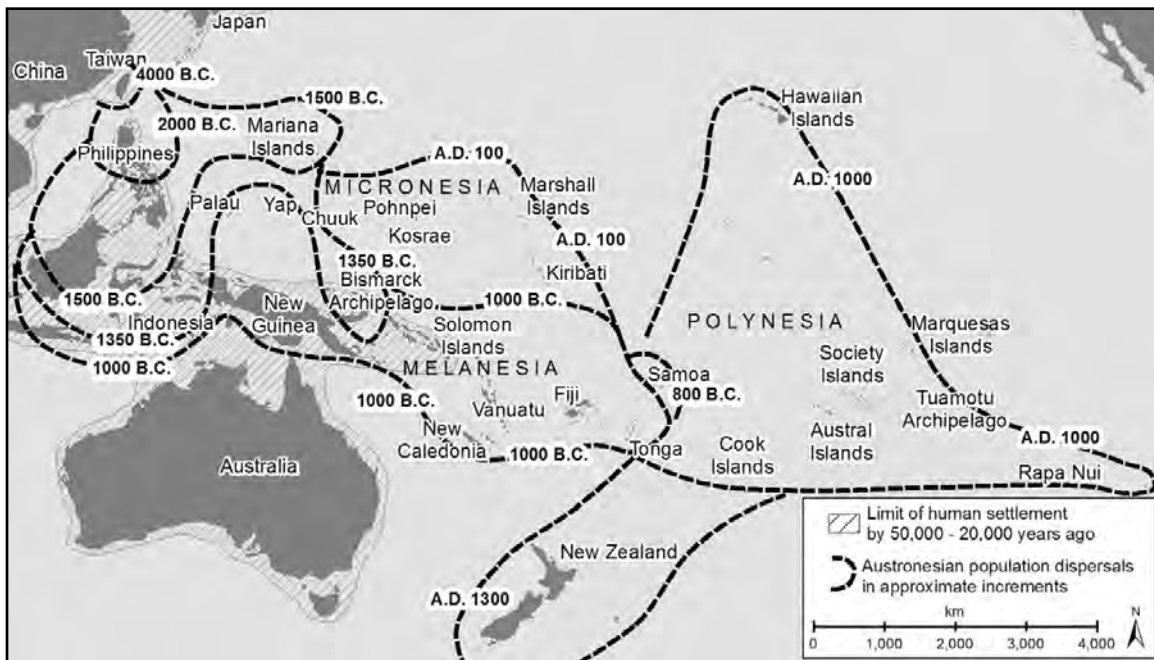


Figure 6. Incremental growth model of population expansions across the Asia-Pacific region. Based on Carson (2018).

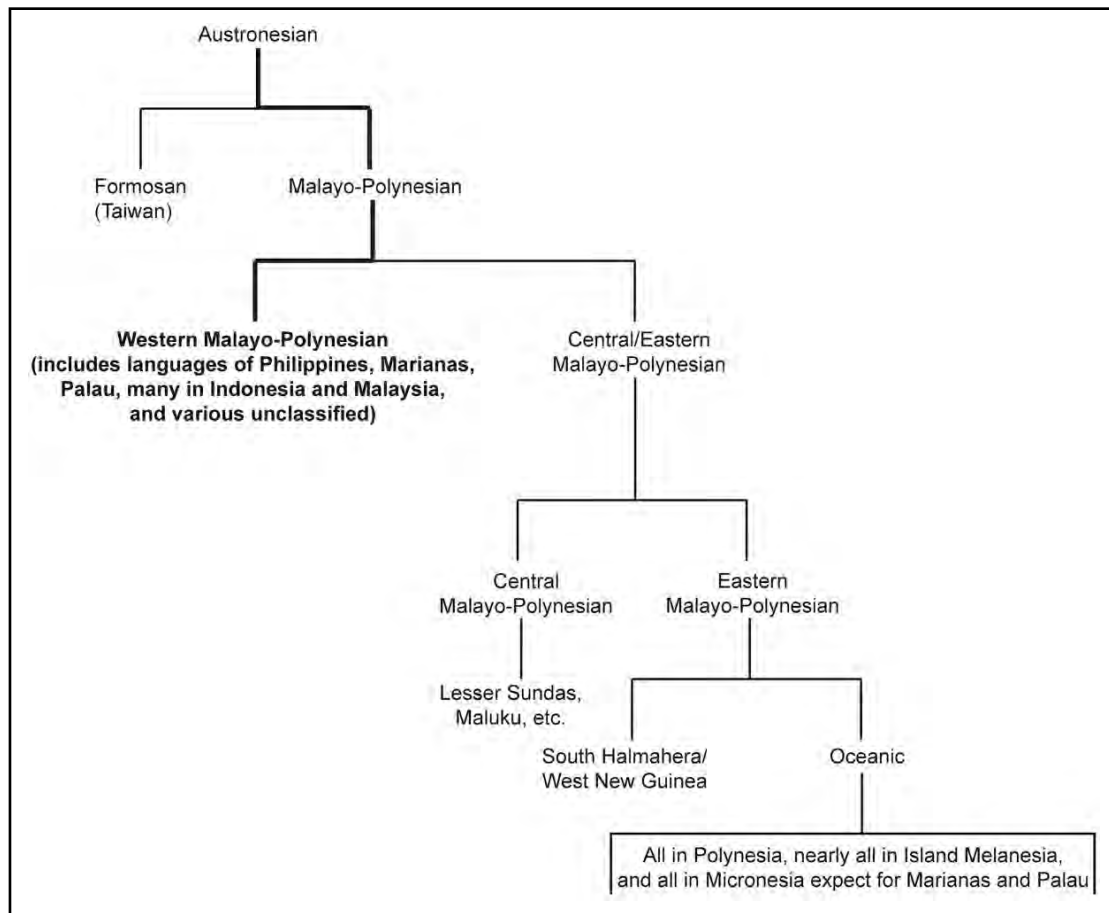


Figure 7. Major relationships among groups and subgroups of the Austronesian language family. Based on Bust (2013).

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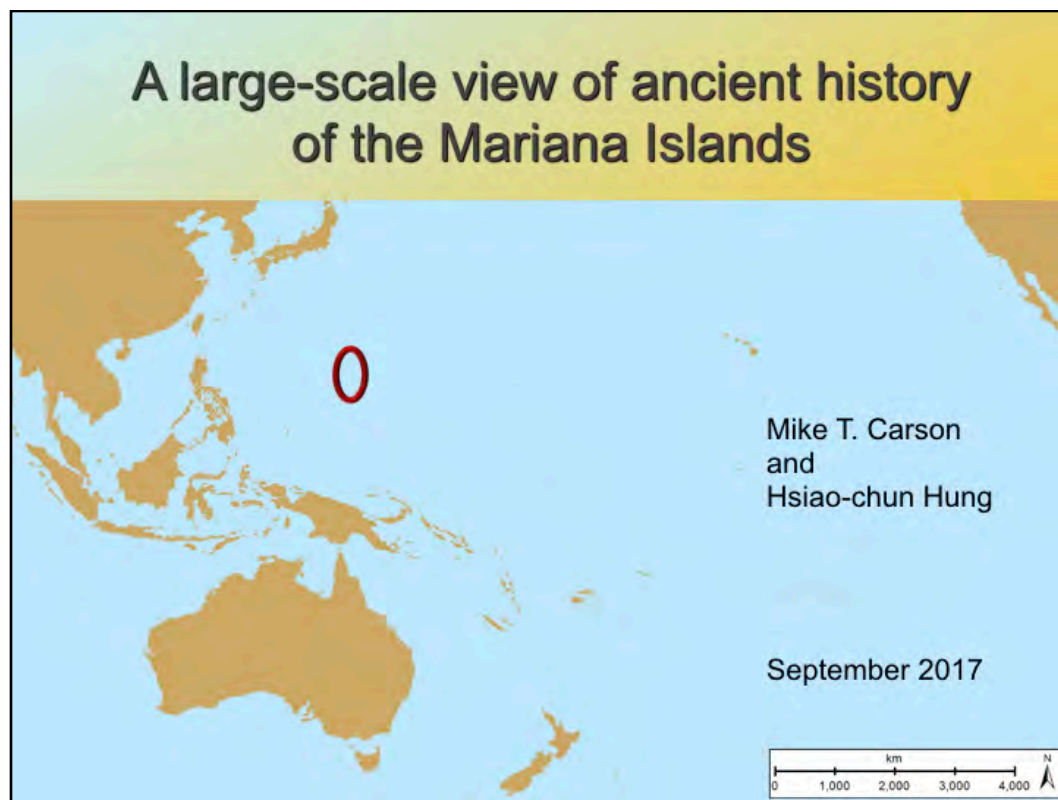
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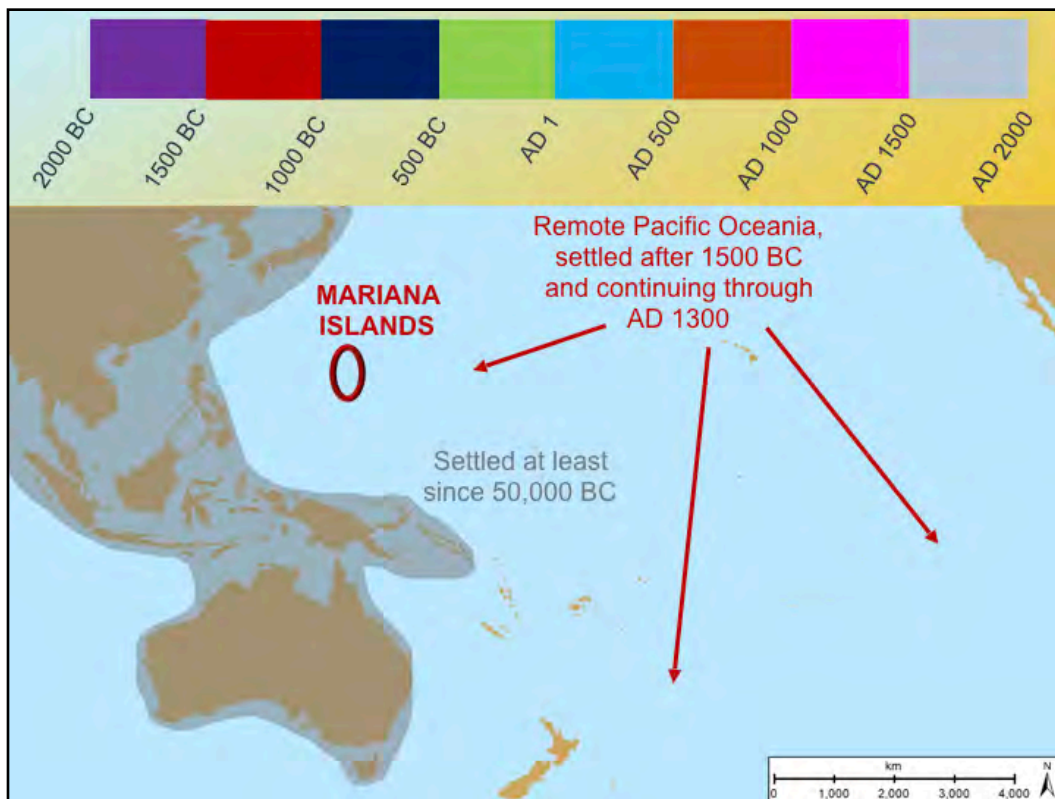
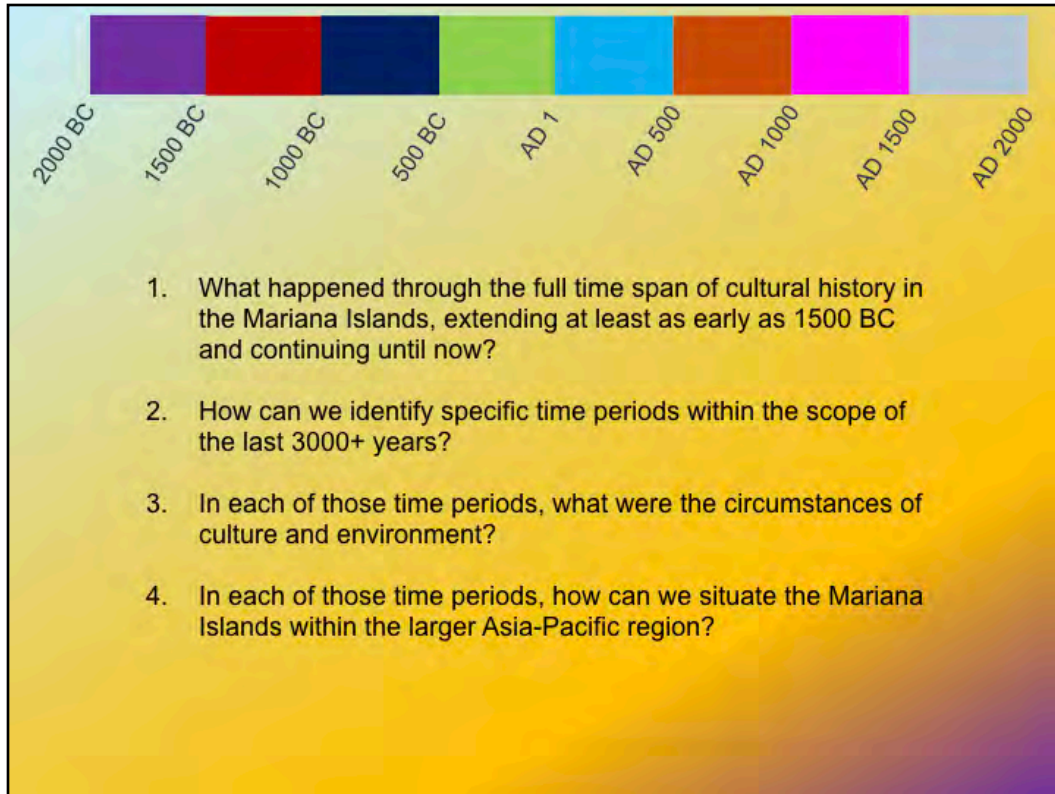
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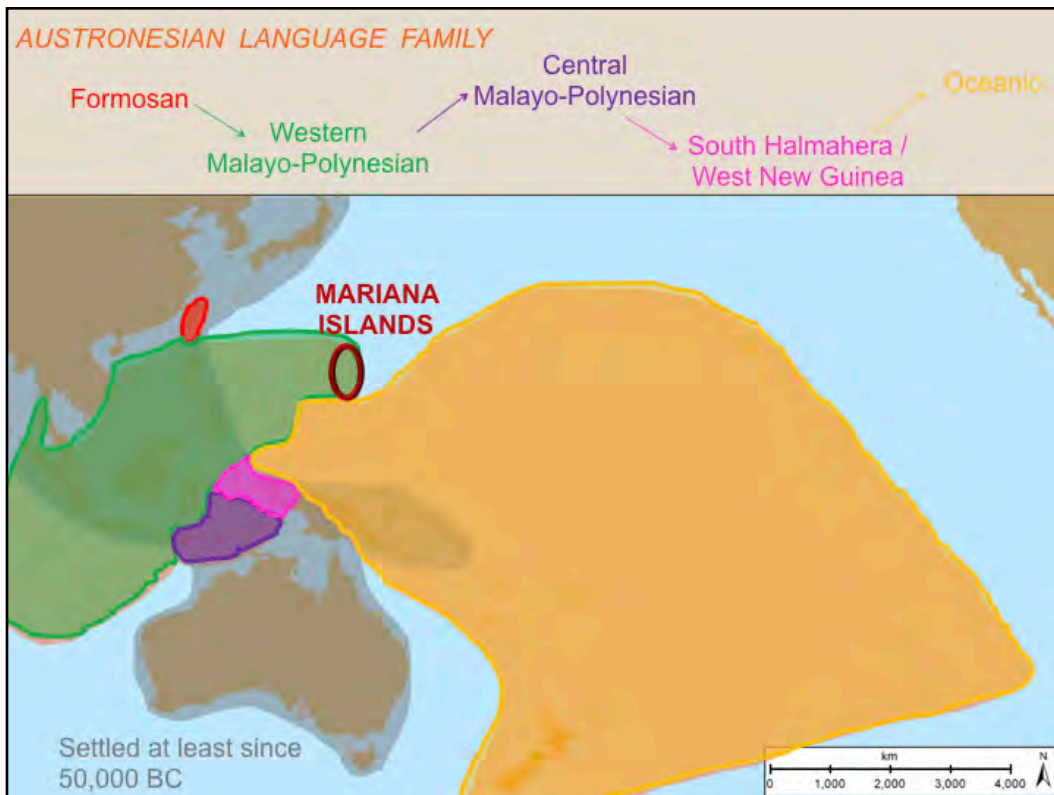
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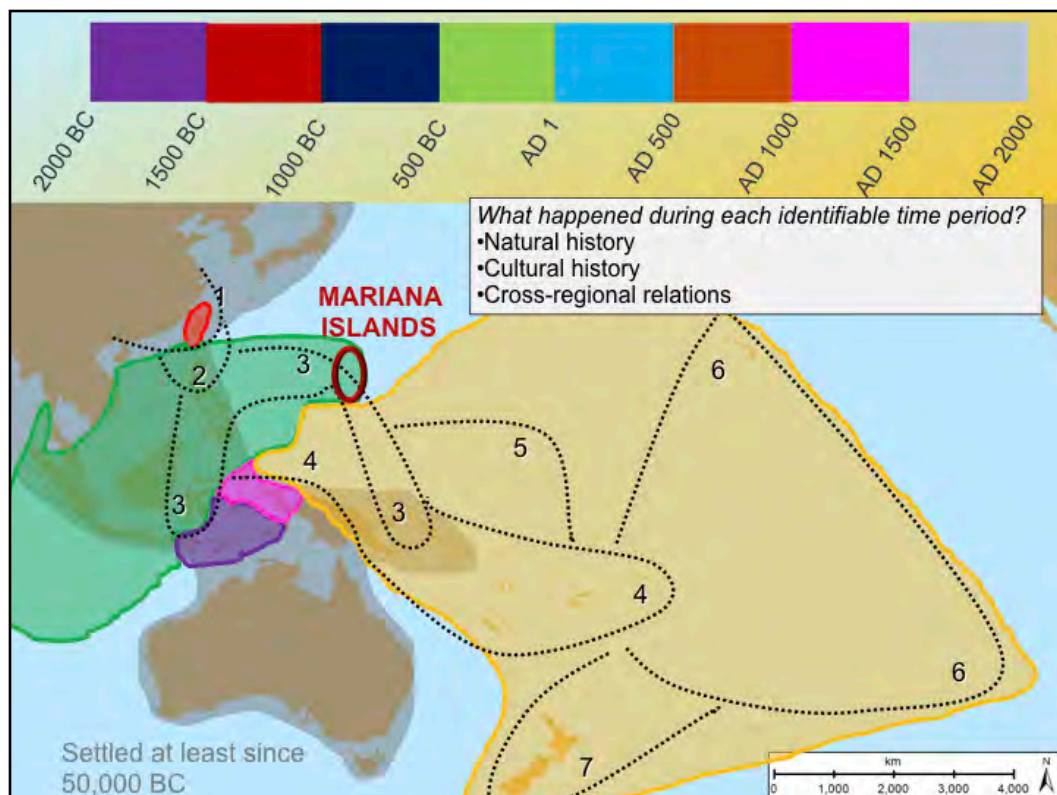
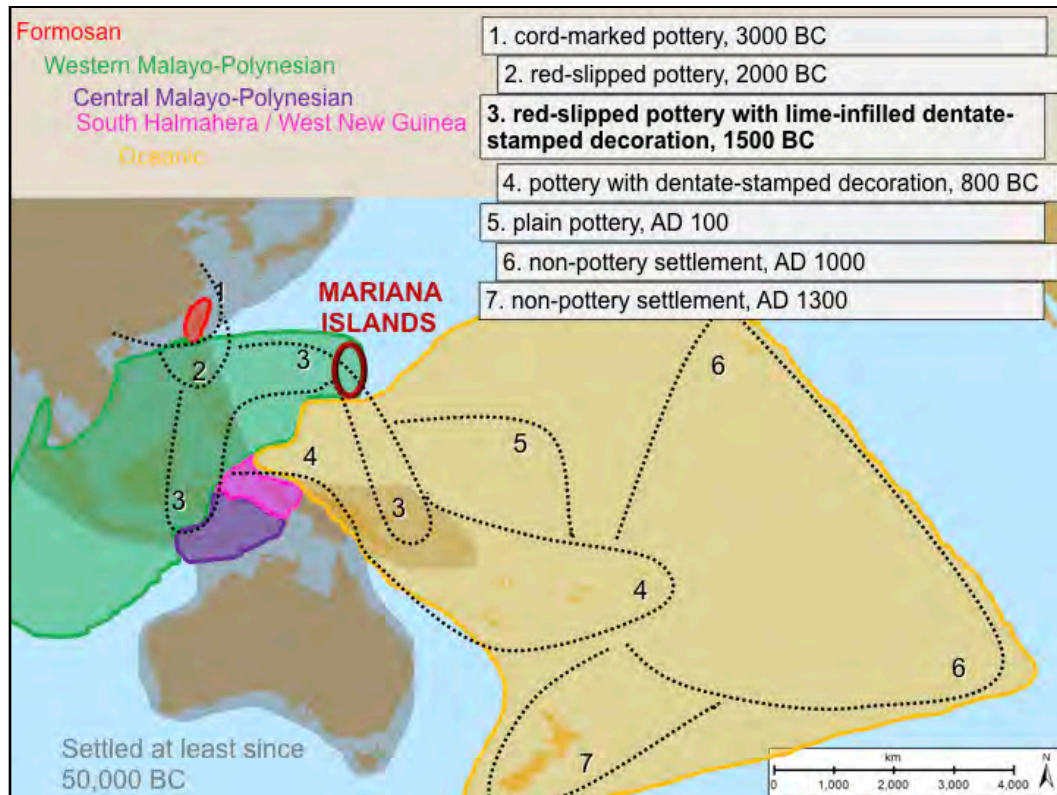


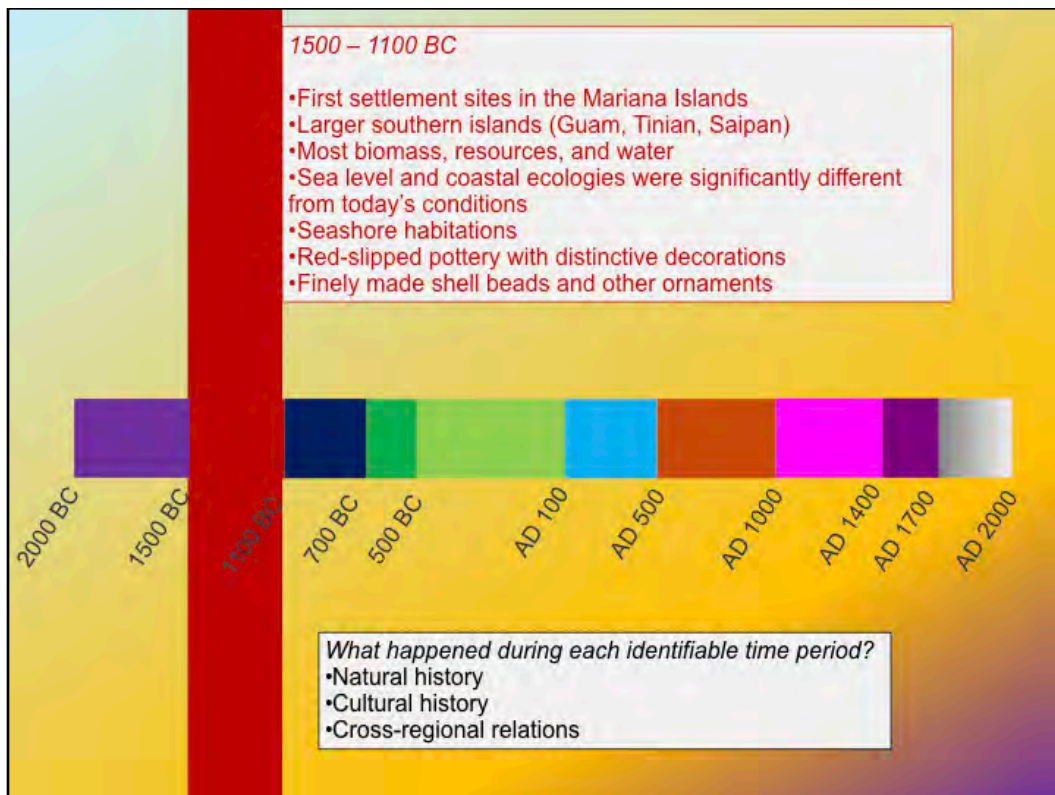


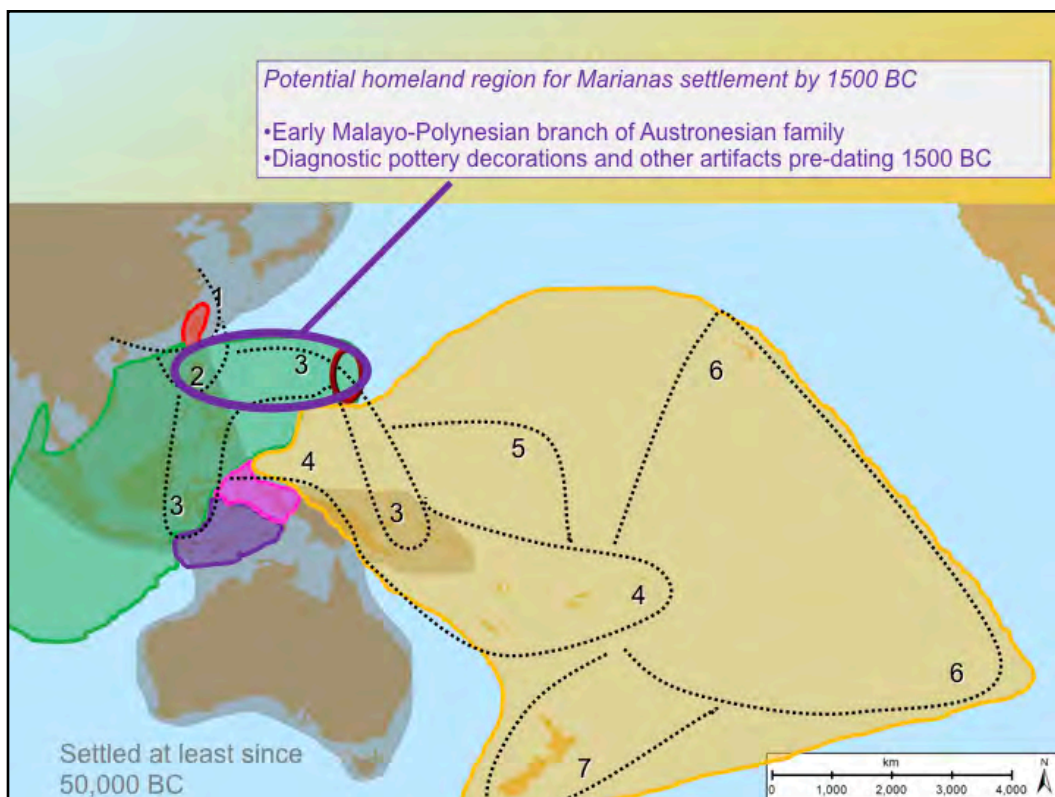
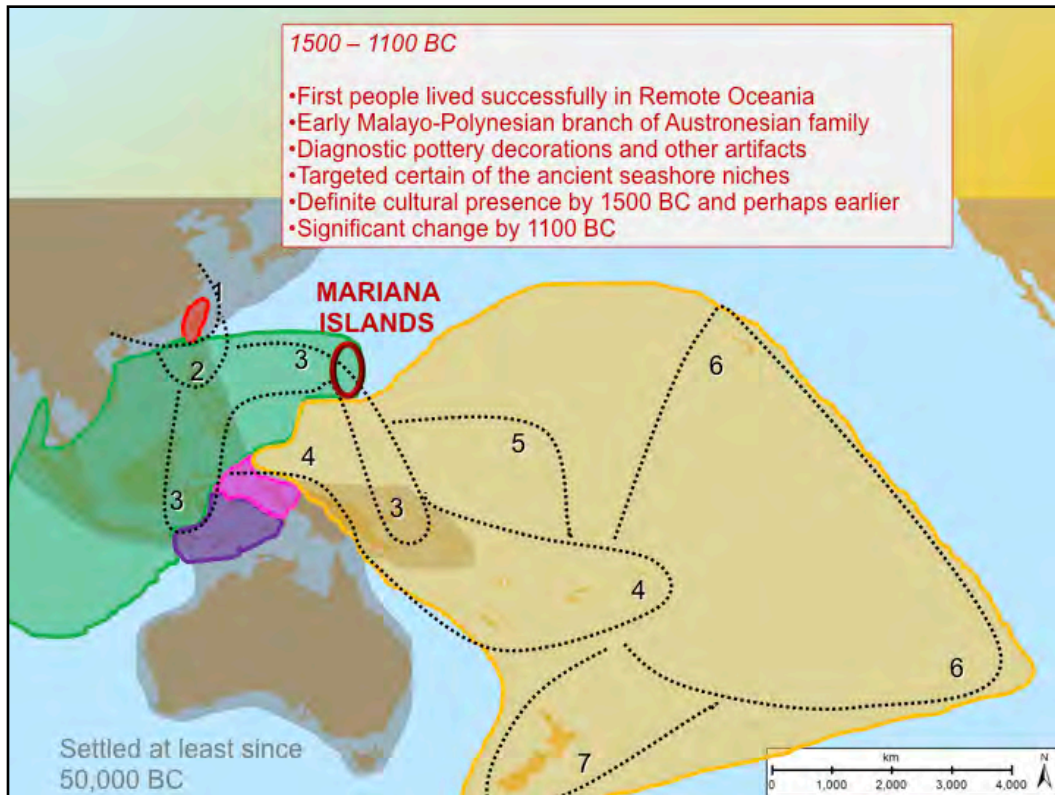
AUSTRONESIAN LANGUAGE FAMILY

- Partial overlap with pre-existing groups
- When did the overlap and expansion occur, specifically involving the Mariana Islands?
- Can we identify multiple "steps" or "stages" of Austronesian groups moving into different areas?

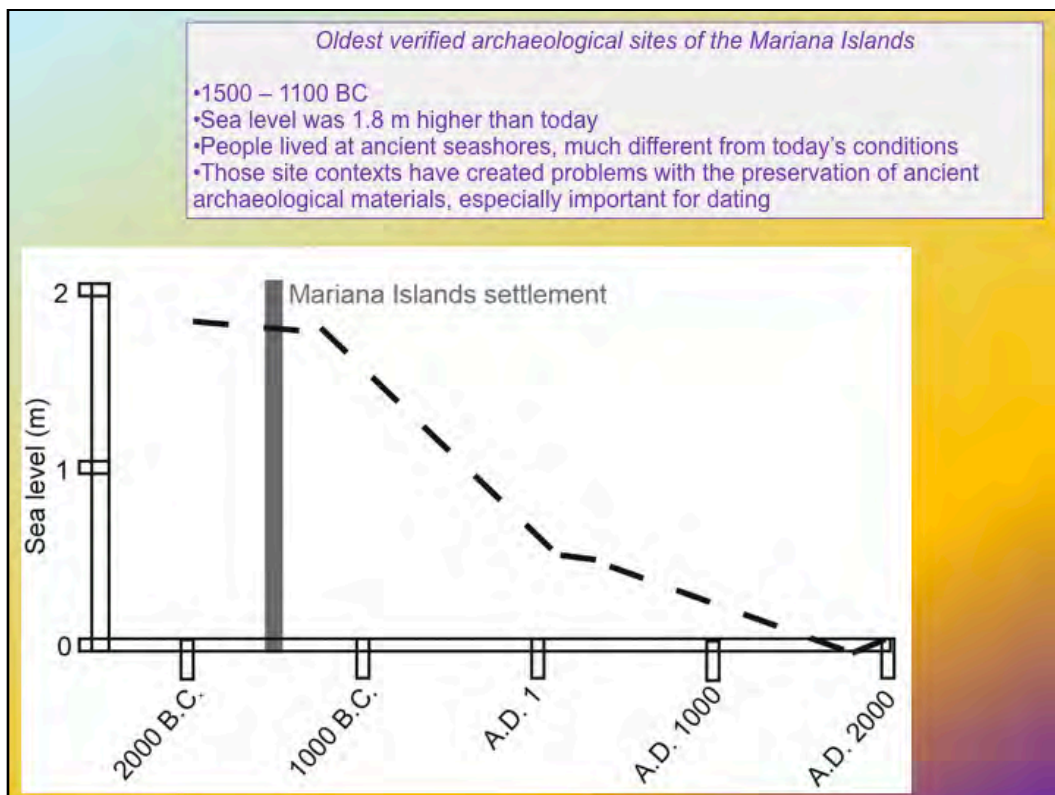
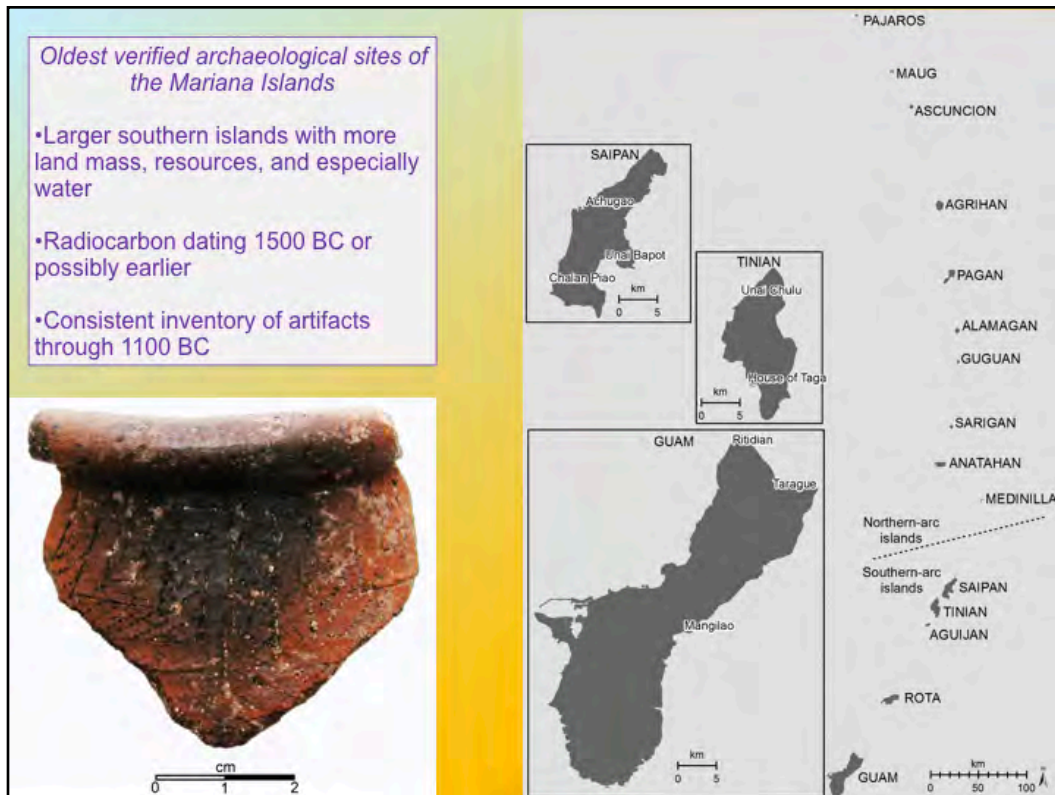


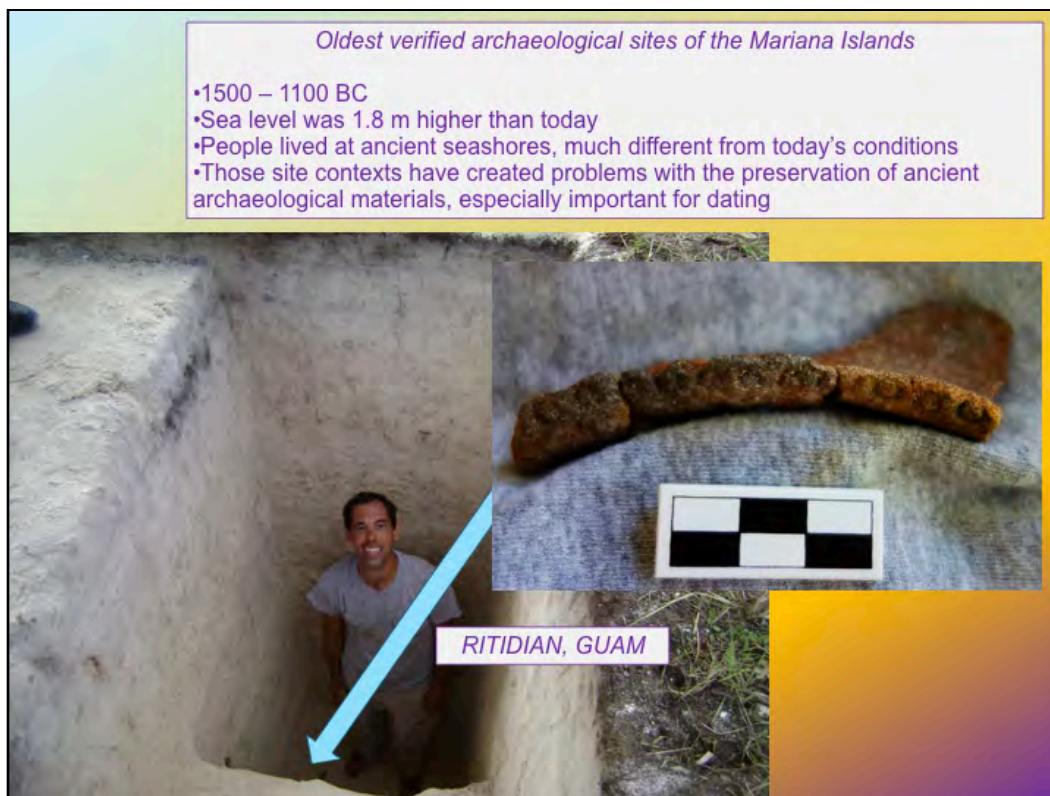
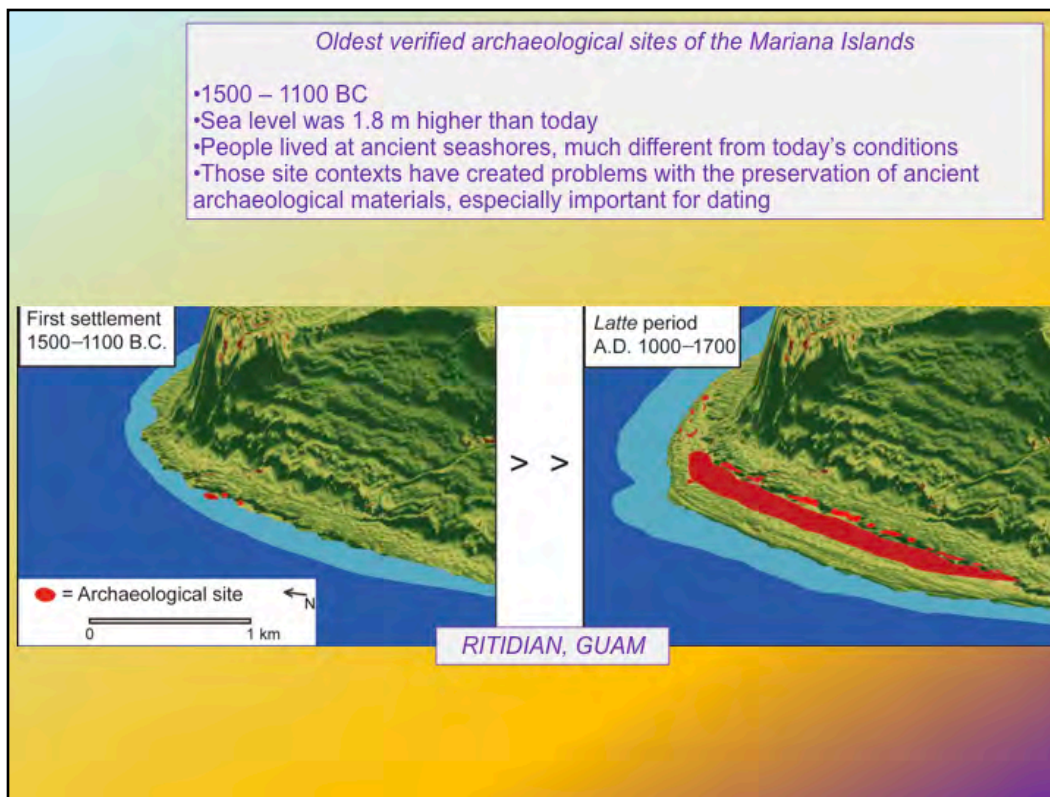


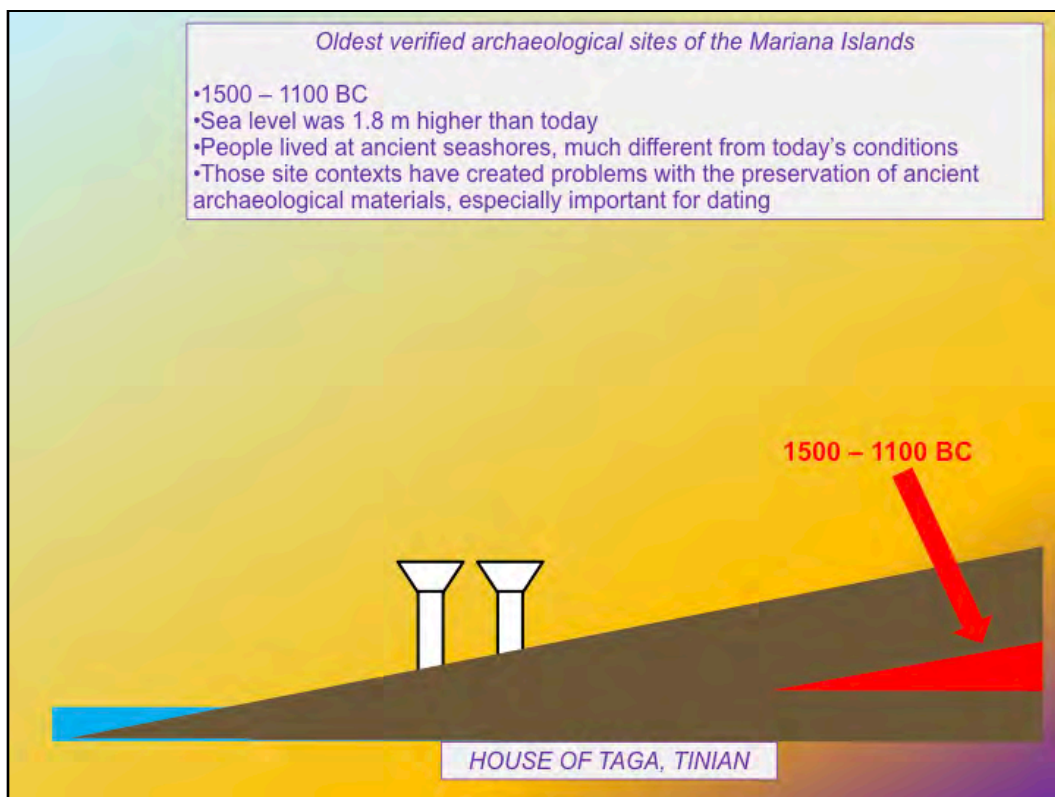
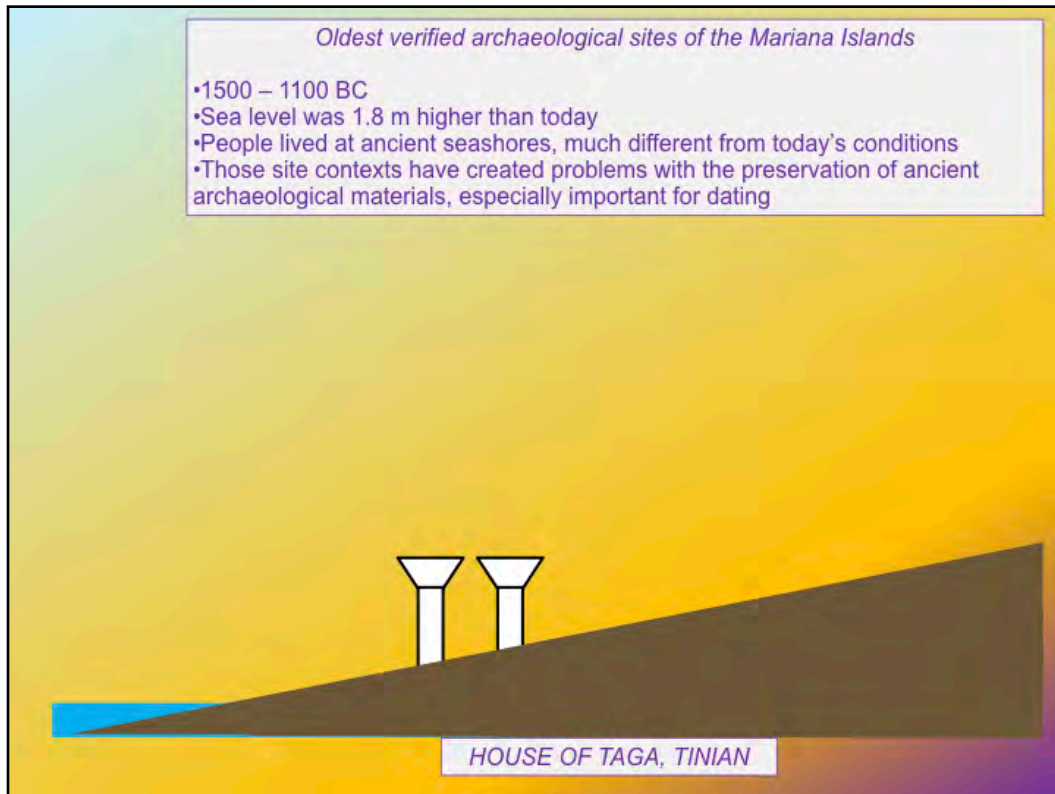












Oldest verified archaeological sites of the Mariana Islands

- 1500 – 1100 BC
- Sea level was 1.8 m higher than today
- People lived at ancient seashores, much different from today's conditions
- Those site contexts have created problems with the preservation of ancient archaeological materials, especially important for dating



1500 – 1100 BC

HOUSE OF TAGA, TINIAN

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HOUSE OF TAGA, TINIAN

Oldest verified archaeological sites of the Mariana Islands

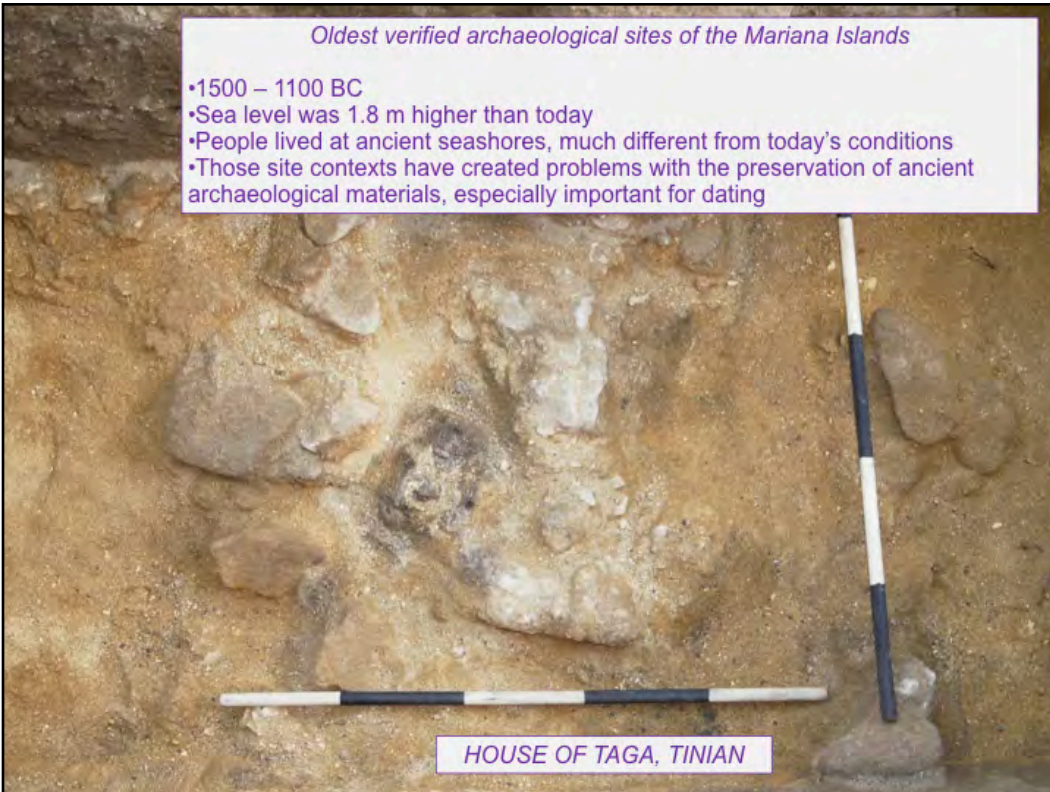
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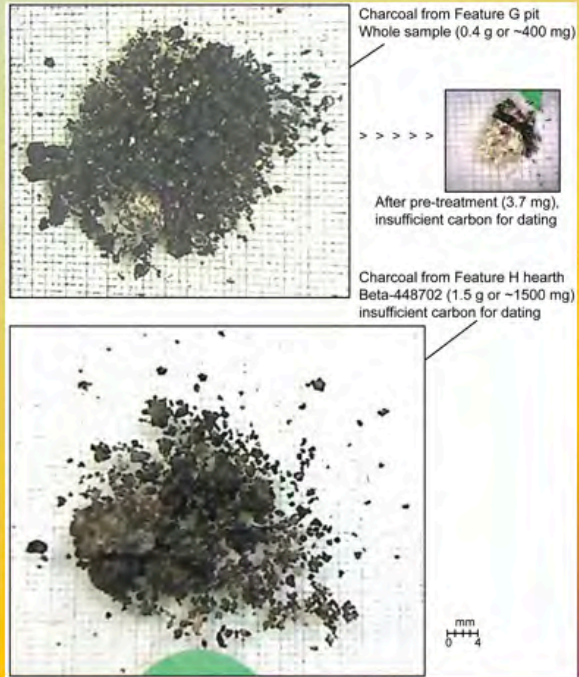


HOUSE OF TAGA, TINIAN



Oldest verified archaeological sites of the Mariana Islands

- In the ancient seashore contexts, charcoal is unreliable for radiocarbon dating



Oldest verified archaeological sites of the Mariana Islands

- In the ancient seashore contexts, charcoal is unreliable for radiocarbon dating

- Instead, need to date shell or other material
- Food shells such as *Anadara* sp. clams
- Secure contexts of hearths and other features
- Use marine calibration curve
- Refine the marine reservoir correction



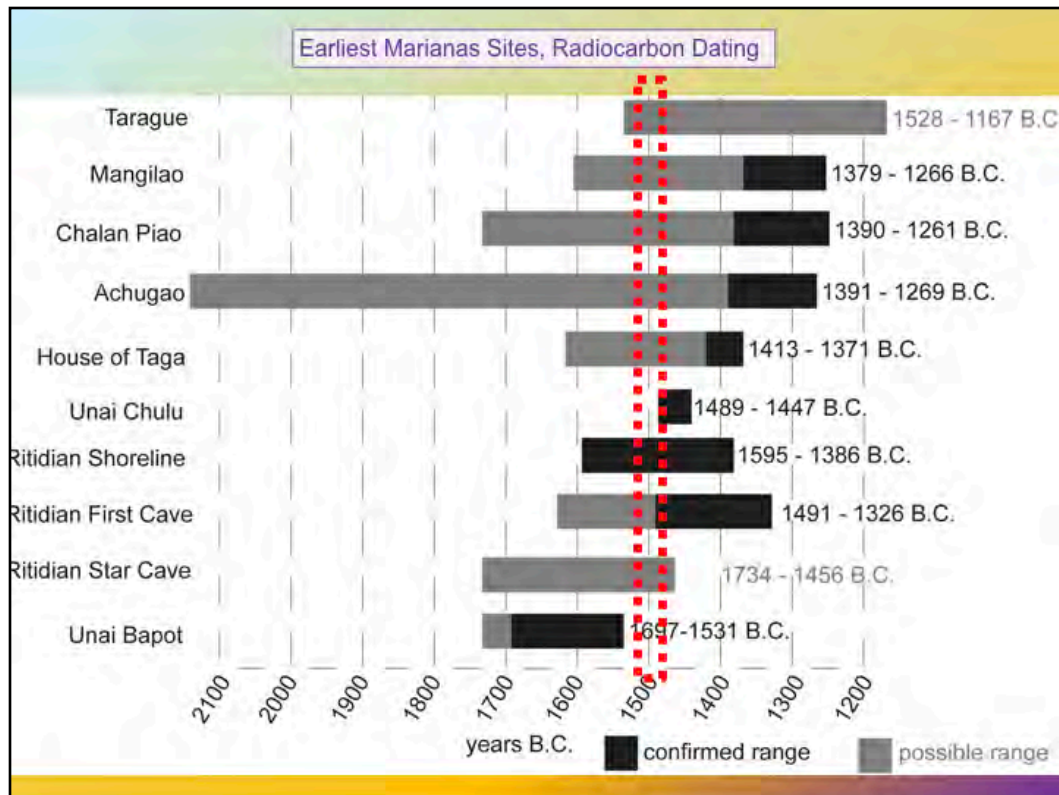
Context	Beta-#	Material	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	Conventional Age (years BP)	Marine Reservoir Correction (ΔR)**	2-Sigma Calibration (calendar years)**
Ritidian, Guam, Stable backbeach layer, 90–100 cm (Carson 2010)	263449	Anadara sp. shell	+2.1	Not measured	2810±40	-70±80	867–412 B.C. (95.4%)
Ritidian, Guam, Stable backbeach layer, 92 cm (Carson 2010)	263448	Carbonised Cocos nucifera (coconut) endocarp	-24.5	-	2510±40	Not applicable	796–509 B.C. (95.4%)
Ritidian, Guam, Stable backbeach layer, 105–110 cm (Carson 2010)	239578	Anadara sp. shell	+1.5	Not measured	3140±40	1±56	1165–806 B.C. (95.4%)
Ritidian, Guam, Stable backbeach layer, 98–105 cm (Carson 2010)	239577	Carbonised Cocos nucifera (coconut) endocarp	-25.4	-	2810±40	Not measured	1073–1066 B.C. (0.7%); 1057–843 B.C. (94.7%)

Context	Beta-#	Material	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	Conventional Age (years BP)	Marine Reservoir Correction (ΔR)**	2-Sigma Calibration (calendar years)**
Ritidian, Guam, Stable backbeach layer, 80 cm (Carson 2017a, 2017b)	424685	Anadara sp. shell	-1.2	-2.1	2870±30	-56±66	788–420 B.C. (95.4%)
Ritidian, Guam, Stable backbeach layer, pit feature from origin at 80 cm (Carson 2017a, 2017b)	433372	Charcoal	-26.3	-	2470±30	Not applicable	768–476 B.C. (92.4%); 464–453 B.C. (1.2%); 445–431 B.C. (1.8%)
House of Taga, Tinian, Hearth Feature A, 170 cm (Carson 2014a)	316283	Anadara sp. shell	0	Not measured	3390±30	-28±48	1481–1190 B.C. (95.4%)
House of Taga, Tinian, Hearth Feature A, 170 cm (Carson 2014a)	313866	Charcoal, narrow twigs	-30.1	-	3070±30	Not applicable	1413–1266 B.C. (95.4%)

Context	Beta-#	Material	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	Conventional Age (years BP)	Marine Reservoir Correction (ΔR) [*]	2-Sigma Calibration (calendar years) ^{**}
Feature C hearth, originating from Layer VI-A (this study, Table 5)	461342	Anadara sp. shell	+0.2	-1.1	3370±30	-90±48	1522–1230 B.C. (95.4%)
Feature C hearth, originating from Layer VI-A (this study, Table 5)	448705	Charcoal	-25.9	Not measured	3110±30	Not applicable	1437–1288 B.C. (95.4%)

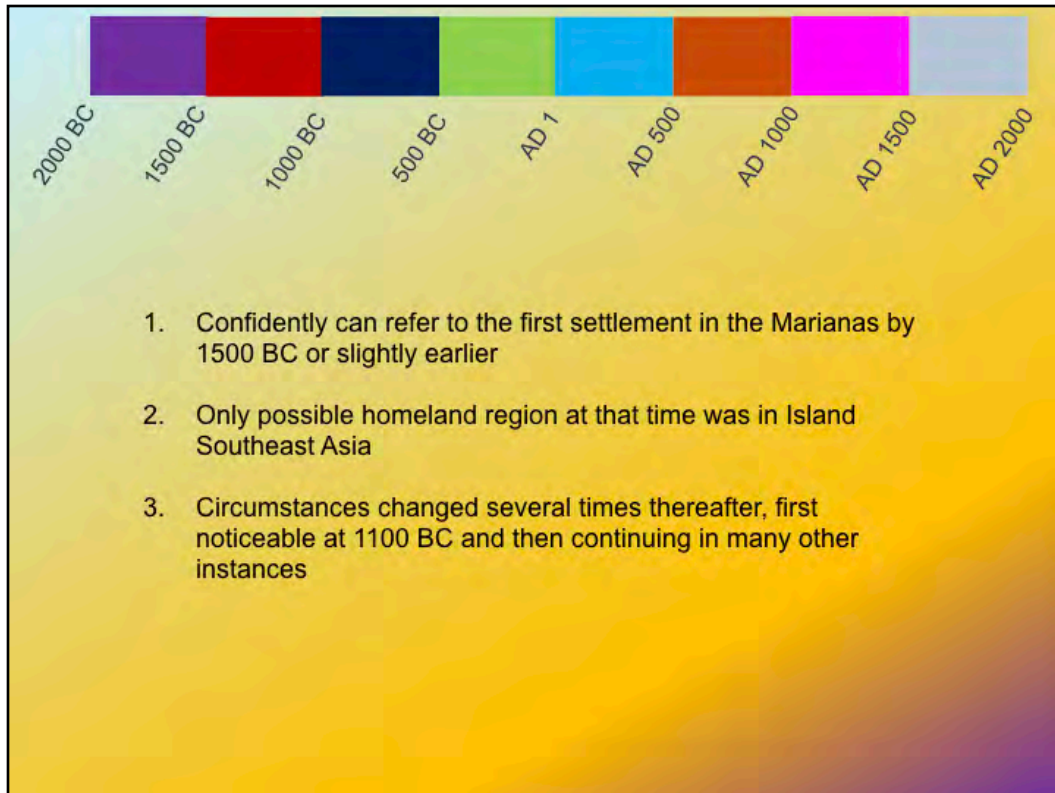
Context	Beta-#	Material	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	Conventional Age (years BP)	Marine Reservoir Correction (ΔR) [*]	2-Sigma Calibration (calendar years) ^{**}
TOTAL POOLED						-49±61	

- Each pairing was within the error range of every other instance
- Isotope ratios were consistent with each other and with all older specimens as well
- All contexts were secure
- Three sites in three different islands, notably including precisely three sites of oldest habitations (Ritidian in Guam, House of Taga in Tinian and Unai Bapot in Saipan)
- Total pooled calculation was rather minimal at – 49 +/- 61
- Effective at least as early as 1437 – 1288 BC
- Reasonable to apply this calculation for the oldest site layers, specifically when dating *Anadara* sp. shells in these particular contexts

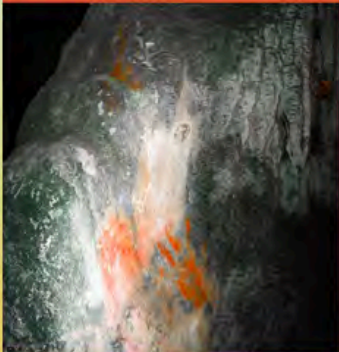


2000 BC 1500 BC 1000 BC 500 BC AD 1 AD 500 AD 1000 AD 1500 AD 2000


1. What happened through the full time span of cultural history in the Mariana Islands, extending at least as early as 1500 BC and continuing until now?
2. How can we identify specific time periods within the scope of the last 3000+ years?
3. In each of those time periods, what were the circumstances of culture and environment?
4. In each of those time periods, how can we situate the Mariana Islands within the larger Asia-Pacific region?



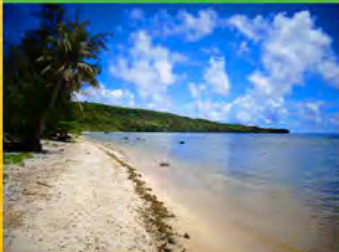
Rediscovering Heritage through Artefacts, Sites, and Landscapes:
Translating a 3500-year Record at Ritidian, Guam
Mike T. Carson




Access Archaeology



Substantive Evidence of Initial Habitation in the Remote Pacific:
Archaeological Discoveries at Unai Bapot in Saipan, Mariana Islands
Mike T. Carson
Hsiao-chun Hung



Access Archaeology



- More information and fuller chronological scope
- Two new books (August 2017)
- Free PDF available online from the publisher

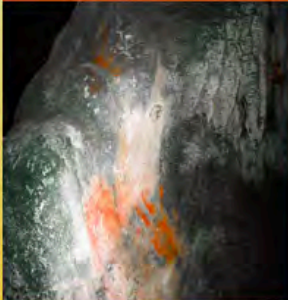
Many thanks!

- Northern Marianas Humanities Council
- Guampedia
- CNMI Historic Preservation Office
- Guam National Wildlife Refuge
- Micronesian Area Research Center, University of Guam

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Access Archaeology





Mike T. Carson (Ph.D. in Anthropology, University of Hawaii, 2002) investigates archaeological landscapes throughout the Asia-Pacific region, with special emphasis in the Mariana Islands. He authored “First Settlement of Remote Oceania: Earliest Sites in the Mariana Islands” (Springer, 2014) and “Archaeological Landscape Evolution: The Mariana Islands in the Asia-Pacific Region” (Springer, 2016). He currently is Associate Professor of Archaeology at the Richard F. Taitano Micronesian Area Research Center (MARC), University of Guam, and he is co-editor of “Asian Perspectives: The Journal of Archaeology for Asia and the Pacific.”



Hsiao-chun Hung (Ph.D. in Archaeology, the Australian National University, 2008) concentrates on human migrations and trading networks in southern China, Taiwan, Mainland and Island Southeast Asia, and the Mariana Islands. Her cross-regional research has supported substantive comparisons of the archaeological materials from multiple sites, for instance toward tracing the ancient movements of people across the region. She currently is Research Fellow in the Department of Archaeology and Natural History at the Australian National University.

Archaeological Data Recovery of Parcel 004-1-52, San Antonio, Saipan

By Boyd Dixon

Senior Archaeologist, Cardno GS Inc.

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Abstract: *During 2014 and 2015, the former US Coast Guard Loran station at Afetna Point in San Antonio on southern Saipan was recorded and subsurface remains excavated by Cardno GS Inc. archaeologists for N15 Architects and Honest Profit International Limited (HPIL). Seventy years earlier on June 15, 1944, the location was called Yellow Beach 2 and 3 by the US Marines and Army infantry braving Japanese artillery to establish a beachhead. Before the arrival of Spanish missionaries almost 300 years earlier, Afetna Point was one of many Latte Period hamlets and villages scattered up and down the western lagoon, from Agingan Point to Makpi Point. Archaeological lab work conducted on-site during 2017 yielded a complex record of this long history, from Latte Period burials, cooking features and stone or shell artifacts, to Japanese war casualties and a concrete munitions magazine, to American combat weapons and unexploded ordnance (UXO), to post-war US Coast Guard buildings, and lastly to a modern boxing rink and fruit stand on Beach Road. All excavated remains are now in the Commonwealth of the Northern Mariana Islands (CNMI) Museum of History and Culture awaiting reburial and interpretation on-site after Historic Preservation office (HPO) review of the final report.*

Archaeological Inventory Survey

In late 2014, the CNMI HPO approved a work plan for Cardno GS Inc. to conduct an Archaeological Inventory Survey of the project area. A subsequent report of the survey results approved by HPO included National Register of Historic Places (NRHP) significance evaluations for four surface sites on the property with recommendations for their treatment during archaeological data recovery (Dixon and McCurdy 2015a). Four archaeological sites were assigned permanent numbers by the HPO (Figure 1):

- SP 1-1037 a subsurface cultural horizon with prehistoric mostly Latte Period remains was found eligible to the NRHP;
- SP 5-1036 a WWII Japanese ammunition magazine was found eligible to the NRHP;
- SP 6-1035 the remains of the WWII and Cold War US Coast Guard Loran station was found not eligible to the NRHP; and

- SP 6-1038 a modern concrete pad for a boxing rink and then food stand formerly on the west side of Beach Road was found not eligible to the NRHP.

The four sites recorded during the archaeological inventory survey represented four time periods of occupation on the property, although historic to modern refuse and occasional prehistoric artifacts were found interspersed within or around each of the four sites during survey and later grubbing due largely to WWII and later 20th century disturbances.

Archaeological Data Recovery

In early 2015, Archaeological Data Recovery of the proposed Honest Profit resort was approved by HPO in a Cardno GS Inc. work plan (Dixon and McCurdy 2015b).

Proposed development included two 6-story hotels, five ground level villas, a swimming pool in between, a lazy river pool in the southwest corner, admissions and entertainment to the east, and parking accessed by Beach Road. Data recovery encompassed virtually the entire area of approximately 10 acres (Dixon and McCurdy 2015c) including remnants of the former sand mine.

Prior to investigation, the CNMI HPO identified the area as having a high potential for encountering significant archaeological and historical resources (Russell 1984). The property was also identified as part of the coastal area designated as a National Historic Landmark WWII American Invasion Beach (Figure 2). In addition, from the US invasion in 1944 throughout the Cold War era, a US Coast Guard Loran facility occupied the property until decommissioned in 1978.

The overall stratigraphy as recorded during data recovery was as follows, although the depths below surface were approximate depending on depths of disturbances:

- Stratum I = 0-30cmbs, loose backfills from sand mining over road gravels from US Coast Guard facility;
- Stratum II = 30-60cmbs, compact very dark grayish brown (10YR 3/2) Latte Period organic cultural horizon, sometimes with features beneath in grayish brown (10YR 5/2) sand;
- Stratum III = 60-100cmbs, loose white (10YR 8/1) sand sometimes with Late Pre-Latte cultural lenses in gray (7.5YR 5/1 to 7/1) sand;
- Stratum IV = 100-150cmbs and below, loose white (10YR 8/1) sterile sand except with cultural intrusions from above.

Pre-Latte and Latte Period Occupation

Very little in situ evidence of the early Pre-Latte settlement of Saipan circa 1500 B.C. was expected on the property given reconstructions of the former coastline east of Beach Road when sea levels were approximately 1.8 meters (m) higher than today (Amesbury et al. 1996; Carson 2008). The late Pre-Latte Period high ground for some time before A.D. 800 appears to have been situated just east of the Middle School parking lot and on a north-south orientation across the middle of the property. Two thin stratigraphic layers of Stratum III were noted between 50-100 centimeters below surface (cmbs), containing only sparse cultural remains and a few *dogas* shells, but no features above sterile sand Stratum IV. Sparse pottery found within these thin layers had Type A straight rims and no surface decoration except slight red slipping.

After A.D. 800 and into the first centuries of sustained European contact before *La Reduccion* in the late 1720s, it would appear likely the receding project area coastline was attractive to Latte Period inhabitants. However, archaeological evidence of *latte* sets here was not recorded in the 1920s by Hans Hornbostel perhaps due to dense coconut plantings during the German and Japanese Periods well before WWII.

No evidence of *latte* habitation support features (*haligi* or *tasa*) was encountered during data recovery, nor any *lusongs*. Instead, an almost continuous zone used for food preparation, cooking, eating, discard, and burials that measured at least 50-75m wide was exposed. This Stratum II zone is presumed to have been situated on the seaward or downwind side of the Latte Period community's habitations, as noted elsewhere in the CNMI (Dixon et al. 2006; Russell and Fleming 1986).

Virtually the entire width of the property on the west edge of the former sand mine contained the Stratum II layer of dark organic midden soil (Figure 3). This cultural layer contained marine shell food remains, tools of marine shell and basalt, sling stones, and Latte Period pottery (Figure 3) with Type B thickened rims (Butler 1990; Hunter-Anderson and Butler 1995; Moore and Hunter-Anderson 1996; Russell 1998). While specific family cooking and eating areas may have been small discrete events over centuries, food preparation on such a large scale at three 1-2m deep *dogas* ovens and two large hearth fields (Figure 4) suggests both communal marine shell collection and periodic feasting involving multiple households.

Interestingly, the deepest *dogas* oven (Feature 5) contained sediments radiocarbon dated between AD 1669 and 1780, decades later than the smaller *dogas* oven (Feature

3) and two hearth fields (Features 1 and 2) that dated AD 1450-1646, and the other deep *dogas* oven (Feature 8) that dated AD 1513-1601. This sequence, based on C14 dates for initial site use (Cal AD 1416-1517), perhaps implies more intense food production at the end of the Latte Period and presumed highest population density, before the site and island were forcibly abandoned during *La Reduccion* circa AD 1730.

The Latte Period residents buried at the Afetna Point village were remarkably healthy (Figure 5), although most achieved adulthood and died in their mid-30s due to the hard work and taxing conditions for their survival. The majority of the 90+ burials were badly disturbed by WWII and subsequent US Coast Guard antenna construction, so could not always be identified as to gender or age. However, a discrete cluster of 12 individuals within a rectangular area roughly 3 m wide by 6 m long appear to be three generations of one family likely underneath one *latte* structure. Excavations yielded three stratigraphic sets of burials: an elder male *manamko* in deepest position who lived to 60 years old or more, presumably cared for by his family at a venerable old age; two adults immediately above; and three to the east at their feet; plus four possible children or early teens to the north. Also present were craniums apparently not associated anatomically with these individuals, although some movement during secondary interment or removal of burial components is possible.

Japanese Administration and World War II

No evidence of Spanish or German occupation of the area was found during excavations, San Antonio being far from Garapan and Tanapag before modern transportation. However, in 1937 the primary coastal road from Chalan Kanoa turned inland toward Asilito before Afetna Point, and one spur of the railroad ended in San Antonio (Bowers 1950). Only five families appear to have lived in and around the property, and seaward of Beach Road is depicted as coconut plantations, not sugarcane. During data recovery a few sherds of Japanese porcelain were encountered in trench backfill within the east half of the property, as were a very few bottles of Japanese beer and soy sauce, but nothing indicating long-term or intensive residency.

The June 15, 1944, invasion of Saipan by the 25th Marines is now located on both sides of the PIC at modern Afetna Point. The Honest Profit parcel is situated at the cusp between Yellow Beaches 2 and 3, both found to be challenging locations to land with inner lagoon tides and currents around the point. No mention is made in secondary literature of the invasion to Japanese coastal defenses aggressively defending the beaches of Afetna Point, so it appears unlikely the munitions magazine at Site SP

5-1036 (Figure 6) was ever completed, with trenches to heavy artillery or machine gun positions never erected.

Instead, the American invasion forces were met with strong Japanese crossfire (Figure 7) from fortifications on Agingan Point to the south and low hills to the east, calibrated to target flags still left in the lagoon when American landing crafts approached the beaches at 8am (Bulgrin 2005). Counter attacks were bitterly fought off within the project area where 105mm Howitzers were only brought into position late in the afternoon. By the end of D-day the US Marines were ashore and dug into foxholes with heavy casualties and considerable Japanese dead, but the goal of a unified fighting line at the Japanese railroad east of Beach Road was not fully achieved across all of Yellow Beaches 1, 2, and 3.

Artifacts from the first day of combat in the project area were prolific and predominantly of American manufacture (Figure 8). They included dozens of 105mm howitzer shell casings; many metal T-posts and fragments of barbed wire; a Browning M1917 .30 caliber light machine gun; and large pits containing later combat clearance artifacts and UXO including live American hand grenades, white phosphorous smoke grenades, ammo boxes with .50 caliber bullet belts, and hundreds of single .30 caliber rounds. Two burials of nearly intact soldiers with Japanese military gear and munitions, and two partial sets of human remains with fewer military artifacts were encountered in mid-property near the sand mine. These soldiers perhaps give testament to the first desperate *banzai* charge after days and nights of naval and aerial bombardment.

Post World War II Development

It was not until November 1944 that construction began of the Loran Station, presumably well after the battlefield foxholes and artillery positions had been backfilled. During excavation of these WWII positions and disturbed Latte Period burials, miles of copper wire were found for grounding each antenna and perhaps transmitting information to the communication center, first built with six Quonset huts and smaller support structures near the antennas and closer to the beach. The transmitting station was eventually paired with Loran stations on Ritidian and Cocos Island on Guam, but was instrumental in providing an early beacon for returning B29s and vessels to Saipan during the period when American airfields were still under attack from Japanese possessions.

The station was later rebuilt with three concrete structures further inland, for signal power building, barracks, and mess hall in the 1950s (Figure 9), with a newer concrete cesspool encountered during excavation. After the metal towers suffered damage during Typhoon Jean in 1968, the facility was rehabbed in 1969 with concrete bases often found to be impacting the Latte Period cultural layer on the west side of the site. The Loran station and US Coast Guard presence were decommissioned in January of 1978, after several episodes of gravel road resurfacing encountered underneath 1987 sand mine fill in the east half of the property, and the destruction of a concrete building found beneath the fruit stand and boxing rink along Beach Road. The former Surf Hotel and later Pacific Island Club were then constructed next door.

Comparisons with the Garapan Site

As a result of the *3rd Annual Marianas History Conference* in Saipan, tentative comparisons are enabled between the Afetna Point development in San Antonio (Dixon 2017, this paper) and the Garapan development (Dega et al. 2017), a linear distance of roughly 6 miles.

- Both developments covered an approximate area of 10 acres, although the Afetna Point site included a less than 2 acre portion removed during 1980s sand mining, with an unknown number of burials extracted.
- Both sites were occupied during the Latte Period, although use of the Garapan site was much earlier as radiocarbon dated between at least AD 1220-1645 (before sustained Contact), while the Afetna Point site use was radiocarbon dated between at least AD 1426-1780 (more likely circa 1730 after *La Reduccion*).
- The Garapan site yielded 416 burials in 2017 and 261 in the 1990s totaling 677, while the Afetna Point site yielded a total of 93, minus those removed in the sand mining and by Graves in the 1980s.
- The Garapan site had three spatially distinct burial complexes roughly paralleling the coast and perhaps representing three time periods or clan clusters, while the Afetna Point burial complex had no extensive clusters on such a large scale. In neither case were these clusters necessarily the social limits of the two sites that may have extended further in either direction.
- Burials at the Garapan site included several with dental incision and one child within a ceramic vessel, while no such evidence was noted at Afetna Point site.
- Both sites had a relatively healthy population with evidence of betel nut dental staining, but no major health problems or introduced pathogens.
- The Garapan site contained fire hearths and postholes with dense midden, while the Afetna Point site contained deep *dogas* ovens and multiple hearth

fields (and/or possible bonfire pottery kilns) with dense midden, but few postholes evident.

- Both sites had the full range of Latte Period stone and shell tools or beads, although the Garapan site had more basalt flakes and cores, and limestone sling stones, than noted at the Afetna Point site.
- Both sites had evidence of the range of domestic food crops and forest products expected during the Latte Period, in Garapan identified from biomolecular research and in Afetna Point from microfossil remains.

To summarize these comparisons, the Garapan site appears to have been occupied earlier in the Latte Period, but perhaps abandoned or moved after the arrival of the Spanish missionaries circa AD 1668. The Afetna Point site began two centuries later but continued to be occupied up until *La Reduccion* ending circa AD 1730, perhaps due to its greater distance from Colonial acculturation. The Garapan site had a larger population density and more clustered settlement pattern, while the Afetna Point site had a smaller population and more dispersed settlement pattern, perhaps reflecting different clan residency rules. The higher number of sling stones at the Garapan site may also have had social implications perhaps including disputed cross-clan interaction at some distance from the village.

Both sites had ample cooking remains, but those at the Afetna Point site suggest communal ovens and hearth zones (and/or possible bonfire pottery kilns), while at the Garapan site cooking may have been relegated to within site clusters, again perhaps a reflection of clan residency. Both sites also had the full range of stone and marine shell tools or beads, but the Garapan site appeared to contain more evidence of stone tool manufacture while the Afetna Point site had more evidence of stone tool maintenance and repair. Garapan was situated closer to sources of volcanic stone in the uplands, while Afetna Point was situated at the extreme southwestern corner of the island on a limestone plateau. Both sites appeared to be sustained by terrestrial horticulture and forest collection, as well as marine and terrestrial hunting and gathering. Proximity of Afetna Point to the island of Tinian and possible social exchange should not be overlooked as one source of different patterns of clan residency.

Conclusions

In conclusion, when viewed together this chronological record of human settlement and occupation of Saipan for over 2000 years (Figure 10) has rarely been presented to the visitor and local public in a wholistic and interactive manner on the very location

such remains were unearthed. The Afetna Point site and that excavated in Garapan have the potential to serve as a bridge between the CNMI Museum of History and Culture, the Marianas Community College and other educational institutions, and the National Park Service American Memorial Park. The hotels can therefore help preserve the cultural heritage of San Antonio and Garapan for future research and reburial, while providing a venue for experiencing the interplay of natural and cultural history through evolving interpretive exhibits and guided tours by locally trained docents and cultural practitioners.

Figures

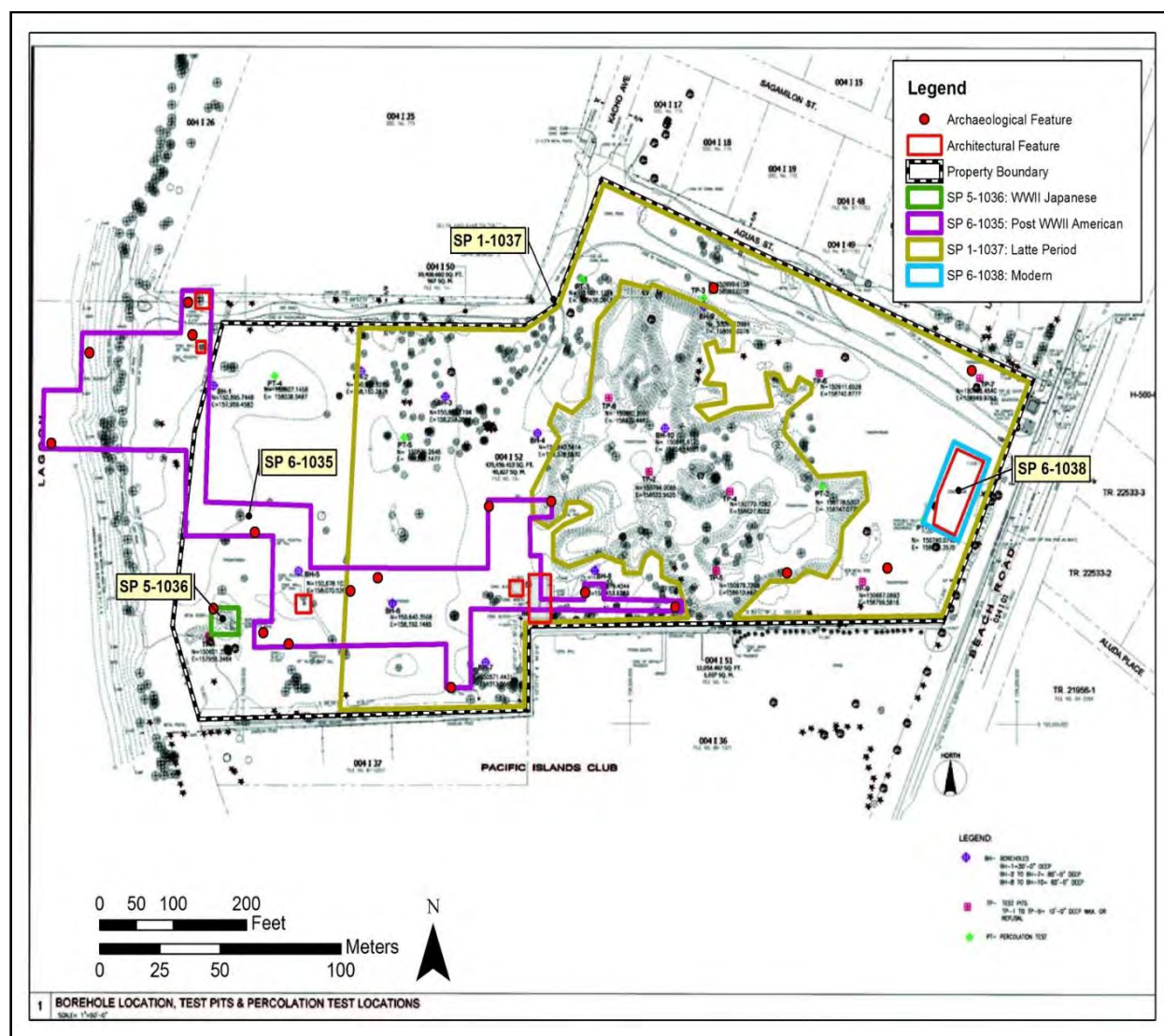


Figure 1. Location of Archaeological Sites on Property





Figure 3. Site SP 1-1037 Latte Period Artifacts

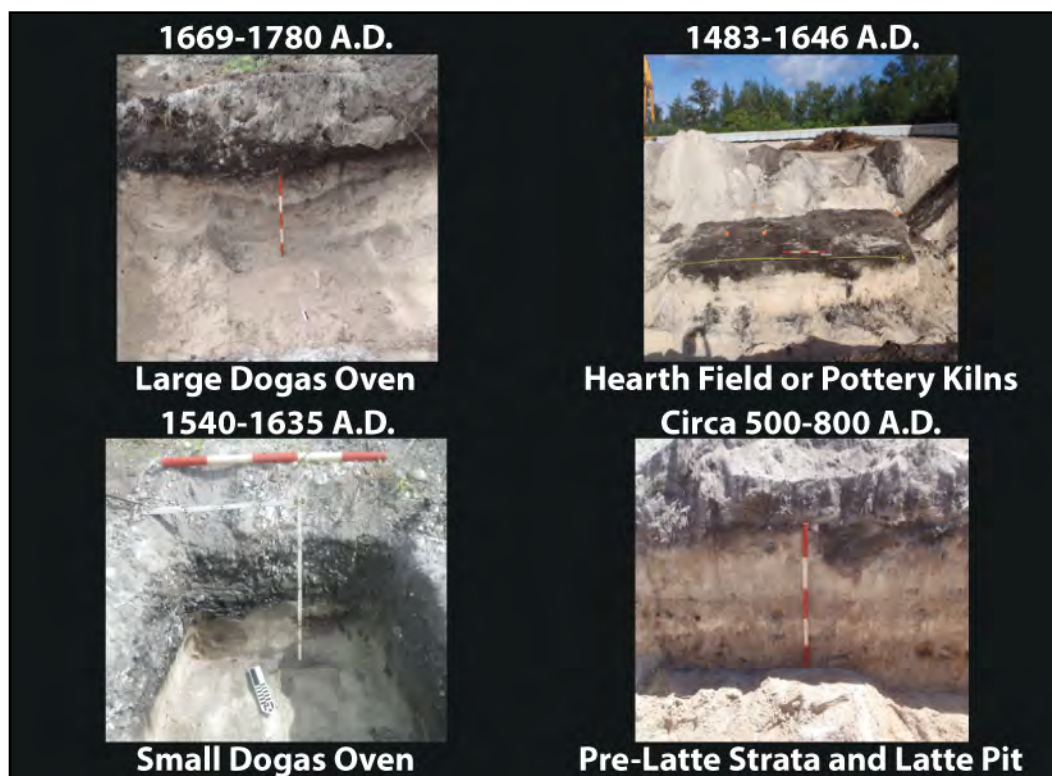


Figure 4. Site SP 1-1037 Latte Period Features

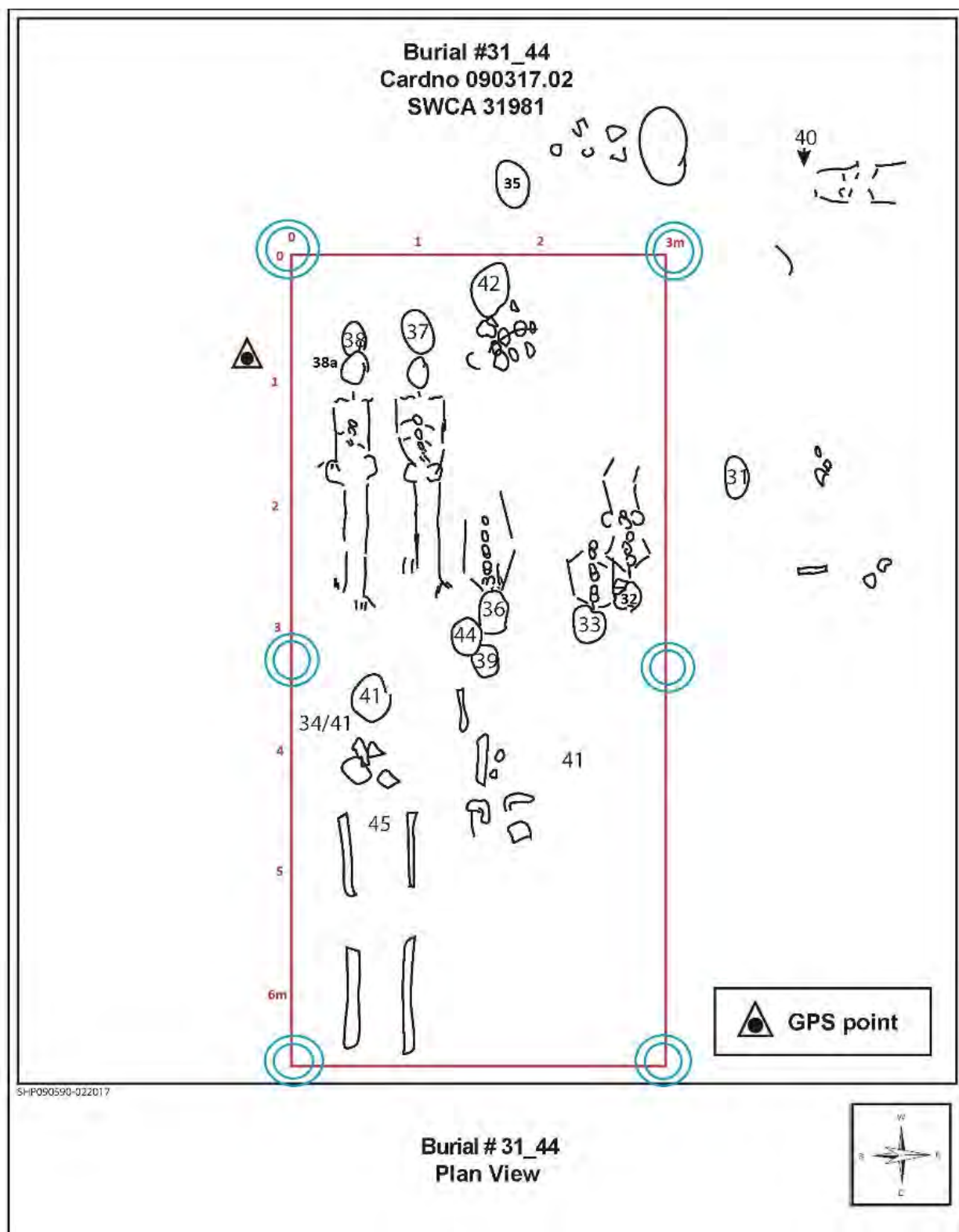


Figure 5. Site SP 1-1037 Latte Period Burials

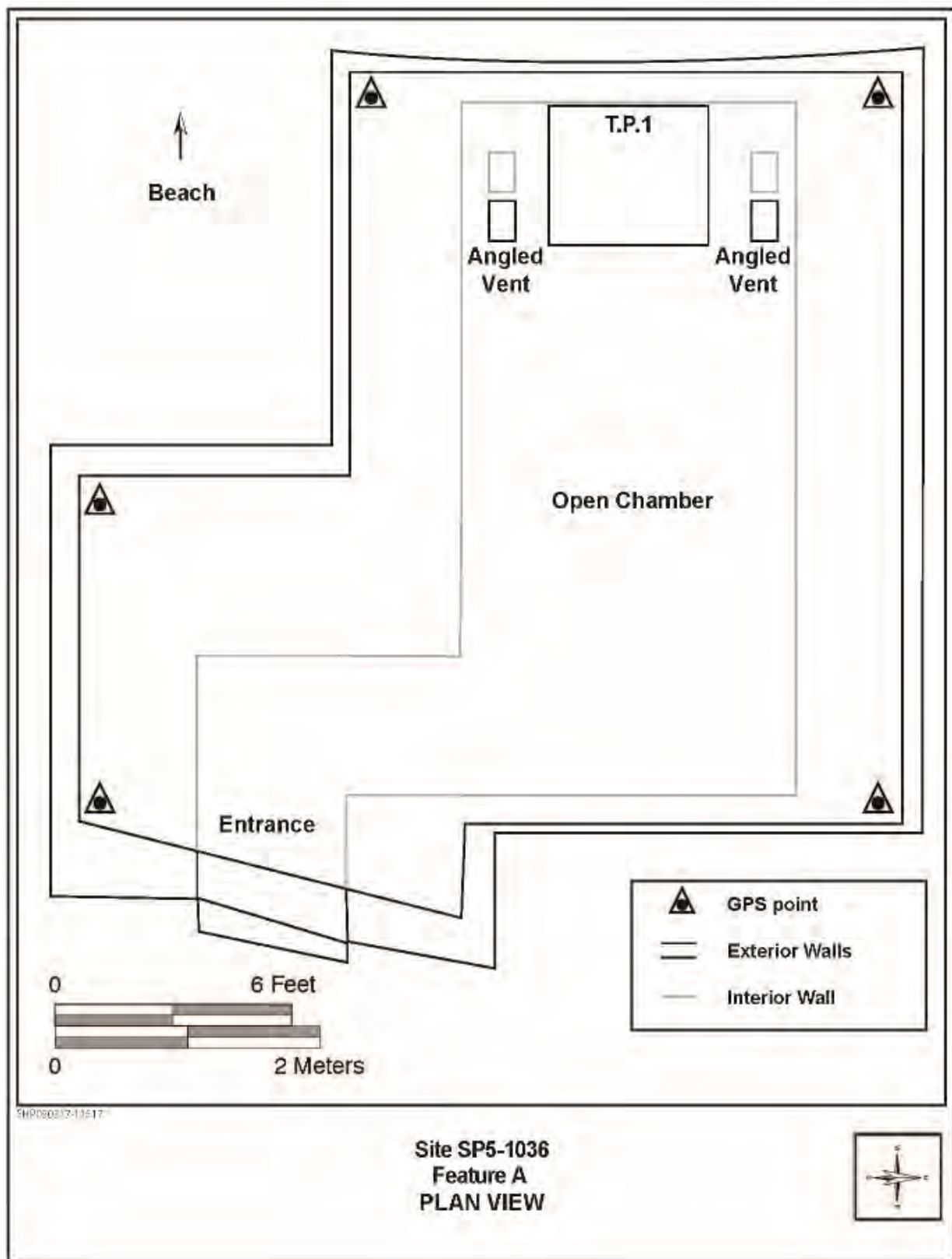


Figure 6. Site SP 5-1036 Japanese Munitions Magazine



Figure 7. Site SP 5-1036 Japanese Artifacts



Figure 8. Site SP 5-1036 American Artifacts



Figure 9. Site SP 6-1035 US Coast Guard Loran Station

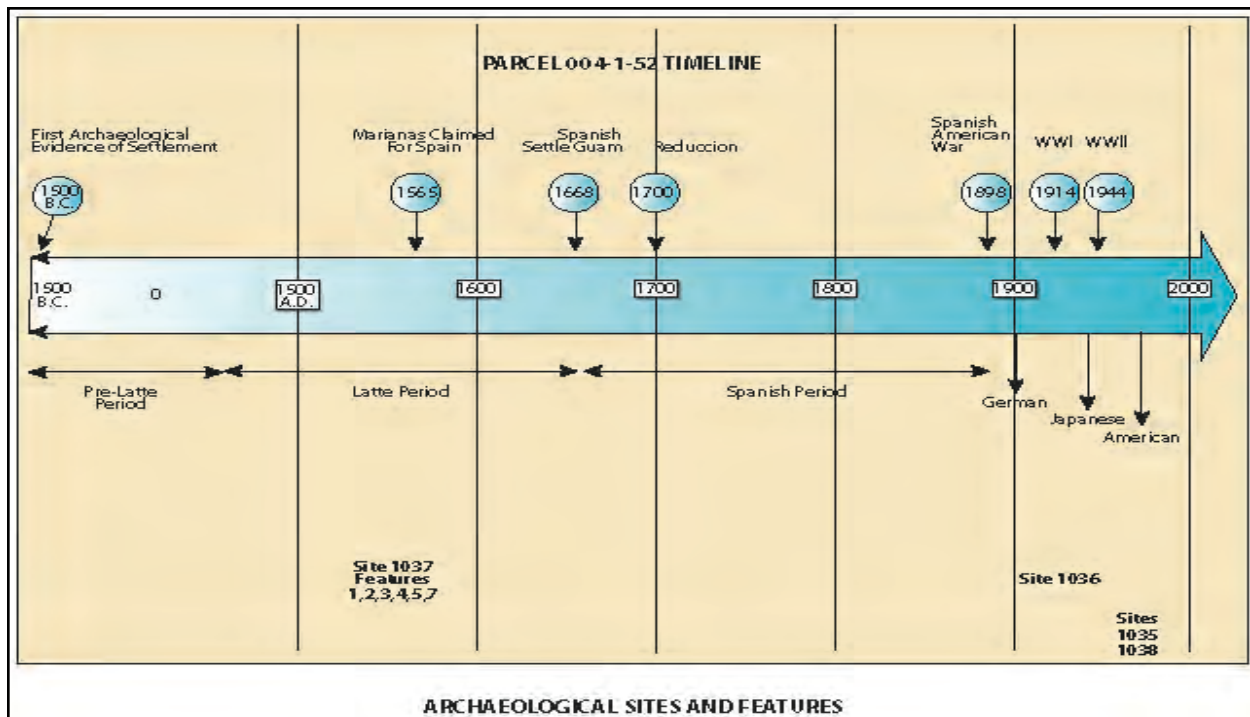


Figure 10. Timeline for Occupation of the Property

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Indigenous Adaptive Resistance in the Mariana Islands: Rethinking Historical Eras

By Dr. David Atienza

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Abstract: *This paper is part of an ongoing research project that seeks to analyze indigenous adaptive resistance and cultural continuity during the Spanish colonial enterprise in the Mariana Islands. In doing so, Atienza will bring out evidence of cultural continuity and transformation, and what might be questioned as a compartmental and externally driven understanding of the history of the archipelago and its islands.*

During the last years, I have been working with a concept that looks relevant to approach the Mariana Islands ethnohistory and also the history of other Pacific Islands' societies. I have labeled it as "adaptive resistance" which is the cybernetic activity of peoples that manifest political/cultural agency under asymmetric imperial or (neo)colonial conditions.¹ The concept of adaptive resistance that I propose includes, but is not limited to, Stern's concept of "resistant adaptation" which refers to "apparent and real accommodations to authority" that incorporated "patterns of resistant assertion and self-protection" that made such accommodation "partial and contingent."² My concept of adaptive resistance also embraces any form of agency that faces asymmetrical (neo)colonial sources of power. Therefore I consider that some strategies of accommodation and/or full acceptance of colonial structures might also be regarded as non-passive decisions taken by active agents of a given culture.

This concept has helped me to reflect on the complexity hiding behind the encounters between indigenous and western societies avoiding, in the best way possible, any

¹ David Atienza, "Priests, Mayors and Indigenous Offices: Indigenous Agency and Adaptive Resistance In the Mariana Islands (1681-1758)," *Pacific Asia Inquiry* 5, no. 1 (2014): 31-48.

² Steve J. Stern, "New Approaches to the Study of Peasant Rebellion and Consciousness: Implications of the Andean Experience," in *Resistance, Rebellion, and Consciousness in the Andean Peasant World, 18th to 20th Centuries*, ed. Steve J. Stern (Madison: University of Wisconsin Press, 1987), 3-25.

Manichean, ideological or linear interpretation of the primary sources.³ At the same time, it has allowed me to penetrate more in-depth on the native experience of struggle, continuity, and adaptation of Pacific Island communities under colonial situations. In the case of the Mariana Islands, this concept has become central to minimize the role of external agents – colonial powers – as unique protagonist of the leading historical narratives for the contemporary islanders.

This proposal it is not new.⁴ A significant movement that is aiming to analyze indigenous agency as the principal protagonist of the Pacific Islands societies started already on the 70s and 80s through the hand of many indigenous and non-indigenous historians and anthropologist.⁵ Current scholars have made significant efforts, and they have achieved many goals in this endeavor, especially on pre-contact history and archaeology and on the contemporary history of the Pacific. However, after thirty years since the beginning of this change of direction one extended period of the Marianas history has been neglected, even though there are some remarkable exceptions.⁶ This period is the eighteen and nineteen centuries or, as current historiography labeled it, “the Spanish Era.”⁷

I do not consider this work revisionism, since what has never been written cannot be reviewed. There is a lack of publications that focus on this period for the Mariana Islands from an indigenous perspective. It is neither a new bias reading on old sources, but a new reading on new sources that had the capacity of throwing new light and review old sources with a new comprehension. All the readings I have made on primary sources talks about “complexity” which is a central concept, necessary to approach the history of the Pacific Islands societies. Otherwise, reductionism to

³ I wanted to thanks Dr. Michael Clements for pointing me out to the concept of bifurcation from Prasenjit Duara, *Rescuing History from the Nation: Questioning Narratives of Modern China*, First Edition (Chicago: University Of Chicago Press, 1997).

⁴ George J. Boughton, “Revisionist Interpretation of Pre-contact Marianas Society,” in *Pacific History : Papers from the 8th Pacific History Association Conference*, ed. Donald H. Rubinstein (Guam: University of Guam Press & Micronesian Area Research Center, c1992., 1992), 221–24.

⁵ An exhaustive list of the colleges that are working on this line is not the goal of this presentation. However, is important to acknowledge that their studies have a great quality and are growing in number and depth.

⁶ I am not aiming I this lecture to present an exhaustive list of scholars but I will mention Carlos Madrid, Michael Clemens, Alexandre Coello de la Rosa, Francis Hezel, among others.

⁷ See Guampedia at <http://www.guampedia.com/guams-seven-historical-eras/> [consulted on March 13, 2018]

simplistic forms that are trying to fit into the main narratives will lead to Manichean approaches that are likely to be utterly transformed in ideologies.

Ideology is a fixed and static worldview which try to explain human history with some few and simple interpretative keys, assuming that those keys will allow a correct diagnosis of any problem and its possible solution. Ideologies usually required an “intellectual reductionism” that do not allow to contemplate the problem from a deep and complex perspective. Therefore, the diagnosis and the consequent “treatment” will be ordinarily inaccurate. Historical episodes and actors that do not match into these epistemological structures or stereotypes will be silenced or will be forced to fit in the schema at any cost. Colonial political forces and empires always carry a particular ideology that justifies their expansion; but neither we can analyze these colonial forces as a compact group with no complexities and internal paradoxes and contradictions, nor we can analyze the occupied culture and actors with the opposite unify interests and motivations. That will remove any agency from the actors, it will be naïve, and a reduction of the human capacities, and will lead us to a biased interpretation of the facts.

Historical narratives for the Mariana Islands have passed through different interpretative models. From traditional models of elimination, that is, narratives that defend a total annihilation or genocide of Chamorro pre-contact people and culture by the end of the Seventeen Century, historiography has passed through models that I call of erosion and dissolution. Erosion models are those that propose that during the eighteen and nineteen-century colonial forces erode indigenous practices but did not manage to eliminate them on its totality. These theories also consider that imperial or external forces failed to amalgamate the cultures that entered into contact. Dissolution theories contemplate the cultural outcome as a new reality non-reducible to its components: the solvent and the solute. In this case, the solvent is the colonial forces and the solute the indigenous societies, what implies specific deprivation of agency on the side of the soluble cultures that get dissolved and unrecognizable on the new reality.

Even though this last model of dissolution looks more suitable to reality, I consider that fails to capture in some degree the complexity that is necessary to understand what happened in the Mariana Islands during the two hundred years of the Spanish colonial control. Therefore, the concept of adaptive resistance allows me to introduce a cybernetic movement that stresses indigenous agency and resistance on a more complex level.

One example to illustrate the practical use of this concept on a concrete historical problem is the demographic collapse of the Mariana Islands at the end of the seventeenth-century and the beginning of the Eighteen Century. There is not a collective agreement on the pre-contact population that varies as much as from 100,000 to 20,000 in different sources.⁸ In any case, all the scholars agree on the drastic and dramatic loss of people that the Mariana Islands suffered in a brief period of years reducing the inhabitants by 90% or more from its original number. Starting out from this agreement, we have to face the ineluctable question of the causes. It is evident that the first and more important cause of this dramatic loss of population and all the consequences that it entails is the contact with the Europeans that started on 1521 and reach its climax by 1700. However, that answer is not satisfactory enough. I would like to know which were the causes that provoked the radical decrease of the population directly.

Mainstream historical narrative point out two main causes in different order of importance: colonial violence and diseases. Both elements are correct but giving it a closer look we can observe that both are external causes that passively are received by the indigenous people of Marianas Islands. I am not writing here to question the critical role that violence and diseases had over the demographic loss. However, we are missing again the agency, the adaptive resistance, of the Marianos. What did the people do? I have been working with the Spanish censuses of 1728 and 1758 and with several other documents. In this primary sources, we can find some answers to the problems I am presenting here.

One element that some sources also mentioned as a cause of the depopulation is the flight of some indigenous people that decided not to live their lives under the European control. This element talks about adaptive resistance and agency. The second element, more important to me and with a higher impact in the demographic process, even catastrophic, could also be found in these censuses and documents.

Reading closely the census of 1728, it shows a negative fertility rate of approximately 1.8 children per woman. For a population to be stable, it is needed to have at least a 2.1 fertility rate. And probably the number was inferior due to the high mortality

⁸ See Jane H Underwood, "Population History of Guam: Context of Microevolution," *Micronesica: Journal of the University of Guam* 9, no. 1 (1973): 11–44; Richard J. Shell, "The Marianas Population Decline: 17th Century Estimates.," *Journal of Pacific History* 34, no. 3 (December 1999): 291; Richard J. Shell, "The Ladrones Population.," *Journal of Pacific History* 36, no. 2 (2001): 225–36.

during delivery or because sudden infant deaths that occur mainly after the arrival of ships every June or July. In addition to this unexpected deaths and according to Jesuit sources some native women decided not to have children during this time. This decision produced a negative natality rate that it looks was sustained at least during two generations reducing the population in one-third. If the loss of lives due to epidemics was probably the first direct cause, negative natality rate should be the second cause, far over war-violence or voluntary flights. Apparently, the violence and the colonial impact was probably the main reason why women refused to have progeny during a period that I have called “the Great Sorrow.” However, it is also a truth that despite the efforts and pressure of missionaries and governors to increase births and marriages, many Chamorro women resisted acting according to their will. We find a change in the trend on the census of 1658 with a positive birth rate that fluctuates around 3.6 children per women.

For me this is an example of adaptive resistance. We can analyze now two external passive causes for the demographic lost: epidemics and violence. And also two causes that manifest agency of the Chamorro men and women: low birth rate and migration. If we admit the capacity of the indigenous Marianos to demonstrate agency under the colonial forces, we need to reconsider their role on the construction of the historic Guahan and the identity of the Chamorro people of nowadays.

After approaching the primary sources available for the Eighteen Century I ponder the possibility that there was three spheres of political, social action and agency in the Mariana Islands from the time of the contact to the end of the Eighteen Century with different fields of interaction. The political and military agenda will constitute one sphere of agency and action. The missionary agenda will form the second sphere. But there was a third sphere of agency: the indigenous Marianos interest and objectives. These three spheres interact one with the other on different levels. Native with missionary interest confronted in some areas but merged in others; missionary with political and military interest clashed and/or matched on different moments; political and military goals with collided with some indigenous people but coincided with others. However, there was also an area on the intersection of the three where the spheres interacted at the same time.

These spheres are not just ideological or an abstract representation of agency. They also had a physical location on the Mariana Islands. They molded the geographical

ethnoscape⁹ during several decades after the initial contact. I consider that during almost significant part of the Eighteen Century the actors and agents with different world views were coexisting with tacitly established limits. At least there was a division between colonized and not-completed-colonize land. The real influence of the military that did not exceed 150 soldiers was limited to Hagatna and Umatac. The expansion of the actual control of the Jesuit priests that hardly surpassed ever a dozen was also restricted and demarcated in villages. This allowed the existence of an indigenous landscape that maintains its limit in a negative sense; taking was “it-was-not” efficiently colonized: the rest. Even though indigenous ways of life were significantly affected by the colonial impact, I believe it continued in Guahan and other islands of the Marianas archipelago, during at least significant part of the Eighteen Century. It is important to remember that, instead of the drastic decrease of indigenous population, on the census of 1728 and 1758, Spanish, Filipino, and Mexican population counted less than the 20% of the total number of inhabitants on the Marianas Islands.

If this is correct, we should look at the history of the so called “Spanish Era” from a different perspective, and we should try to give back the voice to those that lost it on the mainstream history books. The concepts of complexity, permanence, and adaptive resistance should allow us to modify the questions we have done traditionally to the primary sources. By way of example, I will like to propose a different time structure for the period and mention some questions that might be relevant. I will start here just with the first four periods, from the first contact in 1521 to the expulsion of the Jesuits around 1669. This is not an exhaustive list; it is just a proposal.

a) 1521-1672. The Contact: New products and ideas, and redistribution of clan power.

It is iron used as a currency of prestige that could be exchanged for other traditional elements like turtle shells? If so, how that created inflation on power and available elite items? What was the impact towards pre-contact clan or lineage structure? How that force to redistribute land and power? How did alliances work at this time? What was the relationship between navigation and access to iron? It was metal modified? How? Who did it? How the conceptions about time and space changed after the contact? Did epidemics affect the mortality rate on the Islands at this time? Etc.

⁹ For more information about the concept of ethnoscape see Anthony D. Smith, *Ethno-Symbolism and Nationalism: A Cultural Approach* (New York: Routledge, 2009), 50.

b) 1672-1700. The Crossroad: Armed resistance, new alliances, arising from new elites, and demographic collapse.

How demographic collapse transformed clan structures and redistribution systems? Did previous alliances and wars affect the development, duration, and outcome of the fights? How European agriculture methods and new products, religious system, concepts of body and sexuality, post-mortem destiny, and gender relations were accepted and modified? Were the Jesuits conceptualized as a new clan? How were marriages established between natives and non-natives people? What was the indigenous understanding in front of the demographic collapse?

c) 1700-1723. The Great Sorrow: Developments of cultures in contact and new dynamics.


How new elites took over and restructured social life at a village level? What real influence did the colonial forces have in the daily life and political structure of the islands? How European technology modified the life of the indigenous people? Did inter-ethnic marriages occur? If so, how they were integrated into the clan structure and dealt with matrilineal and patrilineal differences? What were the consequences of the indissolubility of marriage? How the introduction of writings systems impacted oral traditions and the historical memory? How was property recorded and claimed? How clans restructured themselves after the demographic collapse? How was death cosmologically integrated into the culture? How colonial *reducciones* reduction to villages affected social relations, kinship, marriage, and land tenure? How bachelors substituted the *guma uritao* bachelors houses ? Etc.

d) 1723-1769. We are water: Demographic trend inversions, new generation perception, towards cultural stabilization.

Did *lancho* farm structure root in this period? It is *lancho* system new or maintains elements of pre-contact land tenure and agriculture practices? How finally new Catholic symbols and morals were adopted? There were conflicts between patrilineal and matrilineal systems? What were the channels of expression for the local resistance? There was any political representation for the indigenous Marianos? What were the models for identity processes? How was Chamorro language maintained and transmitted? Etc.

These inquiries are the result of a quick brainstorm on the period. More accurate questions will emerge as soon as we start to walk this path. The answers to these questions will impact on the level of complexity that the people of the Marianas surely had as well as the foreigners that arrived from beyond the ocean in 1521. If this happens, and it is happening, we will have to modify the labeling of the historical periods for all the Pacific Islands. For Guahan the “Guam Seven Historical Eras” would not be functional anymore as they are presented today on the books of history. The internal agency needs to recover the protagonist on the historical narrative and open the field to multi-linear, bifurcated, and fractal possibilities; thrilling and complex. On these new narratives maybe some forgotten voices from the past would be heard again after many centuries of silence.

Presentation Slides



Indigenous Adaptive Resistance in the Mariana Islands: Rethinking Historical Eras

Dr. David Atienza

3rd Marianas History Conference

Saipan 2017



Adaptive resistance is the cybernetic activity of peoples that manifest political/cultural agency under asymmetric imperial or (neo)colonial conditions.

Elimination
Erosion
Dissolution

Demographic Catastrophe



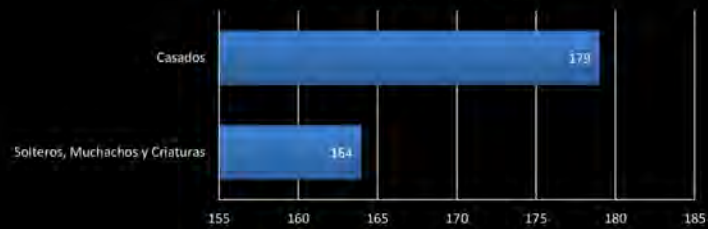
SPANISH-CHAMORRO WAR
EPIDEMICS

Demographic Catastrophe

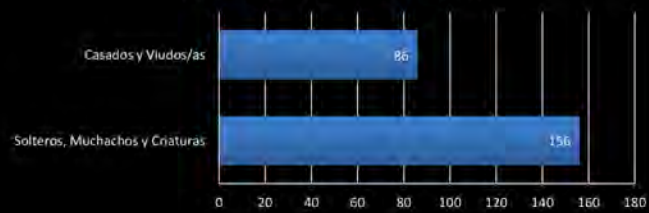


EPIDEMICS
LOW NATALITY RATE
SPANISH-CHAMORRO WAR
MIGRATION AND OTHERS

Agat 1728 Census (Total 343)

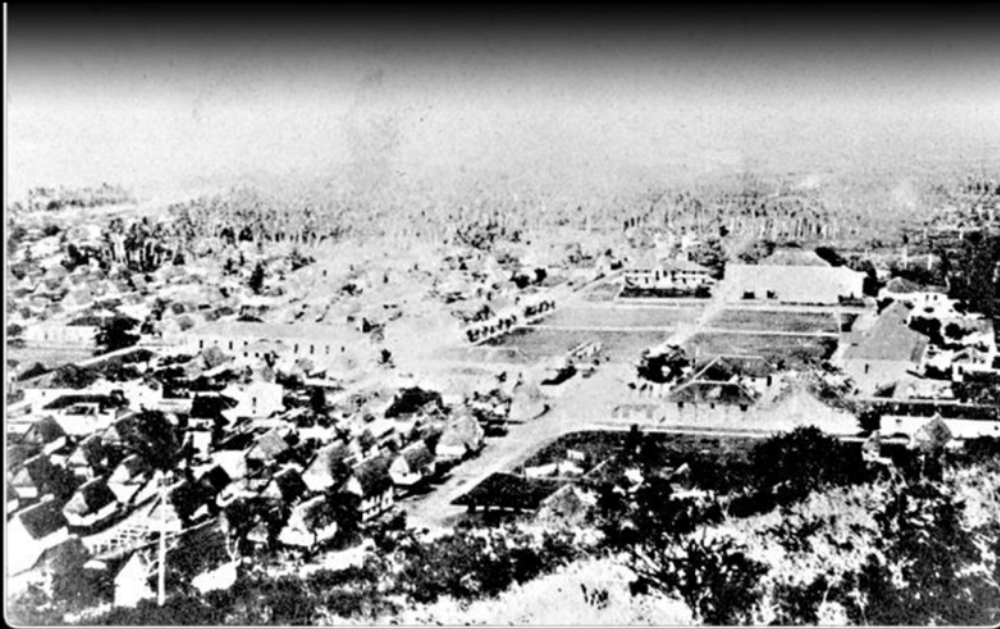


Agat 1758 Census (Total 242)

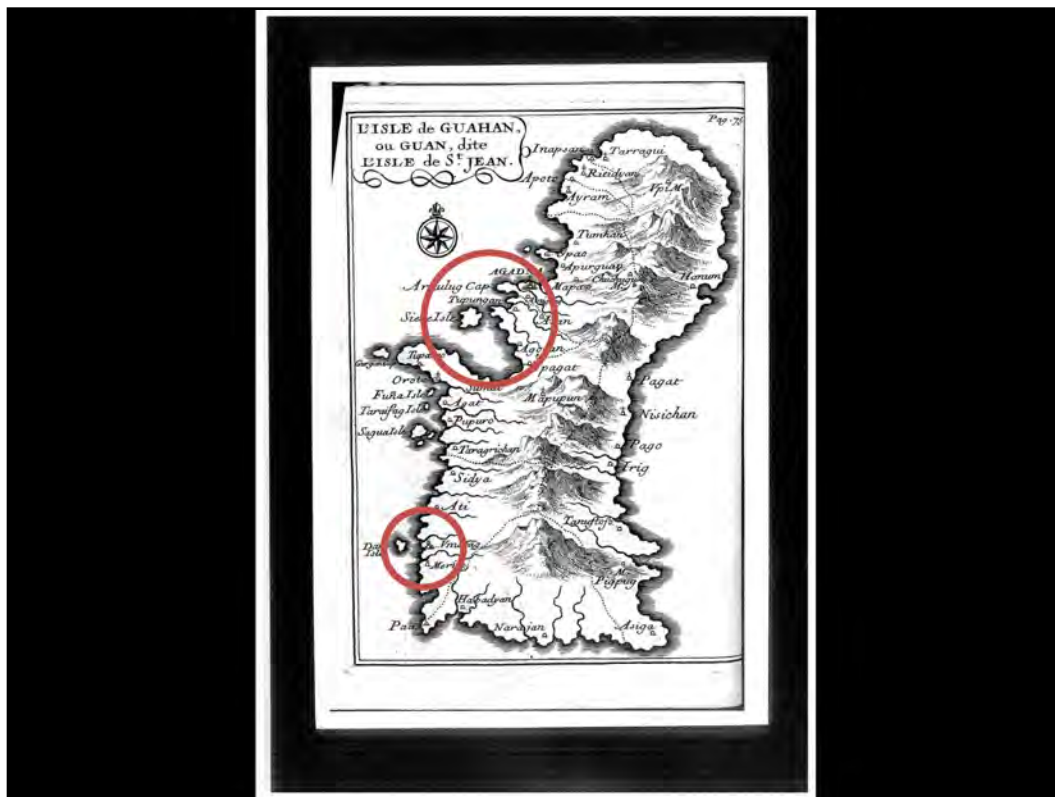


CULTURE IN CONTACT





id	Pueblo	Categoria	Nombre	Apellidos Original	Relacion	Titulo
1	Sosanrango	Casado	Sebastian	Emi	m2	Maestro de Campo General
2	Sosanrango	Casada	Nicolasa	Godogfia	m1	
3	Sosanrango	Soltero	Ignacio	Metengot	s1	
4	Sosanrango	Soltero	Ambrosio	Chosongfia	s1	
5	Sosanrango	Casado	Santiago	Quiconay	m6	Maestro de Campo
6	Sosanrango	Casada	Isabel	Duquen	m5	
7	Sosanrango	Soltero	Estanislao	Amam	s5	
8	Sosanrango	Soltero	Pedro Angel	quicanay	s5	
9	Sosanrango	Soltero	Mariano	Inaganta	s5	
10	Sosanrango	Soltera	Maria Ana	Dama	d5	
11	Sosanrango	Soltera	Maria Rafaela	Mamuranta	d5	
12	Sosanrango	Soltera	Maria	Manuela	d5	
13	Sosanrango	Soltera	Maria	Migaiña	d5	Capitan
14	Sosanrango	Casado	Santiago	sanga	m15	
15	Sosanrango	Casada	Maria	Mangugiuta	m14	
16	Sosanrango	Soltero	Mariano	Quitafaf	s14	
17	Sosanrango	Casado	Ignacio	Tayquinini	m18	
						Ayudante



DECOLONIZING HISTORY



1521 – 1672 NEW PRODUCTS, AND IDEAS, AND REDISTRIBUTION OF CLAN POWER

It was iron used as a currency link to prestige? IF so... How that created inflation on power and elite's available items? What was the impact towards pre-contact clan structure? How did that force to redistribute land and power? How did alliances work?

1672-1700 ARMED RESISTANCE, NEW ALIANCES, ARISING OF NEW ELITES, AND DEMOGRAPHIC COLLAPSE

How demographic collapse affected clan structure and redistribution systems? Did previous alliances and wars affect the development, duration, and outcome of the wars? How European agriculture methods and new products, religious system, ontological self-perception, post-mortem destiny where modified?

1700-1723 DEVELOPMENTS OF CULTURES IN CONTACT, THE GREAT SORROW, AND NEW DINAMICS

How European technology modified the life of the indigenous people? Did inter-ethnic marriages occur, if so, how they were integrated into the clan structure and deal with matrilineal and patrilineal differences? What were the consequences of the indissolubility of marriage? How the introduction of writings systems impacted oral traditions and the historical memory? How was property recorded and claimed? How clans restructured themselves after the demographic collapse?

1723-1769 DEMOGRAPHIC TREND INVERSION, NEW GENERATION PERCEPTION, TOWARDS CULTURAL STABILIZATION.

Did Iancho structure is root in this period? It is new or maintains elements of pre-contact land tenure and agriculture practices? How finally new Catholic symbols and morals were adopted? Patrilineality VS Matrilineality? Local resistance and political representation. Etc.

- - -



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3rd Marianas History Conference

Early Colonial History

Commercial Activity in the Marianas in the 1890s

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Abstract: *In the 1890s, commercial activity in the Marianas was focused around the importation of goods from Manila and other commercial ports in Japan. Goods were brought in by just a few ships. The regulars were two English merchant ships. The 130-ton Esmeralda under the command of Captain John Harrison and eight crew members, and the schooner Saipan, whose Captain was J. McGinness. These two ships were constantly busy loading coconut copra from the Marianas to be sold in China and Japan. In 1892, J. McGinness at the age of 38, died in Yokohama, Japan. In his testament, he named his only heir, a 4-year-old girl whose mother was a native of Saipan, but the girl was in the custody of don Felix de Torres y Diaz, a resident of Hagåtña. This paper presents the issue of an inheritance from a foreigner to a minor from Saipan and the commercial activities exercised by a few residents in Hagåtña.*

Introduction

After the Treaty of Kanagawa (1854), Japan used diplomacy to foster economic expansion across the Pacific. The city of Yokohama, the capital of Kanagawa ken (prefecture), is the first harbor city introduced to the world as the entrance to Japan. Since the time its port was opened, Yokohama has been vigorously acquiring new cultures and information from foreign countries and introducing to Japan first-time-ever things from food to a wide range of cultural items, which entitles Yokohama as the birthplace of Japan's modern culture.

Since then, European nations and America expanded their markets through Japan and the Pacific. The US established consular relations with Japan in (Kanagawa) Yokohama in 1862, and in 1887, the first Spanish commercial company was registered at the Tokyo consulate. Its objective was to initiate imports and exports of goods between Spain, Japan and China. Spain also wanted to open a line of maritime transportation between Japan, the Philippines and San Francisco, touching the Mariana Islands, to promote the progress of the islands. This network of maritime communication would favor the Spanish interests. Unfortunately, operating the route through the Marianas was costly for the colonial government and it was decided not to carry out such a plan. An alternative plan was also considered which was a commercial

route between the Marianas, China and Japan. But this route, too, was considered unprofitable. Trade routes were then left open for interested individuals in the Marianas to use with private investment (Pozuelo, 1997, pp. 728-733).

By the early 1890s, a few Americans interested in conducting business in the Marianas, using the Spanish consular relations in Yokohama, obtained permission to harvest coconuts and export copra. Among them was a British citizen John T. Harrison, captain of the schooner *Esmeralda*, who according to the records, was the so called brother (*Chelu*) of José Portusach an American naturalized as a Spanish citizen and resident of Guam, Mariana Islands (PNA, M 16, Exp. 43:3-3b). John McGinness, captain of the schooner *Saipan*, was a 38 year old single British citizen from Ireland and a naturalized citizen of the US (PNA M 30, Exp. 43:1-47b). The two developed a small business partnership with Don Felix Torres y Diaz a Spanish citizen and resident of Hagåtña without *Cédula Personal* (PNA M 30, Exp. 44:1-77b). (Without *Cédula Personal* means he was a Spaniard born in the Marianas where insular citizens were excluding from paying taxes), Galo Kaminga, a Dutch citizen and naturalized Spanish citizen, and José Portusach y Martinez, a Spanish subject (insular citizen).

In 1892, Portusach and Torres (lessees) signed a lease agreement with the Spanish Treasury for the islands of Pagan, Agrigan and Almagran for the purpose of farming coconuts and processing copra to export. The lease was for a period of 10 years at a cost of 3,205 pesos per year (PNA M 16, Exp. 41:8-10b). John Harrison, in command of the schooner *Esmeralda*, and McGinness with the schooner *Saipan*, were managing the transportation of copra from the northern Marianas to Japan, Hong Kong and China.

Once the copra was sold, these two schooners returned with merchandise to be sold in the stores in Hagåtña and on Saipan. Documentary evidence shows that by the year 1892, merchants in Hagåtña and on Saipan needed a business license in order to operate a business. The commercial activity between Yokohama and the Marianas, even it was a micro-economy, was consistent. There is also a record of business and cultural exchange. In Yokohama were workers from the Marianas, and brokers for the merchants in Guam and Saipan, it also was reflected in the language, as noted by the Augustinian Fr. Adell traveling in route to the Philippines, it was frequent and consistent that various business had a sign indicating “Spanish spoken here” (Rodríguez-Ponga, 2009, p. 108). This exchange allowed Japanese subjects to establish small business in Saipan and Guam.

On 10 July 1893, John McGinness died in Yokohama, Japan, and the Court of the Consulate General of the United States of America at Kanagawa (Yokohama) initiated the reading of McGinness' Last Will and Testament on 8 August 1893 (LCM 152). In a letter dated 4 December 1893, the US Vice Consul General informed the Governor of the Mariana Islands that John McGinness sole legatee was his daughter Jacoba (Nelly) Ygubur. The document states "Said daughter is a half-caste child, aged about 4 years old, by a native mother of Saipan, and is now living with Felix Torres a storekeeper of Guam".

In 1896, the Court of the Mariana Islands received a decree from the Court in Intramuros, Manila, declaring Jacoba Ygubur was the heiress of deceased John McGinness. The minor was under the custody of Don Felix Torres y Diaz, who had requested his retirement from the government and received his pension in January 1894 (LCM 19: 9a). In addition to being an officer of the government, he was also a storekeeper in Hagåtña. At the beginning of 1897, he expanded his store requesting a license to sell textiles, brushes, combs, umbrellas, hats, Italian hats, candles, rice, dishes and ordinary kitchen ware (PNA 26, Exp. 198:80-80b). This merchandise was imported from Yokohama.

As the Spanish-American war broke out in 1898, insular citizens from Guam chose to limit their business to Guam, as did some Japanese businessmen such as Katsusubu Hayashi, Tohutarō Suzuki who kept stores in Hagåtña. These were all small businesses, which represented an entrepreneur drive who, in spite of high taxes and not much support from the Spanish colonial administration, carried on. They received the American administration after the Spanish-American War with expectations of establishing a democracy. The feeling of Hagåtña's residents was that the Americans would possibly eventually allow the residents of the Marianas to claim independence from the Spanish government and its administration's central government in the Philippines.

On Christmas Day 1898, Francisco Portusach called a town meeting in his store and Father Palomo promoted the concept of local autonomy and free enterprise. These ideas ended, though, with the arrival of the ship *USS Brutus* on New Year's Day and its commander Lieutenant Cottman who broke the news that the Treaty of Paris was signed on 10 December 1898. It awarded the Philippines and the island of Guam in the Marianas to the United States.

The surgeon aboard *USS Bennington*, which came to Guam shortly later, reported that in there were but six “so-called” stores in Hagåtña at that time. Three of them were owned by Filipinos. In one of them he bought a cigar made of local tobacco and it was not good. He described the Japanese store as the largest and said it sold Japanese beer and imitation imported wine. He also said that it was a Chinese store where only Chinese shopped. And lastly, he said there was one Chamorro store which sold excellent local coffee and chocolate (Farrell, 2011, p. 320). It was a disincentive attitude toward local business.

In Saipan, after 1899, with the German administration, business tax was set at a very reasonable rate, designed as an incentive to the local community to establish business (Spennemann, 2007, 102). Individuals such as Juan de los Reyes Yguifil, José de la Torre, Leonardo Camacho, Francisca Ramírez, Pedro Ada, Katsusubu Hayashi, Francisco Arriola, Jose Maria Ogama Jose Ogumuro, Antonio Cabrera, Felix Roberto, Antonio Diaz and Vicente Charfauros in Rota continued their businesses, but they were confronted with a German law that prohibit private loans to Chamorros and Carolinias (Spennemann, 2007, p 106). This limitation from the new colonial administration, discouraged the development of business by the people in the Marianas. “Fritz observed acidly: And in spite of their pride and self-interest, their laziness does not permit them to work toward more than what they need... .”

The main revenue generator for the German administration was the lease payments by the copra tax mainly by the Pagan Company founded in 1899. The Yokohama connection was maintained through the commercialization of copra. The cultural exchange was maintained because Fritz was an admirer of the Japanese culture. “In 1904, Georg Fritz, an admirer of Japanese art and culture, purchased a Japanese-style wooden house during a visit to Yokohama, Japan (Spennemann, 1999, p 93). He shipped the disassembled house to Saipan and employed a resident Japanese carpenter to erect it on a concrete foundation at the base of a limestone hill (roughly 20 meters in height) located 700 meters east of the administration building in Garapan Village.”

In conclusion, this paper is a brief discussion of how a small group of entrepreneurs were able to bring hope for autonomy and perhaps independence in a colony that was neglected for hundreds of years. The 1898 historical events divided the islands and suppressed the Mariana’s people into other colonial experiences. If not for the Spanish-American War the Mariana Island might have been one independent nation.

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Presentation slides begin on the following page.

Commercial Activity in the Marianas in the 1890s

Omaira Brunal-Perry
Micronesia Area Research Center
University of Guam
September 1, 2017

Islands of Pagan, Agrigan & Almagran lease agreement 1892 and merchant seamen

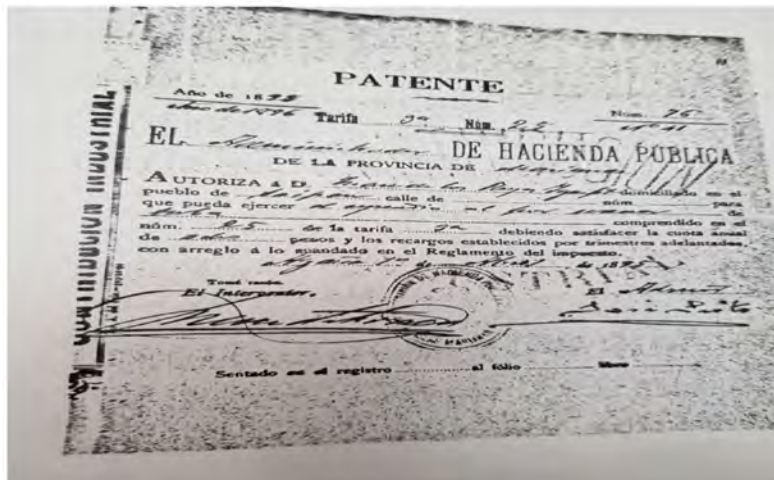
- Leasees:
 - Felix de Torres y Diaz, Spanish subject (insular)
 - Galo Kaminga, Dutch citizen and naturalized Spanish citizen
 - José Portusach y Martinez, Spanish subject (insular)
- Merchant seamen:
 - John Harrison British subject (Brother of Portusach, Chelu), Captain of the schooner *Esmeralda*
 - John McGuinness, American Citizen, Captain of the schooner *Saipan*
 - PNA 30, Exp 41:8-10b.& LCM 127:48b.

Acknowledgment of Jacoba Ygubur heiress of John McGuinness, Captain Schooner *Saipan*



- This is an official acknowledgment of receiving document No. 1285 of date 13 December 1895. It is a declaration to identify the only heiress of Mr. John McGinnes. The Judge of First Instance declares that Jacoba Ygubur is the illegitimate daughter of Mr. John McGinnes and his only heiress.
- Testimony –Jacobo Marina, 3 Jan. 1896. To the Real Audiencia de Manila.

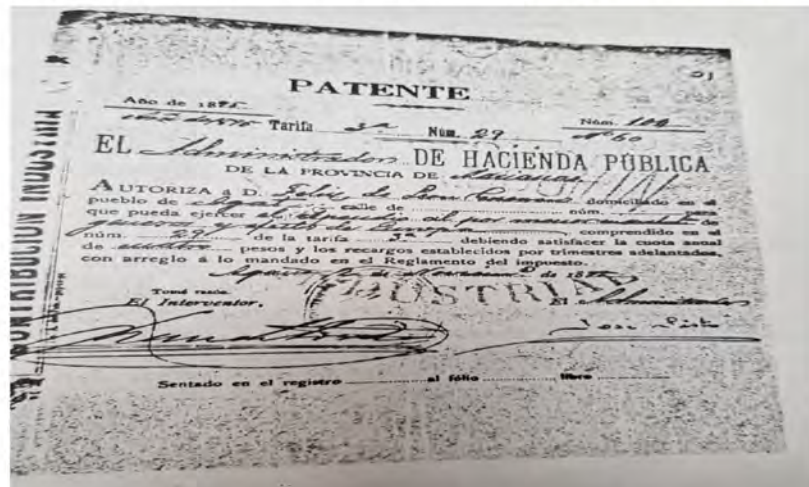
Business license to Juan de los Reyes Yguifil to sell tuba in Saipan, April 1895



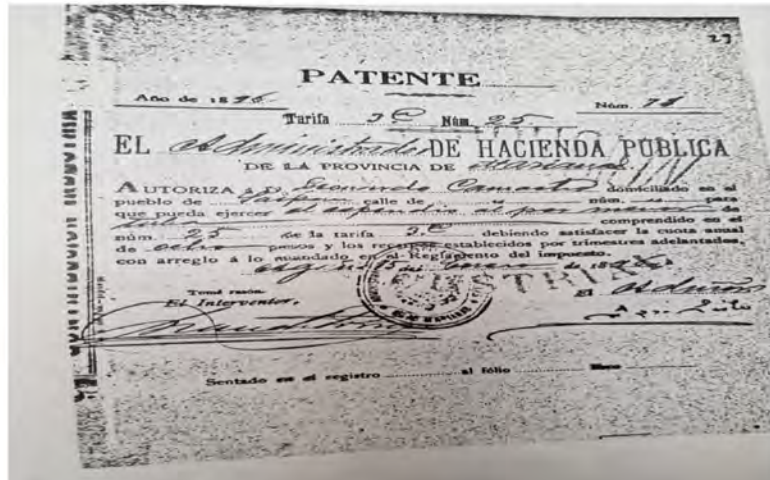
Business license to José de la Torre to sell tuba in Saipan, April 1895



Business license to Felix de Leon Guerrero to sell clothes and fabrics from Europe, Nov. 1895



Business license to Leonardo Camacho to retail tuba in Saipan, Jan. 1896



Business license to Katsusabu Hayashi to open a store sell textiles in general, Jan 1896



Business license to Baltazar Bordallo to open a store to sell cottons, Jan 1896



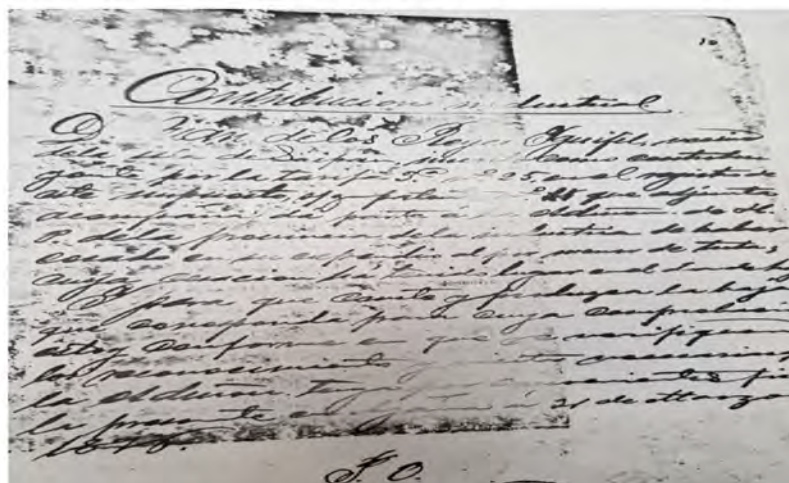
Business license to Vicente Aguon to fabric tobacco, Nov. 1896



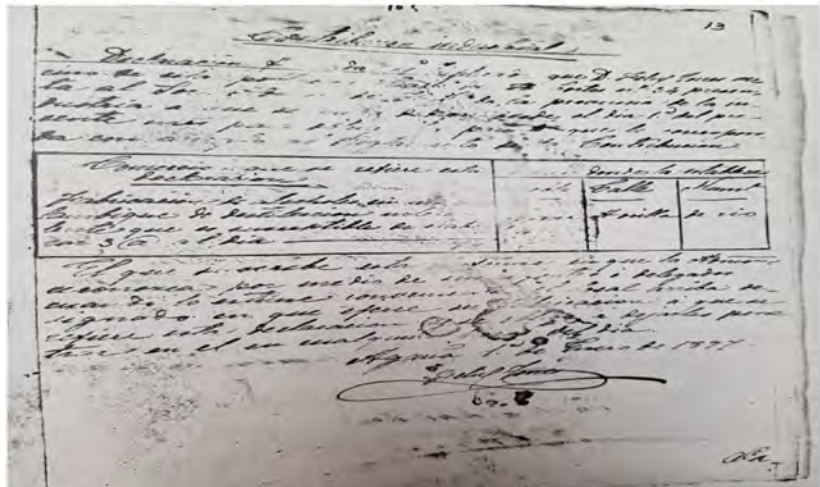
Business license to Francisca Ramirez to open a bakery in Saipan, Nov. 1895



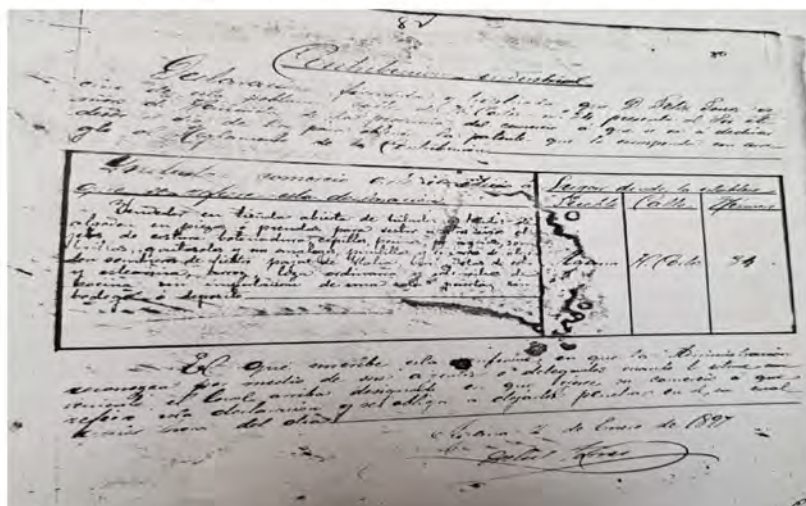
Cancellation of Business license to sell tuba in Saipan, 31 March 1896.



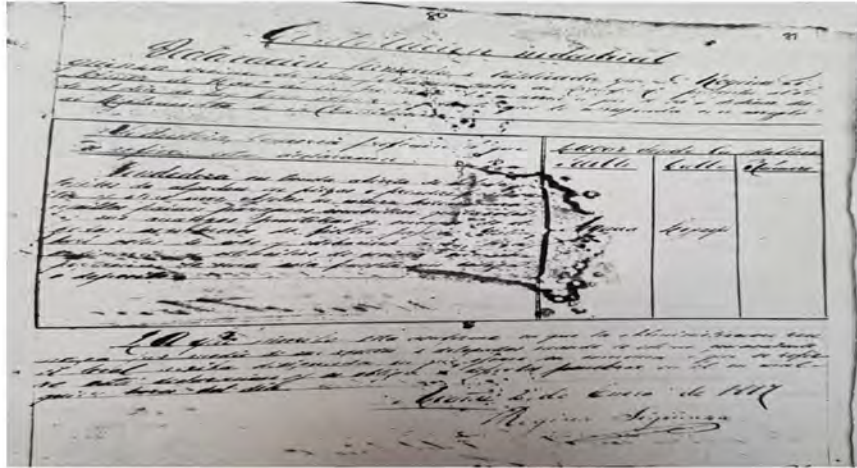
Business license to Felix Torres to open an alcohol distillery in Agaña, Jan. 1897



Two largest store in Agaña 1897: Felix Torres



Two largest store in Agaña 1897: Regina Siguenza



- - -



Omaira Brunal-Perry, MA, JD, earned a juris doctorate from Universidad Libre, Bogota, Colombia, and a MA in Library Science from Syracuse University, New York. She also received a certificate from the US National Archives - Modern Archives Institute, 2005. Currently, she is an associate professor at the RFT Micronesian Area Research Center, University of Guam. Brunal-Perry also serves as the Spanish legal historiographer and librarian in charge of the Spanish Documents Collection and Manuscripts Collection at MARC. Her research interest and publications concern documents related to the colonial Spanish administration in the Mariana and Caroline Islands. Brunal-Perry has done extensive archival research in Mexico, the Philippines, Spain, and the US. In addition, she directed the project “The Spanish Language Judicial Records of Guam.”

HMS Centurion's Anchors and Tinian Harbor

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Abstract: *When Commodore George Anson visited Tinian in 1742 in HMS Centurion, halfway through his famous circumnavigation, he changed the way the island would be viewed by the English-speaking world. His account of the island as a lush paradise, published in 1748 and re-published in navigational treatises, made Tinian a prime layover spot for those ships that would not find a friendly harbor in Guam. This account of a tropical paradise was overshadowed by the disaster that almost struck the ship and crew. A storm parted both of Centurion's cables, and blew it out to sea for 19 days. Although Anson swept for these anchors, they were never recovered. This article examines the legacy of Anson, HMS Centurion, and its time at Tinian, then discusses an archaeological survey on two anchors found in Tinian Harbor that are believed to be those lost by Centurion on 22 September 1742.*

Introduction

This article presents a brief overview of the history of Anson and his circumnavigation of the globe in HMS *Centurion*, with particular focus on the time spent at Tinian, and describes archaeological investigations at two anchors found in Tinian Harbor in 2016.

This project finds its beginning in a conversation between the author and Scott Russell about underwater archaeology in the Commonwealth of the Mariana Islands, shortly after the author assumed the position of Staff Archaeologist at the CNMI Division of Historic Preservation (HPO). When discussing potential future projects, Russell asserted that multiple accounts tell the story of the loss of HMS *Centurion's* anchors at Tinian. Although research into the ethnographic and historic records of *Centurion's* sojourn at Tinian had been completed at the request of CNMI HPO (Barratt 1988), there have been no archaeological reports indicating the discovery of archaeological resources in relation to Anson's two months on Tinian. Since the official account of the voyage, *A Voyage Round the World in the Years MDCCXL, I, II, III, IV* (Walter 1748), has a copperplate etching of the anchoring place at Tinian, as well as depth soundings at the time of anchoring, it should be possible to find the anchors Anson lost at Tinian. "How hard could it be?" Russell asked, thus starting a project to locate and identify the two anchors Anson lost at Tinian in 1742.

George Anson

The life and achievements of George Anson have been covered in detail in a number of biographies. As Williams (1967) notes in his edited collection of Anson's circumnavigation-related documents, as many as three biographers (Sir John Barrow, Captain W.V. Anson, and Captain S.W.C. Pack) have focused on Anson's famous voyage. As these biographers have undoubtedly performed a much more thorough job of detailing Anson's life, this article will provide only a brief summary of his life. Anson's achievements are likewise too numerous to discuss at length here. Many of these were directly influenced by his experiences aboard HMS *Centurion* during his circumnavigation. A few of the more notable achievements will be explained, along with their direct link to those experiences.

As the second son of his family, Anson had to make his own path in life. Anson entered the Royal Navy as a volunteer at the age of 14. This began a long and successful naval career, gaining command of a vessel at 25, and eventually elevated to the Commodore of the famous circumnavigation at 42 years old. Following that voyage, he was installed in the Admiralty, quickly moving through the ranks. He would become the Admiral of the Fleet in 1761, a year before he died (Walter 1928:xvi–xxiii; Barrow 1839; Anson 1912). For his victory against the French at the Battle of Cape Finisterre in 1747, Anson received a peerage, becoming Lord Anson, Baron of Soberton (Anson 1912:106).

“Unlike nearly all our great Naval heroes, George Anson owed little of his success and reputation to his exploits in battle” (Walter 1928:xv). This bold statement was made by G.S. Laird Clowes, editor and commentator of the 1928 edition of Walter's *Anson's Voyage Round the World*, as an opening statement to the Prefatory Notes. While Anson's fame and fortune came from naval encounters during the middle to end of his career (the capture of a Manila galleon and circumnavigation in 1743–1744 and Battle of Cape Finisterre in 1747), Anson's legacy lay in naval reform.

Many of the changes he instituted during his time in the Admiralty would affect the Royal Navy throughout the Age of Sail and beyond. It is worth noting that many of these changes were based directly on his experiences commanding long, independent cruises in far-off lands in medium-sized warships, especially his voyage around the world. One such example of this was the Establishment of 1745, an update to a system created to formalize the dimensions, riggings, and configurations for ships of the Royal Navy (Lavery 2003). With Anson at the Admiralty, the new Establishment of 1745

prescribed significant changes, especially across medium class vessels (those 50- and 60-gun ships with which Anson had a career's worth of experience). Ship's dimensions and rigging configurations were altered based on Anson's troubles during his circumnavigation in *Centurion*. Anchor size was increased, and a new system adopted where a ship would carry a set number of identical large anchors, rather than the multiple sizes and weights previously carried. The Establishment of 1745 was a marked improvement over previous Establishments, and testifies to Anson's ability as a planner (Walter 1928:xvii xviii).

Other lasting reforms included the creation of a naval uniform, and the institution of the Marines as a standing force. Both of these were, again, directly related to his experiences circumnavigating the globe. Anson saw the importance of a naval uniform during his time in China, when as a visiting warship representing the British crown to a foreign power, he wanted to conduct affairs with all the pomp and circumstance possible. To this end, he hastily had his sailors dress in the uniforms of the (dead) Marines when dignitaries visited his ship, and he eventually created ornate uniforms for those men who would accompany him to make political courtesy visits (Walter 1928:329, 376). Naval uniforms were created, and became compulsory for officers by an order in 1748 (Walter 1928:xix). Likewise, Anson saw the importance of a standing Marine corps during his round the world voyage. His mission originally required a large number of highly-trained Marines for the intended assault on Manila, then South America. Instead of highly-trained forces, he received 500 "invalids" collected from the pensioners at Chelsea College. Those who could deserted, and were replaced with raw recruits. Of these, only 17 survived the rounding of Cape Horn, and none appeared to have survived the voyage (Barratt 1988:4). The standing force of the Royal Regiment of Marines was created in 1755, so that a more permanent supply of Marines would be available for military duties on ship, as well as to ensure that more suitable people would be chosen for such duties (Barrow 1839:234 235).

Finally, Anson encouraged experimentation with science and technology related to the naval arts. At his direction, in 1761 HMS *Alert* was the first ship to have its hull sheathed with copper plating to protect against shipworms and marine growth (Barrow 1839:397). This experiment was deemed successful, although the technique was not perfected until 1783 (Walter 1928:xxi). Anson also encouraged the development of navigational technology, and while he was at the Admiralty a new Longitude Act was passed. This offered a reward to anyone solving the problem of measuring longitude at sea. Motivated by this new act, John Harrison continued his work on the marine chronometer. His fourth model, the H4, was successfully tested on

a trip to Jamaica in 1762 and Barbados in 1764 (Taylor 1971:261), effectively solving the problem of measuring longitude until the introduction of electronic instruments in the twentieth century.

Anson's Voyage Round the World

As Anglo-Spanish tension increased during the summer of 1739, after the second “depredation crisis”, the British government began to consider plans for war: specifically maritime war (Young and Levy 2011:224; Williams 1967:3). To this end, Anson was recalled to Portsmouth and informed that Britain had set its course. Two squadrons would be fitted out immediately for secret expeditions. One, commanded by Anson, would take on a large complement of Marines, proceed directly to the Philippines, and capture Manila. The other squadron, commanded by Captain James Cornwall, would be of an equal size and would round Cape Horn and harass Spanish shipping and settlements along the coast, before rendezvousing with Anson at Manila (Walter 1928:2-3). To Anson's chagrin, the Manila raid had been cancelled by January 1740, and he was put in charge of the South Seas operation (Walter 1928:4; Barratt 1988:3).

He was instructed to assume command of the squadron as Commodore, cruise along the South American coast to disrupt shipping, attack Spanish sea towns, and attempt to incite an uprising of the natives of Peru. He was further instructed to use his judgement whether to then head north to intercept the Manila galleon off Acapulco and return via way of China, or return to England by retracing his route around Cape Horn (Williams 1967:34-39).

After a series of lengthy delays, Anson's mission finally began to formulate. He was placed in command of five men of war, a sloop of war, and two victualing ships: *Centurion* (60 guns, 400 crew), *Gloucester* (50 guns, 300 crew), *Severn* (50 guns, 250 crew), *Pearl* (40 guns, 250 crew), *Wager* (28 guns, 160 crew), *Tryal* (8 guns, 100 crew), and the two victuallers, *Anna Pink* (400 tons) and *Industry Pink* (200 tons). In addition to the roughly 1,500 men and boys crewing the ships, there were an additional 470 invalids and marines embarked on board the squadron (Walter 1928:13-14). In total, Anson was in charge of seven vessels and nearly 2,000 people (Fish 2015).

Thus began a series of harrowing adventures for Anson and his fleet. Rounding Cape Horn at the worst possible time of year, Anson lost ships to weather and crew to sickness. Only four ships, and 335 of the 961 crew aboard them, would survive to the

next rendezvous point (Barratt 1988:6; Walter 1928:343). Anson spent the next year successfully cruising off the westward coast of South America, taking eight prizes and sacking the town of Paita, Peru. Delayed by weather, Anson missed the opportunity to intercept the Manila galleon inbound to Acapulco. He waited in an attempt to catch it on the return to Manila, but his fleet had been seen and the return trip was postponed until the following year (Williams 1967:168; Walter 1928:232-239). Disheartened by the missed opportunity, Anson decided to cross the Pacific, refit at China, and attempt to intercept the Manila galleon off the Philippines.

Anson scuttled all the prize ships taken thus far, and made sail from Acapulco to the Ladrões (Mariana Islands) in May 1742 in his two remaining ships, *Centurion* and *Gloucester*. His timing was bad here, as well. This was chronicled by his shipboard teacher, Thomas Pascoe, who wrote “we made this Passage in a wrong Season” (Thomas 1745:153). Anson was unable to find the trade winds for seven weeks, which doubled the time it took to cross the Pacific. Sickness and scurvy set in. Sailors “died like rotten sheep, tossing overboard six, eight, ten, or twelve in a day” (Williams 1967:178). *Gloucester* was so badly damaged that it had to be abandoned and scuttled. By the time the sailors aboard *Centurion* sighted Tinian, they were hanging on to life by a thread—Anson could only muster 71 crew who could stand, and many of those were incapable of duty.

Anson would spend almost the next two months at Tinian. His primary concerns were to heal the sick, repair the leaky *Centurion*, and re-provision for the next leg of their journey. The island proved idyllic for the men, with its seemingly gardenized appearance and abundance of fresh fruits, vegetables, and animals. Anson’s men captured a Spanish and Chamorro party from Guam that had come to Tinian to jerk beef for the Guam garrison, and made use of the huts they had set up as lodging and hospital tents for his sick crew (Walter 1928:289; Barratt 1988:26). With the sick slowly recovering, Anson next set about attempting to repair the leak in *Centurion*. Although three attempts at repair were made, all failed. The carpenters ultimately narrowed the source of the leak down to a bolt holding the stem together, and decided that it could not be repaired without the supplies and facilities available in a proper port (Walter 1928:297-298; Barratt 1988:28).

Towards the middle of September, about half of the crew, including Anson himself, were ashore recovering from sickness. Anticipating a violent storm with the coming of the new moon, *Centurion* was prepared for foul weather. The anchors’ cables were armored, and the anchors were re-set in cleaner ground in 22 fathoms water (Thomas

1745:153 155; Walter 1928:297 299). The main and fore-yards were also lowered in preparation for the storm. On 18 September 1742, the new moon came, with the expected squally weather. That day, and for the following three days, the ship rode safely. On 22 September 1742, the weather worsened. At 5 pm, the cable for the small bower anchor parted. At 11 pm, the cable for the best bower anchor parted, and the ship was adrift (Walter 1928:300; Thomas 1745:155).

The crew immediately dropped the sheet anchor. After letting out one whole cable's length and two-thirds of another (approximately 1,200 ft. of cable), the anchor held, although it was dangerously close to the edge of the bank. They fired four cannon and lit lights as a signal of distress to Anson and the men ashore, but the thunder and lightning drowned out both the boom and the flash of the guns, and their signals were in vain. At 1 am, *Centurion* dragged its anchor past the drop-off, and was driven out to sea, narrowly avoiding running aground in the process (Williams 1967:169; Thomas 1745:155; Walter 1928:300 313).

The conditions aboard *Centurion* were deplorable. Of the complement of 400 usually assigned to such a ship, only 109 were aboard. Of these, more than half were either boys (literally young men in training to become sailors) or crew still recovering from sickness. They had three cables in the hawses, to one of which dangled the only remaining anchor nearly 200 fathoms (1200 ft.) below the ship. None of the guns were lashed, nor were the ports secured. In addition to the leak from the stem, *Centurion* was also shipping a great deal of water through the hawse-holes, ports, and scuppers. The shrouds were loose, the top-masts unriggered, and because they had dropped the fore and main-yards in preparation for the storm, they could only set sails on their mizzenmast. Since they were being driven directly towards the neighboring island of Aguigan, they began to raise the lower yards in the hopes of putting on sail and avoiding the island. After three hours of ineffectual labor, the jeers (ropes used to raise and lower the yards) broke, and the men consigned themselves to their fate (Walter 1928:312 313; Williams 1967:169).

Luck was with them, though, and they found at daybreak that they had avoided running aground on Aguigan. After many days of grueling labor raising the yards and the sheet anchor, *Centurion* began to beat back towards Tinian. After sighting Guam, confirming they were blown further out than they thought, they were able to make a course for Tinian. On 11 October 1742, *Centurion* finally neared Tinian. Sighted by a lookout on land, a boat with 18 crew and fresh provisions was sent to *Centurion* as reinforcements. Thus reinforced, they were able to come to an anchor. Their ordeal

was over, having been blown out nearly 70 leagues (over 240 miles) to sea for 19 days (Williams 1967:169; Walter 1928:315).

Anson immediately boarded *Centurion*, and resolved to leave Tinian as soon as possible. The experience of those left on Tinian was equally harrowing, as they imagined themselves stranded on an uninhabited island, 2,000 miles from the nearest friendly port. They had even begun to modify the small ship used by the Spanish provisioning crew, in the hopes that they might enlarge it enough to carry all of them to China (Williams 1967:163; Walter 1928:302–311). Luckily this was not necessary, and they began to prepare to leave Tinian, but not before misfortune struck once again. On 14 October 1742, *Centurion* was forced back out to sea for a second time. A signal was made to those ashore, and a majority of the crew were able to return to the ship.

Centurion returned to Tinian in only five days this time, much to the relief of the nearly 40 sailors left behind (Walter 1928:316–317). Concerned by the loss of two of his three large anchors, Anson swept for them several times, but to no avail (Williams 1967:163). The crew labored indefatigably in preparing water and provisions, and *Centurion* departed Tinian on 21 October 1742.

The most harrowing part of the voyage over, Anson would continue to Macao to refit and repair *Centurion*, where they found that the mainmast was sprung in two places, the fore-mast completely broken through, and the leak had increased (eventually found to be below the 15 foot mark, caused by a bolt holding two pieces of the stem together working loose) (Walter 1928:337, 345–346). Satisfactorily repaired, although having had great difficulty dealing with the Chinese, Anson then set off to Espiritu Santo where *Centurion* famously captured the Manila galleon *Nostra Signora de Cabadonga* on 20 June 1743 (Walter 1928:349–364). His prize in tow, Anson returned to China, where he sold the prize and re-provisioned in Canton (again with great difficulty) before continuing his voyage. Anson left Canton on 15 December 1743, rounded the Cape of Good Hope on 11 March 1744, and finally anchored at Spithead on 15 April 1744, having narrowly (and unknowingly) avoided a French fleet concealed in the fog in the Channel. Anson's voyage around the world lasted three years and nine months.

Tinian Harbor Anchors

In May 2016, soon after becoming Staff Archaeologist at the CNMI HPO, the topic of HMS *Centurion* came up during one of the author's many discussions with Scott

Russell. Russell was involved through CNMI HPO with the 1988 effort to arrange for Dr. Glynn Barratt to prepare a report that presents the historic and ethnographic record of Anson's 1742 visit to Tinian (published as the Micronesian Archaeological Survey Report 26, for which Russell was series editor). Based on his knowledge of the subject, and the history of archaeological and salvage projects in the CNMI, Russell postulated that the anchors were likely still located where they were originally lost. He further suggested that because there were detailed records about the loss of the anchors, including the depth at which *Centurion's* anchors were set, in the official Walter account as well as other accounts, logbooks, and journals, the depth at which they were lost should be possible to determine. Since the Tinian Harbor has a rapidly increasing depth that is accurately recorded on modern NOAA charts, the probable location could be confined to a relatively narrow band. Finally, as the official account of the voyage, *A Voyage Round the World in the Years MDCCXL, I, II, III, IV* (Walter 1748), includes a copperplate etching of the anchoring place at Tinian based on Piercy Brett's firsthand drawing (Figure 1), it should be possible to find the same location based on the relationship of the landforms shown in the illustration. With this in mind, the author started to study the various accounts of Anson's visit to Tinian, and mull over how such a search might be executed with limited time and resources.



Figure 1. *A View of the Anchoring Place at Tinian where the Centurion Watered*. Copperplate from Walter's 1748 *A Voyage Round the World*. Image courtesy of The J. Paul Getty Trust, Open Content Program, <<http://search.getty.edu/gri/records/griobject?objectid=192743447>>.

In September 2016, the CNMI HPO was contacted by a team from Scripps Institute of Oceanography in regards to conducting a remote-sensing operation in Tinian Harbor. Their research interest lay in locating and researching a WWII airplane crash site believed to be in the area. As their research design involved using an autonomous underwater vehicle (AUV) equipped with sidescan sonar in the approximate area HPO believed *Centurion* lost its anchors, HPO informed the Principal Investigator (PI) of the project about the anchors, and requested that they keep an eye out for “big, old-fashioned anchors” during their survey. This proved fortuitous, as they found one, and then another such anchor while reviewing remote-sensing data. As this was not the purpose of their research, they did not conduct any further verification or dives on the anchors, but they did share side-scan sonar images of both anchors, as well as a frame capture of one taken from an action camera mounted to the AUV on the survey day that one of the anchors was discovered (Figures 2-4).



Figure 2. Sidescan image of Anchor 1. Image courtesy Eric Terrill, Scripps Institute of Oceanography, 2016.

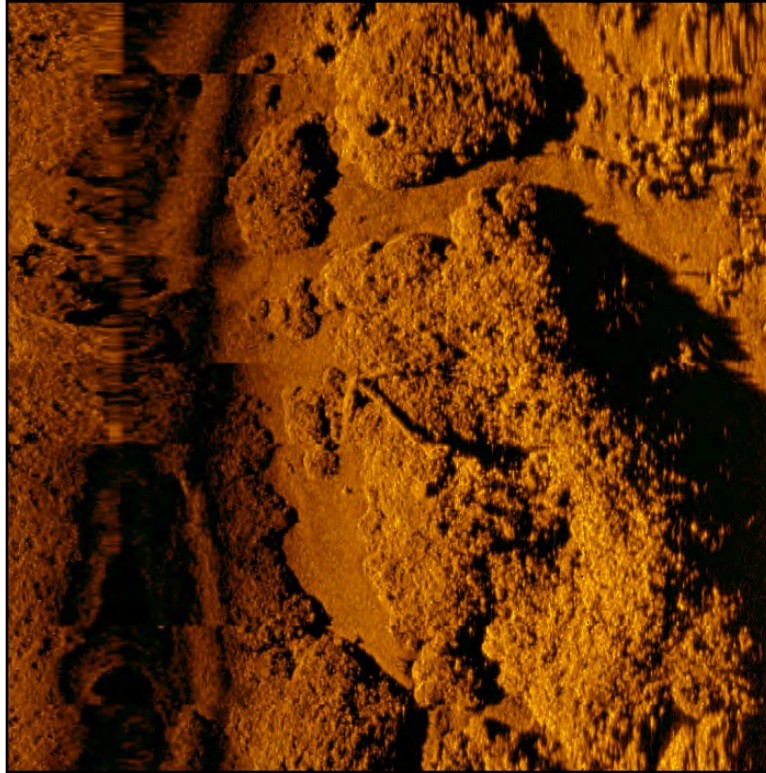


Figure 3. Sidescan image of Anchor 2. Image courtesy Eric Terrill, Scripps Institute of Oceanography; 2016.

Based on these images, the author and Russell believed that these anchors tentatively could be those lost by *Centurion*. The author subsequently requested, and received, further information from the Scripps PI, including locational data and depth of discovery. Meanwhile, Russell began contacting colleagues in the United Kingdom, including at the National Maritime Museum, Joint Nautical Archaeology Policy Committee, and Ministry of Defense, to determine who might be able to provide expertise advice in regards to the identification of the anchors, as well as determine what entities might be interested in supporting future projects concerning the anchors.

Unfortunately, timing and weather prevented diver verification of the anchors until March 2017. As part of an existing project in Saipan and Tinian, East Carolina University's Program in Maritime Studies (ECU PMS) partnered with the CNMI HPO to investigate these targets. As data from Scripps indicated that the targets lay beyond recreational diving depths, specialized equipment and procedures were required. Dives were planned that would incorporate closed circuit rebreathers and staged decompression. Jason Nunn, East Carolina University's Dive Safety Officer, planned and executed all dives with the author.

Visits were conducted by Nunn and Pruitt on 12, 14, and 16 March 2017. The 12 March 2017 attempt resulted in no target (although two WWII-era stockless anchors were observed) due to coordinate rounding errors. On 14 March 2017, Anchor 1 was located and surveyed, while on 16 March 2017 Anchor 2 was also successfully located and surveyed. Pruitt revisited Anchor 1 again on 13 August 2017 in order to re-photograph the site. The survey work had a number of objectives:

- accurately locate the targets
- conduct a preliminary inspection
- record the anchors' basic dimensions
- photograph the anchors for photogrammetric modeling
- evaluate if style and size were consistent with those expected from *Centurion*
- assess surface condition of anchors to determine the presence or absence of markings
- search for other artifacts associated with sites

Methodology

Methodology for these preliminary surveys was fairly straightforward. The target site, based on GPS coordinates received by Scripps, was marked with a weighted shot line attached to a surface buoy. Upon locating the target, divers moved the line next to the target, so the surface support could obtain an accurate GPS reading of the buoy directly above the target. Using a tape measure, divers then recorded basic dimensions of each anchor on the Nautical Archaeology Society Big Anchors proforma. A series of scaled photographs from all angles were also taken for later photogrammetric processing using Agisoft PhotoScan.

Anchor 1

Anchor 1 was the first target investigated as it was the shallower of the two targets. While the first attempted dive on this target on 12 March 2017 resulted in “no target found,” the second attempt on 14 March 2017 was successful. Anchor 1 was located in 42 m (23 fathoms) water. It is a large wooden-stocked anchor of a style most consistent with the “Old Pattern Admiralty Long Shank Anchor.” It is fully intact, with the exception of the missing stock, and lies on the seabed on a mixed sand and reef bottom. The anchor has a pointed crown, straight arms, parallel stock keys, rounded shank, and triangular palms. The ring was intact, but no evidence of cable or chain was present. No associated artifacts were found during a cursory search of the immediate area surrounding the anchor.

Preliminary measurements indicate that the shank is 5.0 m (16 ft. 5 in.) long, with a maximum diameter of 25 cm (~10 in.). Distance between bills is 3.15 m (10 ft. 4 in.), and palms measured 80 cm (~31 in.) wide by 80 cm (~31 in.) long. The ring measured 75 cm (~30 in) in diameter and was 8 cm (~3 in.) thick. Due to surface concretions, no inscriptions or markings were visible on any part of the anchor.



Figure 4. Image of author measuring Anchor 1. Image courtesy Jason Nunn, East Carolina University, 2017.



Figure 5. Image of author and crown of Anchor 1. Image courtesy Jason Nunn, East Carolina University; 2017.

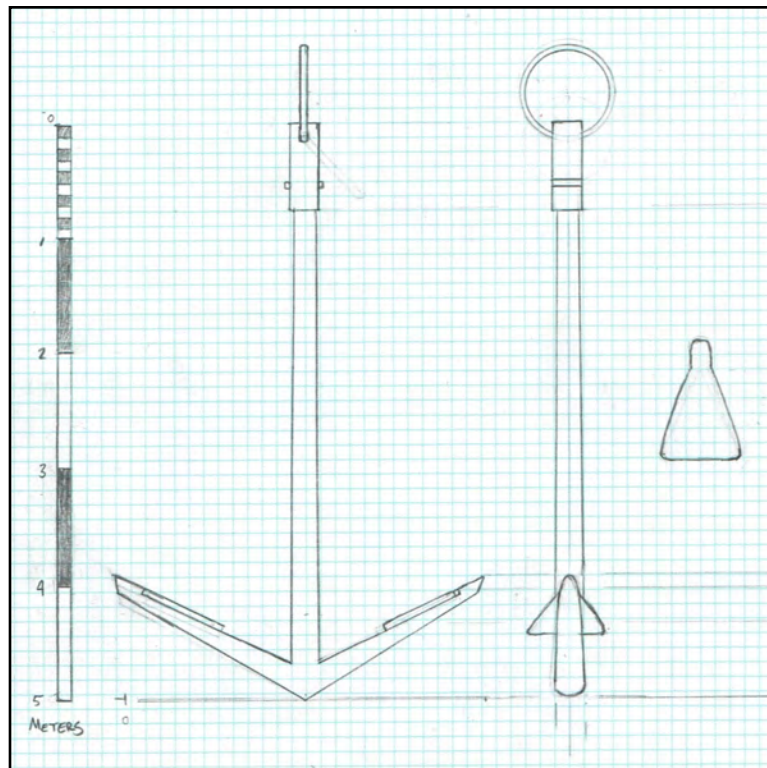


Figure 6. Field drawing of Anchor 1, James R. Pruitt, 2017.

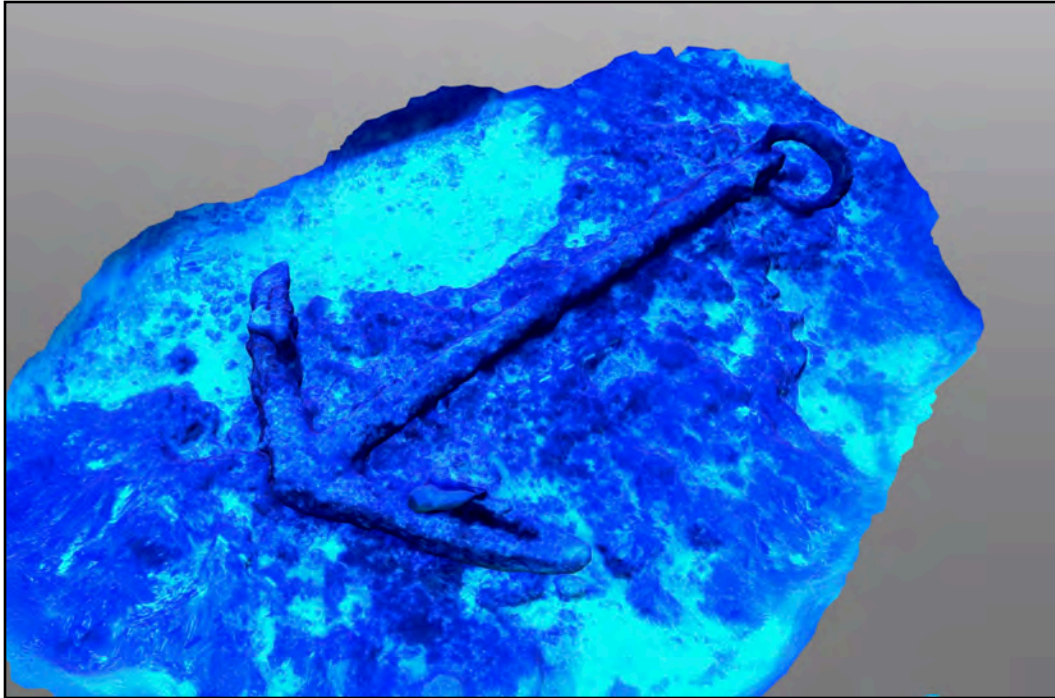


Figure 7. 3D photogrammetric image of Anchor 1, James R. Pruitt, 2017.

Anchor 2

Anchor 2 was successfully located and surveyed on 16 March 2017. Anchor 2 was located in 55 m (30 fathoms) water. Anchor 2 was similar to Anchor 1 in that it also was a large, wooden-stocked anchor that appeared to be an “Old Pattern Admiralty Long Shank” style anchor. It lies on a mixed sand and reef bottom. It also has a pointed crown, straight arms, rounded shank, and triangular palms. In contrast to Anchor 1, Anchor 2 exhibits perpendicular stock keys, although its wooden stock is also missing. Anchor 2’s ring is intact, and is also missing any evidence of cable or chain. No associated artifacts were found in the near vicinity of this site, either, although a discarded fishing net and rope were caught on the anchor near the crown.

Compared to Anchor 1, Anchor 2 is slightly smaller. Preliminary measurements on this anchor indicate that the shank is 4.68 m (15 ft. 4 in.) long, with a maximum diameter of 22 cm (~9 in.). Distance between bills is 2.7 m (8 ft. 10 in.), and palms measured 82 cm (~32 in.) in length, including bill, and 50 cm (~20 in.) wide. The ring measured 70 cm (~28 in.) in diameter and was 8 cm (~3 in.) thick. Due to surface concretions, no inscriptions or markings were visible on any part of the anchor.



Figure 8. Image of the author and Anchor 2. Image courtesy Jason Nunn, East Carolina University, 2017.

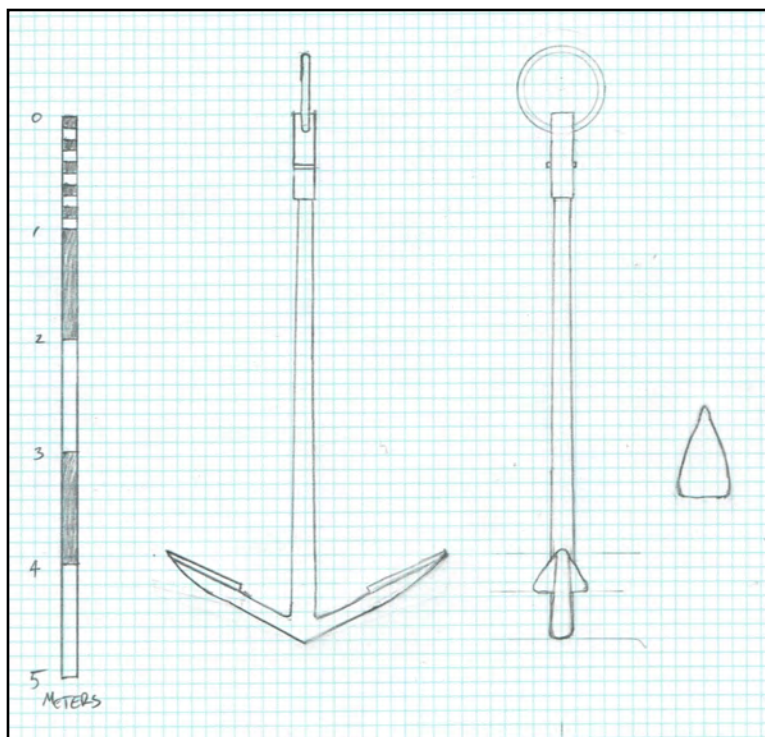


Figure 9. Field drawing of Anchor 2, James R. Pruitt, 2017.

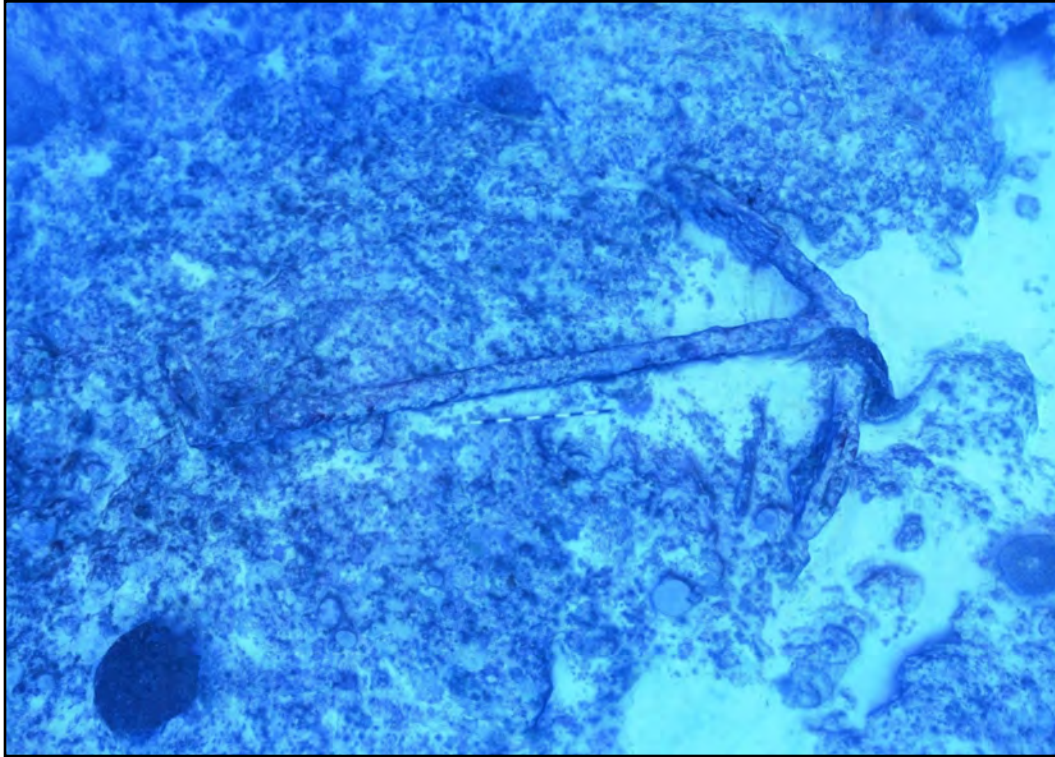


Figure 10. 3D photogrammetric image of Anchor 2, James R. Pruitt, 2017.

Results and Interpretation

Initial surveys on both anchors provided clues that led to a tentative identification as those lost by *Centurion*. Such clues included style, size, location, and site information. When considered as a whole, the preponderance of evidence supports the hypothesis that Anchor 1 and Anchor 2 are indeed the anchors that *Centurion* lost on 22 September 1742.

The photographs, when corrected for fisheye distortion, as well as field sketches and notes, all indicate that the anchors most closely resemble the “Old Pattern Long Shanked Anchor” that was used by the Royal Navy in the eighteenth century (Curryer 1999:49–61). These anchors resemble in style and ratio other “Old Pattern Long Shanked Anchor” from known shipwreck sites, including HMB *Endeavor* (1770), HMS *Sirius* (1790), and HMS *Pandora* (1791), as well as several on display at the National Maritime Museum in London. Towards the end of the eighteenth century, iron-stocked variants of the “Old Pattern Admiralty Long Shanked” anchor came into use, although these appeared to be limited to smaller anchors (roughly 3 m and smaller) (Curryer 1999:54; Nutley and Smith 2000:12–13; Jobling 1993:100). Anchor design changed in the nineteenth century, with Richard Pering’s anchor (1813) and improved anchor

(1835) being approved for use by the Royal Navy. Both of these designs had rounded arms with oval cross-sections, as well as shorter shanks and palms compared to the “Old Pattern Long Shanked Anchor” (Curryer 1999:76; Nutley and Smith 2000:12). Likewise, the “New Style Admiralty Anchor” approved for use in 1841 had similar qualities to the Pering’s Improved Anchor, as it was an evolution of that design (Curryer 1999:83–84).

The locations of the anchors also support the hypothesis that these belong to *Centurion*. When plotted on a map, the locations roughly match the description of the location where *Centurion* anchored as given in both official and unofficial accounts of the voyage. The view from Anchor 1 is comparable to the etching of the anchoring place at Tinian in Walter’s 1748 account (Figure 11, Figure 12). The depth is fairly consistent, as well. Pascoe Thomas’s journal notes that *Centurion* moored in 22 fathoms, after moving the ship closer into shore on 30 August 1742 (Thomas 1745:153–154). Anchor 1 was located in 23 fathoms, and Anchor 2 was located in 30 fathoms of water. While Anchor 2 was located somewhat deeper than expected, two possible explanations could account for the discrepancy: either the anchor was set in deeper water when the crew weighed anchors, armored the cables, and re-moored in anticipation of the coming storm on 11 September 1742; or the anchor may have dragged before the cable parted.



Figure 11. A View of the Anchoring Place at Tinian where the *Centurion* Watered. Copperplate from Walter’s 1748 *A Voyage Round the World*. Image courtesy of The J. Paul Getty Trust, Open Content Program, <<http://search.getty.edu/gri/records/griobject?objectid=192743447>>.



Figure 12. View of Tinian from Anchor 1, James R. Pruitt, 2017.

Further, the sizes of both anchors correlate with that expected of a 60-gun Fourth Rate (1005 tons) ship of the line built in 1732 to the Establishment of 1719 (Walter 1928:xxxiv). Although an exact comparison and match cannot be made, William Sutherland's 1717 treatise on shipbuilding lists anchor dimensions for six classes of ships. The 969 ton class, closest to *Centurion's* 1005 tons, lists the biggest anchor as measuring 16 ft. 1 in. (4.9 m) long (Sutherland 1717:22). By 1763, for a 50-gun ship (*Centurion* was reduced to a 50-gun ship in 1748), the dimensions for a bower anchor were set at 16 ft. 7 in. (5.05 m) long. Anchor 1, at 16 ft. 5 in. (5.0 m), falls neatly between those measurements and was thus likely the best bower of a ship in this class. Anchor 2, measuring slightly smaller at 15 ft. 4 in. (4.68 m), is the expected size for a small bower or spare anchor. It was not until after Anson was installed at the Admiralty, and the subsequent Establishment of 1745, that anchors both grew larger, and all four large anchors were increased in size to the largest (Walter 1928:xviii, 124).

One counterargument to this hypothesis is that these anchors may belong to a different ship or shipwreck. Examining the shipwreck idea first, there are historical accounts of shipwrecks from that general time period (and later) at Tinian. *Bramin* and *Espermen* wrecked at Tinian in 1797 and 1798, respectively. Accounts of the shipwreck and survivors are so similar that they are arguably the same ship. It was either a packet or merchant vessel, roughly 300–400 tons, and wrecked on the reef at Tinian Harbor (Fanning 1924:236–239; Ward 1967:270–273; Carrell et al. 2009:118). Similarly, the bark (mail barque) *Maria del Rosario* wrecked upon what appears to be the same reef in 1872 when its anchors, 14 fathoms deep, split their chains (Driver 1982; Ibáñez y García and Driver 1992:178). These ships were less than half the size of *Centurion*, so would have utilized much smaller anchors. Historical accounts of these ships also make clear that they wrecked on the reef, not in the middle of the greater harbor area. As detailed historical records exist from the Spanish government in Guam, in logbooks from British vessels, and in both British and American whaling logbooks, it is highly likely that a historical record would exist of any wreck of a ship large enough to require

anchors this size. No such records have been found at this time. Furthermore, an examination of the site indicated no wreckage associated with Anchor 1 or Anchor 2 on the seabed, suggesting that these are lost anchors rather than anchors associated with a shipwreck.

The possibility does exist that these are lost anchors from another ship that would have had similar size and style anchors. After the widespread publication of Anson's account, and his glowing review of Tinian, the island became a stopping point for ships wishing to avoid the Spanish-held Guam. Other ships passing through Tinian included HMS *Dolphin* (1765 and 1767), HMS *Tamar* (1765), and *Charlotte*, *Scarborough*, and *Lady Penrhyn* of the First Fleet (Levesque 1994; Cavanagh 1989; Phillip 1789; Smyth 1789). Notably, both *Charlotte* and *Scarborough* lost an anchor each at Tinian in 1788 (Cavanagh 1989). *Lady Penrhyn*, arriving at Tinian after the former two had already left, "observed a buoy to the southward...swept for the anchor, weighed it, and found it belonged to the *Charlotte*" (Phillip 1789:139). *Scarborough's* anchor was not recovered during this episode, but as a 400-ton vessel, it would not have had an anchor as large as Anchor 1 or Anchor 2. Similar to the shipwreck argument above, the loss of an anchor was considered to be a near-catastrophic event, and would be recorded. A search of historical documents has not uncovered any additional records of the loss of anchors besides those lost by *Charlotte* and *Scarborough*.

A final counterargument lies in a newspaper article in the *New Bedford Mercury* from 1829, that states "A whaler, lately in weighing her anchor at the Island of Tinian, hooked up the anchor of the *Centurion*", which was subsequently "carried over to the island of Guam, where the natives immediately commenced beating it out into bars and belts" (Ward 1967:276). This story is repeated in the journal of John Wilson, a surgeon who shipped aboard the whaler *Gipsy*, albeit from 1841. His account reads that "A few years ago, an anchor was hauled up by the *Charles Price*, Capt. Bunker evidently, one of the anchors left by Anson, bearing on its crown, its weight, etc...the Governor of Guam laid claim to it, and it was given up to him, as of little value, but as a curiosity" (Forster 1991:269). Unfortunately, no record for *Charles Price* could be located, nor could Spanish records regarding the receipt of the anchor. This requires more research, but the most likely explanation at this time suggests that the recovered anchor must have been that lost by *Scarborough*.

Although more research is required, including more detailed survey of the site as well as more in-depth research into historical documentation, a preponderance of evidence

(including size, type, location, and site characteristics) suggests that both Anchor 1 and Anchor 2 are those lost by *Centurion* when it visited Tinian in 1742.

Next Steps

What started as “How hard could it be to find Anson’s anchors?” has grown into a full-fledged project. While two anchors were found, and are believed to be those of *Centurion*, more work remains to be completed across several different areas and disciplines.

First and foremost, more survey and research are needed to answer lingering questions. Only one survey dive of 30 minutes was performed on each anchor, with roughly half of that time dedicated to accurately marking the location by moving the weighted marker line to the site, and taking photographs for later photogrammetric processing. As the photogrammetry for Anchor 1 failed due to insufficient data, a second dive was made later in the year to take more photographs. The preparation of preliminary scaled sketches of each anchor raised more questions than answers, and further accurate measurements based on a more detailed proforma are desired. Further search of the seabed, beyond the immediate vicinity of the anchors, may also reveal clues missed in the initial dives. A dive dedicated to searching the area between the two anchors might prove interesting, as well.

Likewise, further historical research should be performed, especially regarding the anchor reportedly recovered by a whaler in the early nineteenth century. Other avenues of historical research involve searching for additional logbooks of ships that passed through Tinian. Finally, continued research into the evolution of minute stylistic differences of anchors through the eighteenth century may bolster, or refute, the argument that both Anchor 1 and Anchor 2 are those of *Centurion*.

Having found and potentially identified these anchors, the next logical step is to discuss management of these sites. With more concrete evidence that both anchors did belong to *Centurion*, the possibility exists that there will be interest locally and abroad in regards to the recovery and conservation of one or both of the anchors. Anson and *Centurion* played an important part to the histories of the Royal Navy as well as Tinian. The only remnant left of *Centurion* is a small piece of the figurehead, now located at the Anson estate at Shugborough. While the recovery of one or both anchors for conservation and interpretation could have immense potential to add to the story of Anson and *Centurion* in Tinian, it is not a simple act to be taken lightly. The

first step involves identifying stakeholders and funding. Although these discussions have started, the surface has barely been scratched; this will be a lengthy and complicated process.

Finally, researching and locating two anchors has raised a whole series of questions of a much broader topic. Tinian Harbor has played an important part to the history of the Mariana Islands, and the world, from prehistoric through modern times. Although the inner harbor is vastly different from when Anson visited in 1742, through development by the Japanese, then the Seabees, and now potentially into a resort hotel and casino, the outer harbor remains relatively untouched. During the first dive in which Anchor 1 was not located, two WWII-era stockless anchors, a fair amount of stud-link anchor chain, and other historical debris was noted. Wider surveys may reveal a much larger collection of resources than is currently known. The land-sea use of Tinian Harbor itself is a topic that remains untouched, and could potentially benefit from analysis as a seascape or maritime cultural landscape. Additionally, this project has only concerned itself with the English colonial viewpoint of the 1740s; a multivocal approach, including the viewpoints of the use and importance of the harbor to indigenous Chamorro and later Carolinian people, is also a topic that should be explored.

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Presentation slides begin on following page.

Presentation Slides

HMS *Centurion*'s Anchors and Tinian Harbor



James R. Pruitt
Staff Archaeologist
CNMI Division of Historic Preservation


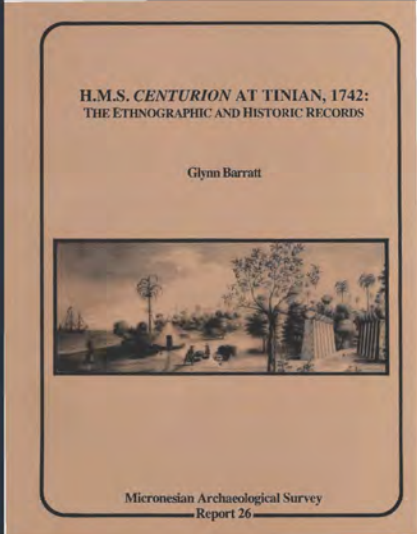
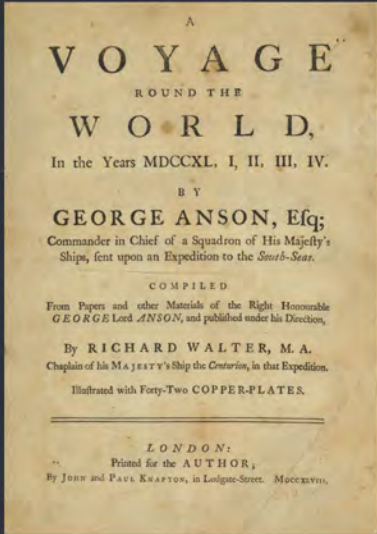


Image: Jim Pruitt, 2017

Project Beginnings



**A VOYAGE
ROUND THE
WORLD,**
In the Years MDCCXL, I, II, III, IV.
BY
GEORGE ANSON, Esq;
Commander in Chief of a Squadron of His Majesty's
Ships, sent upon an Expedition to the *South-Seas*.
COMPILED
From Papers and other Materials of the Right Honourable
GEORGE Lord *ANSON*, and published under his Direction,
By **RICHARD WALTER, M. A.**
Chaplain of his Majesty's Ship the *Centurion*, in that Expedition.
Illustrated with Forty-Two COPPER-PLATES.
LONDON:
Printed for the AUTHOR,
By JOHN and PAUL KNAFTON, in Ludgate-Street. MDCCLXXIII.

**H.M.S. CENTURION AT TINIAN, 1742:
THE ETHNOGRAPHIC AND HISTORIC RECORDS**
Glynn Barratt
Micronesia Archaeological Survey
Report 26

How hard can it be?



Image: A View of the Anchoring Place at Tenian where the Centurion Watered Copperplate etching from Walter's 1748 *A Voyage Round the World*. Image courtesy of J. Paul Getty Trust
<<http://search.getty.edu/gri/records/griobject?objectid=192743447>>

George Anson

Naval Reforms

Establishment of 1745

Uniforms

Marines

Copper sheathing experiment

Longitude Acts



Image: Admiral Lord Anson. Francis Coates, 1750.
Shugborough © National Trust / Sophia Farley.
<<http://www.nationaltrustcollections.org.uk/object/1270614>>

Commodore Anson's Mission

Europe in Upheaval

War of Jenkins' Ear

Anson's Mission

Delays



Image: The Capture of the Nuestra Señora de Cavadonga by the Centurion. Samuel Scott, National Maritime Museum.

<https://artuk.org/discover/artworks/the-capture-of-the-nuestra-señora-de-cavadonga-by-hms-centurion-20-june-1743-175522#>



Image: The Burning of Payta, November 1741. Samuel Scott, National Maritime Museum.

https://artuk.org/discover/artworks/the-burning-of-payta-november-1741-175526/search/actor:scott-samuel-c-17021772/page/1/view_as/grid

Commodore Anson at Tinian

- Left Mexico 6 May 1742
- Arrived Tinian 28 August 1742
- Food, water, recover sick, repairs
- 53 days at Tinian



Image: A View of the Watering Place at Tinian. Copperplate etching from Walter's 1748 *A Voyage Round the World*. Image courtesy of J. Paul Getty Trust

<http://search.getty.edu/gri/records/griobject/objectid=192730445>

Loss of Anchors

- Anchored in 20 and 22 fathom (120 ft./36 m and 132 ft./40 m)
- Violent storm came on 22 September 1742
- Small bower cable parted at 5 PM
- Best bower cable parted at 11 PM
- Dropped sheet anchor, tried to alert Commodore
- Was driven off the bank at 1 AM on 23 September 1742



Image: A View of the Anchoring Place at Tinian where the Centurion Watered Copperplate etching from Walter's 1748 *A Voyage Round the World*. Image courtesy of J. Paul Getty Trust
<<http://search.getty.edu/gri/records/griobject?objectid=192743447>>

Commodore Anson at Tinian

- Blown out to sea for 19 days
- Returned 12 October 1742
- Was blown out to sea for five days again on 14 October 1742
- Departed Tinian 20 October 1742 for Macau



Image: A Flying Proa Taken at the Ladrone Islands. Copperplate etching from Walter's 1748 *A Voyage Round the World*.

Circumnavigation

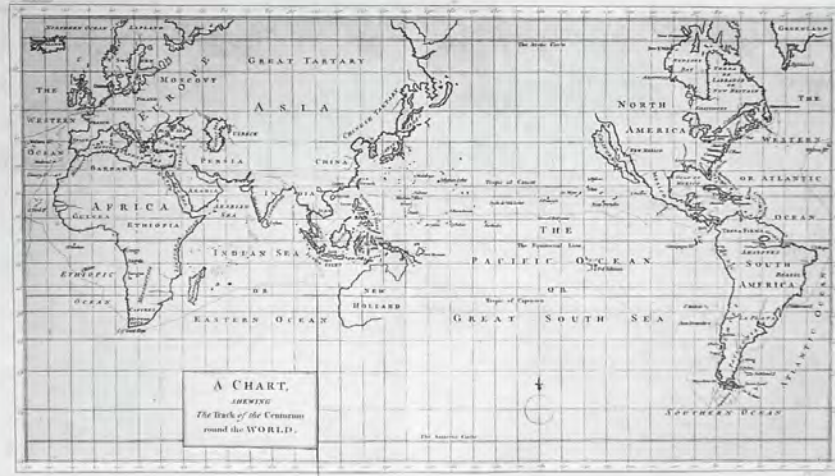
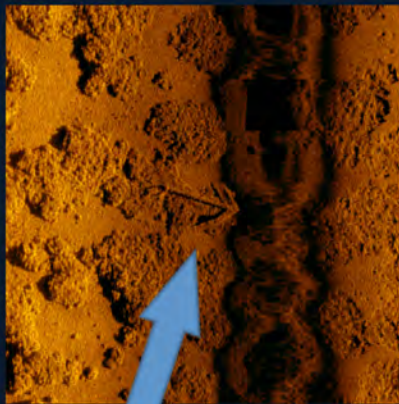


Image: Map of Anson's Circumnavigation, printed in Walter's 1747 *Voyage Round the World*.
-<https://www.classicalimages.com/collections/world/products/1745-george-anson-antique-mercators-world-map-island-of-california-new-holland>

Tinian Harbor Surveys



Images courtesy Scripps Institute of Oceanography, 2016

Tinian Harbor Surveys



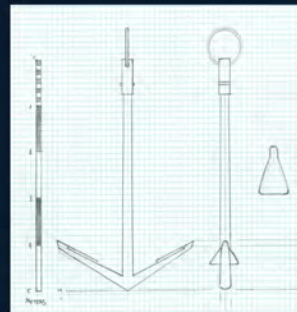
Images: Jon Carpenter and Jason Nunn, 2017



Anchor 1

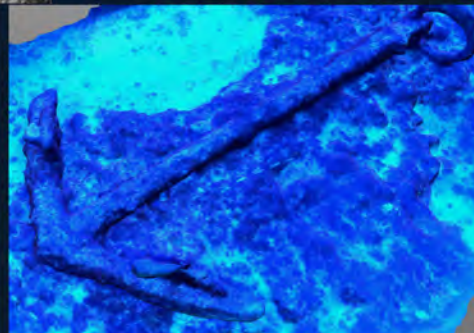


Image: Jason Nunn, 2017



Images: Jim Pruitt, 2017

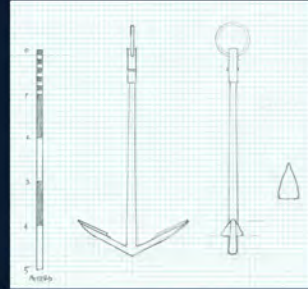
- Depth: 140 ft. / 42 m (23 fathoms)
- 5.0 m (16 ft. 5 in.) long
- 3.15 m (10 ft. 4 in.) distance between arms
- Possibly best bower anchor?
- 1717 text lists 16 ft. 1 in. for 969 ton ship



Anchor 2

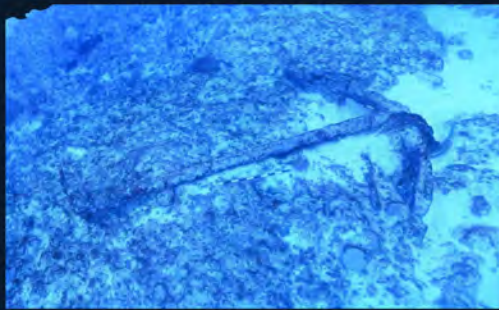


Image: Jason Nunn, 2017



Images: Jim Pruitt, 2017

Depth: 180 ft. / 55 m (30 fathoms)
 4.68 m (15 ft. 4 in.) long
 2.7 m (8 ft. 10 in.) distance between arms
 Possibly spare (small bower) anchor?



HMS *Centurion's* Legacy



Image: Model of HMS Centurion in 1747. *The Life of Admiral Lord Anson, The Father of the British Navy, 1697-1762*, pg. 24. Walter Vernon Anson, 1912. Image from https://commons.wikimedia.org/wiki/File:HMS_Centurion_model.jpg



Image: Shugborough Estate, <https://www.nationaltrust.org.uk/shugborough-estate/features/the-lions-leg-that-saw-the-world>

What's Next?

- More survey!



Images: Jason Nunn, 2017

What's Next?

- Archival research



Image: Page from journal of Arthur Bowes Smyth, 1789.
<http://nla.gov.au/nla.obj-233599084>

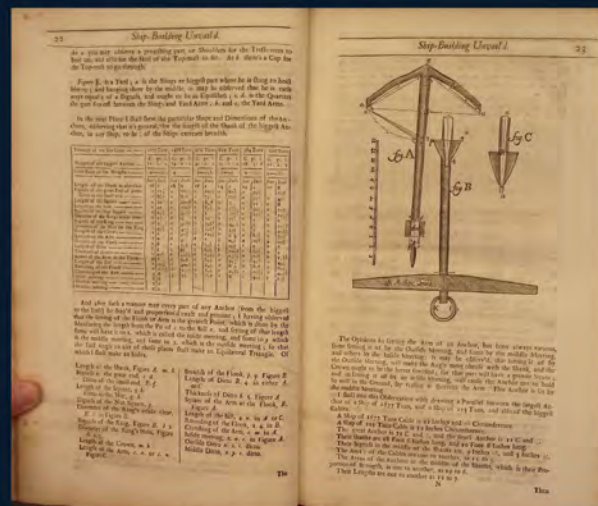


Image: Figure from *Ship-Building Unveil'd*, William Sutherland, 1717.

What's Next?

- Recovery and conservation?



Image: Recovery of HMS *Sirius* anchor in 1985. *Anchors*, Betty Nelson Curryer, 1999. Pg. 55.



Image: Conservation of HMS *Sirius* anchor in 1992.
Migration Heritage Centre New South Wales.
<<http://www.migrationheritage.nsw.gov.au/exhibition/objectsthroughtime/sirius-anchor-cannon/index.html>>

What's Next?

- Ask broader questions, expand the survey area



Image: NOAA Chart 81071, 1991.

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Image: Willie Hoffman, 2017.

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The 1856 Smallpox Epidemic And Depopulation In Guam: How To Create A Marianas Narrative

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Abstract: *1856 was a milestone year in Marianas history because a smallpox epidemic killed roughly half of Guam's Chamorro population. The accounts of mid-19th century life in the Marianas reside in Spanish government and church records, and in foreign visitors' logs, memoirs, chronicles and correspondence. This paper examines known facts and shares information learned through participation in the Northern Marianas Humanities Council's 2015 history research workshop. It also examines historiography in the context of absent native voices. It finds that indigenous agency and responses to impacts on daily life, family structure, language, faith, and culture are under-reported or missing from the record of this epidemic. While further analysis, comparative language study, and genealogy research may yield new insights, historical fiction writing could also be useful in creating an inclusive Marianas narrative.*

Keywords

Guam, smallpox, indigenous, narrative, fiction

Introduction

What was Guam like in 1856? The historical record comes to us from a limited selection of government documents, church records, and logs and diaries of the occasional visitor. It reflects some events from these perspectives. We also have the American revision of history. But the most important perspectives, the indigenous viewpoints, are irretrievable.

In prior conferences and work by our esteemed historians, some of the mistaken thinking about Spanish-colonial period of Marianas history has already been exposed. For example, David Atienza wrote about the influence of the Spanish black legend and how willingly we paint the Spanish colonial period with a broad brush of imperialist violence, omitting much other important detail.¹ Dominica Tolentino and others have

¹ "A Mariana Islands History Story: The Influence of the Spanish Black Legend in Mariana Islands Historiography."

pointed out the incompleteness of our reports on influential women.² Dr. Carlos Madrid searched for and revealed in his book *Beyond Distances* a few intriguing instances of indigenous agency that had lain dormant and undisclosed.³

I write historical fiction, including novels and scripts. Writing historical fiction requires careful and detailed research to capture an authentic feel for the time and place. This paper shares some of my historical research in preparation for writing a novel, and raises some questions that fiction can address to amplify understanding of our past.

Some facts from research for my novel about the 1856 smallpox epidemic:

In late 1855, two prominent business men on Guam chartered a ship to take them to the Philippines for a buying trip and to transport the purchased wares back to Guam.

It was the whaling season, and Guam had dozens of whaling ships come into port each year. In the mid 1840's, Guam would see 60 whaling ships a year;⁴ by the mid 1850's this was down to 30 ships per year.⁵ It was not unusual for a whaling ship to engage in other commercial activities. And it was not unusual for Marianas businessmen, and even the Spanish government, to charter these whalers, because the Marianas did not have access to its own ocean-going shipping transportation.⁶

At this time in 1855, the more important government officials were Spanish military, including Governor Maria Felipe de la Corte, who arrived in July 1855. The church clergy were a mix of Spanish and Filipino priests, including Father Aniceto Ibañez, a Spanish priest in Hagatña. But there was not a significant population of Spanish, even among the soldiers, who by then were mostly Filipino. The total population of Guam was 8,207 (church)⁷ or 8,775 (government).⁸ About one-third of the population were Filipinos. There had been a recent influx of hundreds of Carolinians from the 1848

²*Women in Guam History*, published at Guampedia.

³ Instances include events surrounding Luis Narciso Baza, Gertrudis Tenorio, Juan Atoigue and others.

⁴ *Destiny's Landfall*, p. 98.

⁵ *Memoirs of Ma. Felipe de la Corte. American Activities in the Central Pacific*, Guam vol, p. 64.

⁶ Driver and Brunal-Perry, *Carolinians in the Mariana Islands in the 1800'S*, p. 14.

⁷ Father Aniceto Ibañez reports this in *Chronicles* as the population of Guam at the end of 1855.

⁸ Father Hezel uses this number in his report and attributes it to Spanish government records; it is also used by Rogers in *Destiny's Landfall*.

typhoons. There were only a handful of Americans, four British and one Scot on island. And the indigenous Chamorro population⁹ was roughly half or more of the total population.¹⁰

The two prominent businessmen who chartered the ship were Spaniards: Don Francisco Tudela, a Peninsular Spaniard born in Valencia, Spain, and Don Silvestre Inocencio Palomo y Rodriguez, a Criolo Spaniard, meaning he was colonial born. Each man had been in the Spanish military; each had reached the rank of Sargento Major.¹¹

Tudela was prominent because he had wealth and position. He arrived in Guam in 1841, coming from the Philippines.¹² By 1855, he was retired military. His first wife, Doña Maria de Torres, had considerable wealth of her own and had died in 1847. In January 1849, Tudela married Josefa Anderson, then a 20 year old, half-caste Chamorro whose father was the Scot, John Anderson. By December 1855, Tudela was about 50 years old, had three children with Josefa Anderson, and in today's dollars, was a millionaire.

Palomo was prominent from both long residence and high status. His grandparents were the peninsular Spaniards, Bernardo Palomo y Ignacio and Maria Teresa Tenorio. Palomo's grandparents had spent time in Mexico and then come to Guam and were first recorded in the census of 1758. I don't have a lot of information about his life, but Palomo had been an election official in 1823.¹³ By 1855, Palomo had also retired from the military. He had a house in Hagatña. His wife was Rita de Torres, whose mother had been one of the last pureblooded Chamorros in Guam and whose father was also

⁹ By this time, there were virtually no pureblooded Chamorros. Even the most high-caste, the Chamorros who were *mestizos*, with Spanish ancestry in addition to native blood, would identify themselves as Chamorro because of laws that exempted the native population from the *diezmos* tax.

¹⁰ Hagatña was the largest village and the seat of the government. It is also where most of the Spanish and *mestizos* lived. The Filipinos were spread out in various villages in and around Hagatña. Chamorros were found in all villages except possibly Maria Cristina, the Carolinian village at Tumon. The southern villages were almost exclusively indigenous.

¹¹ Don Francisco Tudela was promoted to *Subteniente* upon his retirement, with retroactive pay. See Brunal-Perry.

¹² He had been Sergeant Mayor at the Zamboagan presidio, Philippines. While in Guam, he held the same post at the Guam Presidio, and also was appointed to run the Colegio de San Juan de Letran, the boys' school, when the headmaster died unexpectedly. In July 1855, he imported goods from the Philippines, brought on the *Consuelo*, the same ship that brought the new Governor, Ma. Felipe de la Corte.

¹³ Father Eric Forbes, "Hagatña VIP's in 1822," Paleric.blogspot.com, 04/02/2013.

high ranking in the Spanish military. Palomo had at least two children, a daughter Rita and a son Jose Bernardo.¹⁴

I suspect, but I have not yet corroborated that Tudela and Palomo were related as in-laws through their wives. Tudela's first wife Maria de Torres and Palomo's wife Rita de Torres may have been close relatives.

In any event, the two men, each with high Spanish status and rank, each retired military, were joint entrepreneurs and together chartered the *Edward L. Frost* for their business venture. The *Edward L. Frost* was an American schooner, built in 1847 in Connecticut by CL Bayles and Company. As a schooner, it had at least two masts, fore and aft sails, gaff-rigged. It was a 141 ton ship, outfitted for whaling, and would have had guns typical of the era.¹⁵ The *Frost* was engaged in whaling out of Lahaina, Sandwich Islands, and typically took its cargo back to San Francisco for sale.¹⁶

Tudela and Palomo left Guam in December 1855 for Manila. Also on the trip was an American named Edward Edgerton, an early daguerreo typist, who had come to Guam in 1855 and was heading to Manila to seek permission to stay and live in Guam.¹⁷ The *Frost*, with Tudela, Palomo and Edgerton, returned to Guam in late February 1856.

The *Frost* arrived to a busy port. In early January 1856, the English barque, the *Invincible*, had struck a sandbar at Apra and sunk. At the end of January 1856, the French frigate, the *Asia*, had gunpowder on board that exploded while in port. When the *Frost* arrived, the American brig *Dover* was still in port for repairs, having lost rigging and sails, and sustaining other damage from a storm at sea.¹⁸

¹⁴ See "Heritage: A Letter to my Children," by Paul Souder; Fa. Eric Forbes, "Familia: Palomo," 8/23/2011, paleric.blogspot.com; Audreya J.P. Taitano and Shannon J. Murphy, "First Chamorro priest," Guampedia.com

¹⁵ Other similar ships were armed with a couple of 24 pounders and 12 pounders; or perhaps swivels and smaller weapons.

¹⁶ Its trip from Lahaina to San Francisco was 19 days in 1852, under Captain Hempstead. In March 1855, 16 days also under Captain Hempstead. The *Frost*, under Captain Hempstead, again participated as part of the December 1856 whaling fleet. It seems likely, but I have not confirmed, that Captain Hempstead was the captain of the *Frost* when chartered by Tudela and Palomo. See, "Log chips: the periodical publication of recent maritime history." Vol 2, #12 (May 1952); see also Melton, *The Argonauts of California*, California Genealogy & History Archives; Sacramento Newspaper, 09/09/1850; Maritime Heritage 1852 and 1855; Susan A. Lebo "A Hawaiian perspective on Whaling in the North Pacific," and NOAA data.

¹⁷ Bennett, *Photography in Japan, 1853-1912*; History SG online article; Palmquist & Kailbourn, *Pioneer Photographers of the Far West, A Biographical Dictionary 1840-1865*.

¹⁸ American Activities in the Central Pacific, Guam volume, p. 68.

On the same day the *Frost* anchored at Apra, it had buried one of the crew, a young man, at sea. The cause of death – smallpox. Once the information about the death was made known to authorities,¹⁹ the question became what should be done with the crew and passengers?² According to Father Ibañez, “At first they were detained, then the government officer in his capacity as surgeon stated that there was no cause for concern and that three days would be sufficient for the quarantine.”

However, the influential men, Tudela and Palomo, and the American Edgerton, and possibly others, did not observe even this short quarantine and instead disembarked the next day. Father Ibañez characterized this as due to a misunderstanding.

It was soon clear that Palomo was ill with smallpox.²⁰ He and Tudela each died from the disease.²¹ Smallpox was a disease that had been around for centuries. Its progression was already well known: There would be exposure to someone infectious.²² Then a 10 to 12 day incubation period. Then fever and muscle aches for a day or two, followed by a few days of recovery. Then the disease would hit in full force: the fever would return along with a painful, bumpy rash that developed primarily on the face and extremities. The bumps would fill up and become hard and last for a week or longer, while other changes in the body occurred that could result in major damage or death. A death rate of 20 to 60 percent was common, and those who survived were typically scarred. Some would suffer blindness or other complications.²³

¹⁹ The information about the *Frost* was relayed to authorities. It was common for the port master or his assistant to conduct an inspection before allowing a ship’s crew and passengers to disembark. I’m not sure who the port master was in 1855, but John Anderson, Tudela’s father-in-law, had been an assistant harbor master for decades and may still have held the position at this time.

²⁰ Initially, Palomo believed it was just due to the fatigue of the journey. Within a short time, he was diagnosed with smallpox.

²¹ We don’t know if Edgerton had smallpox, but we do know that he didn’t leave Guam, even though his visa had been denied, until January 14, 1857, when he headed to Hong Kong on the French frigate, the *Washington*.

²² Infection spread through air droplets, or contact with objects like books and blankets.

²³ “Smallpox,” article at Wikipedia.com

Vaccination, also, was well-known by this time.²⁴ Although there were government-sponsored vaccination boards in the Philippines,²⁵ there was no such entity in the Marianas and the people were generally not vaccinated. There were those in Guam who had been exposed and survived smallpox, though.²⁶ And given the number of Filipinos in the Marianas, it is possible some of them had been inoculated while still living in the Philippines, before coming to Guam

The vaccine could not only prevent getting the disease, it could lessen the severity of the disease and improve the chance of survival, even if given after exposure. So it was important to undertake inoculation promptly. Governor de la Corte sent to Manila for vaccine serum to be sent to Guam.²⁷

In the meantime, the Spanish government in the Marianas repeatedly took other steps to address the spread of smallpox. These were primarily aimed at isolation and containment, and were ineffective. Governor de la Corte called for the isolation of Palomo and the others who had arrived on *Frost* at the *monte*. According to Father Ibañez, this would place them “apart from the rest of the populace. Those who had

²⁴ Spain had undertaken a world-wide campaign (the Balmis expedition) to vaccinate against smallpox at the beginning of the century. The Balmis expedition began in November 1803 and traveled from Spain to the Americas on a campaign to vaccinate the native populations against smallpox. Without refrigeration, the method for creating sera was to have a supply of young boys successively infected with a milder version of the disease, and to make the sera from them. In February 1805, the Balmis expedition, left Mexico on the ship *Magallanes* with six staff, twenty-six boys to carry the live virus, and seventy-seven priests destined for posts in the outlying Philippine provinces, plus fifty-four soldiers and a few other assorted passengers, ship officers and a crew of over two hundred. The goal was to arrive in Manila with some of the boys still sick enough for the doctors to make sera from which to inoculate the people of the Philippines. And although there were challenges along the way, this, they did. From 1807 on, the Spanish government in the Philippines set up vaccination boards for smallpox, which had some lapses in administration, but were mostly successful at maintaining a population inoculated against the disease in the Philippines. See “Arms Around the World: The Balmis Medical Expedition in Asia, 1805-1807” by Thomas B. Colvin.

I don’t know if the Balmis expedition or any of its offshoots reached the Marianas. It’s possible they did. But even if they had, the protection from the smallpox vaccine diminishes over time unless a booster or revaccination is given. So by 1856, most people living in the Marianas would have been born after the Balmis expedition and even those who might have been vaccinated would not have much if any lingering protection.

²⁵ These vaccination boards had an inconsistent record, and have been criticized in other works. See eg., Colvin, “Arms Around the World: The Balmis Medical Expedition in Asia, 1805-1807” fn. 21.

²⁶ We know this because Father Ibañez wrote that they were assigned to nurse the sick. We also know that there were a few deaths in 1823 from smallpox, because we have records that show *viruela* as a cause of death in Guam from that year.

²⁷ More research needs to be done to figure out why the Marianas were not ready and prepared by vaccination against smallpox, in light of the 1854 smallpox epidemic that had wiped out half of Pohnpei’s population, with similar devastating effects. See eg., Crawford, *Missionary Adventures in the South Pacific*.

previously had smallpox were assigned to be nurses. Food and all other necessities were left for them a certain distance away and absolutely no one was allowed in their vicinity.” Yet Palomo did not go to the designated mountain area and instead went to a vacant house on the side of the road to Sinajaña.²⁸

People who had been in the houses with those from the ship became sick, too. The Governor ordered them isolated at the *monte*, also. But their families hid them instead. The Governor ordered the *cabezas de barangay* to round up the *cailianes* (delinquents) and force them to the quarantine area.

The *Frost* left Guam in April 1856, but the shadow of smallpox did not go with it. More people became sick. The Governor ordered the construction of *camarines* (sheds), temporary hospital shelters at a place called Fanilanan. I still don’t know exactly where that is. He also ordered a ration of rice and meat from the *hacienda* for each sick person, because so many of the sick were poor and would starve without help.

The epidemic worsened. One day in July 1856, there were 47 more people taken to the *camarines*. When there were 500 in the *camarines*, the Governor decided people could stay home, but ordered that signs be put up on their houses. Immediately, about one-third of all houses in Hagåtña and the nearby villages displayed this sign.

About this time, the Governor’s urgent request for vaccine serum had reached Manila and a ship returned. The vaccine serum arrived but was useless because it had been destroyed by the heat and conditions of the journey. More and more people died. According to Father Ibañez, the dead were taken by Tagalogs (his term) in their *carretas*, to Adelup for burial. The disease spread to other villages.

Governor de la Corte ordered construction of more *camarines* at Margui for the sick from Asan, Tepungan, and Agat. He ordered *camarines* built at Merizo, Inarajan and Umatac. Another ship arrived with another batch of spoiled serum. There were days in September 1856 where 70 or even 80 people died and were carted away. They were buried, not in individual graves, but in trenches at the beach in Asan and other villages.²⁹

²⁸ This may have been the vacant house of the priest Father Ciriaco, who had a house on the right side of the road to Sinajaña, and who had been dead for some years already. See Heritage, by Souder.

²⁹ “Small Pox Epidemic Victims in 1856” at *Guam Recorder* April 1940.

But there was also a new development. One or more of the doctors, I have not yet identified who, developed a vaccine serum from some of the milder cases of the disease and a vaccine inoculation program began.

Governor de la Corte ordered construction of new *camarines* along the hillside behind Asan and along the Pigo River as a place for those who were inoculated to recuperate from the effects of the vaccination program.

As the vaccination program took effect, the epidemic waned. The *Te Deum* was sung on 30 November 1856 as the official declaration of and a thanksgiving for the end of the epidemic. The death toll was staggering: 3,463 people by Church count; 5,534 by the government.

We know very little about how the people reacted to the epidemic and adjustment afterwards. Father Ibañez wrote that “it would be impossible for man to portray the picture of the situation on this island at that time if he were to attempt to detail what was happening in each of the stricken homes.” But we have not even one account from one stricken home. We have no records of what the people felt, or how they coped with the grief and the massive changes from so many dead.

We do know that the son of Palomo later became a priest, Padre Jose Bernardo Palomo, the first Chamorro priest. He attributed his vocational calling to this time. But what was it that prompted this religious commitment? Was it desire to atone for his father’s role in bringing the virus to Guam? A deepened faith in the wake of inept human response? A feeling that the Chamorros needed an advocate in times of crisis?

We know that the government taxed the estate of Tudela and sent assessors to value the estate. Josefa Anderson could not write, even her own name, at this time, yet she purchased another house and lot in November 1856 as the epidemic waned. Was this a sympathetic use of her money to help out someone in troubled times or a shrewd business move taking advantage of the situation?

We know that the Catholic Church went ahead with its construction of the priest’s house at Merizo. Who did the labor while so many were ill and dying? And the Catholic Church destroyed three large baskets of Protestant Bibles in a public burning.³⁰ Did anyone question the Church’s priorities in such troubled times? Did

³⁰ Nicholas J. Goetzfridt, “Whaling Influence in the Marianas,” at Guampedia.com

the Church's actions fuel resentment, promote the practice of faith, or go largely without notice?

We know ships continued to stop over at Guam, including the *Acacia* in early April and the *Epsom* in August, each out of Melbourne; of course, the ships from Manila;³¹ and the schooner *Secreto* and the whaler *Florence* in November. Did the people still view these arrivals as a cause for celebration? Were they fearful?

We know that even in the midst of the epidemic, there were 161 children born. Did their parents survive? Was there hope and happiness?³² How much of the Chamorro language was lost by the death of so many local people, including the elderly? Did attachment to Chamorro ways strengthen from affection for those who had died or weaken from the gap their deaths left in traditional understanding?

All history contains an element of interpretation by the historian. Or as Stephen King said, "When it comes to the past, everyone writes fiction." But the emphasis of historians on records means that we are listening to the voices of the government, the church, the visiting ships, and not hearing the most important perspectives from the local people. Those who survived had to re-organize and must have changed and adapted from their experiences. Yet I have none of that here; we have none of that in our history books.

When we limit the Marianas narratives to historical records, we have a lopsided historiography. For example, in *Destiny's Landfall* by Rogers, the 1856 smallpox epidemic that killed 40 to 60 percent of the population³³ gets less than half a page of text;³⁴ but Samuel J. Masters, an American on island for a mere 16 months whose

³¹ The priest Father Liberal arrived on one such ship in August, along with spoiled vaccine serum.

³² We also have some glimpses of intense emotions surfacing after the epidemic ended. For example, in December 1856, a Filipino man named Muto stabbed an unmarried man and killed an unmarried Chamorro woman, Ramona de Leon Guerrero, in a fit of jealousy. But we simply do not know more. Had there been a breakdown in romantic barriers during the epidemic that came back up when it was over?

³³ I use the more conservative number found in the Chronicles of Father Aniceto Ibañez, rather than the government reports, in excess of 5,500 people, cited by Rogers. I have not figured out how to reconcile the differences in the reports. Whether it was 40% of the population or 60% of the population, the total number and impact was staggering.

³⁴ *Destiny's Landfall*, p. 100.

impact was primarily helping to get 29 stranded Americans back home, gets more than half a page of text.³⁵

When we limit our Marianas narratives to the written records, the narrative takes on a single story perspective that is characteristic of mythology, as if this were something that happened to the people of the Marianas and was meant to be.³⁶

The single-story narrative robs us of the complexity of the past, the voices of ancestors, and the agency of the indigenous.³⁷ History cannot make up facts. It cannot create records that don't exist. But historical fiction can fill in the gaps in the recorded evidence with imagination and multiple perspectives from a variety of writers that give voice to the agency of indigenous peoples of the Marianas.³⁸

This is a call to action. Please join me in researching diligently and then writing historical fiction to add the missing perspectives, the otherwise irretrievable voices of the indigenous.³⁹

³⁵ Ibid., p. 99. See also, Forbes, "An American Consulate on Guam." The American ship, *Sarah Mooers*, ran aground at Ngotik Atoll in late 1853 and the survivors had been taken to Guam. Masters first went to Philippines, where he secured the repatriation of most of the survivors. He arrived in Guam in November 1854 and arranged for the repatriation of the rest. He was also present in Guam when the *USS Vandalia* sailed into port in 1855 to protest the treatment of these Americans. He left about the time the American schooner, the *Frost*, arrived with smallpox to decimate the Guam population. I don't know if Doctor H.H. Beale who arrived with him and who sought permission to stay and practice medicine in Guam was still present in 1856 when the epidemic occurred.

³⁶ See Herz and Sliwka, who each discuss how historical fiction is helpful in overcoming the educational hurdles of teaching history.

³⁷ In a study of Guam students, historical fiction was no better or worse in helping students learn material, but in their face-to-face interviews, the students who had read narratives, including historical fiction, expressed greater enthusiasm and interest than those students who used only traditional expository textbooks. Cunningham & Gall.

³⁸ "Frantz Fanon's call for the indigenous intellectual and artist to create a new literature, to work in the cause of constructing a national culture after liberation still stands as a challenge." Linda Tuhiwas Smith. "...historical discourse wagers everything on the true while fictional discourse is interested in the real, which it approaches by way of an effort to fill out the domain of the possible or imaginable." Hayden White.

³⁹ See *Journal of a Plague Year* by Daniel Defoe, a novel published in 1722 about bubonic plague in London in 1665.

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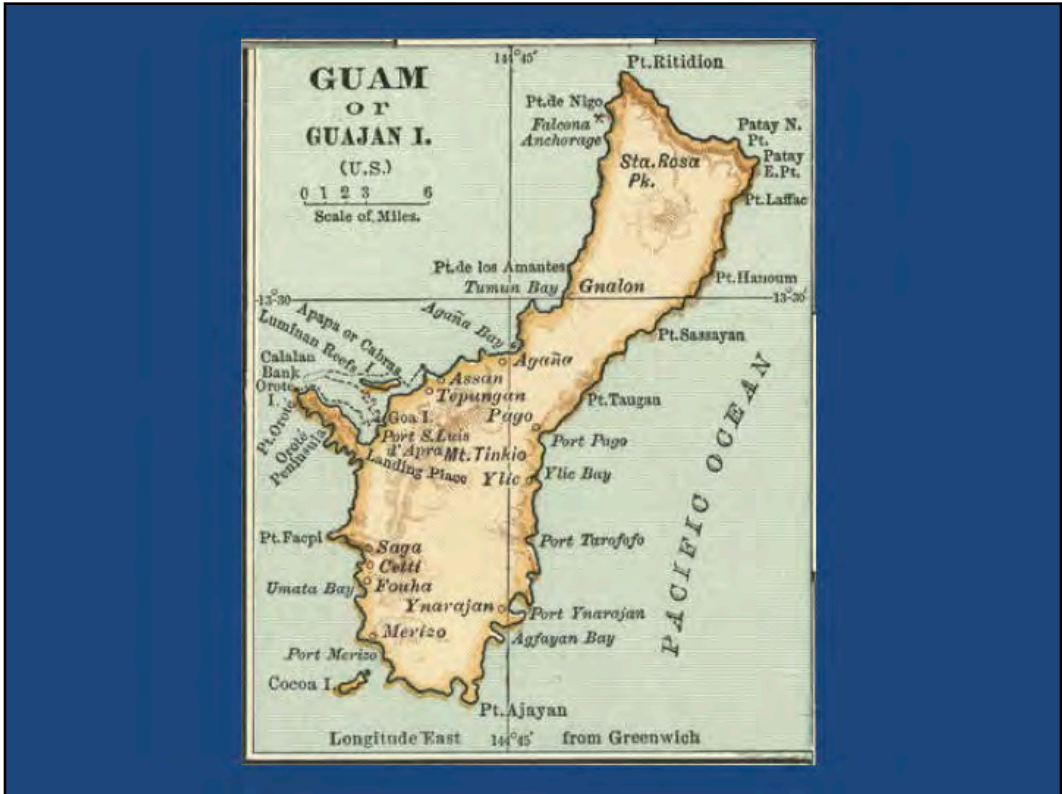
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Presentation slides begin on the following page.





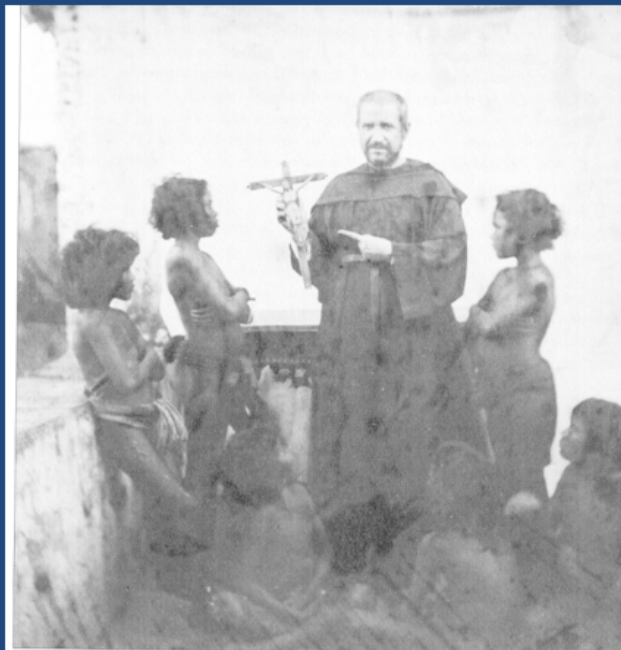
J B Starr, Auctioneer.
CARGO SALE.
 ON Thursday, September 13th, 1850, at 10 o'clock, A.M., J B Starr will sell, at his Auction Room, the cargo of the schooner Edward L Frost. Sale positive, and without reserve.

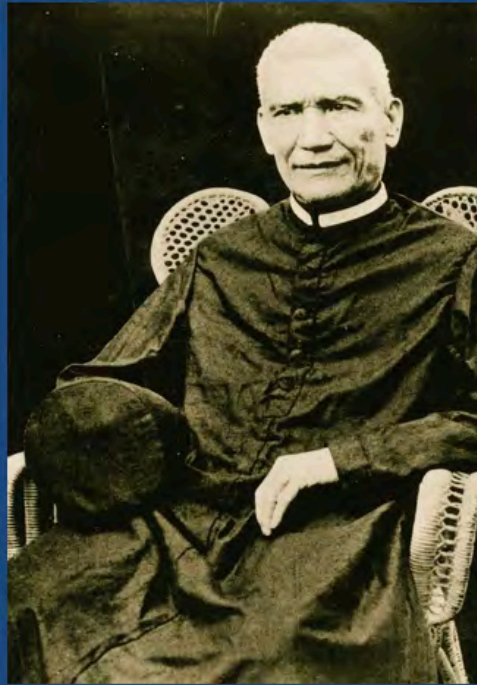
295 bags, 33 1/4	sugar, 22,648 lb
949 "	15 1/4
164 bags	superior oats
50 cases, 3 dozen each	pint, pickles
22 do 2	do quart do
20 do 4	do hf lb, sup Durham mustard
14 hbls, each 70 galls,	sugar-house syrup
3 hbls loaf sugar,	3499 lb
4 hbls, containing 71 mats,	crushed sugar
30 casks bottl'd ale and porter,	in pint botls, 6 doz
6 cases do do,	6 doz each
200 qr bags	superior flour
100 half bags	do
40 bags	corn meal
20 tins	oat meal
1 case lard,	containing 36 tins, 6 lb, each
10 kegs	honey
2 cases	bleached ginger
10 bags	pearl barley
	Wine, biscuit, and ginger bread
11 kegs	pickled onions
300 doz	fresh eggs
5 cases,	containing 16 1/2 dozen, white pepper
5 cases,	containing 100 boxes each, sardines
10 cases	pie fruits, 2 doz each
1 case	garden seeds
3 kegs	solder
10 boxes	charcoal tin plates
10 boxes	charcoal tin plates
12 coils	Manilla rope, small
12 filters,	assorted sizes
10 barrels	Loubats brandy

se9 4t] J B Starr, Auc.



■ ¿Que es la viruela?







Strassenbild in Saipan auf Guam (Marianen) - Seite 135





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Jane Mack is the Directing Attorney of the Marianas Office of Micronesian Legal Services Corporation. She has lived and worked in Saipan, CNMI for more than 30 years. She has a BA in Sociology from Miami University, Oxford, Ohio and a JD from the University of Kansas. She writes novels in her spare time.

