

FAMSI © 2001: Thomas H. Guderjan

Sampling Botanical Remains at Blue Creek, Belize

Thomas H. Guderjan and Steve Bozarth

Research Year: 1999

Culture: Maya

Chronology: Late Pre-Classic to Early Classic

Location: Blue Creek, Belize

Site: Chan Cahal

Table of Contents

[Introduction](#)

[Early Classic Ritual Deposits from the Monumental Architecture](#)

[Late Preclassic/Early Classic ritual deposits from the Chan Cahal residential barrio](#)

[Stratigraphic column from a Late Preclassic/Early Classic midden at Chan Cahal](#)

[Ditched agricultural field](#)

[Summary](#)

Introduction

The study of phytolith botanical remains is still quite new in archaeology with most work having been done only in the past decade. With the exception of a pilot study by Bozarth at Nakbé, this is the first application of the technique to Mesoamerican materials. Blue Creek is a medium-sized Maya site in northwestern Belize which has been investigated intensively since 1992 under the direction of Thomas Guderjan. Excavations at Blue Creek have encompassed many contexts, including monumental architecture and associated ritual deposits, elite and non-elite residential contexts and ditched agricultural fields. This study utilized previously collected soil and residue samples from a number of these contexts. Most importantly, phytoliths of economically important plants were found in all contexts and our initial work has already opened new insights and avenues of future research in the Maya area.

The contexts sampled at Blue Creek were (1) Early Classic ritual deposits from the monumental architecture; (2) Late Preclassic/Early Classic ritual deposits from the Chan Cahal residential barrio; (3) a controlled stratigraphic column from a Late Preclassic/Early Classic midden at Chan Cahal; and (4) a single sample from a ditched agricultural field. We will briefly point out the high points of the results of each.

Submitted 09/01/1999 by:
Thomas H. Guderjan
Maya Research Program
St. Mary's University
mrp@stmarytx.edu

Steve Bozarth
Department of Geography
University of Kansas

Early Classic Ritual Deposits from the Monumental Architecture

We analyzed six samples collected from previous excavations. The biggest surprise of these materials was the presence of microscope sponge spicules. While they are not botanical remains, they are of the same size range as phytoliths and were found during the analysis. They were extremely abundant in Cache 45 and very abundant in Caches 28 and 30. They were also present in Caches 4A, 4B, and 6A. We believe that in reality, each of these cached ceramic vessels must have been stuffed full of marine sponges. The Cache 45 sample was a very clean and uncontaminated sample collected by Bozarth. The others were from previously excavated vessels which also had infilled with loose material from around the caches, diminishing the percentage of actual cached materials in the samples. In addition, Heleconia, a plant used today for wrapping tamales, was found in Cache 6A. Palms were found in Caches 28 and 30 and Curcubita was also found in Cache 28.

The discovery of sponges used in six of six Early Classic caches has immense importance. These had to be carried from the coast to Blue Creek, probably up the Río Hondo by canoe. Their presence in this context probably only reflects a much more widespread use. Further, their placement in these dedicatory caches reflects the restatement of Maya place of origin, the primordial sea. The presence of other marine shell artifacts and stingray spines in these caches reinforces this concept.

Contents of Early Classic Caches in Monumental Architecture

	Sponges	Heleconia	Palms	Curcubita
Structure 1				
Cache 4A	Present			
Cache 4B	Present			

Cache 6A	Present	Present		
Structure 3				
Cache 45	Extremely Abundant			
Structure 12				
Cache 28	Abundant		Present	Present
Cache 30	Abundant		Present	

Late Preclassic/Early Classic ritual deposits from the Chan Cahal residential barrio

Cache 43 was a multi-vessel cache under a house mound at Chan Cahal. We believe that the residents of Chan Cahal were the farmers of the surrounding agricultural fields. In these vessels were jade and non-jade artifacts. In addition, the phytolith analysis revealed the presence of Zea mays, agave, curcubita, palms and a few sponge spicules. With the exception of the sponge spicules, this is the suite of materials we expected from this context.

Stratigraphic column from a Late Preclassic/Early Classic midden at Chan Cahal

The midden stratigraphic column revealed a series of interesting patterns. First, there was an abundance of zea mays, curcubita as well as other economic plants. Second, a few sponge spicules were also recovered from these samples. Finally, the lower two samples of the column contained very abundant quantities of burnt, bundled, tall-grass species phytoliths. This species grows only in consistently wet settings such as those immediately nearby Chan Cahal. Importantly, the phytoliths themselves were charred. Bozarth speculates that this could have derived from a grass-thatched building that was destroyed by fire. In addition, this was the source of the most abundant corn phytoliths. Bozarth sees the possibility that corn was hung to dry within the structure, a common North American practice.

Ditched agricultural field

A single sample from Ditched Field #1 was also analyzed. While we had expected to find materials such as zea mays or curcubita, instead the sample included phytoliths from a species of palm that is used to derive palm oil for cooking, etc. This discovery led to the excavation of eight new trenches through agricultural ditches in the summer of 1999 in an effort to better sample these fields for phytoliths. Analysis of these samples is planned for the next six to nine months.

Summary

While some of the results of this study are ambiguous, several important goals have been achieved. First, as for the question of whether the study of phytoliths has applicability to the Maya lowlands, the answer is a resounding "Yes!". The success of the analyses of ritual contexts was so clear, we argue that the collection and analysis of residues from cached vessels should become basic operating procedure for the area. It is clear that an entirely new dimension of caching behavior can be seen through phytolith analysis. Many times, this dimension will open new avenues of interpretation and understanding of the relationship between the Maya and their cosmos. The presence of phytoliths will aid us in better understanding ritual and economic behavior as we develop the use of the technique at Blue Creek and other places.