In Search of Ramon: A Paleoethnobotanical Study of Plant Remains from Tikal

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Abstract

Although research at Tikal, the capital of the ancient Maya state, began nearly 50 years ago, the site's prehistoric botanical remains have yet to be systematically analyzed. This project attempts to remedy this situation by looking at 200 samples from several locations excavated by the University of Pennsylvania from 1956-1979. The aim of our research was to test Dennis Puleston's hypothesis that cotton (Gossypium sp.) was used as a staple crop by the ancient Maya. The fact that our analysis uncovered no evidence of cotton use in any context suggests that cotton was not a staple crop at Tikal, but the fragmentary nature of our data does not allow us to absolutely reject Puleston's hypothesis. Nevertheless, this study has uncovered remains of many other plant species that were in use at Tikal. We recovered samples of single crop types like maize, beans, squash, and squashes, as well as a few common foods like canoe, ranks, carrots, and a tim. These results draw a detailed picture of how plants were being used by the ancient Maya while also hinting at how they may have been harvested, stored, and cultivated.

Introduction

In the mid-1970s Dennis Puleston popularized his theory by arguing that modern cotton trees growing at the site are remnants of a population that was cultivated by the ancient Maya for their oil-like seeds. Furthermore, Puleston proposed that the site’s shallow (underground) pits were designed specifically for storing large quantities of cotton seeds (Puleston 1970). Although the cotton hypothesis is found in many introductory texts on the Maya, it has never been directly tested using paleobotanical evidence. This study has attempted to fill this informational void by examining 200 archeobotanical samples that were excavated by the University of Pennsylvania between 1956-1979. Although these samples were collected primarily for radiocarbon dating, we found many plant species that were used in the subsistence of Tikal. These results will help us better understand the ancient Maya's economy and their exploitation of the local flora.

Methods

- Samples were organized by location, time period and function (i.e., domestic, ceremonial, middens).
- Samples were sorted by family name and plant part using a Leica DCM light microscope.
- Analyses assigned unique firm numbers to each sample and all results were compared in a database sample (e.g., 16001-001, 16001-002, etc.). All items were identified and stored by specimen inventory.

Results

Bromus (Bromus labiatus)

The importance of bromus to the ancient Maya’s diet is not clear. However, it is clear that the plants were used for food. The plants were recovered from a mound in a context with a domestic canteen and a wild bird (Pulvertaft 1970).

Cucurbitaceae

- Cucurbita spp.: Along with maize and beans, squash completes the full nutritional complement of alienoids. The leaves, stems, and roots of squash are very important. The presence of squash seeds and ossicles in the prehistoric Maya diet is significant.

Other Findings

- We found several other tree species that could have been under cultivation by the ancient Maya. Speciosum spp. has an edible fruit that may have been grown for its carbohydrates (Lentz 1991).
- Mamillaria species were an extremely useful plant that was probably harvested from the forest by the ancient Maya. The seeds were used to produce a gel that could be cooked (Kops 1920).
- Pimenta spp. is a shrub that was used as a seasoning. Ficus spp. produces a sweet fruit. We also found one Gomphostigma sp., used in cultivation. From Tikal 1.

Conclusion

From the wide variety of plant species identified in archaeological samples collected from Tikal, it is safe to state that the ancient Maya cultivated and harvested many of the plants in their surrounding environment. Although we did not find cotton, we did find many other species at Tikal that were potential tree crops, suggesting that the area was not a part of the subsistence economy at Tikal. Continuing research on botanical remains from Tikal may contribute additional evidence of ancient Maya tree-cropping. We also found many agricultural domesticates in the samples, such as maize, beans, and squash. These crops were used in both domestic and ceremonial contexts, suggesting that agriculture and religion were closely linked in ancient Maya society.

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References

[List of references]

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- [Image of botanical diagram or illustration related to the study]