SPINES

GIANT conical spines

ASOCIACION
FLAAR
MESOAMERICA

Ceiba pentandra

Eco-lodge Hacienda San Lucas
Copan Ruinas, Honduras

Background of research on Maya ethnobotany:

This is a report on the remarkable Ceiba pentandra trees on the Hacienda San Lucas, about 3 km from Copan Ruinas, Honduras.

I have been studying plants of Guatemala intensely for the past five years, and studying plants of Guatemala as an avocation during the previous 45 years. I lived at Tikal for 12 months at age 19 (1965). A decade later I created the Parque Nacional Yaxha Sacnab while 30-something of age. It took five years to protect the Yaxha area and get it named a national park. I estimate I was living in the Peten about 20 months over this five year period, not counting the 12 months previously at Tikal. Plus I lectured for eco-tours over a 20 year period. So I have a tad of experience living deep in the rain forests in the core area of the Maya realms.

Although I have years of experience photographing Puuc, Chenes and Rio Bec ruins throughout Quintana Roo, Campeche and Yucatan, and field experience recording the hieroglyphic inscriptions on the stelae of Nim Li Punit Belice, probably 80% of my studies of flora and fauna have been in Guatemala. So naturally I wish to add observations and photographs from nearby countries. So last year I did a photographic field trip to Parque Nacional El Imposible in El Salvador. And during April 2012, I undertook a survey of potential for studying flora and fauna in Honduras. So the following is our first report on the results of our survey of the Copan Ruinas area of Honduras.

Why it is important for Mayanists to have a good photographing reference archive on trees with conical spines

I have been looking for conical spines of ceiba trees over the last several decades. This is because many Preclassic, Early Classic, Late Classic and Post Classic Maya incense burners and some burial urns are decorated with conical spines. These conical spines on the Maya ceramic effigies and bowls are clearly modeled after the spines on the Ceiba pentandra tree.

Although this long-range study of conical spines has documented that there are many other local native Mesoamerican trees with conical spines, the most common trees with spines throughout the Maya area are all species of the Ceiba genus:

Ceiba aesculifolia
Ceiba pentandra
Ceiba schottii

Many species of Erythrina and Zanthoxylum trees have spines. And Hura polyandra has the most abundant conical spines of any tree in Middle America, but so far we have not found one physical specimen of Hura polyandra in Guatemala (though it is listed as a giant and common tree in Parker's book on Trees of Guatemala, 2008:282). Hura is even called Ceiba in South America.

Another fact to consider is that Hura is one of the most poisonous trees of Mesoamerica. The pre-Columbian cultures were adept at utilizing any plant with noxious or psychoactive chemical components. We know from Thomas Gage that the Maya even put the venomous Bufo marinus toad into jugs of their beer-like alcoholic drink.

And the seed pod of Hura polyandra is the most remarkable of any tree in the entire American continents. But until we can find this remarkable tree, we are concentrating on studying the conical spines of Ceiba pentandra.

Ceiba pentandra is the most common of the Ceiba tree species in Guatemala and Honduras. I will estimate it is also common in Belize and parts of Mexico, though Ceiba schottii is listed for Yucatan. Ceiba schottii is not listed for Guatemala.

Ceiba aesculifolia is common throughout the dry areas of Guatemala, and is occasionally found in other parts of Guatemala. This tree often has more spines on more parts of the tree than most Ceiba pentandra trees, and especially more spines on the trunk even when the tree is mature. But I did not notice many Ceiba aesculifolia trees en route from Chiquimula to Copan Ruinas. And I saw no Ceiba aesculifolia at Copan ruins or on the Hacienda San Lucas.

Ceiba aesculifolia is relatively easy to distinguish from Ceiba pentandra by the shape of the tree (not as straight or tall) and by the color (usually dark; Ceiba pentandra tends to be green color during its first 20 or so years). When in flower the flowers are totally different from each other: Ceiba aesculifolia is like a simplified Pachira aquatica flower, so the Ceiba aesculifolia flower is similar to the flower of the Pseudobombax ellipticum tree (also a member of the Bombacaceae family. Hura is a member of the Euphorbiaceae family.

Trees on the Hacienda San Lucas

Ceiba pentandra trees can thrive in about any kind of warm environment: whether humid or dry. There are plenty of Ceiba pentandra trees throughout the Motagua desert area, though here Ceiba aesculifolia is more common. I find that Ceiba aesculifolia is more in drier areas and less common in areas that receive more rainfall. But Ceiba pentandra can thrive in all environments (as long as it is not too cold). There are plenty of ceiba trees in Guatemala City, at 1500 meters above sea level.

There are four Ceiba pentandra trees that we noticed on the Hacienda San Lucas:

- A probably 30 to 40 year old tree on the hotel grounds; giant spines
- A probably less than 15 year old tree with “crocodile”base; substantial spines
- A probably less than 8 year old tree with giant spines.
- A tree probably over 25 years of age, possibly 40+, to the right as you leave the hotel grounds by road.

The 40+ tree had very small spines, so documents that even in one eco-system you can get ceiba trees with different sized spines. This is a factor of the tree itself, not the age of the tree. There is another ceiba with tiny spines in front of the parking lot at Las Sepulturas, Copan Ruinas.

Youngest of the ceiba trees on the Hacienda San Lucas

Although this is clearly the youngest of the Ceiba pentandra trees it had spines which were as large as those of all the older trees.

On this young tree the spines looked all the larger since the tree trunk itself was of such a small diameter.

Here you can see several of the really large spines: several towards the bottom middle (pointing straight out). And several at the upper left (pointing to the left).

These two views reveal the full range of sizes of spones, from tiny and thin to thick and giant.

Here are two views of the upper trunk with the lowest two branches. It is usually for the lower branches to have spines on all sides.

Ceiba tree whose roots remind me slightly of downward pointing crocodile

A “crocodile tree” is well known from Izapa and from paintings and/or incised designs on both Tzakol and Tepeu Maya ceramics. Some crocodile trees have a jicarro or morro tree on top. Other crocodile trees are a different species (large individual leaves).

I am not sure that enough of the leaf sets are ceiba-like. Nonetheless, the ceiba is one contender for some aspects of a crocodile tree. However I feel that several other trees are more likely the original models. And, indeed, there are trees in Guatemala still today known as palo de lagarto. So the palo de lagarto, crocodile or alligator tree, is a real species, even if what is pictured at Izapa stelae and Peten ceramics is more a mythical composite.

So although the ceiba tree is not the only contender, I could not help feeling that the base of this tree at Hacienda San Lucas reminded me of the crocodile aiming into the ground.

Here are additional views of the thorn size and patterns.

Show one view at page height, then for the rest of the two-page spead, show sections so we can see the complete range of thorn sizes and shapes.

Although this tree had large spines, they were not as giant as those of the tree nearer the parking lot of the eco-lodge, nor as large as the younger tree about 10 meters away out in the thicket en route to Los Sapos.

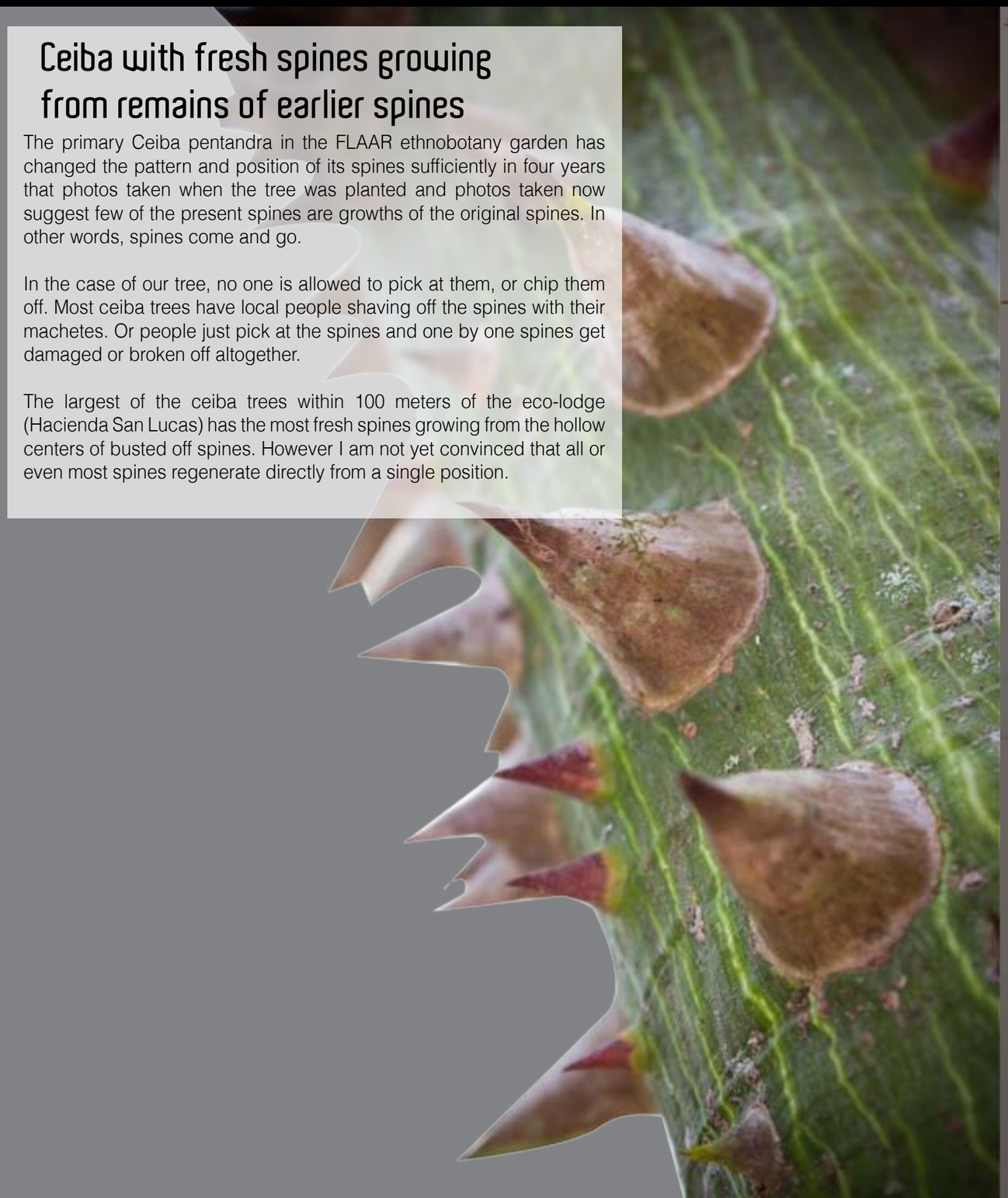
So you can see the diversity of size, shape, and positions of different thorns, here are sections of the trunk so you can see everything at a closer view.

Ceiba with fresh spines growing from remains of earlier spines

The primary Ceiba pentandra in the FLAAR ethnobotany garden has changed the pattern and position of its spines sufficiently in four years that photos taken when the tree was planted and photos taken now suggest few of the present spines are growths of the original spines. In other words, spines come and go.

In the case of our tree, no one is allowed to pick at them, or chip them off. Most ceiba trees have local people shaving off the spines with their machetes. Or people just pick at the spines and one by one spines get damaged or broken off altogether.

The largest of the ceiba trees within 100 meters of the eco-lodge (Hacienda San Lucas) has the most fresh spines growing from the hollow centers of busted off spines. However I am not yet convinced that all or even most spines regenerate directly from a single position.



Our long-range goal is to scan all these ceiba trees in 3D

The present photography of ceiba trees (over the last 20 years and more intensely over the last several years) is to physically locate a portfolio of every size and shape and pattern of conical spines that we can find. Our goal is to show, to Maya scholars and students, is what kinds of spine patterns the Classic Maya had available.

On the ceramic incense burners the spines are usually organized in rows or at least in a regular pattern. No such pattern is natural on any actual tree. However any good Preclassic or Classic period Maya gardener could have “trained” a ceiba tree to show its spines in any pattern that was designed (more or less). All you do is simply remove spines that are not in your desired pattern, and let the spines grow where you wish to show your desired pattern.

If you have enough trees, and enough patience, you should be able to get an incensario pattern or urn pattern (if you wished such a pattern on an actual tree). I would assume that the High Priest had his own sacred garden; the ruler had his royal garden, and important dignateries had their own luxury gardens. We all know about the Aztec royal gardens. Plus the murals of Malinalco, even though painted during the time of the Spaniards, quite frankly show a mythical garden which surely was based on actual gardens.