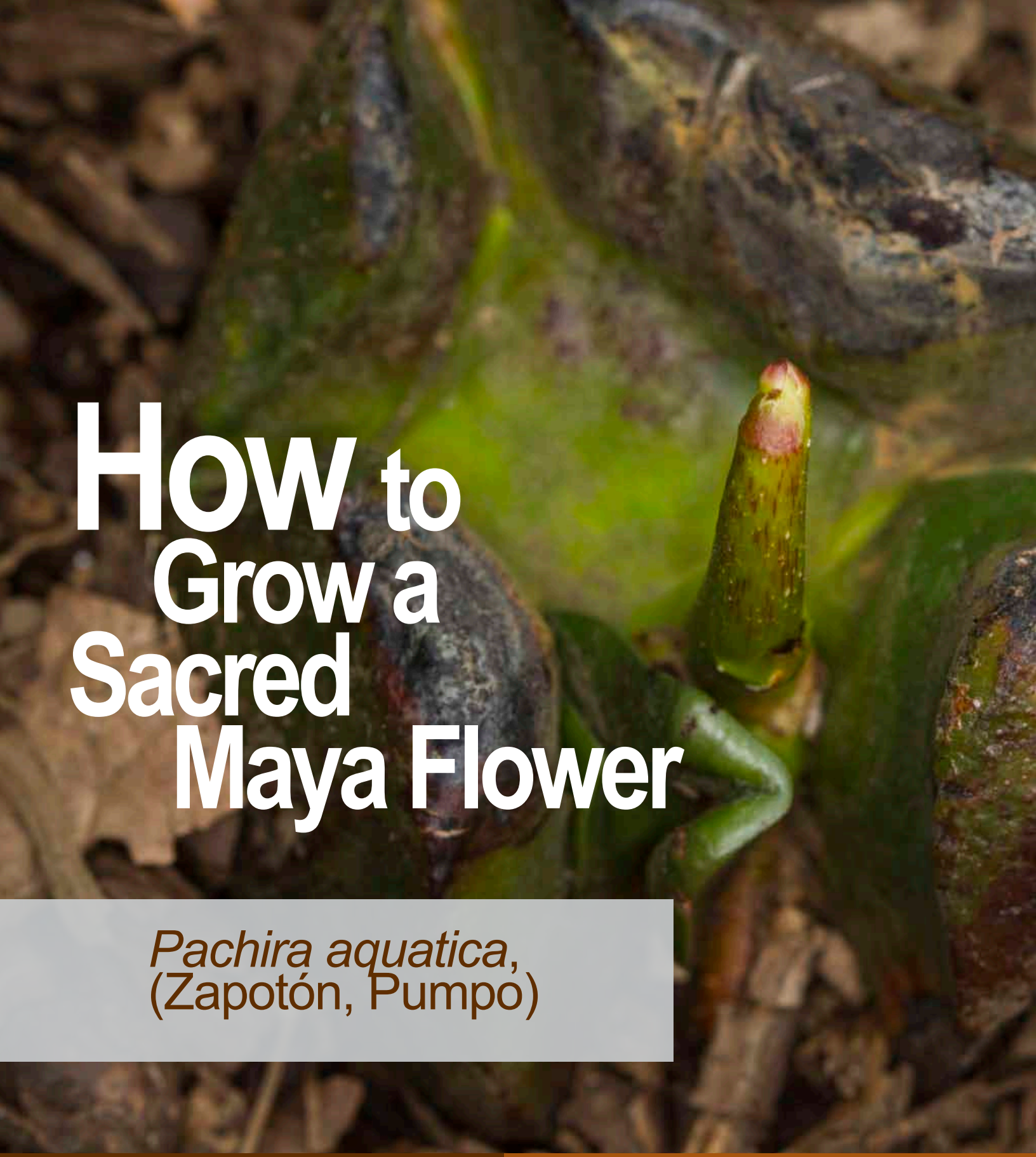


How to Grow a Sacred Maya Flower

Pachira aquatica, (Zapotón, Pumpo)

FLAAR Reports

Nicholas Hellmuth

Introduction:

There are several thousand species of flowering plants in Guatemala. Actually there are several thousand flowering TREES in Guatemala.

If you count all the bushes, shrubs, and vines, you add thousands more. Then count the grasses, water plants; that's a lot of flowers to look at.

Actually, if you count the orchids in Guatemala you would run out of numbers!

Yet out of these "zillions" of beautiful tropical flowers, the Classic Maya, for thousands of years, picture less than 30 different species. It would be a challenge to find representations of a significant number of orchids in Maya art: strange, since they are beautiful, and there are orchids throughout the Maya homeland as well as in the Olmec homeland, plus orchids are common in the Izapa area of proto_Maya habitation in Chiapas.

Yet other flowers are pictured in Maya yart, yet in the first 150 years of Maya studies, only one single solitary flower species was focused on: the sacred water lily flower! (I know this focus well, I wrote my PhD dissertation featuring this water lily).

But already already 47 years ago, I had noticed flowers on Maya vases: there were several vases that I discovered myself in a royal burial at Tikal that pictured stylized 4-petaled flowers (Burial 196, the Tomb of the Jade Jaguar). Still, if you have XY-thousand flowers blooming around you, why did the Maya picture less than 30?

In other words, why did the Maya select the water lily as their #1 flower? I know most of the reasons, but the point is, the Maya had XY-thousand. Yet they show the water lily more than any other.

It is the same with insects. 20+ thousand insects in Guatemala? Yet the Maya show fewer than a dozen (and actually show fewer than 10 if you count the main creatures).

So I have been focusing on, first, figuring out what different flowers the Maya do picture (and what reptiles, insects, birds, etc). Since I do not own a TV set in my home in St Louis, and since there is no TV set in my office in Guatemala, I have to occupy my evenings and weekends: I do this by studying iconography and epigraphy, specifically which plants and animals are featured in Maya myths and paintings.

Show photos by me and Jaime of the butterfly eggs and babies, etc.
I learn about flora and fauna very easily and simply. I raise butterflies, so I can study butterfly biology and iconography.

Show close-up photos of the stingless bees; see if you can find photos of the wasp nests (tough, not many and the nests are all dead now).
I raise bees so I can study bees. I also raise wasps.

Show photos of the spiders; good luck finding photos of the toads; there are no photos of the scorpions.

I have poisonous toads in my yard so I can study their role in iconography. There are many scorpions in my house also, and remarkable spiders everywhere. Neither of these creatures was brought in the house to study: both live here naturally. We can't get rid of them, any more than you can get rid of cockroaches or ants in the house. I don't allow the use of insecticides (other than for mosquitos), so our facilities are relative paradise for flora and fauna.

Show series: cacao flowers; cacao baby pochas; pochas today.
I raise cacao both inside and outside the office. I raise palo de pito. I have two gorgeous sacred ceiba trees in my yard: one is remarkably like a growing incense burner. I have a number of other sacred trees and plants all around my office.

And now I am raising *Pachira aquatica*, called zapotón or pumpo. The name varies by what departmento of the country you are in, and the backgound the the people you are speaking with. Since *Pachira aquatica* is so easy to raise, and produces one of the most beautiful tree flowers of all Central America, I thought I would write about how you too could raise it, in any warm climate on earth.

Show the vase with the Maya lord's bust evolving out of a flower
The reason why we have invested several years of field trips in tracking down and photographing *Pachira aquatica* flowers is because flowers from the Bombacaceae family of trees are pictured in Classic Maya art (as pointed out by Charles Zidar, using many vases including one that I photographed and published over a decade ago). FLAAR has an extensive series of monographs in preparation that will showcase each species, but here is a quick list.

- Ceiba aesculifolia, pochote
(an imprecise name because pochote is used for a dozen other trees, especially of the genus Zanthoxylum, with mostly lesser spines).

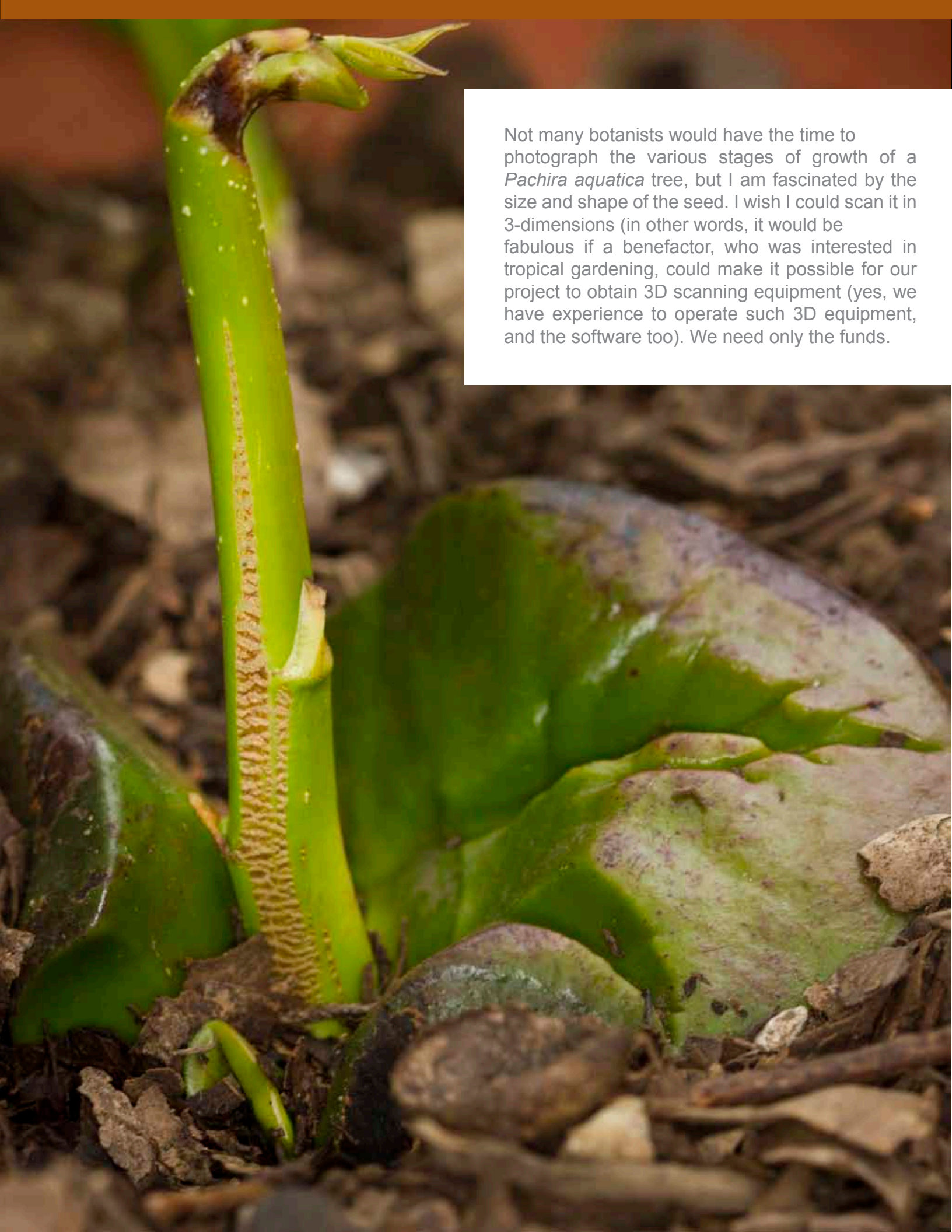
- *Pachira* quinata, called
Bombacopsis quinata or Bombax quinatum by earlier botanists. Red ceiba or pochote (a generic name referring to almost any tree in Guatemala which has triangular or conical spines).

- Pseudobombax ellipticum Shaving brush tree, Amapola Blanca. An endless number of plants in Guatemala are also called amapola, so hopefully biologists and chemists can determine which features of this tree elicit the name amapola. We are studying primarily the physical appearance and relationship with flowers pictured from the 3rd through 9th centuries A.D.; we are not analyzing their chemical components.

So all my work is related to the iconographic and epigraphic aspects of archaeology: the meaning of plants and animals in Maya art and mythology.

But at the same time I do like to contribute knowledge to botanists, and also to horticulturalists. And to gardeners. Plus FLAAR has been dedicated to helping explain what camera equipment and which techniques result in improving your photography.

Pachira aquatica has huge potential as a cash crop. Not for me, I do not sell plants or plant products. But villagers, guides, and people throughout Guatemala, Mexico, Honduras, El Salvador, and Belize can earn needed income by selling plants. You do not need to deplete the jungle to sell *Pachira aquatica*. The trees produce enough extra seeds to fill the world with their offspring. Almost all the seeds germinate, so there is hardly any waste.



Not many botanists would have the time to photograph the various stages of growth of a *Pachira aquatica* tree, but I am fascinated by the size and shape of the seed. I wish I could scan it in 3-dimensions (in other words, it would be fabulous if a benefactor, who was interested in tropical gardening, could make it possible for our project to obtain 3D scanning equipment (yes, we have experience to operate such 3D equipment, and the software too). We need only the funds.

The seeds grow in shallow water

Along Rio Dulce we see the seeds of *Pachira aquatica* sprouting in sanding water (about 10 cm deep). I bet they could grow in water even a bit deeper.

The seeds grow in soil with no standing water.

We find the seeds grow like super heros, even if not in standing water, if given the proper mulch or soil (not too stucky; they like loose mulch).

The sprouts grow faster than any plant other than possibly bamboo

There are some weeks they grow 10 or more centimeters.

The seeds last several months and still can be planted later

We were busy and kept seeds around for months. Even after several months, the seeds still sprouted as soon as they had a bit more sun and more moisture.

The seeds are not wimps: they are strong and produce vigorous trees

These are the largest tree seeds that I am familiar with. And the fruit is one of the ten largest tree fruits in Guatemala. So the seed must be filled with nutrients to pass along to the young seedling.

We have a separate FLAAR Report on the seed mass, as I believe the size and shape of the seed mass mimics the sacred turtle. And the individual seed splits open to produce growth, as the Maya show for the splitting turtle. Wouldn't it be a surprise if the "Maize God" turned out to be the zapotón god! Of course I say this facetiously, but I doubt any other iconography has noticed the shape of the zapotón seed mass (as it comes out of the pod) and then how the individual seed opens up to the remarkable shape that it reveals.

This incredible tree grows well at 0 meters elevation, or equally healthily at 1500 meters above sea level, way up in the Guatemalan Highlands.

We have a separate FLAAR Report on the tree at over 1300 meters elevation in the Jardin Botanico in Guatemala City. In our own garden, roughly 1500 meters, the trees grow almost as fast as a healthy banana (which of course is not native, but is a great garden plant)..

I bet the tree would grow at even higher elevations, but cold snaps during December and January would probably kill off the young trees at elevations higher than 1500 meters. My cacao trees are having a tough year this year due to all the cold snaps.

Summary on raising zapotón

Pachira aquatica is the fastest growing tree that I have seen in my 50 years in Guatemala. I would love to have a time lapse camera recording them on a sunny day, with lots of water available to keep the seeds content.

Pachira aquatica seed mass are also the most successful seeds I have ever seen. The percent of seeds out of a pod which grow is remarkable. No, sorry, we don't have statistics. We are working on so many web pages, reports, PDFs, PowerPoints, etc, and constantly going out on field trips. There is no funding for a staff person to count and maintain the statistics (most of the staff are students and they are at the university trying to survive, and often a bit stressed out from that reality). Plus we are giving away sprouting seeds to everyone who visits us.

But if you combine the growth rate and the number of seeds-per-pod which germinate, it's remarkable. Plus the seeds can sit around for a long time, and then they still germinate if provided the correct "soil" and sun and water combination.

In other words, I consider this as an ideal tree for reforestation. Plus, as we reveal in another FLAAR Report, these riverside trees flourish just fine hundreds of kilometers from the nearest river. We show a tree in the main plaza of a large town, and another tree in the middle of Guatemala City: both are blooming day and night and around the year. And not sitting in a swamp nor anywhere near a swamp.

I will defer to professional silviculture specialists. I will defer to agronomists with a university degree and lab experience. But as a layperson I find this one of the most idiot-proof trees in the world to grow: at altitudes from 0 to 1500 meters above sea level.

Obviously does not withstand frost! And yes, does prefer lots of sun (but also does grow well in the shade; it will sooner or later send its tiptop over the surrounding crown and then the tree will really be happy.

The seeds are huge, and seem to withstand rough treatment (such as being driven around in a pickup truck).

So although I do not consider myself a Johnny Appleseed, I would not mind being considered Nicolas Zapotón-specialist.

Guatemala is a beautiful country, and I do not espouse monoculture anywhere, but the country would be even more gorgeous if there were *Pachira aquatica* trees everywhere. Plus supposedly the seeds are edible!

I would love to find other plants of native Guatemalan Maya or Xinca origin, that transport and adapt as well to all climates, that grow like weeds, which are stunningly gorgeous, and it always helps if they are edible or otherwise utilitarian. I bet the wood is usable also.

Would be fabulous if a private foundation or government agency could fund nurseries to grow these by the thousands and then take them in pickup trucks and distribute the seeds and seedlings to villages across the entire country.

If you are an individual, corporate, or foundation, we are a non-profit entity in Guatemala and have a non-profit 501(3) or whatever in the US as well. Donations are welcome at either the US institute or the Guatemalan institute.

We provide training and education for Guatemalan students of diverse backgrounds but most of all FLAAR provides knowledge to over a quarter-million people a year who read our www.Maya-archaeology.org

Our www.maya-ethnobotany.org, in less than 9 months, went from zero to #2 on Google returns. Our photographs are considered at or above “National Geographic quality.” Unfortunately we have zero funding and we sure could achieve more results if we had an additional student botanist, an additional photographer to catalog our now over 23,000 photographs of Guatemalan flowers, vegetables, trees, and plants.

It would also help us immeasurably to have two new computers so we can process the high-resolution digital images.

There are scores of capable graphic designers in Guatemala who would relish a chance to work with our innovative educational programs. It would help us immensely if we had three more graphic designers on-staff so we could turn more of our photographs into PDFs and PowerPoints.

And basic funding for a video editor would allow us to produce more videos. Please contact us, FrontDesk “at” FLAAR. org (we write it this way so that spam phishers don’t harvest our e-mail as easily).

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