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Sacred Tree
CEIBA

Licda. Mirtha Cano
Dr. Nicholas M. Hellmuth

In the beginning of the study of trees in Maya art, anyone might think that the conception of the Maya about the ceiba tree as the axis of the world, was based on a real tree, since the ceiba tree is the tallest of the tropical forest. But as we are about to study, this tree was an ideological figure, rather than a real tree, based on every structure (branches, flowers, trunk and roots) as we can appreciate in some crocks and murals.

Accordig with Kocyba (2007) among the pre-Hispanic Mayan, the tree had two different iconographic versions, the first refers to the cosmic tree such as support and the central channel of communication between three levels of the universe.

Matthijs H.D in Maya Cosmology 2004, explains that The World Tree, Yakch´e, represents the Maya view on the Universe based on a view of the sky.

"At dawn on the 13th of August, the Milky Way runs though the zenith from south to north. This might be a good explanation for the vertical structure (the tree) in the Maya view of the Cosmos. The four directions represent the four corners of the Earth: The horizontal bar in the middle is the Earth, sometimes also represented as a giant crocodile, apparently because the structure of the soil on which Maya grew their crops resembled the back of a reptilian animal. The heaven is located at the branches of the Tree, where the gods live. The cyclic nature of the motion of the sun was somehow realized: during the night, the Sun passes through Xibalba, the Underworld. The entire cosmos is represented as interconnected parts: Xibalba (the Underworld), Cab (the Earth), Caan (the Heaven) and Yakch´e, the World Tree which connects all of the other components" (Mattthijs 2004).

Fig. 1 *Yaxché, Sacred tree in the center of the world. Matthijs H.D Maya Cosmology 2004.*

Thompson (1950) equated the Yax-che with the ceiba, which the Yucatec Maya worshipped as a symbol of abundance and everlasting life.

Another version is that the ceiba occupies a central role, since it is considered that there were four or five large mythical trees, born in the land and were responsible for sustaining the heavens.

One of the trees was at the centre of the earth, while the other four occupied the four corners of the earth that was seen as a flat rectangular area, at the same time, the roots grow continuously from Ceiba, allowing to maintain contact between the earth and the underworld (Valdez J. A. 1992).

In the iconography of Stela 25 (Fig. 2) from the Late Preclassic site of Izapa, Guatemalan pacific coast, the diving caiman forms the roots and base of a tree, with swaying branches taking the place of the reptile's back and tail.

The caiman is a Mesoamerican symbol of the earth. (E. Newsome 2007)

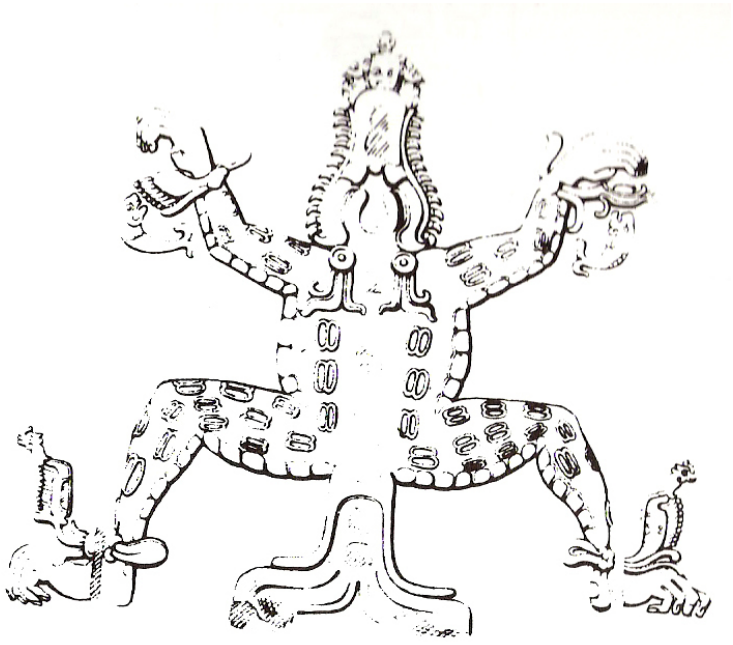

Fig. 2 *Cocodrile tree. Nicholas Hellmuth Monster und Menschen1997.*

Fig. 3 *Stela 25 from the Late Preclassic site of Izapa, Guatemalan pacific coast. Nicholas Hellmuth Monster und Menschen1997.*

In many crocks and incense burners you can see the equivalence of the ceiba spikes. Incense burners from Lake Atitlan (Highland Guatemala) as well as funerary urns from the Quiche Highlands, and incense burners and crocks from Lowland Maya areas, frequently have effigies of spikes up and down their sides. It is well known to all iconographers and most archaeologists that these spikes mimic the thorns on the trunk of young ceiba trees (Personal comunication with Nicholas Hellmuth)

Fig. 4 *Incense Burner from Lake Atitlán Museo Popol Vuh Universidad Francisco Marroquín .*

Fig. 5 Incense Burner Museo Popol Vuh Universidad Francisco Marroquín, Guatemala.

Fig. 6 *Trunk with spikes of Ceiba tree found in El Rancho, El Progreso. Guatemala*

In the San Bartolo Mural (Fig. 7) two different kinds of ceiba trees can be seen, one of them might be *Bombax pentandrum or Ceiba pentandra* because it is clear in the drawing that the trunk is wide at the base. According with Standley (1950) in Guatemala it is reported two species of ceibas (*C. Pentandra* and *C. aesculifolia*) but there exist similar kinds of tree in Bombacaceae family as *Bombax* and *Quararibea* that can be easily confused with the Ceiba genera.

Fig. 7 *San Bartolo west mural. drawing by Heather Hurst.*

Fig. 8 *Ceiba sp. in the route of Sayaxché, Petén , Guatemala. Photo by Nicholas Hellmuth. FLAAR photo archive*

Fig. 9 *Ceiba Pentandra at Tikal Petén, Guatemala Photo by Nicholas Hellmuth. FLAAR photo archive*

Flowers of the Bombacaceae family are often represented in plates and vases in Maya art. The Figure 11 shows that the flower in the plate is very similar to the real flower of *Bombax ellipticum*, the calyx, petals and stamens can be distinguished in both, the picture and the drawing on the plate. The flower of the Ceiba has the characteristic that the five petals curl once opened.

Fig. 10 *Bombax ellipticum* ***Flower. USAC. FLAAR photo Archive.***

Fig. 11 Ceiba flower drawing in one side, in the other side is a bird. Taken from the drowing of a Maya plate.

Fig. 12 B. ellipticum flower USAC. FLAAR photo Archive.

It has been given the name "Ceiba" to the trees of Bombacaceae family, often very large, with thick trunks, and branches usually armed with stout prickles; The leaves are digitately compound and have about 3-7 leaflets. In Central America only two species are known (*Ceiba pentandra and Ceiba aesculifolia*) but two more are known from Mexico. (Stanley and Steyermark, 1950)

In Guatemala they are found at 1000 meters of altitude or lower. They grows in El Petén, Alta Verapáz, Baja Verapáz, Izabal, Zacapa, El progreso, Jalapa, Jutiapa, Santa Rosa, Escuintla, Guatemala, Sololá, Suchitepequez, Retalhuleu and San Marcos.

The *Ceiba Pentandra* has many indigenous names depending of the region or dialect: chij, tinanche, kinin, murul, cox, pochote from the nahualt pochotl, yaaxché (Maya Yucatán), inup (Jacaltenango) nuo (Pocomchí), Mox, Inup (Queqchí).

Today it still has an importance to Guatemalan people, because it represents life, beauty, strength, perpetuity, grandness, kindness and union.

Those aspects of the ceiba tree were the motive to the botanic Ulises Rojas, who propose the *Ceiba pentandra*, as a National Tree to the president Carlos Castillo Armas in a decree in 1955. Since then, on May 22nd the Guatemalan People celebrate the Tree Day, being the Ceiba tree its exponent.

Today it's not only found in the tropical jungle but it public plazas as well.

Fig. 13A *Ceiba pentandra sample from herbario BIGU . Biology School at San Carlos University.*

Fig. 13B *Ceiba pentandra* in hotel Casa de Don David, El Remate. Flores Petén. Guatemala. FLAAR photo archive.

Ceiba aesculifolia (HBK.) commonly known as Ceibillo, algodon de monte (Huehuetenango); tinanche, kinin (Petén, Maya); palo lagarto, murul (Zacapa); cox (Huehuetenango), "pochote" in Mexico, from the Nahuatl pochotl; piim (Maya Yucatan), it is located in dry plains or hillsides, at 1,500 meters or less mostly in Petén, Zacapa; Chiquimula; Guatemala; Huehuetenango; El Progreso and Baja Verapáz. It grows from Mexico to Central America.

Fig. 14 *Leaves and trunk of Ceiba aesculifolia, showing the thorns that give it the name of "palo lagarto" aligator tree , at the Jardín Botánico of Centro de Estudios Conservacionistas CECON. Photo by Jaime Leonardo, FLAAR photo Archive.*

Biology:

Ceiba is a deciduous tree. This means they shed most or all of their leaves during the tropical dry season. The leaves are palmate and compound. The 5-9 leaflets are 7-8 cm long and 1-3.5 cm wide. The flowers usually open before the leaves appear, and are clustered on small, new branches. Once pollinated, the 3cm long five-petaled, whitish pink flowers mature into 12-18cm long oval capsules, growing in clusters, the gray fruits known as kapok open and let loose their silk fibers and small oily seeds (Baker 1994 cited by Schlesinger 2001).

Usually between seven and ten years pass before a *Ceiba* bears its first season of fruit; and in future years, it may produce only every other year, yielding 600- 4000 fruits a crop. The husk appear gray and rough, but on the inside they are lined with a bet of lustrous fibers known as kapok silk

The fertilized blooms begin to swell, and long pear-shaped pods appear in clusters among the branches.

Fig. 15 *Ceiba aesculifolia* with fruits. Photo taken at the Jardín Botanico of Centro de Estudios Conservacionistas CECON by Jaime Leonardo. FLAAR photo archive.

Uses:

The most important product of the ceiba is the floss (Fig. 16) commonly called kapok; the Mayas of Yucatan formerly wove mantas or blankets from the silky fiber contained in its fruits.

It is reported that *ceiba aesculifolia* produces more floss that *C. pentandra*.

Currently it has large commercial demand. As it does not cause allergies, is often used as stuffing for pillows and mattresses for use by patients with asthma and allergic to wool and feathers.

It is reported that Ceiba wood is very lightweight and is used for canoes, rafts, lifeboats, veneer, model airplanes, carved wood, thermal and acoustic insulation, handicrafts, paper, matches boxes, and crates.

Its seed is used for oil production to eat and soaps and the paste left of the seed is used to feed livestock.

The remainings are grounded and crushed as fill material in the preparation of fertilizer mixtures. Because of the lack of nutrients, lack of parasites and ease to burn, it's used in the manufacture of explosives and pieces of fireworks.

The calix of the flower (Fig. 17) is used to make pipas for smoke by the artesans.

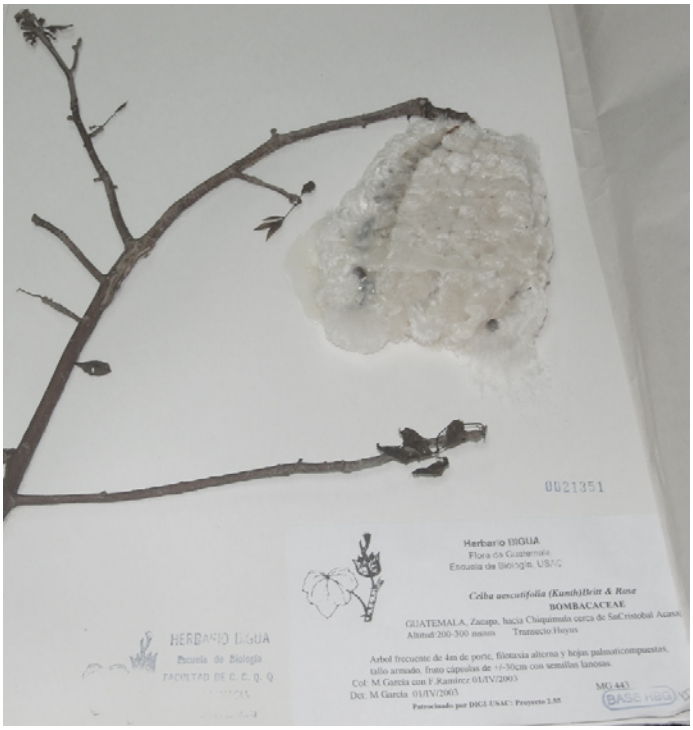

Fig. 16 *Sample of ceiba floss and fruit. From the BIGU herbarium. Biology School at San Carlos University. Photo by Mirtha Cano, FLAAR photo archive.*

Fig. 17 *Calix of Ceiba aesculifolia flower. Photo by : Mirtha Cano, FLAAR photo archive.*

This tree, hosts large numbers of species of epiphytic (Orchids and Bromeliads). These plants also serve as a habitat for many species of birds, reptiles, amphibians and insects making the Ceiba tree a living ecosystem.

Today the raise of livestock in Petén has caused the reduction of the forest, mainly in southern Petén; this has been the main reason for the loss of many species of plants and animals in Guatemala, in second place is the intentional wild fire, agriculture and urbanization.

Fig. 17 *Rinoceront beetle (Megasoma elephas).* ***Photo by:*** *J. M. Matute, FLAAR photo archive.*

Fig. 18 *Moss with delicate filaments that contain spores .* **Photo by :** *Eduardo Sacayon, FLAAR photo archive.*

Fig. 19 *Ladybugs beetle.* ***Photo by:*** *Eduardo Sacayón, FLAAR photo Archive.*

Fig. 20 *Fungus and moss in a branch of a Ceiba tree.* **Photo by:** *Eduardo Sacayón, FLAAR foto archive.*

Fig. 21 *Wild lizzard.* ***Photo by:*** *Eduardo Sacayón. FLAAR photo archive.*

Bonsai Ceiba

Fig. 22 *Ceiba aesculifolia bonsai at the Jardín Botánico of Centro de Estudios Conservacionistas. CECON.* ***Photo by J****aime Leonardo. FLAAR photo archive.*

Bonsai Ceiba

Fig. 23 *Ceiba pentandra* Bonsai at FLAAR garden. **Photo by:** Eduardo Sacayón FLAAR photo archive.

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