



Tecomasuche, Cotton Tree (*Cochlospermum vitifolium*)

Edible Plant of Savannas of PNLT

Parque Nacional Laguna del Tigre (PNLT)
Reserva de la Biosfera Maya (RBM)
Petén, Guatemala

Nicholas Hellmuth
June, 2023





FOR COORDINATION AND COOPERATION PASO CABALLOS AND PARQUE NACIONAL LAGUNA DEL TIGRE, RBM

- **Ing. Edvin Ramírez Villalobos**,
CONAP administrator for Parque
Nacional Laguna del Tigre, where we
were facilitated with camping space
and access to the savannas.

FOR ORGANIZING THE LOCAL GUIDES AND PORTERS AND HELPING US AS GUIDE AND PORTER

- **Julio Augustin Peña Chen**,
CONAP, PNLT

WE THANK THE LOCAL GUIDES AND PORTERS FOR FACILITATING OUR HIKE TO THE REMOTE CIBALAND SAVANNA AT THE SOUTHEAST PART OF PARQUE NACIONAL LAGUNA DEL TIGRE

- Abner Venancio Rax Caal,
- Miguel Angel Pop Chub,
- Walter Rene Tot Sacul,
- Martin Fernando Tot Tox
- Moises Pop Caal

FOR COORDINATION AND COOPERATION IN PASO CABALLOS AND PROVIDING LOCAL PARK RANGERS AND GUIDES, PARQUE NACIONAL LAGUNA DEL TIGRE, RBM, WE THANK

- **Cornelia Chable**, Asociacion Balam

INITIATION AND COORDINATION OF THE PROJECT OF COOPERATION FOR

2021-2025

- **Licda. Merle Fernandez**, CONAP
- **Marla Mercedes Bolvito Jerónimo**,
Unidad de Cooperación Nacional e
Internacional de la Secretaría Ejecutiva
de CONAP
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• FRONT COVER PHOTOGRAPH

Photo by: Edwin Solares,
FLAAR Mesoamerica, Mar. 30, 2022.
Camera: Sony A1. Settings: 1/1,600;
sec; f/10; ISO 800.

Hotel Tikal Inn

We thank Roxana Ortiz for offering to provide lodging for our research team at the Tikal Inn for our field trips in October 2022 and January 2023. Since we are not receiving payments for our field work, our budget appreciates complimentary lodging. Every workday is exhausting because we are carrying and then using very heavy cameras, super-telephoto lenses, sturdy tripods, large gimbals or ball tripod heads. Thus it is crucial for my health to be able to rest and totally recuperate every night in order to be ready for the following day of botanical and

zoological adventures in Parque Nacional Tikal. In order to post photographs on botanical and zoological websites, you can't do this if there is either no Internet or weak Internet. Thus it is very helpful that when we are provided rooms and meals, that functional Internet is available at the Hotel Tikal Inn.

Contact info:

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Introduction to

Cochlospermum vitifolium of Guatemala

Cochlospermum vitifolium, commonly known as Tecomasuche, Buttercup tree or Cotton Tree, is a species of flowering plant belonging to the family Bixaceae. It is native to the tropical regions of the Americas, including parts of Central and South America. The plant is known for its striking yellow flowers and is often cultivated for its ornamental value. It has distinctive yellow flowers, and the characteristic cotton-like fruit capsules.



Tecomasuche fruit, found in Parque Nacional Laguna del Tigre

Photo by: Edwin Solares, FLAAR Mesoamerica, Mar. 30, 2022.

Camera: Sony A1. Settings: 1/800; sec; f/11; ISO 800.

Full Botanical Name

Cochlospermum vitifolium (Willd.) Spreng is the accepted name.

Family name: Bixaceae

Here are synonyms for *Cochlospermum vitifolium*

- *Bombax vitifolium* Willd.
- *Cochlospermum codinae* Eichler
- *Cochlospermum hibiscoides* Kunth
- *Cochlospermum hibiscoides* var. *dasycarpum* Triana & Planch.
- *Cochlospermum hibiscoides* var. *gymnocarpum* Triana & Planch.
- *Cochlospermum luetzeiburgii* Pilg.
- *Cochlospermum serratifolium* DC.
- *Cochlospermum triphyllum* (S.F.Blake) Pittier
- *Mahurea speciosa* Choisy
- *Maximiliana codinae* (Eichler) Kuntze
- *Maximiliana hibiscodes* (Kunth) Kuntze
- *Maximiliana triphylla* S.F.Blake
- *Maximiliana vitifolia* (Willd.) Krug & Urb.
- *Wittelsbachia vitifolia* (Willd.) Mart. & Zucc.
- *Wittelsbachia vitifolia* (Willd.) Mart. in Mart. & Zucc.

[\(Click here to read more\)](#)

Photo by: Edwin Solares, FLAAR Mesoamerica,
Mar. 30, 2022.
Camera: Sony A1. Settings: 1/1,600; sec; f/10; ISO 800.





Photo by: Vivian Hurtado, FLAAR Mesoamerica.
Parque Nacional Laguna del Tigre, trail to Savanna 25. Mar. 30, 2022.
Camera: Google Pixel 6 Pro.

Local names for *Cochlospermum vitifolium*

Tecomasuchil; tecomasuche; pumpunjuche; pumpumjuche; tecomajuche; comasuche; pochote (Petén); tsuyuy (Quecchi); cho (Petén, Maya); pomp, pumpo (Huehuetenango); tecomatillo (Zacapa).

(Standley and Williams 1961: 69)

Amapa, chum, comasuche, cotton flower, pahote, wild cotton

(Balick, Nee and Atha 2000: 72)

I estimate pahote may be pochote because both *Ceiba* species are called pochote and Tecomasuche has similar cotton fluff as its seed dispersal technique. Plus, Standley and Record list the name spelled pochote (1936: 264). The seeds of *Ceiba* are used as flavoring for cacao. But linguistic studies need to double-check whether in Belize it is really pahote and not pochote.

Mayan names for *Cochlospermum vitifolium*

Tsuyuy, Q'eqchi'. Needs names from lots more Mayan languages. Nahuatl name was Tecomasuchil. Needs more linguistic analysis.

Habit for *Cochlospermum vitifolium*

Deciduous tree, from 3 to 12 m tall, with a diameter up to 70 cm. (Conabio, 2015)

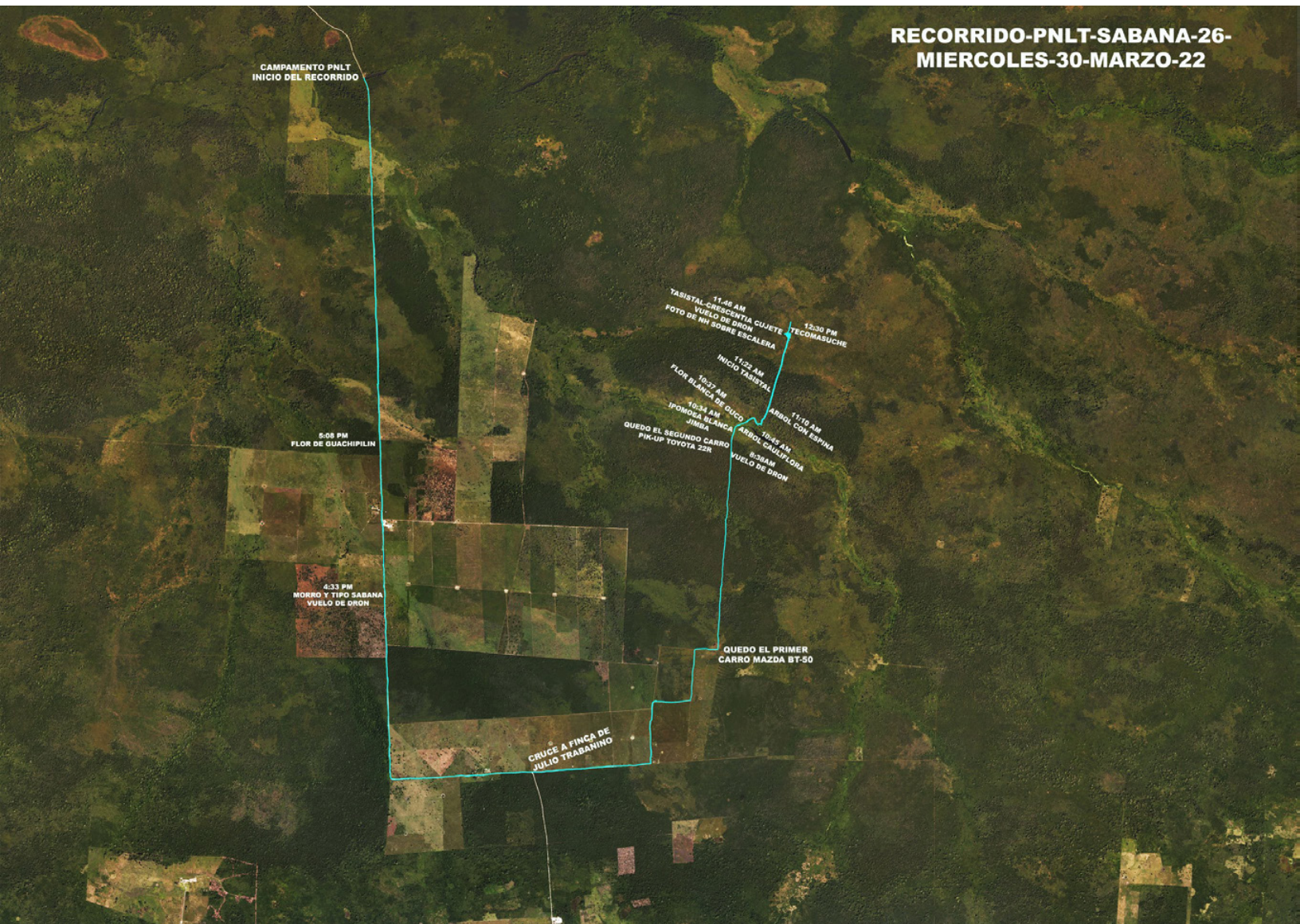


These *Cochlospermum vitifolium* trees put all their energy into growing tall; so the “trunk” is not much wider than your thumb. The yellow flowers tend to be at the end of the branches. Area of PNLT Savannas 25-26, Reserva de la Biosfera Maya (RBM), Peten. This far southeastern area of the PNLT has, to our knowledge, never been studied by a botanist, ethnobotanist, ecologist or archaeologist.

Photo by Nicholas Hellmuth, March 30, 2022 with iPhone 13 Pro Max.

In what Ecosystem(s) can you find native *Cochlospermum vitifolium*?

We saw these trees flowering along the highway from Guatemala City towards El Rancho. We saw these flowers in many other locations that are relatively seasonally dry (as is the area from Guatemala City in most directions). Thus, to find these trees all over the place in a seasonally inundated savanna in Parque Nacional Laguna del Tigre was a total surprise.







Another good view of how these tecomasuche trees are flowering and producing seed pods only at the ends of branches and twigs.

Here the trunks have grown to the size of your wrist. Photo by Nicholas Hellmuth, March 30, 2022, 12: 47pm, with iPhone 13 Pro Max.

What other Trees or Plants are often found in the same Habitat?

No documentation was found online.

Where has *Cochlospermum vitifolium* been found in the PNYNN?

Even though that its not mention on “Plan Maestro del Parque Nacional Yaxha – Nakum – Naranjo 2006-2010” on “Plan Maestro de la Reserva de la Biósfera Maya (segunda actualización), 2015” it is mentioned.

Where has *Cochlospermum vitifolium* been found in the Petén?

[Click here to read more](#)

Only two mentions:

Guatemala, Petén, Lake Petén Itzá, east of Santa Elena.
In low forest, 16.92 -89.9

Guatemala, Petén, 16.566667 -90.233333

The team of FLAAR and FLAAR Mesoamérica are the first to document this plant with photographs for the unexpected location within savannas of PNLT.

Photo by: Edwin Solares, FLAAR Mesoamerica,
Parque Nacional Laguna del Tigre, Savanna 3. Feb. 19, 2022.
Camera: Canon R5. Settings: 1/1,000; sec; f/11; ISO 1,000.





Photo by: Edwin Solares, FLAAR Mesoamerica, Parque Nacional Laguna del Tigre, Savanna 3. Feb. 19, 2022.
Camera: Canon R5. Settings: 1/1,000; sec; f/11; ISO 1,000.



Is *Cochlospermum vitifolium* registered for Parque Nacional Yaxhá Nakum y Naranjo?

No, it is not registered.

Is *Cochlospermum vitifolium* registered for Parque Nacional Tikal?

No, it is not registered.

Where else in Guatemala has this plant been found in addition to Petén?

Baja Verapaz
El Progreso
Escuintla
Huehuetenango
Izabal
Zacapa

[Click here to read more](#)

Photo by: Edwin Solares, FLAAR Mesoamerica,
Parque Nacional Laguna del Tigre, Savanna 3. Feb. 19, 2022.
Camera: Canon R5. Settings: 1/1,000; sec; f/11; ISO 1,000.

Brief list of *Cochlospermum vitifolium* trees for Belize by Standley and Record (1936)

COCHLOSPERMACEAE. Cochlospermum Family
COCHLOSPERMUM Kunth

Cochlospermum vitifolium (Willd.) Spreng. Wild Cotton. Pochote. Chum (Yucatan, Maya). Frequent in thickets or open forest; widely distributed in tropical America. A stocky tree 9 meters high with a trunk 7 cm. in diameter, or often flowering when only a shrub; branches red-brown; leaves alternate, longstalked, deeply cordate at the base, palmately 5-7-lobed, the lobes toothed, glabrate; flowers bright yellow, 10 cm. broad, in terminal clusters, with numerous stamens; fruit a thin-walled capsule 7-8 cm. long, the numerous seeds covered with cottony hairs. The bark contains a tough fiber. The tree is a conspicuous one when in flower, usually when it is devoid of leaves, the great yellow blossoms being strikingly suggestive of roses. Wood white or pale brown, very light, soft, spongy, brittle, laminated, perishable; not utilized.

(Standley and Record 1936: 264)



Botanical Description of *Cochlospermum vitifolium* by Standley and Williams (1961)

Cochlospermum vitifolium Willd. ex Spreng. Syst. 2: 596. 1825. *Bombax vitifolium* Willd. Enum. Hort. Berol. 2: 720. 1809. *C. hisbiscoides* Kunth, Syn. Pl. Aequin. 3: 214. 1824. *Maximiliana vitifolia* Krug & Urban, Bot. Jahrb. 15: 293. 1892. Tecomasuchil; tecomasuche; pumpunjuche; pumpumjuche; tecomajuche; comasuche; pochote (Petén); tsuyuy (Quecchi); cho (Petén, Maya); pomp, pumpo (Huehuetenango); tecomatillo (Zacapa).

Chiefly on dry brushy hillsides or plains, often in thin coastal forest, frequently in second growth, mostly at 1,000 meters or lower; Petén; Alta Verapaz; Baja Verapaz; Izabal; Zacapa; El Progreso; Jutiapa; Santa Rosa; Escuintla; Suchitepequez; Retalhuleu; San Marcos; Huehuetenango. Mexico; British Honduras to El Salvador and Panama; northern South America.

A deciduous shrub or tree, sometimes 25 meters high but usually lower, often flowering when only 2 meters tall, the crown spreading, not very dense, the bark pinkish-brown, the inner bark yellow, the branchlets thick, dark reddish-brown, at first sparsely pilose; leaves on petioles 10-25 cm. long, usually 5-lobate for one half to three-fourths their lengths, 10-30 cm. wide, green and glabrate above, somewhat paler beneath, pilose along the veins or glabrate, membranaceous, the lobes oblong to obovate-oval, acute or obtuse and usually abruptly short-pointed; inflorescences several-flowered, the pedicels densely puberulent, 2-3 cm. long; flowers 8-12 cm. broad, the sepals oblong-ovate to oval, 1-2 cm. long, rounded at the apex; capsule broadly obovoid-oval, 7-8 cm. long, grayish-tomentulose, 5-valvate, umbilicate; seeds reniform, 4.5 mm. broad, densely white-lanate.

Vernacular names reported in adjacent regions are "jicarillo," "berberia," "bombdn" (Honduras); "wild cotton" (British Honduras); "coquito" (Chiapas); "madera de pasta" (Yucatan); "chum," "choy," "chimu" (Yucatan, Maya); "pongolote," "palo de cuchara," "apompo" (Oaxaca and Veracruz). The branches are brittle and can be easily broken from the tree. The wood is exceedingly soft and weak, and when green is a soft spongy mass, drying to a loose bundle of fibers. The branches root easily when placed in the ground, and are rarely planted in hedges. The large stamens are said to be used in Central America to adulterate or replace saffron, having considerable superficial resemblance to the stamens of that plant. The tree is employed commonly in domestic medicine of Guatemala in treating kidney and liver diseases and to hasten childbirth. The tree is a conspicuous and handsome one when in flower, chiefly during the latter part of the dry season. The large flowers suggest bright yellow roses. The large capsules are soft and somewhat inflated, and can be crushed easily in the hand. The bark contains a tough fiber that is stated to be used sometimes for cordage. The name "tecomasuche" is of Nahuatl origin, signifying "trumpet-flower," a term of no very obvious application.

(Standley and Williams 1961: 69-70).



Photo by: Vivian Hurtado, FLAAR Mesoamerica, Trail to Savanna 25. Mar. 25, 2022.
Camera: Google Pixel 6 Pro.

Botanical Description of *Cochlospermum vitifolium* in Trees and Shrubs of Mexico and in Flora of Yucatan

In the 1920's to 1960's, the *Cochlospermum vitifolium* tree was in the family COCHLOSPERMACEAE. Today *Cochlospermum vitifolium* is in Bixaceae family.

109. COCHLOSPERMACEAE. Cochlospermum Family.

The only other genus of this family in Mexico is *Amoreuxia*, which is represented by three species of low herbs.

1. MAXIMILIANEA Mart. Flora 0: 451. 1819. 1. *Maximiliana vitifolia* (Willd.) Krug & Urb. Bot. Jahrb. Engler 15: 293. 1892.

Bombaa vitifolium Willd. Enum. Pl. 720.1809. *Cochlospermum hibiscoides* Kunth, Syn. Pl. Aequin. 3 : 214. 1824. *Cochlospermum serratifolium* DC. Prodr. 1: 527. 1824. *Cochlospermum vitifolium* Spreng. Syst. Veg. 2: 59C. 1825.

Sonora to Veracruz, Yucatan, and Chiapas. Central America and South America; cultivated in the West Indies and elsewhere. Tree, 5 to 12 meters high, with red-brown branches; leaves alternate, longpetiolate, 10 to 30 cm. wide, cordate at base, deeply and palmately 5-lobate, the lobes acuminate, crenate-serrate, glabrate; flowers in terminal clusters, pedicellate. 10 cm. broad or larger, bright yellow; sepals 5, imbricate, tomentulose, deciduous; petals 5, emarginate; stamens numerous; fruit a 5-valvate capsule, globose-obovoid, 7 to 8 cm. long, depressed at apex, finely velvety-pubescent, striate-nerved; seeds numerous, reniform, covered with long cotton-like white hairs. "Chuun," "chum," "chimu" (Yucatán, Maya); "cocito" (Chiapas); "rosa amarilla" (Sinaloa); "apompo." "pongolote," "pochote," "coj<Jn de toro" (Oaxaca); "madera de pasta" (Veracruz, Ramirez); "tecomaxochtl" (Nahuatl); "palo amarillo," "palo de rosa amarilla" (Durango); "quieriga," "quie-quega," "huarumbo," "flor izquierda" (Chiapas and Oaxaca, Seler); "panaco" (Guerrero); "bombon," "catamericuche" (Nicaragua); "porfi-porfi" (Nicaragua, Panama, Costa Rica, Colombia); "tecomasuehil" (Chiapas, Guatemala); "tecomasuche" (Guatemala); "botulo" (Ecuador); "carnestolendas" (Colombia, Venezuela); "bototo," "flechero," "batabana" (Colombia); "botlja" (Cuba).

When in flower this is one of the most showy of Mexican plants. The trees are usually quite leafless when they flower, but they are one great mass of showy yellow blossoms. The branches take root readily when stuck in the ground, and they are often planted to form hedges. The bark contains a fiber which is used locally for cordage. A decoction of the wood or leaves is a popular cure for jaundice, and the flowers are employed as a remedy for chest affections. The wood is soft and brittle.

(Standley 1923:836-837).

COCHLOSPERMACEAE. Cochlospermum Family

Cochlospermum vitifolium (Willd.) Spreng. *C. hibiscoides* Kunth; *Maximiliana vitifolia* Krug & Urb. Chum (Gaumer; reported also as “chuun”), Chimu (Seler). Sp. Madera de pasta (Yucatan), Pochote (B. H.). Common. A small tree with red-brown branches; leaves alternate, long-petiolate, cordate at the base, palmately 5-7-lobate, the lobes acuminate, serrate, glabrate; flowers bright yellow, 10 cm. broad, in terminal clusters; fruit a 5-valved obovoid capsule 7-8 cm. long; seeds numerous, covered with cotton-like white hairs. The wood is soft and brittle. The bark contains a tough fiber. The tree is a very showy one in flower, when it is usually leafless. The Kekchi name is “tsuyuy.”

(Standley 1930: 360).



Photo by: Edwin Solares, FLAAR Mesoamerica, Mar. 30, 2022.
Camera: Sony A1. Settings: 1/250; sec; f/10; ISO 250.



In which States of Mexico is *Cochlospermum vitifolium* listed by Villaseñor

Cochlospermum vitifolium (Willd.) Spreng. BCS, **CAM**, **CHIS**, CHIH, COL, DGO, GRO, HGO, JAL, MEX, MICH, MOR, NAY, OAX, PUE, **QROO**, SLP, SIN, SON, **TAB**, TAMS, VER, **YUC**, ZAC

(Villaseñor 2016: 670)

So *Cochlospermum vitifolium* is found in every Mexican state of the Maya Lowlands surrounding Petén:

- Chiapas
- Campeche
- Yucatan
- Tabasco
- Quintana Roo

World Range for *Cochlospermum vitifolium*

Originally from the American Tropics, it spawns in Mexico, all Central America, Ecuador, Bolivia, Colombia, Perú and the norther States of Brazil. It has been introduced in India, Thailand, Taiwan, Ghana and Nigeria. (Conabio, 2015)

Photo by: Edwin Solares, FLAAR Mesoamerica, Mar. 30, 2022.
Camera: Sony A1. Settings: 1/800; sec; f/11; ISO 500.



Photo by: Edwin Solares, FLAAR Mesoamerica, Mar. 30, 2022.
Camera: Sony A1. Settings: 1/1,600; sec; f/10; ISO 800.

Close relative(s) of *Cochlospermum vitifolium*;

how many other species of plant family Bixaceae are in Petén

Bixa orellana is the other common plant in same Bixaceae family. Bixa Orellana is edible and this achiote is very popular as flavoring for many foods and colorant especially for for Maya cacao beverages.

Cochlospermum vitifolium in Izabal of Guatemala

Yes, it is found in Izabal.

[Click here to read more.](#)

Cochlospermum vitifolium in Belize

Balick, Nee and Atha (2000: 72) list helpful information:

Cochlospermum vitifolium (Willd.) Spreng. — **Loc Use:** MED. — **Reg Use:** MED, FOOD, FIBR, ORN, DYE, SPC. — **Nv:** amapa, chum, comasuche, cotton flower, pahote, wild cotton. — **Habit:** Shrub or tree.

Curious whether Tecomasuche is what it is called in Belize or whether that's a typo.



Close view inside a *Cochlospermum vitifolium*, tecomasuche flower. It's amazing the quality that even an iPhone 13 Pro Max provides (today in 2023 the iPhone 14 Pro Max is a tad better). During the previous decades I started photographing Maya architecture at Palenque in 1961 with a Leica; then learned the better quality of medium format film size at Tikal in 1965 with a Rolliflex. Then I got several jobs so I could afford a Hasselblad in the late 1960's. By 1990's I was using 4x5" and 8x10". But then digital cameras came, and by 1998-1999 I moved into digital photography and dumped Leica and moved to digital Nikon, Canon, and now mirrorless Sony. But on a field trip it's a lot easier to use an iPhone Pro Max.

Cochlospermum vitifolium in Chiapas

Yes, it is found in Chiapas (Villaseñor, 2016)

Cochlospermum vitifolium in Campeche

This tree gets an entire page in *Árboles de Calakmul* (Ochoa et al. 2018: 72) but sadly no mention of local uses other than as for bees. But does remind us how adaptable this tree is to different habitats:

Hábitat: selva baja caducifolia, selva baja inundable, selva alta, selva mediana subperennifolia, vegetación secundaria.

Cochlospermum vitifolium in Tabasco

Yes, it is found in Tabasco (Villaseñor, 2016)

Cochlospermum vitifolium in Quintana Roo

Yes, it is found in Quintana Roo (Villaseñor, 2016)



Do *Cochlospermum vitifolium* trees also grow in home gardens?

Yes, according to Fern (2014) it does and majorly in the US.

Practical uses of *Cochlospermum vitifolium* for the Lacandon Maya of Chiapas

Wood is used for construction. The fruit and fiber are used to make strings and paper sheets. The leaves are used as food for cattle. There are also several medical uses, especially the roots and flowers, like to treat infections, headaches, stomachaches, and snake bites. (Conabio, 2015)

Are any parts of *Cochlospermum vitifolium* edible?

Cochlospermum vitifolium Reported as edible (Bouriquet, 1970) and poisonous (Walley and Rammeloo, 1994): both reports are from Madagascar (FAO BoA 2004: 16)

BOA, Eric

2004 Wild edible fungi A global overview of their use and importance to people. Food and Agriculture Organization of the United Nations Rome. Non-Wood Forest Products 17. 147 pages.

[Click here to read more.](#)



Would be great for a botanist or ecologist to do a thesis or PhD dissertation on this habitat, and why each savanna like area is often very different than other nearby areas. For example, this far southeastern part of Parque Nacional Laguna del Tigre (Savanna 25-26 area) is surrounded by one of the largest tasistal areas of Guatemala (potentially one of the largest of Mesoamerica that has not been obliterated for commercial farming or cattle ranches).

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica. Mar. 30, 2022.

Camera: iPhone 13 Pro Max,



Edge of the surrounding bajo is at the left; the vegetation here is taller than in a normal tinto. The habitat of this savanna is totally different than a pure grassland savanna or a tasistal palm savanna: more shrubs than just grass.

The smoke rising in the background is from fires set in a tasistal area about a kilometer away. These fires are set by invasive hunters; when the grass resprouts after the fire, the fresh grass attracts deer and other animals.

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica. Mar. 30, 2022.

Camera: iPhone 13 Pro Max,

Is there potential medicinal usage of *Cochlospermum vitifolium* by local people

Yes (Boa 2004: 111)

Are any parts of *Cochlospermum vitifolium* trees eaten by mammals?

Yes, the leaves are eaten, the Sloths are the primary eaters. (Mesquita, 2014)

What are the primary pollinators of *Cochlospermum vitifolium* flowers?

Bees, butterflies, and other insects. (Conabio, 2015)



Photo by: Edwin Solares, FLAAR Mesoamerica, Paso de Caballos, Savanna 3. Feb. 19, 2022.
Camera: Canon R5. Settings: 1/1,000; sec; f/11; ISO 1,000.



Closer view of the seed pods. As soon as LIDAR is available of these areas it will potentially show how the Classic Maya used these open flat areas for agriculture. Tecomasuche is edible, produces fiber (from the seed pod), produces dye and medicine (Balick, Nee and Atha 2000: 72). The FLAAR (USA) and FLAAR Mesoamerica (Guatemala) teams are finding that many, and often most, of the wild native plants of savanna areas are edible. Plus turtles (obviously edible) and snails (edible) still live in many of these savannas. So if there were water reservoirs or comparable these species could have been raised en masse in wetlands (in addition to food from plants).

Another edible aspect is potentially the seeds themselves. Most seeds inside large pods of kapok-like silk-like fibers are called pochote. *Ceiba pentandra* and especially *Ceiba aesculifolia* are both given this name of pochote. If pochote is also a name for the (seeds) of *Pachira aquatica* (zapoton, zapote bobo, etc.) then the potential edible aspects of plants named pochote are unexpected (and so little research has been done on this topic). So in these seed pods, in this seasonally inundated/seasonally bone dry flatland, there are lots of secrets (silk-like fibers just like in *Ceiba* seed pods; and seeds given the same name). We hope to hike back to these savannas in PNLT in 2023 and accomplish additional photography.

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica. Mar. 30, 2022.

Camera: iPhone 13 Pro Max,

References Cited and additional Suggested Reading on *Cochlospermum vitifolium*

ATRAN, Scott, LOIS, Mimena and Edilberto UCAN Ek'

2004 Plants of the Petén Itza' Maya. Museum of Anthropology, Memoirs, Number 38, University of Michigan. 248 pages.

Very helpful and nice collaboration with local Itza' Maya people. But would help in the future to have a single index that has all Latin, Spanish, and English plant names so that you can find plants more easily. Suzanne Cook's Lacandon ethnobotany index is significantly easier to use.

BALICK, Michael J., NEE, Michael H. and Daniel E. ATHA

2000 Checklist of the Vascular Plants of Belize: With Common Names and Uses. Memoirs of the New York Botanical Garden Vol. 85. 246 pages.

BALICK, Michael J. and Rosita ARVIGO

2015 Messages from the Gods: A Guide to the Useful Plants of Belize. The New York Botanical Garden, Oxford University Press.

BESTELMEYER, Brandon T. and Leanne E. ALONSO (editors)

2000 A Biological Assessment of Laguna del Tigre National Park, Petén, Guatemala. RAP Bulletin of Biological Assessment 16, Conservation International, Washington, DC. 221 pages.

BUENO, Joaquín. ALVAREZ, Fernando and Silvia SANTIAGO (editors)

2005 Biodiversidad del Estado de Tabasco. CONABIO, UNAM, Mexico. 370 pages.

CALDERÓN, G

1994 Flora del Bajío y de regions adyacentes. Cochlospermaceae. Fascículo 28. INECOL. 6 pages.

Available online: <http://www1.inecol.edu.mx/publicaciones/resumenes/FLOBA/>

CEDANO, M. and L. VILLASEÑOR

2004 Usos y nombres comunes de las especies de Cochlospermaceae en México. Etnobiología. No. 4. Pages 73-88.

Available online: www.asociacionetnobiologica.org.mx/mx2/administrator/Rev.%20socios/

CHIZMAR, Carla

2009 Plantas Comestibles de Centroamérica. Instituto Nacional de Biodiversidad (INBio). Santo Domingo de Heredia. Costa Rica. 360 pages.

Download: www.museocostarica.go.cr/descargas/PlantasComestiblesCA-VE.pdf

CONABIO

n.d. Listado de algas y plantas presentes en Ría Lagartos (Las Coloradas), Yucatán. (CONABIO, anexo 3).

This is just Anexo 3; the rest of the report is splattered in a dozen other PDFs. But this Anexo 3 had six species of Croton listed.

Download: www.conabio.gob.mx/conocimiento/manglares/doctos/anexos/PY71

CONSEJO NACIONAL DE ÁREAS PROTEGIDAS

2015 Reserva de la Biosfera Maya Segunda Actualización. Consejo Nacional de Áreas Protegidas, 1.

COROMOTO, M. VERA, A. J., PARRA, J. C. and A. MORILLO

2016 Physicochemical and functional properties of bototo tree gum exudate (*Cochlospermum vitifolium*) International Journal of food and allied sciences. Vol. 2, No. 2. Pages 42-48.

Available online: www.researchgate.net/publication/313254291_Physicochemical

ESTRADA Loreto, Feliciano

2010 Indicadores ecológicos de la zona riparia del Río San Pedro, Tabasco, México. MS Thesis, El Colegio de la Frontera Sur. 131 pages.

Download: <https://ecosur.repositorioinstitucional.mx/jspui/bitstream/1017/1656/1/10000005>

FERN Ken

2014 *Cochlospermum vitifolium* - Useful Tropical Plants. Useful Tropical Plants Database.

<https://tropical.theferns.info/viewtropical.php?id=Cochlospermum+vitifolium>

FERREIRA Santana, Marcos Diones, LOPES Costa, Ana Daiane, COSTA Gomes, Emeli Susane, and Luciana Edilena SANTOS Guimarães

2019 Ocurrencia y apuntes etnomicológicos sobre *Cochlospermum vitifolium* (Phallaceae, Basidiomycota) en la Reserva Extrativista Tapajós-Arapiuns, Pará, Brasil. Act. Bot. Mex no.126 Pátzcuaro 2019.

www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0187-71512019000100204

GOODWIN, Z. A., LÓPEZ, G. N., STUART, N., BRIDGEWATER, G. M., HANSTON, E. M., CAMERON, I. D., MICHELAKIS, D., RATTER, J. A., FURLEY, P. A., KAY, E., WHITEFOORD, C., SOLOMON, J. LLOYD, A. J. and D. J. HARRIS

2013 A checklist of the vascular plants of the lowland savannas of Belize, Central America. Phytotaxa 101 (1): 1–119.

Download: www.eeo.ed.ac.uk/sea-belize/outputs/Papers/goodwin.pdf

INE

2013 Nomination of Ancient Maya City and Protected Tropical Forests of Calakmul, Campeche. 55 pages.

There is no author on the fragment that is the most available as a download, so we put INE.

LUNDELL, Cyrus L.

1937 The Vegetation of Petén. Carnegie Institution of Washington, Publ. 478. Washington. 244 pages.

LUNDELL, Cyrus L.

1938 Plants Probably Utilized by the Old Empire Maya of Petén and Adjacent Lowlands. *Papers of the Michigan Academy of Sciences, Arts and Letters* 24, Part I:37-59.

OCHOA-Gaona, Susana, RUÍZ González, Hugo, ALVAREZ Montejó, Demetrio, CHAN Coba, Gabriel and Bernardus H. J. DE JONG

2018 Árboles de Calakmul. El Colegio de la Frontera Sur, San Cristóbal de Las Casas, Chiapas, México. 244 pages.

MARTÍNEZ, Esteban and Carlos GALINDO-Leal

2002 La Vegetación de Calakmul, Campeche, México: Clasificación, descripción y distribución. *Bol. Soc. Bot. México* 71: 7-32.

Download: www.botanicalsciences.com.mx/index.php/botanicalSciences/article/

MARTÍNEZ, L., MURGUÍA, K., GARCÍA, I., URIBE, M. and E, GÓMEZ

2015 La historia oscura de la rosa amarilla: un reporte de caso de toxicidad hepática asociado al consumo de *Cochlospermum vitifolium* como remedio herbolario. *Revista Gastroenterología*. Vol. 80, No. 3. Pages 220-222.

Available online: www.revistagastroenterologiamexico.org/es/la-historia-oscura-rosa-amarilla/

Mesquita, E. Y. E.

2014 What Do Sloths Eat? Sloth Diet, Food, and Digestion - SloCo. The Sloth Conservation Foundation.

<https://slothconservation.org/what-do-sloths-eat-sloth-diet-food-and-digestion/>

SÁNCHEZ, J. and A. CASCANTE

2008 Árboles ornamentales del Valle Central de Costa Rica: especies con floración llamativa. Instituto Nacional de Biodiversidad. 104 pages.

Available online: www.inbio.ac.cr/web-ca/biodiversidad/costa_rica/ArbolesOrnamenta

SELVEN Pérez, Edgar and Miriam Lorena CASTILLO Villeda

- 2000 A rapid assessment of avifaunal diversity in aquatic habitats of Laguna del Tigre National Park, Petén, Guatemala. In: Bestelmeyer, B.T. and Alonso, L.E. (eds.). A Biological Assessment of Laguna del Tigre National Park, Petén, Guatemala, pp. 56-60. Conservation International.

STANDLEY, Paul C. and Samuel J. RECORD

- 1936 The Forests and Flora of British Honduras. Field Museum of Natural History. Publication 350, Botanical Series Volume XII. 432 pages plus photographs.

STANDLEY, Paul C.

- 1923 Trees and Shrubs of Mexico. Contributions from the United States National Herbarium, Volume 23, Part 3. Smithsonian Institution.

In this one monograph the species are not listed in alphabetical order, so it's a mental adventure finding the species you are looking for.

All monographs by Standley and co-authors can be easily found and downloaded. I would recommend finding the .pdf versions as they are easier to store, easier to copy, and easier to share with students and colleagues.

STANDLEY, Paul C.

- 1930 Flora of Yuactan. Botanical Series, Vol. III, No. 3, Publication 279. Field Museum of Natural History.

STANDLEY, Paul C. and Louis O. WILLIAMS

- 1961 Flora of Guatemala. Fieldiana: Botany, Volume 24, Part VII, Number 1. Chicago Natural History Museum.

SUCHINI Farfan, Aura Elena et al.

- 2000 Endemismo florístico en la reserva de la biosfera Sierra de las Minas. USAC

Unfortunately the PDF is locked, so no way to show the information without having to hand type each letter, each word, each list.

Download: <http://glifos.concyt.gob.gt/digital/fodecyt/fodecyt%201999.69.pdf>

VILLASEÑOR, José Luis

- 2016 Checklist of the native vascular plants of Mexico Catálogo de las plantas vasculares nativas de México. *Revista Mexicana de Biodiversidad* 87 (2016) 559–902.

<http://revista.ib.unam.mx/index.php/bio/article/view/1638/1296>

VILLEGAS, Pedro. BUROGOS, Claudia, and CRUZ, Harim

- 2011 Plantas medicinales y comestibles de la Reserva Natural de Usos Múltiples Monterrico-RNUMM-, Taxisco, Santa Rosa. Programa Universitario de Investigación en Recursos Naturales y Ambiente- PUIRNA-. Universidad de San Carlos de Guatemala. Guatemala.

Download: <http://digi.usac.edu.gt/bvirtual/informes/puirna/INF-2011-024.pdf>

Helpful web sites for any and all plants

There are several web sites that are helpful even though not of a university or botanical garden or government institute.

However most popular web sites are copy-and-paste (a polite way of saying that their authors do not work out in the field, or even in a botanical garden). Many of these web sites are click bait (they make money when you buy stuff in the advertisements that are all along the sides and in wide banners also. So we prefer to focus on web sites that have reliable information.

<https://serv.biokic.asu.edu/neotrop/plantae/>

Neotropical Flora data base. To start your search click on this page:

<https://serv.biokic.asu.edu/neotrop/>

<http://legacy.tropicos.org/NameSearch.aspx?pro>

This is the main SEARCH page.

<https://plantidtools.fieldmuseum.org/pt/rrc/5582>

SEARCH page, but only for collection of the Field Museum herbarium, Chicago.

<https://fieldguides.fieldmuseum.org/guides?cate>

These field guides are very helpful. Put in the Country (Guatemala) and you get eight photo albums.

<http://enciclovida.mx>

CONABIO. The video they show on their home page shows a wide range of flowers pollinators, a snake and animals. The videos of the insects are great.

www.kew.org/science/tropamerica/imagetab-

Kew gardens in the UK is one of several botanical gardens that I have visited (also New York Botanical Gardens and Missouri Botanical Gardens (MOBOT), in St Louis. Also the botanical garden in Singapore and El Jardín Botánico, the open forest botanical garden in Guatemala City).

www.ThePlantList.org

This is the most reliable botanical web site to find synonyms. In the recent year, only one plant had more synonyms on another botanical web site

- **BACK COVER PHOTOGRAPH**

Photo by: Edwin Solares, FLAAR Mesoamerica. Mar. 30, 2022.

Camera: Sony A1. Settings: 1/800; sec; f/11; ISO 1,250.

ACKNOWLEDGEMENTS TO FLAAR MESOAMÉRICA

Jorge Luis Arana is in charge of the financial administration of the institution and supports the supervision of daily activities.

Vivian Hurtado is the current project manager of the FLAAR divisions: Flora & Fauna and MayanToons. She is also an environmental engineer and a passionate researcher.

Victor Mendoza environmental engineer in charge of the photographic database and its taxonomic identification. He also helps with the coordination of research activities.

Sergio Jerez agronomy engineering student involved in the identification of plants and support in research topics.

Belén Chacón biology student who organizes, tabulates and updates our ethnobotanical list.

Diana Sandoval agricultural engineer who compiles scientific information that is added to our flora and fauna reports.

Samuel Herrera is in charge of processing maps of our field trips and helping with the identification and investigation of species.

Pedro Pablo Marroquín is part of the editing team, review and add information to our photographic reports

Alejandra Valenzuela is a biology student and part of the photographic reports editing team. She also supports the realization and analysis of web statistics.

Byron Pacay is our assistant during field trips to handle GPS data. He also assists in the main office with different tasks.

Norma Cho is a helpful photography assistant during field trips. She also assists in the main office with different tasks.

Isabel Rodríguez Paiz is in charge of fundraising and partnership development.

Edwin Solares is a photographer and videographer during our expeditions. Later, he edits this content to be used in our different materials.

Haniel López is a drone pilot and photographer during our expeditions.

Pedro Pablo Ranero with a degree in communication is responsible for editing videos of flora and fauna to create content on our sites.

Andrea Sánchez graphic designer who helps prepare the graphic line of our publications. She is our editorial art director.

Jaqueline González graphic designer who combines text layout and photo editing to create our reports.

Heidy Galindo graphic designer who combines text layout and photo editing to create our reports.

Cristina Ríos graphic designer who combines text layout and photo editing to create our reports.

David Arrivillaga is an experienced photographer and graphic designer. Sometimes he is a photographer during our expeditions, but he also designs our flora and fauna reports.

María Alejandra Gutiérrez is an experienced photographer who is now in charge of the preparation of photographic catalogs. She was also coordinator of the field trips for the research project in Livingston, Izabal.

Paulo Núñez is an engineer and our webmaster. He is the person in charge of the maintenance and programming of the entire network of FLAAR websites.

Juan Carlos Hernández is a graphic designer and part of the web team. Receive the material we produce to place on our sites.

María José García is a graphic designer and part of the web team. Receive the material we produce to place on our sites.

Andrés Fernández is a graphic designer and in charge of keeping our websites updated and more efficient for the user.

Karla Cho helps with general research and design assistant in the office.

Luis Molina is a professional illustrator specialized in line drawings of Maya vases, bowls, and plates.

Valeria Áviles is a graphic designer and illustrator. She is in charge of coordinating the activities of MayanToons, as well as making illustrations for the different materials that we prepare.

Laura Morales is a digital content engineer, She is in charge of directing the animation area of our MayanToons project.

Paula García is part of our MayanToons animation team. Her job is to bring our favorite characters to life.

Niza Franco is part of our MayanToons animation team. Her job is to bring our favorite characters to life.

Isabel Trejo is a graphic designer and illustrator for MayanToons and for social media posts.

Andrea Bracamonte is a graphic designer and illustrator for MayanToons and for social media posts.

Josefina Sequén is an illustrator for MayanToons.

Rosa Sequén is an illustrator for MayanToons.

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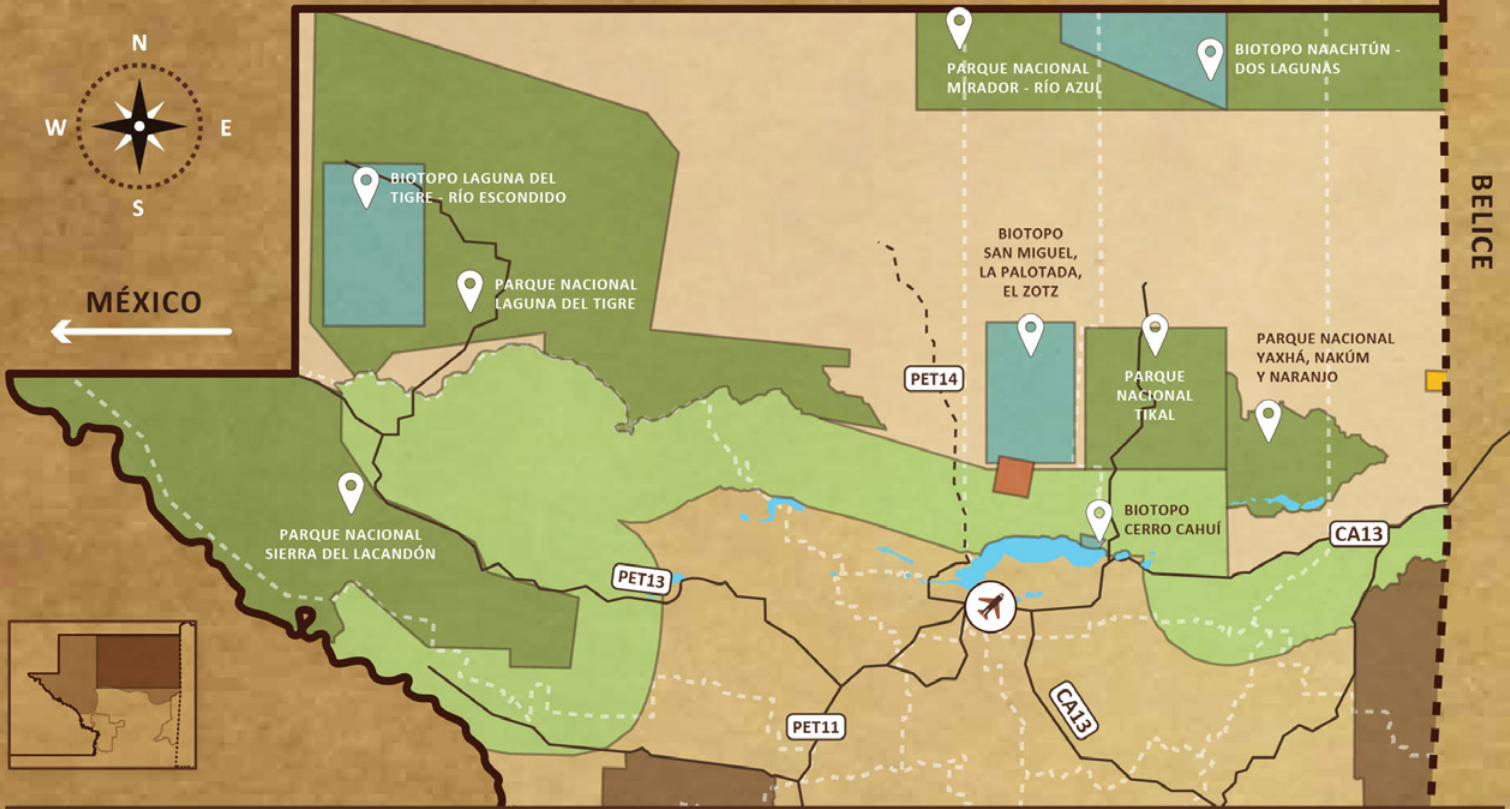
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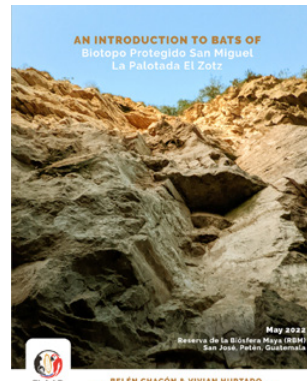
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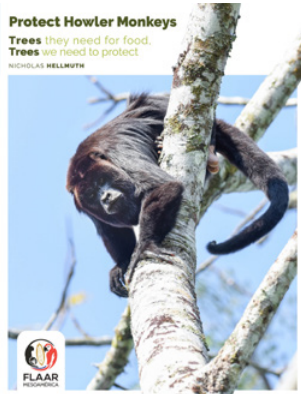
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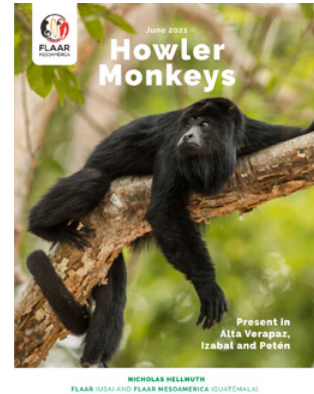
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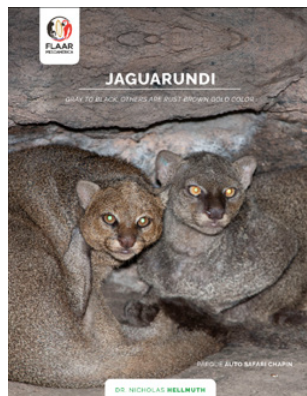
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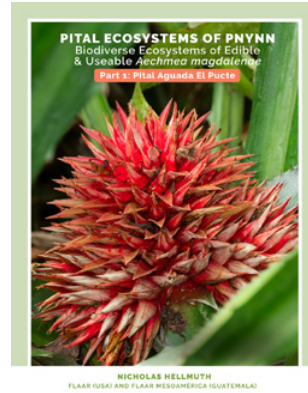
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