



**FLAAR**  
MESOAMÉRICA

# HELICONIA

PLATANILLO, GOLDEN LOBSTER CLAW

*Heliconia latispatha*

Livingston, Izabal

NICHOLAS **HELLMUTH**





**HELICONIA**  
PLATANILLO, GOLDEN LOBSTER CLAW

JULY 2020



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#### PHOTO FROM FRONT COVER

##### *Heliconia latispatha*

Photo by: Nicholas Hellmuth, FLAAR  
Mesoamerica, Mar. 13, 2020, 14:01. Road to  
Plan Grande Tatín from town of Livingston,  
Izabal.

Camera: Nikon D810. Lens: Nikon  
AF-Micro-NIKKOR 200mm. Settings: 1/250  
sec; f/14; ISO 1,250.

#### PHOTO FROM TITLE PAGE

##### *Heliconia latispatha*

Photo by María Alejandra Gutiérrez. FLAAR  
Mesoamerica, Mar. 13, 2020, 13:43. Road to  
Plan Grande Tatín from town of Livingston,  
Izabal.

Camera: Sony RX10 IV. Lens: Sony FE 90mm  
Macro G OSS. Settings: 1/2500 sec; f/13; ISO  
3,200.



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## FULL BOTANICAL NAME **AND HABIT**

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*Heliconia latispatha* Benth. is an accepted name

([www.theplantlist.org/tpl1.1/record/kew-248454](http://www.theplantlist.org/tpl1.1/record/kew-248454))

It is labeled by the USDA.gov as a Forb/herb (despite the fact that it can be taller than any of us). Actually, it can be over three meters tall!



***Heliconia latispatha***. Family Heliconiaceae. "Expanded lobster claw" its common name in English. "Ave del paraiso" called in some Spanish speaking countries.

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Mar. 13, 2020, 14:01. Road to Plan Grande Tatín, from town of Livingston, Izabal.

Camera: Nikon D810. Lens: Nikon AF-Micro-NIKKOR 200mm. Settings: 1/250 sec; f/14; ISO 1,250.

## LOCAL NAMES FOR *HELICONIA LATISPATHA*

Quento  
Platanillo  
Tanay  
(for Tabasco, Mexico, which is a  
bit to the west of Peten,  
Guatemala).

(Bueno et al. 2005: 137)

In Florida, the common name is:  
expanded lobsterclaw (also written  
expanded lobster claw).

## SYNONYMS FOR *HELICONIA LATISPATHA*

*Bihai latispatha* (Benth.) Griggs  
*Heliconia aequatoriensis* Loes.

([www.theplantlist.org/tpl1.1/record/kew-248454](http://www.theplantlist.org/tpl1.1/record/kew-248454))



*Heliconia latispatha* Benth.

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 11:16. Road to Plan Grande Tatín from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/1250 sec; f/13; ISO 3,200.

## BRIEF MENTION OF *HELICONIA LATISPATHA* BY STANDLEY AND RECORD (1936)



***Heliconia latispatha***. Family Heliconiaceae. "Expanded lobster claw" its common name in English. "Ave del paraíso" called in some Spanish speaking countries.

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 11:16. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/1250 sec; f/13; ISO 3,200.

- HELICONIA L.
- *Heliconia acuminata* Rich.
- *Heliconia aurantiaca* Ghiesbr.
- *Heliconia bihai* L.
- *Heliconia champneiana* Griggs
- *Heliconia mariae* Hook
- *Heliconia pendula* Wawra

This list (on their page 95) is hard to describe: incomplete (because later botanists found 200% more). But incomplete is only one aspect: there is no botanical description; no local names, no Mayan names, no ethnobotanical information. And zilch documentation of either habitat or where in Belize these plants were found.

*H. mariae* is one of the tallest *Heliconia* plants in the world. The others have gorgeous flowers. They are all relatives of the universally beloved banana: yet they get nothing whatsoever in this book on Flora of British Honduras. And, the most common *Heliconia* in all countries of the Mayan areas, *Heliconia latispatha*, is not even in the list (nor any synonym).



## BOTANICAL DESCRIPTION *HELICONIA LATISPATHA* BY STANDLEY AND STEYERMARK (1952)

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We continue to utilize Standley and Steyermark because they provide local and ethnobotanical information (a polite way of saying they provide more than just size and shape of the leaves and other parts). And, all the monographs of Flora of Guatemala are on-line and available to download. We do not yet have e-book versions of any of the more recent MOBOT or comparable botanical monographs for Mesoamerican plants.

What Standley and Steyermark lack is first-hand eye-witness experience of standing in front of a field with thousands of these plants. Or going along a remote road in the Municipio de Livingston where we estimate there are potentially “over one million” *Heliconia* along this one single road (one of the only roads in this remote area of the Caribbean region of Guatemala). Access is by boat and by foot; though there are some aging 4-wheel drive pickup trucks that were brought here by boat in past decades. There is no car ferry whatsoever (but there are boat shuttles for people from Belize to the north, from Puerto Barrios to the east and from the main highway bridge (CA13) at the town of Rio Dulce to the west. But Standley and Steyermark is a good start.



***Heliconia latispatha* Benth.**

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 11:16. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/1250 sec; f/13; ISO 3,200.

**“*Heliconia latispatha* Benth. Bot. Voy. Sulph. 170. 1844.**

Pico de gurrión (Santa Rosa); Bijao (Peten); Platanillo; Suc (Quecchi'). Wet forest or thickets, often abundant in second growth, ascending from sea level to about 1,400 meters, but most abundant at low elevations; Peten; Alta Verapaz; Izabal; Santa Rosa; Escuintla; Suchitepequez; Retalhuleu. Southern Mexico; British Honduras to Panama; Colombia.

Plants glabrous or nearly so, rather stout, commonly 1.5-2.5 meters high; leaves long-petiolate, oblong, often a meter long, mostly 20-30 cm. wide, short acuminate, rounded to subacute and usually oblique at the base, slightly glaucous or green beneath; inflorescence erect, pedunculate, the bracts deep or bright red, widely spaced, narrowly lanceolate, spreading, the lowest often dilated at the apex into large green blades, often tinged with orange or yellow, or sometimes yellow or orange throughout, the middle ones about 15 cm. long and 1.5-2 cm. high at the base, long-attenuate; flowers 3-3.5 cm. long, pedicellate, the pedicels glabrous or pilose, the perianth greenish yellow.

The inflorescences are sometimes called “cuchillos” in Salvador. On the Pacific slope this species is particularly plentiful, growing not only in ravines of the foothills but far out upon the plains, in either forest or open places. Some of these habitats become very dry in the verano but are doubtless exceedingly wet during the rainy season.”

(Standley and Steyermark 1952: 182-183).

## COVERAGE OF *HELICONIA LATISPATHA* IN OTHER PERTINENT BOOKS

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*Heliconia latispatha* Benth. Plants coarse, often 2 meters high, with few leaves, the leaves large and broad, green, thin; inflorescence erect, the bracts narrow, widely spaced, spreading at right angles, long and attenuate, orange-yellow. Common in wet thickets and in forest; a common species of Central America. Called "plata-nillo" and "guacamaya" in Panama. In Salvador sometimes called "cuchillos."

(Standley and Dahlgren 1931: 139)



***Heliconia latispatha* Benth.** "Expanded lobster claw" its common name in English. "Ave del paraíso" called in some Spanish speaking countries.

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 11:16. Road to Plan Grande Tatín from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/1250 sec; f/13; ISO 3,200.





***Heliconia latispatha* Benth.**

Photo by: David Arrivillaga, FLAAR Mesoamerica, Mar. 13, 2020, 14:09. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Nikon D5. Lens: Nikon AF-S VR Micro-Nikkor 105mm. Settings: 1/250 sec; f/7.1; ISO 320.

## ***HELICONIA LATISPATHA* IN HONDURAS**

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Research on *Heliconia* is needed for the Copan Ruinas area of Honduras, the Chorti-Mayan speaking area near the Guatemalan border. We are so busy in Petén, Alta Verapaz, and now in Izabal, that we have not yet initiated field work for plants in the Copan Ruinas or elsewhere in Honduras country.

## HABITAT: IN WHAT ECOSYSTEMS CAN YOU FIND **NATIVE *HELICONIA LATISPATHA*?**

Along the road from the village of Livingston to the “aldea” (town) of Plan Grande Tatin, and then from Tatin to Cueva del Tigre, there are an estimated over one million *Heliconia* plants. The dominant species by far (over 90%) is *Heliconia latispatha*. But there are two or three other species in some of the same ecosystems as well. Since not all *Heliconia* bloom all 12 months, there could be other species that we couldn’t recognize because they were not blooming (so with thousands of *Heliconia latispatha* in bloom, it’s tough to notice which plants are not blooming).

Most of the area was hillsides, but there are some flat boggy areas as well. The hillsides were “milpa” (maize) fields. Others were fields that had maize in recent years but were waiting for the vegetation to grow back so that there would be enough to slash down and burn to create ash for the next maize crop. That is why this is called slash-and-burn (“quema y roza”) agriculture.

The *Heliconia* starts to grow while the maize is finishing its growth. Then the maize is harvested and the entire area is deliberately left to regrow. During this time the thousands of *Heliconia* reach full height.

Other *Heliconia*, closer to bogs or on the edges of ravines, grow all year since these areas are not always chopped down to make the milpa field.



***Heliconia latispatha* Benth.** Road to Plan Grande Tatin is fill with *Heliconia* plants.

Photo by: David Arrivillaga, FLAAR Mesoamerica, Mar. 13, 2020, 13:50. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Nikon D5. Lens: AF-S VR Micro-Nikkor 105mm. Settings: 1/500 sec; f/8; ISO 500.





***Heliconia latispatha***. Family Heliconiaceae.

Photo by: David Arrivillaga, FLAAR Mesoamerica, Mar. 13, 2020, 13:50. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Nikon D5. Lens: AF-S VR Micro-Nikkor 105mm. Settings: 1/500 sec; f/8; ISO 500.



## ARE SOME HELICONIA ROOTS (RHIZOMES) FIRE RESISTANT?



***Heliconia latispatha* Benth.**

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 11:16. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/1250 sec; f/13; ISO 3,200.

Even with the mature maize growing you could see the fresh shoots of *Heliconia* sticking up out of the ground. In other words, when the local people slash down everything and then burn everything, cut down to create ash for their maize, beans, and squash crops, plenty of the root stock of the *Heliconia* survive. Whether *Heliconia* has adapted to this (as has tasiste palm, *Acoelorrhaphe wrightii* in tasistal ecosystems in the Petexbatún area of Sayaxché, Petén) has never been asked before. So, I am not aware (yet) of any ecological or botanical study of whether *Heliconia* of some species have fire-resistant roots (or rhizomes).

In Standley and Steyermark there is not one comment nor any description, whatsoever, of the rhizome of these *Heliconia latispatha*. Zilch on any part of this plant below ground. Is that because the rhizomes are so large, they can't be pressed between newspaper or cardboard and can't be shipped back to herbaria? And even if they could be shipped back, there is not likely space to store root mass (plus much of it would rot).

## DOES *HELICONIA LATISPATHA* ALSO GROW IN HOME GARDENS?

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***Heliconia latispatha***. Family Heliconiaceae. "Expanded lobster claw" its common name in English. "Ave del paraíso" called in some Spanish speaking countries.

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020. 13:52. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/1600 sec; f/13; ISO 3,200.

Yes, most species of *Heliconia* are also used in home gardens, though mostly as decoration. However, in the few areas that still use *Heliconia* leaves for roof thatch, these plants are maintained as source of roof thatch material. *Heliconia* leaves are also used to wrap things, for example as a wrap for tamales.

Nevertheless, not every ecosystem will have *Heliconia* nearby to bring it into a garden.



## POTENTIAL MEDICINAL USAGE OF ***HELICONIA LATISPATHA* BY LOCAL PEOPLE**

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In Belize the leaves of *Heliconia latispatha* are used to treat burns

(Balick and Arvigo 2015: 145).

### WHEN DOES ***HELICONIA LATISPATHA* FLOWER?**

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It seems to flower much of the year and was in flower in March in Livingston. When we return in future months, after COVID subsides, we can see whether it is flowering in those future months also.



***Heliconia latispatha***, "Ave del paraíso" called in some Spanish speaking countries.

Photo by: Nicholas Hellmuth, FLAAR Mesoamerica, Mar. 13, 2020, 14:01. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Nikon D810. Lens: Nikon AF-Micro-NIKKOR 200mm IF-ED Macro. Settings: 1/250 sec; f/14; ISO 1,250.



## WHAT ARE THE PRIMARY POLLINATORS OF *HELICONIA LATISPATHA* FLOWERS?

All reports by botanists and ornithologists say that hummingbirds and other birds pollinate *Heliconia* flowers. This is nice to know.

But the unanswered question (and unasked question until now) is: how many other creatures besides hummingbirds pollinate *Heliconia* flowers? In our FLAAR ethnobotanical research garden, Guatemala City, 1500 meters above sea level, it is primarily stingless bees that are happily buzzing around our many species of *Heliconia* flowers. So, it would be a good project for a thesis: what are ALL the pollinators of each *Heliconia* species, and how does this list vary by location (by altitude and habitat)?



***Heliconia latispatha***. "Expanded lobster claw" its common name in English.

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 13:43. Road to Plan Grande Tatín from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/2500 sec; f/13; ISO 3,200.

## HABITAT: WHERE DOES ***HELICONIA LATISPATHA* LIKE TO GROW?**

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A good thesis for ecology or botany would be where do *Heliconia* prefer to grow out in the world. Another issue could be what are the differences in habitat preference between one species and another? Some *Heliconia* will want wetlands which normally have to be flat. I estimate that if you made a list of every area with *Heliconia latispatha* in Guatemala, you would get a dozen different habitats: different soils, different drainage (or lack thereof in a wetland), different shade or full sun, etc.

I like the gardening suggestions for Spacing: 8-10 feet, 2.4-3 meters separated from each other. Along the road west from the village of Livingston there are often LOTS of *Heliconia latispatha* within 10 centimeters of each other; often so thick you can't walk through the mass. And in our garden, we have both *Heliconia* and (non-native) bananas literally touching each other (but this is because I prefer a natural garden; I don't like an organized designed garden, since that is not natural).



***Heliconia latispatha***. Family Heliconiaceae.

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 13:44. Road to Plan Grande Tatin from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS. Settings: 1/2500 sec; f/13; ISO 3,200.



## CONCLUDING DISCUSSION AND **SUMMARY ON *HELICONIA LATISPATHA***

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Gardeners have their favorite plants; botanists have their favorites. I like *Heliconia* plants both as a gardener and as an ethnobotanist. *Heliconias* are a WOW flowering plant both in the wild and in a garden. Yet, the *Heliconia* plants of Guatemala in general have been totally forgotten in most books and articles on “*Heliconia* of the World” (trying to be more polite than to say ignored).

One of our goals at FLAAR Mesoamerica is to bring *Heliconia* back, both botanically, and as a goal for eco-tourism (especially in Izabal and Petén).

**First step** is to make viable lists of which *Heliconia* species can be found in each area of Guatemala.

**2nd step** is to accomplish bibliography of each species.

**3rd step** is to initiate field work to find each species. First field trips will be in the Municipio de Livingston areas of Izabal. We also would like to find more *Heliconia* in Parque Nacional Yaxhá, Nakum and Naranjo, in Petén. Plus, provide tips as to how many other species should be findable elsewhere in Petén (since Chiapas on the west and especially the wetlands of Tabasco, are literally filled with lots and lots of diverse species of *Heliconia*).

**4th step** is to publish photo essays to show all aspects of each species. And, for areas such as the one from the town of Livingston to the aldea of Plan Grande Tatín and from there to Cueva del Tigre, to show all the species of *Heliconia* that are often adjacent to each other in the same or nearby ecosystems of that area.

Although all travel between “departamentos” (states) in Guatemala has been halted for months, we are working from our home offices to finish the bibliographies and prepare photographs that we already have from before the close-down caused by COVID 19.

Now we have reports on the three major species of *Heliconia* that we have found in abundance in Municipio de Livingston:

The present [report and bibliography](#) on *Heliconia latispatha*

A [report and bibliography](#) on *Heliconia aurantiaca*

A [report and bibliography](#) on *Heliconia champneiana* (accepted name is *H. bourgaeana*)

A [report](#) and especially a [bibliography](#) on all *Heliconia* of Guatemala



There are at least nine to fourteen species of wild native *Heliconia* waiting for you in Izabal, of which most are in the Municipio de Livingston.



If you are a botanist, ecologist, student, gardening enthusiast or like to stand in front of *Heliconia* plants out in the fields, forests, and wetlands, Guatemala will welcome you when the world pandemic eventually winds down.



After lots of hours, days, and weeks of library and database research, we have an estimated list of how many species of *Heliconia* could potentially be found in Izabal. Of these, surely more than half will be in the Municipio de Livingston. And, hopefully with the help of local people we can find even more *Heliconia* species here and put Livingston into the botanical monographs, articles, and web pages around the world.

<i>Heliconia aurantiaca</i>	<i>Heliconia mariae</i>
<i>Heliconia bihai</i>	<i>Heliconia marthiasiae</i>
<i>H. champneiana</i> , accepted name <i>H. bourgaeana</i>	<i>Heliconia psittacorum</i>
<i>Heliconia collinsiana</i>	<i>Heliconia subulata</i>
<i>Heliconia crassa</i>	<i>Heliconia tortuosa</i>
<i>Heliconia imbricata</i>	<i>Heliconia vaginalis</i>
<i>Heliconia latispatha</i>	<i>Heliconia wagneriana</i>

## NEXT STEPS, TO HAVE AVAILABLE MORE **DOCUMENTATION ON *HELICONIA LATISPATHA***

Since *Heliconia latispatha* is so widespread, it would help to learn what other uses its leaves could be utilized for. Could the leaves be form-pressed to make plates or table mats? Could more objects or products be wrapped in these leaves for markets? Obvious downside is that plastic is see-through and leaves are obviously not see-through. Let's look for potential uses of this biodegradable!

## REFERENCES CITED AND SUGGESTED READING ON *HELICONIA LATISPHATA*

### **AGUIRRE de Riojas, Regina and Elfriede de PÖLL**

2007 Trees in the Life of the Maya World. BRIT PRESS, Botanical Research Institute of Texas. 206 pages.

Regina de Riojas has dedicated much of her life to trees of the Maya and trees of Guatemala. Elfriede de Pöll has likewise dedicated her life, to biology of Guatemala, at Universidad del Valle de Guatemala.

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

2004 Plants of the Peten 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.

Not available as a download.

### **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.

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

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

### **COOK, Suzanne**

2016 The forest of the Lacandon Maya: an ethnobotanical guide. Springer. 334 pages.

Sold online: [www.springer.com/la/book/9781461491101](http://www.springer.com/la/book/9781461491101)

### **COWAN, C. P.**

1983 Flora de Tabasco. Listados Florístico. México 1: 1–123.



**ESTRADA-BELLI, Francisco and David B. WAHL**

2010 Prehistoric Human-Environment Interactions in the Southern Maya Lowlands: The Holmul Region Case Final Report to the National Science Foundation.

Figure 21 is a wonderful photograph; first, it is large enough (half page size). Second it is adequately exposed. But most important of all, this helpful photo shows lots of *Acoelorrhaphe wrightii* around what I estimate is a single *Crescentia* cujete tree.

**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.

Downloadable on the Internet:

[https://ecosur.repositorioinstitucional.mx/jspui/bitstream/1017/1656/1/100000050585\\_documento.pdf](https://ecosur.repositorioinstitucional.mx/jspui/bitstream/1017/1656/1/100000050585_documento.pdf)

**GARCIA de Miguel, Jesus**

2000 Etnobotánica Maya: Origen y evolución de los Huertos Familiares de la Península de Yucatán, México.

**LESUR, Luis**

2011 Árboles de México. Editorial Trillas. 368 pages.

**LUNDELL, Cyrus L.**

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

**LUNDELL, Cyrus L.**

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

**MARTÍNEZ, J. N.**

2011 Estado actual y valor de uso etnobotánico de las especies vegetales utilizadas en la industria artesanal alfarera del municipio de Guatajiagua, Morazán El Salvador. Universidad de El Salvador. 54 pages.

Available Online: <http://ri.ues.edu.sv/8952/1/19200931.pdf>

**MacVEAN, Lucrecia**

2003 Plantas utiles de Peten, Guatemala. Herbario UVAL, Instituto de Investigaciones Universidad del Valle de Guatemala.

**MORTON, Julia F.**

1987 Fruits of warm climates. Julia F. Morton, Miami, FL.

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

2018 Árboles de Calakmul. ECCOSUR, Chiapas. 245 pages.

It is amazing that there is no such book for Parque Nacional Tikal, nor El Mirador. Even though it includes only half the estimated number of "trees," it has more tree species than Schulze and Whitacre for Tikal (they estimated about 200 but list only about 156 (their lists of species and list by plant family are not identical).

The entire book is a totally free download, however you can't copy and paste so is difficult to add to your discussion.

[http://aleph.ecosur.mx:8991/exlibris/aleph/a22\\_1/apache\\_media/74R92GMRSJSEPFDEE5NJY4SJI2I8AK.pdf](http://aleph.ecosur.mx:8991/exlibris/aleph/a22_1/apache_media/74R92GMRSJSEPFDEE5NJY4SJI2I8AK.pdf)

**PARKER, Tracey**

2008 Trees of Guatemala. The Tree Press. 1033 pages.

**PEÑA-Chocarro, María and Sandra KNAPP**

2011 Árboles del mundo maya. Natural History Museum Publications. 263 pages.

Helpful book; contributing authors are experienced botanists. They cover 220 species of trees, more than virtually all other "Books on Trees of the Maya." Even include tasiste (which is missing from all other books on "Trees of the Maya" except for the recent book on Árboles de Calakmul.

But if all this effort is going into a book, would help if there were more photos, larger photos, and not so much blank space at the bottom of each page. Plus, would help if the text could include personal first-hand experience with these trees out in the Mundo Maya. But even as is, it is a helpful book.

If you are doing field work you need this, plus *Árboles de Calakmul*, plus *Árboles tropicales de México*. Parker's book you need back in your office, since out in the field it's not much help due to lack of photographs. Back in your office the books by Regina Aguirre de Riojas are also helpful.



**PENNINGTON, Terence D. and José SARUKHAN**

2005 Árboles tropicales de México. Manual para la identificación de las principales especies. 3rd edition. UNAM, Fondo de Cultura Económica. 523 pages.

This book is a serious botanical monograph. 1968 was the first edition (I still have this), 1998 was second edition. The 3rd edition is a "must have" book. Each tree has an excellent line drawing of leaves and often flowers and fruits (though to understand flowers you need them in photographs, in full color). Each tree has a map showing where found in Mexico (such maps are lacking in most books on *Trees of Guatemala* or plants of Belize). But trying to fit a description of a tree on one single page means that a lot of potential information on flowering time is not present. And, this is definitely not a book on ethnobotany: for that you need Suzanne Cook.

**POPENOE, Wilson**

1919 Batido and other Guatemalan Beverages prepared from Cacao. *American Anthropologist*, N.S. 21: 403-409.

**PULESTON, Dennis**

1968 *Brosimum alicastrum* as a Subsistence Alternative for the Classic Maya of the Central Southern Lowlands. M.A. Thesis, Department of Anthropology, University of Pennsylvania, University Microfilms, Ann Arbor.

**PULESTON, Dennis**

1973 Ancient Maya Settlement Patterns and Environment at Tikal, Guatemala. PhD dissertation, Anthropology, University of Pennsylvania.

Downloadable on the Internet: [www.puleston.org/writings-dissertation.html](http://www.puleston.org/writings-dissertation.html)  
But no pagination, and no copy-and-paste facility.

**PULESTON, Dennis**

2015 Settlement and Subsistence in Tikal The assembled work of Dennis E. Puleston (Field research 1961-1972). *Paris Monographs in American Archaeology* 43, BAR International Series 2757. 187 pages.

This is his wife's reorganization of his 1973 PhD. No taste, no name could I find. *Crescentia cujete* is only mentioned as a usable plant, seemingly based on Lundell's 1938 list rather than Puleston finding it in a savanna. In other words, there is no list in this Puleston opus that suggests he studied or made lists of savanna habitats. And there are no photographs of any savanna. Indeed, the word savanna is not in his index. This is because the focus of all 1960's-1970's Maya field work was in traditional archaeology and in hilltop settlement areas. There were no house mounds in savannas so no interest (in those decades) in studying a savanna.

**SCHULZE, Mark D. and David F. WHITACRE**

1999 A Classification and Ordination of the Tree Community of Tikal National Park, Peten, Guatemala. Bulletin of the Florida Museum of Natural History. Vol. 41, No. 3, pp. 169-297.

Even though 20 years ago, it's the best list of trees of Tikal that I have found. There is a web site with plants of Tikal but they are not separated into trees, vines, shrubs, etc., so harder to use. The new monograph on *Arboles de Calakmul* is better than anything available so far on Tikal (and the nice albeit short book by Felipe Lanza of decades back on trees of Tikal is neither available as a scanned PDF nor as a book on Amazon or ebay).

**SELVIN 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.**

1931 Flora of the Lancetilla Valley - Honduras.

**STANDLEY, Paul C. and Julian A. STEYERMARK**

1952 Flora of Guatemala, Part II, Fieldiana Bot. Vol. 24, part 3:

*Heliconia* species are covered on pages 178-191.

**THOMPSON, Kim M.**

2013 Biodiversity in Forests of the Ancient Maya Lowlands and Genetic Variation in a Dominant Tree, *Manilkara zapote*: Ecological and Anthropogenic Implications.

Free download, but unfortunately you can't copy-and-paste anything. But the dissertation is helpful as is her subsequent field work and articles.

**VOGL, C. R., VOGL-Lukasser, B. and J. CABALLERO**

2002 Homegardens of Maya Migrants in the District of Palenque (Chiapas/Mexico): Implications for Sustainable Rural Development. In: Stepp, J.R., Wyndham, F.S., and R.K. Zarger (eds.). Ethnobiology and Biocultural Diversity. Pp: 631 – 647. University of Georgia Press; Athens, Georgia

**WILSON, Michael**

1972 A Highland Maya People and their Habitat: The Natural History, Demography and Economy K'ekchi' PhD dissertation. 475 pages.

His field work was near San Pedro Carcha, which is now a suburb of Coban, Alta Verapaz. The climate is moist due to moist clouds during many times of the year.

## 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/plantae/collections/harvestparams.php>

<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/imagedatabase/index.html](http://www.kew.org/science/tropamerica/imagedatabase/index.html)

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](http://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.



## APPENDIX A:

### WHERE HAS HELICONIA LATISPATHA BEEN STORED IN BOTANICAL HERBARIA **THAT ARE LISTED ON THE NEOTROPICAL FLORA DATA BASE**

Guatemala, Suchitepequez, Collected 5.2 mi. W. of Mazatenango, along Hwy. CA-2 to Mazatenango. 14.533333 -91.5, 800m

Guatemala, Escuintla, 12 km west of Escuintla. Mesic tropical forest along stream, 14.27 -90.87, 289m

Guatemala, Escuintla, On Hwy. 10, between Santa Lucía C. [Cotzumalguapa] and W boundary of depto. Escuintla. Just past high stone bridge. Near roadbank in dense weedy tangle of vines and herbs and shrubs. Near a small stream. Some of the tall forest remaining here, but badly d, 14.39 -91.11, 304m

Guatemala, Escuintla, Along CA-2, 5 miles southwest of Estencia, 152m

Guatemala, Retalhuleu, Km 171. Planta colectada a la orilla de la carretera con un cuerpo de agua cerca.

Guatemala, San Marcos, Finca Armenia, San Rafael pie de la Cuesta to hydroelectric plant, 14.91 -91.9, 800 - 1300m

Guatemala, Alta Verapaz, Along access road to Finca Argentina above Papalhá [Papaljá], 15 miles W of Telemán, 15.32 -90, 250m

Guatemala, Alta Verapaz, Cubilgüitz, 15.68 -90.42, 350m

Guatemala, Alta Verapaz, Secanquim

Guatemala, Izabal, At Shell Oil Station and vicinity just south of Río Dulce. In rain forest that has been cut and regrown; Thalia and grass both 12 ft. high or more; very wet area, 15.65 -88.99, 22m

Guatemala, Izabal, Livingston, En el camino de laguna Salvador a Cáliz; Biotopo Chocón Machacas Veg. Selva alta perennifolia. 15.78 -88.86, 2m

Guatemala, Izabal, Livingston, En el camino de laguna Salvador a Cáliz; Biotopo Chocón Machacas. Veg. Selva alta perennifolia. 15.78 -88.86, 2m

Guatemala, Izabal, El Estor, Montaña La Gloria, 15.53 -89.4

Guatemala, Izabal, Along Rio Sauce, 0-2 km N of Lake Izabal, E of El Estor

Guatemala, Izabal, Rio Dulce

Guatemala, Izabal, Los Amates, 90 - 90m

Guatemala, Izabal, Vicinity of Quiriguá, 75 - 225m

Guatemala, Petén, La Libertad, La Libertad and vicinity , 16.79 -90.11, 209m

Guatemala, Petén, Nordwestliche Umgebung des Lago Petén Itzá: wechsel-feuchte Niederung (Bajo) S des Bio-Itzá-Wald-Reservates (GröBee 6 x 6 km.; grenzt südlich an die Reserva Biósfera Maya und östlich am Biotopo El Zotz-San Miguel-La Pelotada an und befindet sich im NE-Eck, 17.14 -89.94, 200 - 260m

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

## ACKNOWLEDGEMENTS TO FLAAR MESOAMÉRICA

The reports are a joint production between the field trip team and the in-house office team. So here we wish to cite the full team:

**Flor de María Setina** is the office manager, overseeing all the diverse projects around the world (including FLAAR-REPORTS research on advanced wide-format digital inkjet printers, a worldwide project for over 20 years). We also utilize the inkjet prints to produce educational banners to donate to schools.

**Vivian Díaz** environmental engineer, is project manager for flora, fauna projects (field work and resulting reports at a level helpful for botanists, zoologists and ecologists, and for university students). Also coordinates activities at MayanToons, division where educational material for kids is prepared.

**Victor Mendoza** identifies plants, mushrooms, lichen, insects, and arachnids. When his university schedule allows, he also likes to participate in field trips on flora and fauna research.

**Vivian Hurtado** prepares the bibliography for each subject and downloads pertinent research material for our e-library on flora and fauna. All of us use both these downloads plus our in-house library on flora and fauna of Mesoamerica (Mexico through Guatemala into Costa Rica).

**Andrea de la Paz** is a designer who helps prepare the master-plan for aspects of our publications. She is our editorial art director

**Senaida Ba** is photography assistant for many years. She knows the Canon, Nikon and is learning the two new Sony mirrorless cameras. She prepares, packs, sets-up, and helps the photographers before, during, and after each day's field trip.

**Jaqueline González** is a designer who puts together the text and photographs to create the actual report (we have several designers at work since we have multiple reports to produce).

**Roxana Leal** is Social Media Manager for flora and fauna research and publications, and MayanToons educational book projects

**Maria Alejandra Gutiérrez** is an experienced photographer, especially with the Canon EOS 1D X Mark II camera and 5x macro lens for photographing tiny insects, tiny flowers, and tiny mushrooms. Work during and after a field trip also includes sorting, naming, and processing. And then preparing reports in PDF format.

**David Arrivillaga** is an experienced photographer and is able to handle both Nikon and the newest Sony digital cameras. Work during and after a field trip also includes sorting, naming, and processing. And then preparing reports in PDF format.

**Juan Carlos Hernández** takes the material that we write and places it into the pertinent modern Internet software to produce our web pages (total network is read by over half a million people around the world).

**Paulo Núñez** is a webmaster, overlooking the multitude of web sites. Internet SEO changes every year, so we work together to evolve the format of our web sites.

**Valeria Avilés** is an illustrator for MayanToons, the division in charge of educational materials for schools, especially the Q'eqchi' Mayan schools in Alta Verapaz, Q'eqchi' and Petén Itzá Maya in Petén, and the Q'eqchi' Mayan and Garifuna schools in the municipality of Livingston, Izabal.

**Josefina Sequen** is illustrator for MayanToons and also helps prepare illustrations for Social Media posts and for animated videos.

**Rosa Sequen** is also an illustrator for MayanToons and also helps prepare illustrations for Social Media posts and for animated videos.

**Laura Morales** is preparing animated videos in MayanToons style since animated videos are the best way to help school children how to protect the fragile ecosystems and endangered species

**Heidy Alejandra Galindo Setina** joined our design team in August 2020. She likes photography, drawing, painting, and design.

**Maria José Rabanales** she is part of the team for editing photographic reports and educational material of Flora and Fauna since September 2020. She works together with others of the team to prepare the finished pdf editions of the material of the Yaxha, Nakum and Naranjo Project.

**Alejandra Valenzuela**, biology student is now part of Flora y Fauna's photographic report and educational material editing team since September 2020.

**Alexander Gudiel**: designer who join the editorial design team on December 2020. He will combine the text, pictures and maps into the FLAAR Mesoamerica editorial criteria.



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# Livingston, Izabal

Mar Caribe



Petén

BELICE

Modesto Mendez

Sarstoon River  
Río Sarstún

3.

Municipio de Livingston

Livingston

Bahía de Amatique

Municipio de Livingston

Municipio de Puerto Barrios

Puerto Barrios

Puente de Río Dulce  
KM 274


Municipio de Livingston

Municipio de El Estor

Lago Izabal

1.

### Áreas naturales protegidas de Izabal

-  1. Bocas del Polochic (El Estor)
-  2. Punta de Manabique (Puerto Barrios)
-  3. Sarstoon Temash National Park (Belice)

### Áreas naturales protegidas de Livingston

Zacapa

Hacia Ciudad de Guatemala

HONDURAS

Petén

BELICE

Bahía de Amatique

Municipio de Livingston

Municipio de El Estor

Lago Izabal

Municipio de Morales








Municipio de Puerto Barrios

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Izabal

-  1. Área sin protección
-  2. Parque Nacional Río Dulce
-  3. El Higuerito
-  4. Área de Usos Múltiples Río Sarstún
-  5. Sierra de Santa Cruz
-  6. Biotopo Protegido Chocón Machacas
-  7. Reserva Protectora de Manantiales Cerro San Gil



Bahía de Amatique

# Aldea Plan Grande Tatin, Livingston



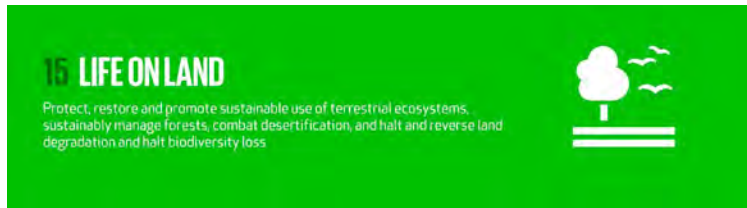
**Izabal**

- 1. Reserva Protectora de Manantiales Cerro San Gil
- 2. Biotopo Protegido Chocón Machacas
- 3. Área sin protección
- 4. Parque Nacional Río Dulce
- 5. Área de Usos Múltiples Río Sarstún
- Acceso terrestre
- - - Acceso de tierra



**Información de referencia:**

- Límites departamentales de Guatemala. (IGN)
- Instituto Geográfico Nacional (IGN) (Hojas 2463 IV y 2463 III)
- Google Map data 2020. Shapes: Sistema Guatemalteco de Áreas Protegidas 2017.
- Cuerpos de agua. Ministerio de Agricultura Ganadería y Alimentación (MAGA)
- Dirección de Análisis Geoespacial del (CONAP), Marzo/2017.



The current Alcalde of Livingston, Mr. Daniel Pinto, together with his team of International Cooperation division, Mr. Edwin Mármol, have set the goal of achieving the municipality development in the years 2020-2024 based on the goals and indicators proposed by the 2030 Agenda for Sustainable Development. From this agenda, FLAAR Mesoamerica will collaborate to achieve Sustainable Development Goal (SDG) number 15 "Life on Land".

Throughout this cooperation project, different materials have been prepared, like this Photo Essay, that helps to collect information on species, different ecosystems: terrestrial, wetlands and fresh water biodiversity. This information would also be useful as part of a strategy to protect threatened species and prevent their extinction. The municipality's goals include to promote the sustainable use, conservation and research of the species of flora and fauna of the terrestrial, wetlands and aquatic shore and coastal ecosystems of the Guatemalan Caribbean. Learn more about this project and the SDG indicators at: <https://flaar-mesoamerica.org/rain-forests-rivers-lakes-bays-ocean-caves-canyons-livingston-the-caribbean-biodiversity-wonderland-of-guatemala/>

### SERIES OF MUNICIPIO OF LIVINGSTON



Any school, college, university, botanical garden, zoological garden, botanical or zoological association (or club) may post this report on their web sites, (at no cost) as long as they link back to one of our web sites:

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Hellmuth, N (2020) *Heliconia*, Platanillo golden lobster claw, *Heliconia lastispatha*, Livingston, Izabal, Guatemala: FLAAR Mesoamerica.

#### BACK COVER PHOTO

##### *Heliconia latispatha*

Photo by: María Alejandra Gutiérrez, FLAAR Mesoamerica, Mar. 13, 2020, 13:44. Road to Plan Grande Tatín from town of Livingston, Izabal.

Camera: Sony RX10 IV. Lens: FE 90mm Macro G OSS.

Settings: 1/2500 sec; f/13; ISO 3,200.

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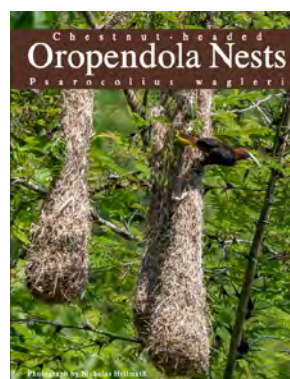
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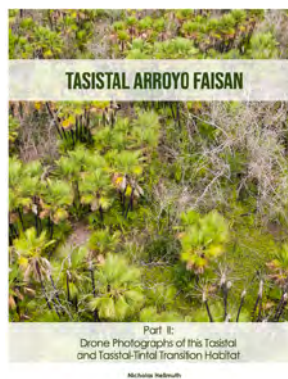
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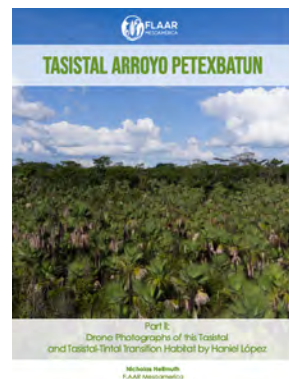
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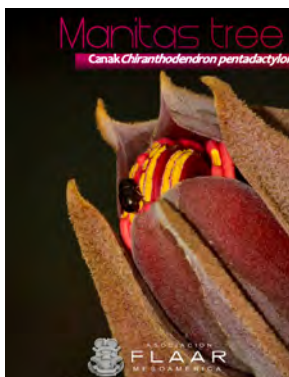
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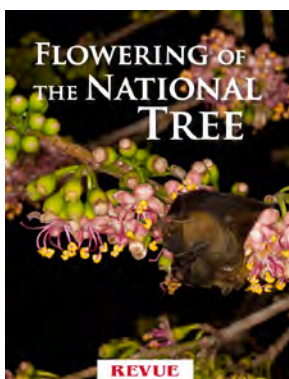
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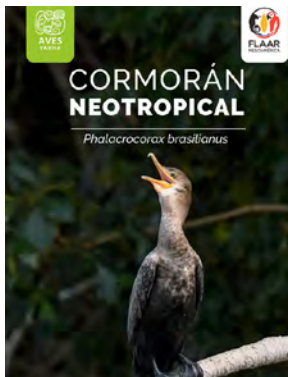
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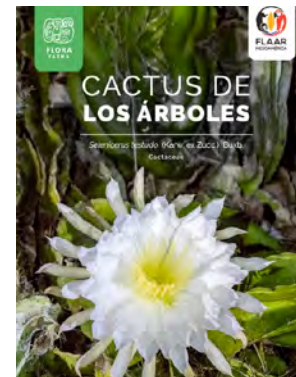
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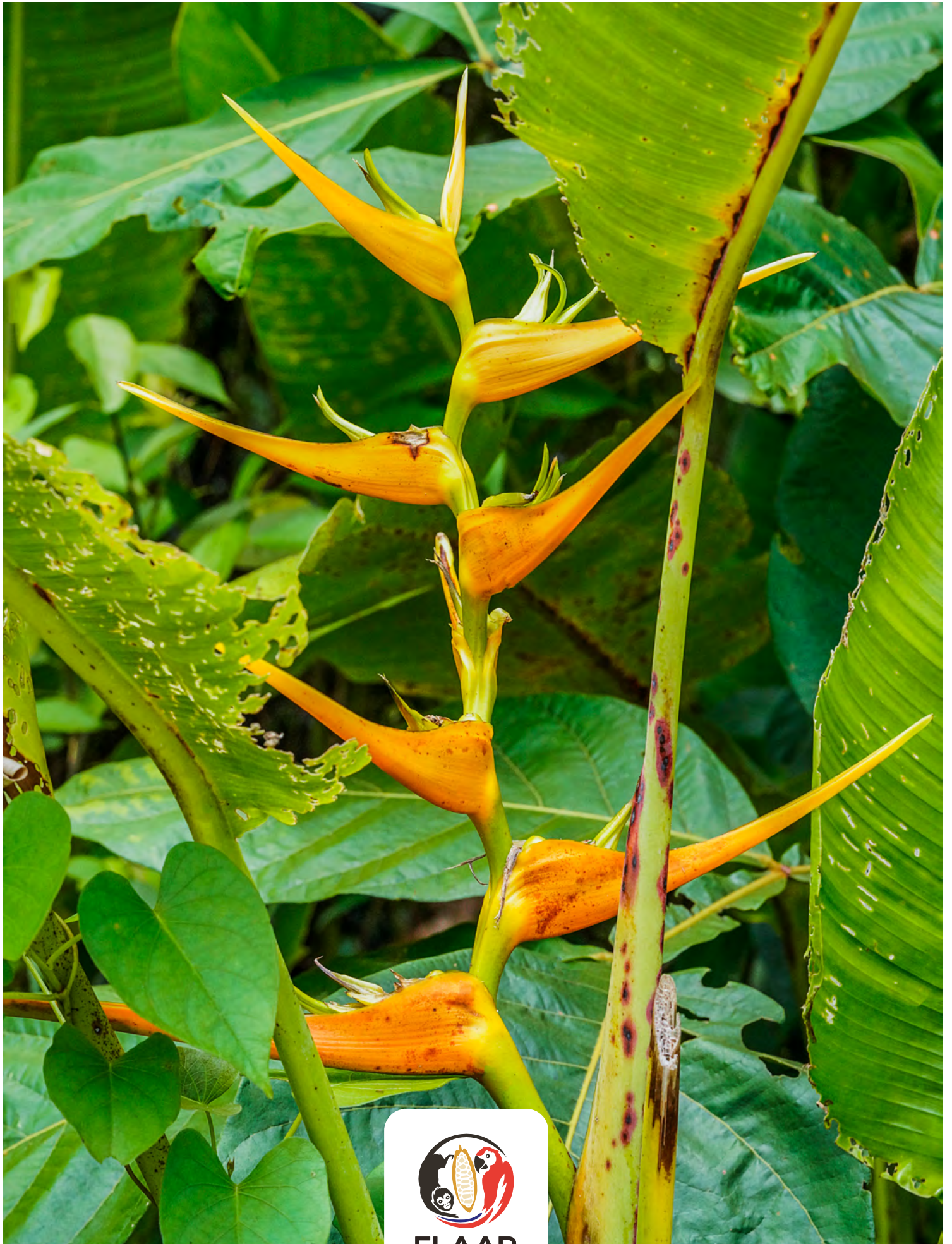


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