

BULLETIN



HELICONIA
SOCIETY
INTERNATIONAL

A Journal of the Zingiberales, including Cannaceae, Costaceae, Heliconiaceae, Lowiaceae, Marantaceae, Musaceae, Strelitziaceae and Zingiberaceae

JUNE 2021

ISSN 2576-5507

VOL. 27 NO. 2

HSI Headquarters
Dr. David H. Lorence
National Tropical Botanical Garden
3530 Papalina Road
Kalaheo, Hawaii 96741 USA

HSI Editors
Dr. Ken W. Leonhardt
Department of Tropical Plant and
Soil Sciences University of Hawaii
Honolulu, Hawaii 96822 USA

Dra. Vivian Loges
Laboratório de Floricultura, Departamento de
Agronomia Universidade Federal Rural de
Pernambuco - UFRPE, Brazil

Esther's Heliconia, a rare Colombian beauty

Jana Leong-Škorničková; Sarah Lim, Herbarium

Research & Conservation Branch Singapore, Singapore Botanic Gardens, National Parks Board
Available from Gardenwise volume 56: 32-34.

Disponibile in: [https://www.nparks.gov.sg/sbg/research/publications/-/media/sbg/gardenwise/gw_2021_vol_56_\(feb\).pdf](https://www.nparks.gov.sg/sbg/research/publications/-/media/sbg/gardenwise/gw_2021_vol_56_(feb).pdf)

Heliconias are very colourful and pretty plants. There are more than 200 species, with almost all being native to tropical America. A number of the easy-growing and free-flowering species are cultivated in the tropics worldwide, including in Singapore where they be seen in streetscapes, parks and gardens. Yet there are also many uncommon species which are not yet widely available in horticulture. One of these rare gems, grown in our Gardens, is *Heliconia estherae*.

Heliconia estherae was discovered in February 1982 by Gustavo Morales and José Abalo in the northern part of Colombia, near Samoré in the mountains, close to the border with Venezuela. Plants were found growing on the slopes at altitudes between 800 and 1250 m, in areas with high rainfall and on soils with silt and clay. One of the discoverers named this exceptionally beautiful *Heliconia* after his wife, Esther de Morales. The mature plants are up to 1.5 m tall with each leafy shoot bearing five to six dark green leaves that have a pale green midrib. The inflorescences are upright, consisting of about seven bracts which are almost white at the base, but become progressively bright pink towards the tip, with the lowermost bract sometimes having a dark green tip. Each of these bracts supports seven to 10 tubular flowers that are 4 to 4.5 cm long, have a cream-white to pale green flower stalk, light green ovaries at the base which turn blue-green with age, and orange-yellow sepals that are almost covered by dark to bright red speckles. The flowers never

really open and thus look like flower buds throughout the flowering period. Like almost all heliconias, they are pollinated by a specific hummingbird, and the shape of the flower perfectly fits the curvature of the pollinator's beak.



A flowering plant of *H. estherae* from tissue culture.

Despite its stunning looks, this species is not yet widely available in the horticulture trade, and we are one of the few lucky gardens to have it in cultivation. We obtained it in July 2010, during the 16th International Conference of the Heliconia Society International held in Singapore. One of the most anticipated events of these conferences is an auction where various items and curiosities connected to heliconias and gingers are sold to raise funds for the Society. During that year's auction, the appearance of a sterile bottle containing tissue-cultured plantlets of *Heliconia*

estherae, donated by the Nong Nooch Tropical Botanical Garden, certainly raised the blood pressure of many! After a heated round of bidding, the bottle was finally pronounced as “sold” to Mr Tan Jiew Hoe, president of the Singapore Gardening Society and long-term patron of the Singapore Botanic Gardens. To our surprise and delight, the bottle was gingerly handed to us straightaway and by the next day, the plantlets had found their new home in our tissue culture lab.



Flasks with plantlets in the tissue culture lab, ready to be removed from the flasks and planted into the nursery for acclimatisation.

The journey from flask to flower was more tedious than anticipated and took a whole nine years. While keeping the tissue culture sterile and multiplying the plantlets in the lab was fairly smooth sailing, getting them acclimatised to outdoor conditions proved to be more difficult. Even after that hurdle was cleared and we had large plantlets growing in the nursery and in the ground, we were unable to get them to flower. Fortunately, our new nursery facilities, which opened in 2018, allow for better control of growing conditions. After moving our research collec-



Plantlets at different stages of development.

tions into the new facilities and tweaking our fertilising protocol, the gorgeous inflorescences started to appear! Now that the process of getting the plants from flask to flower is established, we hope that within a year, flowering plants will appear on some of the lawns in the Gardens.



Plantlets being pampered in the nursery following explanting from flasks.

The Purpose of HSI

The purpose of HSI is to increase the enjoyment and understanding of *Heliconia* (Heliconiaceae) and related plants (in the families Cannaceae, Costaceae, Lowiaceae, Marantaceae, Musaceae, Strelitziaceae, and Zingiberaceae) of the order Zingiberales through education, research and communication. Interest in Zingiberales and information on the cultivation and botany of these plants is rapidly increasing. HSI will centralize this information and distribute it to members.

The **HELICONIA SOCIETY INTERNATIONAL**, a non-profit corporation, was formed in 1985 because of rapidly developing interest around the world in these plants and their close relatives. We are composed of dues-paying members. Our officers and all participants are volunteers. Everyone is welcome to join and participate. HSI conducts a Biennial Meeting and International Conference.

Membership dues are (in \$US): Individual \$40, Family \$45, PDF \$25, Student \$10, Library \$35, Contributing \$50, Corpo-

rate \$100, Sustaining \$500, Lifetime Member \$1000. Membership fees constitute annual dues from 1 July through 30 June. All members receive the BULLETIN (usually published quarterly) and special announcements. Join or renew your membership at www.heliconia.org.

HSI Officers and Board of Directors for 2019-2020

Carla Black, President and Membership; David Lorence, Treasurer; Jan Hintze, Secretary, Membership and Etlingera Cultivar Registrar; Dave Skinner, Costaceae Cultivar Registrar and Conservation; Colton Collins, Webmaster; Vinita Gowda, Student Grants; Sandra Barnes, Archivist; and Directors: Timothy Chapman, Vivian Loges, Minal Patil, Chelsea Specht and Richard Criley.

The HSI BULLETIN is the quarterly publication of the HELICONIA SOCIETY INTERNATIONAL. Inquiries: Jan Hintze, admin@heliconia.org. Website: www.heliconia.org

Heliconia estherae is endemic to Colombia, where it is known from only two municipalities. By cultivating such rare species, gardens around the world, including ours, continue to play an important role in plant conservation.



The stunning inflorescence of Esther's heliconia.



The ovaries at the base of the flowers start off cream-white to pale green (left) and turn blue-green as they mature (right).

All photos by Jana Leong-Škorničková

Our friend Christian left us: Christian Dierberger 1963-2020

Remembrance by Vivian Loges, Carlos Castro, Charleston Gonçalves, Ana Cecilia Castro and Carla Black

Christian Alfredo Dierberger, agronomist, collected heliconias with the same enthusiasm he lived his life. His enthusiasm was matched only by his generosity and his dedication to a job well done. Christian will live on in our fondest memories as a friend and as a professional.

His family immigrated from Germany to Brazil and in 1893 founded what would become Fazenda Citra, a large agro-industrial complex (<https://www.dierberger.com.br/>). In 1985 Christian entered the family enterprise representing the fourth generation. Christian said his company

“supports the idea of species conservation through its cultivation, thus avoiding extraction from nature and the degradation of the environment. We are planning and planting now, so that we can better enjoy our future.” (<https://fazendacitra.com.br/>).



Christian and Ingrid at Fazenda Citra during the 2016 HSI Conference

During the HSI Conference in Panama (2012), we were tickled by his happiness when he found heliconia species that he knew only by photos! Thanks to his generosity, Carla now grows a beautiful clump of *H. villosa* that Chris knew would thrill her just as much. It was in a pre-conference during a happy hour that Christian persuaded us to host the HSI Conference in Brazil in 2016.

A year after the conference in Panama we received an animated message from him: “Good morning Friends of the Jungles!!!! Organizing my photo files I found the photos from HSI Panama conference! It was so good! I would like to do it all again! Who knows, maybe someday, we could redo this trip to the same places. We just need to schedule with Carla and organize. She's ready... There's a lot to see there yet. Hugs Christian” (June 20, 2013).

In 2016, during the Brazilian HSI Conference, the group visited Fazenda Citra. We saw his impressive Zingiberales collection and enjoyed his hospitality and happiness accompanied by his wife, Ingrid, and daughter Alexia.

Besides his special joy and passion for ornamental Zingiberales, he loved sailing, vintage vehicles and drinking beer! Unfortunately, he left us on December 28, 2020, at 57 years of age. His wife Ingrid and daughter Alexia, both as passionate about plants as he was, fortunately will continue with his dreams and business.



Christian with *H. xanthovillosa* in Carla Black's garden during the 2012 HSI Conference



Christian at Fazenda Citra during the 2016 HSI Conference

Origins of *Heliconia* species names

José Ábalo and Gustavo Morales

Compiled by Richard Criley with assistance from Carla Black

Taxonomic comments in italics are by José Ábalo. Our thanks to him and Dr. Gustavo Morales for their review of this list.



At left, Dr. Gustavo Morales at Quindío Botanical Garden during 2012 HSI post-conference tour. At right, Jose Abalo on a field trip in Venezuela.

Andina: Refers to the cordillera of the Andes. *During WWII, the herbarium in Berlin was hit by a bomb that completely obliterated it. The type specimen for H. dielsiana disappeared and we presently have only descriptions. In the bracts two colors are described: "Rot und gelb" (red and yellow). The accepted H. dielsiana is totally light red/orange or totally yellow. Thus, we differ and believe that what is accepted as H. pastazae is the original H. dielsiana since the colors are exactly as described originally, and therefore H. andina should be the accepted name for this species. [See photo in Bulletin 24 (1):1-6]*

Angelica: Inspired by the resemblance to angels' wings. *Now a synonym of H. paludigena. Because we published H. angelica and H. paludigena in the same article, and H. angelica appeared first in that article, we believe this should be the accepted name of the species.*

Antioquiensis: Refers to the Department of Antioquia, Colombia.

Aristeguietae: Dedicated with admiration to Dr. Leandro Aristeguieta, Venezuelan botanist.

Atratensis: Refers to the Atrato River in Colombia. [See photo in Bulletin 25(3):1-7]

Badilloi: Honors Dr. Victor Badillo, who provided academic support as Ábalo & Morales initiated work on *Heliconia*.

Berriziana: Honors landscape architect Gabriel Berriz, friend and collaborator.

Berryi: Honors friend and heliconia promoter Fred Berry.

Boultoniana: Honors Henry Lord Boulton, friend and collaborator. *A synonym of H. griggsiana*; we think it should be considered *H. griggsiana* var. *boultoniana*. This is the pale form, cultivar 'Blue Moon'.

Brenneri: Named for friend Joseph Brenner. [See photos in Bulletins 14(1):4-6, 16(1):1-6]

Burleana: Dedicated with affection and friendship to Roberto Burle-Marx, great heliconiaphile and promoter of *Heliconia* cultivation. [See photos in Bulletins 16(1):1-6, 24(1):1-6, 24(2):12-15, 25(3):1-7]

Cararensis: Refers to region of Carare in Colombia. *Invalid*

Carmelae: Honors Carmela G. de Ábalo, mother of José Ábalo.

Caquetensis: Refers to the Intendencia del Caqueta in Colombia.

Chrysocraspeda: From Greek, refers to the yellow margin of the bracts. [See photos in Bulletins 18(2):13-15, 25(3):1-7]

Colombiana: Refers to republic of Colombia. *Synonym of H. schneeanana*.

Combinata: Refers to the combination of red and yellow of the fruit. *We consider H. titanum and H. gigantea, which grow just upstream, to be synonyms of H. combinata*. [See photo in Bulletin 18(2):13-15]



H. badilloi



H. burleana, northern Ecuador



H. carmelae



H. combinata, above, and *H. chrysocraspeda*, at right.



Estherae: Honors Esther de Morales, wife of Gustavo Morales.

Estiletioides: Refers to a stiletto-form rudiment generally found between the first and second flowers inside the bracts. Though this rudiment exists in other species, it was first seen here.

Fernandezii: Honors Dr. Alvaro Fernández, Profesor, Instituto de Ciencias Naturales, U. Nacional de Colombia.

Flabellata: Refers to the resemblance to a fan made from a woven palm frond. *This is a hybrid of H. episcopalis and H. marginata, so is written H. x flabellata*.

Foreroi: Honors Dr. Enrique Ferero, Director of Investigation, Missouri Botanical Garden.

Fragilis: Refers to the fragile rachis. [See photo in Bulletin 24(2):12-15]



H. fernandezii



H. fragilis

Gaiboriana: Honors friend and collaborator Vicente Gaibor, near whose house a few scarce specimens were encountered.

Gilbertiana: In appreciation of Dr. Gilbert Daniels. [See photo in Bulletin 24(2):12-15]

Gloriosa: Refers to the glorious foliage and colors of the inflorescence.

Holmquistiana: Honors friend and collaborator Juan de Dios Holmquist.

Huilensis: Refers to the Department of Huila, Colombia. [See photo in Bulletin 21(4):6-9]

Intermedia: Refers to the inflorescence emerging from the middle of the pseudostem.

Impudica: Means unashamed, and refers to the clearly-seen parts of the inflorescence. [See photo in Bulletin 16(1):1-6]

Laxa: Refers to the flaccid peduncle. [See photo in Bulletin 14(1):4-6, 22(1):6-9]

Lentiginosa: Refers to the lenticular markings on the inflorescence. [See photo in Bulletin 22(1):6-9]

Longissima: refers to extreme length of inflorescence. [See photo in Bulletin 18(3):9-15]

Lozanoi: Honors Dr. Gustavo Lozano C., Profesor Instituto de Ciencias Naturales, U. Nacional de Colombia. [See photo in Bulletin 18(1):6-7]

Luteoviridis: Refers to yellow and green, the dominant colors of the inflorescence. *This is not a valid species.*

Markiana: Honors Mark Collins, heliconiophile and field work collaborator in Ecuador.

Mincana: Refers to Minca, the type location in the Department of Magdalena, Colombia.



H. gaiboreana



H. huilensis. Bruce Dunstan photo.



H. impudica fruit



H. laxa at left. *H. longissima* at right, with Carla Black and Angel Rodriguez. Bruce Dunstan photo.



H. lentiginosa



H. lozanoi

Mucilagina: Refers to the mucilaginous coating on the inflorescence.

Nariniensis: Refers to the Department of Nariño in Colombia. [See photo in Bulletin 24(1):1-6]

Nitida: Refers to the neat appearance of the smooth, shiny pseudostem.

Oleosa: Refers to the oily look and feel of the bracts. [See photo in Bulletin 22(1):6-9]

Paludigena: Refers to the muddy conditions where the type specimen was found. *See note with angelica.*

Pardoi: Honors Venezuelan Alexis J. Pardo, friend and plant pathologist. [See photo in Bulletin 16(1):1-6, 24(1):1-6]

Peckenpaughii: honors Roger Peckenpaugh who organized the collecting trip on which the species was discovered. *This is a hybrid supposedly of *H. rostrata* and *H. spathocircinata*, so is written *H. x peckenpaughii*.*

Peteriana: Honors Dr. Laurence Peter, author of the Peter Principle, because of apparent confusions in early descriptions between this and *H. brenneri* by another botanist. [See photo in Bulletin 16(1):1-6]

Plagiotropa: Refers to the horizontal growth habit of the rhizomes, following the classification of this characteristic by H. S. Barreiros.

Reptans: Refers to the position of the inflorescence “crawling” on the ground.

Rhodantha: Refers to the pink color of the flower. [See photo in Bulletin 17(3):10-13]

Rigida: Refers to the extreme rigidity of the inflorescence.



H. musilagina



H. montana



H. nariniensis



H. paludigena (angelica)



H. pardoi



H. reptans



H. oleosa



H. nitida

Robertoi: Dedicated with affection to friend Roberto Burle-Marx on the occasion of his 75th birthday. [See photo in Bulletin 18(2):13-15]

Sanctae-theresae: Dedicated to Santa Theresa, because after four difficult days of searching, this plant was discovered on the 15th of October, saint day of Saint Theresa of Jesus.

Scarlatina: Refers to the dominant color of the inflorescence.

Sclerotricha: Refers to the very stiff hairs on the bracts. [See photo in Bulletin 16(1):1-6, 24(1):1-6]

Signa-hispanica: Refers to the Spanish flag, because of the red and yellow of the bracts. [See photo in Bulletin 18(3):9-15]

Spiralis: Refers to the spiral arrangement of the bracts. [See photo in Bulletin 17(3):10-13]

Stella-maris: Refers to a starfish because of the tight spiral arrangement of the bracts nearest the tip of the inflorescence. [See photo in Bulletin 17(3):10-13]

Tandayapensis: Refers to the locality of its type in Ecuador. *A synonym of H. griggsiana; we think it should be considered H. griggsiana var. tandayapensis. This is the dark form, cultivar 'Angry Moon'.*

Venusta: Refers to the beauty of the species. [See photo in Bulletin 14(1):4-6]

Virginalis: Refers to the color of the flower and its integration in the context of the inflorescence.

Willisiana: Dedicated to Dr. W. H. Willis emeritus professor of agronomy, LSU, guide to one of the authors. [See photo in Bulletin 16(1):1-6, 24(1):1-6]



H. rhodantha



H. rigida



H. scarlatina



H. signahispanica, with Bruce Dunstan



Above, *H. stella-maris*, Dylan Hannon photo. At right, *H. venusta*.



New releases of *Zingiber* from Instituto Agronômico (Campinas - SP/Brazil)

Charleston Gonçalves¹, Carlos Eduardo Ferreira de Castro², Sílvia Moreira Rojo Vega³, and Gláucia Moraes Dias⁴

¹Instituto Agronômico (IAC), Campinas (SP), Brasil, e-mail: charleston.goncalves@sp.gov.br; ²Scientific Investigator, retired from Instituto Agronômico (IAC), e-mail: carlos.principe54@gmail.com; ³Pólo Regional do Vale do Paraíba-UPD de Ubatuba/APTA, Ubatuba (SP); ⁴IAC, e-mail: moraesdiasglauca@gmail.com

The collection of ornamental Zingiberales at the Instituto Agronômico (IAC), started in 1980, with the introduction of several accessions with variable characteristics for color, size and shape of *Heliconia*, *Costus*, *Etilingera*, and *Zingiber* species. This collection is the basis of the institution's Plant Breeding Program for Ornamental Zingiberales, which aims to produce new cultivars through intra- and inter-specific crossings or selection in partnership with producers. For the selection were considered plant productivity, floral stem height and weight, low incidence of pests and diseases, inflorescences shape and color and postharvest durability in tap water.

The breeding program with *Zingiber* started in 1987 and the following cultivars were registered and released in Brazil.

'IAC Suanno' (*Z. spectabile* x *Z. zerumbet* hybrid): the clump has an average height of 2.70 m, with elongated leaves composed of green leaflets. Its inflorescences are basal, presenting floral stems with an average length of 40 cm, yellow bracts at the beginning of the formation of the inflorescence and red at the end. Its inflorescences have a cylindrical shape, and the floral stem weight is 270 grams when completely developed. Its flowers are of the labeliform type, measuring on average 7 cm long and 2 cm wide, with white and lilac coloring. In the climatic conditions of Ubatuba - Sao Paulo state, the clumps started flowering in August. It also has a great capacity for multiplication, with widening clumps of very firm vegetative stems that are resistant to falling. Produces 50 to 60 inflorescences/clump per year. The average postharvest durability is 20 days. Due to its characteristics, 'IAC Suanno' is recommended for use as a cut flower and ornamental plant.

'IAC Maranduba' (*Z. spectabile* x *Z. zerumbet* hybrid): It has an average floral stem length of 80 cm, yellow bracts, tinting orange gradually and red at maturity, and is cone shaped. Floral stem weight is 200 grams. Its inflorescences have an average diameter of 6.5 cm, and the bracts are free. Produce 35 to 50 inflorescences/clump per year. The average postharvest durability is 22 days. Due to the good postharvest durability, inflorescence size, exceptional productivity and other attractive morphological characteristics, 'IAC Maranduba' is recommended both as a garden plant and as a cut flower.



Zingiber 'Suanno'



Zingiber 'Maranduba'

'IAC Angatu' (seed collected from *Z. spectabile*): It has an average floral stem length of 63 cm, greenish yellow bracts, tinting orange gradually then becoming red at maturity, cone shaped. The floral stem weight is 280 grams. Its inflorescences have an average diameter of 8 cm, and the bracts are free. Produces 15 to 25 inflorescences/clump per year. The average postharvest durability is 23 days. Due to its characteristics, 'IAC Angatu' is recommended both as a garden plant and for use as a cut flower.

‘IAC Almada’ (seed collected from *Z. spectabile*): It has an average floral stem length of 60 cm, yellow bracts with pink spots, tinting orange gradually and red at maturity, cone shaped. The floral stem weight is 140 grams. Its inflorescences have an average diameter of 8 cm, and the bracts are imbricated. Produces 15 to 25 inflorescences/clump per year. The average postharvest durability is 21 days. The color of the bracts stands out from the cultivars on the market and ‘IAC Almada’ is recommended both as a garden plant and for use as a cut flower.



‘IAC Ubatumirim’ (seed collected from *Z. spectabile*): It has an average floral stem length of 42 cm, green bracts, gradually tinting until completely red at maturity, cone shaped. The floral stem weight is 180 grams. Its inflorescences have an average diameter of 5.5 cm, and the bracts are imbricated. Produces 20 to 35 inflorescences/clump per year. The average postharvest durability is 22 days. Is recommended both as a garden plant and for use as a cut flower.

Zingiber ‘Angatu’



Zingiber ‘Almada’



Zingiber ‘Ubatumirim’

Member Profile: Héctor Méndez Caratini

What is your activity related to Zingiberales?

I have my own three-acre farm, in the mountains of Puerto Rico. At 840 meters above sea level, I grow heliconias, gingers, costus and musa.

What is your profession?

I am a professional photographer interested in documenting and promoting conservation matters. Such as preserving people’s eye sight, endangered plant species and cultures in danger of extinction.



Samurai Hector Mendez Caratini with *H. titanium* in Colombia on the 2012 post-conference tour.

How did you get interested in Heliconias?

For over a century, my farm had been dedicated to harvesting coffee, tobacco and other food products. But farm labor became very scarce and difficult to find. So, I changed the crop for the colorful exotic heliconias.

For many years, I’ve been attending the Aibonito Flower Festival, to purchase exotic plants. Once, while there, I was introduced to Judy Nelson, from Marin Alto Tropicals. They have an incredible collection of zingiberales. I started by collecting one variety from her. Later, I would purchase a different one, and so on. Soon, my dear friend told me that, “You’ve been bitten by the bug.” It was through her (and Kelly and Susan Brooks), that I first started collecting zingiberales. Afterwards, through other sources, I purchased or traded plants until finally, I established my own private Heliconia Conservation Center.

Heliconia Society International

web site is at

www.heliconia.org



When did you join HSI?

I started collecting zingiberales in 1998, when I first joined the Heliconia Society of Puerto Rico. Afterwards, in 2004, I joined HSI during the International Conference held in the island. Afterwards, I have travelled to HSI International Conferences, where I have established a close friendship with their membership.

What is your favorite in the Order?

Since I live in the Caribbean, my special interest has always been the different colorful varieties of *H. caribaea*. Since they have adapted so well to the climate of Puerto Rico, I occasionally travel to other neighboring Antillean islands, in search of the elusive *H. caribaea*. None the less, I also like a lot the pendent ones from Central America.

Have you overcome a special challenge in your work with the plants?

The most difficult situation that I've encountered, living in the tropics, has been being able to survive destructive hurricanes. In 2017 we had Hurricane Maria - a Category Five (the maximum strength) - pass directly over the farm, with 200 mph winds. After such a total devastation, I had to search for, and rescue, the moribund plants, and try to nurse them back to life. Sometimes you succeed. Other times, they are lost forever. But nature has a miraculous way of healing itself. (See HSI Bulletin 24(2):1-3 for Héctor's article about recovering from Hurricane María.)

Brazilian Heliconias: *Heliconia acuminata* L. C. Rich.

Carlos Eduardo Ferreira de Castro¹, Charleston Gonçalves²

¹ Scientific Investigator, retired, Instituto Agrônômico (IAC), carlos.principe54@gmail.com; ² Instituto Agrônômico (IAC), Caixa Postal 28, CEP 13012-970, Campinas (SP), Brasil, charleston.goncalves@sp.gov.br.

Anderson (1985) describes *Heliconia acuminata* as a plant of musoid habit, 0.5 to 2 meters tall. It has an upright inflorescence, 10 to 20 cm long, with a sinuous rachis, the same color as the bract and glabrous to densely pubescent. The persistent bracts, straight or evenly curved, numbering 2 to 10 per inflorescence, are distichous. They are inserted at an angle of 55 to 100° in relation to the inflorescence axis, except for *H. acuminata* subsp. *psittacorastra* that has an angle of 10 to 40°. Bracts are red, orange or yellow in color, brighter externally than internally, glabrous to densely hairy. The straight or evenly curved flowers, 6 to 15 per bract, are opaque olive green with white, or light orange to white, orange or yellow apex with green or black subapical spots in the shape of an eye.

H. acuminata, however, comprises a very heterogeneous set of morphotypes. Geographical variation occurs in the following characters: hairiness and hair structure, angle of the bract, color of the bract, size and standard color of the perianth and size and shape of the staminode. Due to these

characteristics, four subspecies are recognized. *H. acuminata* L. C. Rich subsp. *psittacorastra* L. Anders. with narrow leaves, small inflorescences with angle less than 45°, large flowers 43-56 mm, with spots at the apex in the shape of an eye. *H. acuminata* L. C. Rich subsp. *acuminata* has small flowers of 27 to 45 mm and without spots. The angle of insertion of the bracts varies from 40 to 95°. *H. acuminata* L. C. Rich subsp. *occidentalis* L. Anders. have large flowers from 39 to 56 mm, with eye-shaped spots at the apex, bracts bright yellow, hairy and set at an angle of 55 to 100°, leaves glaucous on the underside. The subspecies *H. acuminata* L. C. Rich subsp. *immaculata* L. Anders., have unspotted perianths.

It blooms in naturally occurring regions from October to March. It occurs at altitudes of 700 to 900 meters, in Colombia, French Guiana, Suriname, Venezuela and Brazil. In Brazil is found in the states of Rondonia, Acre, Amazonas, Roraima and Amapá, in shady humid forests, in places close to streams, with clay soil, although they are also found flowering in clearings and in new secondary growths.

Its synonyms are *H. psittacorum* L.f. var. *flexenous* Petersen; *H. roseoflava* Loes.; *H. tarumaensis* Barreiros. 'Cheri R', 'Kaieteur Falls', 'Ruby', 'Tarumã' and 'Yellow Waltz' cultivars are recognized by the International Society for Horticultural Science (ISHS), with the Heliconia Society International serving as the International Cultivar Registration Authority (ICRA), Dr. Bryan Brunner, Cultivar Registrar.

In 2014, we traveled to Peru through South America, covering 14,000 km of highways that crossed the states of São Paulo, Goiás, Mato Grosso, Rondonia and Acre in Brazil and part of the Peruvian Amazon, in Porto Maldonado, the Andes, the Juliaca region and Puno, Arequipa, Molendo and Cusco in Peru. In this journey we observed two populations of *H. acuminata*: one on the Porto Velho - Rio Branco highway, near the Madeira River; and the other along the road to Assis Brasil, near the border with Peru.

On a previous trip to Acre and Amazonas, in the border region with Colombia and Peru, we found two morphotypes (Figure 1). In the region of Manaus and Presidente Figueiredo in the State of Amazonas we found two other types (Figure 2). We found another form of *H. acuminata* in the State of Pará, on the edge of a secondary forest, near Marajó Island (Figure 3).

HSI Bulletin advertising guidelines

- * Ads will run on an annual (4 issue) basis, starting at any time of year.
- * Rates: 1/16th page costs \$40 per yr, 1/8th page is \$80, 1/4 page is \$160, and 1/2 page is \$320 per yr.
- * Ads should be prepared in digital format, and can be in full color.
- * Ads can be placed by non-members, though membership in HSI is encouraged.
- * The editors reserve the right to refuse advertising, based on content or space availability.
- * Send advertising content in prepared format to: Dra. Vivian Loges vloges@yahoo.com.



Figure 1. Two morphotypes found in the border region of Brazil with Colombia and Peru.



Figure 2: Two morphotypes types found in the region of Manaus and Presidente Figueiredo in the State of Amazonas.



Figure 3. Another form of *H. acuminata* found in the State of Pará, on the edge of a secondary forest, near Marajó Island.

ANDERSSON, L. Revision of *Heliconia* subgen. *Stenochlamys* (Musaceae-Heliconioideae). *Opera Botanica*, v. 82, p.1-123, 1985.

Origins of *Heliconia* species names, pp 4-8.

Late addition

Estiletioides: Refers to the stiletto structure inside the bract that earns the species name.



Brazilian heliconias: *H. farinosa* Raddi

Carlos Eduardo Ferreira de Castro², Charleston Gonçalves², Silvia Moreira Rojo Vega³, and Daniela Merida⁴

¹Scientific Investigator, retired from Instituto Agronômico (IAC), Campinas - SP, Brazil, carlos.principe54@gmail.com; ²Instituto Agronômico (IAC), Campinas - SP, Brazil, charleston.goncalves@sp.gov.br; ³Pólo Regional do Vale do Paraíba-UPD de Ubatuba/APTA, Ubatuba - SP, Brazil; ⁴Agronomist, Maua - SP, Brazil.

In the decades of my time at IAC, I used to carry out field journeys in Brazil to collect samples and identify natural populations of heliconia. On the south coast of the State of Rio de Janeiro and the north coast of the state of São Paulo, *Heliconia farinosa*, a remarkable one, forms conglomerates of five to 40 individuals, in consortium with populations of *H. spathocircinata* and with *H. rivularis*.

Endemic from Brazil, *H. farinosa* occurs naturally on the Brazilian Atlantic coast, at altitudes of 50 to 600 meters from the south east (Espírito Santo, Rio de Janeiro, São Paulo States) to the south (Paraná, Rio Grande do Sul, Santa Catarina States) (Braga, 2021). Typical of ombrophilous vegetation (plants able to withstand wet conditions), *H. farinosa* presents varied morphotypes that grow in humid and shady forests on the edge of streams, on poorly drained soils or on the roadsides.

Its synonyms are *H. braziliensis* Hooker; *H. pulverulenta* Lindley; *H. dealbata* Loddiges ex Baker; *H. farinosa* var. *efarinosa* Barreiros; *H. farinosa* (var. *efarinosa*) f. *constricta* Barreiros; *H. farinosa* (var. *efarinosa*) f. *magna* Barreiros; *H. farinosa* (var. *efarinosa*) f. *angusta* Barreiros; *H. farinosa* (var. *efarinosa*) f. *versatilis* Barreiros, *H. velloziana* Emygdio and *H. sampaioana* Emygdio (Braga, 2021).

According to Andersson (1985), *H. farinosa* Sect. *Farinosa* is a musoid habit plant, 1 to 3.5 meters tall. It presents about 10 green leaves per stem, petioles 60 to 80 cm long, glabrous to slightly hairy, more concentrated at the base. The leaves are 85-100 cm long, and 25-37 cm wide, mid-rib glabrous beneath, abaxial surface green, a waxy coating was observed in most of the populations of South Rio and North São Paulo Coast. The upright inflorescences vary from 15 to 35 cm long and the peduncle is 2-15 cm long, with a sinuous red, orange or yellow rachis, glabrous or slightly hairy. Persistent distichous bracts, numbering 5 to 11 per inflorescence are free, straight or upcurved, inserted in an angle of 35 to 90° to the axis of the inflorescence. The bracts can be red, dark red, orange or yellow in color and can present a slight hairiness or a waxy coat. The flowers, ascending at anthesis, semi-exposed, 10 to 16 per bract, are intense white and slightly curved. The staminode apex is obtuse to acuminate. Fruits are held more or less at the level of the bract margins at maturity (Andersson, 1985).



Carlos Castro and natural populations of *H. farinosa*

H. farinosa grows well and blooms in places with moderate shade, it is recommended for gardens, but it can also be used as cut flowers, since its inflorescences have post-harvest durability from 8 to 10 days.

Flowering occurs between July and November, flower emergence between August and December, fruiting between September and February and senescence of inflorescence between November and February (Andersson, 1985). During the flowering season, it is possible to buy cut flowers from Indigenous peoples of the northern coast of the state of São Paulo in their remaining villages.

Regarding its phenology, higher shoot emergence was observed in plants of all types between March and June.



Above and below, several morphotypes of *H. farinosa*



Tropical Funeral

Paulo Hercílio Viegas Rodrigues, Escola Superior de Agricultura Luiz de Queiroz (ESALQ), Universidade de São Paulo (USP). E-mail: phrviegas@usp.br.

Our history starts in Manaus, the capital of Amazon state in Brazil. Fourteen years ago I, as an agronomist, worked for four years in the Amazonian region. I was consulting for the tissue culture laboratory in Nova Olinda do Norte (NON) city, located at the end of the Madeira river. This laboratory produces banana plantlets for the indigenous people since banana fruit is important to nutrition health. The Amazon state is the biggest in the Brazilian federation. Around 92% of Amazon's tropical forests are preserved. Because of this, the demographic population is very low, the lowest in Brazil.

With the high percentage of native environment preserved, is difficult to apply logistic facilities to the native population. The Amazon river crosses the state and is responsible for the biggest watershed area in the world. The railroads and auto roads are rare. The most common transportation facility is the boats by rivers. But by boat spends more time completing the regular journeys, for example, Manaus to NON, by boat, I would spend 12 hours, against just 20 minutes by plane (Cessna-Caravan).

At this specific moment, I had to work in NON before going to Tabatinga/Leticia/Santa Rosa (TLSR). And where is TLRSR... This place is located at the triple board of the countries Brazil/Colombia/Peru (Figure 1). Despite the flight to Tabatinga spent 3 hours by plane (EMB-190) to the west with a velocity of cruise 800 km/h, you still in the colossal Amazon state.



Figure 1- Triple border Brazil/Colombia/Peru

So, I was in Manaus and I needed to pick up the fly to NON to work at the Lab. But there was a problem. The Cessna-Caravan was full, with no sits available. I just talk with the pilot about the situation, and he asked me about my weight. My weight? I did not understand until he showed me the empty cargo area! This area is behind (end) the fuselage and in front of the back plane's door. I

did not have luggage and I could "fit" in the small space! Then it is more than enough to take off the plane but, where I will sit in this free cargo area? Then the pilot said to me: "Paulo there is a chair, a beach chair behind the back door. Yes, this one colorful and easy to assemble! Use this to sit!". I assembled the chair, sat down, hanged on the wires during the take-off and start to imagine how it will be during the next 20 minutes until we land in NON.

After 5 minutes of flying, the pilot said: "Paulo, we will land, and could you catch a package for me? But take care with this, really be careful, ok?" I was surprised by the request since landing to just "pick up a package" is not very common anywhere in the world! The pilot landed in the airstrip soaked, turned over the plane, and I could understand why "to be really careful". An old indigenous woman moved in our direction hanged the big pan covered with a tissue! I quickly just open the door, said "Hey", picked up the pan, closed the door, and the Cessna start again to running fast to take off to NON. This is an extreme delivery. I put it behind my chair. A strange and delicious smell involved my nose. I asked to pitlot about what is inside this old, and hot pan and he told me: "It is full of the best Tambaqui's calderada (a type of fish stew). Don't touch and take care of it, ok!".

After I worked for 2 days, I came back to Manaus to take the fly to Tabatinga. In Tabatinga I had a project with SEBRAE and tropical flower producers, mainly Heliconia, at the triple border. This week I touch a short course about tropical flowers, supported by SEBRAE, CBA, and Diocese Alto Solimões. After that, an unusual situation happened. An important and respected local person, lovely by the local people, passed away. As is traditional in Brazil, funerals are decorated with flowers such as carnations, chrysanthemums, or roses. Due to the proximity, these flowers are usually brought from Bogotá. Nevertheless, the weather at the triple border is unpredictable and, in this day, the flights from Bogotá were canceled. It means that will not have the traditional flowers to use in the funeral. The community was concerned about this and everybody mobilized to solve the problem. And we have the idea: why not use the local biodiversity at the funeral? Imagine *H. tenebrosa* or *H. rostrata* yellow and green in the funeral! Even touch this idea could be strange, the community support the idea and mobilized to harvest the tropical flowers and foliages.

One of my students is a producer of tropical flowers and foliages, and she invited me to help to harvest and prepare the ornamentals for the funeral. His land is an hour by bus from Tabatinga, almost in the limit of our tropical jungle with Colombia. During the journey, I saw many army troupes and machine-gun bunkers to protect this limit. Fourteen years ago, the situation of Colombia and the FARC's (Fuerzas Armadas Revolucionarias de Colombia - Revolutionary Armed Forces of Colombia) was unstable and very dangerous. We arrived at the farm and I had a beautiful view: the impressive color of *Heliconia orthotricha* She, Candy Cane, Hot Pink, *Heliconia chartaceae* Sexy Pink, *Heliconia rostrata* Pink Peru and

numerous kind of foliage around us. We started to harvest the ornamental plants and did not realize the many hidden and camouflaged soldiers from the 26th Colombian Jungle Brigade, were checking what we were doing. Unexpected the soldiers were around us, just watching, and immobile. A little scary, but safer for us.

Flowers and foliage harvested and ornamentals for the burial were ready to use at this unusual funeral: full of different colors and huge tropical flowers, contrasting with the greening of foliage. The people walked around the coffin to say goodbye to him, and everybody noted a little smile on her face. Probably he approved the idea to use tropical flowers in his funeral! I told these stories several times to my friends and in the presence of my children. My youngest son represented the scene in a very creative way!

Figure 2: At right, Paulo's son's creative drawing of the tropical funeral.



Heliconia Word Search

In the matrix 19 heliconia species names can be found. Names can be vertical, horizontal, diagonal, and even spelled backwards. Hidden clue: The original genus name for *Heliconia* was _____

Find it and the names of these *Heliconia* species in the matrix below.

- | | | | | | |
|------------|-------------|----------|-------------|----------|-------------|
| ANGUSTA | AUGUSTA | BERRYI | BOURGEANA | CARIBAEA | CHAMPNEIANA |
| CHARTACEA | EPISCOPALIS | GLORIOSA | HIRSUTA | INDICA | IRRASA |
| LATISPATHA | METALLICA | PAKA | RICHARDIANA | ROSTRATA | STRICTA |



In this issue:

HSI Headquarters
 Dr. David H. Lorence
 National Tropical Botanical Garden
 3530 Papalina Road
 Kalaheo, Hawaii 96741 USA

HELICONIA
 SOCIETY
 INTERNATIONAL



- 1. Esther's Heliconia, a rare Colombian beauty**
 Jana Leong-Škorničková; Sarah Lim
- 3. Our friend Christian left us: Christian Dierberger 1963-2020**
 Vivian Loges, Carlos Castro, Charleston Gonçalves, Ana Cecilia Castro and Carla Black
- 4. Origins of Heliconia species names**
 José Abalo and Gustavo Morales, compiled by Richard Criley with assistance from Carla Black
- 9. New releases of *Zingiber* from Instituto Agronomico (Campinas - SP/Brazil)**
 Charleston Gonçalves; Carlos Eduardo Ferreira de Castro, Silvia Moreira Rojo Vega, and Glaucia Moraes Dias
- 10. Member Profile: Héctor Méndez Caratini**
- 12. Brazilian heliconias: *H. farinosa* Raddi**
 Carlos Eduardo Ferreira de Castro, Charleston Gonçalves, Silvia Moreira Rojo Vega, and Daniela Merida
- 14. Tropical Funeral**
 Paulo Hercílio Viegas Rodrigues
- 15. Heliconia word search**

Postage here

Addressee label here