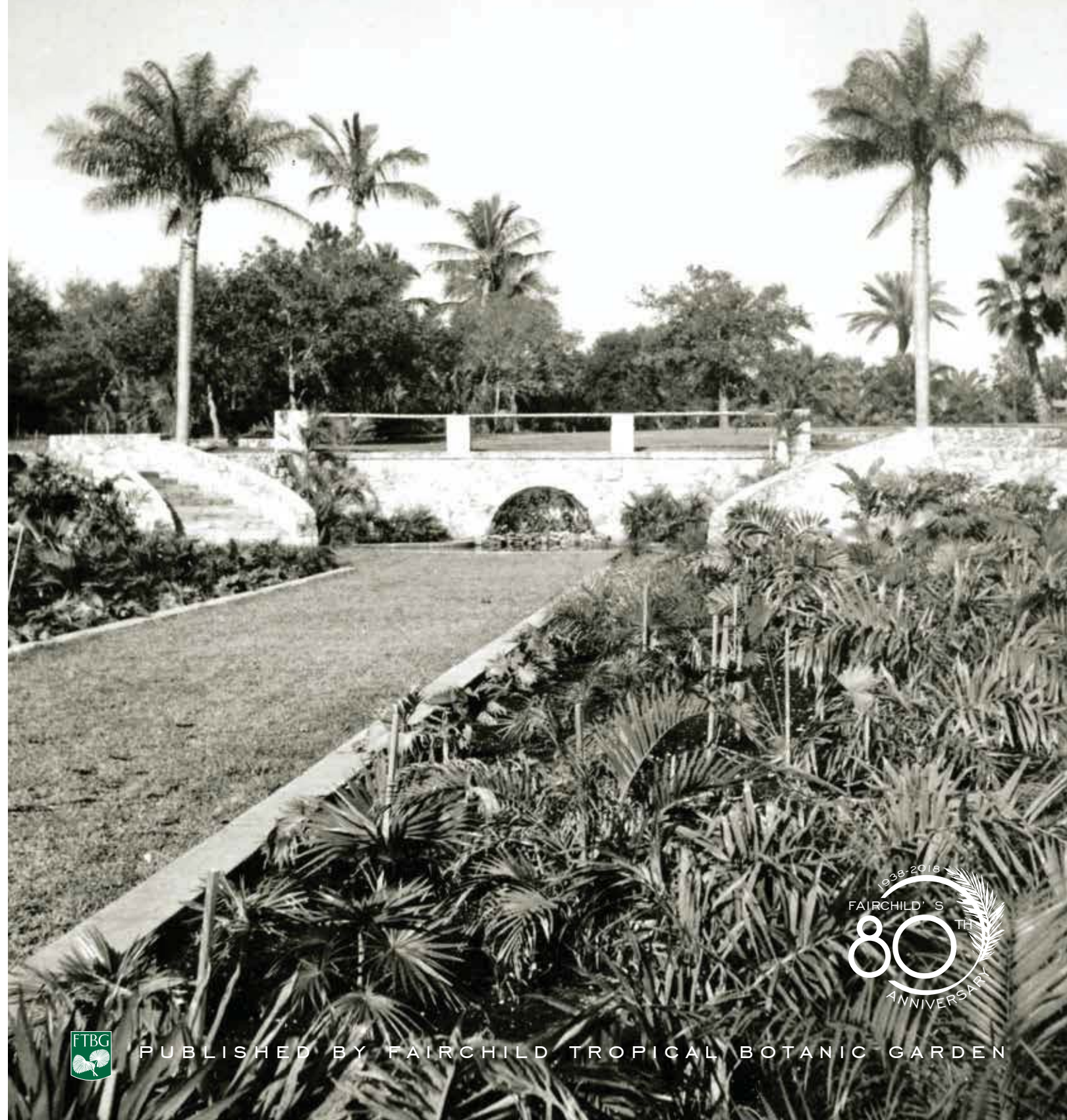


the TROPICAL GARDEN



1938-2018
FAIRCHILD'S
80TH
ANNIVERSARY




PUBLISHED BY FAIRCHILD TROPICAL BOTANIC GARDEN



WHAT'S GOT
SIX LEGS
BUT ISN'T A
BUTTERFLY?

Text and Photos by Kenneth Setzer

Large female Malaysian
jungle nymph.

A photograph showing three Derby's flower beetles of different color variations (green, blue, and purple) perched on a light-colored wooden stick. The background is a soft-focus green, suggesting foliage. A person's hand is visible on the left side, holding the stick.

Three color variations of Derby's flower beetle.

Experience a slice of the tropical world without travelling the globe.

Fairchild's Wings of the Tropics (WOT) exhibit in The Clinton Family Conservatory houses many dozens of species of hummingbirds, butterflies and moths from the tropics, free-flying for you to see up close and personal. But what else lives in the giant enclosure? And why is this diversity of life more than just eye candy?

One of the Garden's aims, which is reinforced by WOT Exhibit Manager Martin Feather, is to present visitors with a slice—however small it must necessarily be—of the incredible mass of diversity of living things found in the planet's tropics. It has long been observed that, as you near the tropics, the diversity of living things—plants, animals, fungi, everything—increases, and as you leave the tropics, towards the poles, diversity decreases. Biologists have never agreed on why precisely this is; it would seem on the surface that warmth and humidity contribute, though nature's secrets are rarely so simple.

Feather, who has decades of experience raising insects for conservation and display, has been the WOT manager since its opening in 2012. He has introduced some quite charismatic beetles and phasmid “walking sticks” to “give people just a tiny slice of the massive biodiversity of the tropics,” he explains. Their presence also helps visitors (and Garden staffers and volunteers, too) cultivate empathy with non-human creatures. Read on for a brief introduction to some of the Wings of The Tropic's less expected residents:

The Malaysian jungle nymph (*Heteropteryx dilatata*)

This large, fearsome-looking insect from the Malay Peninsula is covered in spines. They are mostly for these leaf-eating vegetarians' defense, which involves flipping over to do a headstand with a warning display of spines or stridulating their wings to make a warning sound. They can then close their back pair of spiny legs on an approaching predator like a pair of scissors.

This species is a good example of sexual dimorphism: males and females look quite different. Males reach only around 4 inches and are a dull gray-brown. The adult females can reach 10 inches in length, and develop a striking, lime green-chartreuse color. Popular as insect pets, *H. Dilatata* don't seem to mind handling by humans at all; the gorgeous female pictured in this story explored my hand and arm gently. Note her undersized, vestigial wings.

Australian prickly stick insect (*Extatosoma tiaratum*)

An eastern Australia native, this well-armored, cryptic creature is a master of disguise and deception. When threatened, it may curl its abdomen to adopt a scorpion-like pose, though it cannot bite or sting; when approached, it sways back and forth like a leaf in the breeze. In a remarkable case of interdependence, females flick their eggs outwards onto the forest floor, where a fatty layer covering the eggs attracts ants. The ants carry the eggs back to their nests, consume the covering and dump the intact eggs into their waste areas. The temperature and protection of the ant colony is ideal for hatching, and indeed the hatchling prickly insects are ant mimics.

Derby's flower beetle

(*Dicronorrhina derbyana*)

Beetles are in the order Coleoptera and are the most numerous animals on the planet. A defining characteristic of beetles is their wing covers, called elytra, which conceal their actual flight wings. Compare this to flies and many other insects, which have four wings for flight. In beetles, the forewings evolved into the elytra that cover and protect the flight wings.

These flower beetles are little gems that grow only to about 2 inches long, but dazzle with soft metallic coloration and white stripes. A sub-Saharan native, the adults eat sap and fruit. This image shows three color variations in the Wings of the Tropics: metallic green and red; green with gold highlights; and an unusual bluish color morph. The first two display white markings on their elytra and pronotum (area behind the head), while the blue one has white only on the pronotum. You can tell these are all males because of the "T"-shaped horn structure at their heads. A beetle in the same family and sub-family, called the green June beetle (*Cotinis nitida*), is native to and often found in South Florida and looks quite similar to the African beetle.

Elephant beetle (*Megasoma elephas*)

This Neotropical animal's subfamily, Dynastinae, denotes it as a type of rhinoceros beetle. (It is somewhat confusing to have two Old World animals used to describe a New World beetle.) They can grow as long as 5 inches, with some males growing even larger and horned, but fear not—the beetle only eats sap and decaying fruit. Adults are very dark, nearly black in color, but a layer of fine hairs gives them a golden, airbrushed appearance.


M. elephas larvae, which can take more than two years to pupate, eat decaying wood and organic matter

and are incredible recyclers. Beetles, like butterflies and moths, must survive through all four stages of metamorphosis: egg, larva, pupa and, finally, adult. Somewhat sadly, adults only live for a couple months.

Hercules beetle (*Dynastes hercules*)

Another Neotropical native, this is the longest flying insect alive, with major males growing to more than 6 inches. They've intrigued naturalists for centuries, no doubt due to the massive horn that males sport, which they use to throw competing males from sources of food or from females. Darwin pondered the horn's role in sexual selection. Females lack these horns, which is the case for all scarabs. While mostly black, the elytra of males can be a very woody olive brown with dark spots, while females' elytra have a beige tinge. They apparently darken in higher humidity. Found from Southern Mexico to Bolivia in central South America and nearby parts of the Caribbean, Hercules adults rest by day in leaf litter, and at night search the forest for fallen fruit.

While males may live up to their names in lifting each other during mating disputes, their reputation for strength may be a bit overstated. The larvae are also fairly huge, up to 6 inches, and are eating machines; by consuming rotten wood in dead trees, they are a vital part of a forest's cycle. Because of their size, these beetles need mature forests with large trees.

Feather has a permit to breed Hercules beetles as well as *Chrysina* beetles—small, brilliantly metallic insects of Costa Rica. He explains that captive breeding allows the animals to be displayed and reduces demand met by poachers who take animals from the wild population. It also gives people a chance to look into the face of tropical diversity and wonder if these incredible animals are wondering back. 

An adult elephant beetle.

Photo: Wings of the Tropics/FTBG

