CONCERTS
VALENTINE’S DAY CONCERT
Thursday, February 14
7:00 p.m.
FROST SCHOOL OF MUSIC PRESENTS: A FILM MUSIC SPECTACULAR UNDER THE STARS
Featuring Composer James Newton Howard
Coming soon!
SUNDAY SOUNDS
February 3, 10, 17, 24
March 3, 10, 17
April 7, 14, 28
1:00 p.m.
TEAS
For information or reservations, please call Marnie Valen at 305.663.8059.
FIRST LADIES TEA
Sunday, February 10
3:00 p.m.
THE ORCHID TEA ROOM
Friday through Sunday
March 8, 9 and 10
11:00 a.m. - 3:00 p.m.
SPRING GARDEN TEA
Sunday, April 14
3:00 p.m.
FESTIVALS
11TH ANNUAL INTERNATIONAL ORCHID FESTIVAL
Friday through Sunday
March 8, 9 and 10
9:30 a.m. - 4:30 p.m.
FOOD AND GARDEN FESTIVAL
Featuring the 34th Annual Spring Plant Sale
Saturday and Sunday
April 20 and 21
9:30 a.m. - 4:30 p.m.
PLANTS AND PEOPLE
PROGRAM FOR PEOPLE LIVING WITH ALZHEIMER’S AND THEIR FAMILIES
Registration is requested one week in advance of each offering. RSVP to 305.667.1651, ext. 3388
Saturday, February 9
11:30 a.m.
Monday, February 18
11:30 a.m.
Monday, March 18
11:30 a.m.
Saturday, March 30
11:30 a.m.
Monday, April 8
11:30 a.m.
Monday, April 29
11:30 a.m.
PROGRAM FOR CHILDREN WITH AUTISM AND THEIR FAMILIES
Monday, March 25
10:00 a.m.
WINGS OF THE TROPICS
The world’s most spectacular butterfly exhibit is now open daily!
9:30 a.m. - 4:30 p.m.
FAIRCHILD FEATURES
GALA IN THE GARDEN
Saturday, February 2
6:30 p.m.
MOONLIGHT TOURS AND LECTURES
CHUPUNGU: CUSTOM AND LEGEND, A CULTURE IN STONE
Thursday, February 7
6:30 - 9:00 p.m.
GETTING TO KNOW THE EVERGLADES
Thursday, February 21
6:30 - 8:00 p.m.
ORCHID CONSERVATION IN A CHANGING WORLD
Thursday, March 7
7:00 p.m.
THURSDAY, MARCH 28
FAIRCHILD’S 75TH ANNIVERSARY
Thursday, March 28
6:30 p.m.
FAIRCHILD: THE EDIBLE GARDEN
Thursday, April 11
7:00 p.m.
MOONLIGHT TOUR AND BUTTERFLY LECTURE
Thursday, April 25
6:30 p.m.
PLANT SALES
PLANT SHOW AND SALE
Presented by the Bromeliad Society of South Florida
Saturday and Sunday
April 13 and 14
9:30 a.m. - 4:30 p.m
PLANT ID WORKSHOP
Friday, March 1
1:00 p.m.
Friday, April 5
1:00 p.m.
EASTER BRUNCH
Sunday, March 31
10:30 a.m. - 2:30 p.m.
landscape designers and ornamental horticulturalists worldwide have long been attracted to succulents. Mostly found in arid regions of the world, these plants are sources of pride in most botanic gardens’ living collections, including here at Fairchild.

Succulence, and some physiological features linked to this trait, are rampant in many plant families with gardening value such as Aizoaceae, Apocynaceae, Cactaceae, Crassulaceae and Euphorbiaceae. But in the Rosales order, leaf succulence is extremely uncommon, known only in a few species of the Urticaceae. This unusual feature of the Rosales led us to investigate the taxonomy and morphology of an Urticaceae species restricted to the Constanza Mountains of the Dominican Republic. This species is locally abundant but has a narrow distribution at elevations between 500 and 1,500 meters, usually on well-drained cliffs above streams. It has succulent leaves, and prior to our research it was named Sarcopilea domingensis. However, our studies clearly demonstrated that this species belonged to the genus *Pilea*—where it needed a new name. We decided to make the required taxonomic transfer to this genus while honoring Dr. David Fairchild and Fairchild Tropical Botanic Garden: *Pilea fairchildiana* Jestrow & Jiménez Rodríguez. It was recently published in the June 2012 issue of the prestigious international plant systematic and taxonomy journal *Taxon*.

**Pilea fairchildiana**
An unusual, re-classified, succulent earns a new name honoring Dr. David Fairchild

By Brett Jestrow, James J. Valdés, Francisco Jiménez Rodríguez and Javier Francisco-Ortega

Photos by Chad Husby

Artwork by Julio Figueroa
Our research into this species followed the Garden’s strong tradition of using its living collections for scientific research. Most of our studies were based on plants cultivated at Fairchild, including not only *Pilea fairchildiana* but also other species of the genus, which are growing across the Garden. In association with laboratories from Florida International University, we used molecular, mass spectrometry and electron microscopy techniques to understand the taxonomic placement of *Pilea fairchildiana*. However, some of the most interesting and unexpected results of our study came from the anatomical and histological studies performed in Fairchild’s own laboratories. Some of these results will need to have a physiological interpretation and we are currently heading in this direction.

Many succulent species perform a special type of photosynthesis known as “CAM” that helps to prevent plant dehydration. *Pilea fairchildiana* has the typical superficial features of a CAM species, with large succulent leaves arranged in rosettes located on terminal stem branches. But the mass spectrometry and anatomical studies show that this species and other succulents placed in *Pilea* are not CAM species. Instead, they have the typical photosynthetic routes of most of species in the plant kingdom. These plants do, however, have two features that are extremely uncommon in terrestrial plants. First, the leaves store their water in specialized tissue, located beneath the photosynthetic layer. This is the opposite of all other leaf succulents, which have the water-storage layer above the photosynthetic layer. Second, these *Pilea* succulents have leaf stomata (the pores plants use to exchange gases with the environment during photosynthesis and respiration) located on the upper surface of their leaves. The vast majority of terrestrial plants have their stomata arranged on the lower leaf surface. Clearly, these *Pilea* species have unique traits that seem to utilize the unusual location of water storage and stomata, together with leaf succulence and regular photosynthesis routes, as an alternative physiological strategy.

*Pilea fairchildiana* is easy to cultivate in our South Florida climate and has great ornamental potential. It grows well in both pots with regular pot-mix and in the ground—even with our soil’s high limestone content. Currently a single male plant grows on the rocky east-facing edges of the Garden’s “Overlook.” This was the only example of the species outside of the island of Hispaniola until propagation began in the Fairchild nurseries. Last July, we were able to collect cuttings of females and males during a plant exploration trip to the Dominican Republic in partnership with Montgomery Botanical Center and supported by Lin Lougheed. These cuttings are now growing, and we hope to produce seeds in the coming months for propagation, and, ultimately, for plant distribution.