

Magic Portals

by Frederick B. Essig

Imagine walking through the Amazon rain forest, enjoying exotic orchids, spectacular palms, giant water lilies and iridescent butterflies. Suddenly, you come to a glass wall with a door in it. You go through it and are hit with a blast of cold air and snow flying all around. You've walked through a magic portal and marvel at this completely different part of the world. More likely, though, you haven't entered a snow-storm exhibit in Brazil, but have exited a tropical conservatory in some northern city in the middle of winter.

Conservatories are one of the great horticultural inventions, though they are really not much more than giant greenhouses. But what marvels they contain! Here are exotic plants



photo by Frederick B. Essig

The conservatory at the Missouri Botanical Gardens in St. Louis invoked the trendy geodesic dome of the mid 20th Century.

from all over the world that you might otherwise never get a chance to see. And unlike greenhouses, conservatories often have winding pathways,

benches, water features and other landscaping.

The first conservatories in Europe were extensions of grand private residences and consisted of rooms with big windows facing the winter sun that remained cozily warm during cold weather. Large public conservatories that followed, usually associated with botanical gardens, were large enough to contain a small forest or multiple climatic habitats in separate "rooms." But conservatories can be any size and shape, including classic Victorian structures with long wings connecting to a central dome, modernistic geodesic domes, pyramids and any architectural form in between.

We have conservatories in Florida, but none quite on the scale of the great old conservato-



photo by Frederick B. Essig

This Miltoniopsis hybrid orchid, originating from highland species, did nicely in our cool greenhouse at USF.



Efficient delivery of cool air in the Kew Alpine House allows this alpine columbine to survive an English summer.

ries of the temperate zone, such as Kew Gardens in England and the New York Botanical Garden. My Florida favorite is the one at Selby Botanical Gardens in Sarasota. Full of blooming orchids and other exotics from all over the world, it's an amazing experience. Even Fairchild Tropical Garden in Miami has a conservatory for its most temperature-sensitive tropical plants.

The Land Pavilion in Disney's Epcot Center is a marvelous conservatory of sorts, possibly the most interesting exhibit in the whole park. Though maybe too artificial and sterile for some, I never get tired of seeing their overloaded papaya trees, hydroponic lettuce, and other pampered fruits and vegetables.

Northern conservatories can be a disappointment to Floridians, as they are often filled with plants we see every-day outside. So why build a conservatory in the Sunshine State? Don't we already live in

paradise? Although dips to near or below freezing don't happen often in most of the state, many of us live in denial that it ever happens. We happily plant bananas, mangos and hibiscus, then when that fateful night arrives, we run around covering them up, wailing, "This can't be happening!"

Those of us who have been here long enough to finally get tired of dragging our orchids inside every time it gets cold, and vainly trying to throw a blanket over that ripening crop of papayas, begin to think about building a conservatory in our backyard. Many build enclosures for their collections, sometimes just for a rare tropical fruit tree they have no business trying to grow in central Florida. A conservatory can significantly extend the range of tropical plants that can be grown here.

Here's the twist though: conservatories are not just for keeping plants warm. Sometimes conservatories keep plants dry, and sometimes they keep them cool. This is where it gets interesting for Florida. Suppose we could walk out of a blazing hot Florida afternoon into a Rocky Mountain alpine meadow filled with blue columbines, lupines and Indian paintbrush, or a misty Andean cloud forest filled with fuschias, begonias and exotic ferns?

A cool house in Florida could be quite an attraction, but the A/C bill would be a killer! It's generally more expensive to significantly cool a greenhouse in a warm climate than to keep one warm in a cold climate. With innovative climate-control technology, however, it might be feasible.

For many years we have maintained a small "cool house" at the USF Botanical Garden in Tampa. It is kept from getting excessively hot during the day with a traditional evaporative cooler, but at night the temperatures are brought down into the 60's with a single window-mount air conditioner. Many



A desert thrives indoors at the Brooklyn Botanical Gardens.



Giant Victoria amazonica waterlilies thrive inside Kew Gardens.

cool-climate plants have difficulty in Florida, not because it's too warm during the day, but because it's too warm during the night. It may have something to do with the plants' metabolic rate. In any case, at USF we succeeded in growing a variety of cool-weather begonias, orchids and other plants not normally seen in Florida.

The other example is Kew Gardens' Princess of Wales Conservatory, which has an elaborate climate-control system capable of creating 10 different climatic micro-environments. Kew also has the new Alpine House, where underground cooling ducts pipe cool air directly to the most heat-sensitive plants.

This appears to be an effective way to cool particular plants without trying to air-condition an entire large conservatory.

The Key West Butterfly and Nature Conservatory was built more to keep its inhabitants inside than to create a different climate. Butterfly conservatories, which may include hummingbirds and other non-destructive animals, are increasingly-popular attractions, even in cold spots like

Mackinac Island, Michigan and Niagara Falls, Ontario. Moody Gardens in Galveston even has a colony of fruit bats! These animal-oriented facilities are marvelous places, and you may even get family members who think plants are boring to go with you.

Conservatories are a way to step briefly into a very different part of the world. They are fundamentally just greenhouses, so you can build one to fit any space or budget. Even more exciting is the possibility of banding together to support local botanical gardens' efforts to build new large-scale conservatories, or to maintain or restore existing ones.



Visitors to Kew Gardens enjoy the tropical ambience.

An Associate Professor of Biology at USF, Dr. Essig's recent articles offer some fresh ideas and inspiration for Florida gardeners. These include Chinese gardens (Aug/Sep 07), rock gardens (Oct/Nov 07) and "Gardens Under a Hand Lens" in our last issue.

Selby Botanical Gardens
(941)366-5731, www.selby.org

Fairchild Tropical Garden
(305)667-1651, www.ftg.org

USF Botanical Gardens
(813)974-2329
www.cas.usf.edu/garden/

Key West Butterfly & Nature Conservatory
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