

NATURE'S



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WALLPAPER

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Are those floating plants? Are they alive? These are questions many visitors ask when they first view the new display in Fairchild's Windows to the Tropics Conservatory. To evoke the visitor's curiosity, wonder and sense of surprise, an exhibit was created to display plants in a way many visitors thought was impossible: suspended in air. The resulting *Tillandsia* wall defies the common perception that plants need to grow in soil or attached to some substrate. With a little research about the growth habits of *Tillandsia*, the knowledge of a fishing boat captain and a lot of determination, this new conservatory display celebrates the simple beauty of botanical form and function.

How can Tillandsias live in the air?

Tillandsia produces a white fuzz, known as trichomes or peltate scales, in order to survive. Trichomes control the flow of water in and out of the leaf, performing the role that roots do in many other plants. During dry conditions, trichomes' disc cells collapse or flatten, and form a plug to prevent water from leaving the leaf. When moisture is present, these disc cells rise and form channels that allow movement of water into the leaf to provide the plant with the water it needs to survive. Trichomes do exist in other plants, but they are highly developed in *Tillandsias* and allow them to live suspended in the air, which makes them ideal plants for this display. Of the approximately 400 species of *Tillandsia*, most are native to tropical America and a few are native to the southern United States. The light, moisture and temperature requirements of *Tillandsia* species vary and not all *Tillandsia* species will thrive in South Florida. To create the wall we chose small, lightweight, species appropriate for our climate with long bloom periods.



How was the wall created?

A plastic netted bean trellis was selected as the background for mounting the *Tillandsias* due to its almost invisible quality and insignificant weight. However, we were still faced with the challenge of attaching the *Tillandsias* to the trellis. This needed to be done in a way so the method of attachment was not visible from a distance. The *Tillandsias* also needed to 'stand up' so the blooms that develop from the center of the plant were showing. I first tried using Liquid Nails, but it would not adhere to the plastic trellis. Then, I tried tying them with fishing line, but I was

uncertain of the best method for tying the knots. Luckily, Steve Forman, one of the conservatory volunteers, came to the rescue. His previous position as a fishing boat captain was invaluable to the completion of this project. He demonstrated two types of knots, half hitches and cinch knots, to secure the *Tillandsias* to the bean trellis. This proved to be an excellent system to attach the *Tillandsias* so that they would 'stand up' and create the desired display. Once the protocol was developed for attachment of the *Tillandsias*, volunteers were trained and assisted in completing the *Tillandsia* wall. Approximately six knots were tied for each plant, which adds up to a total of 3,900 knots for about 700

plants. That's about 60 tedious hours of tying knots with fishing line! Thankfully, many volunteers dedicated time to this project that would have otherwise not been possible. Steve, in addition to teaching us how to tie knots, attached at least half of the *Tillandsias* himself and helped us finish the project on time.

The completed wall is on display in the conservatory and is watered and fertilized weekly to encourage growth and blooming. We hope you will stop by the conservatory during your next visit to Fairchild and view what Ellie, a Fairchild member who visits weekly, calls "nature's ultimate wallpaper." 