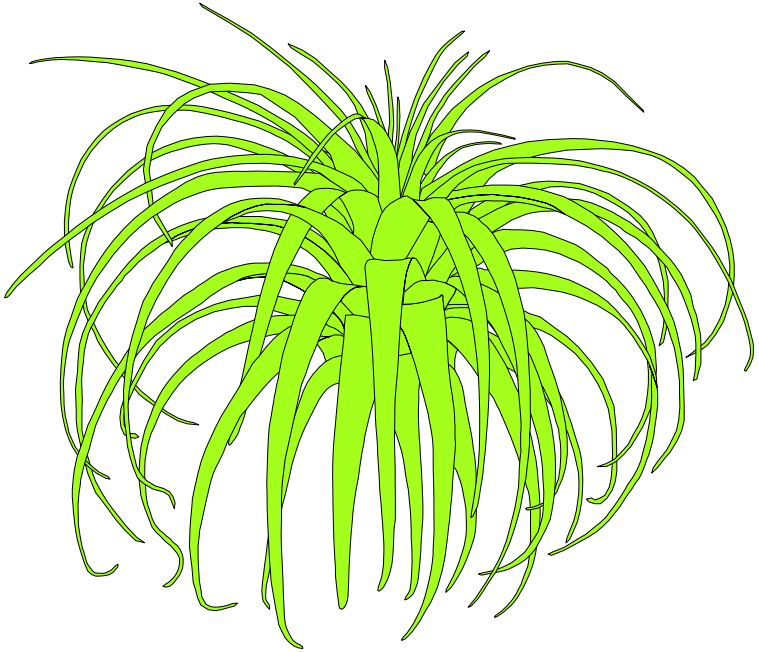


The Giant Airplant

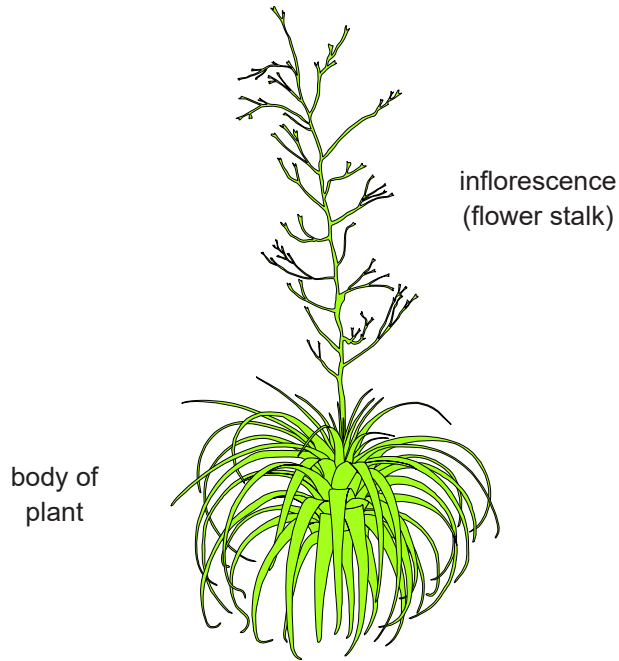


written and illustrated by teresa marie yawn

© 2024

This is the giant airplant.

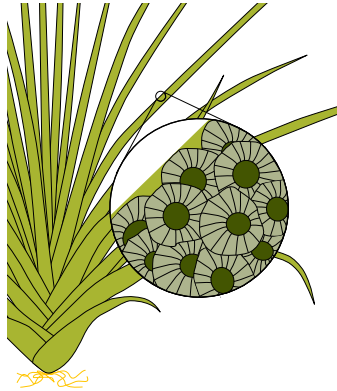
It's scientific name is
Tillandsia utriculata.



The giant airplant is a bromeliad that lives in Florida. It is an **epiphyte** - that is, a plant that lives on trees without harming the trees.

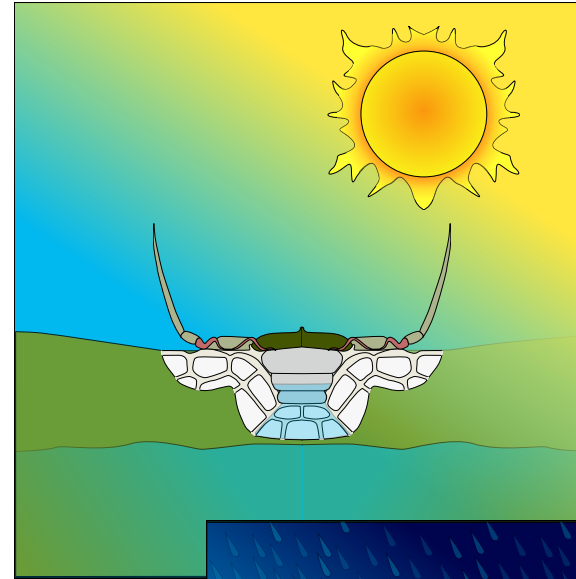


The plants attach to trees using their roots. But, unlike most plants, giant airplants do not use their roots to get nutrition. Rather, they absorb nutrients through their leaves using specialized cells called **trichomes**.

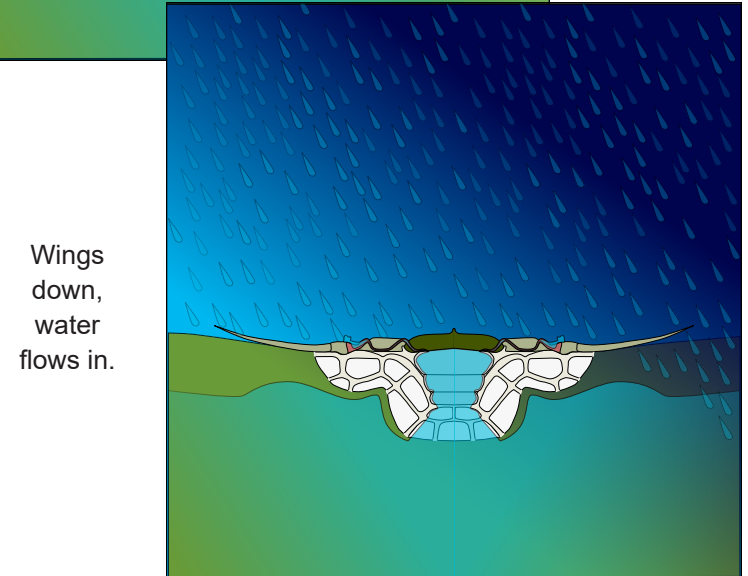


The trichomes cover the leaves. When it is dry outside, the trichomes seal shut, holding in water. When it rains, the trichomes open and water flows into the leaves.

The plant grows on the sparse nutrition that is carried in with the water, which is why these plants are very slow growing.

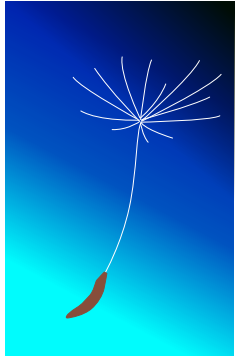


Wings up,
water is
sealed
inside leaf.



Wings
down,
water
flows in.

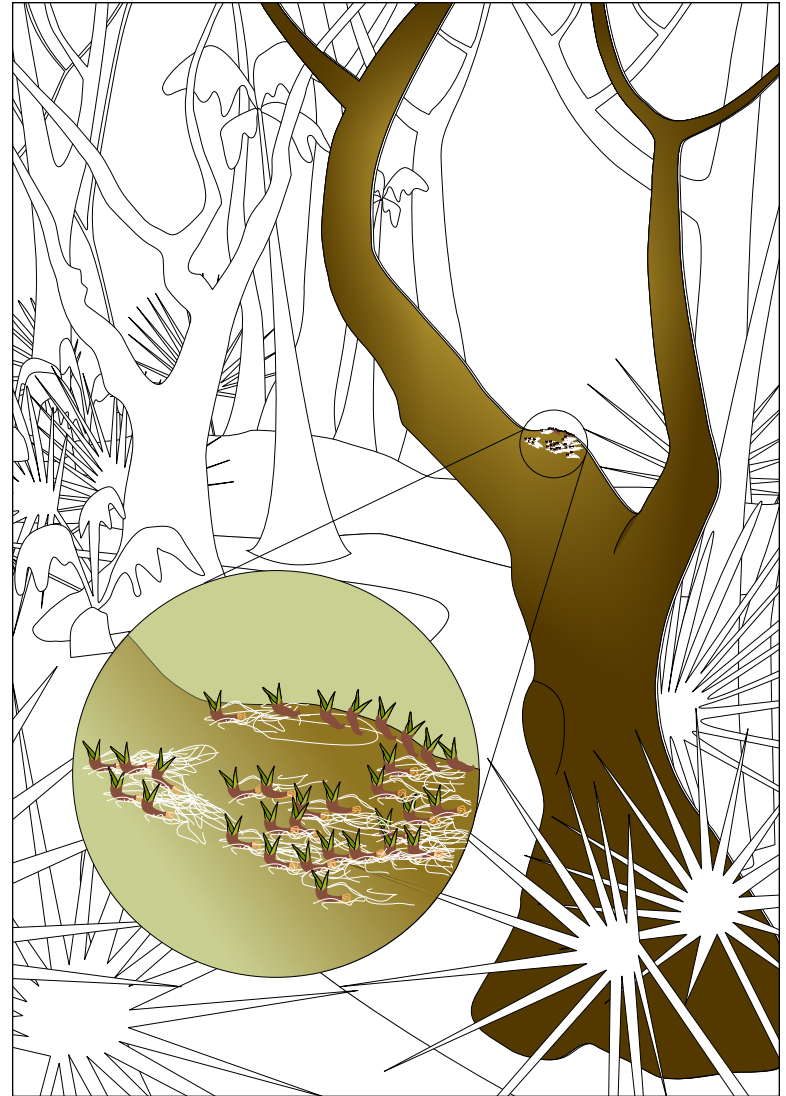
Giant airplants begin their journey as a very small seed.

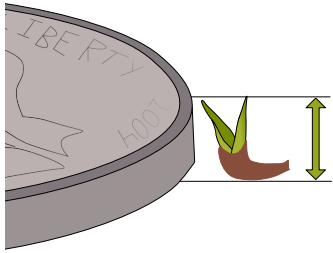


The seed is a tiny brown capsule attached to a **coma** - little hairs that open up like an umbrella. The coma carries the seed through the air to find a place to land and sprout.

The seed, along with many other seeds, lands on the trunk of a tree. These are the lucky ones - many seeds land on the ground or some other substrate upon which the seeds cannot grow.

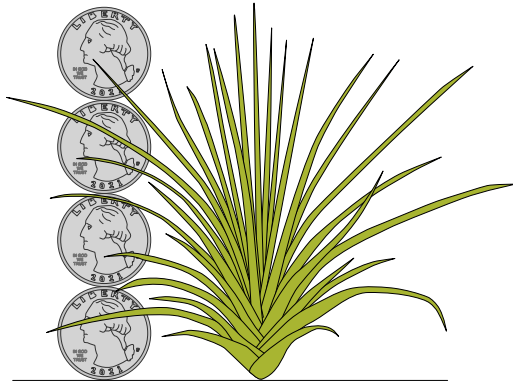
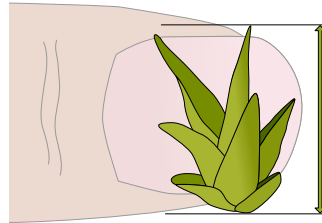
But life is precarious even on the tree. Many of the seedlings die because they get too wet or too dry. But the mother plant released over 10,000 seeds so a few do survive.



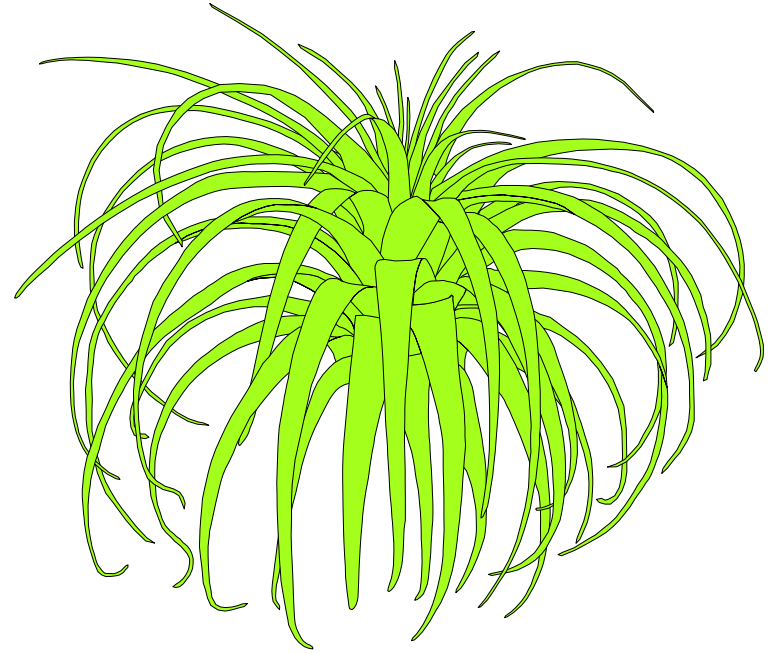


The seedling has just two leaves and is 0.08 inches tall (2 mm), about the height of the side of a nickle.

At 2 years old, the seedling is 1 inch tall (2.5 cm), about the width of a thumbnail.



At four years old, the giant airplant is 4 inches tall (10 cm), about the height of four quarters stacked vertically. Her leaves are thin and straight.



At 15 years old, the giant airplant is 2 feet high (0.6 m) and has long, curving leaves that are up to 3 feet long (0.9 m). The bases of the leaves are cupped and hold water.

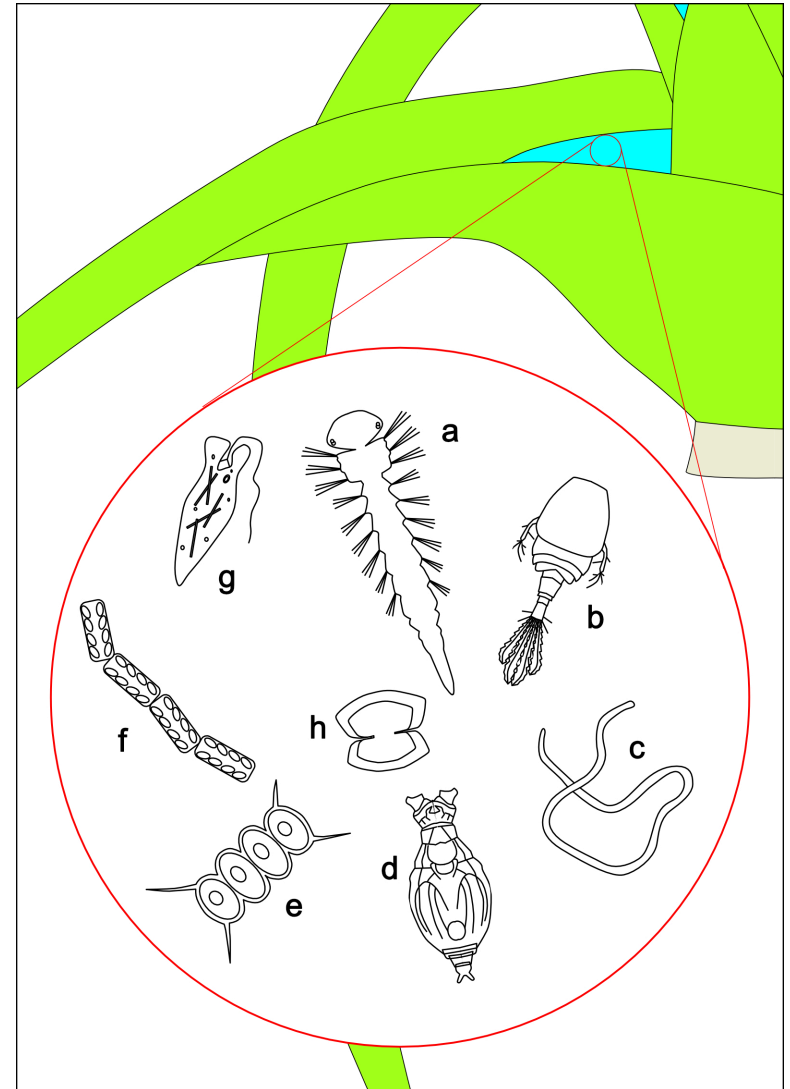
The water-impounded leaf axils are called **phytotelmata**, which is Greek for “plant ponds”. Just like terrestrial ponds, these plant ponds support an array of organisms that form ecosystems.

These are some of the organisms you’ll find in bromeliad phytotelmata:

- A. Mosquito larvae (*Wyeomyia vanduzeei*)
- B. Copepods (crustaceans)
- C. Annelids (worms)
- D. Rotifers (wheel animalcules)
- E. Chlorophytes (green algae)
- F. Cyanobacteria (autotrophic gram-negative bacteria)
- G. Euglenids (eukaryotic flagellates)
- H. Desmids (charophytes)

Birds and insects and little mammals use the water for drinking, hunting, and hiding. They also live in the leafy part of the plant.

The water and organisms in the phytotelmata provide much greater nutrition for the plant and the plant grows faster and larger.



At 20 years old, the giant airplant has reached maturity and she produces an **inflorescence** (flower stalk).

Including the inflorescence, the plant can reach up to 6 feet in height (1.8 m).

The inflorescence sprouts in springtime.

Over the next year, the inflorescence grows taller. Flowers bloom on the inflorescence and seeds develop inside the flowers.

The mother plant pours all of her energy and nutrients into making the seeds. Her leaves start to brown and the ponds in her leaf axils leak out.

The following spring....

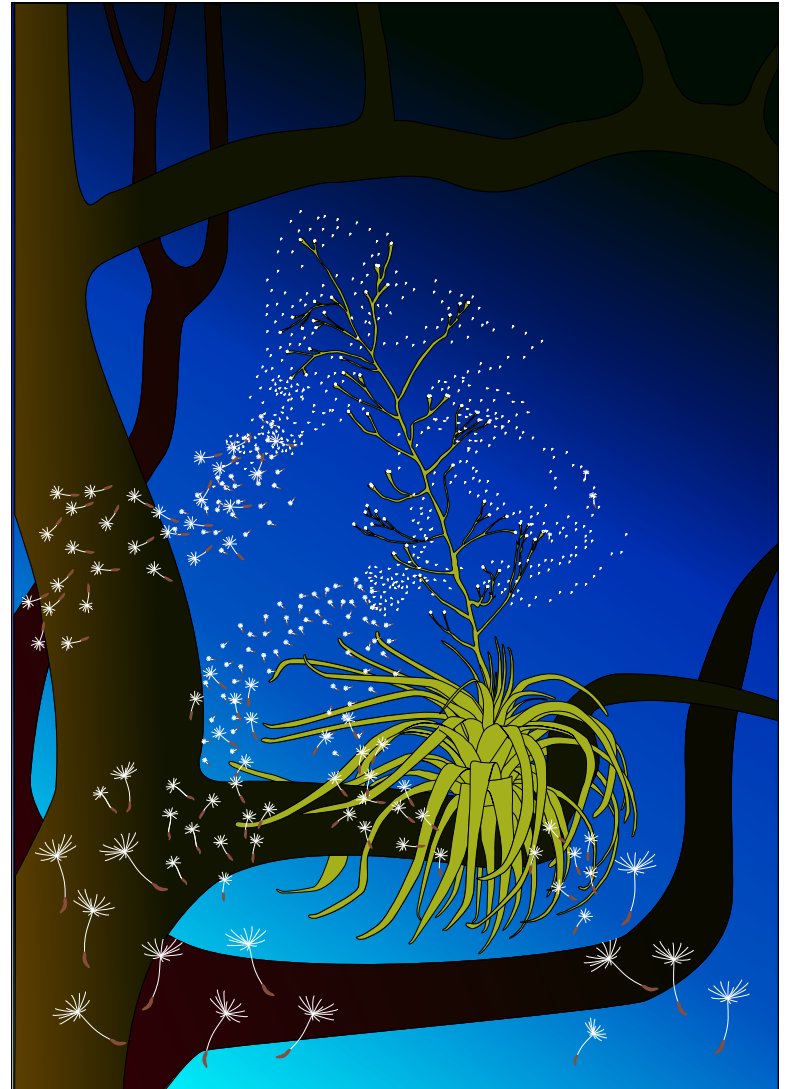


.... when the time is right, a wind kicks up
and tens of thousands of seeds are set free
upon the breeze.

The mother plant dies.

The seeds, set free on the wind, will start the
next generation.

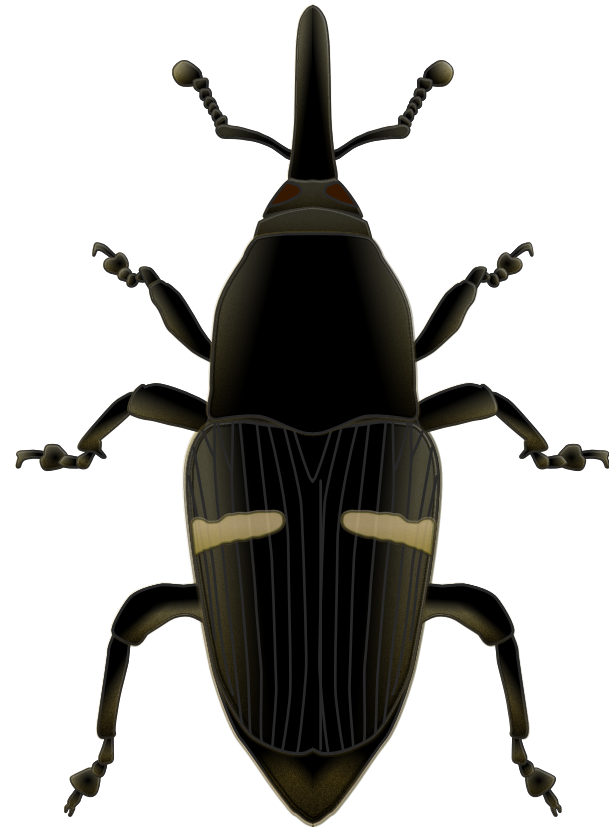
HOWEVER...

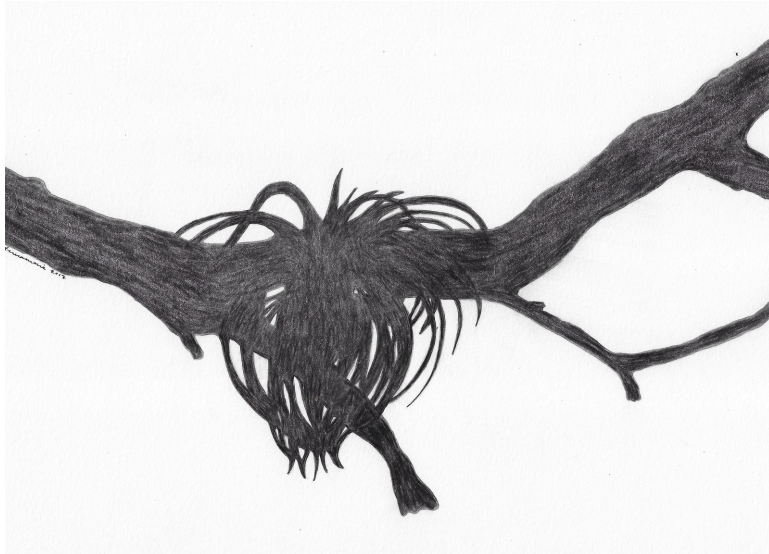


.... Florida's giant airplants are threatened by a small weevil, the Mexican bromeliad weevil (*Metamasius callizona*).

The weevil deposits her eggs in the leaves of a giant airplant. The larvae hatch, move into the stem, and eat the stem, killing their host plant.

Scientists have tried to stop the weevil but so far have not found a solution.





The giant airplant is on Florida's Endangered Species List and it is illegal to handle them. For more information, visit the Florida Department of Agriculture and Consumer Services' (FDACS) Endangered Plants page:

<https://www.fdacs.gov/Consumer-Resources/Protect-Our-Environment/Botany/Florida-s-Endangered-Plants>