Epiphytes
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• 24,000 species of flowering plants including many bromeliads, most orchids, and tillandsia
• 2,800 species of ferns (one third of all ferns are epiphytes)
• Some clubmosses (190 species)
The Epiphytic Ecosystem

- Epiphytic plants are non terrestrial plants that live on a host plant and rely on rainfall and accumulated leaf litter instead of soil.
- As opposed to parasites the epiphyte does not harm its host and actually can help the host by accumulating moisture in the tree canopy reducing the plants need to transpire.
- Canopy Ecosystems increase diversity with things like bromeliads acting like nurseries for amphibians and water sources for other animals.
The most common types of epiphytic plants

Bromeliads

Ferns

Orchids
Characteristics of Epiphytes

• Generally tolerate lower light conditions
• Adhere to other plants but don’t damage their host
• Can live without soil and rely in most cases on capturing leaf litter and water
Staghorn Ferns
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The 18 Staghorn Fern Species

- *P. andinum*
- *P. angolense*
- *P. bifurcatum* (5 cvs.)
- *P. coronarium*
- *P. Ellisii*
- *P. grande*
- *P. Hillii* (1 cv.)
- *P. holttumii*
- *P. madagascariense*
- *P. quadridichotomum*
- *P. Ridleyi*
- *P. Stemmaria*
- *P. superbum* (1 cv.)
- *P. Vassei*
- *P. Veitchii*
- *P. Wallichii*
- *P. Wandae*
- *P. Willinckii* (5 cvs.)

Most commonly cultivated
Platycerium superbum
Platycerium ridleyi – Borneo, Malaya, Sumatra
“Elephant ear” staghorn fern

*Platycerium elephantotis*
Parts of a Staghorn Fern

Shield frond

Shield fronds help hold in moisture and typically start developing in our area as the weather cools in early Fall. They also create a kind of cup catching leaf litter and nutrients.

If overwatered the shield fronds can start to decay prior to new shield fronds developing and can alert us about our watering practices.

Fertile frond

The fertile fronds are designed to photosynthesize as well as capture and direct water to the roots and bud.

Without a spore patch: “sterile frond”
A. Shield Frond
B. Bud - the bud is at the tip of the rhizome
C. Rhizome
D. Sterile Frond - sterile fronds do not have a spore patch
E. Fertile Frond - the fertile fronds are tipped with a spore patch
F. Spore patch
G. Roots - grow in back of the shield fronds
H. PUP - a small plant growing on the tips of the roots
New fertile frond emerging

Rhizome

New shield frond
Vertically board mounted platycerium bifurcatum “colony” on a 42” square platform made from 8” cedar fence planks.
3 *Platycerium bifurcatum* colonies on their 2\(^{nd}\) mounting board in 35 years. These all originated from one plant!
Platycerium grande

42 years old. Started from a pup in a 3” pot in 1974
*Platycerium grande* - Philippines

This is its 3rd mounting board.
Platycerium superbum – Australia, Malaysia, Java, Singapore

One of the fertile fronds was knocked off by a frisbee.

It needs more 2X2 border edging
Platycerium bifurcatum - Australia

This one is over 35 years old as well. Fell off its mount 10 years ago. Placed it on a 4’X8’ piece of plywood on 2 sawhorses and it realigned itself over time
Platycerium bifurcatum are known for sending out new pups from the root system which causes a colony to develop slowly over time. Being as these are the most commonly cultivated we must remember to allow for room for expansion on the mounting boards or be prepared to move them to new homes as they expand.
Staghorn success = “Location, location, location.”

Hanging on a north facing wall with a large open canopy tree overhead gives good morning and late afternoon sun. They are protected from the heat and sun of mid day.
The Ideal Locations for Staghorn Ferns

Staghorn ferns prefer to be protected from the heat of mid-day sun. North facing walls are the best where they might get some morning sun as shown in the picture as well as some late afternoon sun.

In this case the neighbors large pine tree provides mid-day protection as well as the plant being orientated away from long hours of direct sun.

This protection becomes even more important as we move away from the influences of the coast.

Overhead protection also protects the staghorn fern from cold temperature extremes as well.
Most of these *platycerium bifurcatum* originated from 1 or 2 specimens (40 years ago)
Materials for Mounting Staghorns

- 1”X 8” cedar fence planking
- 2”X2” redwood
- Stainless U-Bolt(s) with nuts
- Sphagnum moss
- Plastic coated 14 gauge wire
- 1 5/8” to 2” screws

Resist rot
Mount Slightly Above the Center of the Board

Staghorn ferns spread in 3 directions over time on the board