

Staghorn Ferns at a Glance¹

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Once uncommon, staghorn ferns are now popular and widely available. They are ideally suited to south Florida's growing conditions and will grow well in central and north Florida provided care is given to protect them from freezing temperatures.



Figure 1. Big staghorn

Staghorn ferns are members of the Polypodiaceae plant family, and belong to the genus *Platycerium*. Eighteen species are presently recognized along with many varieties and hybrids. Staghorns are tropical plants native to the Philippines, Southeast Asia, Indonesia, Australia, Madagascar, Africa and America. In their native habitat they thrive as epiphytes, generally found growing on tree trunks, branches, or rocks. Tropical rains provide moisture and wash nutrients into the root area.

Staghorn ferns are valued for their highly variable and unusual growth habits. The plant produces two distinctly different fronds (i.e., leaves), (a) basal and (b) foliar. Basal fronds, often called "sterile fronds," are rounded thickened fronds which grow in overlapping layers and clasp onto a growing surface. (Figure 2.) The upper parts of basal fronds may be lobed or divided and stand erect. This upright form efficiently collects water, fallen leaves, and plant debris. These products eventually break down, releasing nutrients necessary for growth. Foliar fronds, also called "fertile fronds," are either erect or pendant and may be divided into lobed or strap-shaped divisions. Foliar fronds produce brownish reproductive structures (called sporangia)

1. This document is a revision of ENH36 Staghorn Ferns for Florida by G. Hennen, former graduate research assistant and B. Tjia, former floriculture specialist. It is one of a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date June 1990. Reviewed October 2003; Revised July, 2007. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

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on the underside of their fronds. (Figure 3.) These sporangia hold spores which, when germinated, form new plants. Both basal and foliar fronds are covered to varying degrees, with small stellate (star-shaped) hairs giving them a silvery cast. These hairs provide some protection from insect pests and conserve moisture.

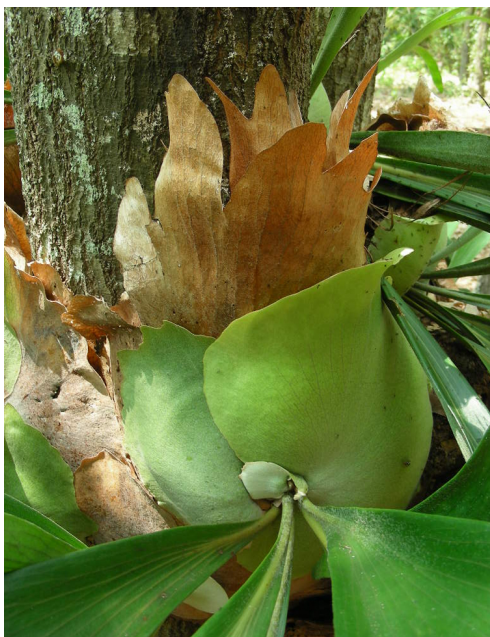


Figure 2. Sterile fronds



Figure 3. Underside showing sporangia

Selection, Care and Culture

Varieties

Most species of staghorn ferns grow readily in Florida although much depends on the familiarity of the grower with the specific needs of different species. Beginners are advised to start with the "easy-to-grow" species, which are readily available

at local nurseries. As you become accustomed to their culture and growth habits, you can start to acquire some of the harder-to-grow and more expensive species. A partial list of species is provided below with specific cultural information and notes on their ease or difficulty in growing.



Figure 4. Small staghorn

Platycterium bifurcatum. The most common species in cultivation and also the easiest to grow. Produces large numbers of "pups," eventually forming a very large plant. Dark green color. Hardy to temperatures of 25-30°F (1.1°C) for short periods. Many varieties are available. Native to Australia and New Guinea.

P. veitchii. A common and easy-to-grow species with erect, silvery foliar fronds. Produces pups. Semi-hardy to temperatures of 25-30°F (1.1°C) and tolerant of light frost. A semi-desert species native to Australia that requires a lot of light.

P. alcorni (*P. vassei*). Easy-to-grow species with upright fertile fronds, dark green. Basal fronds turn brown naturally. Pups well. Semi-hardy to 40°F (4.4°C). Native to Madagascar and East Africa.

P. hillii. Easy to grow with semi-erect dark green foliar fronds. Produces pups. Semi-hardy to 40°F (4.4°C). Several varieties are available. Native to Australia and New Guinea.

P. stemaria. More difficult to grow, requiring temperatures of 80°F (26.6°C) and not below 50°F (10°C). Needs high humidity and frequent watering. Semi-erect, large foliar fronds with a silvery cast when young. Pups well. Large plant native to tropical Africa.

P. andinum. Moderately difficult. This dry forest species needs good ventilation, and drying between waterings. Fronds covered with dense silvery hairs. Pups well. Only *Platynerium* native to South America, specifically in the mountains of Bolivia and Peru. Temperatures between 70-80°F (21.1-26.6°C), low of 60°F (15.5°C). Requires low light.

P. elephantotis (*P. angolense*). Moderately difficult. Thrives in warm temperatures of 80-90°F (26.6-32.2°C), low of 60°F (15.5°C). Produces large unbranched foliar fronds, dark green. Basal fronds brown in the winter. Large fern. Native to dry forests of tropical Africa.

P. grande. Difficult to grow. Likes high humidity but is easily over-watered. Young plants produce only basal fronds. Foliar fronds reclining, light green in color. Does not pup. Tender below 60°F (15.5°C). A large fern, prized by collectors. Native to Philippines.

P. superbum. Difficult to grow. Very similar in appearance to *P. grande* when young. Easily over-watered. Large reclining foliar fronds light green in color. Does not pup. Hardy to 30°F (1.1°C) for short periods, although prolonged cold temperatures not tolerated. Prized by collectors. Native to Australia.

P. wanda. Difficult to grow species. High humidity, easily over-watered. Temperatures between 80-90°F (26.6-32.2°C), lows of 60°F (15.5°C). Possibly largest *Platynerium*. Native to New Guinea.

Mounting

Because of their relatively large size, staghorn ferns are rarely grown in pots except when produced as small specimens for sale at nurseries. Their natural, epiphytic growth habit makes them well suited for mounting on slabs of wood, tree fern fiber or wire baskets. To mount a fern on a piece of wood or tree fern fiber, place a few handfuls of organic growing medium such as peat, compost or rich potting soil on the wood slightly below center. Shape it in a circular mound and place the fern on it so that the basal fronds are in contact with the mounting material. Use wire (not copper), plastic strips or nylon hose to secure the

fern tightly to its mount. When a wire basket is used, pack it with an organic medium and mount and secure the fern “face-up” on the medium. Hang the basket sideways. Pups (small plants) will eventually emerge from the back and sides of the basket and completely cover it.

Watering

In general, allow the medium to dry completely between watering. This may be difficult to judge since the outer medium may appear dry, but the inner layers and the basal fronds will be saturated. It may be best to wait until the fern slightly wilts before watering. Once watered, it will quickly recover, whereas an over-watered fern will rot and die. Generally, water once a week during dry, hot times of the year, and less during winter and rainy seasons. Older plants, those with spongy layers of old shield fronds, tolerate drought better than less mature plants.

Fertilization

A water-soluble fertilizer with a 1:1:1 ratio (i.e., 10-10-10, 20-20-20) is recommended. Staghorn ferns can be fertilized monthly during the warm, growing months of the year and every other month when growth slows down. Frequent fertilization is only necessary when you want vigorous growth. Large or mature staghorns will survive and thrive with one or two applications a year of controlled-release fertilizer.

Light

Most staghorn ferns thrive best under partially shaded conditions. The dappled light of a shade tree or indirect light on an outdoor porch is ideal. This is the equivalent of 600-2000 foot candles. Very low light conditions produce slow growing ferns that are likely to develop disease and insect problems.

Temperature

Most staghorn ferns are considered tender or semi-tender to cold and will not tolerate cold temperatures. There are exceptions, such as *P. bifurcatum* and *P. veitchii*, which can withstand temperatures as low as 25°F (1.1°C). South Florida growers will have relatively few occasions

when cold protection is needed. Most staghorns grown outdoors are usually in protected, naturally warmer microclimates such as under tree canopy. However, central and north Florida growers should be prepared to bring ferns into a heated garage, greenhouse or home when extremely cold temperatures are predicted.

Propagation

Propagating staghorn ferns from spores is slow and difficult and is not practical for most gardeners. Pups (with their root systems) can be carefully removed from large ferns and re-established. Wrap the roots in damp sphagnum and then tie the root ball to a mount. Eventually the sterile frond will expand and grip the mount.

Problems

Staghorn ferns are fairly pest free. When kept too wet, they are susceptible to a disease called *Rhizoctonia* sp. This fungus produces black spots on the basal fronds which can spread rapidly, invade the growing point, and kill the plant. If symptoms appear, withhold water and reduce the humidity to slow the spread. Chemical controls are available and generally effective when used as directed.

The insect pests to watch for are mealy bugs and scales. Insecticides are effective against these pests but may burn or deform the foliage. Generally non-oil-based insecticides are safer on staghorn ferns than oil-based compounds. Other pests such as snails or slugs can be a problem but are easily controlled. Contact your county Extension office for specific recommendations for disease and insect management: <http://solutionsforyourlife.ufl.edu/map/>