

Staghorn Fern

Platycerium bifurcatum

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 1) 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) on the underside of their fronds (Figure 2). 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 1



Figure 2

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.

Platycerium 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.

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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.

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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.