

TERRESTRIAL ORCHIDS FOR SOUTH FLORIDA

prepared by John McLaughlin* and Joe Garofalo*

Orchids can be broadly categorized into three basic types depending on their growth characteristics: (1) epiphytic orchids survive attached to trees (or rocks - lithophytes) producing a sequence of shoots from a basal rootstock. (2) Climbing orchids also attach to trees, but form much longer stems and are therefore not as compact. (3) Less well known in cultivation are orchids that grow with their roots in the ground (terrestrial orchids), which do not produce aerial roots or long climbing stems. Many of this latter group such as the hyacinth orchid, *Bletilla striata*, and the slipper orchids, *Cypripedium spp*, are found in warm- to cool-temperate climates, and do not perform well as perennials in South Florida. *Bletilla* is well adapted to shady locations in North Florida, but *Cypripedium* is best much farther north.

Another group of terrestrial orchids, the jewel orchids, are grown mainly for their attractively patterned foliage. There are several genera which occur naturally in the deep shade of tropical forests, growing in the leaf litter, which are very difficult for us to grow. One, *Ludisia* (syn. *Haemaria*), is much easier to grow and is therefore seen more often in cultivation. There is only one species, *L. discolor*, with several putative cvs. These are usually used as house plants or terrarium subjects for their striking foliage, which is velvety-bronze to black, with coppery-red reticulate venation. Outdoors it requires shade and humidity, and will decline if temperatures fall below 50EF. *Ludisia* is easy to propagate, but slow to put out new foliage.

There are, however, tropical to sub-tropical terrestrial orchids that will succeed well in South Florida, and one of these, the nun's orchid (*Phaius tankervilliae*, syn *P. grandifolius*) has been available for many years. More recently, other species of terrestrial orchids have

become available that are well adapted as landscape plants in South Florida. Most notable are the Bamboo Orchid (*Arundina bambusaefolia*, syn *A. graminifolia*) and various *Spathoglottis spp*.

SPECIES ADAPTED TO SOUTH FLORIDA.

Nun's orchid.

One of 30 members of the genus *Phaius*. They produce large, thin pleated leaves, usually few in number, which grow to about 3' in height. The inflorescence arises from a pseudobulb (a short, fleshy shoot found in most orchids) or rhizome, and consists of an erect four foot raceme of showy, fragrant flowers. Individual flowers of the nun's orchid are large, up to 5" across, rusty brown with a purplish lip. Flowers are believed to be initiated in response to short daylength, mainly late Winter and Spring. Each inflorescence opens over a period of up to six weeks. Nun's orchid will withstand temperatures to 35EF, but are severely damaged below 32EF.

To grow this orchid in the landscape, choose a location that does not routinely flood, with light shade during the hottest part of the day. Allow room for development of a vigorous root system. Organic matter (peat, well rotted compost and partially decomposed pine bark) should be worked into the soil to about 60-70%. Add perlite and sand to improve drainage. Alternatively you can use a commercial potting mix. Soil pH should be in the range of 5.5 - 6.3. Maintain soil moisture at an even level, allowing the top 1-2" to dry out when new foliage matures. Apply an organic or slow release fertilizer every 3 months and a fish emulsion or compost tea every 2 weeks while the plants are in active growth.

To propagate, clumps of pseudobulbs from established plants can be split, and the expended inflorescence can be rooted. After flowering is complete, remove the spent inflorescence and lay it in a flat filled with damp sand. Maintain a moist environment with reduced light for 2-3 months. New shoots will grow from the nodes of the inflorescence. Alternatively, the spent inflorescence can be cut into sections. Make cuts above internodes, apply a rooting hormone to the lower cut ends, and place the sections in damp sand or sphagnum moss.

Bamboo orchid.

All of the bamboo orchids (*Arundina spp*) have tall, erect stems, up to 8', with slender grass-like foliage, growing from numerous closely spaced pseudobulbs. They flower intermittently for most of the year, but more during Spring and Fall. The inflorescence is terminal and branched, with flowers opening one at a time. Each flower is mauve to white with a distinct yellow and purple lip, resembling a Cattleya bloom. They are fragrant, last 3-4 days, and make excellent cut flowers.

In the landscape choose a site free of wind, but not crowded with other plants. If flooding is likely, grow in a raised bed. The bamboo orchid grows best in full sun, with at most some light midday shade. Use a rich, free draining, organic soil as described above for Nun's Orchid. Provide support by loosely tying several stems together with a metal stake. Maintain a 3" covering of mulch at all times, and do not allow the soil to dry out. (Keep the area immediately next to the stem clear of mulch.) In the absence of rainfall, water should be provided every 3 days. Use a slow release or organic fertilizer every 6-8 weeks.

Bamboo orchid can be propagated by division of established beds, cutting the stems back by half before replanting. Alternatively, the side shoots that develop at the base of the inflorescence can be used. These side shoots should be removed when the base forms a firm swelling, then rooted in damp sand.

Spathoglottis spp.

A genus of at least 40 species of slow - moderate growing terrestrial orchids with pleated, palm-like foliage which arises from one of many large pseudobulbs. Slender stems, up to 20" tall, are produced from basal leaf axils. Each bears a raceme of small, non-fragrant flowers that can be white through various shades of yellow, pink and purple. Each inflorescence lasts 2-3 months, with individual flowers opening from the top down. New racemes are produced year round in a warm climate like ours.

When night temperatures fall below 60EF expect a reduction in growth and flowering. Below 40EF plants may lose foliage and go dormant if exposed for more than a day. *Spathoglottis* will withstand a few hours at 30EF with loss of foliage, but more prolonged exposure or lower temperatures can cause severe damage.

In the landscape, *Spathoglottis* needs a site that is not prone to flood, receives full sun and posses excellent drainage. As with Nun's Orchid, allow space for a deep and extensive root development. Enrich the site to a depth of 10-12" and use a soil rich in organic matter. A slow release fertilizer can also be incorporated into the soil at a rate of ½lb per cu ft. It is important to install each plant at or slightly above the soil line since *Spathoglottis* is prone to rot if planted too deep. Place mulch and a light

application of a slow release or organic fertilizer on the surface.

It is critical not to over water, and the top 1" of soil should be allowed to dry out between waterings. Once a month apply liquid compost, and every 2-3 months a slow release or organic fertilizer.

There are a number of *Spathoglottis* species/cultivars available, but the nomenclature can be confusing. A few of the more common are mentioned below. These may be available as container grown plants, or as individual pseudobulbs ready for potting.

S. plicata is the most widely available species. It produces attractive pleated (plicate) foliage and a raceme of purple flowers on an 18" stem. In areas where these plants have naturalized (e.g., in Hawaii) they often revert to a wild form, becoming self-pollinating with the flowers cleistogamous (never opening), and therefore of less landscape value.

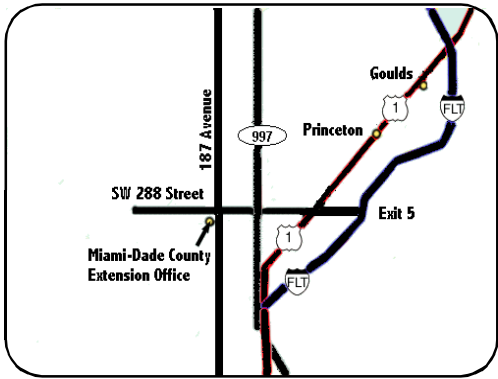
The cv 'Grapeaid' is a compact plant with striking magenta flowers. Hybridization of *S. plicata* and *S. aurea* (a yellow-flowered species) has produced the 'Primrose' hybrids with mauve to pink flowers. More common is the pink/mauve Philippine variety 'S. Parsonsii' and the yellow to orange 'S. Peach'. Another Philippine species, *S. vanoverberghei*, has impressive golden yellow blooms from Winter through Spring. Two species from Thailand produce yellow flowers: *S. affinis* (yellow/golden), and *S. eburnae* (creamy yellow), and go dormant, losing their foliage, after flowering.

SOIL, DISEASE, AND INSECT PROBLEMS.

With nun orchids growing on calcareous soils a magnesium deficiency can develop, and on sandy soils nematodes can be a problem. With all the terrestrial orchids, thrips, aphids, scales, and spider mites, including broad mites, can be occasional problems, but are rarely serious.

Disease is of more potential concern, particularly fungal and/or bacterial crown and root rots. Other disease problems include stem rots, rust, and petal blight. Anthracnose, and to a lesser extent, other leaf spotting diseases also may develop, particularly on *Phaius* and *Spathoglottis*. To reduce disease incidence water at times when moisture can dry quickly from foliage and blooms, be careful not to over water, and provide adequate exposure to sun and good air circulation. If pesticide use seems necessary, contact the Extension office for current recommendations.

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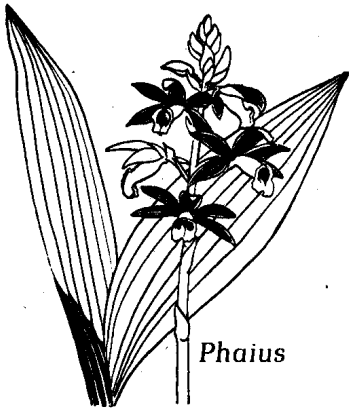


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