CULTIVATION OF THE GENUS ALOCASIA IN FLORIDA

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There are no finer foliage plants than those of the genus Alocasia. Useful in formal indoor decor, the plant boasts leaves of striking beauty, and because they are enjoying a growing measure of popularity here in Florida, it would be well to describe the culture, care, and kinds, with special reference to propagation.

DESCRIPTION

Alocasia is separated from the related genera Colocasia and Caladium by technical characters, but with them it shares the jack-in-the-pulpit inflorescence of the Aroid family. Some forty evergreen species are found from India to the Philippines and New Guinea and beyond, but only a third of these are grown in Florida. Hybridization has increased the number of kinds available to horticulturists, bringing the total to more than twenty, brief descriptions of which follow.

1. A. cucullata Schott, 1½', leaf ovate, cordate, green. This and the next are the two most compact species. Not known to have flowered in Florida. East Indies.

2. A. cuprea Koch, to 2', very compact. Leaves metallic bronze with a quilted appearance, ovate, peltate, purple beneath. Borneo. The compact, many leafed habit is dominant in Fi hybrids.

3. A. indica var. metallica Schott, to 5'. The large leaves are ovate, cordate, metallic purple in color. India. Less susceptible to attack by root-knot nematode than other species.


5. A. Lowii Hook., to 2', the leaf blades ovate-sagittate. This species is one of the finest, the black-green leaves bordered and veined with silver-white, purple beneath, petioles rose. Borneo. The use of this species in hybrids results in intense coloring and a compact habit. Var. grandis Hort. is the type offered by the trade in Florida.

6. A. macrorhiza Schott, to 4', rather compact, leaf ovate cordate. Var. variegata Hort. has foliage marbled ivory and two shades of green, among the most beautiful of all variegated plants. The most commonly cultivated species in the state.


9. A. Sanderiana Bull, to 2½'. The long sagittate leaves are undulate and notched, metallic green with silver white veins and borders. One of the finest species and a proven parent of hybrids. Philippine Is.

10. A. Thibautiana Mast. 4'. One of the larger species. The 2' lvs. are broad ovate sagittate, olive green veined in grayish silver, dull purple beneath. Borneo.

11. A. Veitchii Schott, to 3'. This beautiful form has narrow ovate lvs., dark green, veined and reticulated silver gray. Sold as a var. of A. Lowii following English horticultural usage, but botanically distinct. Java. When self pollinated, the seedlings vary a great deal.

12. A. Watsoniana Hort. The most distinct and beautiful species yet introduced, with broad ovate lvs. 3½' long and 2½' wide. The black-green surface is so densely veined and reticulated silver, that from a distance it appears to be made of the precious metal. The underside of the leaf is rich purple. Slow growing. Sumatra.

13. A. Warriniana, Mast. to 18". The narrow, erect, notched leaves are deep olive green, purple beneath. Flowers not seen. Celebes. The most recent introduction to Florida.


HYBRIDS

A. x Amazonica (A. Lowii Var Grandis x A. Sanderiana); A. x Chantieri (A. cuprea x A. Sanderiana); A. x Chelsonii (A. cuprea x A. longiloba); A. x Sedenii (A. Lowii x A. cuprea); A. x Morfeotainensis (A. Lowii x A. Sanderiana); A. (Lowii grandis x Veitchii); A. (Sanderiana x longiloba). The last two
being as yet unnamed. F; Hybrids are usually intermediate in most characters. Second generation crosses have been made and may be expected in the trade.

**Culture**

Alocasias are very easy of culture. Pure sphagnum moss is the only growing medium necessary. Organic fertilizers like dried blood and bone meal should be applied lightly every two weeks, although the plants respond well to weekly feedings of a balanced liquid chemical fertilizer. Healthy plants become root-bound quickly, so that frequent shifts are necessary. Heat and moisture are prerequisite for rapid growth. Temperatures below 50°F are detrimental, and below 40°F are injurious to these tropical beauties. Under no circumstances should they be allowed to dry out. Light given should be 20%-30%.

Serious pests are four in number, all of which are easy to keep under control. The most insidious is the common root-knot nematode. It pays to regularly check the root system for tell-tale signs of swellings or dead and rotten roots. If the pest is found, it is best to give the very drastic treatment of cutting off every root flush with the stem, reduce the number of leaves to one, dip in a parathion solution (1 Tbsp./gal.) pot in clean sphagnum and place in a rather dark place for a few days. Gradual increase in light, frequent syringings, and a weak liquid manure feeding in about two weeks complete the treatment. In line with this problem, sterility cannot be stressed too much. Pots should be washed in 1/25 solution of clorox in water, as should the bench or other support.

Red spider and mealy bug are the other serious animal pests, and either can be stopped from committing real damage by frequent inspections. If these pests are found, prompt action with Parathion or Malathon gives complete kill.

A fungus, apparently *Colletotrichum philodendri*, or a closely related form, causes a ring-like spotting, especially on the older leaves, and cool, rainy weather seems most favorable to it. A dilute solution of Copper A (1 tsp/gal. & 12 drops Spreader-Sticker) is the best and least objectionable prophylactic, the treatment being given once a week. Since the problem here is to obtain protection without having a heavy colored residue that detracts from the beauty of the foliage, Natriphene should be the best bet, but the author has been unable to establish the efficacy of this colorless fungicide on Alocasias, only a few spot trials being made to date.

**Propagation**

Alocasias are of easy propagation. Healthy plants make offsets rapidly, and these can be removed when the plants are potted up. It is best to peel the offsets for fast results, and a dip in parathion solution won't hurt at this time. Under the best conditions the bulb-like offsets may be an inch long, ½ in. dia., but those from small plants will be the size of a garden pea. Clean offsets make a full 3" pot plant in six months, will bloom in a year in a 4"-6" pot, depending on the variety. At repotting time, the old stem may be cut into pieces, each with one eye. It is best to leave the original plant with an inch or so of stem below the last healthy leaf; the rest can be used for propagating. If the crown of the plant is kept just below the surface of the sphagnum, best root action results, a rule which is applicable both to propagations and established plants.

Seed production is another method of propagation, hardly worthwhile within a species unless a "sport" is desired, but of great value in inter-specific crossing. Hybrid Alocasias have been known for about fifty years, having been produced first by the European horticulturists. Once the mechanism is known, virtually anyone can cross these beautiful plants, but the percentage of successful crosses is low.

The inflorescence is a spike which is enclosed by a spathe, as shown in Fig. 3. The...
Fig. 1. Alocasia cuprea, one of the best species for the amateur horticulturist.
Fig. 2. Alocasia Watsonia, probably the most striking foliage plant grown in Florida. The leaves are 3½' long, black green reticulated and veined silver, purple beneath.
Fig. 4. Alocasia x Amazonica. This hybrid (A. Lowii grandis x A. Sanderiana) was produced by Mr. S. Mauro of Miami, and illustrates the compact habit and bright coloring obtained by careful breeding.
close-set fleshy flowers are unisexual, the pistillate ones being basal, and the staminate ones terminal, separated by a band of sterile, malformed flowers. The first day of flowering, the spathe is fully open, and the receptive pistils are sticky. The second day the spathe is closed, and the third day the spathe reopens, but only above the median constriction. During this second opening, the anthers shed pollen, but the pistils are sealed off from self pollination. A spicy fragrance accompanies the flowering. A camel’s hair brush serves best to transfer ripe pollen to receptive stigmas. Formerly, it was the practice to remove the spathe with a sharp knife, but the author has observed a great many failures due to water getting on the pollinated stigmas, and subsequent fungus attack. Now it is recommended to open the spathe wider than normal by hand and insert the brush without danger to the inflorescence. Early morning is apparently the best time for pollination. Pollen has been stored for 24 hours, no longer time has been tried. Successfully pollinated inflorescences remain erect, failures bend over within a few days. Ripening of seed takes four to six months, and ends with the protecting spathe disintegrating to show the full, juicy, orange berries. Seed should be carefully squeezed out, cleaned, and planted immediately in shredded sphagnum. Germination takes one to eight weeks.

Descriptions of kinds so far not introduced in Florida may be found in Bailey’s Standard Cyclopedia of Horticulture 1: 254-255 Macmillan, N. Y. 1947, or Chittenden’s Dictionary of Gardening 1: 82-83 University Press, Oxford, 1951. Bailey’s is to be preferred over the less accurate Chittenden’s.

The photographs accompanying this article were taken by Mr. Nixon Smiley of the Miami Herald.

GROWING TULIPS IN NORTHERN FLORIDA

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For many years it has been thought that tulips are not suited for growing in Florida. This was generally true, because bulbs grew poorly, many failed to flower, deteriorated and were lost, making it necessary to replace them each year.

Work has been done at Gainesville, starting in 1946-47, to determine the proper time and temperature for cold storage treatment of tulip bulbs to be planted in Florida. Varieties used during this work were the Darwin varieties, The Bishop, Scarlet Leader and Clara Butt, and Inglescombe Yellow of the Cottage group. European grown “first size” bulbs, obtained from commercial sources, were used in the experiments. Cold storage was started as soon as the bulbs were received, which was in late September or early October each year. The times of all storage treatments were those given the bulbs after their arrival in Gainesville.

Experimental Results

The results of several experiments have shown that tulip bulbs given the proper cold storage treatment will grow well and will produce very good flowers in the North Florida areas when planted outdoors. It should be stressed, however, that these bulbs will flower satisfactorily only once, and must be replaced with new bulbs each year. Several factors affect the results obtained by the home gardener and commercial seedsman. Some of these will be discussed below.

Probably the two most important factors that influence growth and flowering of tulip bulbs planted in Florida are duration of the cold storage period and the temperature at which the bulbs are stored. Other factors of considerable importance are storage conditions previous to the start of cold storage treatments, the time that elapses after removal from cold storage before planting, and the temperature at which they are kept until planted.

Bulbs given the same cold storage treatment and planted outside may vary somewhat from year to year in time required from planting until flowering, because of seasonal variations in temperature and other factors affecting growth.