



Cultural Requirements of Paphiopedilum

By Jack Tonkin

More than 60 species of *Paphiopedilum* (paf-ee-oh-PED-i-lum) are found in nature from the high hills of northern India to the lowlands of the Philippines. Magnificent orchids, the paphiopedilums have long been a major part of most collections. A fascinating array of colors and forms and their ease of culture have attracted lifelong admirers.

The relatively recent discovery of several striking species in China, such as the butter-yellow *Paphiopedilum armeniacum*, has sparked unusual excitement among orchid collectors.

All paphiopedilums are characterized by a cuplike lip, called the pouch, and by a prominent dorsal sepal. They are often called lady's-slipper orchids, which refers to the shape of the pouch. The plants are primarily terrestrial, although some, like *Paphiopedilum lowii*, may be found growing epiphytically (on trees) or lithophytically (on rocks). They are dwarf to moderate in size, with leaves which are stiff, waxy, or leathery and range from glossy green to superbly mottled. The leaves usually form a fan-shaped tuft. From the center of each new growth an erect scape arises bearing one or more flowers. A few *Paphiopedilum* species – *glaucophyllum*, *stonei* and *rothschildianum* – may produce up to six flowers simultaneously. Mostly the flowers are 2 to 5 inches across in an incredible variety and mixture of colors, lasting perfectly on the plant for six weeks or more. While their blooming season is primarily from mid-autumn through spring, this rule is not absolute. Many modern hybrids flower twice or more each year.

Paphiopedilums are divided into two cultural groups: The warm-growing, mottled-leaved types, like the famous *Paphiopedilum Maudiae* (ideal for beginners), and the cool-growing, green-leaved types. Ideally, the mottled-leaved paphiopedilums need *Cattleya*-like temperatures, while the green-leaved paphiopedilums grow very well in the company of cymbidiums. All paphiopedilums require reasonably cool nights, particularly in the spring when they are setting their buds for the autumn flowering season. Although this requirement makes them difficult to grow in warm areas, their low light requirement does make it possible to keep them cool through shading. Hence both the mottled-leaved and the green-leaved paphiopedilums may be grown almost side by side, although not to the same perfection as they would be were they in growing areas with environments tailored to their specific needs.

Temperature and Humidity The green-leaved types ideally require a minimum night temperature around 50 to 55 F, while the mottled-leaved types need 60 to 65 F at night. Day temperatures should range between 70 F and 80 F, although short periods of moderately higher or lower temperatures will not injure the plants. The humidity should be moderate, between 40 and 50 percent during the day.

Light Paphiopedilums enjoy medium light intensity, requiring 800 to 1,000 foot-candles throughout the year for optimum growth. Avoid direct sun, except in the early morning. In the home, move plants back from the window at the height of the noonday sun or, ideally, grow them behind a sheer curtain.

Air Movement Moist, vigorous air movement, at a temperature favorable to the plants, is highly recommended to keep the leaves cool and to dry drops of water on the plants, thereby reducing chances of disease. Hot or cold drafts cause buds to blast (brown and die). Consider the position of the plants, especially those on a windowsill.

Watering Although paphiopedilums are sympodial orchids, they do not possess pseudobulbs and hence, like phalaenopsis, must have a regular and constant water supply. This will entail keeping the medium moist



but not wet, a technique with which beginners will have to experiment in order to perfect. Water early in the day so that the foliage will dry before temperatures drop at nightfall.

Paphiopedilums typically need watering every five to seven days, but individual conditions require some variance. The potting mix, the humidity surrounding the plants and weather conditions all affect the rate at which plants dry and thus require water.

For those growers using bark as a potting medium, it is extremely important not to permit the plant to dry completely because it is then difficult to rewet. Water will channel through the dry mix leaving most of the pot dry. When this happens, submerge the whole pot and mix in a pan of water until moisture has been restored to the pot.

Fertilizing Feed plants in fir bark with a high-nitrogen fertilizer (30-10-20 or 30-10-10 ratio) at half of the recommended strength. Fertilize greenhouse-grown plants three times and then apply plain water for the fourth watering to leach out any salts that have accumulated. For home or windowsill growing, alternate fertilizer and plain water. Plants grown in some of the more complicated mixes consisting of rock, peat, oak leaf mold, etc., should receive fertilizer at a more reduced strength because some of these elements may provide nutrients or may be soured by a high nitrogen fertilizer at full strength.

Potting Because most paphiopedilums are terrestrial, a medium that drains well but retains moisture is necessary. Straight fir bark is excellent. Finely chopped fir bark (1/8 inch to ¼ inch) is preferable to the medium or large chunks used for cattleyas and phalaenopsis. Wet the bark thoroughly before potting any type of orchid in it.

Paphiopedilums grow easily into specimen plants because, with good culture, they branch freely and regularly. Since paphiopedilums are capable of producing flowers on rootless growths, particular care in watering must be taken in growing a specimen plant in order to provide the lovely display of blooms with a healthy, extended root system.

Repot paphiopedilums when the medium has decomposed, the plant has outgrown its pot or when it is appropriate to divide the plant. Although many paphiopedilums will live when divided into single growths with roots, it is preferable to make divisions of no fewer than three growths. Repot and divide immediately following flowering.

The procedures for repotting entail clipping off dead roots, positioning the plant in the new container and filling in and around the roots with the compost medium until it reaches just slightly over the base of the plant. Do not bury the plant growths because this encourages rot. The base of each growth should be touching the potting medium to encourage new roots to grow into the medium. Keep watering to a minimum until evidence of new growth is apparent.

Place recently potted paphiopedilums in a shaded area, then move gradually into proper light conditions once new growth begins.

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