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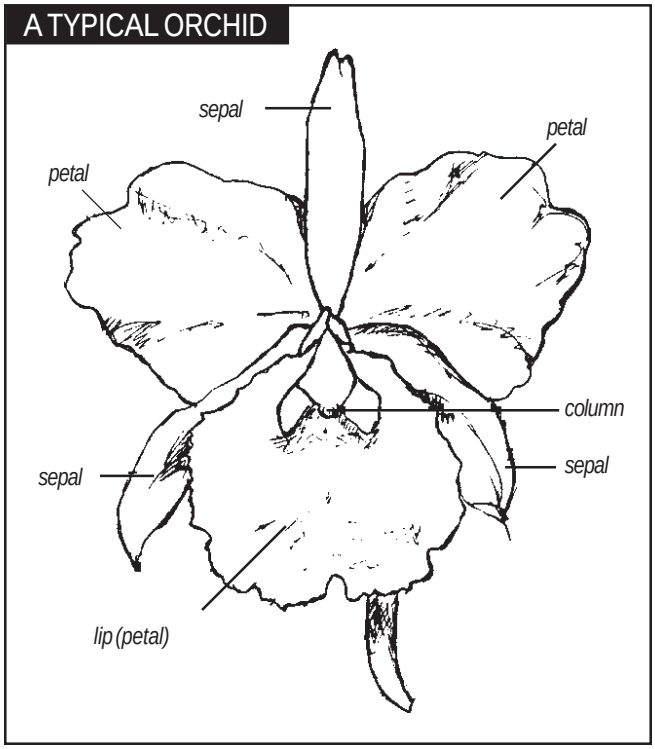
Orchids as House Plants

Orchids comprise the largest family of flowering plants in nature. There are about 35,000 uncultivated species and as many hybrids located on every continent except Antarctica.

These diverse and highly evolved plants are called orchids because of their flower structure. All orchid flowers have three sepals and three petals. One of the petals is called the lip or labellum. It has a different shape from the other two petals and is very showy. Protruding from the center of the flower are the male (stamen) and female (pistil) reproductive organs. They are fused together.

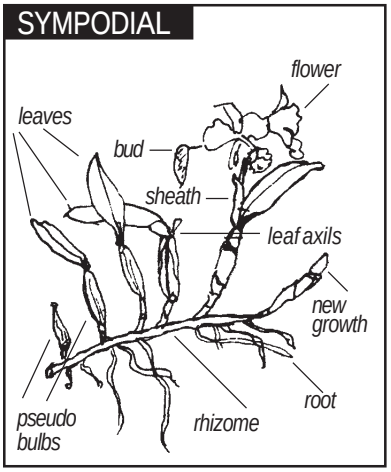


Kinds of Orchids

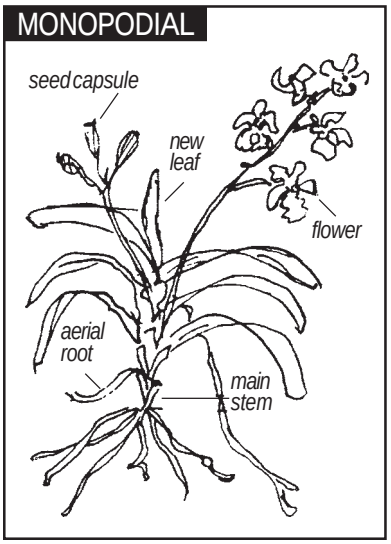
There are two kinds of orchids: **epiphytic** and **terrestrial**. Epiphytic orchids are not parasites, although they anchor themselves to other plants, tree limbs or rocky places for support. They take their nourishment from the air, rain and debris that falls on them and store it in a pseudobulb (the thickened portion of a stem, but not a true bulb). Terrestrial orchids grow in the ground in the top layer of humus or moss. They have no pseudobulbs to store water as epiphytic orchids do. Their leaves rise from an underground rhizome (a root-bearing horizontal stem, which, in orchids, usually lies on or just beneath the ground surface). They remain damp at the roots.

Growth patterns

There are two growth patterns of orchids. **Sympodial** (a form of growth in which each new shoot arises from the rhizome of the previous growth) orchids have a main stem that stops growing at the end of each season. A new lead branch grows from the base, developing its own pseubdobulb and eventually its own flower.



Monopodial orchids have a main stem that grows steadily from the center each year and produces flower stalks at the axil (the crotch between the stem and leaf) of the leaves or opposite them.



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GROWING ORCHIDS UNDER HOME CONDITIONS

Light

Plants should be placed in an east, south or west window and protected from direct noon-day sun. Orchids are variable in their light requirements, depending on genera and variety. Plants that need high light, such as *Cymbidiums ,* can be placed close to the window. This protects other plants that need medium light, like *Cattleyas* , by blocking direct sunlight. Low light can be maintained indoors by varying the distance between plant and window. *Phalaenopsis* is an orchid needing low light. If only a south window is available, a sheer curtain helps prevent scorching during months when the sun is low in the sky.

Artificial Light

If you wish to grow under lights, provide artificial light only during daylight hours to initiate flower buds during the proper season. Varieties with lower light requirements bloom better in this type of culture. For best results, use wide spectrum fluorescent tubes such as grow lights. Warm and cool white tubes used together are also satisfactory.

Temperature

A minimum-maximum thermometer helps check daily temperature fluctuations. A differential between night and day temperature of at least 10-20°F is mandatory for good growth. Warm growing orchids should have a day temperature of 72-80°F with sun and night temperature to 65°F. Day temperatures for intermediate-growing orchids should range from 68-70°F with sun, and night temperatures should be around 60°F. Cool-growing orchids require a day temperature of 65-70°F with sun, and night temperature of 50-55°F.

All varieties tolerate higher temperatures in hot summer weather, but additional shade and misting is necessary to keep them cool. An occasional drop below the recommended night temperature norm during the colder months will not harm the plants.

Ventilation

Orchids need good air movement to prevent fungi and keep leaf temperature low on sunny days. Small fans placed near the growing area or a distant window opened a crack (except in very cold weather) supply moving air. Plants with cooler requirements can be placed closer to the fans.

Humidity

40-60% is a suitable range and can be checked with a hydrometer (an instrument that measures humidity). Use a humidifier or put plants on gravel in trays containing water. Pots should not touch water; this permits weekly drying out of epiphytic plants and prevents rot. As the water evaporates, a humid microclimate is produced around the plants. A bright room that can be closed off from the rest of the house is an ideal area for growing plants indoors. Humidity, temperature and light can be controlled.

Fertilizer

Orchids thrive if fed regularly during the growing season. Use high nitrogen food like 30-10-10 at 1/4 the recommended dose once a month for the first six months after blooming. Then switch to a high phosphorus fertilizer like 10-30-20 at 1/4 the recommended amount to induce blooms. Some growers use a balanced food like 20-20-20 all year in small amounts every watering and flush once a month with water, to eliminate salt build up in the pot. Fish emulsion is good to use to replenish needed trace nutrients.

Watering

Use tepid water to keep terrestrial orchids moist below the surface of the media. Allow epiphytic orchids to dry out below the surface between watering. Vitamins like Super-thrive can be added to the water once a month.

Potting Mediums

Orchids tolerate a wide variety of potting media such as grades of fir bark, tree fern, perlite, charcoal, stones and sphagnum moss. Any combination of these would be suitable.

Some terrestrial orchids need more moss to retain moisture. Pots can be plastic or clay. Clay pots dry out faster, so orchids potted in them have to be watered more often. Pots must have at least one hole at the bottom or added openings at the sides to ensure proper drainage. Netted pots can also be used. Charcoal or styrofoam peanuts must be put in a sterile pot before medium is added. A netted pot can be placed in a larger pot to contain moisture if growing conditions are too dry. Always wait until a plant has flowered or passed its blooming time before repotting. It is also necessary to repot if the potting medium breaks down (becomes soggy). Shake all old mix off the roots and cut away all dead parts with a sterile tool. Divide plant if necessary, leaving four healthy growths to each division.

Summering outdoors

When the danger of frost has passed, usually by the end of May, orchids flourish outdoors on a porch or under a tree if they are raised off the ground to receive light and ample sun. If the temperature rises to around 90°F, mist the leaves several times a day to avoid sunburn.

Vacation care

Water all plants thoroughly. Provide less light. Fill trays with water to keep the surrounding atmosphere moist. If plants are grown on a window sill, provide a curtain to cut down the sunlight. Reduce lighting to about eight hours a day if you are using artificial lighting. Reduce night temperatures to slow growth. If you plan to be gone for more than two weeks, have a friend water your collection once a week. If you have a small collection, place it in the bathtub on moist towels.

Keeping Your Orchids Healthy

Grooming

Keep orchids clean and neat. Occasionally wash leaves to remove dust. Remove dead blossoms and old flower spikes (stems). Always use sterile cutting tools to prevent disease. The flame on a throw-away lighter sterilizes orchid tools satisfactorily. Cut off old leafless pseudobulbs when repotting.

Faded flowers give off ethylene gas like bananas and most other fruit. Ethylene gas can turn buds yellow and cause them to drop off, but does not kill the plant.

Insects and Disease

For a precise diagnosis of any insect or disease problem bring a specimen to the Cornell Cooperative Extension diagnostic lab. Mealybug, mites, scale and snails are some of the common pests that feed on orchids. They can also be found in new media, so flush with warm or hot water before using. Insecticidal soap or light horticultural oil will help control some insects. Do not spray the flowers.

Always look for orchid plants that grow under the conditions you can provide. Join the American Orchid Society or attend a monthly meeting of your local chapter and observe how others grow their orchid plants.

Suggested Readings:

- *Handbook on Orchid Culture.* American Orchid Society. Available from AOS Book Department, 6000 South Olive Ave., West Palm Beach, FL 33405-9974.
- *Home Growing Orchids.* 4th edition, by Rebecca Tyson Northern.
- *Orchids as Houseplants,* by Brain and Wilma Ritterhausen.
- *Orchids for the Home and Greenhouse.* Brooklyn Botanical Garden, edited by Charles Marden Fitch.

General Guide to Orchid Culture

Preferred Temperature	Light Required	Orchid Genus (Abbrev.)	Watering	Suggested Humidity Level	Comments
Warm (65-70°F. nights)	Low	*Phalaenopsis* (Phal) *Doritis* (Dor) *Doritaenopsis* (Dtps)	keep evenly moist	50-60% RH	this group grows as African violets
	High	*Vanda* (V) *Aerides* (Aer) *Ascocenda* (Ascda)	keep evenly moist	70%	this group hard to flower because of light req.
Intermediate (55-60°F. nights)	Low	*Paphiopedilum* (Paph)	keep evenly moist	40-50%	mottled leaf types need more warmth
	Medium	*Oncidium* (Onc) *Miltonia* (Milt), *Brassia* (Brs)	dry out *very* slightly between waterings		
	High	*Cattleya* (C) *Laelia* (L) *Sophronitis* (Soph) *Epidendrum* (Epi) *Dendrobium* (Dend) hybrids	allow to dry out slightly between waterings	40%	this group grows as begonias or palms
Cool (50°F. nights)	Low	*Masdevallia* (Masd) *Pleurothallids* *Dracula* (Drac)	must be kept evenly moist	60-70%	this group difficult; special growth set up required
	Medium	*Odontoglossum* (Odont) *Zygopetalum* (Z)	keep evenly moist	50%	suffers during summer heat
	High	*Cymbidium* (Cym)	keep evenly moist	40%	can stand heat; cool nights needed to bloom

Note: Low light is 500-1000 fc (footcandles), medium light is 1000-1800 fc and high light is over 1800 fc.