First here’s a note about light & watering. All plants can take stronger light if it is diffused (like by a piece of plastic or a sheer curtain) & if there is a lot of fresh air movement. Every grower waters on a different schedule with different kinds of water (i.e. city, well, cistern, RO, hard, soft, etc.) and with and without fertilizers. Your own watering schedule depends on humidity, light, planting medium used, types of plants grown, etc. Some plants don’t like a strict watering schedule, some demand it. The following is a very general guideline.

**2.** Three features of your plants can tell you almost everything you need to know if you read them properly, those features are
**Leaves**
**Pseudobulbs** (or lack thereof)
**Roots**
We will look at each of them in detail.

**3.** When you look at an orchid plant the first thing you notice are the leaves. There are 4 types of leaves:

1. terete (round & tapering)

2. hard, thick, fleshy, stiff

3. medium

4. thin, papery

Two other considerations for the leaves are whether they are mottled or deciduous.

**I. Leaves**

**4.** **A. Terete** (Brassavolas, “rat-tail” Oncidiums (**jonesianum, ceboletta**), Paraphalaenopsis, some

 Vandas)

 1. Generally like highest light levels. In Ohio it is hard to give them too much natural light.

 2. If the leaves get a slight yellow, purple or bronze tint, the plant is usually happy. This

 coloration is like our suntan.

**5.** Sometimes they grow upright.

**6.** Sometimes they grow down.

**7. B. Hard, thick, fleshy, stiff** (Cattleyas, Sophronitis, Lophiaris (**aka mule-ear Oncidiums**

 **lancianun, luridum**), Psychopsis, Tolumnia, most Vandas, Renentheras, some Bulbophyllums)

 1. Generally like high light levels but can burn**.** Maybe shade for an hour or so in the middle of

 the day. **In fact, you can burn almost anything by taking them from a lower light**

 **situation to a higher light too quickly.**

 2. If the leaves get a slight yellow, purple or bronze tint, the plant is usually happy.

 a. Coloration is usually on the entire upper surface of the leaf.

 b. Coloration is sometimes just a stripe down the center of the upper surface or along the

 outside edge of the leaf, as in Sophronitis, some Cattleyas.

 c. Coloration is sometimes just spots on the upper surface of the leaf, as in Cattleya

 acklandiae, Lophiaris lanceana.

 3. If yellow, purple or bronze tint is very strong, plant is getting too much light, shade slightly.

 4. If leaves are a deep, woodsy, dark green, not enough light.

**8.** Cattleya leaves

**9.** Catlleya intergeneric hybrid leaves

**10.** This one shows the yellow tint. The color looks sort of spotty due to the lighting, not the plant.

**11.** This Bulbo shows a slight red or bronze tint.

**12.** This Ascocentrum is a little TOO red. It needs a little less light.

**13. (Notable exception: Phalaenopsis!) They require less light, like the following category.**

 **14. C. Medium** (most Bulbophyllums, Pleurothallis, Masdevalia, some Oncidiums, Phragmipediums)

 1. Require medium light conditions.

 2. Need protection from hot noon-day sun which is basically between 11 & 3. Under a small tree

 or a little bit of shade cloth or cheese cloth works well.

 Jane told me about a book (Orchids or Orchid Growing For Dummies) that had a good definition of “high”, “medium” & “low” light. If you hold your hand a foot above the table & there is a clearly-defined, dark shadow, that’s high light. If there is a gray shadow with not as clear edges, that’s medium light. If there is a light gray shadow you can just see, that’s low light. Although, according to this definition, on a clear night, the full moon is giving me medium light.

**15.** Pleurothallis

**16.** Miltoniopsis

**17.** Phrag

 **18. D. Thin, papery** (Lycastes, Spathoglottis, Phaius)

 1. Require lowest light levels for orchids.

 2. Need some shading except early mornings & late afternoons. They do great in an East or West

 window.

 3. Burn easily.

 4. Sometimes deciduous.

**19.** Phais

**20.** Ancistrochilus rothschildianus

**21.** Lycaste

 **22.**  **E. Mottled** (some Paphiopedilums, some Phalaenopsis, “Jewel Orchids”)

 PICK ONE:

 1. Came from the forest floor where blends in with dappled sun.

OR 2. Came from an open area, therefore the leaves do not require as much chlorophyll for

 photosynthesis.

**23.** A couple Paph leaves.

**24.** A couple Phal leaves.

**25.** Psychopsis

**26.** A Stenosarcos ??? & a “Jewel Orchid” Ludisia discolor

**27.** **F. Deciduous** (Lycastes, some Dendrobiums [nobile-type])

 1. These plants always require a resting period (which means no water) of from 2 weeks to 3 – 4

 months, depending on the species.

 2. Most flower from leafless bulbs or stems.

**28.** Lycaste bulbs

**29.** Dendrobium blooming on leafless pseudobulb. If it bloomed with the leaves still on you couldn’t see the flowers very well.

**30. When you look at an orchid plant the second thing you notice are the pseudobulbs. There are 3 general types:**

**1. Plants with large pseudobulbs in relation to plant size.**

**2. Plants with small pseudobulbs in relation to plant size.**

**3. Plants without pseudobulbs.**

**II. PSEUDOBULBS**

Pseudobulbs are just basically a place to store a little water & nutrition for lean times.

**31. A.** Plants with **large** pseudobulbs in relation to plant size (Cattleyas, Encyclias, some Laelias,

 Lycastes, Calanthes)

 1. Can generally survive, though not thrive, during long periods of drought, especially in high

 humidity. Cattleya back bulbs have been known to survive without roots, living on the

 nutrients stored in the bulbs, for a year or more in a bag in a greenhouse, then spout new

 growths.

 2. Not upset by an occasional missed watering.

**32.** Cattleya & Lycaste bulbs (obviously NOT a full-grown Lacaste leaf).

**33. B.** Plants with **small** pseudobulbs in relation to plant size (Miltonias, some Oncidiums)

 1. Will not survive long periods of complete drought.

 2. Upset but not killed by occasional missed watering.

**34.** Miltoniopsis

**35.** Bulbophyllum

**36. C.** Plants **lacking** pseudobulbs (Pleurothallis, Masdevallias, Vandas, Paphiopedilums, Phalaenopsis)

 1. Will not survive even a short period of drought. Some of the smaller, thinner-leaved ones

 will not survive even one week without water even in high humidity.

 2. Always set back, sometimes killed by occasional missed watering.

**37.** If Ron were here I know he’d know this one right away!! Oerstedella plant, roots & flowers.

**38.** Phragmipedium

**39.** Tolumnia

**40.** Vanda

**41.** Small Pleurothallis, no pseudobulbs, clay pot

**42. When you look at an orchid plant sometimes the roots are obvious, sometimes you don’t see them until the plant is repotted. There are 4 general types:**

**1. Thick, fleshy, white (green when wet).**

**2. Medium.**

**3. Thin.**

**4. Fuzzy**

**III. ROOTS**

**43. A. Thick, fleshy, white** (green when wet) (Cattleyas, Vandas, Phalaenopsis, Sophronitis)

 1. Require a very open mix or can be grown in no media at all. They need only a basket or wire

 to hold them up or hang from. Plants grown this way get all their nutrients from the fertilizer

 in the water – no bark or other material to break down & feed them.

 2. Like to dry out between watering.

**44.** Holcoglossum kimballianum

**45.** Oerstedella species roots

**46.** Vanda roots.

**47. B. Medium** (Bulbophyllums, some Oncidiums, Maxillarias, some Dendrobiums)

 1. Like a medium mix – not too open, but not holding water for too long. Can be mounted but

 need something to hold a little moisture for a while like moss.

 2. Do not mind an occasional drying out between watering.

**48.** Tolumnia roots with moss. You can see the roots never get too far away from the moss.

**49. C. Thin** (Miltonias, Masdevallias, Pleurothallis)

 1. Like a mix of finer materials, one that will hold water for a little longer (“seedling mix”).

 2. Do not like to dry out completely.

**50.** Pleurothallis roots

**51.** Pleurothallis stricta roots

**52. D. Fuzzy** (Paphiopedilums, Coelogynes, “rat-tail” Oncidiums)

 1. Like a mix of finer materials, one that will hold water for a little longer (“seedling mix”

 or terrestrial mixes).

 2. Do not like to dry out completely.

**53.** Phragmipedium roots

**IV. SUMMERING PLANTS OUTSIDE**

 **A. Taking them out**

 **1. What**. Not all orchids like to be outside. Those with special temperature &/or water

 requirements should probably stay either inside or in a place where you can control those

 things. Most plants, though, benefit from the extra light, air movement & attention. **And**

 **you also benefit form being outside in the light & fresh air.**

 **2. When**. Take plants out when night temperatures will stay above 50oF. A pretty good rule

 is put plants outside around Memorial Day (at the end of May) & bring them back in around

 Labor Day (beginning of September).

 **3. Why**. (Benefits of a summer outside)

 a. More sun for those plants that require it, especially those with terete leaves.

 b. Copious amounts of fresh air & air movement.

 c. Ease of watering. Much of the time all you need is a garden hose. You don’t have to worry

 about spilling water on the carpet, windowsills, or tracking water from the basement to

 upstairs, MUCH more room outside than in the typical greenhouse.

 d. Occasional rain water watering. These help leach out the salts that build up in the media

 from watering with city water & fertilizer.

 **4. Where**. Where to put the plants.

 a. Trees

 i. Can be hung from the lower branches of the trees so that the leaves of the trees provide

 natural shade for the plants. Do not hang them out of your reach so that you can pick

 them up & check them once in a while.

 ii. Can be put on tables or benches under the trees for natural shade.

 b. Porch or patio

 i. Can be placed on or hung from railings for maximum light & rain.

 ii. Can be put on benches or tables away from the edge for protection from overexposure.

 c. Lath, screen house or under shade cloth

 i. Can be used instead of trees for shade.

 ii. Cn be set up anywhere.

 iii. Screening helps cut down on some insect problems.

 **5. How**.

 a. Consider which plants are going where.

 b. Have the area ready for them, i.e., enough branches, benches, etc.

 c. Now is a good time to check the plants to see if they need to be repotted. Summer is a high

 growth period & repotting is easier & less messy when done outside.

 d. Preferably pick a cloudy few days. This will help the plants gradually adjust to the higher

 light levels & with less possibility of burning.

 **6. Special care**

 a. Fertilizer. Since the plants are actively growing they will need lots of food.

 b. Water

 i. With the extra light & air movement the plants will require more frequent watering.

 ii. Early morning is best or an hour or 2 before sunset. Try not to water the plants in the

 hot sun – water droplets on the leaves in the hot sun will act as a magnifying glass &

 burn spots on the leaves which can allow bacteria into the plant.

 c. Storms. Most of the time a summer thunderstorm will do little more than give the plants a

 thorough soaking. After the storm, though, you want to check the plants for dislodged

 media, overturned pots & lost labels.

 **7. Special concerns**

 1. Squirrels, chipmunks, birds, etc. They like to get into your plants & bury their stash of

 acorns, walnuts, sunflower seed, etc., depending on what types of plants are in your & your

 neighbors’ yards. These are most often found after they have sprouted & you see the

 strange growth in your orchid pot.

 2. Raccoons, dogs, cats. They tend to want to play in the plants, knocking over the pots,

 taking the labels out just because they can, etc. **They seem to want to lay in the shade of**

 **the plants on benches. I guess that’s because they are off the ground & with the extra**

 **water & raised platform it is a lot cooler than on the ground.**

 3. Thunderstorms & hurricanes, case in point, hurricane Ike a few years back. Unless every

 plant is tied down, which is not practical, there isn’t much of a way to prepare. All you can

 do is grab what you can as soon as you can & clean up the mess when it’s over.

 **8. In the meantime**, clean, paint, & /or otherwise repair where necessary the areas from where

 the plants came. It is just a LOT easier to do this to an empty or half-empty windowsill, room

 or greenhouse.

 **B. Bringing the plants back in**.

 1. Make sure that there is room where the plants are going since they have THRIVED outside

 over the summer & are twice as big as before they went out.

 2. Clean & check the plants.

 a. Take off dead inflorescences, dry sheaths, etc.

 b. Pull out any weeds that might have grown in the mix, see special concerns 1.

 c. Chek each plant carefully for signs of insects. Any spraying necessary is better done

 outside.

 3. Some plants, such as Cymbidiums, some Paphiopedilums & nobile-type Dendrobiums need to

 stay out until the temperature hit 35-39oF to initiate blooming. Always bring them in before a

 freeze (32oF).