

**ERRORS, PESTS AND DISEASES**  
**THE PRACTICAL GUIDE**

SYMPTOMS	POSSIBLES CAUSES	PROPOSED SOLUTIONS
No growth or insufficient growth	Old, decomposing medium which may contain algae, mold and rotten roots. Plant location has insufficient sunlight, overwatering, or insufficient fertilization. Pot too large.	Unpot the orchid; remove all the old medium and cut off any unhealthy or dead roots. Repot with new medium in an adequate-sized pot. Place in an area according to the plant's light requirements. Once the plant is re-established in its new pot, fertilize regularly with 10-4-3 fertilizer.
Spots on the surface of the leaves which at first are yellowish white, then turn brown.	Plants placed too close to a window, or too close to the lamps or tubes of your artificial lighting. Misting plants when they are in full sun can cause this type of damage.	Protect plants from direct sunlight. Increase the distance between your plant and the light source. Do not use oil treatments on plants and then place them directly in the sun, as oil can act like a magnifying glass on the leaves.
Spots on and under the leaves which are irregular but well-marked, yellowish in color, depressed, becoming brown and dry.	Tissue collapse from heat stress, which also affects the root system. Prolonged exposure to an area with insufficient humidity (too dry).	Chose a cooler, more humid area which is slightly more shaded.
Brown spots and wilted leaves.	One or more cultivation errors in the areas of lighting, watering, ventilation or temperature.	Remove the dead leaves, trim the tips of wilted leaves and apply charcoal or sulphur powder on the open surface of the wound.
Leaves do not unfold and have an accordion-type appearance.	Roots have been damaged by stagnant water. Insufficient ambient (room) humidity.	Unpot the orchid and cut off any unhealthy or damaged roots. Disinfect root area with charcoal. Repot in fresh substrate. Increase ambient humidity.
Brown and dry leaf tips on old leaves and sometimes on the new ones.	Ambient air too dry, the medium is saturated with an excess fertilizer, or using hard water that is too rich in mineral salts. Stagnant water.	Increase ambient humidity. Regularly rinse the media with luke-warm running water (flush). Temporarily stop using fertilizer. Check the quality of the water used for watering. If the mineral content is too high then use reverse osmosis water or rainwater.
Light green or marbled leaves.	Magnesium or iron deficiency. More common in <i>Cymbidium</i> , <i>Zygopetalum</i> and <i>Paphiopedilum</i> (please note that these are not variegated leaves). Pale green leaves turning yellow can indicate an excess of light.	Use a good quality fertilizer that contains magnesium and iron. Check the intensity of your lighting.
Withered flower buds which fall from the plant.	Insufficient light, roots too cold, insufficient fertilization. Air which contains ethylene gas from fruit (i.e. apples) or lack of ambient humidity. Insufficient watering can cause flower buds to abort and buds to drop.	Avoid sudden drops in temperature. Do not change the orientation of the orchid in relation to the light source during bud formation. Increase ambient humidity. Sufficient watering.
Sticky leaves, deformed growths.	<b>Aphids:</b> they prefer to attack the tender new growths and flowers. They come in different colors: the most common ones are green in color and 2 to 3 mm long. They are more frequent near open windows and in overly dry air.	Wipe off by hand, and then spray with Safer's insecticidal soap or black soap. Repeat two more times at intervals of 7 to 10 days.
Formation of honeydew and sooty mold ( <i>fumagina</i> ); yellow spots on leaves; yellowish to brown pustules under the leaves and pseudobulbs. Falling leaves.	<b>Brown scale:</b> both the insect and its eggs hide under a yellowish white or brown waxy layer. The larvae are tiny and agile, so they are rarely seen. Infestations happen more frequently in dry air.	Scrape the scale off with your fingernail or use a stick. Wipe plant with a cloth dipped in soapy water or alcohol. If this is not enough, then spray the plant with insecticidal soap. Repeat 5 times at 5-day intervals to cover the entire life cycle of the insect. Increase ambient humidity.
Waxy secretions that look like white wool or cotton balls. Common in the leaf axils and on flower stalks. Stunted growth.	<b>Mealy bugs</b> (frequently found in greenhouses) and <b>long-tailed mealybugs</b> . They belong to the same family as brown scale. More common in dry, heated air.	Rub affected areas with a toothbrush or cotton swab dipped in alcohol. If treatment is insufficient, then spray the plant with insecticidal soap. Repeat 5 times at 5-day intervals to cover the entire life cycle of the insect. Increase the ambient humidity.
Leaves look silvery, the top of the leaf has tiny yellow spots that turn brown over time, presence of small webs.	<b>Mites</b> (red spider mites): most common in dry, heated air. They attack <i>Phalaenopsis</i> , <i>Cymbidium</i> , <i>Dendrobium</i> and <i>Paphiopedilum</i> .	Increase the ambient humidity. If it is a major infestation, use a clear plastic bag (a dry cleaning bag if the plant is large) to increase the humidity level. Sprinkle the affected areas with horticultural sulphur. Do not clean the plant for two weeks to let the product work.
Spotted, stunted flowers. Malformed flower buds. Leaves with a silvery appearance. Tiny and very tightly arranged punctures under the leaves, often shiny, black droppings.	<b>Thrips:</b> dark brown insects measuring 1 to 2 mm, which have two pairs of black and white wings attached to its back. The larvae are barely visible and are found under the leaves. Thrips suck the sap out of the leaves, buds and flowers. Common when the air is dry and heated. They are vectors of virus transmission.	Spray with insecticidal soap, especially under the leaves. Repeat 5 times at 5-day intervals to cover the entire life cycle of the insect. Increase ambient humidity.
Stunted buds, growths and flower stems.	<b>Cantharides</b> (Spanish Fly) and <b>orchid mites:</b> they more frequently attack <i>Paphiopedilum</i> . They suck on the buds and the tender growths. The mites attack weak plants and eat the roots from the outside.	Sprinkle with horticultural sulphur. Do not clean the plant for 2 weeks to let the product work.
Root damage, weak plant.	<b>Gnats:</b> they measure 4 to 7 mm and fly away as soon as the pot is moved. The larvae like peat and humus, and they attack the roots if they cannot find anything else. Contamination can come from house plants with excessively wet soil. Sowbugs can cause this type of damage. Although they usually feed on decaying matter, they can attack the roots and pseudobulbs too.	Yellow sticky tapes. Insecticide pads (caution, may be hazardous to animals). Allow the surface of the media to dry between waterings. For sowbugs, which are not insects but rather crustaceans, use a pyrethrin-based insecticide.
Roots gnawed, growth stunted.	<b>Collembola</b> (Springtails): they are small, jumping, white insects 1 to 3 mm long. They have two antennae and six legs on a slender body. They feed on decomposing peat, and also on roots. Their presence is due to abundant watering and too low light.	Spray with an insecticidal solution such as dimethoate.
Gnawed areas, holes in leaves and pseudobulbs, traces of slime.	<b>Snails and slugs:</b> they can be found on orchids that have been outside.	Use slug traps.
Spots on foliage, stunted growth, rotting.	<b>Fusarium:</b> its spores are present in the ambient air. They settle on the rhizomes and pseudobulbs of potted plants. It can occur in an environment which is too cold or too humid, if plants are fertilized with a fertilizer that is too high in nitrogen or there is poor air circulation. <i>Miltonia</i> , <i>Odontoglossum</i> , <i>Zygopetalum</i> and <i>Cattleya</i> are more prone to this infection.	Remove infected areas with a tool that has been disinfected with alcohol. Treat the cut area with charcoal or sulphur. Soak the entire plant, including the roots, in a fungicide. Repot in fresh medium. Increase ventilation.
Spots on the leaves.	<b>Cercospora:</b> this is a type of fungus that attacks the foliage of the plant and forms spots. It is caused by room temperature being too cool and too humid and/or poor ventilation.	As for fusarium: increase ventilation and avoid spraying the foliage.

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Deposits of yellowish to reddish spores on the leaves.	<b>Orchid rust:</b> caused by contamination, high humidity and lack of ventilation.	Remove affected areas, isolate the plant. Dip the whole plant in fungicide and repot. Increase ventilation.
Brown spots on flowers.	<b>Botrytis:</b> this fungus develops on orchids whose fertilizer is too high in nitrogen, or whose leaves have remained wet for too long, or from contamination from other house plants.	Remove affected parts, disinfect the cut with charcoal or a little cinnamon, spray with fungicide and increase ventilation.
Blackish spots or lesions on the leaf edges or new growths (soft rot). Reddish spots on leaves. Crown becoming blackish, rot on the pseudobulbs.	<b>Black-rot:</b> is caused by pythium. Young plants can succumb overnight. It is caused by too much humidity, stagnant water, temperature too low and a lack of ventilation.	As for other fungal diseases: remove the diseased parts, disinfect the wounds with charcoal powder. Soak the whole plant in fungicide and repot in new medium. Increase the ventilation.
Slimy, watery or oily spots that appear on the leaves, at the base of the leaves or on the pseudobulbs.	<b>Bacterial infection:</b> it is transmitted by water, infected tools (i.e. pruners), the potting medium or poor hygiene practices.	There is not a very effective treatment. If the damage is minimal, remove the diseased parts, otherwise throw the plant away. Sprinkle open wounds with cinnamon. Increase ventilation.
Stunted and discolored flowers. Leaves have circular ringspots or black and brown streaks.	<b>Viral infection:</b> viruses are transmitted from one plant to another through a vector. This could be insects such as thrips or aphids. It can be spread by using tools which have not been properly sterilized (i.e. pruners).	Discard the affected plant or put it in complete isolation to monitor for virus infection. Poorly formed or discolored flowers are not necessarily due to virus infection. Properly sterilize your orchid tools. Control insect infestations.

#### SOURCES

- Heitz Halina, "Orchidées", Hachette/CIL 1991
- American Orchid Society, "Orchid Pest and diseases", 1995
- Poliquin André, "Les orchidées Phalaenopsis", Trécarré 1996
- Tremblay Michel, "C'est une question d'hygiène bien souvent", Orchidofilière oct., nov. et déc. 1995
- Rittershausen Wilma et col., "Orchidées", Solar 1994