



St. Augustine Orchid Society

[www.staugorchidsociety.org](http://www.staugorchidsociety.org)

## Winter Relocation

by Sue Bottom, sbottom15@hotmail.com

Greenhouses can become ovens in the summer heat, but they sure help keep your plants happy in the winter. If you normally grow outdoors but have to protect your plants during cold weather, you can unknowingly upset your plant's internal clock and disrupt its normal bloom pattern. *Plants have different ways of "telling time" in order to coordinate their growth, flowering, and dormancy with the natural rhythms of the climate. Few places on earth – even in the tropics – have such a steady and predictable climate that plants can grow and bloom at any time of the year. They have to deal with cold or cool weather, seasonal drought, heat, and monsoons. Everywhere except directly at the equator, day length changes through the year with great regularity, unlike patterns of temperature and precipitation. Therefore, it is not surprising that plants have seized on day length – or in horticultural terms, the photoperiod – to help them tell time.* In St. Augustine at a latitude of 29.9°N, the photoperiod varies from 10 hrs 13 minutes on the shortest day of the year in December to 14 hrs 4 minutes on the longest day of the year in June, a difference of almost 4 hours.

*Away from the equator, most plants time their growth and flowering at least in part by this seasonal clock, with summer blooming species termed long-day plants, and spring- or fall-blooming species called short-day plants. Temperature patterns and rainfall interact with day length, but if you keep a long-day plant growing under short-day light conditions, it is unlikely to flower, regardless of variations in temperature and moisture. The same can be said for short-day plants growing under consistently long days; a poinsettia kept in the living room will not rebloom because the lights you leave on at night fool it into thinking it is still summer.*



Plants thrive growing outdoors under shade cloth receiving filtered light, rainwater and buoyant air movement.



The greenhouse in January, with a thermostat controlled heater keeping plants toasty on cool nights.

If you grow in a greenhouse or other outdoor structure, the plants respond naturally to the seasonal changes in day length. Commercial nurseries sometimes fool their plants into blooming out of season by covering them in the late afternoon to simulate short days or lighting them at night to simulate long days. If you bring your plants indoors or into an artificially lighted area, be careful to not reset your plant's bloom clock by leaving lamps on in the plant room.



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Changes in temperature are also important in triggering flowering. *Ideally, nights should be 5°–15° cooler than days, and for some species seasonal variation is beneficial too, with more warmth in summer and less in winter. Diurnal and/or seasonal temperature fluctuation is one of the three cues orchids use to time growth and flowering (the others are day length and rainfall/humidity changes). Many orchid species require a lower temperature – say 55°F - for several weeks or months during fall or winter in order to initiate flower buds or growth. If the temperature doesn't fall to the necessary range, blooming will be delayed or prevented. The drop in temperature also helps slow down the plant's metabolism. Cool-growing orchids can tolerate warm days much better if the night temperature falls below 65°, and flowers will last longer, too. No matter what their preferred range, keeping your plants at a constant day/night temperature may compromise blooming and growth.*

The spring blooming phalaenopsis respond to cooler nighttime temperatures rather than photoperiod to initiate blooms. They require an early fall chill down into the mid 50's for several weeks to set the bloom spikes, which should start forming by Christmas with the first blooms opening around Valentine's Day. Some of the spring blooming dendrobiums likewise require a winter cooling to set blooms. Dendrobium growers at lower elevations in Hawaii have to send their plants to another nursery up in the cooler mountains in order for them to initiate blooms. In a greenhouse or outdoor structure, you can maintain lower nighttime temperatures by setting the thermostat on your heater. For those that bring their plants indoors, you may have to leave windows open or otherwise make sure the plants are cooler at night than during the day.



*The floral trigger for phalaenopsis is 10 or 15 degree nighttime drop in temperature during the fall.*



*The spring blooming dendrobiums put on quite a show after their coolish, dryish winter rest.*

Sometimes it takes some ingenuity to keep our orchids happy while they are in their winter homes. In the spring we'll be able to return them to the great outdoors to the bright shade and buoyant air conditions where they really thrive.

*Sections in italics are extracted from William Cullina's excellent book Understanding Orchids, request a copy from the library!*