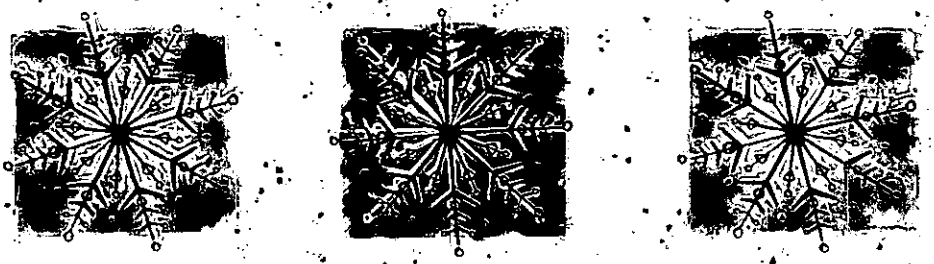

GREATER LAS VEGAS ORCHID SOCIETY

SUNDAY, JANUARY 9, 2005 2 PM

THE MEETING WILL BE HELD IN THE USUAL PLACE, THE NEVADA GARDEN CLUB BUILDING, WASHINGTON AND TWIN LAKES. THE BUILDING WILL BE OPEN AT 1PM.

WHITE ELEPHANT SALE ********

COME AT 1 TO SET UP AND BUY!

Carol Siegel, Newsletter Editor

CAROL SIEGEL- PRESIDENT
CLARICE DEAN -VICE-PRESIDENT
EILEEN MCKYTON- SECRETARY
DIANA SMITH- TREASURER

AND...

Dan Mumau, Michael Lawless, Marsha Hawley - Membership Hospitality Chairmen
Eileen McKyton and Dan Hawley- Welcome Desk
Lillian Patterson- Photographer and Historian
Dan Mumau and Tony Billitere- Raffle Chairmen
Phyllis Bond, Leslie Doyle,Shelly North and Eileen McKyton- Special Events Chairmen
Jeri Lee and Tony Billitere- Community Liaison
Alex McKyton -Building Chairmen and Webmaster
Tex Severance and Mike Levin- Show and Tell Gurus
Tex and Gidget Severance- Judging Chairmen
Scotty Nogaim- Election Chairman, Raffle Lady
Steve Ninemire Library Chairman Clarice Dean, Assistant Librarian
Clarice Dean- Trip Chairman
John Haydukavitch-Video Chief
Shelly North-Classy Club Apparel Chairlady

January 9, 2005	Charles Rowden, "Orchid Photography" SECOND SUNDAY OF MONTH
February 6, 2005	Alan Koch, Gold Country Orchids, "Orchid Growing For Dummies"
March 6, 2005	Jerry Fischer, "The Orchids of Borneo"

April 3, 2005	Mike Glikbarg, Orchids of Los Osos, "Odontoglossum &Oncidinae"
May 1, 2005	Dr. Joseph Arditti "Techniques Orchids Use to Survive in the Wild"
June 5, 2005	Sue Fordyce, owner Fordyce Orchids " "Sophronitis and Her Sisters"/"Orchid Sign Language"
July 10, 2005	SECOND SUNDAY Sheldon Takahashi, Carmela's Orchids, "Cattleyas"
August 7, 2005	Barbecue
September 11,2005	Virtual Greenhouse Tour
November 6, 2005	The Adventures of Dennis D'Allesandro in Bolivia"
December 4, 2005	Sixth Annual International Food Fest and Holiday Party

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It was our best party ever as our fun-loving club gathered for all the things we love best- music, mayhem, margaritas and morchids—(more orchids...) It was great fun to hostess the party. The food was glorious, thanks to the creativity and generosity of our members. A special thanks to Phyllis Bond for the ham, Leslie Doyle for the turkey, Dan Mumau and Mike Lawless for the prime rib, and to me, too. Through the generosity of members, we were able to donate five cartons of food to the Salvation Army. How nice of us!! We really loved the margarita machine kindly donated by Mark and Katie Cravenn for the party (Need a machine to rent? Call them at 256-2121.) We discovered that we sang much better when we had had a few margaritas. The real star of the party was Carol Mendocino, who didn't need to have any margaritas at all to steal the show. Her magnificent voice and subtle styling kept us all mesmerized as the very talented Mike and Adrianna Thurber accompanied her on keyboard, guitar and violin.

Just in case that weren't enough, Karen Basner provided relaxing chair massages. I recognized all the members who had done extra special things this year with certificates of appreciation, and we thrilled to 110 beautiful blooming holiday orchids supplied by our very own Santa, Dan Vong. We also had the extra treat of four boxes of hotel plants to take for free courtesy of the efforts of Dan Mumau and Mike Lawless. Prime rib AND orchids. What could be better!

In January, we will be having our Fifth Annual White Elephant Sale, a fun fundraiser, which raised $700 last year. COME EARLY SO THAT YOU CAN SET UP AND BROWSE AND BUY!! ONE O'CLOCK WOULD BE GOOD!! Because we are a very high-class club, our junk is of the very best quality. I got a great brass lamp for my office last year and sold two nice bikes. Make sure you bring in things to sell for the club- movies, CD's, books, kitchen stuff, nick-nacks, lamps, gifts you don't want, sporting equipment, or the like. If you don't have anything you want to part with, consider buying a bottle of wine or an orchid or donating an orchid or something orchid-themed. It's fun and for the best cause, US. We probably won't have the spring plant sale this year, so we want to make sure we are on a firm financial foundation to start the year. It will only work if you bring stuff—AND buy stuff.

Our January speaker had a conflict so after significant groveling and begging, I got our April speaker to switch with him. SOOO we are happy to have as our speaker Charles Rowden, a famous orchid photographer, who will teach us the tricks of photographing our orchids and show us some of his beautiful photos, too. Your mate might want to come. I know my husband will come because, even if they aren't as obsessed with orchids as we are, they might want to learn to photograph them.

Daniel Vong will be providing orchids. We thank Dan Mumau and Mike Lawless, Steve Ninemire, Jeri Lee and Terry Wilsey for providing food for the meeting. The club has been able to get more of the Aussie Gold potting mix to sell at the meeting. We are the only ones selling it in our area, and members are loving this everlasting potting mix that pours like sugar and retains lots of water. Get yours. It is a great fundraiser for us and a terrific potting medium, too.
It is hard to believe that 2005 is here already. We have had a fantastic year. We ended 2004 with 109 members, a record!! Pardon us as we strut our stuff, 2004 style.

In January, we learned why our dendrobiums haven't bloomed from John and Tom Salventi of Parkside Orchids. They introduced us to this huge genus of 1500 species and sold great plants, too, They were overwhelmed as we enjoyed our Fifth Annual White Elephant Sale, haggling all the way. (Someone made me sell my Dior purse for $2. It's a hard crowd...) Steve Ninemire donated dozens of blooming Sharry Baby oncidium to the sale. Steve, our wonderful librarian, purchased our rolling cart and lots of books and did a great job this year of organizing and cataloguing everything. Alex and Eileen McKyton got us tax-exempt status, allowing us to deduct our contributions to the club. The newsletter had an original article on national flowers around the world.

As at every meeting to follow, members provided incredible food, and Scotty Nogaim and Eileen McKyton ran our great raffle. Clarice researched and presented the Species of the Month as she did each month of the year and held a silent auction on that species. Mike Levin and Tex Severance enlighted us with an insightful Show and Tell Segment, Dan Mumau and Mike Lawless and
Tony Billitere provided hotel orchids, and Daniel Vong and Mike Levin sold great plants. Dan Hawley and Eileen McKyton greeted members

and were the friendly faces at the door. Diana Smith, Dennis and Clarice Dean,
Alex and Eileen McKyton, Marsha Hawley and I arrived there early to set up and left last to tear down. We were proud of our terrific website, www.glvos.com, maintained by the brilliant Alex McKyton and paid for by Alex and Eileen.

In February, I did a slide lecture on "The Sex Life of Orchids" for the club, a talk I have given seven times this year to other clubs in other states. What fun!! The club sold oncidium and cattleyas, and the newsletter had an original article by Clarice Dean on orchid nurseries in California and one by me on avoiding orchid discouragement.

In March, Ron Coleman, author of several books on native orchids, did a slide lecture on native orchids of the United States. The club created a folding poster on Nevada native orchids to go with this talk. The poster has won several awards at shows. We had our annual Spring Plant Sale at the gracious home of Leslie Doyle and the newsletter had an original article on vanilla and an orchid poem.

In April, Ron Parsons did a wonderful talk on rare and odd orchids, and, inspired by this, the newsletter had an original article on "Freaks and Stinkers" which will be published in Orchid Digest in 2005. The club made donations to the Orchid Digest, American Orchid Society, and the Pacific Judging Center. We had a sensational orchid display at the Easter Show at the Cal, and two of our very talented members, Mike Levin and Diana Smith, won AOS awards. We were thrilled! Tony Billitere organized a group to present A Day With the Experts at Plant World to introduce growers to our club and the world of orchids.

In May, Norman Fang of Norman's Orchids, presented a fascinating talk on phalaenopsis. Best of all, he brought LOTS of his outstanding plants to sell. It was Cinco de Mayo, and the club arranged its first security guard to protect our spots. We were happy!! Several of us went on a field trip to Red Rock with Joe Raba and Dr. Pat Leary to see our native orchid, *Epipactis gigantea* in bloom. Clarice and Dennis Dean organized a magnificent orchid display at the Sunset Flower Show at the Green Valley Library , and I spoke on the sex life of orchids in the library. Our article on "Orchid Addiction" was published in Orchid Digest, and the newsletter had an article on "The Zen of the Orchid Club" which will be published in OD in 2005.

In June, the expert Glen Decker spoke on phragmipedium and sold them, too. The club took part in an American Orchid Society study on *Spiranthes infernalis* in Ash Meadows and dug up plants for the study with a permit. The club's participation will be mentioned in the report on the study. The newsletter had an article on orchids that look dead but will rebloom.

In July, Dr. Joseph Arditti, author of the textbook, **Orchid Biology**, spoke on orchids in food, medicine, magic and sex. We had a slide presentation, in addition, on our *S. infernalis* study and on the native orchids of Bruce Peninsula in Canada. The newsletter had an article on "Ten Types of Orchid Growers" which was published in **Orchid Digest** this fall and our article on the native orchids of Nevada was published in the **Native Orchid Journal**. Native Orchid Conference Journal.

In August, as the fires miraculously and mercifully were put out, we enjoyed a COOL barbecue at the gracious home of Eldine Stevens in Mt. Charleston. Up at dawn, Dan Mumau and Mike Lawless prepared a feast for us. Clarice Dean spoke on how to take care of the hotel dendrobium that we get, and we got to take home lots of them.

In September, Mike Blitz of Exotic Orchids of Maui did a very interesting slide lecture on the influence of *Laelia tenebrosa* on any orchid it is crossed with. His magnificent orchids filled the room. We did a potting demonstration showing how different potting materials hold water differently, part of our emphasis on how to grow. The newsletter had an article on "Ten Questions to Make your Orchids Bloom" and another on the speakers' day at Orchid Digest.

In October, Aaron Hicks of the Orchid Seed Bank did a power-point presentation about the efforts to preserve, conserve, and disseminate native orchid seed. He sold flasks and taught us how to take care of them. Diana Smith and Carol Siegel prepared and sold an herbal moisturizer as a club fundraiser. We now look ten years younger. The club put in a magnificent display at the Fall Flower Show, and the newspaper had an original article by Clarice Dean on growing dendrobiums and one by me on orchids NOT to buy.

In November, Bill Bergstrom of Bergstrom Orchids delighted us with fabulous orchid slides on the weirdest and wildest things to grow—and sold many of them, too. We sold Aussie Gold for the first time, and members loved this new potting mix. The club held elections and Carol, Clarice, Eileen and Diana were re-elected. The newsletter had an article on watering orchids with many member contributions.

In December, we had our party, a fitting end to a glorious year. The newsletter had an article on cloning and one on what makes an orchid an orchid.

Well, it was just the best year. We made wonderful friends, got lots of hugs and kisses, and learned that the only thing better than growing orchids is growing friendship.
See you in January. Love, Carol growlove@cox.net 254-4168

more →

Let There Be Light

By Carol Siegel (and friends…)

It is the miracle of light that drives the engine of life. Leave your orchids in the dark, and they will die. But why? Why do orchids and almost all plants need light to survive?

Plants don't eat steak or chicken or cookies. They "eat" water and carbon dioxide. Light is energy. It is light that provides the energy to convert that water and carbon dioxide into simple molecules and then more complex molecules that "feed" the life of the plants and permit it to grow. Light is like a battery that helps the plants go.

PHOTOSYNTHESIS

The process, at the very basis of plant life on earth, is called photosynthesis. It takes part in two stages. In the first, "the light reaction", plant pigments like chlorophyll b, carotene, and xanthophylls absorb and channel energy to chlorophyll a, whose electrons are excited into a high energy state. This energy is used later to make sugars. Water donates more electrons to the plant pigments to make up for those lost in the energy transfer. In the process, water is split into hydrogen and oxygen. The oxygen leaves the leaves through the openings in the leaves., and the hydrogen is used to make sugars. It all takes place in less than a second!

In the second phase, CO_2 fixation, carbon dioxide from the atmosphere unites with a sugar, and hydrogen from the light reaction is added, and the building blocks for the plant's life are created. Too complicated for you? Just remember that light is needed to power the whole process.

How much light do plants need? Do different kinds of orchids need different amounts of light? What kind of light do they need? How can you provide that light? How can you measure how much light you are giving your orchids? Questions...questions...questions...

FOOTCANDLES

Light is measured in footcandles. (A footcandle is the amount of light falling on a 1-inch-square area located one foot away from one candle) Ordinary sunshine produces about 10,000 footcandles of light at noon in summer. On an overcast day in winter the reading may be as low as 500 footcandles. In nature, some orchids grow in shade and require only about 500 footcandles of light. Others grow in the tops of trees and thrive with 4000 footcandles of light. Most orchids are adapted to a medium range and will do well with between 1500 and 3000 footcandles. On the next page is a chart from Ortho's ALL ABOUT ORCHIDS (p.7), which summarizes the light requirements of the most commonly grown orchids. You can then match the light you have with the orchids you can grow. For example, if you have a shady window, then phalaenopsis may be a good choice for you. On the other hand, if you have a big, bright greenhouse, vandas might be the ideal choice for you. (SEE CHART ON NEXT PAGE)

If you are growing indoors, direct sunlight entering a clean window on a clear day may read 8000 footcandles right next to the glass, but is usually closer to 4000 footcandles. In the shade at the side of the same window, it may be as little as 600 footcandles. A regular light bulb produces only about 500 footcandles although it seems bright. We have a hard time judging light intensity since our pupils adjust to the light. There are several ways to measure light intensity.

MEASURING LIGHT INTENSITY

You can use the "**look and see**" method. If your orchid leaves are dark green like a houseplant, they are probably receiving too little

IDEAL LIGHT RANGES IN FOOTCANDLES

PLANT NAME	LIGHT RANGE							
	Low			Medium			High	
	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000 footcandles
Brassavola								
Brassia								
Cattleya								
Cymbidium								
standard								
miniature								
Dendrobium								
Epidendrum								
Laelia								
Ludisia								
Masdevallia								
Miltonia								
Odontoglossum								
Oncidium								
Paphiopedilum								
green-leaf								
mottled-leaf								
Phalaenopsis								
Phragmipedium								
Sophronitis								
Vanda								

light to bloom. If your orchid is not blooming, the leading cause is probably that it is not getting enough light. Dark green means not enough light. Remember that, although houseplants are pretty, they usually don't bloom. An orchid getting sufficient light is usually a light-to-medium green. If pseudobulbs are present, they are full and round and not soft or shriveled.

With too much light, leaves often look scorched, with a red or yellow tinge. Their blooms may be deformed or brown. In general, plants with thick leaves are more resistant to burning, although phalaenopsis leaves will still burn easily.

You can **measure light with your hand**. If you position your hand a foot away from your plant,and between the plant and the light source, and you see no shadow, you do not have enough light for blooming. If you see a faint to moderate shadow, you probably have enough light for the lower-light plants like phalaenopsis and paphiopedilum. If you see a sharp shadow, you can probably grow higher-light plants like cattleya, dendrobium, oncidium and vanda.

There are also ways to **use a light meter on your camera** to measure light. If you use a camera with a built-in light meter, set the film speed to ASA 25 and the shutter to 1/60th of a second. Aim the camera at a white, matte piece of paper held level where the plant's leaves would be. Hold the camera so all you see through the viewfinder is the paper. Adjust the f-stop (lens opening) until the correct exposure for taking a picture is shown on the light meter in the camera. Convert the f-stop into footcandles using the following chart:

f/2.8 200 footcandles
f/4 370
f/5.6 750
f/8 1500

f/11 2800
f/16 5000

I found the shadow thing and the camera thing really hard to do and bought a **light meter** from Charley's Greenhouse instead (www.charleysgreenhouse.com $29.95). A light meter will enable you to see exactly how much light your plant is getting. I was told that my high-intensity lights would last for several more months, but when I measured the light falling on my plants, it had decreased from 4000 footcandles to less than 1000 footcandles over time. It was time to replace them. After replacing the lights, the light again measured 4000 footcandles. A light meter will eliminate guessing.

MODIFYING LIGHT

Las Vegas is one of the few places where you will get enough light from a north-facing window. In most places, this would be just not enough light, but light is the one thing Las Vegas has plenty of. If you grow in a windowsill or bay window, you may need to shade your plants when they grow with full sun, like a west-facing or south-facing window. You can use vertical blinds, sheer curtains or open-weave curtains to modify your light. You may not need to modify your light at all if you move your plants back a bit. Light falls off drastically a foot away from the window. Make sure to measure it with your meter.

If you grow in a greenhouse or sunroom or enclosed patio, you can put up shade cloth in the summer to cut down on light. A 50% shade cloth (they are rated that way) will cut down your light by half so that if you are getting 8000 footcandles of light coming in your area, the shade cloth will cut it down to 4000 footcandles. You can also paint the outside of your greenhouse with the coating that Clarice and Dennis Dean use.

Here is the recipe for the white wash:
12 cups builder's lime (found in 50 lb. bags at Home Depot)
4 cups table salt
2 gallons water
Mix well. This works well in a garden sprayer. If you reduce the water by half, it can be rolled on. If you apply it in the spring, it will be washed off by winter time when it is no longer needed.

GROWING UNDER LIGHTS

If you grow under lights, you won't need to worry about getting too much light. If you grow under fluorescent lights, you will need about four 40-watt bulbs to cover a two foot by four-foot area, two standard fixtures that hold 48 inch bulbs. Many growers swear that plain ordinary fluorescents changed frequently work just fine, but I have had the most luck with Agrosun fluorescents available from Hydrofarm (www.hydrofarm.com). They are expensive, but they produce good results. You will want to change these growlights about once a year. I do it in January so I always remember. Under fluorescent lights, you will be able to flower phalaenopsis, paphiopedium, and lower-light loving plants.

You will probably need high-intensity discharge lights if you wish to grow light-loving plants like cattleyas and oncidium. Hydrofarm sells fixtures for 250 -watt metal halide bulbs that will cover a four-foot square area or so. You can also buy 400-watt fixtures that provide really strong light for your cattleyas. Hydrofarm claims that their Agrosun bulbs for these fixtures provides just the right mixtures of red and blue light for orchid flowering. They discourage the use of the fixtures that use sodium lights for orchids.

Conveniently, you can buy a cart that has a 250-watt metal halide or 400-watt metal halide light fixture on the top and four 48-inch fluorescent lights on the bottom. I have ten of these and am very

partial to them because they are strong, pretty, and efficient. The big drawback is that they are very expensive. The creative can build one like this for themselves.

GETTING DIFFERENT AMOUNTS OF LIGHT ACCORDING TO THE SEASON

Whether you grow on a window, in a greenhouse, or under lights, you must make sure you are varying the amount of light with the seasons. Your orchid is genetically programmed to bloom in response to certain signals from the rainforest or jungle or mountaintop where it evolved. Your living room may be missing these signals. Your job is to reproduce the signals that tell your orchid that all is well in the environment,that it is safe to bloom as it has for aeons. One of the most important signals that some orchids (like cattleyas) need is a variation in light and darkness according to the seasons.

If you are growing in a greenhouse, Mother Nature will take care of varying the amount of light with the seasons giving you less light in December and many more hours of light in June. Your orchid will be happy. If you supplement your greenhouse light with artificial light, you will have to put your artificial light on a timer to mimic the light that nature is giving- no light on at 1am when it is otherwise dark in your greenhouse.

If you are growing in a windowsill in the living room, and light is always on for the same number of hours while you conduct your normal life, your orchid will be missing its signal to bloom. You need to block the living room or TV light with a screen or sheet or such or put the orchid in a room that is seldom-used and can be dark when it is dark outside.

If you grow under lights in a garage or basement or bathroom, you need to turn on and turn off your lights with a timer. I set my timer

for 12 hours of light and 12 hours of darkness in December gradually increasing to 18 hours of light and 6 hours of darkness in June and gradually decreasing to 12 hours of light and 12 hours of darkness in December, just as in nature. This fools my orchids into thinking that all is well in their garage-rain forest, that that there is day and there is night, that there is winter and there is summer. Ah, they can bloom!!

GETTING MORE LIGHT

If you are not getting blooms, be sure to measure your light and compare it to what your specific kind of plant needs. How can you get more light if you do not have enough?

Think of ways to get more light in your growing area. If you grow under lights, use grow-light fluorescent or HID bulbs which mimic sunlight and not regular bulbs. Make sure you are replacing your grow-light bulbs at least once a year and more if you can afford it. The light output drops dramatically in fluorescent bulbs long before they burn out. Put high-light requiring plants like cattleyas closer to the middle of the bulbs since light falls off dramatically at the ends of the bulbs. Increase light by bringing the top of your orchids closer to the fluorescent or HID (high-intensity discharge) lights. Clean the lens covering your HID light and dust your fluorescents. Clean your orchid leaves on a regular basis. Increase the amount of time your lights are on with a timer. More time equals more light. Make sure your plants are not so crowded together that leaves are blocking other plants' leaves from getting light.

If you grow on a windowsill or greenhouse, make sure your window or glass is clean! Bring the plant closer to the window of your house or glass of your greenhouse for more light. Buy a light meter and see if your window or greenhouse is getting enough light. It might be too dark to bloom orchids. You can add artificial lights to your window or

greenhouse to supplement your natural light. You can make your growing area more reflective with white paint, mirrored tiles or mylar.

MORE LIGHT TIPS

1.Turn you plant from time to time so that it does not get lopsided growing toward the light source. Don't do this when the plant is in spike. Be careful NOT to turn paphiopedilum or phalaenopsis as their spikes are elongating. The spike will twist and turn in an unsightly way as they look for their original light orientation.

2.Feel the leaves if you are not sure if the plant is getting too much light. If the leaf feels warm—or worse, hot—move the plant to a cooler spot or further away from the light source.

3.Make sure that your orchid has UNINTERRUPTED darkness at night. A table lamp in the living room can prevent blooming. Plants like cattleyas need more than 12 hours ~~or less~~ of uninterrupted darkness in order to flower. Can't provide that? They won't bloom.

4.Choose the right spot for your plant. Sometimes, just moving your plant a few feet to the left or right will provide just the right light conditions. Be imaginative. Do not assume that just because you have a window, greenhouse, or growlights, that you are providing the right light for your plant. Read, think, and experiment.

5.To make up for what artificial lights lack, leave them on for a longer duration- 14-16 hours. One advantage to growing under lights is that there are never any cloudy days.

6.The leaves of a plant will give you a clue to how much light they had in their native environment. The tough, cylindrical leaves of vandas are protection against the high amounts of light in their native

environment. They are high light plants. The large leaves of phalaenopsis maximize the light in their native low-light environment. They like low light. Leaves that are pleated (plicate) are usually native to shady areas. The large surface area of these leaves maximize low sunlight conditions. They like shade.

7.The various wavelengths of light in sunlight have definite effects on plants. Blue light is important in structural development . Red light is important for photosynthesis. Green is hardly absorbed at all, but reflected back to your eye—making plants look green to you. You need to have red and blue lights both in your grow lights for healthy development.

8.Air movement through breezes and fans will do a lot to prevent plants from getting too hot in high light. Make sure your area has plenty of air movement.

9.If you buy replacement bulbs for your fixtures, shop around. They can vary as much as $10 a bulb.

10. Remember to match your light conditions to the kind of plant you buy. If you have a shady space, don't buy cattleyas. If you have a bright, sunny window, buy cattleyas.

All of us struggle with providing light to our orchids. I asked members to tell us how THEY provide light for their plants.
The following kind souls shared their secrets with us. We thank them.

Clarice Dean writes:
In the greenhouse we use natural lighting which can be a challenge to control. We have a triple layer polycarbonate for the roof that that provides 50% of the available foot-candles. The sides have double layer polycarbonate. Additionally, we have a large shade tree in the

back yard that partially shades the greenhouse in the afternoon when the heat that develops from the afternoon sun is more intense. The amount of light the plants get have a tremendous effect on the amount of heat gain in the greenhouse which is controlled with fans, exhaust fans, and a water wall. The heat gain in the summer is better controlled when we partially shade the greenhouse with Alluminet shade cloth. The winter heat gain is mainly controlled by air movement. We test all areas with a light meter to judge the best placement of plants.

Diana Smith writes:
When I first built my greenhouse, I bought an inexpensive light meter -- one of the ones the catalogs warn you about not being worth much. However, it seemed fairly accurate, since it registered at about 10,000 foot candles in full sun in October. I also did a light check every month at noon to get an idea what the variation was in different seasons.

My greenhouse is under a lathe patio cover that provides 50% shade to the east and south, so I really don't need additional shading from the top. In the summer, the light registers around 5,000 foot candles when measured at the ceiling of the greenhouse. The west wall gets way too hot being totally exposed, so I have shaded it with a heat-reflective 50% shade cloth (from Charley's Greenhouses). In winter, the light is reduced to around 3,000 to 4,000 and comes in mostly from the southern and western exposures. The eastern end maxes out at around 2,500 foot candles at that time.

I hang the light-loving plants, such as vandas, as high as I can so they get lots of sun. The next tier down is oncidiums, dendrobiums and cattleyas. I arrange these so that the plants closest to the south and west walls are tolerant of the high light levels. Crowded benches (not mine, of course) and tall growths can reduce light levels dramatically

for plants that are farther away from the walls. The lowest level houses the shade-loving plants such as many of my coelogynes, paphs, and phals

I keep an eye on the leaves for an indication of how the plants like their particular placement. Pale yellow leaves and dessicated spots mean the light is too intense. Dark green leaves and soft (too flexible or droopy) growth means the light level is too low. The flowers themselves can also indicate light levels; smaller but brightly-colored blossoms are typical of maximal conditions. Finding the perfect spot for each plant is an ongoing quest. Light, air movement, heating and cooling equipment all contribute to creating microclimates that have an effect on how much light the plants can handle.

One problem I have is that during the winter the light comes into my greenhouse sideways, encouraging lopsided growth and poorly presented flower spikes. I have considered hanging some lights from the ceiling to counteract this, but as wild as I am with the water hose, I would probably pop the bulbs by splashing them.

Christine De La Cruz writes:
As you know, I have a small greenhouse and I ordered an aluminum-type netting that was suggested by Rion which you could tie down to the greehouse. Under this, I also placed solar-shade material I bought from Home Depot because without it, the polyurethane panels absorbed too much light and heat. I am leaving them on during the winter season as well because they also keep the cold out. I think I will have enough light but I can slip off the solar-shade if my light meter shows that there's not enough light coming in.
The phals like lower light so I keep them in the back which is next to the concrete wall and get more shade. I think my greenhouse is fashionable because it uses layering.

Anne Murphy writes:
I grow my plants in front of two windows. They face the south east so the plants get morning sun. I don't use a meter because I have nowhere else to put them. I actually have some orchids outside, they are surviving ok, but probably need to come in soon. I am thinking about getting some grow lights and setting the plants in a small corner of the garage and bring them inside the house to display when they bloom.

Gail Harris writes:
Light is one thing I've just played around with and put plants under south and west-facing windows (with glass curtains to shield them from direct sunshine). I've moved them around a bit when one or the other of them seems to need more or less light. One wall, which is oposite the south window, is mirrored, and so reflects the light back across the room. A couple of phalaenopsis seem to do well sitting on a table next to the mirror and in the path of the late afternoon sunshine from the west windows. And, O, yes, a lone paphiopedilum lives happily on a shelf in the bathroom where the only light comes in from a north window. They all have to make do with any supplemental light from the lamps I use for night time illumination. Too bad that the new full-spectrum lamps that are currently advertised have a base that only fits into a special recepticle.

So much for the inside plants. The cymbidiums live outside under the north facing patio eaves, and seem to soak up as much light as they want. As I'd mentioned before, I put the dendrobiums out there with them, but I'm not sure how well they'll winter over. I may have to bring them indoors again

Eileen McKyton writes:
We had a balcony where we lived and will have a cover over the pool where we are (someday we will have a pool). These are both solid so

no light can come from directly above the orchids. The growing area is on the south side of the house. Alex then constructs a support grid between the posts (not for support but to attach things to). On the outside he staples shade cloth and then trim so the neighbors won't complain. This also helps keep the shade cloth attached and in one piece. On the inside he attaches plastic sheeting the really heavy kind, it is kind of see through. He first staples it up then applies CS 20 hurricane strapping. We found out in heavy winds the staples just don't hold. We have also recently found out that the plastic lasts only about 2 years before drying out and falling apart. We put the benches around the perimeter and put the plants that like the most light on the outside especially the west side. Dendrobiums really like it there and they, since they are so tall, provide more shade for the shade loving plants. Once we find out where each type of plant likes to grow it stays. If the type of orchid starts to look not so good we move it to another location. It might be getting too much light or not enough light among other things. We have found out that if a plant really thrives in a certain location DO NOT move it, not even 1 foot. We have killed plants by just moving them only a foot.

Jackie Braverman writes:
I take advantage of the northern window exposures in my home. I have a rather large window box in the kitchen, with 2 shelves filled with phaphs, phals, and baby catts. My vandas are hanging behind a glass block wall, also northern light -- in a large walk in shower.
The balance of the collection is scattered through out the house -- opposite eastern and southern window exposures, and a few under skylights. No light meters -- coming from Florida didn't need them, I guess I will now.

Marguerite Janes writes:

I place my orchids in the south facing window and then pray for blooms.

Mike Levin writes:
As for light...it's easy ...all natural- the sun and a north exposure works in Vegas. Shade cloth, 1 layer except in the dead of winter, though I may keep it on this year and see how it goes.
I don't know what percent shade cloth it is. I bought it at home depot 6 years ago and it was the only type they sold. It lies on double layer clear lexan that is no longer truly transparent due to age. It is worth noting that standard literature on greenhouses advises against using the north side of a home but this is not a problem in Las Vegas. I do encounter some plants growing toward the light, leaning, instead of growing straight up which would be best.

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