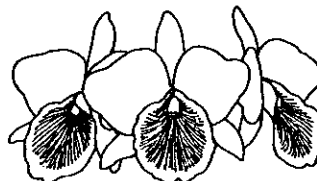


GREATER LAS VEGAS ORCHID SOCIETY

THE ORCHID COLUMN

SUNDAY, SEPTEMBER 9, 2007



BUILDING OPEN AT 1 PM

Carol Siegel, Newsletter Editor

Our August barbecue was a great success. (Miraculously, there was neither forest fire nor rain to spoil our day...) Our great catering team of Dan Mumau and Mike Lawless graciously prepared the BEST food- lamb chops, steak, salmon, chicken, hot dogs, hamburgers, sausage... It was a gourmet feast! They did a beautiful job decorating the buffet table and got up early in the morning to do all this for us. We are so grateful that they donated their time and effort and talent. They are the owners of a Catered Affair and would love to help you with your parties (362-5251). They catered the weddings for the children of Clarice and Dennis Dean, and the food was delicious.

Members brought great side dishes and desserts. Lonna Clarke's mushroom casserole was a big hit, and she graciously agreed to give me the recipe, which I have reprinted at the end of the newsletter. Thanks, Lonna.

We thank Eldine Stevens for once again opening her lovely home in COOL Mt Charleston to our group. Despite the fact that she had a fire in her Las Vegas home, she still opened up her mountain

retreat to us at no charge. It was glorious. Thanks, Eldine.

Diana Smith treated us to a demonstration on mounting orchids. It was a tremendous success, and she gave away her two mounted orchids as prizes. Diana has been growing orchids for over thirty years (since birth?), and she is really an orchid expert. A teacher, she is at ease in front of a group and taught us so much. Now I know why I have trouble with mounted orchids! At the end of the newsletter, in addition, she has written an article on how to begin to grow orchids. I know you will enjoy it.

Diana wore rubber gloves while handling the sphagnum moss she used to mount the orchids. She mentioned that I am very big on rubber gloves. Members were very interested and asked for more information on why to use rubber gloves so I am giving more information. There is a rare but serious disease called "sporotrichosis" that can be largely prevented by using rubber gloves with your plants. If you type "sporotrichosis" under google, there is a ton of information on this disease.

The Center for Disease Control and Prevention, for example, says that sporotrichosis is fungal infection caused by a fungus called *Sporothrix schenckii*. It usually infects the skin.

People handling thorny plants, sphagnum moss, or baled hay are at an increased risk of getting this. A number of cases have been reported in nursery workers, especially those handling sphagnum moss topiaries.

The fungus can be found in sphagnum moss, in hay, in other plant materials and in soil. It enters the skin through small cuts or punctures. Control measures included wearing gloves and long sleeves. It is advisable to avoid skin contact with sphagnum moss.

The first symptom is usually a small painless bump resembling an insect bite. It can be red, pink or purple. It usually appears on the finger, hand or arm and can be followed by additional bumps which may look like boils. Eventually, the lesions look like open sores and can spread to other areas of the body, even the joints or lungs, especially in people with compromised immune systems.

Smart people use one razor blade per plant to cut off dead or diseased material. If you use a razor blade, nice thick rubber gloves will also limit your cuts from the blades. Rubber gloves will also prevent pesticide exposure on new plants that may have been sprayed with who knows what. Longs Drugstore has great thick Latex gloves. I have found that Krogers/Smiths rubber gloves are

very thin and break easily. Home Depot's rubber gloves are good but not as good as Longs. Well, you asked.

Thanks, too, to Tony Billitere who carted up hotel plants and gave them away free at the picnic. You are an angel!

In July, we had a special event, our "Fifteen-Minute Solution," a new invention to share our expertise. We had presentations going on at the same time in different spots in the meeting hall, and members had the opportunity to attend four of the presentations, each fifteen minutes long.

The speakers were:

Carol Siegel "Growing Under Lights"

Diana Smith "How to Begin to Grow Orchids"

Clarice Dean "Building A Greenhouse"

Dan Mumau "Outfitting a Growing Area"

Steve Ninemire "Learning to Grow by Reading"

Cathy Loftfield "Orchid Photos"

I gave all our presenters a dendrobium lei to express our appreciation. Members said they had a great time and learned a lot. We thank our speakers for their informative presentations, their handouts, and their enthusiasm. We will do it again next year, but I think we will limit the number of presentations to just four, and the number to attend to three, so everyone will have a little more time at each station.

We welcomed new members Betty and John Williams and Gene Radcliffe and

Billie Wyrick and Ania Zakowska. We welcomed guests Melina Ortiz and Cecilia Smith. We are thrilled to have you!

We wish a speedy recovery to Jean Gordon after surgery and to Chris Schaeffer after thyroid surgery. We hope Fred and Robert Schechter feel better after their auto accident. We are glad to hear that Becky Biondi is on the mend after knee surgery. We send love to Dan Hawley after his hospitalization. It was a tough summer for our members. Get well soon.

I donated seven high-intensity discharge lights to the club, which were sold by silent auction. In addition, we sold plants from Hilo Orchid Farm. We made over \$650 at the meeting- and did not need to pay a speaker. Win, win, win.

We thank Joe Raba, Anna Contomitros and Peter Lom, Esther Watson, Billie Wyrick and Gene Radcliffe for the delicious food and drink at our July meeting. We thank Lonna and Greg Clarke, Calth Loftfield, Becky Biondi and Pat Holland in advance for our September treats.

Thanks once more to Tony Billitere, Ed McCormick, Myra Glassman, Clarice and Dennis Dean for all their help getting us hotel plants for the raffle. It is lots of work, but we really appreciate it.

We are grateful to Sharon and Uwe Proehl for volunteering to help dear Tony with picking up and storing the

plants. We have such wonderful members!

Our club is very interested in Nevada's native orchids. On July 28, A hardy band of our members (Bruce and Katherine Weber, Miles Hoffman and Gustave Mattiello, Terry Wilsey, Jim and Cathy Loftfield, Diana Smith, Jeri Lee, Carol Siegel, and Eileen Mckyton) hiked up to Deer Creek in the Spring Mountains with our mentor, Dr. Patrick Leary. On a glorious cool summer day, we exulted in the beautiful mountain plants (which included maple trees!) and came upon our native orchid,

Platanthera sparsiflora. It was a first for all of us.

This native orchid is green, hooded, and tiny. Flowering from April in wet meadows, marshes, stream banks and seeping slopes, this orchid is commonly called the "Sparsely Flowering Bog Orchid." Often producing over 120 green to yellowish-green very fragrant flowers per plant, it flowers sparsely only in comparison with *Platanthera dilatata* which can have 240 flowers. Easily recognized by its green color and large column, the flower column fills half the hood formed by the sepals and petals. This narrow flower likes high elevations and wet ground and is pollinated by a moth. (Dr. Leary wrote me later to say the pollinator was a moth not a bee.)

To complicate matters, a sister plant *Platanthera tescamnis* has been described in 2006 in the Spring Mountains. It has some small differences in its sexual apparatus and even Dr. Leary couldn't say for sure that

it was NOT *tescamnis* but *sparsiflora*. This newly- described orchid does like lower elevations and drier climates, so the flower we say probably was *Platanthera sparsiflora*.

On another native orchid front, our club became famous in 2005 when we rediscovered *Spiranthes diluvialis*, a Nevada native orchid that had not been seen since the 1930's. It was published in the Native Orchid Conference Journal, and we proudly explored our Panaca find in 2006 as well. This year, Lonna and Greg Clark went up to see the orchid and found some specimens but reported that the ground had been disturbed.

Just FYI, Lonna & I were up in the Panaca area this weekend so we checked out the orchids. We found about 6 orchids in bloom in the same place as last year. However, I did notice that apparently a tractor dumped or plowed about 1/3 of the area we searched.

Regards,
Greg & Lonna

Just two people may not have noticed all the orchids in bloom since we went up with many more people last year. Many eyes can notice more. In addition, surprisingly, soil disturbance is commonplace for this native orchid.

Jim Coyner, *S. diluvialis* expert, believes that the orchid is a pioneering plant that easily establishes in disturbed soils. After an irrigation dam was constructed in the Uinta Basin about thirty years ago, a population of *S. diluvialis* established itself in the gravel pit area where the gravel was mined for the dam. Moreover, in the Duchesne River, where illegal bulldozing left piles of debris, *S.*

diluvialis found a place to grow. Even in areas that have been mowed or grazed, the orchid has found a foothold. Animals routinely eat the orchid flowers and turn up the wet soil, but the orchid does okay. The orchid also does not bloom every year, so we are hopeful that next year there will be lots of blooms.

In September, Leon Glicenstein of Hoosier Orchids will be doing a synchronised presentation with two slide projectors on "Jewel Orchids." These darling plants are grown for the great beauty of their leaves. Their flowers are often small, but the leaves are, well, JEWELS. I have seen this presentation at Orchid Digest Speakers Day and know you will love it, too. Thank you to Terry Wilsey, our loyal club travel agent, who arranged his transportation. Terry would love to help you, too (731-2114). We thank Eileen Mckyton who has arranged orchids to sell.

Our speaker will be selling jewel orchids, too.

At the end of the newsletter is Lonna Clarke's recipe. There is also a wonderful article by Diana Smith on how to begin to grow orchids. In addition, I have gotten permission to reprint a delightful article by Ed Wright, "By the Book," the winner of the Dillon Essay Contest in 1994. Enjoy!

Love, Carol growlove@cox.net 254-4168

THE PEOPLE WHO MAKE IT HAPPEN:

CAROL SIEGEL- PRESIDENT
CLARICE DEAN -VICE-PRESIDENT
EILEEN MCKYTON- SECRETARY
DIANA SMITH-TREASURER
Miles Hoffman- "The Recruiter"
Paula Garrett- University Liaison
Dan Mumau, Michael Lawless, Marsha
Hawley - Membership Hospitality Chairmen
Eileen McKyton/DanHawley-Welcome Desk
Lillian Patterson, Cathy Loftfield-
Photographer /Historian
TonyBillitere, Sharon and Uwe Proehl,
Myra Glassman, Ed McCormick- Raffle
Angels

Marsha Hawley- Fund Raising Chairlady
Leslie Doyle, Shelly North and Eileen
McKyton- Special Events
Jeri Lee, Myra Glassman, and Gail
Harris- Nevada State Garden Club
Representative
AlexMcKyton-BuildingChairmen&Webmaster
Tex &Gidget Severance and Mike Levin-
Show and Tell Gurus and Judging Chairmen
Scotty Nogaim- Election & Raffle Lady
Terry Wilsey- Club Travel Agent
Miles Hoffman- Library Chairman
Clarice Dean-Species of the Month
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COMING ATTRACTIONS...

Our meetings are held at the Nevada Garden Club Building at Twin Lakes and Washington between Valley View and Rancho at the western edge of Lorenzi Park. The meeting starts at 2, but I open the building at 1 for shopping.

September 9, 2007 Leon Glicenstein, "Jewel Orchids"
October 7, 2007 Helen Hersch, "Advanced Windowsill Growing"
November 4, 2007 Greenhouse Tour- Homes of the Deans, Shelly
North and Mike Levin
December 2, 2007 Eighth Annual Holiday Party
January 6, 2008 Jim Comstock, "3D Photos of Orchids"
February 3, 2008 Jason Fischer, Orchids Limited, "Growing Orchids
From Seed"
March 2, 2008 Steve Frowine, "Miniature Orchids"
April 6, 2008 Mike Glikbarg, "Everything You Wanted to
About Orchids"
May 4, 2008 Ron Parsons, "Dendrobium"
June 1, 2008 Mike Blietz, Exotic Orchids of Maui, "The World of
Cattleya"
July 13, 2008 "Fifteen Minute Solution- Another Culture Day"
August 3, 2008 Barbecue
September 7, 2008 Fred Clarke, "The Weird World of Bulbophyllum"
November 2, 2008 Martin Motes, (THE Vanda Expert), "Vandas"
December 7, 2008 Ninth Annual Holiday Party

Deluxe Mushroom Casserole
Courtesy of Lonna Clarke

1/2 c. butter, divided
3 (8 oz packages sliced mushrooms)
1 1/2 c. herb-seasoned stuffing mix
2 c. (8 oz) shredded sharp cheddar cheese, divided
1/2 c. half-and-half

Melt 1/4 c. butter in a large skillet over medium-high heat; add mushrooms, and cook, stirring constantly, until tender. Stir in stuffing mix.

Spoon half of mushroom mixture into an 8-inch square baking dish; sprinkle with half of cheese. Repeat layers; dot with remaining butter. Pour half-and-half over casserole.

Bake at 325 for 30 minutes

Yield: 6 servings

*I doubled the recipe for the BBQ, added 1/2 c. sun-dried tomatoes, mixed 1/2 white mushrooms & 1/2 baby bella mushrooms, and used sharp Tillamook cheddar cheese.

IN THE BEGINNING SHE SAID, "LET THERE BE ORCHIDS!"

By Diana Smith

So, someone gave you an orchid as a gift. It is so beautiful and deliciously fragrant; you'd like to have more. (Heh, heh, heh. You have been bitten by the orchid bug.) But, how do you start?

What should I get?

Which ones make your heart stop? Do your homework looking specifically for what they need to bloom. Can you provide it? If not, resign yourself to the fact that any plants you buy will end up in the garbage can or on the raffle table.

Are you a generalist or a potential specialist? Some of us find all orchids fascinating and pleasurable. Some of us are really hooked on one or two specific types. If your space is limited (which means ALL OF US) consider what kinds are especially desirable for you and try not to buy others on impulse.

The #1 reason we adore orchids is their FLOWERS. If you are just starting out, buying seedlings may seem cheaper. But the electricity, time and effort you spend getting them to bloom is a gamble! To be sure, get plants in bud.

Assess what you have to offer.

Certain conditions are necessary to grow and bloom orchids:

Light - most important for health and bloom. Different types of orchids require different light levels. Most need bright, indirect or filtered sunlight. Do you have a south window? How about east? Can you stand sheer curtains?

Temperature - fluctuations are often necessary to initiate buds. No matter what people say, house temperatures are NOT going to do it! Our homes are heated and cooled to fairly stable temperatures for our comfort. Do you allow your house to drop down to 55°F at night in the winter? 45°F? Neither do I. How can you provide this fluctuation?

Humidity - keeps the plants from being constantly stressed. Here again, our houses are usually de-humidified for our comfort and to reduce mold problems; not a good situation for our orchids. In the Nevada desert, getting the humidity high enough is one of the most difficult conditions for us to achieve.

Time and money - How much time do you have to take care of your collection? How much can you afford to spend on upgrading your windowsill to a more controlled environment?

Space - Can you house full-sized Cattleyas and Cymbidiums, or do you need to stick with the minis?

Blooming times

Most of us would like a display of gorgeous, fragrant orchids 365 days a year. There are three ways to do this: 1) Keep buying new plants in bloom, and give or throw them away when they are done. 2) Go for plants with long-lasting flowers such as Phalaenopsis, or ones that bloom sequentially for long periods such as Phragmipedium and Dendrobium hybrids. 3) Most orchids consistently bloom during a specific season, and many orchid suppliers label their plants to reflect this. Pick your most beloved group of plants, pay attention to their blooming schedules, and buy based on when they are expected to

bloom. A simple method is to buy one or two in-bud plants each month for a full year. They will most likely re-bloom during the same month the next year.

Simple set-up

If possible, put your plants in a small or infrequently used room so you can manipulate the environment. You can always relocate them when they bloom.

Light - Put your plants in a south window with a sheer curtain to diffuse the sunlight. Use a single or double layer of curtain depending on the actual amount of sun shining on the plants. Your second choice would be an east window with a sheer curtain that you can move aside when there is no direct sunlight. West windows are the next choice, again with a sheer curtain, but

now add a reliable fan and up the humidity to reduce temperature stress. You only have a north window? Okay. Put up a 4 foot fluorescent shop light on a timer above or close behind your plant stand and change the bulbs every 6 months. Best yet, put up a greenhouse!

Temperature - GET A MIN/MAX THERMOMETER to see what your conditions actually are. If you don't have the right temperature fluctuations, try opening the window, closing the window, closing the heat/air conditioning vent and closing the door to that room, isolating the area with curtains, or adding a portable heater or cooler.

Humidity - GET A MIN/MAX HYGROMETER to see what your actual conditions are. If you don't have enough humidity, cluster your plants in a tray on "egg crate" or pebbles with a bit of water on the bottom. Misting works for about ten minutes, until it dries off and blows away by air movement leaving only mineral spots behind. A plastic tarp or shower curtain can be used to contain the higher humidity in the small space for a bit longer. Stop at a drug store and get a cold air vaporizer and a timer. Your best bet is to add a whole house or room humidifier set at 40% to 50%. It's healthier for you, too.

Air movement - add a fan. Ceiling fans are the best; oscillating fans inside the growing area are good, too. Avoid permanently pointing the air stream at one specific spot.

Watering - I love my low-volume indoor hose. Gallon water jugs work well, too. Drain the trays using a siphon hose or turkey baster. Or, carry the pots to the sink and drench them. Be sure to "water through", in other words let the water run through freely to leach out root-damaging mineral salts.

Join an orchid club

(The following is a blatant, unpaid, advertisement.) Of course, the best source of information about starting up is your local orchid club, an affiliate of the American Orchid Society. Local growers have the answers to local problems, and are experienced in dealing with your new addiction.

Not By The Book

By Edward S. Wright

THE BOOK — COMPANION and guide in our early studies of orchid culture; paperweight and door-stop to the later years of the same pursuit. When, where, why and how do we draw away from this composite of all that is true and trite? It's a long trail toward orchid independence and it starts in the greenhouse.

The first glimmer of insufficiency is when we realize it's hard to raise orchids by *The Book* because orchids aren't avid readers. One may, of course, go into the greenhouse and read selected orchid literature aloud to the plants for an hour or so every day, but one must be prepared for strange looks from the neighbors and an "I told you so" from a relative-in-law or two. In addition, we just flat have some reservations about *The Book* when it comes down to growing plants.

For starters, *The Book* tells us the world is composed of fauna, flora and orchids. Evidently *The Book*, specifically and collectively, has a primary purpose to convince us that orchids are entirely different from all other plants. Don't believe it. Orchids were plants a long time before they discovered people, and that was some little time before orchid people discovered orchid books. Orchids are first, last and always plants and have many characteristics in common with other plants. They have a few peculiarities, both individually and as a group, but most ornamental-plant characteristics are common to orchids. When *The Book* quotes some expert to prove orchids are completely different in a major aspect, forget *The Book*, forget the orchids and analyze the expert. Axiom number 1: an orchid expert is someone who has killed a thousand plants.

Withdrawal from dependency upon *The Book* might progress to a line of study entitled: "In The Jungle." Orchids in nature will be found growing on trees, rocks or shrubs, but rarely on bare bark. Rather, plants grow in debris that collects atop branches and in innumerable little fissures and depressions on trees and rocks. It makes sense when you think about it from the orchid's standpoint. Orchid seeds have no stored food, so they must establish themselves in an area where food and moisture are retained. Such natural delicatessens support not only orchids but the fungi that are essential to seed survival during those critical first few months of orchid life. Orchids seem to do best when we're a bit less sterile, a bit less inert, perhaps, in potting. A little organic material in the medium will help cure homesickness for the jungle and will make orchids grow better.

While we're on that subject, even *The Book* lacks any account of an orchid established naturally on fir bark. Personal recollections of the early days of fir bark go something like this: A lumberman named Woody something or other, up in the Pacific Northwest, found his lumber mill inundated with bark from the fir trees being processed. Not knowing what to do with the material, he employed an expert (see above). After study, the expert found the material really was pretty useless, so he told Woody to put it in large bags, paint an orchid picture on the front and ask a good price for it. Orchids always mean high quality, so the reasoning went, and people would be embarrassed if they didn't know a good use or two for a high-quality product. In due course, an orchid grower

noted the picture and asked a salesman if the material was something for potting orchids. The salesman had no more idea than the lumberman, the expert or the customer, so he said, "Yes!" in his heartiest salesman voice. The rest is legend.

Right after the establishment phase, orchids need a good meal. Food to an orchid is liquid nutrient. Natural orchid food is composed of soluble nutrients washed off supporting and surrounding surfaces into the orchid's feeding zone. We recreate and augment this process in the greenhouse by adding soluble plant food to irrigation water. We apply such water only in the morning, for to water later in the day will cause one's thumbnail to turn blue — perhaps that is confused with something else, but whatever happens is pretty awful. *The Book* says so! Funny thing, though, in the jungle it never rains in the morning unless a storm is near. Each day, the sun rises and begins to heat the land, water and plants. As more heat is absorbed, water vapor begins to form and, as it continues to warm, it rises. On through the day, more heat, more vaporization, more water rising to greater heights. Finally, the water vapor gets high enough to lose heat so it condenses into water droplets and falls back to earth as rain. Not at 10 in the morning, but at four in the afternoon. For most of an hour, tropical rain comes down like nobody's business, then the all-clear is blown and a wonderful, refreshed world is at hand. During these rains, civilized people of the world have tea; American businessmen scurry about getting soaked to show how hard they work; orchids get fed and orchids get wet. They not only get wet, they stay damp most of the night, slowly soaking up nutrients and water they will need for another day of active growth. Next morning, Kipling wins again: the sun comes up like thunder and water vapor begins to rise, with plants perfectly positioned to enjoy

the good life and the promise of another liquid extravaganza in the afternoon to come.

Let's not leave tropical rain precipitately. Based on a few samplings, runoff from tropical rain seems to contain very weak levels of fertilizer. The orchid in nature probably receives 15 to 20 parts per million of nitrogen, plus proportional amounts of other nutrient elements, with each rain. That makes it hard to rationalize *The Book's* mandate to feed "one teaspoon per gallon of 20-20-20" or even half that amount. Sure, we want to feed our plants well, and we realize competition in nature is such that almost no living entity has an optimum diet each and every day. Even so, a teaspoonful of a 20-percent fertilizer is a lot of food: about 240 parts per million of each of the main elements or some 12 to 16 times the level found in nature. Plants say the material on feeding was written by people who sell fertilizer, not by people who are trying to secure the best possible growth from orchids. Put another way, the only one happy when you feed the bark is Rin Tin Tin.

To compound the matter, we feed plants with 20-20-20 or some other formulation without giving much thought to what the numbers represent. The Big Three shown on all fertilizer containers indicate the available percentages of nitrogen, phosphorus and potassium, or the N-P-K percentage. It says so on the bag; it says so in *The Book*: This is the good stuff the plants must have. "Feed Blue Marvel to win a blue ribbon." Okay, but the plants go right on building basic structure with C-H-O, or Carbon, Hydrogen and Oxygen, just like most other living beings on this planet. Granted, some essential chemical reactions won't occur or will not be accomplished effectively or efficiently if key fertilizer or trace elements are missing. Orchid growth still consists primarily of helping the plant do what it is already expert at doing: using sunlight and chlorophyll to convert water and carbon dioxide into starches and sugars suit-

able as energy sources to the plant. The great thing is, plants freshen the environment as they absorb carbon dioxide, release oxygen and do all kinds of photosynthetic chemical magic.

Which leads us into the secret of the ages. *The Book* won't tell you this, but the greatest change an orchid must accommodate in the transition from natural to greenhouse growing conditions is the flower pot. More significant than a childhood switch from summer's barefoot anarchy to school-time's cowhide confinement, a pot causes profound changes in the life of an orchid. For practical purposes, a pot is the universe of an orchid in cultivation. Even slabs and wooden baskets constrain plants. We put orchids onto and into containers for our convenience — certainly not because it is

Mulligan, the more ingredients, the better. Unfortunately, most of these ingredients remain in the pot long after the plant has absorbed all the nutrient it can. Water evaporates from this soup and what remains is a highly condensed and "thirsty" sludge. Nearest source of water? Plant tissue. Result? Dehydration.

This situation is not unique to plants. It is the same situation found when a shipwreck survivor drinks sea water to alleviate thirst. Moisture is taken from the area of lower concentration and is released into the area of higher concentration. Sea water is more concentrated than body fluids, so the survivor dehydrates no matter how much sea water is consumed. Same with plants: If we feed high concentrations of nutrient salts, let them concentrate through evaporation, then fail to flush them completely with

going to improve growing conditions for the orchid. Pots do many things for and to our orchids. They confine plants so more of them can be crowded into a growing area of given size. They hold tags just long enough to generate a feeling of false confidence. They break on the way to orchid shows. They hold salts against the roots.

Chemical-salt buildup is an inevitable companion to pot culture. The stronger the nutrient solution, the more rapidly pots accumulate salts. Salts in an irrigation solution come from many sources. Most water supplies contain salts derived from calcium, carbon, sodium, chlorine, several metals and traces of chemical wonders perpetrated upon the environment. We add primary fertilizer salts from the nitrogen, phosphorus and potassium groups, then sprinkle in a few trace elements just for good measure. Like a good

very heavy water flow at each irrigation, our plants will dehydrate no matter how often we spritz, spray, dribble or otherwise moisten the medium. The cure is almost too simple: Adopt nature's plan of constant feeding with a weak nutrient solution and put plenty of it through the pot to flush the medium and irrigate the plant at each watering.

Maybe we should just feed orchids chicken soup. At least we see a lot of orchids that seem in danger of catching a cold. *The Book* tells us orchids are, for the most part, tropical plants. Great, except there is no such thing as a tropical plant because there is no place properly called "the tropics." We use that term to refer to the portion of the earth between the Tropic of Cancer on the North and the Tropic of Capricorn on the

South, then mistakenly say, "the tropics." The two official Tropics are located at 23°27' North and South of the equator because that represents the northernmost and southernmost points at which the sun will be directly overhead at some time during the year. It seems our wobbly old earth sort of meanders around a rough circle and isn't even perpendicular to its own orbit. The amount of tilt: 23°27'. That's what is meant by the expression, "What goes around comes around."

Properly, the area bounded by the two formal Tropics should be called "The Torrid Zone," and we'd grow better orchids if we remembered that. Sure, a few cool-growing orchids are different, but most of the common "tropical" epiphytes have a zone of compensation that evolved in the Torrid Zone: torrid like in hot. "Whoa," you say, "zone of what?" Compensation is that hypothetical level of plant function above which plants grow and below which they decline and die. The zone of compensation, the area in which plants are in balance, depends on many things, but temperature is a primary factor. "Tropical" plants do not evolve a good system for dealing with drastic changes in temperature for the simple reason that they are rarely exposed to them. When orchid plants shut down due to extreme heat or cold, they have a severely limited capacity to restart and resume normal functions. Thermal dormancy just isn't practiced in the Torrid Zone.

Based upon empirical observance only, one might guess the compensation or balance line for the orchids most commonly grown is around 40 to 45 F, because most orchids seem to barely hold their own if temperatures fall into that area. It then seems that plant activity doubles for every 15 to 20 F rise in temperature, at least to the area around 85 F. While empirical for orchids, such data hold true for many plants. This means that plant activity is about four times as great near 85 F as it is in the low 40 F range. We also observe

that above 95 F, orchid plants begin to shut down due to heat stress. This is probably a defense mechanism common to most plants that shuts down plant activity when loss of water approaches or exceeds the capacity of the plant to raise water to its segments.

Due to their great mechanical strength, orchid plants do not easily wilt, but they give definite signs of drastically curtailed activity as temperatures approach 100 F. In measuring plant temperature, we do not measure the ambient air surrounding the plant. Leaf temperature is always higher than the surrounding air because the leaf is absorbing energy from light radiation. Take the temperature of the plant just as you might take the temperature of a sick child. Shake the mercury or other indicator all the way down in a regular sick-room thermometer — preferably one calibrated down to 90 F, as many are. Place the thermometer on a leaf for several minutes and read the result. If the reading is below 90 F, we're not concerned. Leaf temperatures above 95 F rapidly become critical, but temperatures in the 80- to 90-degree range during the hottest part of the day, when coupled with plenty of rapidly moving fresh air, will produce a happy plant that is about as active as it physically can be. Makes it easier to tolerate smarties from the high desert who brag about keeping temperature down in the 70s on fine summer days when plants should be packing in strength and energy for flowering. Our plants sweat it out right along with us, thank you.

Just to get the last bit of mileage from this session, let's toss the calendar out with *The Book*. Early astronomers and scientists developed a number of solar/lunar calendars and refined them over centuries of observation into accurate tools. In 46 BC, Julius Caesar appointed a symposium that consolidated the best features of many calendars into the Julian

calendar that became the standard of the world for 1,600 years. That's a long enough period for a lot of little errors to develop a massive effect, so, beginning in 1582, our current calendar was established to make things right. This calendar was finally adopted as a world standard in 1923. That's great, but no one told the orchids.

Today's calendar opens for business on January 1 every year, but orchids are still asleep January 1. They are much more in tune with the old calendars that started the new year around March 21. The year is just off to a better start when September, October, November and December again become the seventh, eighth, ninth and tenth months, in keeping with the Latin roots for their names. Spring is certainly a more physically pleasant time for awakening than January.

Finally, March coincides with the wanderings of the earth in relation to the sun, as we discussed earlier. With a natural order to awaken them, orchid plants will start each year near March 21. For the most precise start date, adjust that date by the number of days, + or -, that Easter varies from April 1. To track this, get an old desk calendar, the book type that everybody gives and nobody uses. Use the same one for several years, disregarding the day of the week and using only the date each month. Make brief notes every few days about changes you see in the greenhouse. Over a period of several years, the rhythm of the universe will be reflected in this plant diary. You'll also develop the best and most accurate guide possible for your personal growing program — what blooms when; when to take preventive action against a seasonal pest; which plants are productive and which just signed up for the free lunch. Good information, good fun and just a little bit awesome when you see a bit of the cosmic record take form on your pages. Our little microuniverse in a greenhouse is not galactically insignificant; we're part of a

design so grand it goes unnoticed unless we learn where and how to look. Our plants know, and they can teach us.

To grow good orchids, one must also study a bit of math. *The Book* teaches us the great mathematical rule of orchids: to multiply, you must divide. In practice, results are not always on the plus side. To get the picture, pull up to a hobbyist's house for a visit. He tours you through the front garden, the *pièce de resistance* being a narrow path skirting a specimen plant of the Aunt Molly rose. He bought this in 1939 for 29 cents and a coupon from a package of facial soap. It has never been trimmed or restrained in any way and now is suspected of devouring sundry small animals and a meter reader who disappeared on this street three or four years ago.

You pass through to the back via an arbor covered with strangler fig, and only your good Swiss army knife saves you from a first-person testimonial. Next, it's through the back garden where the first tomato is 7 feet off the ground on this vine that looks like Tarzan just left. Now enter the greenhouse. The biggest plant there has two pseudobulbs and a tiny new growth that looks scared when it sees the Swiss army knife still in your hand. You put your knife away, then carefully button the flap on your pocket when the hobbyist starts telling you he has all these plants and none of them ever bloom. Answer to the unwritten quiz: Little plants spend all their time and energy growing. Big plants, having little else to do, bloom. Plants bloom to reproduce, not to enter orchid shows. Mature plants have the capacity to reproduce, so mature plants bloom. We've all seen the seedling blooming for the last time, but we're talking about Bloom.

We're going to lose the faint-hearted now because we are going to talk about *the chapter that is never in The Book*. Parental dis-

cretion is advised. This chapter, to be blunt, discusses "Conversing With Orchids." Most of us engage in this practice but we do it in a furtive, clandestine way because the subject is never included in *The Book*. In fact, this subject is not always considered proper for discussion in mixed company. Not because orchid conversation is X-rated. We simply are inhibited by a culture that teaches us from earliest childhood that plants cannot communicate with people. Well, if we mean orchid plants cannot engage in conventional speech, there may be a little truth to this one. But then we'd have to say that instrumental music can't convey meaning. Even the bang-bang stuff the kids listen to seems to be saying something — at least to them. You'd have to lay it on the Native Americans, too, because the Indians were sending messages with smoke and mirrors long before politicians found out they could convey massive public debt the same way.

If you're still not convinced, here's the clincher. Did you ever see a new grandmother with her first grandbaby? Newbaby is only two hours old and Newgranny can tell you exactly what it likes, doesn't like and what it thinks of Uncle Charlie's strange habit — all with no margin for error.

So now tell me orchids can't communicate. Of course they can. And they do, if we stop making it hard for them. We must establish an empathic relationship with our plants that will let them be part of our lives just as we are part of theirs. We need to forget a lot of old myths, toss away some old books and open our minds to the world as seen by an orchid plant. When in doubt, learn to do it the way the orchid does it. After all, an orchid plant is a competitor all its life. If it is alive, it is winning, so listen to it, be a part of it and think for yourself when you read or listen to the experts expound the latest orchid legend.

When you're one with your orchids, you won't have to go by *The Book*: you'll know. □