

GREATER LAS VEGAS ORCHID SOCIETY

SUNDAY, JUNE 5, 2005 2 PM

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

DIRECTIONS FOR ALL THE NEW PEOPLE-If you begin at Decatur and Sahara, go north on Decatur, make a right (E) on Washington, pass Valley View a few blocks, and make a right on Twin Lakes. The slump-stone building will be immediately on your left. If you get to Rancho, you have gone too far. The building is on the western edge of Lorenzi park.

Carol Siegel, Newsletter Editor

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

AND...

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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
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Tex Severance and Mike Levin- Show and Tell Gurus
Tex and Gidget Severance- Judging Chairmen
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Steve Ninemire Library Chairman Clarice Dean, Assistant Librarian
Clarice Dean- Trip Chairman
John Haydukavitch-Video Chief
Shelly North-Classy Club Apparel Chairlady

June 5, 2005 Fred Clarke, "Cycnoches, Mormodes,
 And Catasetum"

July 10, 2005 SECOND SUNDAY Sheldon Takasaki,
 Carmela's Orchids, "Cattleyas"

August 7, 2005 Barbecue Eldine Stevens' home

September 11, 2005	Doug Conkin, "Planning and Developing An Orchid Collection"
October 2, 2005	Virtual Greenhouse Tour and Pot Party
November 6, 2005	"The Adventures of Dennis D'Allesandro in Bolivia"
December 4, 2005	Sixth Annual Holiday Party
January 8, 2006	Jason Fischer, "Orchids of Japan"
February 5, 2006	Jim Hamilton, Petite Plaisance Nursery, "Growing Orchids Naturally"
March 5, 2006	Doug Conkin, "Integrated Pest Management"
April 2, 2006	John Salventi, "How to Grow Award Winning Plants"
May 7, 2006	Harry Phillips, Andy's Orchids, "Tiny Treasures" (the Pleurothallidinae)
June 4, 2006	Tentatively Eric Christensen
July 9, 2006	Tentatively Chuck Acker
August 6, 2006	Barbecue in Mt. Charleston
September 10, 2006	Marni Turkel, "How to Grow Orchids"
October 1, 2006	Virtual Greenhouse Tour and Pot Party
November 5, 2006	Bill Bergstrom, "The Orchids of Mexico"
December 3, 2006	Seventh Annual Holiday Party

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Amid maracas and mariachi music, a security guard protected our parking spots at our June meeting. Undeterred by the festive Cinco de Mayo party in the park, we had a record turnout and a great time. Daniel Vong provided a knock-out raffle and great plants to sell as did Mike Levin. The club, thanks to Clarice Dean, had unique plants to sell from Carter and Holmes, as well as Aussie Gold potting mix and fertilizer. Everyone who bought a raffle ticket got something, and the club made \$100. We thank Nita Bragg, Jeannie Salles, Steve Ninemire, and Liz Leone for the festive Mexican food complete with pinatas! I was pleased to provide the security guard from my speaking fee in Sonoma.

Many thanks to our dear treasurer, Diana Smith, who, armed with her trusty apron, kept all our accounts straight. She is such a great help in making the meeting run flawlessly. I couldn't do it without her.

Speaking of which, we really thank Clarice and Dennis Dean for waiting two hours for the security guard to show up. After a good deal of frantic telephoning, the security guard made her way to the right place, and Clarice and I could finally relax. Thank you, Clarice and Dennis for this above-and-beyond service. Next year, I will try to move the meeting to the week AFTER Cinco de Mayo and make it really easy.

Clarice presented the Species of the Month, *Brassia caudata*, an epiphytic orchid (grows on trees) found from Southern Florida to Central America and the northern part of South America. This warm-growing Oncidium-type orchid grows in humid forests and likes bright, filtered sunlight and high humidity. Give the plant less water in the winter as there is usually a dry season in its native habitat. You will love this gorgeous orange-yellow orchid with reddish brown spots and waxy, 8-inch spidery flowers. Try it.

The club also purchased a new book on laelias. We were so pleased to see so many members crowded around the library and taking out books. The library is free, and the information is priceless.

Dr. Joseph Arditti, world-famous author of ORCHID BIOLOGY, presented an amusing, educational, and interesting slide lecture on the ways orchids adapt to living in the wild. (It was his birthday, and we even had a birthday cake for him!)

We welcomed new members and guests Owen Anderson, Kent and Karen De Groff, Steve Kinsky, Clemen Borg, June Gardiner, Myra Lee

Glassman, Gloria Hoffman, Judith Howard and JJ Francish. We are thrilled to have you join our warm and friendly group. We are glad that Eileen McKyton is out of the hospital and that Jean Gordon is recovering from her fall. We loved having little Anthony Haydukavitch at the meeting, our littlest (just one!) and most beautiful member. Congratulations to Liz and John whose adoption of Anthony is almost complete. Thanks to Tony Billitere who picked up orchids kindly donated by the Mirage and to Dan Mumau and Mike Lawless who brought in orchids for the raffle kindly donated by English Gardens Florist.

Our June 5th speaker had an emergency so I begged and groveled and got Fred Clarke, owner of Sunset Valley Orchids, to speak on "Cycnoches, Mormodes, and Catasetum." He has an article in this issue of ORCHIDS magazine, and he is quite a famous man. We are so happy to have him come!! Thanks to the board- Eileen, Clarice, Diana and me- who will provide food for the meeting. We still need three people to volunteer for July. Please... We have people for later in the year but July is still HUNGRY for volunteers. (Call me- 254-4168 or email growlove@cox.net.)

I have arranged a field trip for our club to Panaca with Jim Coyner to search for *Spiranthes diluvialis*, which has not been seen since 1926. This is the 13th Nevada native orchid, and there is great interest in whether it still is found in our state. It is an opportunity for us to contribute to orchid conservation and to have lots of fun together. Jim, a specialist in this orchid, will meet us in Panaca, Nevada (which is 150 miles from here) on the morning of Saturday, July 30th at 10 a.m. He will lead us in our search, and we will return that evening. You may volunteer to come up with us at our June meeting or call me at 254-4168 or email at growlove@cox.net. We will carpool up. Bring lunch, water, a hat and comfortable walking shoes.

In August, we will be having our annual barbecue at the gracious home of Eldine Stevens in Mt. Charleston. Dan Mumau and Mike Lawless, Owners of A Catered Affair, have graciously agreed to do the catering. The club pays for meats and drinks, and each of us brings a dish for 10-12 people- dessert, casserole, side dish, or the like. It is a purely social, fun event in the COOL mountains.

In October, we will be having our annual Virtual Greenhouse Tour. Ten members take 35 mm slides of their growing areas and each take five minutes at the meeting to discuss his slides and how they solve the problems of water, humidity, temperature, air movement and light. Lillian Patterson will take the slides for you if you prefer 839-9200. So far, Christine de la Cruz, Dan Mumau and Mike Lawless, Sharon Proehl, the McKytons, Steve Ninemire, and the Deans have signed up. It is a great way to share successful ways to grow in the desert, and it is always inspiring to see how clever members are.

After the tour, we will have a POT party, (4 or 6 inch) where you bring a plant, a POT, some clippers and we all pot together. The club is really going to pot... and other bad jokes. This is a practical meeting, and everyone always appreciates it.

After the newsletter, I have gotten permission to reprint a fascinating article on the lengths wildlife biologists go to save Florida's rare orchids (Reprinted with permission from the February/March issue of NATIONAL WILDLIFE MAGAZINE. Copyright 2005 by the National Wildlife Federation). Thanks to Gidget Severance who brought this article to my attention. There is also an article on common household products to use in orchid growing. Keep blooming, Carol 254-4168

COMMON HOUSEHOLD STUFF FOR YOUR ORCHIDS

A-Z by Carol Siegel

It seems like you're constantly BUYING stuff when you grow orchids—pots and bark and fans and thermometers and... well, it never ends. However, there are a lot of common household things all around your house that you can use in your orchid care, and you won't have to spend a thing. Here, from A-Z, are some ideas you might find useful:

A-ALCOHOL- No, not the stuff on the bar (which you might need when they continue to refuse to bloom no matter what you do...) but just plain rubbing alcohol. Alcohol is really useful used straight on a q-tip to squash and kill those pesty mealy mugs that nestle in the leaf axles. An inch of alcohol, an inch of Formula 409, a tablespoon of dishwashing liquid mixed in a spray bottle full of water is also quite effective as a spray to kill bugs, and it can't harm you. You can also mix some rubbing alcohol with a cap of Physan in a bucket of water to disinfect your cutting tools.

BOTTLE- A spray bottle is a terrific item to foliar (leaf)feed your orchid. Alan Koch recommends an interesting fertilizing regime which I like- Fertilize the roots one week, spray the leaves with the solution the next two waterings or weeks, and then just water the fourth week. He says plants do better when leaves and not roots are bombarded with fertilizer salts. Jerry Fischer recommends fertilizing normally each watering with a weak solution of his Green Jungle fertilizer (www.orchidweb.com) and then once a month in the growing season spraying the plants with a SIX times stronger solution of fertilizer in a spray bottle. For example, if you usually put one ounce in a gallon of water with his product, occasionally use SIX

ounces in a gallon and spray it on. I tried it and the plants looked great.

C-CINNAMON- Cinnamon is made from the bark of a tree. Because trees are bothered by viruses and fungus and bacteria just like orchids, the cinnamon bark contains powerful ingredients to control those very things. Cinnamon is remarkable effective sprinkled on funky-looking leaves, on cut stems, and on a lot of orchid fungi. Try sprinkling it on your problem plants. I have great success sprinkling them on orchid cuts. They seem to dry out right away.

D-DRILL- An electric or hand drill is very effective for making the holes in pots for barbecue skewers. Small wooden skewers are just wonderful to hold newly potted plants in place. Drill or punch a hole on either side of your plastic pot and thread the skewer through the pot. Cut the excess off, and voila, you have a gentle way to hold the plant in place. Some people like to punch two holes in the BOTTOM of a plastic pot and thread a twist tie through one hole in the bottom, around the plant, and down out the other hole, twisting the tie on the bottom. See what you like. You can buy a package of the skewers in the barbecue grill stores, in the grocery stores, and even in the 99 cent stores.

The same drill with a 3/8" bit makes very nice extra holes in the bottom of plastic pots. Bob Gordon, phalaenopsis expert, recommends a square inch total of drainage hole area in a 4-inch pot or about eight or nine 3/8" round holes. A 6-inch pot should have two square inches total of hole area. Most pots don't have that much—or the holes are blocked with plastic from manufacture—so drill away for good drainage.

E-EGG CRATE- Many of us have overhead lights with an egg rate pattern plastic covering. You can grow orchids in a shallow pan with

the same egg crate cut to fit. Fill the pan with water to the top of the egg crate, and set your plants on top (not sitting in the water or they will rot). This will provide splendid humidity for your plants. If the egg crate gets dirty, a few hours in a Clorox solution in the bathtub will take care of it.

F-FAN- Fans of every shape and size are an orchid's best friend. In nature, orchids receive fresh air and breezes daily. The hobbyist can duplicate this delightful natural condition by using fans—floor fans, clip-on fans, oscillating fans, just anything that moves the air. Stand in the middle of your growing area. If you just love the gentle breeze, so will your orchids. If your hair is whipping around your face, turn down the fan or move it farther away. If the air is dead, look for another fan. Walmart has a fan that sprays a mist from the middle when connected to a hose, and it is really useful on hot summer days.

G-GARDEN TOOLS- You probably already have scissors and garden shears and clippers that you can use to keep your orchids tidy. Make sure that you sterilize your tools between use with Physan or a propane torch. (See P) Go to the 99 cents store and buy a dozen or more clippers that you can soak overnight in Physan. You will have enough fresh ones to use on your whole collection.

HORTICULTURAL OIL- Fred Schechter recommends adding one tablespoon of horticultural oil (available at Plant World) to one quart of 91% isopropyl alcohol (or $1 \frac{1}{2}$ tsp of oil per 16 oz. Alcohol) and spraying it on pests like scale. He swears it is very effective and really safe for you. Don't have horticultural oil in the house? Many recommend that a little salad oil will do the trick. Buy toothbrushes at the 99 cents store and scrub the scale off with a toothbrush dipped in the alcohol/oil mixture and then throw the toothbrush out (They are six for one dollar...). Then, spray with Fred's mixture.

I-IVORY SOAP- Ivory soap liquid (and most dishwashing soaps) are almost as effective as insecticidal soap in killing insects AND it won't kill you. Add a little soap to some water and spray. If you use a powerful insecticide, the addition of a little soap to your mixture will help the stuff stick to the poor buggies and kill them more effectively. ORCHIDS magazine also recommends half-filling a bucket, adding 1/6 cup dishwashing liquid, and immersing a plant completely for an hour to drown ants. Remove, let drain, and replace where it was growing.

J-JUICE, that is BUG JUICE (I can't think of a J...) Bug juice, or insecticide, is a necessary evil. Just remember to use the LEAST powerful first. A little alcohol on a q-tip will control the first bug. Don't use a nuclear bomb when a fly swatter will do. Much has been written on insecticides, but I can't stress how important preventive measures are. First, never bring a new plant directly into your growing area. Quarantine it for a couple of weeks. Inspect it. Distrust it. Might it have a ROACH in it? A MEALY bug? An ANT colony? Some people like to lightly spray new additions with an insecticidal soap, Neem Oil, or a one of the gentler insecticides. Second, inspect your plants for a few minutes a day. If you hose your plants or have them automatically watered, take some hands-on time to see if your plants are getting bugs. One bug is easier to eradicate than an infestation. If you do have something crawlly, isolate the plant(s) RIGHT AWAY. Do not risk creating an epidemic. Don't be lazy. Third, if you have to spray something strong like Ornithene, make sure you do it as they tell you on the label. Most of the sprays require spraying two or three times a week apart. AND do be sure to wear protective clothing, take the plants outside if possible, leave the area immediately after, take a bath, and be smart. If a plant is REALLY bad, introduce it to the trash. One plant breaks your heart. Your whole collection in the garbage will kill you.

K-KLEENEX and its sister TOILET PAPER- Boxes of Kleenex and rolls of toilet paper are really handy in the greenhouse. Paph orchids and phals tend to collect water in the leaf axles after watering. This wet condition can kill paph buds and rot phals. Pushing a little toilet paper or Kleenex into the wet spot and leaving it there for a moment is a really effective way of drying out the leaf junction and saving the bud and plant.

L-LIGHTS- Many growers don't realize that their greenhouses can have dark spots. Not every greenhouse or growing area is ablaze with light. You can improve your blooming success by adding fluorescent grow lights to your greenhouse dark areas or your window sills. Take a light meter and see just how much light various areas of your growing space get during different times of the day, and see if you don't get better success adding a shop light with grow lights,

If you are growing with lights that your lights will fade with time. Replace your grow lights and halide and sodium lights once a year. Remember that you get very little light toward the ends of the bulbs and more toward the middle so place high-light loving plants toward the middle. Any room can become a growing area with the addition of a light cart, a fan, and a humidifier.

M-MILK-If your orchid leaves are dirty, a little whole milk on a kleenex gets them clean in an instant.

N-NOTEBOOK- Many people have fun keeping records of their orchid plants. If you make a page for each plant, you can give it a number (which you note on your plant tag), record the purchase date, repotting information, nursery you bought it in, blooming success, flower size, and the like. Diana Smith does this, and it adds to her hobby pleasure. I am not that kind of person, but I photograph my

plants in bloom, put the pictures in album, labeling them with genus, species, and date. It thrills me to go through the albums.

O-ORANGE OIL- The last issue of ORCHIDS mentions using orange oil to control ants. There is a product called Orange Guard that is death to ants. Available at Ace Hardware or at 1-888-659-3217, it is sprayed on ants or ant areas and their wax coat is destroyed and they suffocate. Don't spray on flowers(Orchid, 10/02)

P-PROPANE LIGHTS- There are really handy small propane lighters from companies like Scripto and Bic that you use to light the grill. These are nice, safe, cheap ways to sterilize your cutting tools between plants to prevent the spread of disease. They are way more handy than the big propane tools available from garden catalogues that threaten to burn off your eyelashes every time you use them—and they work just fine.

Q-QTIPS-Q-Tips are very handy for getting between leaves to squash bugs, dry out spaces, and wipe out cottony things. I like the little travel packages that are small and plastic so that they don't get wet in the greenhouse.

R-ROLLS OF TOILET PAPER- See K. Festoon your greenhouse with rolls of toilet paper and use it to dry off leaves to prevent rot and spots.

S-STYROFOAM- Save styrofoam in a drawer to use in the bottom of plastic pots instead of crockery to increase drainage. If a plant is very wide but has few roots, and you must put it in a BIG pot, add a lot of peanuts so there is not so much bark to stay wet until the plant grows lots of roots. This will prevent the medium from staying too wet and rotting the poor plant. Test styrofoam before using to make sure it doesn't dissolve in water. Throw out this goopy type of

styrofoam since it would prevent drainage rather than increase it. Bob Gordon does not like to use styrofoam but makes extra holes in the pot instead, but most do use it.

T-TWEEZERS- What would we do without tweezers? Use them to remove the extra sheathing around the base of your plants when repotting. If you use your fingers, you can knock off growing tips, but tweezers are just right. Remember to sterilize them between uses.

U-USEFUL SOLDERING IRON- Your soldering iron will be very handy for making extra holes in the bottom of your pots. Look for one with about a 3/8" tip.

V-VINYL or LATEX GLOVES- Always wear gloves when you handle or water your plants. Not only will it save your hands and nails, but it will prevent you from being exposed to fungus, bacteria, insecticide, and other nasty stuff. There is even something called sporotrichosis which can make you very sick when handling Sphagnum moss. Although it is unlikely, why take a chance?

W-WATERING CAN- A plastic watering can is a cheap and effective way of fertilizing your plants if you don't have a fancy system. It usually takes a cap of the fertilizer in your gallon watering can of water (follow package directions) and you can fertilize your already-watered plants.

X-10X magnifying glass- You can use a magnifying glass to inspect your plants.

If you look inside a flower, you will sometimes be surprised to see it has bugs!!

Inspecting your plants this way will open a whole new world to you and will help you catch and identify plant problems at an early stage.

Y-YELLOW #2 PENCILS- Nothing makes a better imprint on an orchid tag than a pencil. Surprisingly, they last longer than pens. Don't forget to always note when you have repotted your plant. It can be fun to note the date of blooming, too.

It is a good idea to put TWO identical tags in each pot in case one gets lost, and one ALWAYS gets lost, especially if the plant cost you a lot of money.

Z-ZIPLOC BAGS- Ziploc bags are very handy for storing things in your growing area. Bark that is put in a ziploc bag doesn't get all over the floor when it falls. Q-tips stay dry, clips are easy to find, dragonfly clips are always handy, and twist ties are easily accessible. The less mess in your greenhouse the better!..

(next page for another article)

Delicate Affair
By Rene Ebersole

Wildlife biologist Larry Richardson will do almost anything to save South Florida's rare orchids; he will even court a flower

IN THE SHADOWS of pond apple and pop ash trees, a canoe slips quietly through tannin-tinged waters, past the stumps of 600-year-old cypresses, across an alligator's bubble trail and into a cove scented with rotting fish. There, Larry Richardson pulls his paddle out of the water and points at a low-hanging branch adorned with a wad of roots and spiky leaves—the signature of the rare cigar orchid.

"I put that one there when it was just a baby," says Richardson above the sound of a pileated woodpecker drumming on a dead cypress. When it blooms in the coming weeks, this plant will unfurl ruffled petals in a rich palette of gold and crimson polka-dotted patterns in preparation for a visit from a pollinator that no longer exists here.

In the absence of the orchid's pollinator, in a swamp denuded by logging decades ago and increasingly threatened by modern-day development and plant poachers, Richardson, a U.S. Fish and Wildlife Service biologist, is trying to help orchids hang on in South Florida. At the same time, he also must keep tabs on other imperiled species that share the orchids' habitat, especially the critically endangered Florida panther.

Richardson's orchid work is largely a covert operation to prevent poachers from discovering the locations of the state's stash of rare plants. Yet the refuge where most of his efforts are concentrated is surrounded by people, and their impacts on the orchids are severe.

The 26,400-acre Florida Panther National Wildlife Refuge lies in the heart of Collier County, one of the fastest-growing regions in the nation. Tucked within this increasingly urbanized landscape, the reserve conceals panthers, more than 100 bird species, unique hardwood forests, alligators and more than 40 species of orchids. But a century of people meddling with the waters that crawl a southwesterly route across the state's limestone mantle has drastically altered the region's hydrology and threatened its diverse flora and fauna.

Most U.S. states shelter wild orchids. But Florida's subtropical climate and the ease with which orchid seeds can be transported from the tropics by hurricanes makes this state especially rich in these unusual plants. Sheltered within Florida's borders are 118 species, roughly half of all the orchids known to exist in the United States and Canada.

Branches overhanging the deepest, darkest sloughs are bejeweled with rare epiphytes (species that grow on trees rather than in soil), including the cigar orchid and the celebrated ghost orchid, made famous by Susan Orlean's best-selling book *The Orchid Thief* and the Nicholas Cage movie *Adaptation*. These plants demand water-filled swamps, which store the sun's warmth during the day and release it after dusk, to survive the cold winter months.

If lower water levels created by development induce droughts that coincide with cold temperatures, it could spell the end of such species. "Some of these orchids can grow 50, 60, even 100 years," says Richardson. "Then one night you get two hours of freezing temperatures and they turn to mush."

As he shows a visitor around the panther refuge—first by canoe, then on a chunky-tired vehicle called a "swamp buggy" and lastly on

soggy feet—Richardson points out the identifying characteristics of a handful of endemic epiphytes: the distinctive, alternating leaves of the night-fragrant epidendrum (*Epidendrum nocturnum*), the spidery veins of the leafless, froglike ghost (*Dendrophylax lindenii*) and the diminutive, lime green pom-pom flowers of the dingy-flowered star (*Epidendrum amphistomum*). Then he zeroes in again on the one he's currently trying to save.

Wading through cool, thigh-high water coated with duckweed, Richardson approaches a cigar orchid (*Cyrtopodium punctatum*) budding atop a 5-foot-high cypress stump. A water moccasin skirts the edge of the tree, then zigzags away, taking cover in some high grasses. Being mindful of the snake, Richardson fingers the plant's long, slender leaves. "This orchid does not belong here," he says, touching a young bud. "Historically, it would have grown much higher up." Shielding his eyes from the sun, he motions toward the bald cypress trees overhead.

More than a century ago an unknown quantity of cigar orchids was hauled out of this swamp on the trunks of cypress trees headed for the nation's lumberyards. Coveted for their long, straight, knot-free and rot-resistant boards, those trees supplied the materials to build Navy battleships for World War II. Later, the tall, wooden sentinels were fashioned into all sorts of post-war commodities, from pickle barrels and stadium seats to roof shingles, coffins and Coke bottle crates. The few remaining old cypress trees left standing in the refuge were probably deemed too hollow or too crooked, undesirable for logging. Today, surviving cigar orchids exist almost entirely on cut stumps.

Until recently, the cigar orchid's future in this region looked bleak without its pollinator. No one knows what happened to the insect, which is believed to be a bee, but some suspect it may have been

wiped out by pesticides used on nearby agricultural fields dotted with tomato and pepper plants. With cigar orchids failing to reproduce year after year and the dead cypress stumps becoming increasingly rotted, Richardson decided to take matters into his own hands; by performing the duties of that missing pollinator.

"Here's this male bee," says the tall, blonde-gray biologist, wagging his index finger toward an orchid bud that will soon feature a bumblebeelike yellow bloom. "He thinks he can mate with this 'bee.' Only it's not a female; he's been ripped off." As the bee backs out of the flower, he unknowingly picks up a waxy cluster of pollen, or a pollinia, like a Post-it Note on the back of his head. "The pollen has enough stickum for the bee to carry it to the next orchid, where he gets duped again," says Richardson, "leaving the pollinia attached to the stigma, pollinating the plant."

Richardson then trudges east down a well-worn alligator trail to find another cigar orchid. This one is in full bloom. The mass of yellow and ruby-colored flowers glow in the sunlight like a lavishly wrapped present against the drab brown and green of the swamp and the surrounding forest. Arching his neck to see into a flower, he plucks a pinhead-sized pollinia from a bloom with a pair of small forceps. He plans to implant the waxy cluster of pollen on a stigma of another flower about a mile away.

"After I pollinate the flower," he says, "it shrivels and the stem swells. Over time—roughly a year—the swell becomes a seedpod." When the pod bursts open, it disseminates a million seeds that drift in the breeze. The problem is that seed caches dispersed from a 5-foot-high stump—rather than from 30 feet up in the canopy—can't travel far. Richardson offers some assistance there, too, by shimmying up sturdy, young cypresses and fastening seedpods to the bark with thumbtacks. "A seed has to land where it will find the right

habitat and take hold," he says. "When they float from these historic heights, they increase their odds. They could go from here to Cuba."

A seed with any chance of sprouting must land in a crevice on a tree trunk that's not too wet, not too dry, not too bright and not too shady, and then become infected by precisely the right species of fungus. "There are hundreds of types of fungi," says Richardson. Some will digest the orchid seed, killing its chances of becoming a plant. One will nutrify it, helping the seed develop further.

In the hopes of eventually achieving a full-scale orchid restoration in the heart of the Big Cypress Basin, where the refuge is located, Richardson and Scott Stewart, a colleague at the University of Florida, are trying to cultivate native orchids in a laboratory on the panther refuge. Once the method for reproducing and reestablishing cigar orchids is perfected, they plan to tackle the cultivation of other imperiled native species.

Saving the panther is a large part of Richardson's job, but he tries to devote as much time to orchids as possible. "What's good for orchids is good for panthers," he says—and everything else that lives in South Florida's shady swamps. Right now, several developments are afoot that could give a boost to Richardson's orchid offensive. The biggest is the \$8 billion Everglades restoration project, an attempt to re-establish more natural water flows to South Florida. If this epic project succeeds, it will buy Richardson and Stewart some valuable time to perfect their cultivation techniques.

But another major threat still lingers: poaching. Plant pilferers come in all shapes and sizes: tourists on a guided afternoon swamp walk; fanatical collectors driven by the hunt for something rare, something valuable, something forbidden; even the occasional rogue member of a group that works to protect orchids.

Mike Owen, the biologist at the nearby Fakahatchee Strand State Preserve, was witness to one of the biggest orchid heists in Florida history. He had only been working in the Fakahatchee—the orchid capital of the United States—for three months when on December 21, 1993, a local orchid collector named John Laroche and three Seminole Indians were caught hauling garbage bags and pillow cases full of rare plants out of the park. The Indians and Laroche—star of *The Orchid Thief* book—were arrested on the spot and Owen was asked to document the 136 plants they had collected. Of the 92 wild orchids poached, many were so new to Owen that Laroche had to tell him what they were. Included in the large haul were several specimens of the highly prized ghost, and despite Owen's best efforts to put the plants back in the swamp, every one died.

Richardson shares Owen's frustration about the incident. "That guy Laroche wanted to collect them all," he says. "But the demise of certain orchids is not going to be from such arrogance. It will be from apathy."

Steering his silvery blue truck into a Naples parking lot rimmed with what appears to be nothing more than a trivial scrap of swampland, Richardson warns, "This location must remain top secret." He dons a pair of waders and a hefty backpack, then ambles across the cement, scales a chain-link fence and strides down an overgrown path until he is wading in knee-deep mud. The song of an ice cream truck hums in the distance. Children laugh and shriek in a nearby yard.

Seconds later, Richardson finds the first signs of a ghost—it's spidery, chlorophyll-pumped veins running up a pond apple tree. On the same tree, he discovers five others. "There are more ghost orchids on this one tree than on two or three acres in the refuge," he whispers. "Anyone could come in here, cut a limb and have a ghost."

In fact, somebody already has. "See there," Richardson says, pointing at a severed branch on a neighboring tree. "It's been cut in two places. They took out a big chunk with a ghost orchid on it. Now that orchid is doomed to die because the dead wood will release chemicals that kill the plant."

Still, Richardson finds many of the trees in this section of the swamp untouched. All told, he counts 17 ghosts in less than an acre. "It's one of the largest concentrations of ghost orchids in the state," he says. "But there are no seedpods. So there's no reproduction, no future. I'm going to pollinate the heck out of them this year."

Senior Editor Rene Ebersole got hip deep into her work while reporting this story, spending several days wading through Florida swamps with orchid scientists.