February 2005
Vol. 36, No. 2

THE HOUSTON HAPPENINGS

The Monthly Newsletter of the Houston Orchid Society, Houston, Texas

Speaker Spotlight

By Ted Baenziger

Our speaker this month will be Dr. Joseph Arditti, Professor Emeritus, Developmental and Cell Biology, University of California at Irvine. He has written, edited, and taught comprehensive and detailed references for professionals, growers, plant scientists, and hobbyists from Orchid Biology, Vol. I, in 1977, to Orchid Biology, Reviews and Perspectives, Vol. VII, in 1997, and most especially, a definitive text with Robert Ernst in 1993 on micropropagation of orchids (seed, mericlones, and meristems, with recipes!).

Dr. Arditti received his Ph.D. from the University of Southern California and has spent his career doing research on orchids at the University of California at Irvine. He has made extensive visits to the Bogor Botanical Gardens in Indonesia, the National University of Singapore, the Singapore Botanic Gardens, and the University of Malaya.

Interested in the New Caledonia area as well, in 1979, he published a book with Michael S. Strauss about Taro culture, a plant that grows well here in Houston, known as "Elephant Ears."

More information is available on the net: http://www.orchidaceousbooks.com.au/OB50012.html about the first of his volumes in the series; http://www.chebucto.ns.ca/Recreation/OrchidSNS/magmar97.html about exudate on orchids (nectar and other sugars that attract ants); but the best way to find out more is to "google" his name.

Donations to the Houston Orchid Society

By Ted Baenziger

The Houston Orchid Society is an Internal Revenue Service-recognized Section 501(c)(3) charitable corporation. We have been awarded the Distinguished Affiliated Society Services Award (DASSA*) from the American Orchid Society (AOS). Our purpose is to discuss and study orchids; to present lectures, lessons, and exhibits for members and the larger public; and to organize and participate in workshops and similar study groups in orchid symposia and conferences. We also share knowledge, information, and instruction about orchids including their biology, hybridization, culture, and their enjoyment and fascination.

To this end, we schedule a major exposition of orchids in the Spring of each year, in conjunction with the Southwest Regional Orchid Growers Association (SWROGA*). Through our outreach to the Houston Museum of Natural History, and other venues, we disseminate information about and foster interest in all aspects of orchids, especially conservation and preservation of native species.

Our regular meetings, held on the first Thursday of the month at the Houston Garden Center, Hermann Park, are complemented by our monthly Newcomers Group visits to greenhouses of local growers and an annual Workshop in August on various topics of interest. Visitors are always welcome at our meetings, although, we do ask that they become members after three visits to enjoy the full range of possibilities in the society.

If anyone would like to help us in this work by making a tax-deductible contribution to HOS, please contact our treasurer, Bill Bartlett, or send a tax-deductible GIFT check to HOS President, Pam Vinson. Thank you!

*For more info. on DASSA, visit www.orchidweb.org/dassa.html and on SWROGA - visit www.swroga.org.

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HOS Meeting Announcement

Speaker:	Dr. Joseph Arditti, Professor Emeritus, Department of Developmental & Cell Biology, University of California at Irvine
Date:	Thursday, February 3, 2005
Time:	7:30 p.m. - 9:30 p.m.
Place:	Houston Garden Center, 1500 Hermann Drive
Program:	Survival! How and Why Orchids Survive in Nature

President's Post

By Pam Vinson, President

This is one of my favorite times of the year -- I have bloom spikes popping up everywhere in my greenhouse. Most of my Phalaenopsis are in spike, and some of them are blooming for the first time.

2005 Annual Spring Show

The Annual Spring Exhibition and Sale, "April -- Love for Orchids is Everywhere," will hopefully be our largest and best show ever -- please volunteer when called upon. You should also consider putting in a small exhibit -- there's even a category for five or less orchids in an exhibit. If you're a beginner, ask a friend to work with you.

Committee Chair Needed

There's one Committee Chair still open -- Guest Hospitality -- and I know that there is one person within our society who will step forth and fill this position.

Board Meeting

I am looking forward to our first Board meeting -- date to be set soon. If you have any business, please let me know.

2005 Spring Show Ticket Sale Contest!!!

As most of you know, the Houston Orchid Society will have its Annual Spring Exhibition and Sale on April 1-3, 2005. As I announced at the January meeting, I'm coordinating a ticket sale contest for HOS members to compete in:

Tickets will be $4.00 each to the public for advance ticket sales ($5.00 at the door). At our monthly meetings, pick up as many tickets (in sets of 10) as you think you can sell. After those sets are sold, turn in the money, and pick up more sets. In mid-March, the contest will end, and all unsold tickets and money will be turned in. The number of tickets sold will be calculated and the top three sales will be the winners.

There will be three wonderful prizes: 1st prize is $150, 2nd prize is $100, and 3rd prize is $50. The prizes will be paid in HOS Show Cash which can be used at any of the venders during the show. To help boost tickets sales: we will have booths at the Texas Home & Garden Show on Feb.11-13 at Reliant Center and at the Houston Home Show on March 18-20 at George R. Brown -- please volunteer (your tickets sales will be added to your total) -- please see me to sign up. Let's have a great ticket sale and a wonderful show!

Thanks -- Pam Vinson

Recap: January 2005

Speaker Summary

By Nanette George

At the January meeting, Jerry Boyd of The Orchid Connection, San Diego, presented an interesting discussion on Mexican orchid species and his experiences as a commercial grower in Veracruz, Mexico. His nursery was positioned near a large canyon facing Pico de Orizaba, Mexico's highest mountain and an inactive volcano.

Jerry grew 90% of his orchids outside on trees, on lines strung between trees, on benches, and some under shade cloth. While the natural environment provided the benefit of humidity, light, and a natural canopy, the high winds blowing across the canyon created challenges for growing outside and the need for adaptive measures.

Jerry's concern for Mexico's natural habitat and the rapid deforestation of its mountainous regions was evident. Viewing his slides, we saw the stark contrast between the mountain areas stripped bare of their lumber and the still-beautiful Oaxaca Valley where many cliff-dwelling orchid species continue to thrive.

Having since sold his nursery, Jerry now does mostly wholesale and local sales in the San Diego area. While he no longer sells from his website, you may still view an extensive list, with photos, of Mexican orchid species at www.orchidconnection.com.

Plant Table

By Laurie Skov

After the Christmas snow, the plant table still blossomed in January. The most popular species was **Phillip Drilling's** family heirloom Cattleya bowringiana. There was a tie for the favorite hybrid: the **Gerber's Angraecum Lemforde 'White Beauty'**, and **Dorothy Forman's Paphiopedilum Buena 'White Cap' x Lemon Heart**. (For photos and related story, see the Happenings online supplement).

Thanks to Denny Haase and Tim Fischer for the great plant introductions. Ted Baenziger recognized Denny and Renee Haase with a $50K check for sharing the most plants in 2004. Ted also noted all those who brought more than 20 plants and promised to mail a recognition certificate to each.

Now that your plants demonstrated their winter hardiness with their dose of magnesium, it's time to up the phosphorus to get great blooms for the March 11-13 GOS and the April 1-3 HOS shows. I'll be asking for both plant and people volunteers to put together great displays at each.

2005 Spring Show Update:

We're one month closer to the Spring Show and the excitement is building! The South Texas OS is planning to charter a bus to bring members to the Show. Many out of town individuals have called asking about Show details. A few weeks ago, we met with the students from the Art Institute who will be designing our poster -- they are very excited about working on the project. We expect to have the posters ready for the March meeting.

This month is the call for volunteers. We hope that each of you will sign up for one or two activities and volunteer at least two hours of your time during the three-day Show. If everyone contributes a little, then we'll have plenty of volunteers. Major volunteer activities include:

HOS Exhibit: We'll need folks to work with Laurie Skov to produce an exhibit we'll be proud to show the public. It's what we're about.

Pre-ticket Sales: Each of us needs to buy/sell 10 tickets for the success of the show. Please invite your family and friends to come to the show with you.

Judging: We will need clerks for the Friday night judging, assistants for the plant registration table all day Thursday, and more.

Security: We'll need folks to oversee the entrances and exits and just keep an eye on things.

Refreshments: Since there is no food court area, we'll be providing a small refreshment/hospitality area for the volunteers and vendors...a few snacks and soft drinks.

Ticket desk: We'll need some folks to check tickets and collect money from new ticket sales.

The time you volunteer for any of these activities will fly by and be fun. With your involvement, it's going to be a great Show! Feel free to call or email either of us for details or to volunteer.

Jay Balchan (713) 656-3249 jay.w.balchan@exxonmobil.com
Don Ghiz (713) 661-1885 doninhoustontx@aol.com

AOS Corner

By Melba & Jim Butler

If you haven't already seen it, the January 2005 issue of Orchids magazine has numerous informative and helpful articles, but these immediately caught my attention:

- "Good Grooming," by Ken Slump (How to Make your Collection Work for you) – Ken has orchid collections in Denver and Ft. Lauderdale. He grows in a sunroom in Denver and outdoors in Florida. How's that for opposite extremes and versatility?

- "Home Remedies," by Susan Jones (Ways for Indoor Growers to Combat Ailments Safely) – The tips can easily be utilized by most any grower!

We all need to do all we can to have our orchids in tiptop condition for our upcoming Houston Orchid Society Show April 1-3 at Reliant Park Convention Center! Good luck!

HOS still has a few calendars for sale. You can purchase them at a discount at the AOS table at the February meeting!

Houston Judging Center

By Margaret Putman

Judging Center News for Jan. 15, 2005:

There were 12 plants entered for judging with two awarded, both grown by Anita Aldrich, Galveston, TX: Tolumnia Red Bird Reef 'Sunset' (Little Bird Reef 'Sun Bird' HCC/AOS x Red Fury) AM 80 and Tolumnia Donna Craig 'Suncatcher' (Island Moon x triquetrum) HCC 75. (*See "Orchid Grower's Guide," on page 4* for photos and related story).

There were 17 Accredited Judges, 1 Probationary Judge, and 3 Student Judges present with a total of 30 persons attending.

Next Judging at New HJC Location

The next regular judging will be the Houston Judging Center Seminar* to be held February 19, 2005 at our new location, Room 202, Jerabeck Athletic Center, St. Thomas University, 4000 Mt. Vernon St., Houston, TX 70006 (details and map of the campus are available online at www.swroga.org). It is requested that all plants be entered before 11:00 a.m. so that they may be properly researched prior to judging.

Houston Judging Center Seminar*

February 19, 2005
8:30 a.m. – 4:00 p.m.
(Judging session will be in the afternoon.)
Cost - $30.00 – includes lunch – OPEN TO ALL.

Guest Speakers:
Claude Hamilton – "Judging Broughtonias & Their Hybrids"
Tom Larkin – "Judging Phragmipediums & Their Hybrids"

Send Registration Payment to:
Houston Judging Center
c/o Julius Klehm
19203 Evendale Court
Houston, TX 77094

Orchid Grower's Guide

Tolumnia

By Nanette George with Anita Aldrich, Hybridizer and AOS Judge

The Houston Judging Center January awards went to veteran grower and hybridizer of beautiful tolumnia orchids, Anita Aldrich of Galveston. Her lovely Tolumnia Donna Craig 'Suncatcher' earned an HCC 75 and striking Tolumnia Red Bird Reef 'Sunset' earned an AM 80.

Anita provides the history of her two award-winning hybrids:

The Tolumnia Donna Craig cross was made in 1995, from parents, Island Moon (a strawberry pink) and the species triquetrum. "The purpose was to get compact plants with nice bouquets of pink flowers," Anita explains. "I was so pleased to see it producing such charming little plants that I wanted to give it a special name...and who better to name it after than our ambassadress of orchids extraordinaire, Donna Craig." The cross has produced three award-winning plants so far, including 'Suncatcher' in ivory overlaid with pink.

Anita's Tolumnia Red Bird Reef 'Sunset' came from a cross that she made in 1992 between her awarded Little Bird Reef 'Sun Bird' HCC/AOS and Red Fury. "The latter parent was poorly shaped, but large, and really red," Anita explains. "The resulting progeny came mostly reds to oranges. An earlier award 'Sundance' HCC/AOS was a velvety red. This recent award, 'Sunset', was described by the judges as a "brick" orange."

Culture Notes

Temperature:	Intermediate to warm (60 to 80-85 F)
Light:	Bright diffused light
Water-Humidity:	Maintain humidity above 50%. Water thoroughly when dry. Key to success in cultivation is to promote rapid drying and good air circulation.
Fertilizer:	Half- to quarter-strength balanced fertilizer at regular intervals.
Potting:	Best grown mounted on cork, treefern, twigs, etc. If potted, a coarse, fast-draining mix and clay pots will facilitate rapid drying and ample air circulation about the roots.
Author:	Anita Aldrich
E-mail:	aldrich@wt.net

More About Tolumnia
From www.orchidweb.org (used with permission from author, Anita Aldrich):

"Tolumnia is a synonym of the variegatum section of the genus Oncidium, sometimes called "equitant" oncidiums because of the triangular or "triquetrous" cross section of the leaves. Although Tolumnia is the botanically correct genus name, Oncidium is retained as the horticultural name for registration purposes by the Royal Horticultural Society.

Mature plants are "miniature" usually under six inches tall. The growths generally form tight clusters of fans, and with good culture can quickly produce a specimen plant in a three-inch pot. Most species produce numerous white, yellow or pink flowers on 18-24 inch arching racemes."

The most commonly grown species are Tolumnia pulchella, T. triquetra, and T. guianensis. There are about 30 different species of Tolumnia native to the Caribbean Basin and tropical Americas.

Additional Resources (photos, articles, descriptions):

www.angelfire.com/or3/orchidsnz/oncframe/onc_equitants.htm

www.clanorchids.com/culture/oncicult.htm

www.crescentbloom.com/Plants/Genus/T/O/Tolumnia.htm

www.dreamwater.org/jim4eq

www.geocities.com/~marylois/arch257.html

www.orchidarium.pl/foto/index55.html

www.orchidlady.com/orchidgarden/2001-09/

www.orchidspecies.com/indextuvwxyz.htm

www.orchidweb.org/orchids/az/tolumnia.html

www.plants.usda.gov/cgi_bin/topics.cgi?earl=plant_profile.cgi&symbol=TOVA

http://www.orchidguide.com/genera/oncidium/a13.htm

Committee Bulletins

Membership
Secretary: Robbie Maberry (robbie.maberry@honeywell.com)

Thanks to all members who have paid their dues for '05. I was rather busy at the meeting, so if I inadvertently forgot to mention your name as a new member, please forgive me and let me know so I can correct my records.

To be included in the HOS roster and to vote if a member for three years, please get your payment to me by the end of the Feb. 3rd meeting. (The bylaws for HOS state that if memberships lapse due to non-remittance by the deadline, members must reapply for new membership. The bylaws also state that membership dues begin the first of the year and are not prorated according to the month that you join.) If you are a life member and have new information for the roster, please record this on a membership form and get it to me before the end of the February meeting.

I'm looking forward to serving the members of the Society. Welcome new members: Nuria Avila, Rachel Roberts, Walter J. Pagel, and Johnny H. and Donna F. Williams

Newcomers Group
Chair: Lee Rowell (orchidexpress@myway.com)

What an incredible January meeting we all had at Cabrera Farms Nursery with Phillip Drilling. We enjoyed a nice, cool, sunny day and admired the three greenhouses that he built. Phillip divided a large nodosa, taking his time to show all the steps. Claudia Ludwig jumped in showing us how to mount some of the divisions on cork. It was a great learning experience for all our newcomers. I loved how Phillip explained how you can use a storage shed, giving it a couple polycarbonate skylights, and voila, you too can have a mini-greenhouse for the winter. If you haven't had the opportunity to go out to Cabrera Farms, you should. We missed many of our newcomers; please contact me with your email address so I can send you reminders of the meetings and of upcoming mini-workshops we can do.

Please remember greenhouse etiquette; leave your purses and bulky coats in the car. Please do not pick up plants or pull tags out to read a name. Just ask the grower, and they will be happy to explain to you more about the plant. We do not want to knock over any plants or break inflorescences.

Our February Newcomers Meeting will be at Deana Roberts' home at 9306 Bonhomme, 77074. I will have maps for you at our next HOS meeting up by the front door. For those of you who do not have much room for a greenhouse, this is a good lesson on how to use all your available space.

Refreshments Table
Chair: Deana Roberts (deanaroberts@sbcglobal.net)

Refreshments for February will be provided by Emily Lam-Jones, Diana Hunter, Lee Rowell, and Rachel Roberts. I need volunteers for April and on until the end of the year -- a few folks have signed up, but, as a group, we have grown, and it takes a village to feed us.

Happenings Deadline for March 2005 Issue: 2/11/05. Please email your articles to hos.happenings@sbcglobal.net. Note: The Happenings with online supplement is posted on the HOS website: www.houstonorchidsociety.org.

Houston Orchid Society
2005 Officers and Committee Chairs

Officers

President	Pam Vinson
1st Vice President	Ted Baenziger
2nd Vice President	Laurie Skov
Recording Sec.	Sarah Bentley
Treasurer	Bill Bartlett
Membership	Robbie Maberry

Chairs

Guest Hospitality	Open
Happenings Editors	Nanette & Doug George
Librarian	Deana Roberts
Newcomers Group	Lee Rowell
Parliamentarian	Linda Brandenberger
Petals and Wings	Laurie Skov, Sheila Skov
Plant Raffle	Holly Miller, Emily Lam-Jones
Refreshments Chair	Deana Roberts
Silent Auction	"Trey" Clarence Hotalen
Spring Show Co-Chairs	Jay Balchan, Don Ghiz
Webmistress	Nina Rach
2005 Workshop Chair	Greg Scott

Directors

Sid Bosen	Julius Klehm
Jim Butler	Richard Lund
Melba Butler	Margaret Putman
Richard Champagne	Theresa Riggs
Dolores Fields	Greg Scott
Joe Fields	Sheila Skov
Marvin Gerber	Jerry Stephens
Don Ghiz	John Van Domelan

Representation

AOS Representative	Melba Butler
IPA Representative	Clark Whiteside
ODC Representative	Nina Rach
SWROGA Director	Julius Klehm
SWROGA Director	Terry Palmer

Houston Orchid Society

February 2005 Meeting

Speaker:	Dr. Joseph Arditti, Professor Emeritus, Developmental & Cell Biology, University of California at Irvine
Program:	Survival! How and Why Orchids Survive in Nature
Date:	Thurs., February 3, 2005
Time:	7:30 p.m.
Place:	Houston Garden Center

We're on the Web!

Visit us at:

www.houstonorchidsociety.org

Houston Orchid Society
The Houston Happenings
12710 Eagle Ledge Lane
Tomball, TX 77377

Online Supplement
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NEWS UPDATE

Houston Orchid Society…

Next Month's Happenings

Please be aware that the deadline for submitting articles for the March Happenings is Friday, February 11, 2005 (exceptions, of course, are the HJC and Newcomer's Group articles -- please have them turned in by 2/22). We need your articles early this month because we will be in Wash. D.C. for a mini-vacation and paph. conference 2/17-2/21, and with February being a short month, we'll need to work ahead. Thanks for your help!

Plant Table Winners

We would like to do a culture article with plant table winners each month -- this is the kind of info. we will need from growers:

*How old is the plant?
*What medium did you grow it in?
*Originating background on the plant (e.g., the L. lobata is native to Brazil)
*Growing conditions that the plant "prefers"
*Any other interesting facts or culture notes you would like to mention on your winning plant -- possibly any pest issues that you overcame, etc...

We ask that if your plant does win -- please email your information to us at hos.happenings@sbcglobal.net -- and we will include your plant with photo and culture notes in the article. Thanks (in advance!) for sharing your expertise with your fellow HOS members.

Special Events…

News Release

By Greg Allikas and Kathy Figiel

U. N. Postal Administration to Issue Endangered Orchids Stamps and Collector Folio -- Stamp Sale & Auction to Benefit AOS Conservation Grant Fund.

Make plans to be at the American Orchid Society visitor center Friday evening, March 4, 2005 for a rare South Florida event. The last time orchids were significantly featured on US issue postal stamps was with the 11th World Orchid Conference held in Miami in 1984. This year something bigger is scheduled! The United Nations Postal Administration will be releasing its endangered species stamps and collector folio on March 3 in NYC. The 2005 subject will be endangered orchids and will feature 12 species on sheets of 16 first-class stamps issued in US and 2 international currencies. South Florida's own Greg Allikas contributed heavily to the project. His photographs were used extensively in the collector folio as well as reference for the stamp paintings themselves.

Greg and Kathy will be hosting a wine-cheese-stamp sale at the AOS Visitor Center on Friday evening, March 4, 2005. You will be able to purchase stamps, collector folios and first day covers. Stamp sales will begin at 5:30pm followed at 7:00pm by an auction of signed original photographs used in the folios. These beautiful framed limited edition photographic prints by Greg Allikas, will make a unique collectible addition to this stamp issue. Proceeds from stamp sales and print auction will go toward funding AOS conservation grants. Additional orchid photography by Greg will be on display and available for sale in the atrium. RSVP required by February 25 - Cassie Costa at 561-404-2011, ccosta@aos.org.

This is sure to be of interest to orchidists who may be attending the Miami Show. Miami judging will be March 3 and the stamp sales and auction at AOS March 4. All are cordially invited! Those who can not attend, can order stamps directly from the UN at http://www.un.org/Depts/UNPA/coming/index.html.

February 19
Houston Judging Center Seminar
8:30am-4:00pm
(Judging session will be in the afternoon.)
Cost - $30.00 - includes lunch - OPEN TO ALL.

Guest Speakers:
Claude Hamilton - "Judging Broughtonias & Their Hybrids"
Tom Larkin - "Judging Phragmipediums & Their Hybrids"

Send Registration Payment to:
Houston Judging Center
c/o Julius Klehm
19203 Evendale Court
Houston, TX 77094

For flyer, map of campus, and map of Houston area, go to www.swroga.org events calendar.

February 19
25th Annual Paphiopedilum Forum, hosted by the National Capital Orchid Society. The Forum will be held from 8:00am-4:00pm on Saturday, February 19, 2005 at the U.S. National Arboretum in Washington, D.C. http://www.usna.usda.gov. Cost is $40 per person. Speakers and topics include:

- Harold Koopowitz, Editor of Orchid Digest, co-author of Novelty Slipper Orchids. Speaking on Paph. fairrieanum and its influence in hybridizing.
- Phillip Cribb, Senior Principal Scientific Officer, Royal Botanic Gardens, Kew, England, Author of The Genus Paphiopedilum. His topic: "Those damned elusive slippers. Twenty-five years looking for Paphiopedilums and Cypripediums in southern and western China."
- Bob Wellenstein of Antec Laboratories. Speaking on Latest Trends in Culture.
- Steve Drozda, Certified AOS Judge, Pittsburgh, PA. Survey of recent slipper *awards*.

For registration form and details, go to http://mysite.verizon.net/vze8jgww/.

March 4-6
60th Miami International Orchid Show, hosted by the South Florida Orchid Society. The Show will be held March 4-6, 2005 at the Coconut Grove Convention Center, 2700 S. Bayshore Dr., Miami, FL. Contact: Dorothy Bennett %SFOS, 10801 SW 124 St., Miami, FL 33176; (305) 255-3656; sforchid@bellsouth.net. For more information and ticket order form, go to http://www.southfloridaorchidsociety.org/Main%20page.htm.

March 4
Wine-Cheese-Stamp Sale & Auction/AOS Benefit, AOS Visitor Center, March 4, 2005, 5:30pm-stamp sale; 7:00pm-auction. RSVP required by Feb. 25 - contact Cassie Costa at 561-404-2011, ccosta@aos.org.

March 11-20
The 18th World Orchid Conference will be held March 11-20, 2005, in Dijon, Burgundy, France. For more information, visit www.woc2005.org/english/index_E.htm.

**If anyone from the HOS is planning to attend, please consider sharing your experience with an article (and photos!) in the Happenings! `

U.S. Orchid Shows

For a listing of the many upcoming orchid shows around the nation, visit the AOS website events calendar at: http://orchidweb.org/events/calendar.html.

Resources…

SWROGA

SWROGA (SouthWest Regional Orchid Grower's Association) has an excellent website with many helpful resources including a downloadable MS Excel file of the alphabetical listing of hybrids and species -- includes genera, abbreviations, group or species, makeup (parentage), and classes. The site also posts a calendar of upcoming southwest region orchid shows. Visit them at www.swroga.org.

Native Orchids of America

If you are interested in native orchids of the United States and where to find them, check out the complete list with map, photos, detailed info., and references at www.orchids.org/ooc/na_orchids/us_orchids_java.shtml.

Reminders…

HOS Library

The HOS Library has a small budget to purchase some new books. If anyone has suggestions for some new and interesting books that they would like to see included in the library, please email Deana Roberts (Librarian) with your suggestions at: droberts@sbcglobal.net.

Submitting Articles to the Happenings Web Supplement: Guidelines & Ideas

The purpose of this supplement is to provide extra space for HOS members to share their orchid-growing expertise and experiences through their own written articles. We will also use this space to publish timely, "post-press" information and interesting orchid-related articles from outside sources.

Guidelines for Submitting Articles

Deadlines: The deadline will be the same as for the printed version of The Houston Happenings (deadlines will be published in each monthly newsletter).

Articles: Articles should be related to orchids (citing sources, providing written permission for article or photo reprints). If possible, please create your documents in MS-Word or in rich-text (RTF) format for PC (not MAC) in portrait orientation.

Editing: Your article will be edited for punctuation and flow, but, generally, not for style. If possible, please provide your own layout as you want your article to appear.

Posting: The Happenings with supplement will be posted at the end of each month on the HOS website (www.houstonorchidsociety.org).

Topic ideas: Orchid culture topics; photo showcases of member orchid collections; journals -- e.g., someone working on a new hybrid might like to journal their results and "lessons learned" -- or -- someone might want to share their journal notes and photos taken on their exotic orchid "safari;" reviews of orchid-related books, journal articles, magazine articles, or websites; resource information; articles on orchid conferences; photo spreads on orchid shows; greenhouse construction and blueprints with step-by-step instructions and photos, etc...

Please email us your thoughts, questions, and ideas -- we look forward to hearing from you! (Email address: hos.happenings@sbcglobal.net).

***END.

HOS PLANT TABLE WINNERS

January 6, 2005 Meeting

Photo removed.

Angraecum Lemforde 'White Beauty,' owned by Renee & Marvin Gerber.

Tied for favorite hybrid at the January 2005 meeting.

Photo by Laurie Skov.

Paphiopedilum Buena 'White Cap' x Lemon Heart, owned by Dorothy Forman.

Tied for fvorite hybrid at the January 2005 meeting.

Photo by Laurie Skov.

Photo removed.

Photo removed.

Cattleya bowringiana, owned by Phillip Drilling.

Won favorite species at January 2005 meeting.

Photo by Laurie Skov.

Profile:
Angraecum Lemforde 'White Beauty'

The story behind the Gerber's beautiful Angraecum Lemforde 'White Beauty'…

Angraecum Lemforde White Beauty "Remar" AM/AOS is a cross of Ang sequipedale x Ang Magdalene. We bought our plant as a seedling from Fred Hillerman. He had an orchid nursery specializing in the genus Angraecum. We bought the plant when he came to speak at the HOS meeting about 20 years ago. Our plant was awarded about three years later at the San Antonio monthly judging.

The genus is endemic (found only in one location) to the island of Madagascar. There are a small number of species (10-15) in the genus.

We grow our plant in with our cattleyas, giving it a little extra water as it has no pseudobulbs to store moisture. It often blooms more than once a year. In fact, our plant was awarded, received the trophy for the best flower at our Fall show, and also at a Spring show, and was the centerpiece of our daughter's bridal bouquet -- all in one year!

There is an interesting story about the naming of the hybrid. When Hillerman made the cross, he felt it would be the best Angraecum hybrid ever -- going back in time, or going forward. He felt this way because the limited number of species in the genus limited hybridizing opportunities within the genus. It took about seven years for the seedlings to bloom. When Hillerman sent his registration to the RHS to name the cross, he was heartbroken when his registration was returned -- the Lemforde nursery in Germany had named the same cross one month earlier!

--Renee & Marvin Gerber

Online Resources

www.angrek.com/AAOS/Past/9610/Txt/Fred.html - notes from Fred Hillerman's talk at an AAOS meeting on "Culture of Angraecoids and Other African Orchids."

www.ont.co.za/ang%20sesquipedale.htm – culture notes.

http://www.nhbirdsnest.com/orchid_pages/angraecums.htm - photos.

www.vaos.org/tablenov03/tablenov03.html - photos.

www.streetmorrisart.com/floralartgalleryIII.html - beautiful original artwork including an Ang. Lemforde 'White Beauty.'

Orchid Names: Do It Yourself Online

By Iris Cohen (CNYOS) - Used with permission.

Many people regard the registration and nomenclature of orchid hybrids as an esoteric branch of necromancy. Proper labeling actually increases a plant's value, and in the case of one that is inherently superior, it paves the way for a really prestigious award.

For anyone with Internet access, getting the right name for your orchid, or finding its parents when you already have its name, is as close as your computer. The Royal Horticultural Society, which is the official registration authority for orchid hybrids, has virtually the entire database of their registrations on the World Wide Web, at http://www.rhs.org.uk/research/registration_orchids.asp.

Unlike other flowering plants, individual clones of orchids are not registered. What are registered are the names of grexes, entire crosses between two parents. Where italics are available, the names of orchid genera, both natural and artificial, are in italics, as are the names of species. In the Orchid Register, only roman type is used. The names of genera and hybrids are capitalized, while the names of species and wild natural hybrids are in lower case.

In botany, it is recommended that when the parents of a hybrid are listed, the seed parent is first, followed by a multiplication sign and the pollen parent, the opposite of the way it is done with animals. When you do a search for a grex name, the parents on your label may not be listed in the same order as in the Register. This is called a reciprocal cross. The grex name is the same.

Let's say the label on your new orchid reads Slc. Jewel Box 'Scheherazade,' AM/AOS. You want to locate the parents. Go to the above Web site and click on the words "Grex Name Search." Ignore the awards. You will also need to figure out what, if any, are individual clone names, and ignore them also. If you see a name in single quotes (sometimes erroneously in double quotes), you will know it is a clone name. If you are not sure, just type in the first two words of the name. You do not need to type anything in the "Genus" field, unless the grex name is an extremely common one, like Rothschildiana. Do not abbreviate a genus name, unless the abbreviation is part of the name. You do not have to capitalize anything. When you have typed in the grex name, click on "Search" or hit the "Enter" key.

The next page will give you a choice of three names, Cymbidium Jewel Box, Dendrobium Jewel Box, or Sophrolaeliocattleya Jewel Box. Click on the one you are looking for, and it will take you to the registration information. You will find out that Slc. Jewel Box is a cross of C. aurantiaca (Guarianthe aurantiaca) with Slc. Anzac. It was originated and registered by Stewart, Inc. in 1962.

Apostrophes are a problem. The instructions on the RHS Web page say to ignore them, but if you type in a name that has an apostrophe, you will be told, "No record in database…" whether you included the apostrophe or not. To work around this, if you are sure it is a registered grex, type in the genus name and the part of the name before the apostrophe. For example, if you are searching for Oda. Joe's Drum, you will get the "No record" message whether you type Joes Drum or Joe's Drum. Go back and type Odontioda in the genus field and Joe in the grex field. You will get a list of all the Odontiodas containing the word Joe, including Joe's Drum. Click on it to get the parentage. Some diacritical marks are used. In Spanish names, you may need to include the dieresis (the squiggle over some n's).

Now suppose you have the parents of your orchid on the label and you want to find out if the cross has been registered. Go to the registration page and click on "Parentage Search." You will get a page with four fields. Where it says "Grex," you can also type in a species name if that is one of the parents. Typing in the "Genus" name is not necessary, but it will narrow the search. If you are not absolutely sure of the genus, leave it out.

Let's say you want the name for the cross of Slc. Jewel Box x California Apricot. Type in the names and click on "Search." You will be told, "No record in database, try entering parents in reverse order." Go back to the Search Page. Select California Apricot, cut it, and paste it in the other grex field. Do the same with Jewel Box. This time you will be told that the cross is registered as Sophrolaeliocattleya Hazel Boyd. Click on the grex name if you want the registration data.

Sometimes the correct or commonly known name of a species is not the same as the name used by the RHS. If you have a cross of Dendrobium lithocola and want to know if it has been registered, you need to enter the "horticulturally preferred" name, Dendrobium bigibbum (var. compactum).

One of the most frustrating problems in orchid name detection is when you purchase a plant in good faith that has a name on the label and no parents, and you discover it is not a registered name. When you buy an orchid with an unfamiliar name, always ask for the

Orchid Names: Do It Yourself Online…*Cont'd.*

parents. It may be that the hybridizer fully intends to register it, but hasn't done so, or doesn't want the expense. Occasionally, there are dishonest sellers who market others' mericlones under spurious names. If you know the parents, it will not be a problem. If you have the parents and you think the cross has been registered, do a search. If you get the "No record" message, try again in a couple of months.

When you have an unusual or outstanding orchid, especially a fairly new one, which you are thinking of hybridizing with, it is useful to find out whether that species or grex already has any registered offspring to its credit. With the RHS Web site, you can do this very easily. Go to the Parentage Search page, and enter your orchid in one of the grex fields. Leave the other field blank. The search will tell you all the offspring that have been registered. Don't forget to go back and move the name to the other field, so you will have its complete record as both a pollen parent and seed parent.

Sometimes, when you make inquiries of an orchid seller, you will find that the plant is a mericlone and the name on the label is a clonal name. Further probing should eventually reveal the parentage. All too often, orchid owners are stymied because the names on the labels are misspelled or faded. If you are getting the "No Record" message, go back and enter only the part of the name you are sure is correct, or try various spellings. The name may be "Marie" rather than "Mary."

Another mystifying problem is when the label only tells you the grandparents. A label of that type should be written: (C. luteola x Blc. Waikiki Gold) x (C. Cherry Chip x walkeriana). Given that information, you will find that C. luteola x Blc. Waikiki Gold = Blc. Junka Gold. The next search will tell you that C. Cherry Chip x walkeriana = C. Hunabu Surprise. Put them together and Blc. Junka Gold x C. Hunabu Surprise = Blc. Lennea Trimble. The real problem occurs when the label is written carelessly and you have difficulty sorting out which name is which. If the names are unknown, you will have to try them different ways. Sometimes foreign growers put a dash between the grandparents rather than a times sign. Or they may abbreviate the name of a well-known parent. Dendrobium Theodore Takiguchi, when crossed with another Dendrobium, is often listed as Ted-So-and-So.

A special case that may frustrate beginners is the question of natural hybrids, hybrids between two genera or two species that occur in nature. If an old natural hybrid was discovered and named before the cross was made in cultivation, it always carries the name given by the botanist. In botanical writings, the name is in italics, sometimes with a times sign in front of it, e.g. Cattleya xhybrida. When the hybrid is used as a parent in registration, it is written Cattleya Hybrida. If you turn it up in a search on the RHS site, you will see it printed twice, once in lower case, and once capitalized. Nowadays, when someone registers an artificial hybrid, and it is also discovered to be a natural hybrid, the botanist gives it a brand-new name. Both names are correct. If you do a search on Comparettia speciosa x Comparettia falcata, you will see two names, Comp. maloi and Comp. Afterglow.

There is one last step you can take when all else fails and you can't find anyone who can decipher your mystery label. You can contact the Orchid Registrar, Julian Shaw, at orcreg@rhs.org.uk or julian.shaw@rhs.org.uk. But, please remember that the Orchid Registrar's job is more taxing than Kofi Annan's, and try to exhaust all other sources of information first.

Special thanks to Susan Taylor, HOS Member, for bringing this article to our attention and to Iris Cohen for allowing us to publish it in our newsletter.

Slipper Orchids – Checklist for Growing Problems

By Bob and Lynn Wellenstein, AnTec Laboratory - Used with permission.

To answer a question, such as "My Paphs or Phrags are not growing well", or "They are not flowering for me", it would be useful to have the following information. It will not always be possible to provide all of this information, but as much as possible is helpful, especially in eliminating certain possibilities, and sometimes knowing what you cannot provide may also give clues as to what is going on. It is also very possible that while thinking about how to answer these questions you will end up solving your growing problem. After you've answered as many of these questions as possible, we'd suggest looking at the articles "Buying and Growing Your First Paph", which contains information detailed well beyond just the beginner's level, and "PAPHIOPEDILUM: Frequently Asked Questions (FAQ)" where you may very well find your answers. For more detailed information these articles cross reference to some of our other growing information articles.

Plants

Specifically, what plants do your questions refer to? Paphs and Phrags are not homogeneous groups of plants with regard to care, and it is necessary to know what plants are under discussion. At what stage are they---- seedlings, adults of single or multiple growths, recent divisions, or recent acquisitions, and when did they last flower? Is your problem related to just a few of your plants, or does it seem to cross all boundaries?

Light

If greenhouse growing, what is your geographic location and total shading factor (glazing plus shadecloth). In what micro-climate are the plants, i.e. if you are in a cool climate are they close to the wall in the back, far away from the heaters and are they generally therefore growing somewhat colder than other plants in your collection? Are your plants positioned right next to the glazing on the east or south side, and therefore subject to greater amounts of stress with regards to heat and light? Are you growing the plants under the bench, or if on the bench, are there hanging plants above them that drip upon them for a time after you've watered? Are you plants directly under a fan? Is there sufficient space between your plants on the benches, or are they crowded? If you cannot see the mix on the top of each individual pot, then they are crowded.

If under lights, what type, wattage and distance from them, both horizontally and vertically? How long are the lights on? Do you seasonally vary the time the lights are on? Are your timers working correctly?

Temperatures and humidity

What are your typical daytime and nighttime temperatures? Have the plants been moved recently to a new location so that they are experiencing new and different temps? Are temperatures constant throughout the year or do they vary by season? If varying, give the typical seasonal temperatures. Do you know what your average relative humidity is, and is it strongly variable?

Water

How do you determine when to water your plants? Do you water on a fixed schedule? Do you water with several volumes per pot (i.e. until there is a large amount of run through), or less? When you water, can you see the surface of each pot to ensure that every pot receives water? Does the water run through freely through the pot, run very slowly through the pot or pool up on the surface when you water? What is your water quality in terms of hardness and pH? Do you have an analysis, particularly with regard to calcium, magnesium and sodium? What is the approximate temperature of your water when you apply it to your plants, particularly is it much cooler than the air temperature, or of the plant's leaf surface? What time of day do you water, can you water only in the mornings, do you water later in the afternoon, or approaching evening? If watering in the greenhouse in the evening through unavoidable circumstances, do you raise the temperature of the greenhouse overnight? If you are growing under lights, do you water just before the lights go on, or after they go off?

Fertilizer

What do you use for fertilizer? At what strength do you fertilize, and at what frequency? Do you use different fertilizers at different times of the year? What is the pH of your fertilizer/water irrigation mix? Do you have an accurate measuring system for fertilizer? Do you use any supplements and at what frequency and rate? Does your fertilizer contain calcium and magnesium?

Pots and Potting Mix

What is your potting mixture composed of? How long have your plants been in this mix, and does the mix

Slipper Orchids – Checklist for Growing Problems…*Cont'd.*

appear fresh or has it broken down so that it resembles soil? Do various plants have different mixes, or is your collection in a homogenous potting mix? How do you prepare the mix, and do you have a constant 'recipe' that you use? What is your pot size with regard to the root system of your plant? What are you pots made of and what is their shape and depth? Describe the drainage system of your pots. Do you use any sort of crocking? On what type of surface do the pots rest, are they on a solid based tray, on mesh, or on pebbles?

Roots

How often do you repot? Have you unpotted your plant recently and examined the roots? If so, describe the condition of the roots, especially with regard to quantity and color, substance (hollow, squishy, firm). Also, are there white growing tips in evidence? Are the roots going tightly around and around the inside of the pot, very nearly filling the pot with little visible evidence of remaining potting mix? Are there only roots on the outside walls of the pot, or are there roots in good condition throughout the pot? Are there emerging new white roots at the base of the plant? Are the roots only on the top of the mix in the pot, and refusing to go down into the mix?

Top Growth

Describe the top growth--the leaves-- of your plant. How many growths, has it flowered previously, and when was the last time it flowered? Do your plants seem to be extending their rhizome above the surface of the pot, and thus attempting to put out roots above the mix? What is the color of the leaves, is it uniform throughout or are there varying streaks or spots (not referring to the natural mottling some Paph leaves have)? Are the lower leaves pale in color, or almost yellow, or are they brown and very dry? What do the leaf tips look like, are they the same color of the rest of the plant, or are they dark in color and crispy, or damp? Are the leaves turgid or floppy? Are you growing new leaves at a rate equal to or faster than the loss of older ones? Are there dark, wet areas at the bases of the leaves? Are there areas of dark, crispy spots or blotches anywhere on the leaves? Are there new starts on the plant, and are they growing well or are they turning dark brownish-orange in color and appear wet? If your plants are mottled leaf types, is the mottling barely discernible, or are the leaves very darkly mottled? Are the new growths of the plant maturing smaller in size than the previous mature growths?

Air Movement

How much air movement do you provide for your plants? Are fans blowing directly on the plants or moving the air over them? Describe the feel and smell of the air in your growing area.

Pesticide Applications

Have you made any applications of pesticides, fungicides, horticultural oils etc. to your plants in the last few months?

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Scale Insects on Orchids

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This note is written for the orchid keeper or grower in northern states of the U.S., and Canada, that generally has a small to medium sized indoor collection. The keeper or grower in southern states enjoys the potential of many more scale problems because of outdoor growing, but also benefits from natural environmental population management by the weather, and predatory and parasitic enemies of scales!

Sources and Identification

Scales are probably the most important insect pests of cultivated orchids in northern climates. Mealybugs and aphids may tie for second in importance and are controllable with the same methods. According to a 1976 publication from the Florida Department of Agriculture and Consumer Services, there are no fewer than 27 species of scale identified from cultivated orchids. Fortunately, few hard or armored scales, but mostly soft scales, usually referred to as brown soft scales or hemispherical scales, regularly survive in the north on indoor or greenhouse plants. Especially common is the brown soft scale (Coccus hesperidium) shown above, and possibly the similar elongate soft scale (Coccus longulus). Boisduval's scale (Diaspis boisduvali) the scurge of the southern orchidists, is rarely encountered in northern home collections and apparently does not survive well here, except in the largest greenhouses. However, when introduced on infected plants it can spread quickly to a variety of orchids and be extremely difficult to control. Boisduval's scale will also seriously debilitate or kill orchids.

The more common species of these odd insects that infest orchids are immediately recognized in the adult stage by the light yellowish to greenish-brown, tan, or dark brown, oval to circular, objects that show-up on leaves, petals, sepals, petioles, pseudobulbs, and sometimes rhizomes and roots. Mature females of Boisduval's scale are a rather typical rounded and light-colored scale type, while males are easily recognized by the cottony appearance of aggregated males, and these may be confused with mealybugs if not examined closely. The immatures, or crawlers (above far-left), of all scale species are tiny and yellowish to pinkish, and not easily seen without a magnifier.

In the home orchid collection scales are acquired by plants in some combination of three sources. The most common way of acquiring scales is by purchasing an infested plant. On plants at home scales are easily transmitted from infested to clean plants when your plants touch each other and the crawlers to move from plant to plant. The final source is colonization of your plants by windblown crawlers. Colonization is usually done during the summer when your plants are outdoors, but it can also occur indoors in greenhouses and sunrooms by floating on currents produced by circulating and heater fans. This occurrence appears to produce the odd effect of having pockets of infestation when the crawlers settle on plants where the air currents are the weakest and early during a spreading infestation. Similar effects are found with aphids, mealybugs, whiteflies, and spider mites.

Life Cycle

Scale insects have a three-stage life history: egg, larva (or nymph), and adult. Eggs are laid by females, with the eggs usually retained in the body and under the outer "scale" covering when the female dies. These hatch into the mobile nymphs, called crawlers. The crawlers are the active stage that can move between plants. After finding a suitable place for feeding, the crawler will settle and begin feeding, and transform into the next nymphal stage. At this point the female begins to form the hard protective "scale" covering. The covering enlarges as the insect grows. Nymphs often have a light yellowish scale, which darkens to tan or brown as the insect matures. Males of soft scales do not form the hard coating or scale, but are small winged creatures whose primary, if not sole, role is to mate and die.

Scales have short life cycles, but may have generations many times a year. In a warm greenhouse or indoors the life cycle may be accelerated, though typically a month or more is required for completion of a generation. It is the overlapping of generations that creates the biggest scale management problem. All control methods are at their greatest effectiveness against the the crawlers. By the time the scales have formed the hardened cover (the scale), it is too late to easily kill those adults with chemicals. Also, the large dry brown scales are already dead and the "shells" may be full of eggs which will spill when the shell is ruptured.

Management

Scale management is usually a protracted and serious effort, and never much fun. Light infestations restricted to one or a few plants can usually be treated with household products rather than concentrated insecticides. When possible, immediately isolate infested plants from others to prevent the crawlers from moving amongst them.

Because the life cycle of scales can be so short combined with the overlapping of generations, in order to bring a serious problem under control you will need to do a treatment every 2-5 weeks, depending on the life cycle period of your particular problem scale species. Consequently, the key to scale control is persistence.

Management methods that are the least toxic to people, pets, and plants, are the most time consuming and laborious. Insecticidal methods, including horticultural oils, soaps, and synthetic insecticides are progressively more toxic (to both the insects and humans!) and more expensive, but less work. Regardless of method or chemical used, you must remain vigilant and expect to make at least 2-3 applications 10-16 days apart.

Because of plant costs, personal attachment to orchids by owners, and the over-riding desire to avoid insecticides whenever possible a number of effective "home remedies" for scale control are available. Be aware that non-insecticidal treatments may not be highly effective for elimination of scales. Thus, they should be viewed as controls, not eradicators. Also, many common home chemicals are extremely toxic to humans, pets, and plants even in diluted forms, often being proportionately more toxic than the feared insecticides.

Rubbing Alcohol

Probably the most popular home remedy is to swab and daub plants with a Q-tip or ball of cotton dipped in isopropyl (rubbing) alcohol. Do not use other alcohols, such as ethanol or methanol, that can penetrate the plant tissues rapidly and cause considerable damage! The concentration of the isopropyl seems to make little difference; the common 70% available in stores is satisfactory. On hard-leaved plants, gentle rubbing with the fingers or a soft toothbrush is effective, with or without the alcohol. Remove all scales, large and small. Afterwards, you will still need to repeat the alcohol treatment to remove the tiny yellowish spots which are the recently hatched crawlers. Pay particular attention to the midrib, other veins, and leaf edge areas. Closely monitor your plants to get an idea of the life cycle of the particular species of scale that is your problem, but expect to repeat treatment against the immatures every 1-2 weeks.

A common alternative to the swab and daub method is to spray alcohol with a misting bottle or small pump sprayer. Many home growers will also mix-in a small amount of mild liquid dish detergent, and sometimes mineral oil, neem oil, or horticultural oil. One recipe for a 1.5 liter spray bottle is to mix a 50:50 solution of isopropyl and water, with a few drops of liquid soap to act as a spreader, and 1/4-1/2 teaspoon of one of the oils. But, it seems that every grower has their own proportions of these ingredients, none of which seem to work significantly better than another. Caution is urged, however, as excessive amounts or too strong of a detergent, or use of an ammonia-based chemical cleaner may damage your plants, especially buds and flowers. This is particularly true of dish-soaps and household detergents that could remove natural protective waxes from plant tissues. Also, alcohol sprays are not effective against eggs protected by the scale covering, hence the physical removal of the scales by hand is more effective and provides more rapid control.

A potential problem with alcohol treatment that is occasionally reported may be chilling of the plant. The rapid evaporation of alcohol cools the plant tissues. Especially with air movement that increases evaporative cooling, this chilling is suspected of over-cooling tissues and creating zones of dead cells that may become necrotic from bacteria or fungi. On warm or breezy days consider wiping any residual alcohol with a tissue instead of permitting it to evaporate off the plant. Such problems and tissue drying are found particularly on soft or thin-leafed orchids (e.g. Oncidiinae).

Repotting

Given an extreme infestation you may see scale developing on the roots and rhizomes. At this time, or anytime you observe a heavy infestation, then you may need to consider replacing the potting medium. The potting medium can harbor eggs and crawlers, so dispose of it in a compost pile or in the garbage. When repotting, a close inspection and if necessary a very gentle cleaning of scale and spraying of the roots before repotting is essential. Use care with the cleaning of roots because of the fragility.

Oils, Soaps, and Sterilants

Horticultural oil, neem oil, mineral oil, insecticidal soaps, and sterilants form the next stage of chemical control of scale insects. The oils and soaps are often regarded as "organic" or non-chemical methods, but this is a misconception or an extremely broad concept of "organic." Indeed, neem oil is extracted from the neem tree, but horticultural oils and mineral oil are petroleum distillates. Likewise, insecticidal soaps are a solution of synthetic pyrethroids mixed with a detergent (soap) that is made from petroleum products. Sterilants are anti-bacterial and anti-fungal chemicals that are also often effective on algae. However, all of these solutions are generally considered safer for humans, pets, and plants than usual insecticides. None provide absolute control over pests, but frequent use during the presence of pests frequently reduce insect populations to below self-sustainable levels in small orchid collections.

Horticultural, mineral, or neem oil solutions smother the insects, so complete coverage of all sprayed plants is essential. These oils are mixed with water and usually a plant-safe detergent for enhancing the spreading and sticking of the oil. The main caution with these oil solutions is that they should never be applied to plants on hot days (>85 degrees F) or in direct sunlight, as to prevent burning of tissues. Leave the plant in shade until the application has dried.

Insecticidal soaps are usually solutions of a synthetic pyrethrin, piperonyl butoxide as a synergist (to enhace the effectivenss of the pyrethrin), and sometimes a plant-safe detergent. As with oils the detergent acts as a surfactant and spreader for dispersing the pyrethrin evenly, and as a mild caustic against the insects. Also, to prevent sunburn apply the chemical and allow it to dry in shade. Pyrethroids are synthetic analogs of pyrethrum, the natural extract from certain Asteraceae. Caution should be urged with so-called "safe" insecticidal soaps as some plants are sensitive, particularly tender new tissues, and when mixed with hard water. Some non-orchid ornamentals will drop leaves and abort flowers when sprayed with insecticidal soaps, so caution is urged with prized orchids. Though piperonyl butoxide is usually regarded as safe for plants, it can cause allergies and respiratory problems for users and may contribute to phytotoxicity problems.

Sterilants are usually Physan 20, RD20, or Consan 20, and these are used as anti-bacterial, anti-algal, and anti-fungal agents. These solutions are all composed of isomer cocktails of ammonium chloride and all have the same antibiotic activity. These chemicals can be used in diluted form, according to label directions, usually for controlling bacterial and fungal diseases on orchids. However, at these same dilutions there is some limited effectiveness on scale crawlers and other delicate insects. Frequent use of sterilants for insect control is not recommended, due particularly to potential damage on new growth, buds, and flowers, and should be done under shade to prevent sunburn.

Insecticides

Persistent populations of scale or infestation in many plants often demand the need for use of synthetic insecticides. There are few insecticides specifically registered for use on orchids, but there are several common, inexpensive, home-and-garden chemicals labeled for ornamental plants. Insecticide formulations not labeled for ornamental plants are often mixed with solvents that aide in the application of the active ingredient for specific purposes. These solvents, not necessarily the insecticide itself, often produce phytotoxicity and may seriously damage or kill plants. Thus, never use any insecticide that is not specifically labeled for ornamental plants.

There are many insecticides available for ornamental plants, but some are not tested on orchids, and others are generally too expensive or otherwise readily available for the small keeper or grower. Some of the more available

and effective insecticides that come in various brand names are acephate (e.g., orthene [wettable powder or liquid]), malathion (liquid), and carbaryl (water-based emusifiable concentrate). A current garden center insecticide mixture of acephate and the miticide fenbutatin-oxide is effective for many common orchid pests. Fertilizer/systemic combinations for roses and other ornamentals, usually with disyston or disulfoton, may be effective but are not widely tested on orchids. Also, caution should be given to the fertilizer effect on your plants in combination with other nutrients. Of course, always follow label directions and never, never, never exceed the minimum recommended concentration given in mixing directions! Recommended solutions are based on extensive testing for selected pests and plants. Orchids are tough plants, but many are sensitive to various chemicals, particularly under direct sunlight or high heat, and while certain species may not react to a given formulation others may, so testing is justifiable.

Some insecticides are occasionally discontinued for use because of some discovered hazard. For example, Cygon used to be available, but it no longer recommended and labeled for orchids because it will damage many plants, especially the buds and flowers, and is extremely hazardous to use. As of late 31 December 2004 diazinon is also no longer available for use, even for non-commercial outdoor use. Although most insecticides with discontinued labels are legally allowed to be "used up", it may be best to dispose of such chemicals rather than continue their use and risk damage or loss of plants, or increase your own health hazard.

Most home orchid keepers and growers in northern states that need to apply insecticides during inclement weather need special care for applications. If you cannot spray out of doors, place your plant(s) inside a large plastic bag (remove the bag after the spray has settled!) and let the plant ventilate where the fumes will not be wafted around the house or work area. Again, you may have to consider removing the potting medium, spraying the plant, and repotting it with new media in a clean pot when the spray has dried.

Growth Regulators and Chitin Inhibitors

Research on the use of insect growth regulators, botanical insecticides, and their application to ornamental plants is increasing, but incomplete. Insect growth regulators, such as kinoprene (tradename = Enstar II), are synthetic forms of juvenile hormone which is highly important in insects at critical stages of their metamorphosis. The use of growth regulators interrupts the normal development of the insects, including orchid pests such as scales, mealybugs, aphids, and whiteflies. Apparently, there is little good and reliable information on their use on orchids, but an increasing number of growers are reporting satisfactory results with Enstar II and there does not seem to be any plant health problems noted thus far. Also, they are regarded as safe for humans and pets. Kinoprene does not work on adult insects and so should never be used to eradicate a pest population, but is best used on incipient infestations and maintenance sprays.

Azadirachtin (tradenames = Azatin and Neemazad) is a plant derived (neem tree) chemical, or botanical insecticide, that is a chitin inhibitor. Chitin is a primary component of the insect integument, or exoskeleton. Azadirachtin reduces the insects' ability to properly develop its integument and causes mortality through incomplete development. There is little information available on this chemical for use on orchids, but it is available on a wide variety of ornamentals and is labeled for greenhouse applications.

Final Considerations

Heavy infestations of scale, especially on many plants may require severe control methods. In such situations, you may need to consider the use of a synthetic insecticide. On the extreme side if you have a plant showing signs of decline from scale you may have to seriously consider destroying that plant, as the low likelihood of rejuvenating that plant may not justify the expense and effort of continued treatments. After all, the destruction of a sick plant can be used to justify the purchase of a new and healthier plant!

If you are battling scale for long periods of time (e.g., >9 months) and have been using the same insecticidal control method then you may have built a bigger problem that you started with. Depending on the length of time of your problem and the intensity of chemical use you could have selected a population of resistant scales. The best resolution to this is to change methods and chemicals occasionally; that is, do not use the same chemical mix more than 3-4 times sequentially. After isolating infested plants give them a thorough application of something different

from what you have been using. For example, if you used insecticide then switch to an oil, soap, or different insecticide.

Generally, never use an insecticide not labeled for ornamental plants. Whenever using oils, soaps, and insecticides, be thorough, change formulations frequently, and do not use less than the minimum concentration of mixture. Too little of a chemical enhances resistance, while too high of a concentration may damage the plant. Never use hard chemicals prophylactically, that is do not routinely use chemicals as a preventative as it is a waste of chemical (and money!) and such use allows resistant scales to develop. Finally, keep up the manual removal of all scales, if possible. Removing the egg laying adults is as important as killing the nymphs. Again, you need to monitor the cycling of your scales to optimize spray effect and minimize total number of sprays.

Special thanks to Dr. Paul Johnson for allowing us to publish his helpful article in our newsletter.