

Guest Speaker Jeanne Kaeding:  
Orchid Habitats & Travels in Ecuador

Ecuador is reported to be home to more than 4,500 species of orchids—that's 20 to 25% of the total number of species found worldwide! The variety of genera ranges from Acineta to Zootrophion, from the tiniest of Pleurothallids to Sobrallias that can measure over 6 feet in height, and found in between are numerous other species, including Phragmipediums, Cattleyas, Oncidiums, and Odontoglossums. One of the more famous residents is the spectacular *Phragmipedium besseae*. Furthermore, Ecuador is home to Ecuagenera, an incredible source of regional orchids, which is known throughout the world for its orchid conservation and propagation efforts.

Our next meeting will be held on Sunday, January 9<sup>TH</sup>, 2:00<sup>PM</sup>, at St. Augustine's Church; this month's guest speaker has been fortunate enough to be one of the few orchid hobbyists to experience orchids in Ecuador first hand. Jeanne Kaeding is the current president of the Genesee Region Orchid Society, and a student judge for the American Orchid Society. She has been growing orchids since 1978, first on the windowsill, then under lights (with iguanas!), and currently in a greenhouse.

CNYOS members may remember a talk Jeanne gave two years ago on her efforts at growing orchids from seed. Her current presentation, *Orchid Habitats & Travels in Ecuador*, is based on a two week trip to Ecuador she took in November of 2003. She will describe some of the different orchid habitats she saw there, interspersed with a little travelogue. And, of course, there will be pictures of orchids, both in the wild and in the Ecuagenera greenhouses.

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**NOVEMBER MEETING: SUNY MORRISVILLE:**

Our November meeting was held at the SUNY Morrisville campus, to hear something about the orchid horticulture curriculum currently being offered there. A large number of members made the short drive out to the Morrisville campus, where Professors David Soucy and Kelly Hennigan discussed the program. Students are actively learning and practicing orchid propagation techniques, including growing orchids from seed and even mericlone. Members were given a tour of the facilities.

The planned trip to Marlow Orchids was cancelled because too few members signed up (many members had conflicts on that weekend).

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**DECEMBER MEETING: ANNUAL HOLIDAY PARTY**

December 5<sup>TH</sup> marked the annual CNYOS Holiday Party. For a change of pace this year, we held a potluck at St. Augustine's, and everyone was in agreement—our members are gifted not only as orchid growers, but also in the culinary arts! From deep-fried turkey to pumpkin cheese-cake, there was no shortage of delectable choices... It was a great way to round out 2004. There was a short business meeting, but for the most part, it made for a relaxing afternoon.

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**LUNCH WITH OUR SPEAKER**

CNYOS will be taking our speaker to lunch at Clock 24 in Baldwinsville prior to our meeting this Sunday. If you're interested, please let Jeff Stuart know by Saturday afternoon so he can make reservations. Call 471-1404 or e-mail [jastuart@syr.edu](mailto:jastuart@syr.edu). Plan on meeting at St. Augustine's between 11:30 - 11:45 on Sunday and we'll drive to the restaurant from there.



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**MEETING MINUTES FOR NOV. & DEC., 2004**

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**November 7<sup>TH</sup>**

1. Treasurer's Report. Total proceeds: \$6,616.36. The Fall Show & Sale is currently showing a loss of \$863.83.
2. The members and special awards listing from the Fall Show & Sale may be incomplete, as reported in the November 2004 newsletter. The newsletter editor sends his condolences.
3. This year's Holiday party will be a potluck to be held at our regular meeting.
4. Dave Ditz gave a report on the show, and stated that we need to decide on a date to avoid scheduling conflicts with other regional shows.
5. The November meeting was held at the campus of SUNY Morrisville. Professors David Soucy and Kelly Hennigan discussed their orchid propagation program that they set up two years ago. Students from the program regularly attend the Philadelphia Flower Show, participate in AOS judging at the STOS show, and are starting to propagate Phalaenopsis.

**December 5<sup>TH</sup>**

1. Howard Ginsberg (Bedford Orchids) asked that a letter of support for a Montreal-based AOS Judging Center be sent to the AOS. A motion was approved to do so.
2. 2004 Show Chair Dave Ditz made a few comments regarding this year's show. The club needs volunteers for both the chairperson and the judging chair. Jeff Stuart will resume his roll as judge's chair.
3. Suggestions are being sought for alternative sites to hold our Fall show. Suggestions included the Foreign Legion Hall, Nottingham High School, May Memorial Church, and Great Northern Mall.
4. A Nominating Committee was set up by club motion to report on a slate of officers at the January meeting. Committee members include Jeff Stuart, Barbara Weller, and Cliff Rossler.

**Respectfully Submitted,**

**Barbara Weller, CNYOS Secretary**

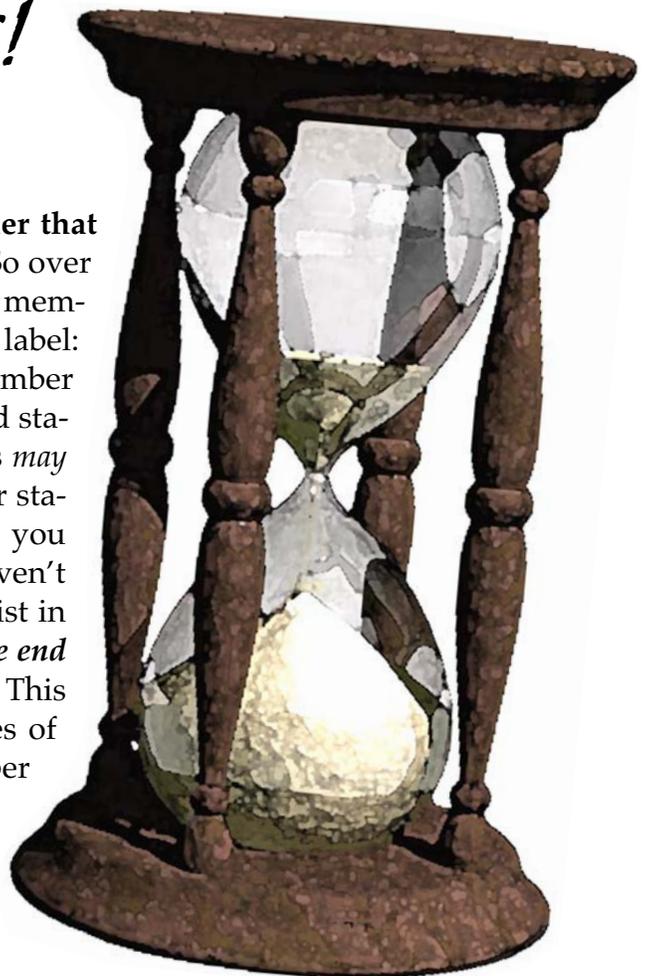
- February 6**      **CNYOS Monthly Meeting:** Taking orchids out of compot, annual silent auction.
- March 6**      **CNYOS Monthly Meeting:** Dennis D'Alessandro of Gypsy Glen Orchids
- April 1-3**      **Genesee Region Orchid Society Show**, Eisenhart Auditorium, Rochester Museum & Science Center, 657 East Ave., Rochester, NY. Contact: Ron Uhlig, 26 Mandalay Ridge, Pittsford, NY 14534; (585) 387-9940; [www.genesee-orchid.org](http://www.genesee-orchid.org).
- April 3**      **CNYOS Monthly Meeting:** Howard Ginsberg of Bedford Orchids
- April 12-17**      **The 25<sup>TH</sup> Anniversary New York International Orchid Show** at Rockefeller Center, sponsored by the Greater New York Orchid Society, <http://www.gnyos.org>
- April 22-25**      **Southern Tier Orchid Society Show**, Oakdale Mall, 601-635 Harry L. Drive, Johnson City, NY. Contact: Gail Kirch, 1099 Powderhouse Rd., Vestal, NY 13850; [gkirch@stny.rr.com](mailto:gkirch@stny.rr.com).
- May 1**      **Annual CNYOS Orchid Auction!**

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## *YIKES! DUES ARE OVERDUE!*

*...and time is running out!*

Because there was no newsletter last month, a reminder that **it's time to renew your membership never went out...** So over the next month, CNYOS will be looking for your annual membership dues (due each December). Check your mailing label: "C" is a Courtesy mailing. "M04" indicates a paid member who owes dues for the new season. "M05" reflects a paid status. "CM" denotes a Commercial Mailing. These labels *may* not be entirely up to date, so if you've already paid, your status will be updated by the next newsletter. If, however, you are currently receiving this newsletter as a courtesy & haven't joined the club, you will be removed from our mailing list in February. *Likewise, those who have not paid dues by the end of February will also be removed from the mailing list.* This does not apply to commercial vendors & representatives of gardening organizations. Annual club dues are \$15.00 per person or \$17.00 per family, payable to CNYOS. Dues should be given to CNYOS Treasurer Carol Haskell, 102 Wynthrop Rd. Solvay, NY 13209.



*Please renew—we would hate to lose you!*

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Please note especially all names and abbreviations in boldface, and correct or complete your records.

### Cypripedium Alliance

<i>Phrag.</i> Don Wimber (Eric Young x <i>besseae</i> )	Rossler
<i>Paph.</i> Norito Hasegawa ( <i>malipoense</i> x <i>armeniicum</i> )	“
<i>Phrag.</i> Hanne Popow ( <i>besseae</i> x <i>schlimii</i> )	Kessler
<i>Paph.</i> Maudiae ( <i>crossii</i> x <i>lawrenceanum</i> ) 2 plants (?)	Erickson
<i>Paph. bellatulum</i>	“
<i>Paph. bellatulum</i> (?)	Stuart
<i>Paph. spicerianum</i>	“
<i>Paph.</i> Buena Bay (Yerba Buena x Saint Ouens Bay)	“
<i>Paph. wenshanense</i> (?)	Ufford
<i>Paph. spicerianum</i>	Olney
<i>Paph.</i> Vanda M. Pearman ( <i>delenatii</i> x <i>bellatulum</i> )	Cohen
<i>Paph.</i> Limelight (Maudiae x Chiara)	“
<i>Phrag.</i> Olaf Gruss ( <i>besseae</i> x <i>pearcei</i> )	“
<i>Paph.</i> John Lamb ( <i>barbigerum</i> x <i>gratrixianum</i> )	“
<i>Paph. barbigerum</i>	“
<i>Paph. concolor</i>	“

### Cattleya Alliance

<b><i>Blc.</i></b> South Globe ( <i>Lc.</i> South Esk x <i>Bc.</i> The Globe)	Olney
<i>B. nodosa</i>	Ufford
<b><i>Slc.</i></b> Fire <b>Lighter</b> (Bright Angel x <i>Sl.</i> Orpetii)	Rossler
<i>Bnts.</i> Donald Prince ( <i>S. brevipedunculata</i> x <i>B. nodosa</i> )	Coleman
<i>Slc.</i> Mahalo Jack ( <i>C. walkeriana</i> x <i>Sl.</i> Orpetii)	“
<i>Blc.</i> Oconee x Malibu Gem	Loveland
<i>Slc.</i> <b>Kawaii</b> Starbright ( <i>Lc.</i> Flirtie x Tickety Boo)	“
<i>Nla. pulchella</i>	Lloyd
<i>Pot.</i> Memoria Shirley Moore ( <i>Blc.</i> Crowfield x <i>Sc.</i> Beaufort)	Cohen
<i>Hksa.</i> Koolau Sunset ( <i>Slc.</i> Mae Hawkins x <i>Ctna.</i> Keith Roth)	“
<i>Sc.</i> Mini Collins ( <i>C.</i> Michael Collins x <i>S.</i> Arizona)	“
<i>Slc.</i> Final Touch (California Apricot x <i>Lc.</i> Drumbeat)	“

### Vandaceous

<i>Phal. violacea</i> forma <i>albescens</i>	Ufford
<i>Asctm.</i> unknown	Boronczyk
<i>V.</i> Pat Delight (Kasem's Delight x Fuchs Delight)	Olney
<i>Sgps. comberi</i>	Coleman
<i>Dtps.</i> San Damiano Stripes (Minho Stripes x <i>Phal.</i> Brother New Player)	Cohen

### Oncidium Alliance

<b><i>Odcdm.</i></b> Wildcat (Rustic Bridge x Crowborough)	Coleman
<i>Brsdm.</i> Nittany <b>Gold</b> ( <i>Brs. verrucosa</i> x <i>Mexicoa ghiesbreghtiana</i> )	“
<b><i>Mtssa.</i></b> Dennis Kleinbach (Cartagena x <i>Milt.</i> Goodale Moore)	“
<i>Onc.</i> Sharry Baby (Jamie Sutton x Honolulu)	Erickson
<i>Brs. longissima</i>	Capella
<i>Rst. uroskinneri</i>	Stuart
<i>Rrm.</i> Orchidom Dancer ( <i>Tolu.</i> Fan Dancer x Kone's Good Choice)	Cohen
<i>Onc. crista-galli</i>	“

### Dendrobium Alliance

<i>Egm. triflorum</i> var. <i>orientale</i>	Erickson
<i>Egm. triflorum</i> var. <i>orientale</i>	Coleman
<i>Den. lawesii</i>	Rossler
<i>Den.</i> Candy Cane (Aussie Green x Penang Stripe)	Cohen
<i>Den. unicum</i>	“

### Miscellaneous

<i>Masd.</i> Copper Angel ( <i>triangularis</i> x <i>veitchiana</i> )	Cohen
<i>Max. cucullata</i>	Capella

**Iris Cohen**

**Editor's Note:** There was no newsletter in December, and it was our intention to include the November Show Table listing in this issue. Unfortunately, neither Iris or I am able to locate it; the document seems to have evaporated into the electronic ether. Our apologies for the omission—the November Show Table was an impressive one, especially for a meeting that was held away from our regular location. JAS

## CLUB REMINDERS

The **CNYOS Club Library** is now located at St. Augustine's church. Make arrangements with Val Introne (682-8595) if you want to borrow an item from the Library.

*DON'T FORGET TO BRING YOUR BLOOMING ORCHIDS FOR THE MONTHLY SHOW TABLE!!!*

## *HAPPY NEW YEAR!*



*Phalaenopsis bellina (violacea),*  
photograph by Vagisha  
Sharma, with digital enhance-  
ment by J. Stuart.

**A limited supply of Coconut Husk Chips is still available from Jeff Stuart. The medium grade is sold out, but there is still a supply of small/fine. If there is interest, a group order for general supplies might be possible. Contact Jeff Stuart (471-1404)**

### *Volunteers Needed To Impress CNYOS With Their Culinary Skills!*

Somehow our list of volunteers to provide refreshments has disappeared (perhaps it has absconded with the November Show Table). Please sign up at the next meeting

### **STOS NEWS: NEWS FROM THE SOUTHERN TIER ORCHID SOCIETY**

The next meeting of the Southern Tier Orchid Society will be held on January 16<sup>TH</sup>. No details on the program are available at this time.

Monthly meetings begin at 2:00<sup>PM</sup> in the Vestal Public Library. For directions, etc. contact STOS president Paul Crumb at 607-539-7249 or by e-mail, [pfc3@cornell.edu](mailto:pfc3@cornell.edu). Better yet, check out the club web page: <http://www.geocities.com/orchidovation/>

### **GROS NEWS: NEWS FROM THE GENESEE REGION ORCHID SOCIETY**

The January meeting of the Genesee Region Orchid Society was held on January 3<sup>RD</sup>, and featured SUNY Morrisville's Kelly Hennigan discussing Orchid Propagation Techniques. Kelly is an assistant professor in the Department of Horticulture at SUNY Morrisville. She holds a BS and MS in horticulture from Cornell. While at Cornell, Kelly ran a web-based program to teach grafting techniques using tropical Hibiscus.

At SUNY Morrisville, Kelly teaches plant propagation and plant science. Students in the horticulture program learn various micro-propagation techniques, including growing orchids from seed and mericlone. The program was founded about two years ago, and has attracted a dedicated group of students.

Taken with permission from *The Orchid Collection*, Newsletter of the Genesee Region Orchid Society, Vol. 27, No. 5, January 2005, Phil Matt, Newsletter Editor (716) 288-7025. More Info: <http://www.geneseeorchid.org/>

## ODONTOGLOSSUM CIRRHOSUM &amp; HELCIA SANGUIOLENTA

Two fine examples of orchids from Ecuador are in this month's Spot-Light, both being from the Oncidiinae subtribe. With over 4,500 orchids from Ecuador to choose from, it's difficult to narrow it down to just two! But these particular two are generally available to orchid hobbyists, and adaptable to both greenhouse and under-lights culture.

*Odontoglossum cirrhosum* is a spectacular species in bloom. The spidery white flowers (occasionally blotched with red) get up to 4 inches in diameter, and can be intensely (and pleasantly) fragrant. The species hails from high the high altitudes (1200-2900 meters) of Colombia, Ecuador, and Peru, and as such appreciates cool to cold temperatures. The overall plant size is roughly 30 - 45 cm. Bright light and ample amounts of clean water (i.e., rain, RO, or deionized) are appreciated. Although it can bloom at any time of year, it generally does so in the cooler months. It is best grown in sphagnum moss, to help keep its high-moisture requirements. The name refers to the tendril-like extensions of the column.



THE LARGE WHITE FLOWERS OF *ODM. CIRRHOSUM* ARE OCCASIONALLY MARKED WITH RED, AND CAN BE WONDERFULLY FRAGRANT. COOL TEMPERATURES, AMPLE MOISTURE, AND BRIGHT LIGHT ARE KEY CONSIDERATIONS FOR SUCCESSFUL CULTURE.

The genus *Helcia* is closely allied with *Trichopilia*, and has anywhere from only one to five species (depending on which taxonomist you ask). *Helcia sanguinolenta* is found in Ecuador, Peru, and Colombia at elevations between 600 - 3000 meters, and boasts 1.5" beautiful leopard-spotted flowers.

The lip is white streaked with red—the species name "sanguinolenta" translates to "blood-stained." The plant is small-statured (~15 cm), and the flowers are reported to be fragrant and long-lasting. It is a generally adaptable plant, although it prefers it on the cool side of intermediate, with cool night temperatures and ample moisture. It does well both potted and mounted, provided its moisture needs are met. This species requires less light than one would think, and is reported to do well under the same conditions as other Ecuador genera, including *Stelis*, *Restrepia*, and *Pleurothallis* species.



*HELCIA SANGUIOLENTA* HAS STRIKING MODERATELY-SIZED YELLOW FLOWERS BLOTCHED WITH RED. SOME TAXONOMISTS (AND RECALCITRANT HOBBYISTS) CONSIDER *HELCIA* TO BE SYNONYMOUS WITH *TRICHOPIILIA*.

**References:** Photos of *Odm. cirrhosum* and *Helcia sanguinolenta* © Andy's Orchids (<http://www.andysorchids.com>). Text compiled from the following websites, and/or personal experience: <http://www.orchidworks.com>, <http://www.orchidspecies.com>, and <http://www.orchidweb.org>. No reproduction without permission.

by Jeff Stuart  
CNYOS Newsletter Editor

It happens to me every year; fall quickly approaches, and my orchid collection has enjoyed a nice summer outdoors. And with all that extra room in my indoor growing area—not to mention the almost limitless space in my backyard—I always end up making a few extra additions to the collection. And then, typically under the threat of frost, I need to rush to bring the collection indoors. But with the new orchids, and all that wonderful summer growth, there seems to be a bit less free space on my orchid stands than there used to be. So I end up cramming orchids into every spare inch of free space, quickly filling up the stands and all the available windows... Does this sound familiar?

Inevitably, because of poor planning on my part (and perhaps a bit of a lack of will-power when faced with making orchid purchases), the orchids come inside each fall and get put into locations that make it hard for me to take care of them—I usually end up losing a few. This year, however, I tried to minimize the trauma by both expanding my growing space by adding a few new light gardens, and by revamping some of the older stands by adding new drainage trays (the older ones were no-longer satisfactory and easily overflowed). When faced with constructing new light gardens, there are a number of factors to consider: the new stands must be of adequate size to accommodate the expanded collection, they must be sturdy, and perhaps most impor-



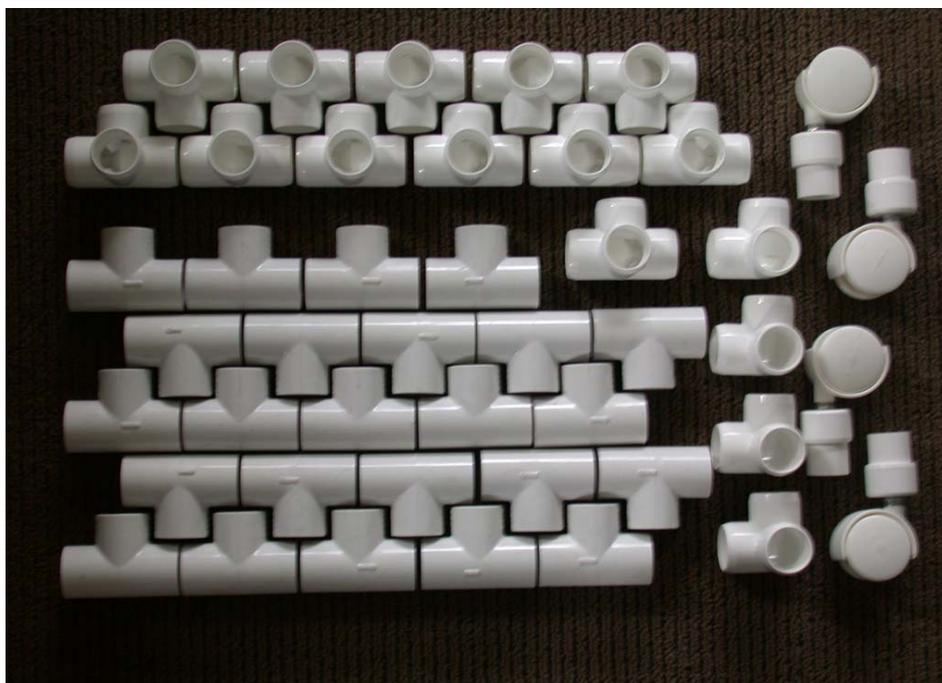
**FIGURE 1:** PVC PIPES OF MANY DIAMETERS CAN BE PURCHASED AT LOCAL HOME CENTERS FOR REASONABLE PRICES.

tantly, they must be waterproof. The latter was a key factor in motivating me to construct a new set of stands—my oldest stand was made of wood, and was starting to decay. I lived in fear for several months that it would collapse. Clearly, wood is not the best solution. Metal is perhaps OK, although rust and corrosion can be issues. Commercial plastic shelving would be great, were it not for the cost. Furthermore, most orchid-hobbyists who grow under fluorescent lighting tend to set up stands with 2'x4' horizontal shelves, so that 4 to 6 four-foot fluorescent tubes can be accommodated. I've never found commercial plastic shelving with the correct dimensions. I needed to fabricate shelving on my own, preferably of plastic, to specific dimensions.

**The Right Stuff:** The answer to my dilemma was found in PVC piping (Figure 1). I've previously described making a stand for growing mounted orchids, so perhaps it's not so surprising that I "arrived" at the conclusion of using PVC. It is easily available in many convenient diameters, is inexpensive, and easy to use. A number of standard plumbing fit-

tings are available in almost any hardware store. Furthermore, stands can be glued together easily with minimal effort. The only inconvenience is that the fittings available locally are designed for plumbing projects, not for furniture building... That makes design of a shelving unit difficult, as plumbing seldom requires 3-way corners & 4-way T-fittings. Such fittings are needed to make shelf supports and corners. Your average hardware store carries only right-angle and 3-way T-fittings. Fortunately, a Google search on the internet revealed numerous web-sites dedicated to specialized PVC fittings for building lightweight and weatherproof furniture! All the fittings necessary are easily available by mail order at fairly reasonable prices—the cheapest source I found was from a retailer in Florida by the name of Patios-to-Go (<http://www.patiosstogo.com>). Almost any size and fitting you can possibly need—from that needed for patio furniture to dog agility gear—can be purchased at a reasonable price from this site (at a price of one third to half of what other web sites listed—done deal!). Patios-to-Go also has a selection of casters, although you must be careful to specify the pipe size you're using. For 1" pipe they had to custom assemble the casters I requested. The ability to move the shelves is extremely convenient.

**Time to Design:** Now that I knew what was available, it was time to design my stands. I settled on one-inch PVC pipe and fittings for construction; this size might sound to small at first, but



**FIGURE 2: A PLETHORA OF PVC FITTINGS.** THE TOP TWO ROWS SHOW SPECIAL-ORDER FOUR-WAY FITTINGS USED AT THE CORNERS. THE STANDARD “T” FITTINGS SHOWN ABOVE ARE AVAILABLE AT HOME CENTERS. FOUR 3-WAY CORNERS ARE SHOWN AT THE RIGHT, NEXT TO SPECIAL ORDER CASTERS, ALL OBTAINED FROM PATIOS TO GO. THERE ARE A FEW EXTRA STANDARD “T” FITTINGS SHOWN THAT WERE NOT NEEDED FOR THE FINAL STAND.

upon inspection of the pipe it turned out to be more than sufficient—PVC pipe is strong. I came up with a simple design for units with three shelves each (in addition to the top), a little larger than 2 x 4' and approximately 6-7 feet tall. I wanted the shelves as tall as my basement growing area could accommodate, so that the fluorescent fixtures could be raised and lowered as needed. The length and width had to be a nominal 2 by 4 feet in order to fit the trays I had in mind. Each stand needed a total of four 3-way corner pieces, twelve 4-way T fittings, & 8 standard 3-way T-fittings (available locally from Home Depot). Figure 2 shows all the needed fittings. The latter fittings were needed for a pair of cross-braces per shelf, to add center support for the drainage trays (see Figure 5). As an aside, I only intend to use the upper two shelves—the bottom shelf is there

primarily for structural support and storage space.

**The Right Tools:** When dealing with PVC, some specialized equipment is in order—although not altogether necessary. The primary task is to cut the pipe to the correct length. There are several ways to do so, and a standard miter box & saw is an effective way to go. However, this is an awkward approach because it is difficult to clamp a pipe in position prior to cutting, and it generates a lot of plastic “saw-dust” while cutting. A much better solution is to go with a PVC pipe-cutting tool, which typically consists of a ratcheted blade that cuts through the pipe as you squeeze the handles together—the ratchet action makes cutting the tube fairly easy. Make sure the cutter you purchase is approved for the diameter of the PVC pipe you intend to use.



**FIGURE 3: CUTTING PVC PIPE.** ONCE A LENGTH OF PIPE HAS BEEN MEASURED, A RATCHETED PVC PIPE CUTTER PROVIDES A CLEAN AND EASY METHOD OF CUTTING PIPES. TWO VIEWS OF CUTTING THE PIPE ARE SHOWN IN THE BOTTOM TWO PHOTOS.

Figure 3 illustrates the tool being used to cut 1” pipe. In addition to the pipe-cutting tool, other tools might include a file for shaving off rough ends and removing burrs (if necessary), a tape measure, a permanent marker, & a rubber mallet.

A slight disadvantage to using a PVC pipe cutter is that your cuts will often not be square (i.e., the cuts will look crooked), but not to worry; the slight variation in pipe length that results will be



**FIGURE 4: PIPES CUT TO LENGTH:** IT IS SURPRISING TO SEE HOW MANY PIPES ARE NEEDED FOR JUST ONE SHELF!

insignificant once the stand is assembled. I found variations as much as an eighth of an inch were easily absorbed once the fittings were attached.

### Working With PVC Pipe:

Once I had compiled a list of all the PVC pipe lengths I needed, I went right to measuring and cutting. Determining how much pipe you need may not be as easy as it sounds. You must first consider the finished length, after you've attached the appropriate fitting to either end. One-inch pipe fittings typically added an inch to each end, meaning that a 48" finished width will need a 46" length of pipe and two end fittings. You'll have to confirm the dimensions of each type of fitting, which may vary between manufacturers and pipe sizes. Finally, PVC pipe comes in standard 10' lengths, so a few calculations will be needed to figure out how many pieces you'll be able to cut from each new pipe—it's nearly impossible to eliminate waste, but careful planning will minimize unused pipe. A simple tape measure was used to measure pipe lengths, which I marked out with a fine-tip permanent marker. Remember—measure twice and cut once! My goal

was to end up with as little left over PVC as possible. Figure 4 shows all the finished pieces waiting for assembly.

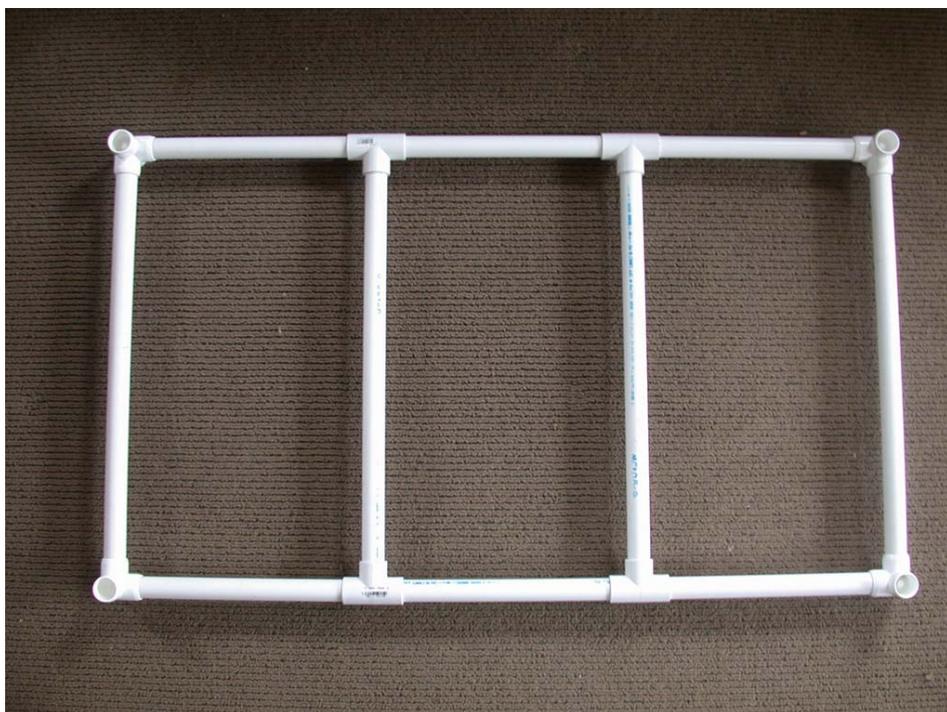
After all the pieces are cut, it's a good idea to assemble the unit to make sure everything fits and the resulting shelf matches the design—any mistakes should become obvious immediately so that corrections can be made. Be careful not to tighten the joints too much, because you'll have to disassemble before gluing—you may need the rubber mallet to gently knock the pieces apart. If you're satisfied with the results, it's time to move onto the next step. Figure 5 shows an assembled shelf.

**Cementing PVC Pipe:** There are a number of commercial products available for gluing PVC pipe together, but I recommend selecting a product like Oatey PVC Cement (Figure 6). This is usually available in a handy pack, includ-

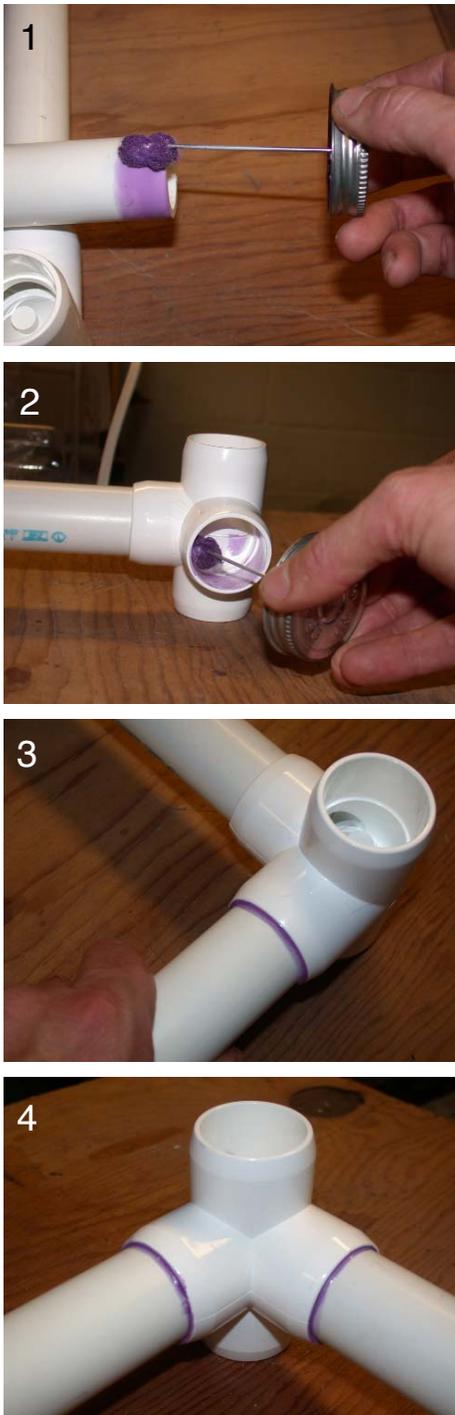


**FIGURE 6: OATEY PURPLE PRIMER & PVC CEMENT.** THE OATEY PRODUCTS PRODUCE VERY STRONG BONDS & SHOULD BE USED IN WELL-VENTILATED AREAS.

ing a can of purple primer and a can of cement. Brush-applicators for each are included as part of the container caps. Oatey products are intended for plumbing applications, and form a very strong bond. **WARNING: Use the primer & cement in a well-ventilated area—the fumes can be toxic!** Even in a ventilated area, I felt light-headed after working with the cements for the better part of a day. The primer is used to clean off the surfaces to be cemented, and is applied immedi-



**FIGURE 5: ASSEMBLING THE COMPONENTS OF EACH SHELF** ENSURES THAT ALL PIPES ARE CUT TO THE CORRECT SIZE AND THE PARTS FIT TOGETHER PROPERLY.



**FIGURE 7: CEMENTING PVC.** 1 & 2: BOTH THE INTERIOR & EXTERIOR OF THE PIPES & FITTINGS ARE PRIMED WITH PURPLE PRIMER. CEMENTING IS DONE SIMILARLY (NOT SHOWN). 3. ONCE ALL SURFACES ARE COATED WITH PRIMER & CEMENT, THE PIPE IS INSERTED FIRMLY INTO THE FITTING. HOLD THE PIPE FIRMLY IN PLACE FOR ~ 30 SECONDS TO SET THE BOND. 4. THE FINISHED CORNER. CARE MUST BE TAKEN WHEN CEMENTING AN ENTIRE SHELF TO MAKE SURE THE END RESULT IS LEVEL.

ately prior to applying the cement, itself. Before applying the primer, the surfaces to be cemented should be free of dirt and dust. Because we're not worried about a leak-proof seal, the joints need not be perfect. Once the surface is relatively clean, apply the primer to create a fresh PVC surface. The brush should not be dripping wet—not much primer is needed—and primer is applied by simply running the brush over the surface to be cemented (both the pipe and fitting should be primed). The purple color makes it easy to tell if you've achieved adequate coverage. When not in use, be sure and store the brush in the primer. Once the components are primed, open the cement and use the (new) brush to apply cement to the primed areas on both the fitting and pipe. Quickly join the two components and tighten into place (use the mallet if necessary). Rotate the pipe about a quarter turn, and hold for 30 seconds. The cement sets very quickly—after ~30 seconds no readjustment will be possible. A full bond is formed in anywhere from an hour to several hours, depending on the temperature and humidity. However, because we are not doing plumbing work, we can safely handle the joint while assembling the rest of the shelf after only a few minutes. The four steps are shown in Figure 7. Cementing the shelves together takes time—in my design, each shelf consisted of 10 pipe pieces and 8 fittings, with 20 individual joints to be cemented! You want to be sure that when all the components are cemented into one shelf, the result is as level and square as possible.

**Cementing Strategy:** It's worth noting a bit of strategy while cementing your shelf together. When cementing individual joints, try to make sure that the pipe is completely inserted into the fitting, and that once cemented, the pipe and fitting are "square," i.e., the pipe should come straight out of the fitting without being at an angle, making a right angle to the other pipes joined by the fitting. This may mean having something handy to act as a spacer—a piece of wood or something else of the correct height—to keep the pipes level while the cemented joint cures for the first minute or so. Work with one shelf at a time, and don't worry about cementing the vertical pieces in place. The majority of the lateral stability comes from the (horizontal) cemented & assembled shelves (i.e., so the shelf will resist pulling apart from side to side), and the vertical supports need not be permanently cemented. This is particularly convenient if the shelves need to be disassembled and moved in the future. Furthermore, you have more control over the height of the stand, which can be changed in the future by installing longer pipes for a taller stand, or cutting down the length of the pre-existing pipes for a shorter stand.

**Finishing the Light Garden:** At this point, the shelf is just about done. If you purchased casters, they can be attached to the bottom shelf, and then the entire unit can be assembled. Use the mallet to make sure the vertical supports are well seated in the fittings. Chain can be used to hang the fluorescent lights on the shelf—leaving additional chain in

place will allow the lamps to be raised or lowered as needed. A power-strip secured with zip-ties to the top of the shelf unit makes a convenient place to plug in the lights, and is unlikely to get wet during watering. Figure 8 shows my finished stand. For drainage trays, I'm using a roofing product called roofing pans, that are cut to length with the ends folded up to form trays—these pans are one foot wide and interlock along their length. They're about 3" deep and can be cut to any length. If you can get the ends folded and install drains, they make ideal trays for fluorescent light gardens. The idea was inspired by an article on hydroponics I found on-line, which described the roofing pans as a cost effective alternative to expensive trays sold by hydroponics specialty stores. I ordered the pans from a Delaware-based company that specializes in light-weight patio roofs. The major problem for most people will be folding the open ends into a tray; roofing pans are made of moderate gauge aluminum and can be difficult to bend (even with the proper tools). Fortunately, my pans arrived with one end already (machine) folded, but the cost of folding both ends was prohibitive. So I tackled the task myself, which took a lot of time & effort. For drains, I'm using marine through-hull fittings. These fittings can be affixed through a pre-drilled hole, and connected to a drainage hose. As is evident, the use of roofing pans is assembly-intensive, and therefore may not be the best choice for the average under-lights orchid grower. On the flip side, they are light-weight, water-resistant, and relatively inexpensive (as com-

pared to pre-fabricated trays).

Despite my efforts—not only did I replace my decaying wood stand, but I built two additional new ones—I was not completely successful in transitioning my orchids into their winter growing areas. The trays are still not finished (they need the drains installed) so the collection is somewhat in disarray. However, only a few orchids died, and it's arguable that they were already in bad shape. But in the long term, my efforts will be well worth it, and the plants will be much better off.

And if you're considering building a light garden, using PVC pipe and the new furniture-grade fittings is an excellent way to go. The resulting stands are strong yet light-weight, durable, will not corrode, rust, or rot, can be easily modified to be taller or shorter, and won't provide homes for insects and other orchid pests. All in all, PVC is an ideal solution to constructing not only indoor light gardens, but even sturdy greenhouse benches. And if you liked Tinker-Toys as a kid, this is a great project!

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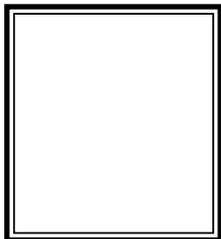


FIGURE 8: THE FINISHED STAND. THE COMPLETED STAND LOADED WITH ORCHIDS! THE TRAYS DISCUSSED IN THE TEXT ARE NOT YET INSTALLED.

Next Meetings: Guest Speaker Jeanne Keckings  
"Orchid Habitats and Travels in Ecuador"



Next Meetings: Sunday, January 9, 2PM



THE CENTRAL NEW YORK ORCHID SOCIETY  
Your local AOS & Orchid Digest Affiliate  
351 Kensington Place  
Syracuse, NY 13210-3309



## Central New York Orchid Society

**President:** Kim Boronczyk (315) 455-7587  
**Co-V. Presidents:** Carolyn Pace (315) 662-7993  
Cynthia Busic-Synder (315) 684-7525  
**Treasurer:** Carol Haskell (315) 468-0811  
**Secretary:** Barbara Weller (315) 468-5039  
**Newsletter Editor:** Jeff Stuart (315) 471-1404

<http://www.paphiopedilum.net>

The Central New York Orchid Society meets at St. Augustine's Church, 7333 O'Brien Rd, Baldwinsville, at 2:00<sup>PM</sup> on the first Sunday of each month from September through June. Yearly dues are \$15.00 per individual, or \$17.00 family. Dues should be paid to the CNYOS Treasurer, Carol Haskell.

## THE ORCHID ENTHUSIAST

The **CNYOS Newsletter**, *The Orchid Enthusiast*, is a publication of the Central New York Orchid Society and is distributed to the Society's members ten times per year, prior to all club meetings, events, or functions.

*Jeff Stuart, Editor*

351 Kensington Place  
Syracuse NY 13210-3309  
(315) 471-1404

e-mail: [jastuart@syr.edu](mailto:jastuart@syr.edu)

