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Native Orchid Conference - Carolina Coast August 7-10, 2004

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The third annual meeting of the Native Orchid Conference Inc. (NOC) was held at the Coastal Carolina University, Conway, South Carolina, August 7 to 10. Some 60 registrants from as far away as England and Germany gathered for an enjoyable and thought-provoking discussion of matters orchidaceous. Two days of presentation were alternated with two days of field trips to orchid-rich habitat in North and South Carolina. An optional trip into the mountains northwest of Blacksburg, Virginia was scheduled for August 12. The timing of this conference was fortuitous. Not only did the organizers miss the very wet weather of the week previous but they also missed the rain of Bonnie followed by the devastating effects of Hurricane Charley, which damaged the Myrtle Beach/Conway region and dealt a blow to the habitats we had visited just a few days previous. While natural systems have a way to deal with weather and fire since they have evolved with such challenges, the impact on human residents can be disruptive and costly.

The conference program began on Saturday, August 7. After a welcome from NOC President, David McAdoo, Jim Fowler, Greenville, South Carolina, and author of *Orchids of South Carolina*, presented an introduction to the orchids of that state. Jim pointed out that the greatest concentration of species (37 of the 55 state-wide) was in the coastal plain which we later had the opportunity to visit (Figure 1).

Figure 1: Jim Fowler and Jyotsna Sharma

Lucy Dueck, Research Coordinator, Molecular Ecology, Savannah River Ecology Laboratory, University of Georgia, presented a fascinating preview of the *Spiranthes* Genetics Project, including a peek into the unravelling of mysteries surrounding the identity of *Spiranthes* for conservation purposes. She reported that one of the *Spiranthes cernua* populations studied had more affinity with northeastern *Spiranthes*

ochroleuca. Included in the conference package was her colorful illustrated booklet, *Wild Orchids in South Carolina: The Story*.

Alan Weakley, Curator of the Herbarium, University of North Carolina, Chapel Hill, provided an interesting overview of orchid habitats in the southeastern US. He explained the role played by fire in the ecology of the North Carolina State Tree, Long Leaf Pine (*Pinus palustris*), which dominates the coastal plain pine savannah. For more information about this interesting life history, visit http://www.nearctica.com/trees/conifer/pinus/Ppalus.htm.

Occasional fire, which may be sparked by lightning or through prescribed burns, controls the overgrowth of grasses and shrubs. Control of ground cover not only benefits herbs growing in these places, including *Platanthera*, *Cleistes* and *Calopogon* as well as some carnivorous plants, but it also 'liberates' pine seedlings from the short 'grass' stage. During this post-fire 'bolting' phase, Long Leaf pine seedlings can grow at a rate of 3 to 5 feet per year (Figure 2).

Figure 2: Here we see the effect of a very recent prescribed burn. Pine foliage is scorched and ground cover mostly gone. What we cannot see are the tiny grass shoots already visible amongst the ashes.

For Kathy Gregg, West Virginia Wesleyan College, the visit to South Carolina was to a familiar 'stomping ground' since she had previously studied *Cleistes bifaria* and *Cleistes divaricata* in some of the places we were to visit. Kathy spoke about the Recovery of Showy Lady's Slippers from Moderate and Severe Herbivory by White-tailed Deer. She illustrated how repeated shoot destruction could weaken plants to the point that recovery was uncertain. Caging of individual plants or of small colonies eliminates herbivory but many years may be needed for the plants to recover vigor. Kathy brought along a butterfly net just in case we saw *Platanthera* pollinators (Figure 3).

Figure 3: Kathy Gregg

Wayne Roberts, Roberts Flower Supply, Columbia Station, Ohio, provided tips for successful culture of seed-raised *Cypripedium* and other terrestrial orchids in garden situations including bog gardens. After a supper break, we returned to hear about the Epiphytic Orchids of South Florida from Chuck McCartney. Only one epiphytic orchid is found in the Carolinas (*Epidendrum magnoliae*). Chuck presented 28 species from the Sunshine State. We were treated to images of 4 species of *Vanilla* as well as *Epidendrum*, *Encyclia*, *Prosthechea*, *Pleurothallis*, *Cyrtopodium*, *Oncidium*, *Tolumnia*, *Ionopsis*, *Macradenia*, *Brassia*, *Polystachya*, *Harrisella*, *Campylocentrum*, and *Dendrophylax*.

The evening was rounded out by a panel discussion, which was moderated by Mark Rose on the topic 'Ethics of Reintroduction.' Panelists included Marilyn Light, Kathy Gregg, and Wayne Roberts. Points discussed included the relative merit of reintroduction, translocation, and supplementation in natural settings. Relatively few terrestrial orchid taxa are in horticultural trade, yet these are legally traded across a wide geographic range. What, if any, is the risk of introducing a different genotype into a garden within the natural range of that species? If we are planning reintroduction into a habitat where the orchid once grew, is there a different risk than if we consider reintroducing the same species into a place where the orchid is likely to grow but has never been recorded? Why did the orchid disappear from a site or why did it never become established there, at least in recent times. It was agreed that there are serious issues which require some thoughtful consideration before any reintroduction projects are considered.

The second day of presentations was Monday, August 9. Bill Summers of St. Louis, Missouri, provided an animated and colorful talk on the Orchids of the Ozark Plateau. This knowledgeable author of the 'Orchids of Missouri' led us on a trip, often by canoe, along this former front of glaciation. One fantastic sight was of the Showy Lady's Slipper (*Cypripedium reginae*) flowering along steep dolomitic bluffs. Another interesting sight was of a group of morels (*Morchella* sp.) clustered with a Showy Orchis (*Galearis spectabilis*) growing in a pine oak forest. Chuck McCartney followed with a slide program of the Orchids at Granny Squirrel Gap (in the southwestern tip of North Carolina). This provided the audience with a peek at what grows in the habitats far from the coastal plain. Orchids growing there include the Large Yellow Lady's Slipper, the Downy Rattlesnake Plantain and the Appalachian Twayblade (*Listera smallii*).

After a good coverage of the southeast, it was time for Jean Stefanik of Manchester, New Hampshire, to present the Native Orchids of Northern New England. Jean chairs the NH Orchid Society's Conservation & Education Committee. She showed us a very attractive peloric form of *Pogonia ophioglossoides*. This plant was one of a group of similar-flowered stems. Jean also commented how moose create a woodland clearing during their wintering season (yarding), speculating that this might create a more suitable habitat for the Pink Lady's Slipper (*Cypripedium acaule*).

Ken Cameron, Associate Curator, The Lewis B. & Dorothy Cullman Program for Molecular Systematics Studies, New York Botanical Garden, reported on recent DNA investigations of *Liparis* and *Malaxis*. The questions being asked include the relationship of species with plicate (pleated) leaves and those with conduplicate leaves (those with one leaf folded over the other one in the bud). Another question involves the possible transition from epiphytic to terrestrial life form and whether this happened once or several times during the evolution of this group. Research has shown that the genus *Oberonia* is a common ancestor to both genera. Epiphytic and terrestrial species are separately clustered, and *Liparis* and *Malaxis* are not natural groups. The investigators concluded that the type for genus *Liparis*, *Liparis loeselii*, is closely related to east-Asian taxa with conduplicate foliage.

The conference wrapped up with a presentation by Marilyn Light on Long Term Study - The Conservation Payoff. Marilyn, who chairs the North American Regional Orchid Specialist Group, pointed out that some 60% of North American terrestrial orchids are not or have not been tracked on an individual plant basis. She used examples from ongoing studies to illustrate how and why we should track individual plants and populations. A conservation team of NOC members then was established to get some studies underway (Figure 4).

Figure 4: The Conservation Team is from the left clockwise: Claude Poirier (holding daughter and future conservationist, Colombe), proud mom, Nathalie Gladu, David Mellard (team chair), Jim Fowler, Jean Stefanik, Eleanor (Sam) Saulys (standing), Jyotsna Sharma (standing) and Kathy Gregg.

Field trips are the life blood of orchid conferences. They give an opportunity for people unfamiliar with an area to learn about the orchids, their habitats, diversity, and related conservation issues. Some 25 species were seen during the three excursions. Participants were divided into groups which somewhat reduced the impact of many feet. Our group first visited the Green Swamp in North Carolina where we were led by a very knowledgeable Frank Galloway. We saw his lovely garden and how well he grew plants in bog gardens. We then ventured into some more accessible parts of the Green Swamp. This preserve largely consists of impenetrable bay vegetation including evergreen shrubs (Sweet Bay - *Magnolia virginiana* and Red Bay - *Persea borbonia*), and thorny vines such as *Smilax* sp. Fortunately for us there are more open areas or 'islands' where orchids and carnivorous plants grow together in sandy soil with grasses, wildflowers and other interesting things such as the Fox Tail Clubmoss, *Lycopodiella alopecuroides*. We saw the intriguing 'pocosin' habitat, and walked into the pine savannah. These pine savannah clearings have intriguing local names such as 'Big Island', 'Bean Patch,' 'Calf Island' and 'Shoe String.' As our excursion continued, those of us unfamiliar with the flora soon learned how to distinguish between the yellow/orange-flowered orchids, *Platanthera ciliaris*, *Platanthera cristata* and *Platanthera integra*, as well as to recognize some of the frequent co-inhabitants such as the purple-pink Meadow Beauty (*Rhexia* sp.), Yellow Eyed Grass (*Xyris* sp.) and the Orange Milkwort (*Polygala lutea*). In the moist woods around Rice's Creek where we saw a non-flowering *Epidendrum magnoliae* (formerly *Epidendrum conopseum*) growing high up in a tree. The orchid was so high and the setting so shaded that I looked down to see, if by chance, pieces had fallen to a much more convenient viewing level. Wonder of wonders, there was a large patch of non-flowering plants on the ground. The stems were short (2-3 in) but reed-like with 3 or 4 glossy green leaves. There was no sign of buds, spent blooms or fruits. Then we visited a 'bay' with a plentitude of Venus Flytraps (*Dionaea muscipula*) and Pitcher Plants (*Sarracenia flava* and *Sarracenia rubra*). Some of the Venus Flytraps were colored brilliant red, others green, but there did not seem to be too many traps shut on unwary insects. For more information on the Green Swamp, visit http://nature.org/wherewework/northamerica/states/northcarolina/preserves/art5606.html

A second field trip was to the Francis Marion National Forest in South Carolina. We gathered at the Seewee Visitor and Environmental Center near Awendaw. While there we discovered a population of *Habenaria*

Figure 5: *Habenaria repens*.

repens and an alligator! The alligator was quite benign and swam in the distance, while the orchids were growing on an easily accessible bank which was a delight for the photographers. There was less risk of trampling seedlings as the orchids were in easy reach (Figure 5). We travelled a short distance to a wooded area sloping towards a creek. There we saw a group of Crane Fly orchids (*Tipularia discolor*) blooming as they do, without foliage. The deciduous forest was dense so it was difficult to see the orchids unless one knew where to look. Further along the creek we found a group of Tubercled Orchid (*Platanthera flava* var. *flava*). The flowers were mostly finished but the lip was clearly quite broader than that of var. *herbiola*, which is more familiar to us in the north.

In a much brighter open site which had been burned a year or two previous, we could appreciate the benefit of prescribed burns which control the heavy ground vegetation that would otherwise compete with more delicate herbs. We saw orchids and also the Southern Red Lily or Pine Lily (*Lilium catesbaei*) (Figure 6). There were numerous tall, orange, butterfly-pollinated Yellow Fringed Orchids (*Platanthera ciliaris*) (Figure 7). The Crested Fringed Orchid, (*P. cristata*) was easy to distinguish from unusually short specimens of *P. ciliaris* if examined closely (Figure 8). The Fringeless Orchid, (*P. integra*) was less frequently seen but was easily distinguished from the fringe-lipped species (Figure 9). We saw the Southern White Fringed Orchid (*Platanthera blephariglottis* var. *conspicua*) in many localities including along a wet roadside (Figure 10). There was evidence that the flowers were being visited as indicated by errant pollinia stuck to petals and lips. It was too early to assess fruit set.

Figure 6: Pine Lily being photographed by Bill Temple of England.

What was the highlight of this trip for many were some plants of *Platanthera ×bicolor*, which is a natural hybrid between *P. ciliaris* and *P.*

Figure 7: *Platanthera ciliaris*.

Figure 8: *Platanthera cristata*.

Figure 9: *Platanthera integra*.

Figure 10: Lying in wait on *Platanthera blephariglottis* var. *conspicua* was the Green Lynx Spider (*Peucetia viridans*).

blephariglottis var. *conspicua*. Some flowers had the long lip of *P. ciliaris*, while others were more or less colored between both parents (Figure 11). For more information about Francis Marion National Forest see http://seweecenter.fws.gov/francismarioninfo.htm

All good things must come to an end, and after saying fond farewells, we went our various ways, back to a life of enjoying native flora and of sharing our experience with others. Thank you to the organizers, David McAdoo and Mark Rose, to the field leaders, Frank Galloway and Jim Fowler, and to the camaraderie of all concerned. We look forward to the 2005 conference and another opportunity to meet friends, make new acquaintances and observe yet another array of orchid habitats in North America.

Figure 11: *Platanthera* ×*bicolor* group.

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Editor's Note: The next article is Mike Parson's account of the third field trip into Appalachian Mountains near Blacksburg, Virginia at the end of the 2004 NOC Annual Meeting.

The 3rd Native Orchid Conference - The Last Field Trip

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A third field excursion was to the Appalachian Mountains near the border of Virginia and West Virginia. I had met up with Bill and Sylvia Temple from England, and we booked up a good B&B near Bluefield. We had been given an extra day to prepare ourselves before meeting at a car-park in Blacksburg. There was to be only one group here, and we were to be led by Stanley L. Bentley, the author of '*Native Orchids of the Southern Appalachian Mountains*' and also the person who discovered a new orchid in the area, namely, *Corallorhiza bentleyi* (Bentley's Coralroot Orchid). We were introduced to Stan Bentley before we went to the first field stop, and he kindly autographed our books. On the first break after travelling on to some single track roads in the mountains we found this rare orchid in acidic soil under heavy tree canopy. It was certainly different from the other Coralroots with its shining bronze appearance and large seed pods. Since being discovered in 1996, several plants and sites have been found, and although the flowers are cleistogamous we did find some with the lip showing. Color forms ranged from green, bicolor green-brown and even yellow.

Corallorhiza bentleyi

In the same area there were leaves of *Isotria verticillata* (Large Whorled Pogonia) and *Corallorhiza maculata* (Spotted Coralroot) still in bloom with the very spotted, much slender labellum than the recently found orchid. Further down the road another coralroot appeared, namely, *Corallorhiza odontorhiza* (Autumn Coralroot), which is also normally cleistogamous. Again, we found several plants in bloom showing the lip for all to see. It was strange to find them all in bloom, especially because *C. maculata* is usually associated with spring.

In these woods also were *Goodyera pubesens* (Downy Rattlesnake Plaintain) popping up in all areas but there were more rosettes than flowers. Some were in full bloom having their white inflorescence standing out in the dark shadows. Further into the mossy hollows was *Goodyera repens* var. *ophioides* (Lesser Rattlesnake Plaintain), another

white flowered orchid with a longer and more open lip but much smaller in height. Both species of *Goodyera*, unlike the *G. repens* found in Europe, have beautiful tessellated rosettes with various designs.

The winding mountain road reached a junction where we stopped to eat our lunch, but now the rain was beginning to fall so we ate quickly so that we see the rest of the goodies before the heavens really opened up. First there were some *Platanthera ciliaris*, then some *Liparis loeselii* (Fen Orchid) in seed, another orchid which is also found in Europe. Both species were in a ditch near some *Listera smallii* (Small's Twayblade), an endemic orchid found only in the Appalachian Mountains. This orchid was growing under some rhododendron bushes but it had just gone over and was in seed. As we were going toward our last stop for the day we saw the emerging *Spiranthes ovalis* (Oval Ladies'-Tresses) before seeing in full bloom *Spiranthes lacera* var. *gracilis* (Southern Slender Ladies'-Tresses) all along the roadside verges showing a greenish throat and long, slender appearance. This orchid differs from the *Spiranthes lacera* var. *lacera* (northern variety) by not having the leaves at flowering time and being smooth. It also has a very nice fragrance.

Around the next bend was *Platanthera peramoena* (Purple Fringeless Orchid; see back cover), a great orchid to finish the day with. This large orchid had a large labellum, and the flowers were light purple. These orchids were hiding amongst the ironweed which is of a similar colour and much larger so they were difficult to pick out from the rain drenched plants.

It was now time to go home but a few of us revisited the following day, when the rain had subsided a little, to spend more time to take some extra photos. It was a pity the rain had cut short the previous day as Stan Bentley was going so show all of us the '*locus classicus*' site for *Corallorhiza bentleyi*.

Overall, the conference was a great success and the weather was superb until the last day. It was never too hot in the savannahs of North and South Carolina as it had been a few days previously and this accounted for the bugs and mossies being at a record low. We were very lucky to have missed the tropical storms before the conference, although we did catch the fringe of 'Bonnie' in the Appalachians, but to have missed hurricanes 'Charley' and 'Frances' was really good fortune.

Lost and Yet to be Found: The Snowy Orchid, *Platanthera nivea*

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While researching the state's orchids for the Flora of Arkansas Project, I have determined that all of the orchids that have been validly attributed to the state are still extant except one, *Platanthera nivea*, the snowy orchid. Until recently, botanists within Arkansas were not even sure that the plant had ever actually occurred here. By piecing together information from two specimens in different herbaria, I have been able to confirm that at one time the snowy orchid did occur within Arkansas, and have been able to identify the county where it occurred, its general habitat, flowering period, and the day of the month and year when specimens were collected. Hopefully, this information may yet lead to its rediscovery and its inclusion in the state's extant orchid flora.

Platanthera nivea
Photo: David McAdoo

Only one specimen of *Platanthera nivea* is housed within Arkansas. This specimen is deposited at the herbarium at the University of Arkansas in Fayetteville (UARK). There is but a single flowering stem on the sheet and the label data are incomplete. According to the label, the specimen was collected by F. L. Harvey in July of 1883 from the prairies of east Arkansas. Harvey was the first botanist at the University and he traveled widely within the state. Because no other specimens were known to exist, and no extant population was known, some in the state doubted that the Harvey specimen was actually collected in Arkansas. Mississippi, Louisiana, and Texas were mentioned as the likely states of collection, and it was speculated that the specimen had been mislabeled.

While there was doubt within Arkansas that the snowy orchid had occurred in the state, there didn't seem to be any doubt outside of Arkansas. Correll (1950) listed *Platanthera nivea* as occurring in Arkansas County, Arkansas. And Sheviak's treatment of *Platanthera nivea* for Flora of North America (2002) listed Arkansas in the state distribution

for the species. Botanists from outside of Arkansas seemed to know something that those of us in the state didn't. The questions would not be resolved until additional specimen(s) was(were) located. This is often easier said than done. Most of the plant specimens collected in Arkansas are, in fact, located in herbaria outside of the state, and knowing where to look is often a challenge, for specimens collected in Arkansas have been distributed far and wide.

I began by communicating with Dr. Charles Sheviak at the New York State Museum, for he had treated *Platanthera* for Flora of North America. He kindly answered my questions and informed me that he thought he had seen a specimen at Harvard University in Cambridge, MA. My next communication was with Emily Wood, Manager of the Systematics Collections at Harvard University Herbaria. She confirmed that the Oakes Ames Orchid Herbarium (AMES) at Harvard housed a collection by Harvey of the snowy orchid from Arkansas (AMES 79579). She kindly emailed me the label data from the specimen, and sent copies of the specimen and the pertinent pages from Ames' publication on *Habenaria* in North America (Ames, 1910). The specimen at AMES had three flowering stems, not one. And, while its label was incomplete, there were much more data on that label than on the label at UARK.

From the specimen label at AMES, I learned that the snowy orchid had been collected in Arkansas County, on 4 July (1883), in an extensive prairie area in east central Arkansas known as the Grand Prairie. Harvey had noted that the flowers were white and had an odor like tuber roses, the plants were plentiful, and that the roots were tuberous. Also, the sheet bore an annotation of *Habenaria nivea* (Nutt.) Spreng., written by Charles Schweinfurth with the literature citation: Ames, Orchidaceae, IV, 54, 1910. The Arkansas information for *Platanthera nivea* in Ames' publication on *Habenaria* in 1910 was clearly based on the Harvey specimen at AMES, with the following information: 'Grand Prairie, July 4, F. L. Harvey (3).' The number "(3)" indicates that Ames had seen the specimen at Harvard University.

Platanthera nivea
Photo: David McAdoo

With the one-time presence in Arkansas of the snowy orchid confirmed, my attention now has turned to looking for an extant population of *Platanthera nivea*. Unfortunately, most of the Grand Prairie of east-central

Arkansas where the snowy orchid once grew has been destroyed. At one time, this area consisted of some 900,000 acres, with approximately 320,000 acres in tallgrass prairie [Arkansas Natural Heritage Commission (ANHC) & United States Fish and Wildlife Service (USFWS), 2004]. Sadly, today only 430 acres of this tallgrass prairie remain. But, there is good news. Prairie restoration is receiving increased interest. And efforts from many groups at the local, state and federal level are underway. Suitable habitat, in both size and quality, may yet return and be available for colonization by long-distance dispersal from extant populations of the snowy orchid in Mississippi, Louisiana, or Texas.

Additionally, the Flora of Arkansas Project is promoting herbarium and field studies throughout the state. Plants new to the state are being discovered and recorded, and some long-thought to have disappeared from part or all of the state are being rediscovered. An example is the earleaf false foxglove (*Agalinis auriculata*), which was rediscovered in northwestern Arkansas in September of 2003 after an absence from that part of the state for 120 years. It was last seen in northwestern Arkansas by F. L. Harvey in 1883, the same year as the snowy orchid. I hope that in some out-of-the-way spot, the snowy orchid, *Platanthera nivea*, also awaits rediscovery. At that time we can change its status from 'Lost' to 'Found.'

Acknowledgments:

Many individuals have contributed to my work. I would especially like to thank Charles Sheviak at the New York State Museum and Emily Wood at the Harvard University Herbaria for their kind assistance.

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Pictorial Orchid Flora Project

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The Native Orchid Conference is launching a Pictorial Orchid Flora of the United States and Canada, which will be part of our website. Ultimately the Pictorial Flora will have plant, inflorescence, close-up, and diagnostic images of each of our orchids, their varieties, and color forms. Our start-up flora will have at least the close-ups and inflorescences and will expand from there based on space available.

The initial posting of the Pictorial Orchid Flora will be available soon. The initial posting of the flora was made from a small group of members known to have representative photos of high quality. But to complete the Pictorial Orchid Flora we need your help! We are soliciting candidate photos for those species on the needed list posted to the website. If you have photos of the missing species you are invited to submit them for consideration to be added to the flora. Quality of the submitted photos should be comparable to those in the initial posting of the flora. Credit will be given for all posted photos.

Candidate photos should be submitted in .jpg format on a CD-RW. Image resolution should be roughly 200 dpi, and resulting file size approximately 300 K. If you do not have the capability to create a CD, many photo shops provide this service for a fee. Include an MS Word file, on the CD or as a hard copy, with permission for the Native Orchid Conference to use and post your photos. Put your name on the CD and on the CD jewel. All CDs submitted become the property of the Native Orchid Conference and will not be returned. Acceptance of the CD does not guarantee use of submitted photos as part of the Pictorial Orchid Flora.

The Pictorial Flora editor is solely responsible for decisions on which photos to use. Posted images may be replaced periodically at the discretion of the editor.

The Pictorial Orchid Flora is a big project; it is an exciting project; and it is a unique project. It will be a successful project only with your help. Please submit candidate photos to:

Ron Coleman, 11520 E. Calle Del Valle, Tucson, AZ 85749.

Rescuing Native Orchids in Georgia

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The idea of removing native orchids from their habitat is surrounded by complex ethical issues about whether "to dig or not to dig." The two extremes in this case are 'one should never dig native plants' and 'one should always dig plants. It may be that there is an acceptable middle ground between these extremes that satisfies most people on this rather complex and volatile issue. I should make it clear that this article represents my viewpoints on this issue and not the viewpoint of the Native Orchid Conference, Inc. or other organizations.

As in many other parts of the country, a drive to work in Atlanta often reveals forested and non-forested areas that are being converted to residential, commercial, and industrial uses. About 7 years ago, I discovered a population of *Cypripedium acaule* growing just 20 feet from what was once a country highway in Gwinnett County, Georgia. In recent years, it has become clear that this once rural highway is well on its way to being developed and becoming part of the greater Atlanta metropolitan area. A patch of maturing pine trees, which is owned by and is located across from a country club, remained on this stretch of the highway. A quaint little church formed one boundary, while an upscale residential neighborhood and another highway formed the remaining boundaries. Since the property is owned by the country club this population looked safe even though the area was becoming more and more suburban as time passed. This population was absolutely spectacular with hundreds of plants, many forming clumps of 5 to 10 ramets. I visited the population once or twice a year over the years to see how it was doing, but mostly just to enjoy its beauty. I was

Cypripedium acaule
Photo: David McAdoo

amazed that this microenvironment could exist in such an area but felt secure that the country club would not develop or sell the property. It was my private population, and I got much pleasure from seeing how it did each year. One spring, however, I was horrified when I drove by and saw that the country club had logged the pine trees. Had I only known; had I only visited the country club to let them know what a treasure they had. Fortunately, a few plants survived among the small hardwood trees along the past forest's border and near the church, so I continue to check them from time to time. The plants come up each spring but are quickly stunted because of the high light levels. My hope is that some will survive until the pine forest returns some day, a generation or two from now.

I have found other *Cypripedium acaule* populations in Gwinnett County; some have been lost to development, while others remain. Needless to say, the Atlanta metropolitan area presents many opportunities for rescuing native plants that are doomed for destruction. Personally, it is rather difficult to find the right opportunity when it is ethically acceptable to dig plants. The Georgia Native Plant Society (GPNS) has solved this problem for me by organizing and conducting native plant rescues from areas that are destined for development. This program is very popular with members who want to collect native plants in a conscientious and safe manner. A GNPS fact sheet has this to say about the program:

> "This is a major effort and an integral part of the Georgia Native Plant Society, and it was a motivating factor in the formation of the GNPS. The purpose of the rescue program is to relocate native plants that are in the direct path of development. It is a community effort, undertaken with the developer's written permission and with many hours of volunteer labor. Rescued plants go to nature centers, parks, schools, public gardens and backyard habitats."

I should add that the decision for where plants are relocated remain with the individual but GNPS has coordinated donations to some of the locations mentioned previously.

The rescue efforts through the GNPS are managed by a coordinator, who oversees the administrative aspects of the entire rescue program and by trained facilitators who conduct each rescue. The coordinator has the following duties:

⇒ obtain written permission from the land-owner or developer for

society members to enter the property on certain dates and times,
- ⇒ send out e-mail notification to members letting them know which facilitator to contact to sign up for a rescue, and
- ⇒ list the plants that can be rescued from each location.

The facilitators are responsible for the following:
- ⇒ answer questions from members who have signed up for a particular rescue,
- ⇒ supervise each rescue so that members abide by the rules set forth by GNPS and the owner or developer,
- ⇒ have members sign a release form just before the rescue so the owner or developer is not responsible for injuries that occur to members while conducting a rescue.

Visitors, children, and pets are not allowed as part of the rescue effort, and rescues usually are limited to 10 to 15 people. However, several rescues may be conducted at one location. Usually what happens is that members sign up for a rescue, arrive at a specified time, receive instructions from the facilitator (for instance, the boundaries of the property), and then spend 1 to 2 hours carefully excavating plants.

I've rescued many orchids through GNPS, including *Goodyera pubescens*, *Tipularia discolor*, *Platanthera* spp., *Aplectrum hymaele*, and *Cypripedium* spp. Because *Cypripedium* spp. native to Georgia are protected in the state, GNPS has been issued a permit by the Georgia Department of Natural Resources (GDNR), which allows the society to legally remove *Cypripedium* spp. from sites that will be developed. I also have a permit from the GDNR to rescue *Cypripedium* spp. and have been using it for many years to rescue *Cypripedium acaule* in my efforts to learn how to grow this orchid in residential gardens.

The GNPS rescue program is very successful with the society offering many rescues every month all year long, even in the winter months during Atlanta's mild Zone 7 conditions (typical winter lows are 10 to 20 ^{o}F or -7 to 12 ^{o}C). Actually, winter is the best time to transplant some native plants, such as our native azaleas. If you would like to learn more about GNPS's rescue program and the society itself, please visit their website at http://www.gnps.org.

In addition, we might take a lesson from the Australian native plant so-

cieties, which have a conservation group within their society that coordinates assistance on conservation issues, such as purchasing habitat, working with Aussie authorities to count plants, and removing weeds from orchid habitat. Many local Aussie societies also have strong cultural and seed propagation groups that focus on learning how to grow their native orchids, both for the pleasure of growing plants and for providing knowledge, should threatened plants need to be relocated or grown in captivity to ensure survival. Because many Aussie terrestrial orchids form tubers, many societies have established a tuber bank. These tuber banks accept excess orchid tubers grown by society members, and these tubers are sold to other members at a very low price, thus reducing the pressure to illegally collect from the wild. I should point out that it is against the law in Australia to collect native orchids without a permit. In addition to their tuber exchange program, some societies have micropropagation programs run by members that provide native plants.

I've taken a similar approach with my rescue work for *Cypripedium acaule*. First, I learned the laws of my state so that I could collect legally *Cypripedium acaule* that might be lost to development. This law requires a permit from the state, which I have, and written permission from the land owner. These wild-collected *Cypripedium acaule* are then used to learn their growing requirements in captivity. My hope is that, should the day arrive, the orchid community will have the knowledge to keep these plants alive, and at the same time, enjoy them in a garden. I also give orchid seed from rescued plants to the Atlanta Botanical Garden, which has a native orchid micropropagation program.

Cypripedium acaule
Photo: David McAdoo

Grass Pink Orchids: The Calopogons

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Every June in our region, I look forward to renewing acquaintance with a vibrant hot pink orchid commonly called the grass pink (*Calopogon tuberosus*). In specialized wetlands, primarily fens and bogs, during mid-June, I look for a spire arising from a white underground corm that holds aloft a number of non-resupinate flowers. The technical word, non-resupinate, refers to a lip that has not twisted on the small stalk called a pedicel so that the lip remains in the uppermost position rather than having rotated 180 degrees. A lip is typical in flowers of orchids in that it functions as a 'landing runway' for visiting insects. It can be confusing for the novice to determine the lip in this genus because it is divided into two portions growing in opposite directions, making for a most unusual configuration. The bipartite lip is divided into strap shaped parts, with the one pointing upward being hinged at its base, while the other is a mirror image in the opposite direction. The hinged uppermost portion is a visual attractant having a bright yellow crest on the lip and a tight cluster or hairs protruding from this spot. These act as a deceptive attractant to insects who hope they are coming in for a pollen meal only to find no reward at all. However, an amusement ride of sorts awaits those of suitable size. If proper bulk is present, the upper hinged lip is bent downward to meet the grooved slide of the lower portion of the lip throwing the insect upon its back for a ticket-less slide down the lower lip and in the process, accomplishing pollination. Experienced observers have reported that naïve young bumblebees seem to be most victimized by this deceit in the plant world. Where are the investigative reporters?

Calopogon tuberosus
Photo: David McAdoo

In Ohio, we are limited to one representative of this genus. To find others it is necessary to go farther south. In North America, we currently have five recognized species and one named variety. Starting with the species one may see here in Ohio, i.e., *Calopogon tuberosus*, I will describe their visual traits. It is written that our species stands from 25 to

75 cm tall. It puts forth anywhere from a couple to over a dozen flowers, which open in a slow progression as opposed to other species which open all at once. It is also noteworthy of our species that there is no noticeable narrowing anywhere along the perimeter of either the sepals or the other petals. Furthermore, none of the lateral or dorsal parts of each flower manifests any recurvature. Both the plant and the flowers of this species are large compared to others in the genus. The middle sepal, also called the dorsal sepal, measures longer than two centimeters. Petals are broad and spreading. Leaves are flat and about l cm wide; in contrast to the leaf of *Calopogon tuberosus* var. *simpsonii*, the leaf is not inrolled to form a slender tube. Flower color would qualify as hot pink much more dramatically offset by the colorful lip hairs than the pink shown by other species. This plant can appear in a white form, forma *albiflorus*. The species extends in range across the northern half of the U.S. and well on up north across Canada; in fact, it can be found from Newfoundland all the way south to both Cuba and the Bahamas; however, farther south, it is replaced by the named variety. So we take pride that our local species has the widest range of all its genus-mates. A frequent growing companion is another pink orchid called the rose pogonia (*Pogonia ophioglossoides*). This species is a much smaller plant with a single flower on each stalk. The lip is lowermost in position, i.e., it is resupinate. It is a more delicate pink, highlighted by a 'runway' of yellow hairs that form its landing strip up the lip. Speaking of growing companions, even the experienced eye can be fooled while looking for these little gems. Similarly colored flowers of *Rhexia* spp. (the meadow beauties), *Sabatia* spp. (the marsh pinks), and one of the milkworts in the south, "drumheads" (*Polygala cruciata*), play constant tricks upon the eye.

Pogonia ophioglossoides
Photo: David McAdoo

Calopogon tuberosus var. *simpsonii* is a named variety of the species and is seen only south of the Mason-Dixon Line. This variety is restricted to the extreme south of eastern U.S. all the way westward to Texas and Louisiana. It is a robust plant with large flowers. One can separate it from the grass pink based upon habitat alone. The variety will be found in open prairie marls. In south Florida this variety

Calopogon tuberosus var. *simpsonii*
Photo: David McAdoo

completely replaces *C. tuberosus*. It does show an all white color form and this has been named forma *niveus*. Since both manifestations of *C. tuberosus* are robust, it can also be quite helpful to look at leaf distinction in areas where their ranges overlap. In variety *simpsonii* the leaf is extremely narrow and inrolled making a slender tube contrasting to the more traditional leaf of the usual representative for the species.

The bearded grass pink (*Calopogon barbatus*) is one of the two smallest flowered species in the genus. This species grows perhaps half as high as *C. tuberosus*. It ranges from North Carolina south through Florida then west to Louisiana. Of the species, this one does exhibit perhaps one of the greatest tolerances for diversity. Typically, it grows with such carnivorous plants as: sundew (*Drosera* spp.), pitcher plants (*Sarracenia* spp.), and butterwort (*Pinguicula* spp.). The middle sepal is 2 cm or less in length. An important trait is that lateral petals are widest below the middle as one looks toward the base. This basal bulge is highly noticeable and quite helpful in the field for recognition. For the beginner, it is helpful to note that the lateral petals are the lowermost of the two sets of lateral plant parts. Some have stated that this is the earliest species to flower deep in the south. Especially in Florida, it seems to be a growing companion of another genusmate, the pale grass pink (*Calopogon pallidus*). One expects to see *C. barbatus* most frequently in wet, nutrient poor soils in the company of carnivorous plants; obviously, this requires open, sunny areas. Another observation is that *C. barbatus* does not seem to show a white form, while the frequent companion *C. pallidus* does.

Calopogon barbatus
Photo: David McAdoo

The many flowered grass pink (*Calopogon multiflorus*) is our next stop. This small flowered species also opens its flowers simultaneously. The middle sepal typically is less than 2 cm long, and the lateral petals are widest above the middle. To my eye, the bulge on this species doesn't seem as dramatic as in *C. barbatus*. However, the pink color in this species is much more dramatic than in others, perhaps due in part to a uniform colored, more vibrant tight cluster of yellow hairs upon the

Calopogon multiflorus
Photo: David McAdoo

uppermost lip. While dramatic pink color is expected, there seem to be only few reports of pale pink variants and none of white flowered forms. Habitat for *C. multiflorus* is the most distinctive of all others in the genus. Plants prefer open pineland with an understory of saw palmetto (*Seranoa repens*). The understory must be burned 3-6 weeks prior to your visit to enable witnessing prime bloom. Though this amounts to an open, sunny habitat and seasonally wet substrate that hosts carnivorous plants, it is by far the driest among the habitats of *Calopogon* spp. It takes some training of the eye to begin to recognize the proper appearance of the understory to see this orchid in bloom. All burns do not appear equal and the degree of openness of the pineland can be critical. During this April (2004) was my best encounter with this species as I saw a number of prime blooming specimens under ideal conditions. I find it to be the most handsome of the species quintet.

Calopogon pallidus, the pale grass pink, is a fascinating species of small to medium sized flowers opening a few at a time. Distinctive to this species is the strongly ascending and forward pointing lateral petals giving some resemblance to the protruding horns of some animal. Another important trait is the two broad lateral sepals that arch backward toward the flower stalk resembling the wings of some insect in take-off position. Because both *C. pallidus* and *C. multiflorus* are frequent companions, these two traits are helpful for identifying them in the field. Both are widely encountered in northern to central Florida and become rarer farther south. *Calopogon pallidus* is said to be the second most-common and widespread species of the genus in the eastern U.S. Because of the pale color, the yellow lip crest seems quite pronounced in this species. There is a named white form for this species, *C. pallidus* forma *albiflorus*. It is also reported that the species has flowers opening slow enough in succession on any one stalk that you frequently encounter fruits, open flowers, and buds on the same stalk.

Calopogon pallidus
Photo: David McAdoo

A fifth species of grass pink, *Calopogon oklahomensis* was formally recognized in 1995 (Goldman, 1995), and a recent article (Goldman et al., 2004) reports the widest variation in its habitat. Habitat includes moist, loamy prairies, savannas, sandy woodlands from Minnesota

south to Georgia west to Texas and Louisiana. The website for the Flora of North America (http://www.fna.org/FNA/) adds bog edges and frequently-mowed meadows from sea level to 300 meters. Plants are 11-35 cm tall, have forked corms, non-appressed leaves, and produce 2 to 7 flowers, which are one centimeter apart and open simultaneously. It is interesting to note that Goldman (1995, 2004) concludes this species does not fit the profile of a relatively recently derived hybrid species though the exact origin remains currently unclear. However, whether it is a hybrid or not remains inconclusive at this time. I was particularly intrigued by the finding that this species can grow in drier substrates and in those with more clay and loam than the others; in fact, Goldman observed it growing in conditions that would rot corm and roots of the other species. Certainly, I hope to see this rather recent addition to the grass pinks for myself. Perhaps by that time some of these issues will be resolved.

As you travel the eastern portion of the U.S., be sure to look for these striking orchids in all their appearances from species to variety and color form. A visual treat awaits you and your camera.

Literature Cited:

Goldman, D.H. 1995. A new species of *Calopogon* from the midwestern United States. Lindleyana 10:37-42.

Goldman, D.H., Jansen, R.K., van den Berg, C., Leitch, I.J., Fay, M.F., and Chase, M.W. 2004. Molecular and cytological examination of *Calopogon* (Orchidaceae, Epidendroideae): circumscription, phylogeny, polyploidy, and possible hybrid speciation. Am. J. Bot. 91: 707-723.

Group of *Calopogon barbatus* plants
Photo: Jyotsna Sharma

A Few Words from the President

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Greetings to All,

For members of the organization who were unable to attend our annual conference held in August, we missed your participation and are sorry that you were not able to attend. Part of the program on Saturday's opening session was reserved for the annual business meeting of our organization. We want to share with you some of the discussions from the meeting.

Minutes of the meeting, along with committee reports that were filed have been posted on the web site in the FILES section. They are located in a sub-folder entitled "2004 Business Meeting." It can be found in the main FILES folder labeled "Organizational Information." (Note: Printed copies of the organization's legal documents including the financial ledger are available in Greensboro, NC for review by any member. Most all of them can be seen on-line in other sub-folders in the "Organizational Information" FILES folder.)

As a reminder for your calendar, next year's conference (which will be chaired by Lorne Heshka) is scheduled for:

Dates: July 9 -12, 2005
Place: Winnipeg, Manitoba, Canada
Venue: St. Benedict's Conference Center, a 72-acre facility 15 minutes from downtown. As was the case at the Ontario conference, a limited number of inexpensive dorm rooms will be available on site.

Hopefully by setting the date and location this early you will have more than enough notice and it will allow you to plan vacation time so you can attend next year!

You might not be aware of some of the statistics, but we continue to have a healthy, growing organization.

⇒ Our finances are in great shape, and we have been granted 501 (c) 3 tax exempt status by the US Internal Revenue Service.

⇒ Our paid membership continues to grow and has reached 145 addresses (185 members) in this first year. (Note: Membership renewal forms have been included with this issue.)

⇒ The web site has averaged a little over 10 new members per month since it started in October 2002 and now stands at 240 people from all over the world.

⇒ The conversations that have taken place on the web site have pretty well kept on topic and there have been over 1,350 postings since its inception.

A second standing committee (Publication was the first) is in the process of being organized. It will work to provide a coordinating role for the long-term study of orchids in our region. Minutes of their initial meeting have been included on-line with the other minutes and reports mentioned above.

In other activities a project to create a portfolio of all the orchid species in North America is being undertaken. It will be led by board member Ron Coleman. The goal is to provide a single, searchable repository for multiple, reference photos of different orchid species (and varieties) in the region. The idea is to provide an on-line picture companion to the orchid section of the Flora of North America that can serve as reference material for our members.

If you are like me, much of the enjoyment from participating in this organization comes from the network of friends that I have had an opportunity to make over the past several years. It is great to see this network continue to grow. I share your enthusiasm and enjoy learning from you about our native orchids.

David McAdoo at NOC, 2004
Photo: Jyotsna Sharma

Best Regards,
David McAdoo, President
Native Orchid Conference

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