

# The Native Orchid Conference Journal



**Volume 5(2)**  
April-May-June 2008

## Volume 5, Issue 2

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Native Orchid Conference Journal is published four times a year by the Native Orchid Conference, Inc., a non-profit [501(c)3] organization, as a service to its members. The organization is devoted to fostering the study, conservation, and enjoyment of orchids native to North America. Membership dues are \$25, \$30, and \$35 for individuals, families, and international subscribers, respectively. Address inquiries about membership, back issues of this journal, and requests for copies of the bylaws to the Treasurer: Christine Fleissner, NOC, Inc., P.O. Box 29010, Greensboro, North Carolina 27429-9010, USA; [nativeorchids@yahoo.com](mailto:nativeorchids@yahoo.com) OR [ncorchid@yahoo.com](mailto:ncorchid@yahoo.com).

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## Everglades Mystery Solved

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As a part of the 6th Annual Native Orchid Conference meeting in Miami, Florida (14 – 17 April, 2007), participants visited the Fakahatchee Strand State Preserve and the Everglades National Park (Figure 1; page 7). While looking for *Trichocentrum undulatum* (Swartz) Ackerman & M.W. Chase we came across several plants, one of which was encased in a hoop like structure reminiscent of hoop petticoats (Figure 2; page 7). There were several speculations as to the purpose of the structures. By chance I had a conversation with a graduate student working at Marie Selby Botanical Gardens (MSBG) that led me to Dr. Wesley Higgins from whom I learned the answer. Herein lies the tale.

To set the stage, in 1925 a "fly" was captured in the Everglades National Park by G. Moznette. It was sent to the National Museum of Natural History in Washington DC where the specimen languished. In 1973 it was recognized that the fly was a yet undescribed species, but appeared to be related to *Melanagromyza floridensis*. The fly was subsequently named *Melanagromyza miamensis* by K.A. Spencer in 1973 (Figure 3; page 7).

No further reports were made in reference to the fly until naturalists Rick and Jean Seavey observed *Melanagromyza* in the Everglades (<http://www.seaveyfieldguides.com/About%20Us/Default.htm>). They noted that the fly had infected the flower stalk (Figure 4; page 8) of the mule ear orchid, *Oncidium undulatum* (Swartz) Salisbury (= *Trichocentrum undulatum*). This suggested that there might be a relationship between the insect and the orchid, in that the insect had laid its eggs in the flower stalk of the orchid. If hatched, the larvae (Figure 5; page 8) would feed in the stalk, killing it, and later emerge (Figure 6; page 8). The Seaveys noted a decline in the orchid's ability to produce reproductive structures; only two out of 200 plants flowered in 1998. In 2006 the *Trichocentrum undulatum* population produced only one seed pod in the observed group. They also reported that if the fly enters the stem below the fifth node, the stem dies; whereas if it enters above the fifth node, the plant may develop lateral branches which may also be attacked.

A consortium was formed in 2004 which included Marie Selby Botanical Gardens, Institute for Regional Conservation, and the National Park Service to reintroduce *Trichocentrum undulatum* to its historic range in the Everglades. One of the goals was to increase the number of seed pods to produce propagules for population augmentation.

Bruce Holst of MSBG designed the hoop structures so that they would cover the entire plant and, hopefully, prevent the infection of the orchid by the insect. His wife made five structures that were put into place by Bruce Holst and Jesse Hoffman.

The hoops were removed when the orchid was in bud or flower so that they could be pollinated and seed pods would form. This procedure resulted in a dramatic increase in the number of seed pods both in artificially and naturally pollinated plants. Careful pruning by park personnel to decrease stress on the plant was done after capsules had set. Dr. Wes Higgins and Bruce Holst at MSBG anxiously awaited ripe capsules for germinating the seeds *in vitro*. Dr. Higgins stated that in spite of "bagging," some of the stems had larval flies and pupae. He did not know if the stalks had already been infected before bagging or if somehow the flies bypassed the barrier. Dr. Higgins points out in "The Conservation Dilemma" (Higgins and Gann, 2007) that the fly *Melanagromyza miamensis* is more endangered than the *Trichocentrum undulatum*, even though the attempt is to increase the population of *T. undulatum*. Sadly, when the research site was visited during the World Orchid Conference in January 2008, two capsules had been poached by an unknown person(s).

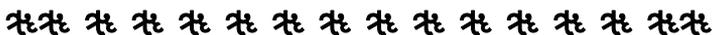
As a side note, Frank Craighead (1963) reported that a small bark beetle, *Xyleborusmorstatti*, bores into the developing flower stalk of *Oncidium luridum* Lindley (now *Trichocentrum luridum* (Lindley) M.W. Chase & N.H. Williams) and destroys many inflorescences in some seasons.

Editor's Note:

Paul Welty also serves as a Volunteer at Marie Selby Botanical Gardens.

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## Citizen Scientists: An Orchid Recovery Project

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Fifteen years ago I received a notice looking for volunteers to participate in a unique project to restore populations of a native orchid in northeast Illinois. WOW, since I freely admit to having an orchid addiction, this project was made for me! I attended the first training session and learned we would be working to restore the federally threatened *Platanthera leucophaea*, the eastern prairie fringed orchid. While I had found lady's slipper orchids on many camping trips, my true fascination with the family until then had been with tropical orchids. Before that day I had never heard of, let alone seen, this species.

Natural area restoration has been ongoing in the Chicago area since mid 1970s due mainly to the curiosity of one man: Steve Packard. In 1975 Packard discovered prairie remnants within the forest preserves of Cook County. Although they were strewn with garbage and overgrown with weeds, some prairie plants still survived. After doing much research, he was given permission by Forest Preserve management to begin restoration at one area by using volunteers. In fact a book (*Miracle Under the Oaks* by William Stevens) has been written about the early years of his restoration efforts. The recovery project for *P. leucophaea* is a byproduct of that restoration movement.

In the 1980s Marlin Bowles, a researcher with the Morton Arboretum southwest of Chicago, was studying this rare prairie species. One day Packard met with Bowles, saw the plants of *P. leucophaea* Bowles had been growing in pots, and was shown the technique used to pollinate them. Ironically, soon after that day, Packard received a call from someone who had found what could be orchids on forest preserve land. Packard met with the caller and discovered a population of *P. leucophaea*. He then used his newly learned skills to pollinate them. These plants produced seed, which were later collected and introduced into the area that he was restoring. A number of years later this effort was rewarded with blooming plants at that site. In the mean time Bowles had written a recovery plan for the orchid from his research. It was decided to expand the orchid's re-introduction into suitable natural areas throughout the Chicago region. Since money was limited for this project, it was decided to recruit enthusiastic volunteers to get the project going.

At the first meeting in 1993, the volunteers met at a site on private land where some prairie fringed orchids were in full bloom. We learned that *P. leucophaea* grew in moist to wet tall grass prairies (Figure 1; page 9) and were shown the proper method to pollinate the flowers (Figure 2; page 9). Due to

the fragmentation of natural areas, the orchid's natural pollinators might be missing and the volunteers would hand pollinate. In that early evening we walked around with our new tools, toothpicks and a styrofoam cup (Figure 3; page 9), collecting pollinia from one orchid and placing it on another. For the first time, I enjoyed the wonderful fragrance that the species releases in the evening to attract pollinators. We were given assignments of sites that already had the orchid present, had been a historic site, or had suitable habitat with known associate plants. I accepted two sites, one historic and the original site where Packard had first pollinated the orchids. We were to pollinate only 25% of the flowers. We tagged each plant with a numbered metal tag in the ground and marked the plants with a stake to find them later in the year. When we returned later in the season, we would discover if other blooms had produced seed capsules from natural pollination. Finding them later proved to be the most difficult part of the project for they were easily camouflaged among the many prairie species. We would harvest the capsules when they just started to brown. Some seed would be distributed to other new sites and the rest were allowed to disperse naturally. From year to year we would keep track of plants that would bloom, produce only vegetative growth, or fail to appear.

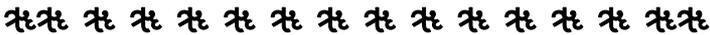
The first year, I received seed to put into my historic site. It was suggested to mix the seed with an agent, such as sand or cornmeal to make it easier to distribute. Also I collected a bit of soil from the base of a blooming plant hoping that it may introduce the mycorrhizae that were thought to have a relationship with the orchids. I set up transect lines that traversed through different plant communities and moisture levels. In 1994, the second year sowing seed, I decided to disturb the prairie sod allowing the seed more contact with the soil. Believe me when I say prairie sod is THICK! What a sight I must have been to the traffic on the nearby road; using my trusty camping axe to chop through the thick prairie soil matrix. Seven years later, I was rewarded with one blooming orchid exactly on my transect line. Of course I did my little orchid dance! The plant was caged so as not to become deer candy and the seed was left to disperse. Sadly, that plant has never been seen since.

Studies of this orchid are still continuing and at our annual meeting we hear of the new discoveries being made. Cathy Pollack with US Fish and Wildlife has been staying out in the field at night to determine which of the sphinx moths are the pollinators. Larry Zettler of Illinois College and his students have worked on the relationship fungi have with germination of the seed. Patty Vitt of the Chicago Botanic Gardens has studied the effects of pollination on the life of the orchid. Timothy Bell of Chicago State University and his students are researching germination and growth stages of seedlings.

Through the years many volunteers, now called Citizen Scientists, have continued to be devoted even with success and failure. A few of the sites that started with small populations climbed up to well over 500 orchids, while other sites,

like mine, just barely seem to hang on. The drought the Midwest experienced three years ago took its toll on all the orchids but given time they may recover. Last year for instance, after seven long years, I found a new blooming plant in an area I had never sown seed. Another orchid dance was done! I am guessing it came from seed produced from the first plant I had discovered on my transect line. That day I also saw and photographed a sphinx moth pollinating a native phlox. Although it wasn't the correct species responsible for pollinating the orchid, I did get to see up close how they feed on a flower's nectar with their long proboscis.

Not long ago I read *An Annotated Flora of the Chicago Area* by Hermann Peepoon written in 1927. It described a familiar area in Chicago that is now covered with homes and a shopping mall. Back then it was a prairie with hundreds of eastern prairie fringed orchids. That area can never be restored but wouldn't it be wonderful to see *Platanthera leucophaea* blooming once again in the remaining natural areas of our large urban setting. I'm hoping to do many more orchid dances in years to come.



## Hunting Wild Orchids in Southwestern Nova Scotia IV: Six Species on an Old Tennis Court

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Three decades ago I described the orchid population in and around our family camp at Argyle, Yarmouth County, in southwestern Nova Scotia (Wood, 1978). A follow-up appeared 22 years later (Wood, 2000). And submitted elsewhere for publication is a third article on *Platanthera psycodes* and *P. lacera*. The stimulus for the present piece occurred in 1998 when in August I found three late-blooming *Spiranthes* species on an abandoned clay tennis court. Adding in the three other species which appear in July, I find it remarkable that a half dozen native orchids can live together in such a small, apparently inhospitable enclave. Five are *Spiranthes* species (Ladies'-tresses). This report was delayed because of recurrent problems finding a suitable journal for native orchids. Meanwhile I turned my attention to finishing a large book on *Dendrobium* (see Editor's Note at the end of this article). With both of those com-

plications now removed, this report should appear in time for the centennial of the family club.

Assuming that few readers are devoted enough or ancient enough to have kept a copy of the American Orchid Society Bulletin for 1978, I should sketch the habitat. Around 1909, as part of our original camp layout, a wire enclosure containing two clay tennis courts was constructed, presumably over a gravel bed, in spruce-fir woods. At this spot nesting ruffed grouse, black-throated green warbler, and red-eyed vireo continue to be regular summer companions. Northern raven, osprey, and rarely a barred owl may appear overhead. The weather in summer is cool and rainy, with frequent morning fogs. Vegetation around is lush. The forest orchids are *Cypripedium acaule*, *Goodyera tessellata*, and, at least in the past, *Platanthera macrophylla* and *P. obtusata*. Ancient stone walls in the woods delineate fields which may date back to the 1760s. In my first article (Wood, 1978), I discussed 19 species of native orchids growing in the area, which also includes grassy fields, acid moors, and sphagnum bogs. The tennis court, of course, most resembled the moors; they are designed to be level, fast-drying, and hard when dry.

I discussed in the subsequent article some changes in the general habitat and orchid populations during the intervening years (Wood, 2000). After World War II we abandoned one of the two courts and paved the other with concrete. Vegetation colonizing the clay side has been controlled by mowing in late spring to about 2 inches (5 cm), a height suitable for finding stray balls. In the 1970s, finding orchids there, I began to monitor the site yearly and discouraged mowing during the summer. The flora on this court includes grasses and native plants such as spruce seedlings and heaths, e.g. lowbush blueberry (*Vaccinium angustifolium*) and yarrow (*Achillea* sp.). Exotics include the fall dandelion or cat's ear (*Hypochaeris radicata*), hop-clover (*Trifolium dubium*), eyebright (*Euphrasia* sp.), and pearly everlasting (*Anaphalis margaritacea*). These identifications were made by A.E. Roland, co-author of the Flora of Nova Scotia (Roland and Smith, 1969), who visited the camp in 1972. I have not found much change since that time. These plants are obviously a collection of widespread, weedy species, as one might expect. Orchidists may be reluctant to include their plants in the weed category. It all depends on one's point of view! At least these are natives. The orchids flowering on the court in late July have been *Platanthera lacera* (Figure 1; page 10), *Spiranthes lacera* var. *lacera* (Figure 2; page 10), and *S. romanzoffiana* (Figure 3; page 10), all species which colonize disturbed, open ground.

Anne and I traditionally make annual visits to the camp during the last half of July and a few days into August. We thus hope to see the maximum number of blooming plants, especially orchids, as well as nesting birds. In 1998, to coordinate with children and grandchildren, we chose the last three weeks in August, leaving on the 28th, our latest departure date since I began keeping notes in 1970. In 1977, on my next-to-latest visit, I noted budding *Spiranthes* at

Figures to accompany 'Everglades Mystery Solved' by Paul Welty (page 1).

1. Research site in Everglades National Park near Flamingo, Florida. Photo by Wesley Higgins
2. *Trichocentrum undulatum* plant in exclusion net. Photo by Bruce Holst.
3. This specimen of *Melanagromyza miamensis* is deposited in the Florida State Collection of Arthropods. Photo by Gary Steck.



Figures to accompany 'Everglades Mystery Solved' by Paul Welty (page 1).

4. Dying *Trichocentrum undulatum* inflorescence after oviposition occurs. Photo by Wesley Higgins.
5. *Melanagromyza miamensis* larvae in *Trichocentrum undulatum* stalk. Photo by Bruce Holst.
6. *Melanagromyza miamensis* pupae in *Trichocentrum undulatum* stalk. Photo by Bruce Holst.



Figures to accompany ‘Citizen Scientists: An Orchid Recovery Project’ by Cathy Bloome (page 3). Photos by Cathy Bloome.

1. Whole plant of *Platanthera leucophaea* at one of the recovery sites.
2. A flower of *Platantehera leucophaea*.
3. Toothpicks used to hand-pollinate flowers of *Platanthera leucophaea*.



Figures to accompany 'Hunting Wild Orchids in Southwestern Nova Scotia IV: Six Species on an Old Tennis Court' by Howard Wood (page 5). Photos by Howard Wood.

1. *Platanthera lacera* on tennis court. Argyle, Nova Scotia. July 1970.
2. *Spiranthes lacera* var. *lacera*. Pubnico, Nova Scotia. July 1970.
3. *Spiranthes romanzoffiana*. Tennis court. July 1971.





Figures to accompany  
'Hunting Wild Orchids in  
Southwestern Nova Scotia IV:  
Six Species on an Old Tennis  
Court' by Howard Wood  
(page 5). Photos by Howard  
Wood.

4. *Spiranthes cernua*. Tennis court. August 1998.
5. *Spiranthes ochroleuca*. Tennis court. August 1998.
6. *Spiranthes ochroleuca*. Self-pollinating plant. Tennis court. August 1998.



Figures to accompany 'Hunting Wild Orchids in Southwestern Nova Scotia IV: Six Species on an Old Tennis Court' by Howard Wood (page 5). Photos by Howard Wood.

- 7. *Spiranthes lucida* colony. Tennis court. August 1998.
- 8. *Spiranthes lucida*. Tennis court. August 1998.
- 9. *Spiranthes lucida* colony with one plant of *Spiranthes cernua*. Tennis court. August 1998.

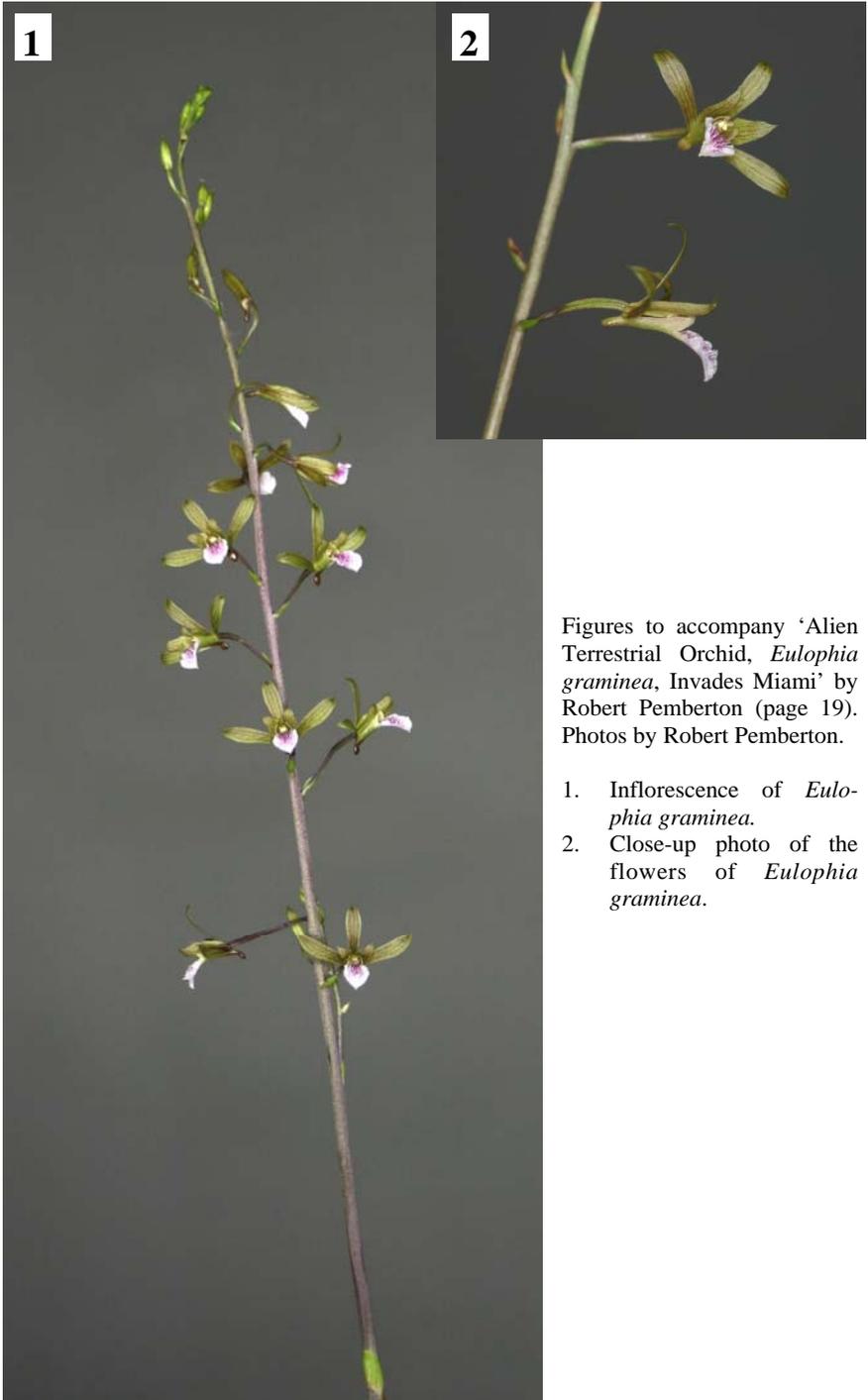




Figures to accompany 'An Easy-care Orchid' by Jim Notestein (page 17). Photos by Jyotsna Sharma.

1. *Habenaria quinqueseta* growing underneath a Chinese Fir in a home garden in Gainesville, FL, where it appeared naturally in the early 1980s.
2. Jim Notestein showing a containerized plant of *Habenaria quinqueseta*.
3. Containers with vegetatively propagated plants of *Habenaria quinqueseta*.





Figures to accompany 'Alien Terrestrial Orchid, *Eulophia graminea*, Invades Miami' by Robert Pemberton (page 19). Photos by Robert Pemberton.

1. Inflorescence of *Eulophia graminea*.
2. Close-up photo of the flowers of *Eulophia graminea*.

nearby Pubnico. I failed to record anything on the tennis court. *Spiranthes romanzoffiana* had disappeared by 1982. It popped up, however, a mile away in 1995 and 1996 at the abandoned railroad station, then vanished again, possibly a victim of the 1997 drought. The other two species, *Spiranthes lacera* and *Platanthera lacera*, have reappeared yearly.

In 1998, not expecting to see orchids on the court so late, I was surprised and delighted to find many white and creamy spikes in bud. I assumed these to be *Spiranthes cernua* (Figure 4; page 11) and its yellowish sister species, *S. ochroleuca* (Figures 5 and 6; page 11). They stood out because nothing else was in flower. Finally, only a few days before our departure, they bloomed. I took photos, noting that the white flowered “*S. cernua*” seemed to be present in two sizes. I must have had suspicions about the smaller one because I took many pictures of it. While projecting the slides later, I discovered that the little plant was actually *Spiranthes lucida* (Figures 7, 8, and 9; page 12), which Roland and Smith (1969) did not report southwest of Halifax. I had seen it only once before in June of 1974 in a marsh at Muddy Run, Pennsylvania, near the lower Susquehanna River. There it occupied its typical habitat at its usual bloom time. This summer, not expecting to see this species, I had not examined closely the tiny spikes, which stood perhaps 6 inches (15 cm) tall, and I missed the telltale bright yellow lips. Unlike the other two *Spiranthes*, it was growing in mats, up to 3 feet (~ 1 m) across, as described by Morris and Eames (1929).

The plants of *Spiranthes cernua* and *S. ochroleuca*, in contrast, grew scattered around the court and sometimes mixed together. Reviewing my slides, I found that the white *S. cernua* looked closely similar to plants I had photographed in Pennsylvania over the years. The pale yellow *S. ochroleuca* which I had not seen before had flowers almost indistinguishable in shape from its “sister species.” *Spiranthes ochroleuca* flowered in two ways: most of the plants opened full spikes at once, but a small group showed only one or two flowers at a time. It did not appear, as usually noted, taller than *S. cernua* or growing in drier spots. My photos show its flowers spaced slightly wider, however, as described by Luer (1975).

*Spiranthes ochroleuca* is easily identified and limited to northeastern North America. *Spiranthes cernua*, on the other hand, is widespread and variable, with regional varieties extending into the Great Plains and to the Gulf Coast. Charles Sheviak (1991) gave an interesting explanation for this. He considered *S. cernua*, a tetraploid (with four sets of chromosomes rather than two), to be a “compilospecies,” which has incorporated into its genetic makeup several related diploid species in different geographical areas: *Spiranthes ochroleuca* in the northeast, *S. magnicamporum* on the drought-prone central prairie, and *S. odorata* in the south. The three late-bloomers on the court, like the three earlier species, grow in open ground and thrive (if often temporarily) on substrates

disturbed by man, such as fields, road cuts, and in this case, a tailor-made microhabitat! *Spiranthes lucida* seems generally to require a wet situation. The rainy Argyle climate allows it to occupy such an unlikely, relatively well-drained place as the court.

I have not found *Spiranthes ochroleuca* outside the Argyle area, but I have seen *S. cernua* in several moist habitats in Pennsylvania. The most notable was at the home of a relative in Benton, in the center of the state. A colony of dozens of plants grew on the soil dam embankment of a farm pond only about two years old. The plants had spread from a nearby wet hillside swale where I had seen them previously. Another colony, in a tiny unused field along my daily commuting route west of Philadelphia, grew well in grass until it was shaded out by invading shrubs and trees.

The July-blooming *Spiranthes lacera* var. *lacera* and *Platanthera lacera* are very versatile plants. They appear in a wide range of habitats at Argyle, from moors to bogs, but not in the woods. *Platanthera lacera*, which I have discussed in another report (Wood, unpublished. 'Hunting native orchids in southwestern Nova Scotia III: *Platanthera psycodes* and *P. lacera*.'), has appeared in quantity on the front lawn of the camp after we allowed part of it to revert to hay for a few years. This species is native to northeastern North America, from Nova Scotia to Minnesota and Georgia. *Spiranthes lacera* var. *lacera*, less able to tolerate tall grass, often grows between the tracks in unpaved roads. Its basal rosette of leaves, however, gives protection from mowers. Ours is the northern variety, which extends from Nova Scotia to Manitoba to Tennessee. The remaining species, *S. romanzoffiana*, was first described from the Aleutians. It extends across Canada and the northern U.S. to a few places in Ireland and the Hebrides. I have seen it in a bog in New Brunswick, but only on solid ground in Nova Scotia. Despite its wide range, it is less common and less persistent at Argyle than the other two species. It has disappeared within a few years from the only three places where I have found it.

Absent from the tennis court are not only the orchids of the neighboring woods and bogs, but also two standouts in the open landscape: white *Platanthera blephariglottis* and purple *P. psycodes*. The former requires a strongly acid substrate, whereas the latter needs the permeable damp soil of wet fields.

Finding the three "new" *Spiranthes* on the court was a delightful surprise. It is reassuring to see that where the habitat is favorable, native orchids, which many greenhouse growers consider rare plants, can appear in such quantity and diversity, intermixed with many other plants, in a small, artificial, even "domestic" habitat. I hope that in this stabilized environment and protected by mowing from more aggressive competitors they will continue to be our guests for a long time. To most of my tennis-playing relatives, the overgrown side of

the court is merely a repository for poorly hit balls. To me it is a treasury of Ladies'-tresses.

Editor's Note:

Dr. Howard P. Wood is an Associate in Botany at the Academy of Natural Sciences in Philadelphia, PA. He was awarded the 2006 Engler Silver Medal for a work in systematics for his book, *The Dendrobiums*. This honor is awarded every three years by the International Association for Plant Taxonomy. He was presented this award at the closing ceremonies of the 19th World Orchid Conference in Miami in January 2008.

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## An Easy-care Orchid

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A colony of *Habenaria quinqueseta* (Michaux's orchid) was discovered growing on our private property in Gainesville, Florida in the shade of what is known as the "Champion China Fir" of Florida (Figure 1; page 13). We believe the colony began from a single or perhaps several wind-blown seeds in the early 1980s.

Being deciduous, the orchids make a seasonal appearance around May. They have low, flat, elliptical, and subtly striped green leaves with an erect flower-

ing stalk developing in late June. By August, mature plants display 1 foot high stalks with 8-12 white, 5-bristled, and slightly fragrant flowers. The nectar spur is nearly 1 inch long and holds the sweet reward for many (60+) species of hawkmoths found in this region. During its maximum vegetative period, Michaux's orchid can produce juvenile pea-size bulbs at the ends of certain of its thick and slightly furry roots. If these orchids are encouraged, their vigor may produce several new plants each season. After flowering, the now olive-sized pseudo-bulbs may die. However, the off-sets it has produced over several years increase and spread the colony. Irregular dormancy onset has been noted in the colony. This is one of many details of this orchid worthy of research and evaluation.

Richard Weaver, Botanist for our local Division of Plant Industry, formally identified the plants in the *H. quinqueseta* colony which occurred naturally in our garden. A specimen also was collected by the Horticultural Inspector, C.A. Zamora, on 6 October, 2003. Dr. Mark Whitten of the University of Florida Herbarium then collected a voucher specimen from the same colony. Select members of our Michaux's orchid colony have been introduced to container culture and are being multiplied (Figures 2 and 3; page 13).

As for its cultivation, plants are most conveniently handled and transplanted when they are dormant. Commercially grown pseudobulbs can be shipped in glass containers. When you install the plants in your garden, choose a shady location. The species responds to time-release fertilizer, appreciates organic soils, requires good drainage, and will be more prolific if lightly watered in drought periods during the growing season. When dormant, rainfall is enough. Apply about 1 inch thick mulch cover with a fine textured material.

Given that *H. quinqueseta* is native from Texas, and eastward through the Coastal Plains bioregion into the Caribbean, we are seeking persons and/or organizations (botanical gardens, state- or federal- parks, water management districts, or non-governmental organizations) who are willing to experiment with re-introduction and monitoring of breeder colonies of this orchid at appropriate sites. Together, we can re-weave one more strand into the web of life that is so at risk from human development. Should you be interested in this effort, please contact Jim Notestein at 352.372.2107.



## **Alien Terrestrial Orchid, *Eulophia graminea*, Invades Miami**

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We first encountered an Asian orchid, *Eulophia graminea*, in South Miami during the autumn of 2007. Thus far we have found it in seven residential areas and in two parking lot islands, one at a supermarket in northern Miami and the other adjacent to the beach on Virginia Key in Biscayne Bay in Miami-Dade County in southeastern Florida. The area where we have detected plants of this orchid stretches 35 km from north to south. The orchid appears to have been at some locations for two years or more. *Eulophia graminea* is native to the tropical and subtropical parts of Asia from Pakistan east through India, Nepal, Southeast Asia, southern China to the Ryuku Islands south of Japan. It also extends into cooler areas in Kashmir in northwestern India and Sikkim in northeastern India. At eight of the nine sites where we have found the orchid, it is growing in woodchip mulch. In its native range the plants grow in many kinds of open, disturbed habitats, including grasslands and even beaches.

The small flowers (Figures 1 and 2; page 14), usually about 2.5 cm across, are not showy but are attractive when viewed up close, with a white lip marked with rose-pink, contrasting nicely with the somber green petals and sepals. The inflorescences arise from spherical to conical pseudobulbs, usually about 5-8 cm in diameter, which typically sit completely or partly above the ground. The slender inflorescences range from 30 cm to 1.5 m tall and bear up to 60 flowers. In addition to defining the naturalization, we have been studying the orchid's reproduction. Most of the plants are producing fruit but at low levels, and it appears to need a pollinator. The flowers are faintly fragrant and bear a small nectar-filled spur which are attractants probably for an insect pollinator. Determining what the pollinator(s) are and which fungi are promoting the germination of its seed and seedling establishment are the focus of our research.

We suspect that *Eulophia graminea* entered Florida or the United States as plants imported for cultivation. Plants are offered for sale by nurseries in Thailand via the internet. Amateur growers outside the United States also offer to trade the orchid via the internet. The orchid then probably escaped cultivation to naturalize, as many horticultural plants but relatively few orchids have done.

The naturalized orchid plants can spread via its airborne seed and pseudobulbs moved in mulch and soil. The northern parts of its native distribution in Kashmir and Sikkim have colder climates than southern Florida's subtropical climate, which suggests that the orchid will be able to survive farther north in Florida and perhaps beyond. The orchid's airborne seed may spread it south into the West Indies. Or, people may purposefully move the orchid for cultiva-

tion.

We suspect that *Eulophia graminea* almost certainly occurs in many more places than where we have detected it. We wish to more accurately define its current distribution and to monitor its spread. We request your help in this process. If you encounter plants, please send us photos or specimens and some details of the location and occurrence. The contacts are: Bob Pemberton, PhD, Fairchild Tropical Botanic Garden, 2121 SW 28<sup>th</sup> Terrace, Ft. Lauderdale, FL 33312, USA. (e-mail robert.pemberton@ars.usda.gov). Suzanne Koptur, Ph.D. and Timothy Collins, Ph.D., Department of Biological Sciences, Florida International University, Miami, FL 33199 USA (e-mails kopturs@fiu.edu; colinst@fiu.edu).

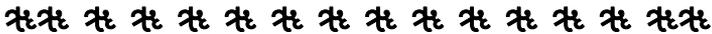
For additional information see our recent articles: (1) Pemberton, R., S. Koptur, and T. Collins. 2008. An Asian orchid, *Eulophia graminea* (Orchidaceae: Cymbidiae), naturalizes in Florida. *Lankesteriana* 8: 5-14, and (2) Pemberton, R., S. Koptur, and T. Collins. 2008. Newly naturalized orchid (*Eulophia graminea*) found in Florida. *Orchids* 77: 412-413.



## END NOTES

### Erratum:

Table 1 in the article ‘A Window on Orchid Population Longevity in the Ottawa District (Canada)’ by J.M Reddoch and A.H. Reddoch [NOCJ 5(1), pp. 1-5] lists *Platanthera blephariglottis* which should be followed by the superscript ‘3.’ This superscript was meant to refer to footnote # 3 (‘current access blocked by beaver flooding; colony probably still present’) listed on page 2. We regret this omission.



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