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A New Intraspecific *Calypso* Hybrid

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I have seen thousands of plants of the widespread variety of *Calypso* (*Calypso bulbosa* (L.) Oakes var. *americana* (R. Brown) Luer) at almost a hundred localities in various parts of the Alberta Rockies and hundreds in at least 35 locations across the rest of Canada. I have seen the western *Calypso* (*C. bulbosa* var. *occidentalis* (Holzinger) B. Boivin) at several places along the west coast. I have also seen thousands of photographs of these two varieties taken from locations throughout their ranges as portrayed by Luer (1974) and Sheviak and Catling (2002). It was not until 25 June 2010, that I found plants apparently referable to a hybrid between them. The plants occurred in a steeply sloping forest of Engelmann Spruce and Subalpine Fir above Carthew Falls in Waterton Lakes National Park (Figures 1a and b; page 17). In an area of 50 m² we found 80 plants referable to var. *americana* (Figure 2a; page 18), and 10 that were intermediate and apparently of hybrid origin (var. *americana* × var. *occidentalis*, (Figure 2c; page 18) and 4 that were most likely backcrosses of the hybrid with var. *occidentalis* (Figure 1c, 2b; pages 17 and 18).

A natural hybrid of the infrataxa of *Calypso* has not been previously reported in North America (e.g., Szczawinski 1969, Luer 1975, Long 1980, Kuijt 1982, Packer 1994, Sheviak and Catling 2002, Brown 2006, 2009), and is here described.

Calypso bulbosa × *kostiukiae* P.M. Catling, nothospecies nova. *Calypso bulbosa* (L.) Oakes var. *americana* (R. Brown) Luer (Native Orchids of the United States and Canada, 336. 1975) × *Calypso bulbosa* (L.) Oakes var. *occidentalis* (Holzinger) B. Boivin (Naturaliste Canadien 94: 522. 1967). (Figure 1a, 2b and c; pages 17 and 18.)

TYPE: CANADA: Alberta. Waterton Lakes National Park, in a steeply sloping forest of Engelmann Spruce and Subalpine Fir above Carthew Falls, 49.0350, -113.9286, 25 June 2010, P.M. Catling and B. Kostiuk s.n. (holotype: flower and photograph, DAO 866716).

Hybrida e *Calypso bulbosa* (L.) Oakes var. *americana* (R. Brown) Luer et *Calypso bulbosa* (L.) Oakes var. *occidentalis* (Holzinger) B. Boivin, labello distalli maculis multis roseis et pilis recteis luteis vel albis.

Hybrid from *Calypso bulbosa* (L.) Oakes var. *americana* (R. Brown) Luer and

Calypso bulbosa (L.) Oakes var. *occidentalis* (Holzinger) B. Boivin, with the distal lip with many pink spots and with erect yellow or white hairs.

ETYMOLOGY: The name “*kostiukiae*” commemorates Brenda Kostiuk, co-discoverer of the hybrid plants, born in Alberta (Edmonton, 1959) and researcher on the ecology of native Canadian orchids. An appropriate common name would be Kostiuk’s Hybrid *Calypso*.

PHENOLOGY: Peak flower from 20-30 June.

IDENTIFICATION: Some of the most distinctive putative hybrids (Figure 2c) have the tuft of yellow hairs similar to var. *americana*, but they also have the abundant spots all over the lip apron that are characteristic of var. *occidentalis*. However, in the latter variety, these spots are usually magenta or brownish, especially toward the edge and there is often a central pinkish blotch. In the hybrid, all spots are pink and there is no blotch. The flowers from the hybrid plants at Waterton are very similar to a hybrid cultivar produced by Ashmore and named “Aaron Island” (Ashmore 1995 p. 88, 1999), this helping to support their hybrid identity.

Plants with a white tuft of hair and a profusion of only pink spots on the lip (Figures 1c and 2b; pages 17 and 18) may also be hybrids (likely backcrosses as suggested by artificial backcrosses produced by Ashmore (1999 p. 29). There are many cases like this where F1 hybrids are identifiable but backcrosses are too close to putative parents in their colours and/or morphological features to allow certain identification. Although a cross of an F1 hybrid with var. *occidentalis* could produce a plant that would normally be accepted as var. *occidentalis*, it is unknown whether a cross with var. *americana*, could produce a plant that would pass for that variety.

One difficulty with the key below would be identifying a pure white *C. bulbosa* var. *americana*. What is frequently accepted as the white form of the latter, *i.e.* forma *albiflora*, has only the sepals and petals pure white and the lip normally colored with the usual yellow tuft and pink spots at the base of the apron. A plant of *C. bulbosa* var. *americana*, with all flower parts pure white, is extremely rare. The white form of *C. bulbosa* var. *occidentalis* has the tuft white (as usual) and the spots on the lip apron are often present but very pale (sometimes very pale yellow), but pure white forms are reported. Determining the variety of a very rare pure white form, without reference to geography, may be possible using the hairs of the tuft which are said to be less dense in var. *occidentalis* (e.g. Luer 1975) and/or by the length of the spur horns with regard to the lip lamina which are often longer in var. *occidentalis* but shorter in var. *americana* (e.g. Sheviak and Catling 2002) but these differences remain to be quantified.

Another consideration regarding the key relates to the result of couplet 7b. Here the importance of the absence of the blotch is not absolutely clear and as a result there are two possibilities. However, the blotch does seem to be very characteristic of var. *occidentalis* and its absence in combination with a white tuft may be quite unusual.

Table 1. North American infrataxa of *Calypso bulbosa* (L.) Oakes in Z. Thompson, Natural History of Vermont 1: 200. 1842. *Cypripedium bulbosum* L., Species Plantarum 2: 951. 1753.

Calypso bulbosa (L.) Oakes var. *americana* (R. Brown) Luer forma *americana*, Native Orchids of the United States and Canada, 336. 1975. *Calypso americana* R. Brown in W. Aiton and W. T. Aiton, Hortus Kewensis 5: 208. 1813.

Calypso bulbosa (L.) Oakes var. *americana* (R. Brown) Luer forma *albiflora* P.M. Brown, North American Native Orchid Journal 1(1): 17. 1995.

Calypso bulbosa (L.) Oakes var. *americana* (R. Brown) Luer forma *biflora* P.M. Brown, North American Native Orchid Journal 10: 35. 2004.

Calypso bulbosa (L.) Oakes var. *americana* (R. Brown) Luer forma *rosea* P.M. Brown, North American Native Orchid Journal 1(1): 17. 1995.

Calypso bulbosa (L.) Oakes var. *occidentalis* (Holzinger) B. Boivin forma *occidentalis*, Naturaliste Canadien 94: 522. 1967. *Calypso bulbosa* forma *occidentalis* Holzinger, Contributions of the United States National Herbarium 3: 251. 1895.

Calypso bulbosa (L.) Oakes var. *occidentalis* (Holzinger) B. Boivin forma *nivea* P.M. Brown and R.A. Coleman, North American Native Orchid Journal 1(1): 17. 1995.

Calypso bulbosa (L.) Oakes × *kostiukiae* Catling, *hic*

Key to the infrataxa of *Calypso bulbosa* in North America

- 1a. Distal portion of lip with only a few reddish-purple spots at the base of the apron 2
- 1b. Distal portion of lip spotted throughout or pure white with some very pale yellow 5

- 2a. Plants with two flowers ... *C. bulbosa* var. ***americana forma biflora***
- 2b. Plants with a single flower 3

- 3a. Petals and sepals white *C. bulbosa* var. ***americana forma albiflora***
- 3b. Petals and sepals pink 4

- 4a. Distal portion of lip (outer apron) white *C. bulbosa* var. ***americana forma americana***
- 4b. Distal portion of lip (outer apron) pink or even dark rose pink *C. bulbosa* var. ***americana forma rosea***

- 5a.** Base of the apron (distal portion of the lip) with a prominent patch of yellow and a prominent tuft of yellow hair; blotch on central portion of lip lacking; spots on the distal portion of the lip pinkish *C. bulbosa* **nothovar. kostiukiae** (var. *americana* × var. *occidentalis*)
- 5b.** Base of the apron on the distal portion of the lip without any yellow colouration, the white hairs less prominent; blotch on central portion of lip present or lacking; spots on distal portion of lip pink, magenta, or very pale yellow or lacking **6**
- 6a.** Sepals and petals white *C. bulbosa* var. *occidentalis* **forma nivea**
- 6b.** Sepals and petals pink **7**
- 7a.** Blotch on central portion of lip present; spots on distal portion of lip magenta *C. bulbosa* **var. occidentalis forma occidentalis**
- 7b.** Blotch on central portion of lip lacking; spots on distal portion of lip magenta or pink *C. bulbosa* var. *occidentalis* **forma occidentalis** (or in areas of overlap of the two varieties F1 backcrosses with var. *occidentalis* **forma occidentalis** may key here and plants may be referable to *C. bulbosa* **nothovar. kostiukiae**)

DISTRIBUTION: I have seen photographs referable to this hybrid and what I believe to be both putative parents from Glacier National Park in Montana. The hybrid is illustrated from Glacier Park by Shaw and On (1979, p. 125) and Kimball and Lessica (2010, p. 172). It seems likely that the hybrid would occur in southern British Columbia and indeed I have seen photographs corresponding to it from Stein Valley in Nlaka'pamux Heritage Park.

A hybrid is not unexpected anywhere in the region of overlap between the putative parents. This is a very limited area of southern British Columbia, southwestern Alberta, eastern Washington, eastern Oregon, Utah and western Montana. The western var. *occidentalis* occurs primarily in the Coast Mountains but expands eastward into a small portion of the Rocky Mountains mostly south of the Canadian border, to Utah and west to the region of Missoula and the Coeur d'Alene Mountains in Montana. The western Calypso is only one variety with this pattern. Other orchids that are widespread west of the continental divide but cross it into Alberta in the Waterton area, and sometimes to a very limited extent in one or two other places, are *Cypripedium montanum*, *Listera caurina* (also called *L. banksiana*, — a name that is under review), and *Listera convallarioides*. Among the other varieties that enter into Alberta only at Waterton but are widespread west of the divide in British Columbia are One-flowered Clintonia (*Clintonia uniflora*), Western Yew (*Taxus brevifolia*), Western Wheat Grass (*Melica smithii*), Licorice Fern (*Polypodium hesperium*) and Mountain Box (*Pachistima myrsinites*). The reason that these plants occur

on the east slope of the Rockies here and not elsewhere may have to do with weather, or with postglacial migration, or both. Pacific weather systems do spill over into the Waterton area and there is high precipitation with a peak early in the growing season, frequent high wind, and higher temperature than elsewhere in Alberta, but a small temperature range. The Pacific Hemlock – Cedar groves in Glacier Park adjacent to Waterton Lakes are also often attributed to the weather. However, the Waterton area was also near the southern limit of the last (Wisconsin) glaciation and may have been colonized from a nearby montane refugium (Ogilvie 1962). Regardless of the cause, eastern and western plants meet in this region, and it is a small area of overlap in the extensive ranges of both *Calypso bulbosa* var. *americana* and *C. bulbosa* var. *occidentalis*.

CONSERVATION: All plants in the Waterton Lakes National Park are protected (and there are concealed cameras recording activities of large mammals in key areas).

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NOC *NOC* *NOC* *NOC* *NOC* *NOC*

Some Additional Observations of a Positive Impact of Trails on Terrestrial Orchids and Some Data From Along a Road

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In a recent article (Catling and Kostiuk 2011) we provided evidence that hiking trails are often beneficial to terrestrial orchids contrary to a widespread notion that they are always damaging. The effect of trails is of interest in planning natural areas and it was suggested that trail closures and limitations to access may not always benefit orchid conservation. The effect of trails is also of interest in relation to the ecology of orchids where some kind of disturbance is often a key element (Catling 1996). Here we provide two additional examples of the effect of trails for species (*Cypripedium acaule* Aiton and *Spiranthes cernua* (L.) Richard) that were not included in the article referred to above. We also include some data collected along a road with respect to *Cypripedium parviflorum* Salisbury var. *pubescens* (Willdenow) O.W. Knight.

METHODS

(1) *Cypripedium acaule* along a trail. We recorded distances from the trail for 66 plants of *Cypripedium acaule* along 3 km of a trail through Oak (*Quercus borealis* and *Q. alba*) and Pine (*Pinus strobus*) woods at Rock Dunder Mountain (approx. 44.5255, -76.2102), Morton, Ontario. The sample was small but the plants occurred at 11 almost evenly distributed places along the trail with never more than 5 plants at a particular place. Regression including Analysis of Variance (ANOVA) was used to evaluate the trend and significance (at the 95% or higher confidence level) of numbers of plants with respect to distance, in consecutive 10 cm sections, from the trail. The survey was late (18 Sept. 2011) but plants were still green and we think that few, if any, were missed.

(2) *Spiranthes cernua* along a trail. Here we surveyed a 2 km long trail over the open pannes between two dune fronts at Sandbanks Provincial Park

(43.9087, -77.2845). Two thirds of the length of these trails, approx. 1300 m, was parallel to the main dune system and more or less perpendicular to the panne system. The remaining third, approx. 700 m in length, was perpendicular to the main dune system and it appeared that there was neither more or less habitat in the immediate vicinity of the trail. The trails traversed variable terrain, *i.e.* were not confined to the edges of sloughs. Orchids mostly grew in beds of Hair-like Beakrush (*Rhynchospora capillacea*) on the edges of deeper, periodically flooded areas with Twigrush (*Cladium mariscoides*). Higher areas were dominated by Artemesia and Juniper. *Spiranthes cernua* was in peak bloom during the survey (2 Sept. 2011). The effect of the trails was sufficiently obvious here that no significance test was required. Graphs were prepared showing the number of plants 0-1 m from the trail edge and +1-2 m from the trail edge in 40 sections of trail each 50 m in length.

(3) *Cypripedium parviflorum* var. *pubescens* along a road. The south side of an east to west road across the Burnt Lands Alvar Provincial Park (45.2595, -76.1427) was surveyed in late May, 2010. We recorded the number of plants in three adjacent zones: (1) an open area extending from the forest edge toward the road in a band 3 m wide; (2) a wooded area extending from the edge of the forest into the forest also 3 m wide adjacent to zone 1; and (3) an area of forest 3 m wide adjacent to zone 2. The open area of zone 1 was created by cutting the trees, mostly Eastern White Cedar (*Thuja occidentalis*). Zone 2 was Cedar woodland with some edge effect of increased light. Zone 3 was darker Cedar woodland. *Cypripedium parviflorum* var. *pubescens* was in peak bloom when the survey was undertaken (late May 2010). We reasoned that zones 1 and 2 were disturbed open and semi-open habitat resulting from the road and could be compared with zone 3 which was interior undisturbed woodland. The absence of normal distributions in the samples made the use of various significance tests inappropriate. The results were simply evaluated in a plot of consecutive 100 m sections versus number of plants for three zones.

RESULTS

(1) *Cypripedium acaule* along a trail. The P-value from ANOVA (0.1865) was not significant. The Square root-Y provided the best fit line with 10% of the variability explained by this model. Although the result is not significant, there are more plants within the 0-1 m distance (46) than within the +1-2 m distance (20 plants) which is beyond the shrub cutback and occasional trampling zone. The best fit line suggests a decline in number of plants with increasing distance from the trail (Figure 1).

(2) *Spiranthes cernua* along a trail. Throughout the length of the trail, there were more orchids along the edges, *i.e.* within 0-1 m of the trail edge than within +1-2 m. The result (Figure 2) is clearly highly significant.

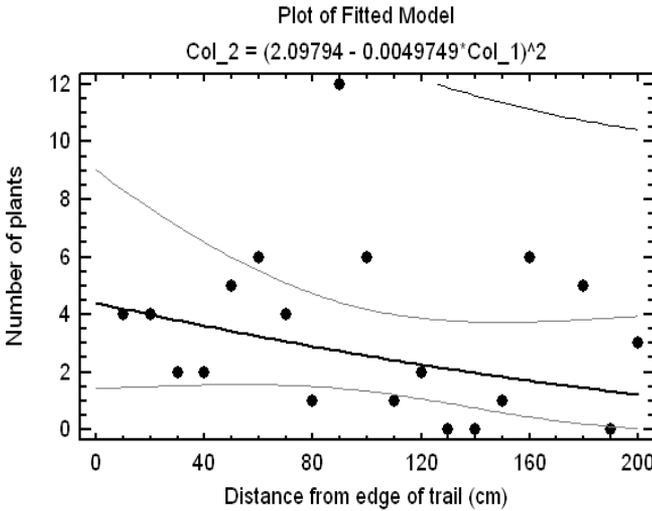


Figure 1. Number of plants of *Cypripedium acaule* at various distances from the edge of a trail up to 200 cm. Although there is not a significant relationship, the best fit regression line indicates that there are more plants nearer to the trail edge.

Figure 2. Number of plants of *Spiranthes cernua* along 40 trail segments, each 50 m long in two zones adjacent to the trail: (1) 0-1 m (dots), and (2) +1-2 m (solid triangles). The number of orchids is consistently greater in the zone adjacent to the trail.

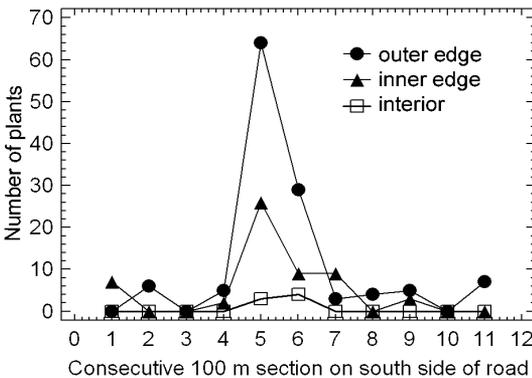
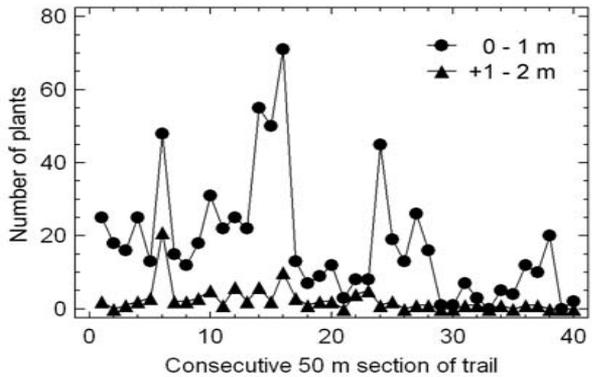


Figure 3. Number of plants of *C. parviflorum* var. *pubescens* in 11 consecutive 100 m sections of roadside in three adjacent zones: (1) the open edge (dots), the wooded edge (triangles), and (3) the inner edge (open squares). The number of orchids is greater in the edge habitats.

WE HAVE COME A LONG WAY ...

It was almost a century ago that we had Smokey Bear telling us about how bad forest fires were, and Bambi fleeing to escape the flames. Smokey was a huge hit and he will always be with us, but the attitude toward fire has changed and now across North America we have prescribed burns. We understand that a scorched landscape is sometimes a valuable opportunity for both forest management and biodiversity. We have learned a lot but we may need to go further to develop a more reasonable approach to use of natural areas by humans. —PMC

(3) *Cypripedium parviflorum* var. *pubescens* along a road. The open edge had a total of 135 plants, whereas the forested edge had 57. This contrasted with only 7 in the interior forest zone. It is clear that the disturbed road-edge habitats, both open and forested, had more plants than existed further into the woodland at a number of points, *i.e.* consistently (Figure 3).

DISCUSSION

To grow in the drier cedar woodland on limestone plateaus of the Ottawa Valley, it appears that *C. parviflorum* var. *pubescens* requires indirect light and low heat. This can be provided by north-facing woodland edges along an east-west road. Several situations of this kind are known to the authors and the effect would be much more obvious if hundreds of plants had not been removed from these sites by garden supply companies. While we may promote trails in many situations, we would never promote roads because of their very negative impact on wildlife, and reptiles and amphibians in particular. We do promote roadside management, and we also promote the use of information from the roadside situation..

There are three important elements of information with respect to the *C. parviflorum* var. *pubescens* example. These relate to management: (1) woody biomass removal alone can be very beneficial in improving orchid habitat and in developing a high biodiversity in general; (2) roads can play an important role in providing habitat and could be managed for this purpose at low cost (but are frequently planted with exotic species at great and unnecessary expense); (3) use of the tools that make roadsides beneficial including woody biomass removal, soil disturbance, exposure of low nutrient mineral soil and creation of moisture gradients, could all be applied to improve orchid occurrence and biodiversity in natural habitats.

The observations reported here for *Spiranthes cernua* and *Cypripedium acaule* provide further evidence that hiking trails are often beneficial to terrestrial orchids as suggested previously (Catling and Kostiuk 2011). This is good news because the more people enjoy nature, the more it will be protected. Interest-

ingly, a number of other rare plants thrive in disturbed conditions along trails (such as Moonwort, *Botrychium lunaria*). We may notice trampled vegetation along a trail or in a natural area around an orchid plant, but quite possibly the overall effect is often beneficial. There are however, no universal rules.

It has been suggested that people step softly around orchids (Light 2005). Certainly we should avoid trampling orchids. However, they like paths so much that they do sometimes grow in places where trampling is inevitable. While photographers should minimize disturbance, we should probably accept that it is likely that some level of disturbance is beneficial. We should be cautious about entering special areas such as wetlands and floating mats that may be particularly susceptible to damage. However, in many cases environmental stewards may be able to cut back a little on the rhetoric about damage caused by people. We may see fewer closed trails, fewer requests to stay on the trail, and fewer fences around rare plants. Of course restrictions are sometimes necessary, but they should be based on science.

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A MESSAGE FROM THE PAST

As far as we know, native orchids and other plants in temperate regions evolved over millions of years in a situation where fires periodically removed trees and exposed mineral soil and where large mammals (giant sloths, mastodons etc, extinct only 11,000 years ago – a fraction of a blink in geological time) had significant impacts on soil and woody vegetation. In much of the present North American landscape these and other essential ecological processes to which plants are still adapted have been lost. They are mimicked along some trails and roads used by humans. They are also mimicked by other situations elsewhere, such as coppiced woodland of Europe. This is woodland where people go to cut firewood. The cutting of large trees and the continuous cutting of their regrowth increases light, leads to trails, and forms thickets. Some European orchids are more abundant in coppiced woods than in other, less disturbed situations. To ensure survival of orchids, and many other plants, we may have to broaden the effect of disturbance processes as habitats continue to be reduced.

— PMC

Frederick W. Case, Jr. — A Remembrance

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“Fred Case was a giant in our community,” a botanist told me after Fred’s death earlier this year, and an examination of his life shows just that.

Born, raised and educated in Michigan, his knowledge of botany eventually spanned the continent. From high school in his hometown of Saginaw, Fred went into the Army and spent two years in Missouri, Wyoming and Alaska, using every spare minute to botanize. On discharge from the Army, Fred went on to receive his undergraduate and masters degrees from The University of Michigan. He then began teaching Biology at Arthur Hill High School back in Saginaw. Teaching Ecology, Advanced and Honors Biology – his career extended over four decades. Fred inspired his students. “It was not just the case of a teacher who is paid to do a job and does it, but you understood how fundamentally this was a major part of his life,” one former student remarked. He sponsored an evening Biology Club once a month that was very popular. His class field trips were always memorable; “students always had trouble keeping up with his pace,” said one. This attribute was true later in his life also. I remember being with him a few years ago in the Appalachian Mountains of Virginia with other botanists and they could not keep up, either. Another former student said that, “...what came through” in Fred’s teaching “was how much he loved the organisms themselves and was fascinated by them, and this was infectious to the student.” Over the decades the superior quality of his instruction resulted in being honored by his school, city and state for excellence in teaching.

Fred’s interests ranged beyond North American terrestrial orchids, the subject we all knew him for. He was an authority on Sarracenia, coauthoring their treatment in the Flora of North America, where he also authored the treatment of Trilliums. His accomplishments in horticulture were legendary. The thirty-eight acre garden at his home in Saginaw hosted bus tours from all over the Midwest every spring. Here visitors were treated to over twenty species of North American Trillium, in addition to many hybrids that Fred developed. He was proudest of the multi-petalled *Trillium grandiflorum* he produced, including clones named for his wife, Roberta, and his friend, Mrs. Copeland, of the Mt. Cuba Center. The rock garden area was astounding, as well as the selection of Azaleas and Sarracenias. The small greenhouses were for tropical orchids and for propagating carnivorous plants. Roberta took charge of the two pools, where she tended her beloved water plants.

Every summer for decades, the Cases would travel all over North America botanizing. Fred could tell you on which mountain every rare alpine plant grew and where it was best suited. His maxim was: Never think you know a plant until you have seen it growing in all its range. Not only did Fred have great “plant hunting” ability (spotting plants at breakneck speeds along the highway or in the woods), he had a remarkable memory that enabled him to recall specific plant locations decades later. It was on these far-ranging trips that he and Roberta found and described a *Sarracenia* species new to science – *Sarracenia alabamensis*. They bought and donated a refuge in Alabama to the Nature Conservancy for the protection of this imperiled species.

In addition to teaching, Fred served on many educational and scientific boards of local, national and international organizations, was inducted into three national honorary scientific societies and won numerous awards from statewide and national organizations; this list alone goes on for pages. A few of the more notable awards were medals from The Garden Club of America, The American Rock Garden Society, and The American Society of Plant Taxonomists.

Fred lectured and wrote extensively. He spoke to hundreds of local, national organizations and societies and was a featured speaker at an annual meeting of the Alpine Society of Great Britain and the Third International Rock Garden Society in London. Everyone who attended one of Fred’s talks came away in awe of his command of the subject and his ability to make it understandable to the audience. In addition he was an accomplished photographer. A prolific writer, Fred authored over twenty-five journal articles and four books, two of which are the standard by which others are judged: *Orchids of the Western Great Lakes Region* and *Trilliums*, which he co-authored with his wife, Roberta.

Fred and Roberta, known as Boots, were a match made in heaven. She was a biologist whose specialty was salamanders, and was also a great field botanist. Their common interests and mutual love was outstanding – true soul mates. Often they would walk down a path botanizing, hand in hand, singing Gilbert and Sullivan. I believe they knew every one of that repertoire by heart. When a painful and ultimately mortal disease struck Roberta the last years of her life, Fred suffered almost as much as she. After forty-four years of marriage, Roberta Case died in 1989. Fred was never the same.

Fred’s own health declined over the last decade, as did the continent wide botanizing trips that characterized his life until then. However, his interest and desire to visit the sites close to home remained. The tour busses came every year to see the splendid gardens up to the very end, and I am told they will be open next spring in a final memorial tribute to a wonderful couple.

When Fred Case died in January 2011, he left a mighty legacy. It cannot be reduced to the dozens of journal articles or four books he authored or co-authored. Fred and Roberta's son David and his family mourn him deeply. His dedication and teaching continue to influence a wide circle of people, from professional botanists to former students to interested gardeners and amateurs all over the continent. Fred was a great help to Carlyle Luer – see the prologue to *The Native Orchids of the United States and Canada* – and forty years later was still helping members of the Native Orchid Conference and others when they called for help.

As one of his former students and lifelong friends eulogized at Fred's funeral, "Right or wrong, Fred was stubborn, and opinionated. He was his own man, whether you agreed with him or not. He had an ego, but it is a trait of men and women who are driven a certain way... achievers, scholars, adventurers." Fred was certainly all three.

It is a great honor for the Native Orchid Conference, Inc. to establish the Frederick W. Case Grant in honor of this revered botanist and friend.

The award will be given annually beginning in 2012. The purpose of the grant is to support basic or applied research by university students on North American native orchids. The amount of the award will be up to \$1,000, and a special committee of the NOC will select the grantee. The criteria for applicants will be forthcoming.

The intention of the Native Orchid Conference is to solicit sufficient funds to endow this grant

NOC NOC NOC NOC NOC NOC

As mentioned by Hal Horwitz and delineated on the following pages for the Frederick W. Case Grant, our organization has decided to back up our mission and start a new scholarship program to be sponsored by the membership. To date we have received donations from the following:

Hal and Helen Horwitz
Doug and Beth Martin
Bob Yannetti

Al Menk
Anita and Stefan Ambs
Jim and Kathy Hayward

I would like to personally extend a warm "Thank You" to each of these donors for their continued support of the Native Orchid Conference and especially of the Case Grant. I would hope that with the coming new year many of our members would make a special effort to support these endeavors by sending a donation in with their 2012 dues, a notice of which is included in this edition of the Journal.

Mark Rose, President

FRED CASE GRANT

The Native Orchid Conference (NOC) announces the sponsorship of an annual grant of up to \$1,000.00 in the memory of Mr. Frederick W. Case, Jr. The purpose of the grant is to support basic or applied research on orchids native to North America north of Mexico. The grant will be awarded to a university graduate or undergraduate student based on the conditions listed below. Although the initial award will be made starting in 2012, the NOC will undertake to raise sufficient funds to perpetually endow the grant.

Fred Case, teacher and botanist, passed away on January 12, 2011. He was an internationally acclaimed expert on the North American *Orchidaceae*, *Sarraceniaceae* and *Trilliaceae*, and his enthusiasm inspired many to participate in our shared interest. An honored educator for four decades, Fred received numerous awards and recognition for his achievements. He was widely published and lectured extensively nationally and internationally on orchids, rock gardening and wildflowers. Fred was associated with Cranbrook Institute of Science, Mt. Cuba Center, University of Michigan Matthaei Botanical Gardens, Longwood Gardens, Michigan Department of Natural Resources Committee on Endangered and Threatened Plants, Michigan Botanical Club, North American Rock Garden Society, Saginaw Valley Audubon Society, Saginaw Valley Orchid Society and Nature Conservancy. His book, *Orchids of the Western Great Lakes*, was a seminal work in regional orchid floras and remains the standard work by which all others are judged.

THE NATIVE ORCHID CONFERENCE

The Native Orchid Conference (NOC) is a 501c-3 non-profit educational and conservation organization, whose purposes are to

- promote the study, conservation, and enjoyment of the native orchids of the United States and Canada;
- disseminate information relating to native orchids through meetings, lectures, publications and otherwise;
- operate on a non-profit basis solely for benevolent, charitable, scientific and educational purposes useful to the public.

We educate the public about the beauty, diversity and environmental importance of native orchids through our Journal, an annual conference, lectures, symposia, workshops and field trips as well as sponsorship of research projects and other activities. We encourage the preservation and protection of naturally

occurring plant communities on public and private land, participate in plant rescue projects and support the preservation and restoration of natural habitat. We support the availability of nursery grown native orchids to lessen destruction of wild populations.

THE FRED CASE GRANT PROGRAM

The Native Orchid Conference will award an annual grant of up to \$1000 to support research on native orchids of North America, north of Mexico. The grant will be awarded to a graduate or undergraduate university student for projects in basic or applied research in botanical or horticultural areas that are in consonance with the purposes of the NOC, as summarized above.

ELIGIBLE PROJECTS

Projects eligible for funding may include but are not limited to the following:

- Orchid systematics
- Surveys of natural areas
- Research into protection of endangered species
- Horticultural research involving native orchids
- Restoration of native species or habitats
- Molecular research

HOW TO APPLY

There is no standardized application form; however, the request for funding must include the following:

- Name, address, phone number and e-mail address, and date submitted.
 - Please provide contact information where the committee can reach you for clarification even when away from home or school.
- A short statement explaining your specific interest in native orchids.
- A concise project description (no more than two pages) that includes a summary. The description should include a statement describing the need for the project, it's location, objectives, hypotheses where appropriate, means of data collection and analysis methodology, who benefits and how from the research. Also include names of other organizations involved. Highlight aspects of the work that you believe are important and creative and a statement as to how the project will advance the knowledge of North Amer-

- ica's native orchids. You may wish to include brief but relevant references to published literature within the two page description.
- The application must be accompanied by a letter of recommendation from a sponsor, such as an academic supervisor or major professor. (One page limit)
- Proposed project schedule. Regardless of project length, grants will be made annually.
- Project budget; summarize how NOC grant funds will be used. Show how additional funds or support, if expected or received, fit into the overall budget. NOC encourages applicants to seek additional funding elsewhere.
- Tuition or conference registration expenses are not acceptable uses of the NOC grant.

GRANT SUBMISSION PROCESS

Completed requests for funding must be received by the Grant Committee Chair by January 31.

All requests for funding must be submitted both in writing and by electronic mail.

The NOC Grant Committee will review the applications and determine a winner. The committee will have rotating members and be announced each year on the NOC Yahoo web site.

The winner will be announced at the annual conference of the NOC.

At the end of the academic year for which the grant is applied, the grant winner must agree to provide an accounting of the use of grant funds, submit an article for the *Native Orchid Conference Journal* and give a presentation of their work at an NOC annual conference.

Mail applications to: Chair, Case Grant Committee
 Native Orchid Conference, Inc.
 P. O. Box 13204
 Greensboro, NC 27415-3204

E-mail applications to: ncorchid@yahoo.com

Direct any questions to David McAdoo at (336) 996-2324 or
ncorchid@yahoo.com



Figures to accompany “A New Intraspecific *Calypso* Hybrid” by Paul Catling. Photos by the author.

Figure 1.a, habitat of Kostiuk’s hybrid *Calypso* along a trail in Englemann Spruce — Subalpine Fir woodland near the Carthew Falls. b, trail showing habitat with Yellow Violets (*Viola glabnella*) in the foreground and a confusing *Calypso* plant above the rock in lower left. c, close-up of the confusing *Calypso* best interpreted as Kostiuk’s Hybrid.

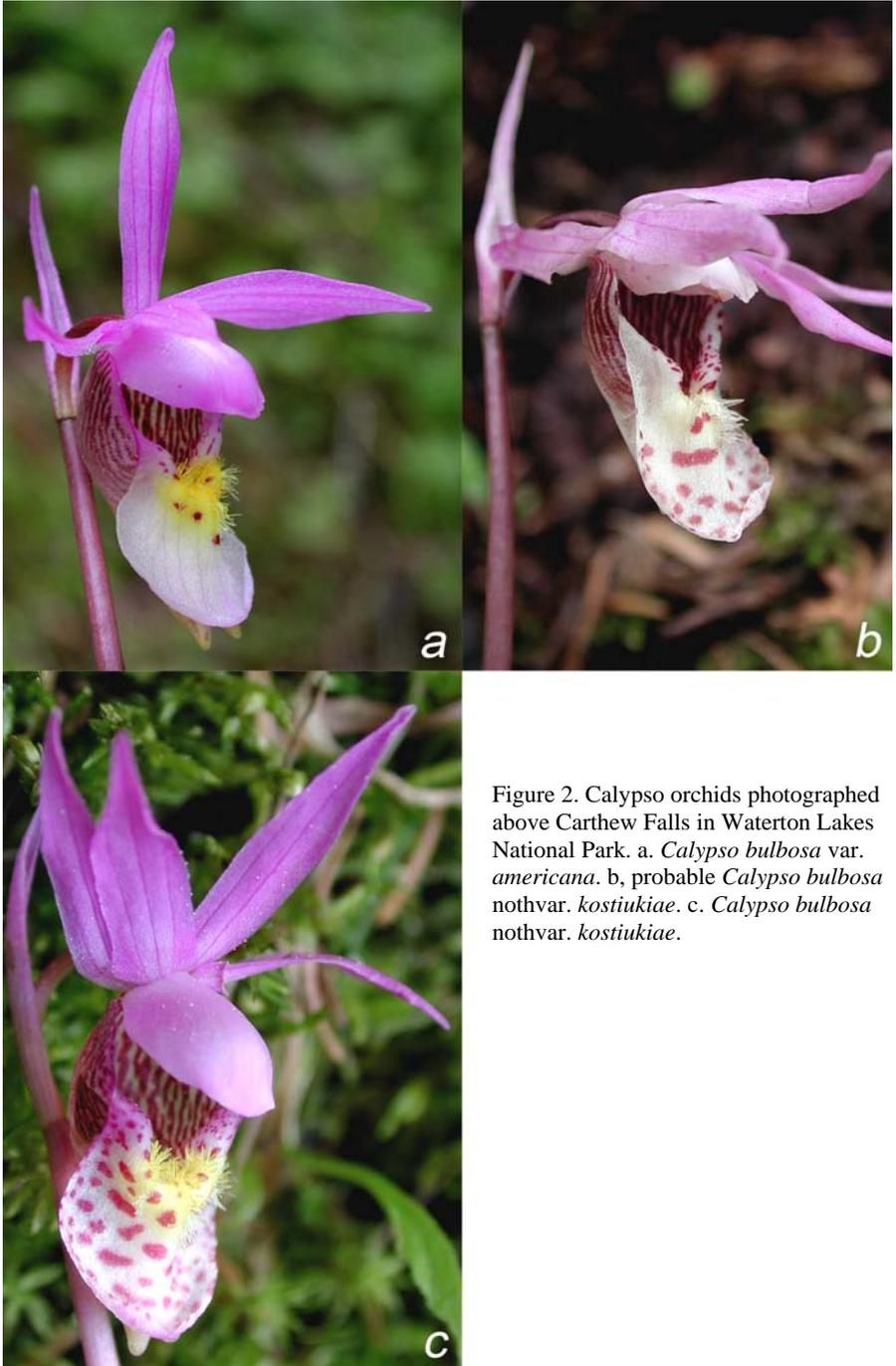


Figure 2. Calypso orchids photographed above Carthew Falls in Waterton Lakes National Park. a. *Calypso bulbosa* var. *americana*. b, probable *Calypso bulbosa* nothvar. *kostiukiae*. c. *Calypso bulbosa* nothvar. *kostiukiae*.

Figures to accompany “Searching for Long Island’s Wild Orchids” by Tom Nelson, page 21.



Platanthera ciliaris (left) and *Tipularia discolor* (above) in Connecticut.



Listera australis (below) and author’s daughter, Johanna, with *Cypripedium acaule* (right).





Platanthera pallida — close-up and its habitat

Platanthera cristata
forma *straminea*



Searching for Long Island's Wild Orchids

Tom Nelson

New York, NY

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I was born in Logan Utah and was lucky enough to have parents that nurtured my interest in nature and the outdoors from an early age. National Forest land was within easy walking distance of our home, and my friends and I spent many pleasurable hours in the foothills and mountains of the Bear River Range, forging a deep bond with the natural world that has lasted into adulthood. When I was twelve years old, I was part of a youth group that was taken on a guided nature walk by a ranger who knew the name of every plant along the trail. This really impressed me, and since Utah State University was wonderfully close by, I visited the college bookstore and found the perfect book: *Vascular Plants of Northeastern Utah* by Bernice Anderson and Arthur Holmgren.

I soon developed a keen interest in all things botanical, and within a year or two my friends and I had managed to somehow find the Intermountain Herbarium at Utah State and make the acquaintance of Professor Holmgren (the curator) and Ms. Anderson (the assistant curator). To say that they mentored me would be an understatement; Art took me along on many field trips with his classes, and they both gave freely of their time — my friends and I would often wander in unannounced after school and ‘hang out’ in the herbarium — not your typical teenagers.

I had by this time taken over the gardening chores at home (much to my parent's delight) and had built several rock gardens chock-full of native plants. My parents were incredibly patient when I insisted on filling the family station wagon with beautiful rocks, bags of forest soil and transplanted specimens of plants whenever we went on an outing into the mountains. Art was also an expert gardener who specialized in rare alpine plants and would often give me unusual specimens. The culmination came when my parents built me my own 10'x12' greenhouse in the backyard to house my collection of tropical plants that had filled every nook and cranny of our house. I was one lucky kid!

At this point the outcome of the story seems easy to guess; the reader is certain that after being awarded advanced degrees in botany that I am now comfortably ensconced at a University or Botanical Garden teaching or doing research. It was not to be. My parents are both musicians and fostered a love of music in

all their children. Even though I initially resisted — I much preferred catching snakes as a youth — the music bug bit me at age fifteen when I decided to learn to play jazz piano. It's always been apparent to me that music and nature go hand in hand, so everything was fine until I had to choose a major in college. Art was an amateur violinist and had always appreciated my love for music, but I know he was extremely disappointed when I chose music over botany. Fast-forward thirty three years and I can be found living in the wooded section (Inwood) of far northern Manhattan — as close to the edge of the city as it is possible to be without actually leaving it — with my wife Jackie and daughters Johanna (age 9) and Christina (age 5). After receiving advanced degrees in music performance and composition, my career as a free-lance musician is flourishing.

I never lost my love for plants through the years and as I have traveled to different parts of the country and world I have always been excited to see what new species I would find. Orchidaceae has always been of special interest; I wrote a research paper for my 9th grade biology class titled *Native Orchids of the Bear River Range* using as source material two well known floras: Correll's *Native Orchids of North America* and Cronquist's *Flora of the Pacific Northwest*. This paper included my own original pencil drawings and pressed specimens. Art and Bernice both had thriving colonies of yellow lady's-slippers (*Cypripedium parviflorum* var. *pubescens*) in their gardens that had been rescued from a pending housing development and Bernice had generously given me a start for my rock garden.

In 1999 while at the New York Botanical Garden Bookstore I came across a very intriguing book: *Wild orchids of the Northeastern United States* (1st edition) by Paul Martin Brown. This book rekindled my interest in wild orchids and I subsequently bought and devoured every native orchid flora that I could find.

Everything changed in early 2007 when I made the acquaintance of Mr. Brown (founding editor of the *North American Native Orchid Journal*) and became a full-fledged orchidophile. I had met with limited success in finding wild orchid populations in 2005-2006, but it is a hard go without specific site information. Paul helped us plan a very successful family trip to Newfoundland, where we found 30 species of orchids and sent us to several other breathtaking orchid sites in Vermont and up-state New York. As soon as we would return from one trip, there would usually be an email message from Paul saying "if you're not tired yet" His suggestion for early August was an orchid-hunting foray to the eastern end of Long Island. Following is an account of the on-going adventures that resulted from that suggestion. Figures to illustrate the adventure are found on pages 19-20.

8/4/07: After visiting two amazing sites for orange fringed orchis (*Platanthera ciliaris*) in coastal Connecticut, we took the ferry to the North Fork and headed to Greenport, where our adventures would continue in the morning. Our goal was to locate the elusive crane-fly orchis (*Tipularia discolor*) at its only current location on Long Island.

8/5/07: After dropping Jackie and the kids off at the playground, I headed over to Moore's Woods to search. And search, and search. *Tipularia discolor* has an interesting life-cycle. A single hibernal leaf sprouts in the fall and stays green through the winter, dying away in the spring. The flower spike — which can reach 50+ cm — appears in midsummer; its coloration makes it very hard to spot against the dead leaves of the forest floor. I searched for over two hours before taking a break and then enlisted Jackie and Johanna in the futile quest. I even tried the intrepid orchid hunter's most useful stance; down on hands and knees for a "worm's-eye" view of the forest. It was all to no avail, the crane-fly orchis would remain elusive. To me the thrill is always in the search and even though we came up empty-handed, Moore's Woods is a beautiful place and the kids enjoyed picking and eating the plentiful wineberries (*Rubus phoenicolasius*) and being in the woods, surrounded by the beauty of nature.

We then boarded the ferry for the pleasant drive across Shelter Island. It was our first time in this area, and we thoroughly enjoyed it. One of the great fringe benefits of having an orchid habit is that one ends up in places that one probably would never have visited; the orchid sites are almost always located in very scenic areas and are often within nature preserves or state and national parks.

Our next stop was a roadside location south of Sag Harbor for orange crested orchis (*Platanthera cristata*). This species is impossible to miss, and there were about a dozen plants in prime bloom, their brilliant orange blossoms blazing in the sun like lit torches, a few feet from where I parked. I busied myself photographing while the ladies waited in the air-conditioned car, as the temperature was hovering in the mid-nineties. The orchids were growing in dry sandy conditions on the edge of a pitch pine (*Pinus rigida*) forest and were 10-20 cm. tall, with compact blossom spikes that were crowded with flowers. We looked carefully a little further down the road for northern white fringed orchis (*Platanthera blephariglottis*) and Canby's hybrid fringed orchis (*Platanthera xcanbyi*) a cross between *P. blephariglottis* and *P. cristata* — both of which had been seen here in previous years — but came up empty-handed.

High summer is the time to revel in fringed orchids and our next quarry was the biggest prize of all: the pale fringed orchis (*Platanthera pallida*) a species endemic to eastern Long Island. We headed south to East Hampton and then turned east towards Montauk to an area near the town of Promised Land. I had made a feeble attempt in 2005 to locate these orchids based on vague informa-

tion in Phillip E. Keenan's excellent book *Wild Orchids Across America*, but had only ended up getting stuck in the sand at Napeague State Park.

After wrestling with the directions a bit, we finally arrived at the prescribed area: a Nature Conservancy preserve located behind a trailer park. We had lost a lot of time at Moore's Woods and were all a little tired, so Johanna and I headed out to find the orchids, while Jackie and Christina waited in the car. After a short search amidst the ubiquitous sandy pitch pine habitat that makes up much of eastern Long Island, we came upon an incredible spectacle: a thriving population of more than two hundred pale fringed orchids! This population has been known for many years. Latham collected specimens at Promised Land and near Montauk in 1928 and 1929 (Lamont, 1996) but it was considered to be a color form of *P. cristata* until Paul Martin Brown separated it into a species in 1992. The flowers, apart from their different coloration, have descending, recurved lips and very short spurs. (Brown, 2007). Even though the habitat is nearly xeric, the orchids formed thick stands, with some specimens reaching 60 cm in height, and the beautiful creamy ivory-colored racemes created a gorgeous sight as the late afternoon sun illuminated the forest.

We retrieved Jackie and Christina — they couldn't miss this botanical pageant — and the kids played in the sand dunes while I photographed and Jackie shooed the abundant mosquitoes away. Finally finding the pale fringed orchid was a great way to finish off an exciting day; totally exhausted, we headed for our motel in Montauk and after a delicious seafood dinner, went straight to bed.

8/6/07: After a leisurely morning at the motel pool and then the beach — this was technically a vacation — we set out to visit two more orchid sites on the way back to Manhattan. The first stop was along Barnes Hole Road near Greenway, where we found three *Platanthera ciliaris* growing in a fenced-off Nature Conservancy property. A small population compared to what we had seen in Connecticut two days ago; this is a very rare plant on Long Island and we were heartened to see these few individuals.

We had a 3 o'clock appointment at Connetquot State Park (near Oakdale) with Gary Lawton, the Environmental Manager for Long Island Parks (and a good botanist as well) to see a population of orange crested orchis (*Platanthera cristata*). As can be expected, the traffic through the Hamptons was very bad. We didn't arrive until around 4:30. Luckily, Gary lives at the park, and kindly waited for our tardy arrival. Once again a beautiful place that we never would have visited, had it not been for orchid hunting. Originally a private hunting preserve and a favorite haunt of the Vanderbilts in the late 1800s, it became a state park in the 1970s and gives one a pretty good idea of how primordial Long Island appeared before it was settled.

Jackie had not surprisingly developed a headache from the traffic, so she and Christina waited at Park Headquarters while Johanna and I headed out in Gary's Jeep to see the orchids. Every orchid hunter should be lucky enough to have such an understanding wife. At over 3,500 acres the preserve is massive, and we were glad to have a ride to the other side where the orchids were.

After about twenty minutes we arrived at a grassy roadside area where there were about a dozen plants in prime bloom. These plants were much shorter, and I immediately noticed that the coloration was creamy white instead of orange, this being the pale yellow-flowered form of the orange crested orchis (*Platanthera cristata* forma *straminea*). This is a very rare plant in our area, and its presence at Connetquot makes one appreciate the visionaries that preserved this huge area right in the middle of urban Long Island, saving its treasures for future generations.

We then walked down a nearby dirt track — spotting a few more *P. cristata* (all forma *straminea*) along the way — to a wetter area where there were two beautiful white fringed orchids (*Platanthera blephariglottis*) in full bloom. Few sights are more beautiful than the soft feathery plumes of snow-white blossoms atop a tall stem that characterizes this species. Gary said that the ubiquitous deer eat most of these and the pink lady's-slippers (*Cypripedium acaule*) as soon as they bloom. I guess we lucked out!

During our time together Gary had mentioned that there was a large extant population of the hard to find southern twayblade (*Listera australis*) in the park and that he would be glad to show it to me next spring. What an invitation! We thanked him and said our goodbyes, with a “see you in May” rounding out the conversation. It was a fitting end to a whirlwind three-day introduction to the botanical wonders of long Island.

11/24/07: After hearing about our difficulties at Moore's Woods, Paul suggested that I contact his friend Eric Lamont, an excellent field botanist who knows all of the orchid sites on Long Island and could help us locate *Tipularia*. So on this cold Saturday after Thanksgiving, Johanna and I found ourselves back in Moore's Woods with Eric, who was not only our guide, but was quickly becoming a good friend as well. We were searching for the *Tipularia* leaves that are so easy to spot in the autumn and Eric knew exactly where to go. We found almost fifty leaves, most of them concentrated in an area near a distinctive fallen-down tree that would be easy to relocate next August. Eric said that the *Tipularia* population at Moore's Woods seems to be declining — for unknown reasons — and that he was very glad to see so many leaves. It was fun to be out in the woods with someone that shares my enthusiasm for nature and we agreed to speak in the spring to make plans to visit more orchid sites together.

5/17/08: I had contacted Gary Lawton and he agreed to meet me early on this spring Saturday to show me the population of southern twayblade (*Listera australis*). He guided me to a sphagnum bog with a large population of skunk cabbage (*Symplocarpus foetidus*) that upon close inspection was teeming with twayblades. It was only 9:15 am — an ungodly hour for a musician — but the sun was shining brightly, the birds were singing and even though I had worked late the night before, I felt great. Gary discovered this population years ago while leading a class trip. He spotted an unusual plant that he thought looked like an orchid and without drawing anyone's attention to it — in order to protect it — he made a note to check it out later. It turned out to be a significant population of southern twayblade.

Gary had a busy day ahead of him, so he got me started by pointing out a few plants, and then left me on my own to photograph. The southern twayblade is small and grows right in the sphagnum, making it very difficult to spot. The morning light was incredible and I spent over two hours exploring the bog, finding forty one plants, including three “giants“ that were at least 30 cm. tall. It is a very unique and beautiful plant, with its sturdy stem and up-curving polished leaves supporting a spike of purplish long-pronged flowers. The flowers are small — about 0.5 cm. long — and are best viewed through a hand lens. Morris and Eames wrote in 1929 that it was their favorite of all the twayblades and that “the lips have a richness of color that is hard to beat. When the sun shines on them no garnet or ruby could surpass their crimson glow.” A lot of the plants were past bloom and hard to see; Gary tells me that some years he has counted over a thousand in bloom! This is an incredible orchid site that I plan to revisit.

5/31/08: It was a cloudy Saturday morning and Johanna — my orchid buddy — and I were headed to a site for large whorled pogonia (*Isotria verticillata*) in West Hills County Park near Melville. Eric was unable to join us, but had generously given me very detailed directions to the site, and I was excited to see this species for the first time. There was very little traffic, and we reached exit 40 on the Northern State Parkway in about forty minutes.

After parking in a church parking lot that abuts the park, I climbed up an embankment to make a pit-stop in the thick oak (*Quercus* spp.) woods. Paul tells me that many great orchid discoveries have been made in this fashion; and there, spread out in the woods before my eyes, were dozens of stately pink lady's-slippers. A fairly common species on Long Island, it is one of my favorites and it was great to find a large colony so close to home. Also known as the moccasin flower, the delicate pink “moccasins” are overlaid with a network of rich rose-red veins complimented by bronze petals and green or reddish-brown sepals. These plants were among the largest I have ever seen; standing almost 60 cm. high, with leaves bigger than my hand and pouches 10-12 cm. long, they were truly giants.

We walked into the park, following what appeared to be a bridal path and soon came upon the *Isotria* site right by the side of the trail. Unfortunately, they were all past bloom by a few days, with wilted blossoms clinging to the plants that fell off when touched. I was disappointed, but glad to have found the site; next year we will come earlier and enjoy the feast of orchids growing here. The colony is thriving. I counted 140 plants growing in the sandy loam under the oaks.

A rainstorm had been brewing all morning and, luckily for us, just as we reached the car — after paying homage to the moccasin flowers one last time — drops of rain started to fall. As we started the drive home, the skies opened up and a torrential rain fell. Good timing!

8/4/08: We found ourselves in Moore's Woods once again, but this time was different; Eric had emailed me earlier in the week and informed me that he had found one blooming crane-fly orchid near the fallen-down tree, and that we should hurry out to see it. He warned me that it was hard to spot, and he was right.

Carefully keeping everyone away from the area to avoid stepping on it, I searched for about twenty minutes, meeting with no success. I sat down on the ground and dejectedly exclaimed "we're not going to find it!" Jackie came over to give me sympathy and as I turned to talk to her, the well-camouflaged orchid suddenly materialized right before my eyes, about five feet behind her! The plant was about a foot high and very beautiful. I was mesmerized by the translucency of the delicate blossoms, which shone incandescently whenever a shaft of sunlight would penetrate the thick beech (*Fagus grandiflora*) woods.

The *Tipularia* at Moore's Woods have a distinctive reddish hue to the flowers, a striking contrast to a specimen Eric and I were shown a few weeks later during a field trip to the Pine Barrens of New Jersey. The flowers on that plant were green and brown; seemingly two different color forms.

Successfully locating an elusive orchid always leaves us in high spirits, so we left Moore's Woods in a jubilant mood. I really wanted to look for more *Tipularia* — which I'm sure were there — but the plan was to revisit several of the sites from a year ago as a day trip, so we had to keep moving.

To our surprise, there were no *Platanthera cristata* south of Sag Harbor. Eric said that July had been very dry, and that he had been unable to find any, so they must have gone dormant. We felt very lucky to have seen them the year before. There was further evidence of a drought at the *Platanthera pallida* site. There were fewer plants, and most of them were small and stunted, with only a few robust specimens. Once again it was late afternoon and the painterly light

was a photographer's dream. Something about the way the sun illuminates the pine forest and lights up the white orchids against the sand is truly unique to this spot, and will keep us coming back for years.

After a visit to the beach and dinner in Montauk, we drove home, arriving well after dark. A great day!

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MEGA PURPLES IN NEWFOUNDLAND¹

Cory and Shirley Curtis

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We had been here in Newfoundland for two weeks and decided it was time to go home, but had failed to make reservations on the ferry early enough, so we found we had six extra days to wander around. We had already seen all we expected to see, including the new *Dactylorhiza* site at St. John's.

We decided to go out to Blow Me Down Point, we'd been there on a previous trip in 1994 and the scenery is so beautiful we decided to return.

I'd bought the new Titford's *Wildflowers of Newfoundland* book and they mentioned finding fringeless purples, *Platanthera peramonea* on a wet hillside near Flat Bay on the West Coast. We were skeptical about finding this and didn't, however we found acres of other purples.

SITES FOR PURPLES

1. Blow Me Down Point, July 29th

At Bottle Cove there were a few Purples (*Platanthera pycodes*) scattered around the parking lot then up the hill to the fog horn helipad there were several hundred dwarf purples ranging in size from 3-12" tall. The closer to the edge and wind exposure the smaller they were.

2. Flat Bay, July 30th

1st stop... *P. pycodes*, This was a steep bank to the ocean, thousands here, but this also had a fair amount of trash dumped here at some time. So the site wasn't great.

2nd stop... top of a hill, amongst dwarf white birch were about 200 *P. grandiflora* (large purples) early prime with many buds, very sweet!! And 3 albino plants.

¹ Although written as notes in 1997 and first published in her area newsletter in August 21, 1997, Shirley has been back there many times and enjoys seeing these orchids.

3rd stop ... Old foundation with a fence around it, 500 *P. psycodes* (small purples), few whites, *P. lacera* (ragged fringe).

3. St. George / Barachois brook, July 31st

TCH 1 onto Rte. 490 west, turn left onto 461 go 3/10 mile to a field about 10 acres on both sides of the road. Fantastic field, everything was here! 10,000+ orchids such as: *P. grandiflora*, *P. psycodes*, *P. lacera*, *P. clavellata*, *P. keenanii*, *P. andrewsii*. It was predominately pure white orchids, some were *P. psycodes*, *P. lacera* and maybe *terraenovae* (if that is a form), plus a few green *P. lacera*. This field had the best selection of white orchids we found anywhere. Most other *P. psycodes* fields had 5-10 albinos, and the *P. grandiflora* fields had 1-5 albinos.

4. Cordroy Valley, August 1st

In a 50 acre field 2 miles from Grand Cordroy campground, we found approximately 10,000 *P. psycodes*, and at least 10 albinos. Scattered among the purples were hundreds of *Spiranthes romanzoffiana*, *P. clavellata* and *P. dilatata*.

8 miles further up the road we found a 3 acre field with about 200 *P. grandiflora*, these were very robust and had dense heads of very large flowers that were peak! Inflorescence was 5-7" tall, with 50+ flowers, plants 14-24" tall, spur 3 cm, lip 15 mm, flowers 3 cm. Very, very sweet scent. We found 5 albino plants here, and a few *P. lacera* (green and pure white).

In a field beside Grand Cordroy Beach, we found 150 *P. lacera* (ragged) mostly green, some white, and *P. psycodes*. We found a nice bed of wild strawberries here that were abnormally large, plentiful and delicious!

Not far from here just across a one-way bridge, in a wet boggy area there were more purples and *P. dilatata* among pitcher plants (Newfoundland's provincial flower)

We camped at Grand Cordroy campground, formerly a provincial park, for three days. We even found about 50 purples and few *P. lacera* around the edge of the campground. We explored about every road in Cordroy and in almost every unmowed field there were 1000s of purples intermingled with *P. lacera*, *S. romanzoffiana* (lady's tresses), *P. clavellata* (little club spur), *P. dilatata*, *P. hyperborea*, pitcher plants and all the *Platanthera* hybrids.

Moose are very plentiful. They were introduced in 1878 and 1904 — there are 160,000 now. We saw a couple walking all over the plants and eating them. It was a great trip! We will go back soon.

Winter Blues

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Central NY. To many from outside New York State, the words “Central NY” or “Syracuse, NY” are synonymous with clouds and rainy/snowy weather. The regions around Seattle, Washington and Syracuse, NY jointly boast of having the title of “rainiest or cloudiest weather in the country.” Buffalo, NY often receives the title of “Snow Capital of the Northeast” because of the lake effect snows that fall from Lake Erie, but the general Syracuse area and much of the rest of Central NY is well-known for its extensive periods of cloudy weather/rain/snow. If you aren’t a skier/snowmobiler or a mycologist, then this type of weather could induce depression, melancholia or a strong desire to relocate to warmer/sunnier climes.

For those of us either too silly, lazy or poor to move out of the area and are native orchid enthusiasts, it usually means a long, dark and cold stretch of time where we can’t go outdoors and look for our favorite plants. We stretch out the Fall months looking for *Spiranthes*, dried stems of *Platanthera* with seed pods and maybe some putty root leaves, but eventually there aren’t any other orchids to check out and we must retire for the winter. The thought of not having any orchids to hunt for and take pictures of can be quite depressing at times! Those of us subscribed to the Native Orchid Conference email list also have to face the emails of members who live down south, where the season is either much longer, or extends completely year-round, which can invoke feelings of profound envy of our southern cousins!

An upstate orchid hunter must pass the time looking over pictures of the orchids they’ve taken the previous year, think about places they’d like to go next year, and maybe even contemplate starting garden seeds on a windowsill, just so that they have something green to look at while it’s still snowing outside! Such things can only alleviate the winter blues for so long before an orchid hunter starts counting the weeks, days and minutes until the first Central NY native orchid pops aboveground and the new season starts with a flourish.

Interestingly enough, in Central NY the orchid that has the good fortune of being the first to emerge and flower is also one of the smallest! The Heart-Leafed Twayblade (*Listera cordata*) has a long name, but is quite small. It grows between 3” and 10” tall, and has very small flowers. Despite its di-

minutive size, and seemingly being a frail plant, it emerges and flowers no matter the weather above ground, not long after the winter snows have melted away. I have visited this area earlier and earlier each year to see when the other orchids in the area would be emerging, only to find each time that the Heartleaf Twayblade was flowering before them all! It also makes little difference as to whether or not at that time, it has been warm or very cold beforehand. Even with very bitter conditions directly beforehand, this orchid flowers bravely at the same time each year.

The one spot that I've seen this orchid the most in Central NY is at a State Unique Area called Labrador Hollow. In late winter/early spring, this area often is cloudy and rainy, and since it's in a narrow valley between two very tall hills sculpted by glaciers, and water is funneled and settles into a small lake, the surrounding habitat is very wet and chilly. The steep hills allow snow to remain down in the valley much longer than in surrounding areas, as the sun doesn't get in very well. The habitat is often somewhat shaded by tall trees (both coniferous and deciduous), and later on tall ferns can shade the thick layers and hummocks of sphagnum moss, which often collectively helps to maintain the damp and chilly conditions. There is a tremendous amount of ground water in this area which stays quite cool, so the ecozone can stay cool and humid for a long time. I would say that when I have visited this spot in the spring, looking for signs of emerging orchids, at least 40% of the time the area would be subjected to either snow or rain showers. Despite these conditions, *Listera cordata* is very happy to shake off the winter snows and herald the coming of spring with it's tiny blooms.

The whole "Unique Area" is the remains of a glacial plunge pool that was formed thousands of years ago where a glacier stopped, and meltwater plunging from the interior or top of an ice mass dug a large hole in the ground, and left lots of silt and mud around the edges. Because of the prevalence of limestone in this part of the state, there are many calcareous wetlands, and Heartleaf Twayblade is often found growing in these cold and wet, limey conditions. Some research shows that this orchid often prefers somewhat neutral to acidic pH conditions, but in New York it's often found where there are calcareous conditions (limestone in the ground and groundwater). New York State has many orchids that survive and flourish despite this seeming contradiction of plant needs, but as there are many different kinds of mosses which grow in wetlands that are calcareous, many orchids grow in the mosses (neutral to acidic) instead of in the calcareous soils (neutral to higher pH).

At Labrador Hollow, there is a lot of sphagnum, and *Listera cordata* grows mainly in the thick cushions over the wet soil region, and many plants will grow in the sphagnum hummocks that form over the roots and crowns of large Ostrich Ferns. Because of their small size and the fact that they often are the

same color as the moss they grow in, it can be quite difficult just to find this species growing out in the wild, even if you know that they are there. You can look over and over an area where you've found them in the past, and swear to yourself that there aren't any flowering this year. When you do finally find that first plant, then all of a sudden your eye can "see" them in the moss, and they sort of instantly "materialize" in front of you, seemingly out of nothingness.

Often nearby, and sometimes together, you can find Early Coralroot (*Corallorhiza trifida*) in large stands and numbers, often growing on the edge of black, mucky pits and often right with the Twayblades in the sphagnum hummocks. The Coralroots flower a bit later, preferring to have at least a little warmer conditions before they emerge and flower. Heartleaf Twayblade can be found across most of the Northern Hemisphere, predominantly in areas that stay cool and damp year-round. In the United States, they prefer wetlands that are often at higher elevations.

There are two color varieties of *Listera cordata* (see back cover). One is a yellowish-green color (both the flowers and plant stems), and the other is often a nice, dark red/brown color. I'm not scientifically knowledgeable enough to know if these are different varieties that would breed true if self-pollinated, or if this species just happens to make both color forms relatively indiscriminately. I do know that wherever I have seen this orchid species in New York State, I have seen both red and green. Both forms seem to be of the same shape and size in a given area, so I couldn't say if there really was any difference between these two color forms other than the color.

In the Unique Area, *Listera cordata* often has winged visitors. Often, mosquitoes and gnats are seen resting on the flowers, and one internet site points out that the flowers secrete a tiny amount of nectar, which draws the presumed pollinator. I have had to brush away mosquitoes and gnats from flowers while I was trying to get close-up images of the flowers, but sometimes I leave them in the frame for size comparison. Usually I'm not very thrilled with having mosquitoes where I'm taking native orchid pictures, but at this spot they are fairly tame, so I'm not as forthright at dispatching them or wearing layers of insect repellent!

Since these plants are quite short and have tiny flowers, for me to get very nice close-up pictures, I need a tripod that gets quite low to the ground. I have a Slik Twin-Camera Platform which connects to the top of my tripod, and I can extend the end down towards the ground, so that the camera can be inches from the top of the moss (with my ear often being in the moss itself) and I can get images with the perspective looking upwards at the plant and flowers, which can make them look much larger and taller than they really are. One sort of "problem" you can have with photographing on a tripod in a mossy swamp

is that there often is no flat, dry or solid surface on which to rest your equipment (or yourself) so that the whole bog and tripod doesn't shake while you are trying to capture a really clean close-up image! Even breathing in and out can change the level of the moss, the alignment of the camera lens to the flower, and the distance of the flower from the camera. Even pressing the shutter down on the camera can result in the whole camera and tripod settling down into the soft moss (which floats on wet soil). A shutter release is mandatory, and often one must breath in and out a few times, then hold their breath and trip the shutter release. (Whew!) Also, you pretty much have to lean sideways and downwards to be able to look through the shutter to line the flowers up with the viewfinder, and also to make sure that the image is still in focus (which can get exhausting after a while). But, having a clean, close-up image is well worth the effort, as they are amazing little flowers, which often require a hand-lens to see up-close detail. The flowers look sort of like tiny "people" up close.

There is one spot up north in the Adirondacks where I've seen gigantic specimens of Heartleaf Twayblade, but here at Labrador Hollow, they are often much shorter. These plants usually top out at 5-6". New York has many native orchids that are much larger and showier, but after a few months of seeing nothing green growing outside, I am incredibly enthusiastic to find and photograph this tiny harbinger of spring, the Heartleaf Twayblade, and a brand-new native orchid season! Come on, second week of May.

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2012 NOC Conference

I would like to officially notify you that

**the 2012 NOC Conference
will be held in North Carolina.
It is now scheduled for May 19-23, 2012.**

We will use the facilities at the University of North Carolina-Wilmington in Wilmington as our initial base. Saturday May 19 will be meetings at the University and our Annual meeting. Sunday May 20 will be field trips to the Green Swamp area with other nearby sites a possibility. Monday May 21 will be another day of meetings and lectures at the University.

Tuesday May 22 will be a travel day to the North Carolina Mountains in the Brevard area. We will try and have some location to visit in route to the mountains. Wednesday May 23 will be another day of field trips in the Brevard, NC area, one of the richest areas in all of Eastern North America.

So please mark your calendars and make plans to join us for what looks to be another great Conference. For any suggestion or questions regarding this conference please feel free to contact Conference Co-Chairs David McAdoo at (ncorchid@yahoo.com) or myself.

Yours in orchids,
Mark Rose, President
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Native Orchid Conference Members -

During the board meeting at our Native Orchid Conference Meeting in July we asked Duane Erdmann, NOC Journal editor, to convene a committee to study and submit a proposal on whether or not to move the Journal to being published electronically. His committee consists of Stefan Ambbs, Amy Levengood, David McAdoo, Ben Rostron, and Jyotsna Sharma.

After several exchanges of emails, the Committee recommended that the NOC develop and implement a plan to electronically publish the Journal. Reasons for and issues still needing to be addressed were shared with members in an email (or snail mail) that went out late October. The goal was to have the input of members before the proposal was sent to the Board. Nearly 40% responded, and 14% are against our moving to an e-published-only journal. About a dozen people said it would be acceptable as long as they would continue to receive their hardcopy. However, publishing in two formats is not a desirable way to go based on cost and time required for creating the items.

Based on the survey results, the Committee reversed its recommendation stating that this is not the time to move and suggested that this be on the agenda for our May 2012 meeting. On behalf of the board I accept this report and recommendation and will bring this matter before the attendees at that time.

I thank the committee for their work on this issue and encourage you to send any further comments to me or Duane Erdmann.

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- ◆ New subscribers shall receive all issues published within the year they join Native Orchid Conference.
- ◆ Contributing authors can request up to 2 free copies of the Journal at the time their article is accepted. Copies requested at a later date or requests for additional copies will be charged at \$7.50 each.
- ◆ Back-issues are available in limited quantities. Each issue may be purchased for \$7.50 while supplies last.
- ◆ Inquiries concerning orders for back-issues of this journal should be addressed to the Treasurer: Jim Hayward, NOC, Inc., P.O. Box 13204, Greensboro, North Carolina 27415-3204, USA; nativeorchids@yahoo.com OR ncorchid@yahoo.com.

