

Native Orchid News:

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THE NEWSLETTER OF NATIVE ORCHID CONSERVATION INC.



#1 *Platanthera huronensis*

Native Orchid Conservation Inc.

117 Morier Avenue

Winnipeg, MB

R2M 0C8

Plant of the month

Platanthera hyperborea complex
in Manitoba

NOCI Website:

www.nativeorchid.com

For more information contact

Doris Ames.

Phone: 231-1160

E-mail: adames@mb.sympatico.ca



#2 *Platanthera aquilonis*



#3 *Platanthera aquilonis*



#4 *Platanthera huronensis* (allogamous)



#5 *Platanthera huronensis* (autogamous)

PLANT OF THE MONTH (SEE COVER PHOTOS)

Field Identification of the

***Platanthera hyperborea* complex in Manitoba**

Article and photos by Lorne Heshka

There are three members of the *Platanthera hyperborea* complex in Manitoba. These are *Platanthera dilatata* (Pursch) Lindley (tall white northern bog orchid), *Platanthera aquilonis* Sheviak (northern green bog orchid) and *Platanthera huronensis* (Nuttall) Lindley (green bog orchid).

All three of these species bloom from mid June until early August with the prime blooming period in mid-July. *Platanthera aquilonis* and *Platanthera huronensis* range widely in Manitoba from the south to at least Churchill in the North. Preferred habitat of these two species is moist ditches and meadows in the prairies and parklands, and open fens and bogs or moist sedge meadows of the northern coniferous forests. *Platanthera dilatata* does not range as far north, with the northernmost collected specimen from the Split Lake/Gillam area. This species can be found in open fens and bogs, on floating sphagnum mats and moist sedge meadows in undisturbed areas. *Platanthera dilatata* is normally found in habitat that is wetter than where you would find the other two species.

Platanthera dilatata is easily identified as it has pure white flowers, a lip that is moderately to strongly dilated and has a spur that is usually slender and is about the same length as the lip. The fragrance of clove is characteristic. The other two species of this group create a great deal more difficulty in identification and the purpose of this article is to provide some guidance that may be of assistance in the field.

Cytological studies by Dr. Charles Sheviak during research on this complex noted that within the green flowered plants of this group, some were diploid (two sets of chromosomes) while others were tetraploid (four sets of chromosomes). It was this revelation that led Sheviak to look carefully at the morphology of the flowers and resulted in the recognition of the new species *Platanthera aquilonis*. *Platanthera aquilonis* is diploid while *Platanthera huronensis* is tetraploid. This cytological information is of not much assistance in the field except for the fact that occasionally the tetraploid (*Platanthera huronensis*) will produce extremely robust specimens.

In the field *Platanthera aquilonis* can usually be identified by a dull yellowish coloured lip, that has nearly straight sides with angles rounded but not dilated. The spur is stout, club shaped and blunt, about 3/4 of the length of the lip but often appears shorter because it is curved sharply forward with the tip of the spur beneath the middle of the lip. The flowers are scentless and are autogamous (self-pollinating). Occasionally because of environmental conditions or flower variability, these described characteristics are not distinct and may appear similar to those of *Platanthera huronensis*. For more conclusive identification, a magnifying lens, preferably a 10X loupe, should be used to examine the structure of the column and manner of pollination. The anther sacs of *Platanthera aquilonis* are low and spread widely at the base with the tips close and almost touching. Self-pollination occurs as the pollinia rotate forward out of the anther sac and contact the stigmatic surface, the pollinia sometimes breaking up and spilling pollen grains.

Platanthera huronensis characteristically has whitish-green flowers that could also be described as an icy-green colour. The lip is lance shaped with the base moderately to roundly dilated and is not yellow as with *Platanthera aquilonis*. The spur is often simply pendant or may be slightly forward curved and may vary from being a slender cylindrical shape to a thicker more club shaped form. Normally the spur is approximately as long as the lip. The flowers are fragrant and can be either allogamous (cross pollinating) or autogamous. The anther sacs are elevated and almost parallel, only slightly diverging at the base and are separated at the apex. Self-pollination occurs in a manner similar to *Platanthera aquilonis* while in those plants that cross pollinate, the pollinia remain in the anther sacs until removed by the pollinating insect.

Please note that occasionally plants do occur which are intermediate between the two species and may be very difficult to identify. It is possible that these may be hybrids or this may simply be due to plant variability.

During a trip to Churchill in July 2003 with Dr. Sheviak and his wife, we drove to Thompson and took the train to Churchill. A number of locations along the route to Thompson and locations at Churchill were checked for the presence of these species. Both *Platanthera aquilonis* and *Platanthera huronensis* were found at many of the locations checked. All specimens of *Platanthera huronensis* from the Grand Rapids area and north to include Churchill were found to be autogamous. In the south, specimens of both the allogamous and autogamous types were observed.

Following is a table summarizing the differences between the two species:

Feature	<i>Platanthera aquilonis</i>	<i>Platanthera huronensis</i>
Lip/flower colour	Green flower with yellow lip	Whitish-green flower, lip not yellow
Lip shape	Sides nearly straight, angles rounded but not dilated	Lance shaped, base moderately to roundly dilated
Spur	Club shaped, approximately 3/4 length of lip, strongly forward curved	Slender to thickened cylindrical shape, equal in length to the lip, pendant to slightly forward curved
Scent	Absent	Fragrant
Pollination	<u>Autogamous</u> — pollinia rotate forward out of anther sacs, pollinia may break apart spilling the pollen	<u>Autogamous</u> — pollinia rotate forward out of anther sacs, pollinia may fragment spilling the pollen; <i>or may be allogamous</i> — pollinia remain in the anther sacs until removed by a pollinator
Anther sac position	Anther sacs low, widely diverging at the base and in close proximity at the apex	Anther sacs elevated, almost parallel, slightly diverging at the base and separated at the apex

Following are descriptions of the accompanying photographs:

Photo #1: Plant of *Platanthera huronensis* at Churchill

Photo #2: Partial inflorescence of *Platanthera aquilonis*. Note the lip colour and the spur size, shape and position. Pollinia can be seen rotated downward.

Photo #3: Close-up of *Platanthera aquilonis* blossom. Note the position of the anther sacs: diverging at the base close at the apex and the downward rotation of the pollinia.

Photo #4: Close-up of *Platanthera huronensis* — allogamous type. Note position of anther sac: upright, nearly parallel with the pollinia retained.

Photo #5: Close-up of *Platanthera huronensis* — autogamous type. Note position of anther sac: upright, nearly parallel with the pollinia rotated downward from the anther sacs.

PRESIDENT'S REPORT - DORIS AMES

Another summer has come and gone with much survey work accomplished, including a very interesting trip to Riding and Duck Mountains in June. Earlier John Neufeld, Eugene Reimer, Peggy Bainard Acheson and Doris Ames went on a little holiday to the Bruce Peninsula to attend the Orchid Festival there in late May. We enjoyed it very much and saw many interesting orchids and other plants not found here. I highly recommend it to any orchid lovers. If you are very lucky we may bore you with a powerpoint presentation about our trip at a future meeting.

We had a successful field trip season with six interesting outings coordinated by Bob Joyce. Trips to two new locations this year, Agassiz Forest Reserve and Manitoba's Tall Grass Prairie and Buffalo Point, were well attended. On the one to see the fringed orchids, we were fortunate to have two experts along, Laura Reeves and Christie Burkowsky. Their brains were quite thoroughly picked. According to Bob's report, eighty NOCI members attended the field trips this year. Thanks to the board members who agreed to lead these trips and share their expertise with us.

A number of our members also attended Tall Grass Prairie Days on August 9th where we enjoyed the nature walks and fun activities.

On June 9th, Eugene Reimer and Doris Ames gave a powerpoint presentation on Manitoba's native orchids to the gardening club members at the Williams Wildflower Festival. It was a beautiful day and we had fun having lunch with the members and finding all the orchids and other plants along the interesting trails they have marked out around town. Celeste Lavalla and the other gardening club members in Williams, Minnesota do a great job highlighting the beauty of their wild flowers and protecting them as well.

We recently received two grants to help with our Field Guide Project; one from the Shell Canada Environmental Fund for \$5000.00 and one from The Province of Manitoba Special Conservation Fund for \$7000.00. We thank them both very much for their generosity and support for our project. Work is proceeding on the writing of species accounts and the selection of photographs. We could use your help with publication costs. To that end, we are taking advance orders now for the field guide entitled "Manitoba Orchids". **Planned publication date is November 1, 2004. It is being offered at the special price of \$15.00 for orders taken before April 1, 2004.** After that it will cost \$17.95. If you would like to order one or more copies please complete the enclosed order form and send it in along with payment to our secretary Alice Warren.

Native Orchid Conservation Inc.
Manitoba Orchids
Field Guide Advance Order Form

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