

Orchids in the Arboretum

by

Stephen G. Saupe, PhD.
Biology Department
College of St. Benedict/St. John's University
Collegeville, MN 56321

Introduction

A few weeks ago, I received a letter from a Cold Spring (MN) man who was concerned about the imminent destruction of some yellow lady's-slipper orchids near the St. John's campus. Sadly, the letter arrived too late to save these plants; they were victims of utility work in the right-of-way. On a positive note, this incident stimulated me to think about the overall status of orchids in the St. John's Arboretum and at St. Benedict's. Consequently, I spent a morning in the CSB/SJU Bailey Herbarium (*Sagatagan Seasons* Vol 2 (4) Winter 2000) to learn about the species that occur on campus so that I would be better prepared to respond to any future threats to our local flora. My search through the specimens in the herbarium documented 19 species of orchids that had been collected through the years at St. John's or St. Benedict's (Table 1). Each species is discussed below. The scientific names that I've used come Welby Smith's excellent and definitive book on the subject, *Orchids of Minnesota* (University of Minnesota Press, Minneapolis; 1993).

Campus Orchids

Amerorchis rotundifolia – Small round-leaved orchis. Father James Hansen, OSB, who was one of the greatest field biologists to ever teach at St. John's (*Sagatagan Seasons* Vol 2 (4) Winter 2000), deposited a single specimen of this orchid in the herbarium. The label indicates that the specimen came from "Collegeville" but listed the collection date as "1903 or 1904." The unusual date citation suggests that the specimen was either not examined until a few years after it was collected, or that the specimen may have actually been a gift and was collected elsewhere. In any event, this and the fact that the normal range of this species is swampy areas in northern Minnesota, the presence of this orchid on campus is provisionally accepted, awaiting further study.

Coeloglossum viride var. *virescens* – Long-bracted orchid. This orchid was collected in woods in Collegeville and near Lake Watab. The genus name is derived from the Latin for "hollow tongue" which refers to the shape of the spur on the flower. It is easily mistaken for *Platanthera hyperborea* and *Platanthera flava*.

Calopogon tuberosus – Grass-pink. As the name suggests, these lovely orchids have a single, grass-like leaf and pinkish-colored flowers. There are two specimens in the herbarium that were collected by Father James in late July in a "tamarack swamp" in Collegeville. The most recent collection was in 1908.

Corallorhiza – Coral-root orchids. This group of orchids is named for the coralline appearance of its underground rhizome. These species are unique because they lack chlorophyll and are unable to make their own food through photosynthesis. As a result, mycorrhizal fungi associated with their roots supply all of their nutritional needs. Four species occur in Minnesota though only two species have been reported from the CSB or SJU. Spotted coral-root (*C. maculata*) and early coral-root (*C. trifida*) have both been collected in “woods” at St. John’s.

Cypripedium – Lady’s-slipper orchids. The scientific name of these orchids translates into “Aphrodite’s shoe” referring to the inflated, pouch-shaped lower petal. Five species occur in Minnesota and all but one (*C. candidum*) of these species grow on campus. The stemless lady’s-slipper (*C. acaule*) was collected in Collegetown in late May in a “tamarack swamp.” Our specimens are the only Stearns County record for this plant, which is otherwise common in the coniferous region of the state where it prefers shade and an acidic, nutrient-poor environment. A handwritten note accompanying one of our stemless lady’s-slipper specimens reports that this orchid “Is said to be very poisonous esp. in autumn, when it is said to be equal to Poison Ivy as regards this quality.” The ability of these plants to cause skin irritation is a feature of all the members of this genus. The rams-head lady’s-slipper (*C. arietinum*) was collected twice in Collegetown in the early 1900’s (1902, 1903) in a “swamp.” The collector noted, “These flowers are comparatively rare.” Not surprisingly, the Minnesota Department of Natural Resources currently lists this orchid as threatened in the state. In fact, our specimens are the only Stearns County record for this species. Based on the number of specimens in the herbarium, the yellow lady’s-slipper (*C. calceolus*) is the most abundant lady’s-slipper in our area. There are two varieties of this orchid. The small yellow lady’s-slipper (*C. calceolus* var. *parviflorum*) is distinguished from the large yellow lady’s-slipper (*C. calceolus* var. *pubescens*) by its overall smaller size, but an even more important difference is that it has maroon-colored sepals whereas the larger variety has yellowish-green ones. Both varieties have been collected in the woods at St. John’s as well as at St. Benedict’s. The Minnesota state flower, Showy lady’s-slipper (*C. reginae*), has been collected in Collegetown in a “tamarack swamp.” Our most recent specimen was collected in 1928.

Galearis spectabilis – Showy orchis. This orchid, which was formerly called *Orchis spectabilis*, flowers relatively early in the summer (early June) and has been collected from the woods at St. John’s (Collegetown) and St. Benedict’s. Both Dr. Elizabeth Wurdak, CSB/SJU Biology Department, and Dan Vogel, Assistant Land Manager at St. John’s, report recent sightings on the St. John’s campus.

Goodyera pubescens – Downy rattlesnake plantain. This orchid, which is one of three species in Minnesota, has leaves with an intricate pattern of white reticulations on the leaves that are reminiscent of scales on a snake. There is one specimen in the herbarium that was collected in 1913 by Father James in “shady damp woods” in Collegetown. It is not uncommon to find the evergreen rosette of leaves of this species during hikes in the spring or fall.

Platanthera – Rein orchids. At least three of the ten Minnesota species in this genus, which used to be called *Habenaria*, have been collected on campus. In June 1909, Father James collected Hooker's orchid (*P. hookeri*) in woods in Collegeville. The Large round-leaved orchid (*P. orbiculata*) possibly occurs at St. John's. Father James collected a specimen in woods in Collegeville. However, there is some question whether or not this specimen was identified correctly since it lacks the characteristic small leaves (bracts) on the flowering stem and it was found growing in "woods" rather than a coniferous swamp or bog. This specimen may be another specimen of Hooker's orchid with which it is easily confused. The Northern bog-orchid (*P. hyperborea*) was collected in Collegeville by Father James and the small purple fringed-orchid (*P. psychodes*) has been collected on both the St. John's and St. Benedict's campuses near swampy areas. There is one collection of the tall white bog-orchid (*P. dilatata*) from Collegeville, which if correctly identified represents a Stearns County record and the most southerly population of this primarily coniferous forest species. Father James also collected a tubercled rein-orchid (*P. flava* var. *herbiola*). If it is identified correctly, though this is questionable because it is reported from a "rich woods" rather than its normal habitat of a brushy meadow, it represents a rare population of a Minnesota endangered plant. Father James also collected a large purple fringed orchid (*P. grandiflora*) at St. John's. According to Welby Smith this species presumably does not grow in Minnesota so this collection likely represents a large-flowered variety of *P. psychodes*.

Summary:

Nearly half of the 42 species of orchids that occur in Minnesota grow on campus. Globally-speaking, our campus orchids are but a miniscule fraction of the total number of species. The orchid family, scientifically termed Orchidaceae, is one of the largest plant families with more than 20,000 species worldwide. Unfortunately, it is unlikely that all 19 of the species for which we have herbarium records still occur on campus. For several species, the herbarium records are decades old and in some cases more than a century. Further, with the exception of the yellow lady's slippers and a few others, there have been no recent reported sighting for many of the species. For example, the only orchid reported by DNR botanists during their search of campus for the Stearns County Biological Survey in 1997-1998 was the large yellow lady's-slipper. It is likely that some of these species in Table 1 have been extirpated from campus because of habitat destruction, deer browsing, or other causes. Next summer (2007) I plan to do a thorough search for orchids and other rare plants in the Arboretum. In the meantime, keep an eye out for any orchids and alert me to any of your sightings. Happy hunting!

Table 1. Orchid species of the St. John's Arboretum and College of St. Benedict. Each species is represented by at least one specimen in the CSB/SJU Bailey Herbarium. Nomenclature follows Smith (1993).

Scientific Name	Common Name	Campus on which it grows	Notes
<i>Amerorchis rotundifolia</i>	Small round-leaved orchis	SJU	County record, needs confirmation
<i>Calopogon tuberosus</i>	Grass-pink	SJU	
<i>Coeloglossum viride</i> var. <i>virescens</i>	Long-bracted orchid	SJU	
<i>Corallorhiza maculata</i>	Spotted coral-root	SJU	
<i>Corallorhiza trifida</i>	Early coral-root	SJU	
<i>Cypripedium acaule</i>	Stemless lady's-slipper	SJU	County record
<i>Cypripedium arietinum</i>	Rams-head lady's-slipper	SJU	County record
<i>Cypripedium calceolus</i> var. <i>parviflorum</i>	Small yellow lady's-slipper	CSB, SJU	
<i>Cypripedium calceolus</i> var. <i>pubescens</i>	Large yellow lady's- slipper	CSB, SJU	
<i>Cypripedium reginae</i>	Showy lady's-slipper	SJU	
<i>Galearis spectabilis</i>	Showy orchis	CSB, SJU	
<i>Goodyera pubescens</i>	Downy rattlesnake plantain	SJU	
<i>Platanthera dilatata</i>	Tall white bog-orchid	SJU	
<i>Platanthera flava</i> var. <i>herbiola</i>	Tubercled rein-orchid	SJU	
<i>Platanthera grandiflora</i>	Large purple-fringed orchid	SJU	Doubtful, needs confirmation
<i>Platanthera hookeri</i>	Hooker's orchid	SJU	
<i>Platanthera hyperborea</i>	Northern bog-orchid	SJU	
<i>Platanthera orbiculata</i>	Large round-leaved orchid	SJU	Needs confirmation
<i>Platanthera psychodes</i>	Small purple fringed-orchid	CSB, SJU	