



**(C.N.P.S.)  
CONSERVE NATIVE PLANTS SOCIETY INC.**

Volume 1

Spring 2003



*Cypridedium acaule* seedpods

Photo by Bud Ewacha

This photo was taken near Grassy River Park on the North side of Reed Lake. It illustrates how prolific the plants can be in the wild, where their pollinators have not been decimated by urban pesticide use. Similar urban populations require hand pollination to achieve these results.

## **President's Report By Bud Ewacha**

As of April 24, a new conservation group has been formed to protect all native plants that are endangered. This new society has its mission to locate rare native plants and to work towards protecting the habitat and re-establishment of plants back into its ecosystem. The prime consideration will be the protection of these rare and endangered plants.

The new society has gained a strong beginning with new members signing up. The enthusiasm and expertise of these members has led to the setting of goals for this first year. Some of the projects being considered are Gull Lake Wetlands Project, *Cypridedium acaule* Pathology Study, seeding project of native plants back into the wild, and special projects on South East Timber Sales.

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**Annual General Meeting**

April

Year runs from April 1 to March 30

**Board Meeting**

June 11

7:30 p.m.

at

35 St. Michael's Rd

Members are welcome to attend all  
meetings.

The president, Bud Ewacha, has spent many years, and monies furthering the cause of protecting the Gull Lake Wetlands. It is one of the most important fens in North America. Bud has been one of the first individuals to raise awareness of the fragility of the uniqueness of this area. He has been championing this cause since 1995. His efforts have led to a greater public awareness of this rare area. As well, he is continuing to work on having this area set aside as an ecological reserve. An important goal is that this site be accessible, through the use of footpaths and boardwalks, so that the public can gain appreciation while being instructed of this area.

Interested individuals may contact Bud Ewacha for further information at 253-4741.

Board Members	Position
Bud Ewacha	President
Lori Slobodian	Vice-president
Dan Moroz	Treasurer
Paul Buchanan	Secretary
Donna Goodridge	Membership
Connie Proceviat	Member at large
Dan Riendner	Member at large

### Field Trips 2003

Saturday, June 21<sup>st</sup> – Visit a cedar bog near Woodridge, to see Ram's head lady slipper, Yellow Lady's slipper and small Round Leaf Orchids. There should be Paintbrush and other interesting plants blooming at the same time.

Saturday, July 5<sup>th</sup> – Visit the Gull Lake Wetlands to see Showy Lady's Slipper, Mocassin Flower, Dragon's Mouth, Rose Pogonia and Grass Pink. Many insectivorous plants also call this area home, and we should see many rare and medicinal plants on this trip.

Saturday, July 12<sup>th</sup> – Visit the tall grass prairie to see the rare and wonderful Western Prairie Fringed Orchid near Tolstoi, Manitoba. Then travel to Buffalo Point to see the Purple Fringed Orchid.

Field trips are limited to members of CNPS and their families. There will be a \$10 charge to cover the costs of these field trips, and you may have to sign a liability waiver. Please use your own discretion as to whether you are able to participate depending on the degree of difficulty walking. We do not make any guarantees that you will see every plant mentioned in bloom, but we do guarantee an interesting and informative hike with wonderful people, plants and animals to meet. If interested, please contact Dan Reidner at 663-1261.

Please dress suitably for the weather, as we intend to go rain or shine. Hats and drinking water are strongly recommended. You will be notified if a trip has to be cancelled for any reason.

## Seeding *Cypripedium* species

Seeding of many wild plants is not a complicated issue. Once certain conditions have been met, such as a cold wet treatment, the seeds will readily germinate and grow. They can do this because each seed contains a pre-formed, embryonic plant with enough food in storage to ensure its early growth.

The situation is quite different for the seeds of *Cypripedium* and other native orchids. The seeds of these plants are released before the embryo is formed, somewhat like premature babies of the plant world. This means that at germination, the seedling has a lot of growing and organizing to do before it is capable of producing roots and shoots. If you observe the seeds of orchids, you'll notice something else – their dust-like size. They are among the tiniest of seeds, and they travel light. They have almost no food in storage for their growth.

With these factors going against their quick germination and establishment, it may seem a wonder that we have orchids at all. However, the orchids are one of the largest and most advanced plant families on the face of the planet. These apparent shortcomings are actually adaptations to life with symbiotic fungi. Certain kinds of soil-dwelling fungi colonize the seeds at the time of germination and provide the necessary food resources to the seedlings. This system works so well for the orchids that many of them do not leaf out and make their own food in the sunshine until they are several years old. They remain underground, feeding on the nutrition provided by their fungal symbionts.

What does this mean for the individual that wants to grow *Cypripedium* species from seed? There are germination media that can be ordered from chemical suppliers, but in order to use these, the seeds must be taken into sterile culture and grown as for tissue culture. Many species of *Cypripedium* can be germinated in this way, with the sugars and nutrients in the gelled medium taking the place of the fungal contributions. Although the seedlings may grow well under these conditions, these sterile plants often suffer very high mortality rates when brought out into the real world. They lack the support of the root-inhabiting fungi that would otherwise remain with them for their long life spans.

Wouldn't it be a better alternative to let the seeds germinate naturally, in the presence of the fungi? Yes, but little is known about the success of this method of seeding. Although there is anecdotal evidence that this approach has been tried, there seems to have been little recorded success. This could be due to the long underground juvenile period of *Cypripedium* seedlings that makes it difficult to assess the results, or to the lack of the proper conditions or fungi on the seeding site. A long term, carefully monitored study would be helpful in shedding some light on the secretive process of native orchid seed germination.

In 2001, Mr. Ewacha, Dr. Carla Zellmer and Mr. Tony Szumigalski began such a seedling experiment using the mocassin flower, *Cypripedium acaule*. This controlled and monitored study involved planting known amounts of recently collected, viable seeds into test plots at Cat Hills Provincial Forest Reserve. The site represents excellent habitat for *C. acaule*, but presently is home to only a handful of plants. The plots are monitored seasonally for the appearance of seedlings. The first seedlings, if present, could be expected to appear above ground in the spring of 2004, although we greet this summer with some anticipation. This will be a first chance to test the feasibility of increasing population size and genetic diversity by seeding into a 'natural' habitat.

Mr. Ewacha has also developed a second project to test the success of seeding several species into an urban site. He prepared several test plots by removing the existing surface layers of soil and replacing this with soil collected from an area supporting the growth of native orchids. The species seeding into these plots included *Cypripedium arietinum*, *C. micranthum*, *C. candidum*, a white form of *C. reginae*, *Arethusa bulbosa* and *Platanthera psychodes*. Mr. Ewacha believes that these experiments may provide key insights into re-establishing native orchid populations in the natural environment.

Written by Dr. Carla Zellmer