



Plants with a Serious Appetite

By Dr. Reese Halter



Pitcher plant (*Sarracenia purpurea*)
Photo L. Hamilton

The most remarkable aspect of nature is how organisms have carved out an existence in the harshest of environments.

Plants, as an example, have adapted to live in soggy and sometimes perpetually saturated soils and ponds that are extremely acidic, very nutrient poor but with lots of bugs buzzing around. They still survive, like all other green plants, from the sun's energy. But they've also learned to supplement nutrient deficient soil from an unusual source. Welcome to the world of green plants that eat ants, grasshoppers, slugs, spiders,

mosquitoes, flies, and even green tree frogs. These are carnivorous plants!

Carnivorous plants have generally weak and small root systems because they have specialized – and costly – traps that lure and digest their animal prey. They are perennial, shade intolerant plants that live for at least two years and require a cool winter dormancy period. They don't tolerate competition and require frequent low

temperature surface fires to burn off dead and dried plant materials, reduce competition, and promote seed germination.

Carnivorous plants live in bogs or places in the forest with wet spongy ground often consisting of sphagnum moss and other decomposing vegetation that forms peat. They also live in fens that are flat, open, sand-based expanses covered with a thin layer of peat with shallow water imperceptibly flowing.

So how exactly do carnivorous plants lure, trap, and digest their prey? They produce beautiful flowers that are mellifluous and full of nectar or a sweet fructose sugar that's referred to as "the junk food of the plant kingdom."

The traps are quite attractive and, in fact, can be confused by some as flowers. There are four kinds of traps: closing, suction, adhesive, and pitfall traps.

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Carnivorous, from page 1

The Venus flytrap (*Dioaea muscipula*) is an example of the closing trap and called by the father of natural selection, Charles Darwin, “the most wonderful plant in the world.” Its leaf blade is modified into two parts or lobes that look like a book open at a 45 degree angle. It relies on specialized plant hairs, usually three per lobe, located on the interior surface of the trap to detect its prey. If the prey brushes against the hairs, normally nothing happens (unless air temperatures are very high, then it snaps shut). If the prey brushes the hair again or touches another hair within 20 to 40 seconds of the first contact, the trap will snap quickly closed.

The Venus flytrap can only be opened and closed about nine times per day. It’s a trigger sensitive trap that will not be activated by a drop of rain, a blowing plant fragment, or a prey that has escaped.

Bladderworts (*Utricularia* spp.) use a suction trap taking advantage of their aquatic habitat. The bladder or trap is a bag-like structure, a few millimetres wide, with an opening or trap door at one end. When the trap is set it pinches inward and contains a negative pressure – much like squeezing the bulb of an eyedropper. There are sensory hairs protruding from the trap door. When an unsuspecting water animal swims by, it stimulates a trigger hair, the trapdoor opens inward and the negative interior pressure sucks the helpless prey in as the door closes. This happens so quickly that modern science has yet to accurately measure it.

Sundews (*Drosera* spp.) and butterworts (*Pinguicula* spp.) use adhesive traps. They produce gooey droplets that glisten in the backlighting sun and entangle the prey. Once entrapped the sundew leaf blades slowly fold inward to the centre of the leaf. The flat leaves of the

butterworts, on the other hand, curl on the margins to form a shallow bowl. It takes from 30 minutes to a couple of hours for the adhesive leaves to fold or curl.

Pitcher plants (*Sarracenia* spp.) are the largest of the green-leaved carnivores and they use pitfall traps. At the tip of most pitcher plants is a flattened to slightly curved, flap-like structure called a lid or hood. Beneath the hood the waxy neck is lined with stout downward-pointing hairs. The neck or tube funnels into a narrow base at its bottom containing a primordial broth to digest its prey. As an insect stretches down into the pitcher in search of more rich nectar, it slips and tumbles to its demise.

Bumblebees, however, are able to move in and out freely from the pitcher plants and gorge on nectar as they are important pollinators. Green tree frogs and yellowish green crab spiders hang just inside the pitcher rim and partake in some of the incoming prey. They don’t harm the pitcher, but occasionally a frog slips in and becomes a large nutritious meal for the plant. There are some mosquito larvae that can actually live in the pitcher’s digestive juices. The adults enter and exit the pitcher by walking the funneled tube with specially adapted non-slip footpads.

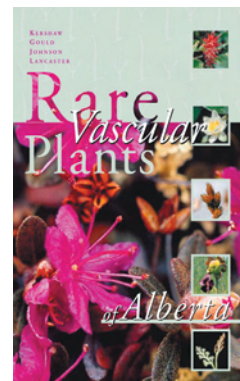
Insects and other small animals are packed with protein and very effective at promoting growth of carnivorous plants. Once the prey is captured, special glands in the leaves release a watery solution made up of fast acting proteins that are able to dissolve the hard outer surface or exoskeleton of insects. The glands also absorb the digestive nutrients and carry them throughout the plant’s vascular system (just like veins in the human body). It takes a Venus flytrap about four days to digest its prey and about another four

days before it reopens. Each of its traps is capable of three to four digestive cycles in its lifetime.

Habitat destruction, fire suppression policies, introduction of exotic plants, and mass illegal collection for commercial use have all had a disastrous effect on native carnivorous plants.

Carnivorous plants and their extensive habitat in the north country are indeed worthy of protection. Over the past 65 years, Ducks Unlimited Canada has protected and conserved many waterways including magnificent bogs and fens crucial for migratory birds and carnivorous plants. ♦

Dr. Reese Halter is a conservation biologist at California Lutheran University, public speaker, and founder of the international conservation institute Global Forest Science. His article is © 2007, and is reprinted here with permission.



Addenda for the Rare Vascular Plants of Alberta are now available!

For information, drawings, and range maps of rare vascular plant species of Alberta not found in the *Rare Vascular Plants of Alberta* (Kershaw et al. 2001) please visit the Alberta Native Plant Council’s website at www.anpc.ab.ca under Publications. This is an ongoing project with plant species added as the pages are completed.

Cultivating Our Roots: Growing Authentic Prairie Wildflowers and Grasses

Book Review

By June Flanagan

I was introduced to Nora Stewart while updating the ANPC Native Plant Source List. Until recently, Stewart operated a seed-production venture, raising native forbs and grasses on five acres in the Moose Mountain foothills of southeastern Saskatchewan. Upon hearing that her new book, *Cultivating Our Roots*, was about prairie plants, I immediately ordered a copy. When the book arrived, I read it in one sitting, cover to cover. Stewart's friendly writing style made it seem as if she were in the same room, sharing her extensive experience as a grower of native prairie plants.

The book describes how to recognize and cultivate 22 grasses and 64 wildflowers, with species-specific methods to collect and process the seeds. These featured species are common prairie plants with a perennial habit and a widespread range across the Canadian Prairies and Northern Great Plains of the United States.

In the initial chapters, the steps necessary to produce a seed crop from native prairie species are covered. This includes suggestions for acquiring and germinating the seeds as well as guidelines for planning and preparing the planting site. Planting and cultivation instructions are outlined, with advice for potential problems that might arise due to pressure from weeds, pests, diseases, and weather. Comprehensive information is presented on harvesting, drying, and

cleaning the crop. The author then includes an overview of business factors that should be considered, such as packaging, marketing, and shipping the seeds.

A major portion of the book is made up of the plant profiles, with more details regarding cultivation and harvesting for each species. The profiles are organized by plant family, and accompanied by an explanation of the features that set each family apart. Colour images depict each species at four stages of development: the young seedling, the plant in flower, the plant at the seed stage, and the fruit and individual seeds. Clearly focused, the pictures zoom in on the essential elements, and present a valuable tool for identifying the plants throughout the growing season.

Stewart employs technical terms when necessary, but she defines them with everyday language in the text and again in a glossary. Several appendices with useful information and an index wrap up the book's contents. The author took nearly all of the photographs throughout the book and uses them effectively to illustrate the text.

It's rare to find such a highly specialized book for a particular region; as an author, I've learned firsthand that most publishers require manuscripts that reach a broader audience. The self-publishing route provided Stewart with freedom to create a full-colour illustrated work, and to address the



Book cover of *Cultivating Our Roots: Growing Authentic Prairie Wildflowers and Grasses*

Photo J. Flanagan

topic with a tight focus and in-depth information. In addition, the book was made with integrity; it was printed on the prairies, and it includes an "Environmental Benefits Statement" with calculations of the resources used to produce it. The paper is sturdy, and I like the double loop wire binding that allows the pages to open completely flat. My only quibble is that I would prefer a more substantial cover, because this book is going to get used often.

Through *Cultivating Our Roots*, Nora Stewart intended to provide a resource for those interested in launching a native seed growing operation, although she also hopes that it will be useful to homeowners and people in the landscape industry. I believe she accomplished her goal – it is an excellent reference for anyone interested in cultivating native prairie species, and would be a fine addition to a prairie plant book collection. Much thought went into this concisely written book, and I thoroughly enjoyed reading it. ♦

Join the Botany Alberta Border Cross Event!

July 1 to July 4, 2010, in the Cypress Hills

The ANPC, Adopt-a-Plant Alberta, and Nature Conservancy of Canada (NCC) will join forces this summer with a new partner, the Native Plant Society of Saskatchewan, for a “botany border cross event.” This event is a great opportunity for botany enthusiasts of all levels to congregate and share their passion for plants.

Botany Alberta Border Cross will take place this year in the Cypress Hills, spending Friday, July 2 in Alberta and Saturday, July 3 in Saskatchewan. For Sunday, July 4, volunteers will have the opportunity to spend a half day in the provincial park, or to travel to Old Man On His Back Prairie and Heritage Conservation Area for a full day event hosted by NCC Saskatchewan.

Bypassed by retreating glaciers during the last Ice Age, the Cypress Hills are guaranteed to be interesting – home to hundreds of uncommon and rare plant and animal species, wetlands, freshwater springs, stands of lodgepole pine, and history to boot! After daily guided site visits, enjoy s’mores around the campfire and swap stories about your favourite plants.

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Event Details

Date: Thursday, July 1 to Sunday, July 4, 2010

Meeting Times: 6:00 p.m. July 1; 8:30 a.m. July 2; 8:30 a.m. July 3; 9:00 a.m. July 4

Meeting Location: Main group campsite, Elkwater, Cypress Hills Provincial Park, Alberta

Closest Town: Elkwater, Cypress Hills Provincial Park, Alberta

Camping: NCC has booked the main group campsite at Elkwater arriving July 1 and departing July 4. There are 13 tent sites and 6 RV sites available at cost. Please reserve your spot with NCC at your earliest convenience.

Food and Drink: Bring your own food and drink. NCC will provide drinks and snacks during the day and after-dinner s’mores.

Meet & Greet: Takes place Thursday evening at 6:00 p.m. and 8:30 a.m. on Friday, Saturday and Sunday at the firepit located at the main group campsite at Elkwater.

Don’t Forget: Your botany books, magnifying glass, binoculars, camera, rain gear, and sunscreen!

Additional Information: Can’t make it for two days? Come for one! Just let us know. Also, please let NCC know if you plan to attend the optional Sunday event at Old Man on His Back Prairie Heritage and Conservation Area.

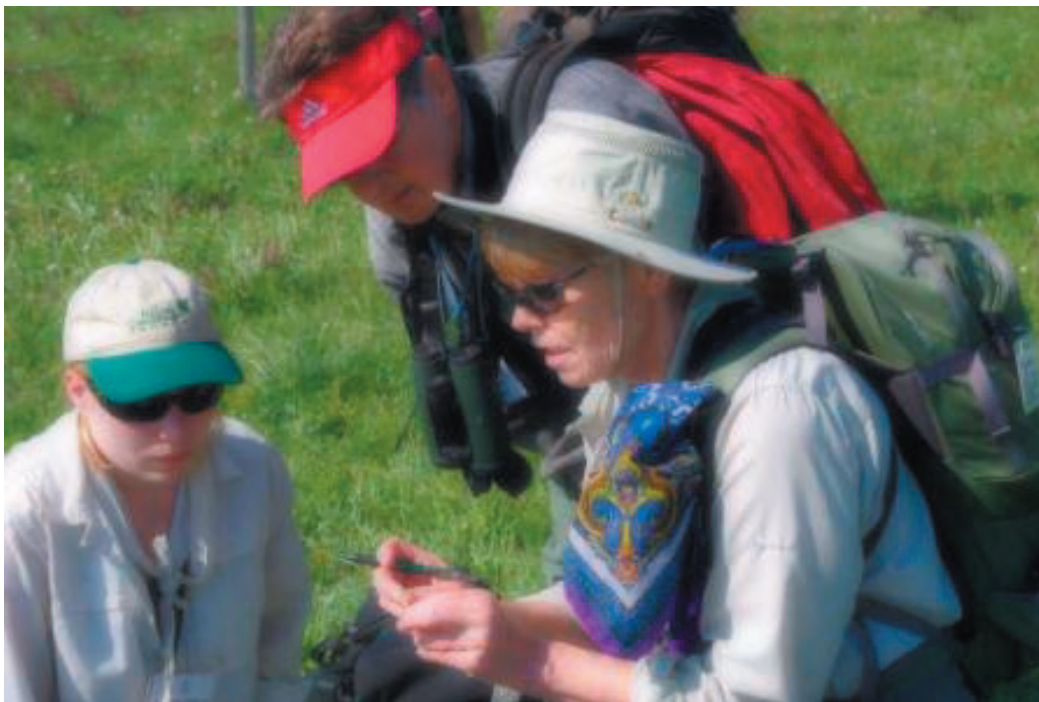


Native Plant Society
of Saskatchewan



**Botany Alberta
participants identifying
plant species at the
2009 event in Waterton
Lakes National Park**

Photo Nature Conservancy
of Canada



Botany AB, from page 4

To register for Botany Alberta Border Cross visit: www.conservationvolunteers.ca. Registration is limited, so don't leave it until the last moment. For additional information and updates, please visit the Adopt-a-Plant website at www.ab.adoptaplant.ca. If you have questions please contact:

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**Botany Alberta 2009
participants enjoying the
flora in Waterton Lakes
National Park**

Photo Nature Conservancy
of Canada

GPS: An Expert Busts Some Myths and Gives Some Advice

By Mryka Hall-Beyer

GPS, the Global Positioning System: it's the butt of jokes about blind obedience and talking back to your car dashboard. It's also misunderstood. The ANPC Adopt-a-Plant Alberta (APA) program has been using small GPS units for several years, and that experience has raised some questions that *Iris* readers in general might like answered.

GPS is, very simply, an electronic surveying system that allows anyone, any time and anywhere, to find their location using their choice of several coordinate systems (latitude and longitude generally being the most familiar). It does this by plotting the distance to four or more known locations. The only difference from a classical tape measure and landmark system is that the distances are very large and measured by the travel time of radio waves rather than a measuring chain or tape, and the landmarks are not on the ground but rather satellites that continually broadcast their locations.

Great, so now our GPS has told us where we are. Easier than sighting the North Star and using a chronometer like the sailors of old, but what does it get us? Here you are in the middle of the Pacific Ocean and you suddenly know your latitude and longitude: what then? In fact, for it to help, you need either a map or the coordinates of the place you are trying to get to. The "map" might be in your head, such as "OK, I know if I sail due east for however long it takes I'll eventually run up against a continent," but you have to have one nonetheless! The more accurate and detailed that map is, the better you will be able to use your location information.

These two considerations, how to find out where you are and how to relate your location to other places, form the basis of all the functionality of a GPS unit. The jokes we are hearing these days usually relate to the second part – people going up un-maintained roads or blindly following instructions to the wrong place.

The most hyped GPS units today are sold for navigation in cars, and so include maps in their memories. At the simplest, these maps may appear on the unit's screen and allow the user to look at their surroundings, with zoom-in and zoom-out features. A little more computing power, and the system can work out an appropriate distance and route to another location. More memory and it will "know" locations for street addresses. A bit more, and alternate routes can be compared. Still more, and an always-polite voice can tell you where to turn, taking into account lane changes, one-way streets and even current traffic jams. Ultimately, stores or restaurants along the route can advertise their presence or even spit out coupons to a printer or send them to your text device!

All of these add-ons rely on the map and other information being correct and up-to-date. The degree to which this is true depends on how much you are willing to pay, if you can be connected to the web, or how much advertising you are willing to tolerate.

Often, when people talk about "GPS" they really mean all the above-mentioned systems functioning together. However, the map, other information, and special features are

not functions of the GPS itself: all the GPS provides is knowledge of the unit's location at any given time.

If you are an adept map user of the old school, all these additions may be more trouble than they're worth. All you need is the location, an old map and you'll do the rest! If you want all these bells and whistles, go for it.

For now, let's pay more attention to the location and to the simpler units that can be used away from cities. I've never seen a portable GPS that has the ability to tell you which fork in a mountain trail to take or how to get to your favourite picnic spot. Nevertheless, today more and more maps and travel guides are being published with locations for critical trail junctions, parking lots, or features of interest. You can enter these points manually into your simple GPS, buy a CD, or download data from the web directly into your unit.

Once these points are entered into the GPS unit, even with a simple one, you can use the unit's navigation features to find the distance and direction you have to travel to get there. The direction is updated continually, marking a distinct improvement over using a simple compass that doesn't know if you've had to turn aside to cross a stream or avoid a bear.

The most common question that users ask is how accurate are GPS units. The answer varies, but if you want a very broad rule of thumb, figure "better than about 30 m," sometimes much better, but rarely worse. Some of the variability in accuracy is due to changing

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conditions. Among these are electrical interference in the atmosphere, the presence of objects that might bounce the signal and so lengthen its path, the configuration of the satellites (i.e. how many your unit can lock onto at once) and your view of the open sky. Of course, there is also the question of receiver quality. We're not talking a major improvement for an extra \$100.00: any personal unit will give about the same accuracy. But paying thousands of dollars will get you survey-grade instruments.

The simplest way to get higher accuracy with your instrument is to use a public "differential" system radio connection. This uses instruments installed at known (surveyed) locations that calculate the correction needed to make their GPS location coincide with their real location. They broadcast this correction continually, and any instrument equipped to receive and process the signal can then make that correction for its own locations. This does not absolutely remove all error, but it helps a lot. You can usually get to within 5m and often to within 1m of the correct location using these systems.

When buying a GPS unit, see if it is advertised as "WAAS-ready." WAAS is the US public system. Canada has CDGPS, but it is used mainly by high-end surveying companies: the Canadian market is too small for receiver companies to incorporate it. WAAS can be used in much of Canada; however, the improved accuracy degrades the farther away you get from the WAAS ground station. The nearest WAAS ground station to Alberta is in Billings, MT, so best corrections would be in south-eastern Alberta. Most other countries do not have differential systems except for some around coastlines (northern

Europe and Australia), though this is of course subject to change. In any event, personal GPS receivers generally have WAAS or nothing for differential correction.



A handheld GPS unit

Photo L. Hamilton

up on accuracy, I suppose just because we can. When buying a GPS unit, the first question is "how accurate is it?" And apparently people are willing to pay more to get from 30 m to 10 m. But look at it this way: on a 1:50,000 topographical map, a 30 m circle would be represented by a dot 0.6 mm across. If you demand more precision than that, you should probably be in another business than hiking or botanizing, even professionally. Within 30 m, those old precision instruments and the human eye can get you to where you want to be. Sure, at night in a dense fog 30 m might be the difference between walking off a cliff or not, but let's use some common sense here: look at your feet before you step. If you can't see them you probably can't see your GPS screen either!

There are a couple of tricky things about small personal GPS receivers to be aware of. One is that GPS altitude

measurements are not terribly accurate (give or take 100 m). If you want a good record of change in altitude you should look for a unit that has alternative altitude devices, generally based on changes in air pressure. These are just like aneroid altimeters that have been in use for over a century, only they are connected to the GPS unit's processor so the data can be captured and displayed.

Second, the direction and speed functions of GPS units work by comparing successive positions. If you are moving too slowly or not at all, these positions are all within the circle of error of the reading, so the unit can't tell how you are moving. They are almost completely useless for movement under 2 km per hr, and become more and more accurate as speeds increase. So they're great for use in vehicles but less so when you are walking over rough ground or through dense brush. Because of this problem, many units now are available with incorporated compasses. Again, they're just like old-time compasses except for their connection to the GPS unit's processor.

Even simple GPS units usually have the ability to download a series of points. There are many freeware programs online that can be used for simple tasks. If you have electronic maps, the points can then be plotted automatically, and various things like elevation changes, route distances, and the like can be calculated and represented. Of course, with more sophisticated GIS (Geographical Information Systems) you can do much more, but this is the domain of training or serious hobby study, and I won't go into it here.

And finally, the most important information of all: don't forget spare batteries! The more features you have, especially the power-hungry alternative compass, the more juice is consumed.

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New Direction for Adopt-A-Plant Alberta

By Nora Manners

Adopt-A-Plant Alberta (APA) volunteers will be out working again this summer to search for rare vascular plants, bryophytes, and lichens across the province. However, this summer will see some changes to the program. The emphasis will be moving from intensive training workshops designed to equip volunteers to conduct rare plant surveys on their own, to a more graduated program where new volunteers are introduced to rare plant identification and then encouraged to attend several group events to learn skills and gain confidence. APA will also continue to provide logistical support for more experienced plant adopters who plan and conduct their own rare plant searches.

Only one volunteer training workshop will be held this year – on May 15, 2010, at the University of Calgary herbarium. The workshop will focus on rare plant identification and the collection of plant specimens. Following the workshop a field event will be held on May 16 where volunteers will have an opportunity to search for rare plants in the Calgary area under the guidance of several experienced botanists. At this field event and others planned throughout the 2010 season, volunteers will learn about survey methods, standardized data collection methods, use of GPS units and topographic maps, and field safety.

Monitoring and stewardship activities will also be conducted this summer for several plant species at risk: western spiderwort (*Tradescantia occidentalis*), western blue flag (*Iris missouriensis*), tiny cryptanthus (*Cryptantha minima*), and

hare-footed locoweed (*Oxytropis lagopus*). Planned field events are listed on page 9 and details will be posted in the events calendar on the APA website at www.ab.adoptaplant.ca. Registered volunteers will also be sent regular updates throughout the summer.



APA volunteers learning to identify smooth woodsia (*Woodsia glabella*) during the 2009 Botany Alberta training workshop at the Devonian Botanic Gardens
Photo L. Matthias

APA volunteers in 2009 reported 57 observations of rare plants and lichens, including the following S1 and S2 species.

S1 species reported:

- Loesel's twayblade (*Liparis loeselii*)
- white water lily (*Nymphaea tetragona*)
- Wallace's little clubmoss (*Selaginella wallacei*)
- smooth woodsia (*Woodsia glabella*)

S2 species reported:

- broad-leaved arrowhead (*Sagittaria latifolia*)
- Geyer's onion (*Allium geyeri*)

- alpine foxtail (*Alopecurus alpinus*)
- telesonix (*Boykinia heucheriformis*)
- alpine harebell (*Campanula uniflora*)
- fox sedge (*Carex vulpinoidea*)
- snakeskin liverwort (*Conocephalum conicum*)
- northern quillwort (*Isoetes echinospora*)
- slender naiad (*Najas flexilis*)
- flame-coloured lousewort (*Pedicularis flammea*)
- limber pine (*Pinus flexilis*)
- mountain scale (*Psora himalayana*)
- oval-leaved blueberry (*Vaccinium ovalifolium*)

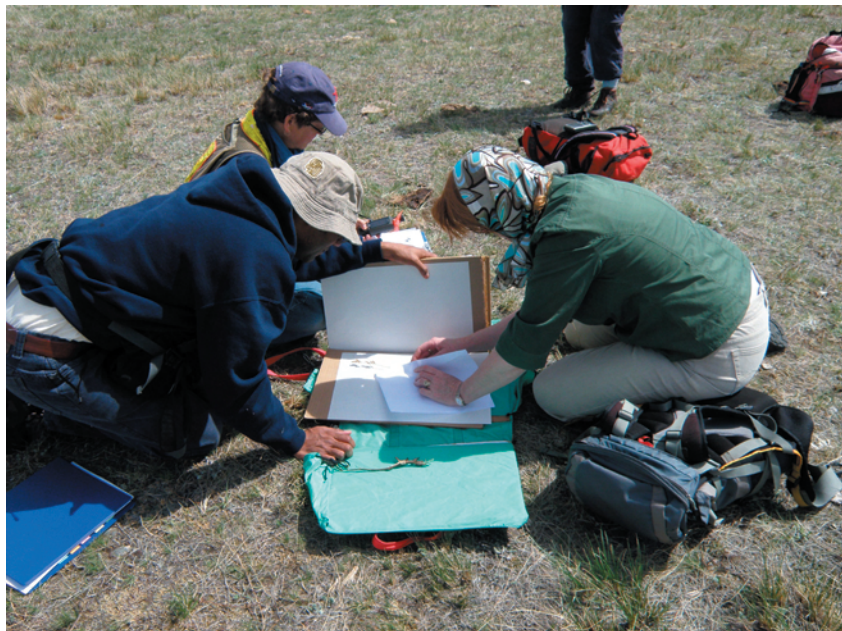
Note: not all of these species have been verified yet.

APA welcomes returning and new volunteers from across Alberta. If you would like to register to be an APA

volunteer for 2010 or to find out more about the program, please contact Nora Manners, Program Coordinator, at apa@ales.ualberta.ca or at 403-627-1473.

You can also visit the program website at www.ab.adoptaplant.ca. ♦





Leslie Monteleone (right) demonstrating specimen collection and pressing techniques during the 2009 Botany Alberta field event at Milk River Ridge
Photo N. Manners



Soapweed (*Yucca glauca*) pods observed during the 2009 Botany Alberta field event at the Pinhorn Grazing Reserve
Photo N. Manners

Adopt-a-Plant Alberta Training Workshop & Field Events for 2010

May 15, 2010

Training workshop at the University of Calgary herbarium.

May 16, 2010

Rare plant field trip in the Calgary area following the training workshop.

May 22 & 23, 2010

Survey for hare-footed locoweed (*Oxytropis lagopus*) in the Milk River Ridge (Del Bonita) area.

July 2 to 4, 2010

Participate in Botany Alberta in the Cypress Hills area (see information on page 4).

July 24 & 25, 2010

Join us at Lesser Slave Lake Provincial Park to help map northern beach fern (*Phegopteris connectilis*) populations and to explore the Marten Mountain burn.

July 2010

Help establish monitoring plots and control escaped baby's-breath (*Gypsophila paniculata*) in western spiderwort (*Tradescantia occidentalis*) habitat.

July 2010

Conduct a western blue flag (*Iris missouriensis*) survey in southwestern AB to help MultiSAR evaluate the success of habitat management prescriptions.

July 2010

Resurvey for tiny cryptanthus (*Cryptantha minima*) a 1-ha survey plot (est. in 2007) in Medicine Hat and participate in control of invasive species.

GPS, from page 7

Turn off what you don't need (like beeps and voices), turn off the unit when you're not actually using it, and keep the spares handy. Data will not usually be lost when changing batteries, but in some units you may need to recalibrate a compass or re-select setup functions.

For additional information concerning mapping and GPS, please see the Powerpoint presentation (with audio), prepared for APA training, available at: <http://breeze.ucalgary.ca/map2009>.

Amerorchis rotundifolia var. lineata – Condemned to Oblivion?

By Eileen Ford

On July 1, 1991, in a mossy spruce wood above the town of Elkwater, Alberta, a group of Red Deer River Naturalists were taken to see “a very rare variety of the round-leaved orchid (*Orchis rotundifolia* var. *lineata*). . . . This striped variety was once thought to occur only in the Cypress Hills, but a few specimens have now been collected in Ontario” (Fisher 1980).

What a Canada Day celebration to have seen this poster child in all its magenta beauty, for the orchid that had captivated us was indeed the subject of a poster hanging in the Elkwater Lake Information Centre.

Alas, 1991 was prior to our association with the Adopt-a-Plant Alberta program, and prior to our use of the GPS. So all we did was marvel, photograph, and jot down a few personal diary notes.

July 6, 2009, marked a full ten years before Cheryl Thorpe and I found ourselves in Elkwater, eager to renew an old friendship. We returned to the mossy spruce wood, inspected every round-leaved orchid (*Amerorchis rotundifolia*), but could find nary an individual of the lineate variety. We searched our many field guides for information, to no avail. Thus began our search.

Emails by the dozens, meetings with each and every person connected with the Cypress Hills Provincial Park yielded no personal knowledge of ever having seen or heard of *Amerorchis rotundifolia* var. *lineata*. No one remembered a poster, nor could one be found. But we did glean a few tidbits:

1. In a mini-herbarium at the Elkwater Lake Information Centre was a photograph taken by Hillary Tarrant on September 7, 2003, titled “*Amerorchis rotundifolia* var. *striata*” as well as a photo taken by Cliff Wallace.

2. The information desk came up with an old copy of *Guide to Orchids of North America* by Dr. Petrie (1982), who makes mention of the lineate variety but includes no photo.

3. In Robert M. Fisher’s *Guide to the Orchids of the Cypress Hills: including the most common orchids of Alberta and Saskatchewan* (1980), observations of *Orchis rotundifolia* var. *lineata* by both W.C. McCalla (in 1932) and R.G.H. Cormack (in 1945 and 1948) are mentioned. Both observations were from the Alberta side of the Cypress Hills.

4. In an article I had saved from Canadian Geographic (1995) titled “Prairie Oasis – The Cypress Hills,” Sid Marty tells us about being taken by Keith Bocking to see a number of orchids. According to the article, “the list includes a much-sought-after striped form of the round-leaved orchid.”

5. We perused the publication *Surveys for Vascular Plants of Special Concern, and for Birds and Mammals in Selected Habitats within Cypress Hills Provincial Park, Alberta* (Baresco et. al. 2000), but found no mention of our plant. Although ANHIC does not list *Amerorchis rotundifolia*, and although this study acknowledges ANHIC “for providing information on previous occurrences of rare plants,” had a specimen as rare as *Amerorchis rotundifolia* var. *lineata* been

sighted or not sighted (yes, we keep track of no sightings, too), mention would surely have been made of it.

6. More recently, Dorothy Fabian and Bonnie Smith were kind enough to verify that *Amerorchis rotundifolia* var. *lineata* had been collected by W.C. McCalla in 1932 (with photo) and by R.G.H. Cormack in 1945.

Thus, *Amerorchis rotundifolia* var. *lineata* is not a phantom orchid; it has a documented provenance.

Acknowledging now that round-leaved orchid has a rare variation, should we not keep records on it? I believe records MUST be kept on this rare, strikingly beautiful plant.

Many questions about this beautiful species remain to be answered: Have the same plants bloomed “lineate” each of the times they’ve been recorded? Does the same plant bloom “lineate” every year? Every 10 years? Only when rainfall exceeds 20 inches per year?

Without official documentation we will never know. My grandchildren will never know that I had the intense pleasure of having met *Amerorchis rotundifolia* var. *lineata*. It is our responsibility to learn about this rare beauty and to put that knowledge on public record.

I am appealing to anyone who has had any association with this variation to please share their findings with me. Contact Eileen Ford at (403) 886-4905 or email: hh3@telusplanet.net.

See *Orchid*, page 11

Have you seen this plant?



Amerorchis rotundifolia* var. *lineata

Photo E. Ford

We are seeking information on this rare variety of the round-leaved orchid (*Amerorchis rotundifolia* var. *lineata*). If you have any information please contact Eileen at hh3@telusplanet.net.

Orchid, from page 10

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NEW ANPC Publications Now Available

The Alberta Native Plant Council was busy in 2009, and we published two important documents:

- **Recommendations for Botanical Surveys in Areas of Proposed Developments**, which is designed to assist land managers/planners, industry representatives, regulators and consultants in properly identifying the scope of work required to assess sensitive botanical resources in an area of proposed development.
- **Guidelines on Plant Rescues** identifies considerations when planning plant rescues, such as adverse effects and ethical decisions.

Please visit our website at www.anpc.ab.ca.

Go to the Publications webpage and look under the Guidelines and Products heading.

Whoops!



In *Iris* No. 62, we neglected to mention that the Adopt-a-Plant excursion to Fort McMurray took place July 30 to August 1, 2009.

As well, this grape fern (*Botrychium* sp.) that was photographed during that trip by Pat Marlowe was mistakenly labelled in *Iris* as a club-moss.

Our apologies if we caused confusion for any of our readers. ♦

Iris is published three times a year by ANPC. The Council aims to increase knowledge of Alberta's wild flora and to preserve this diverse resource for the enjoyment of present and future generations.

If you have an announcement, article or other item, you are invited to submit it to the editor for publication. Items concerning native plants will be given highest priority.

The editors reserve the right to edit submissions, but will review changes with the authors whenever possible. Disputes will be resolved in favour of the audience.

Copyright remains with the authors except where noted. Permission to reprint is generally granted, but please contact the editors for details.

Submission deadline for the next issue:

September 30, 2010

A subscription to *Iris* is included with membership in the ANPC. To join, contact the secretary, or check our website, www.anpc.ab.ca.

ANPC Objectives

The Alberta Native Plant Council strives to

- Promote knowledge of Alberta's native plants
- Conserve Alberta's native plant species and their habitats
- Preserve plant species and habitat for the enjoyment of present and future generations

The Council's specific objectives are these:

- To educate individuals, industry, and government about native plants
- To promote awareness of native plant issues through a newsletter, an annual workshop, and in the media
- To co-ordinate information and activities concerning Alberta's native plants
 - To develop briefs or position papers for special projects
 - To organize field trips, plant studies and May Species Counts
 - To update lists of current research and conservation projects
- To preserve natural habitats and plant communities
 - To support legislation that protects native plants
 - To take action to establish, preserve and manage protected areas
 - To undertake Alberta projects jointly with like-minded groups
- To encourage appropriate use of Alberta's native plants
 - To produce information on the use of native plants in land reclamation
- To develop and distribute collection, salvage and management guidelines
 - To update a list of native seed sources and suppliers for horticulture and reclamation ♦



**Past issues of *Iris*
are now available
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