

# The Blazing Star



NEWSLETTER OF THE NORTH AMERICAN NATIVE PLANT SOCIETY

## Native Plant to Know

# Walking Fern

*Asplenium rhizophyllum*

[*Camptosorus rhizophyllum*]

by *Nelson Maher*

On a warm sunny day at the end of winter it's not hard to think about walking fern (*Asplenium rhizophyllum*). I know that under a great depth of snow all those walking ferns that I saw last year are in excellent shape, deep green and leathery. This species is just one of the 15 evergreen ferns that I look forward to seeing each spring as I take my first walk on the Bruce Peninsula without skis or snowshoes.

Searching for ferns is a ritual of spring for many people along the Niagara Escarpment in Grey County. The limestone rock - more specifically dolostone, which is the harder top crust of the escarpment with its higher magnesium content - is the preferred habitat of many ferns. Centuries ago, large blocks fell away from the escarpment into the shade of the talus slope. A heavy layer of moss formed on their surface creating the ideal habitat for walking ferns. Sometimes you will find the

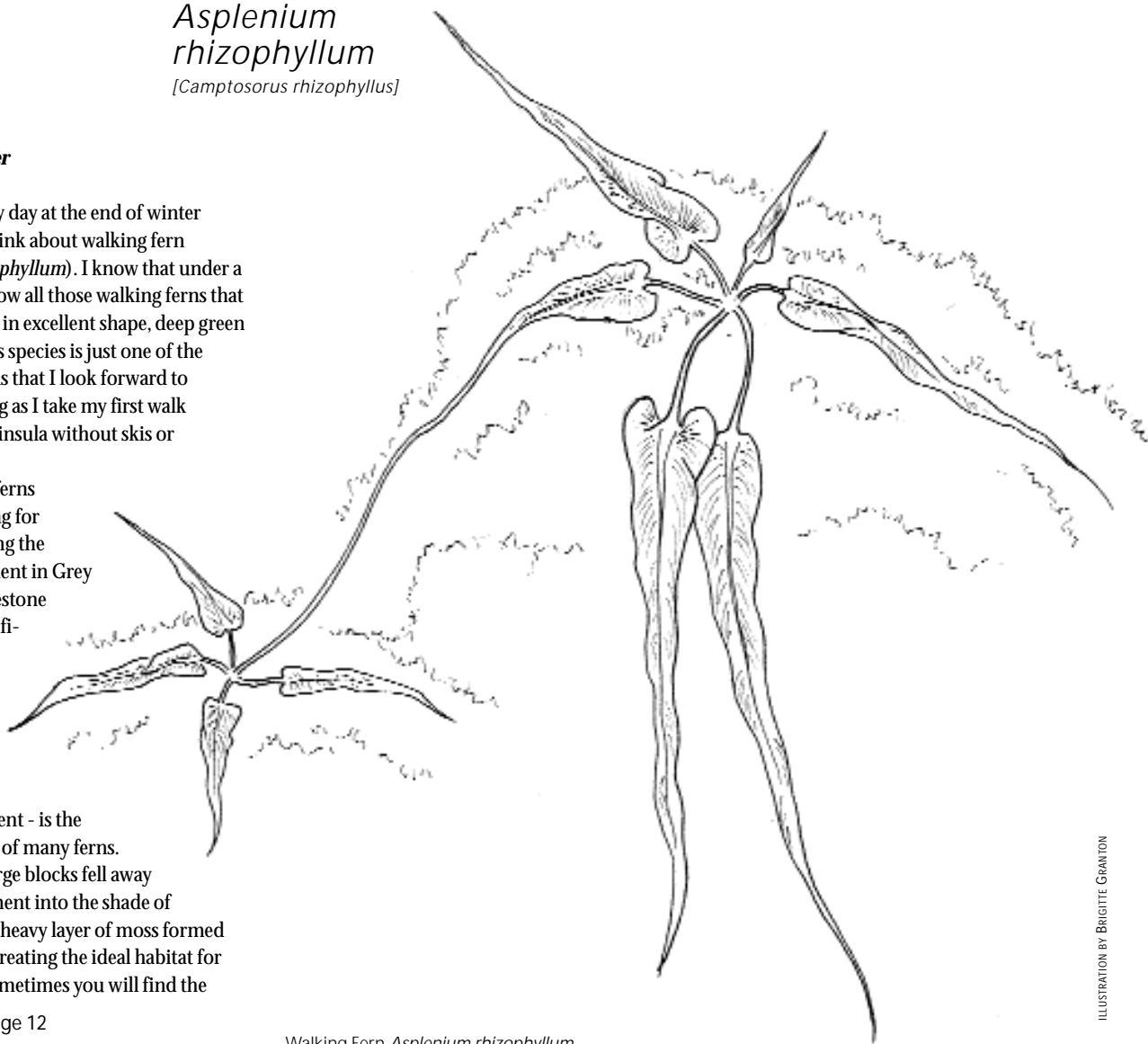


ILLUSTRATION BY BRIGITTE GRANTON

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Walking Fern *Asplenium rhizophyllum*

## The *Blazing Star* is . . .

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The North American Native Plant Society is dedicated to the study, conservation, cultivation and restoration of North America's native flora.

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## NANPS Plant Sale

SATURDAY, MAY 8, 2004 – 10AM - 3PM  
Toronto Botanical Garden (formerly the Civic Garden Centre)  
777 Lawrence Avenue East (at Leslie)  
Toronto, Ontario

Remember to attend the seminar on starting your own pesticide-free garden by Doug Counter, former NANPS Director and native plant enthusiast.

*Volunteers needed! Help us make the plant sale a great success by donating some of your time either setting up plants when they arrive on Friday evening, May 7th, helping to sell them on Saturday or participating in the tear-down in the afternoon. Also, if you have grown too many Verbena hastata (or any other natives) please bring them for the plant donations table. It's a fun time, you learn a lot about native plants (even if you're already knowledgeable) and you help make this fundraiser a successful event for NANPS.*

## Lakeside Garden & Prairie Restoration/Oak Savannah Tour

SUNDAY, MAY 30, 2004

This spring, NANPS co-founder Jim French is graciously opening his cottage property to wildflower enthusiasts. Packed into his one-acre lot are many ecosystems in miniature. You will see the glorious woodland ephemerals of spring, then stroll through examples of prairie, moss & bog gardens.

Drive yourself or join our chartered bus (seating limited) from Toronto. Those taking the bus will also enjoy a guided tour of a

prairie/oak savannah. An exciting look at the largest remnant of this endangered ecosystem in central Ontario.

**Bus:** NANPS members \$40 per person  
Non-members \$50 per person  
**Self Drive option\*:** \$10 per person (\* does not include prairie/oak savannah tour)

Visit [www.nanps.org](http://www.nanps.org) or contact [excursions@nanps.org](mailto:excursions@nanps.org) (please specify SPRING tour in the subject line) or call NANPS voicemail at (416) 631-4438.

## Shining Tree Woods and Environs Trip

SATURDAY, SEPTEMBER 25, 2004  
(NANPS Members only)

Due to the popularity of the autumn 2003 field trip to Clear Creek, the North American Native Plant Society (NANPS) is offering another fall trip.

Please join us for the first-ever public tour of your society's remarkable and fragile nature reserve. It's in Norfolk County, in Canada's "deep south". The land was purchased by the society in 1994, to preserve, for all time, its many Carolinian floral and faunal delights, a highlight being Canada's only indigenous Magnolia - the "Cucumber Tree" (*Magnolia acuminata*). This magnolia was known to native peoples as the "shining tree" due to its leaf sheen, and the property was christened Shining Tree Woods.

The tour leader will be Mark Bacro who lives, botanises, birds and gardens in the vicinity.

Our tour will also include a visit to a few other areas of interest in Norfolk County, in the heart of Ontario's Carolinian Zone. Due to the environmental sensitivity of the woods, numbers will be limited. Book early to reserve your spot!

We will be leaving by chartered bus (large, with water closet) from the parking lot of the Toronto Botanical Garden, at the south-west corner of Leslie Street and Lawrence Avenue East in Toronto. The bus leaves at 8 AM sharp. We hope to be able to make one stop in the west end of the city.

For further information, please send an e-mail to [excursions@nanps.org](mailto:excursions@nanps.org). Tom Atkinson will answer your inquiries. It would help if you could be brief, and specific.

## NANPS 20th Anniversary AGM

SATURDAY, OCTOBER 2, 2004 – 10AM – 4PM  
Markham Civic Centre  
Highway 7 and Warden  
Markham, Ontario

The North American Native Plant Society (formerly the Canadian Wildflower Society) will be celebrating its 20th Anniversary starting this fall. Join us for a very special occasion to be held in Markham where it all began. Events include presentation of the Paul

McGaw Memorial Conservation Awards, our fall plant sale, several very special speakers from among our Honourary Directors and previous Directors, a special luncheon to honour the Society's founders and the sale of early-collected native plant seeds and publications.

Be sure to mark your calendars and join us to celebrate two decades of dedication to native plant conservation.

# Bug Lovers Wanted

by Jim Dyer

Many insect pollinators – among them bees, flies, moths, butterflies and beetles – may be facing a precarious future, much like many of our native species of plants, mammals and birds. The declining diversity and abundance among pollinators is emerging as the latest major challenge to be addressed under the International Convention on Biological Diversity. In response to this challenge, Environment Canada and Agriculture and Agri-food Canada have jointly funded the development of a training package to raise public and gardener awareness about plant pollinators.

Honeybees are probably our best-known pollinators. Domesticated for honey and wax production in medieval Europe, honeybees demonstrated their greatest value as foraging insects that pollinated plants. Introduced into North America with European settlement,

flowers. Hemispheric and radial flowers (such as asters) are the simplest types of flowers with their nectar and pollen easily accessed. They are the first choice of beetles and flies, but are visited by many pollinators, including bees and butterflies.

Radial patterns have disappeared in the complex bilateral flowers in favour of insect-specific shapes including long, tubular, curved corollas with trap doors. Bees, bumblebees and butterflies, as well as birds and bats, mainly visit three-dimensional flowers, including bilateral flowers such as beardtongue (*Penstemon* spp.) and tubular flowers such as trumpet creepers (*Campsis radicans*). Nectaries, the cavities under the anthers that store the nectar that pollinating insects seek, have also co-evolved with pollinators into the variety of spur and coil shapes seen in three-dimensional flowers.

Native pollinators are as essential to wild flowering plants as they are to cultivated

crops. Inadequate seed set in crops is usually easily recognized. Symptoms of inadequate pollination for wildflowers may go unnoticed for years or decades since many are perennials, and individuals may survive for years without successfully reproducing. This may doom the population to extinction when those individuals complete their life span.

Pollinator habitat, including nesting sites, food sources and mating sites, needs to be protected. Flower-rich field borders, fence lines

and hedgerows, where non-crop forage plants are not treated as weeds, provide alternative food sources and encourage beneficial insects. Plants such as thistles (*Cirsium* spp.) and milkweeds (*Asclepias* spp.) should be viewed as bee forage. Nectar-rich flowers attract beneficial predators as well as pollinating insects to the garden. Providing windbreaks, maintaining riparian forests and planting nectar-producing trees such as apples helps protect pollinators.

Fragmentation of plant communities leads

to declines in all wildlife, including pollinators. Small wildlife reserves need to be connected with undeveloped corridors.

In prairie grasslands, many flowering wild plants support native pollinators, mainly bumblebees, which are in danger from overgrazing of the prairie by cattle. Early cutting of hay – before bloom – also deprives pollinators of their food, and pollinator habitat is destroyed as grasslands are brought into annual crop production.

Pesticides have a direct negative impact on native pollinators. Even at sub-lethal levels, pesticides affect longevity, memory, navigation and foraging abilities. Mosquito control has caused major kills of honeybees (the impacts on native pollinators are unknown but certainly severe). Herbicides eliminate the natural forage that wild pollinators need before and after crops bloom.

International experts on biological diversity have become alarmed at the status of pollinators. Not having enough trained experts to monitor pollination processes effectively, they proposed training parataxonomists – volunteer observers who are capable of making and recording scientifically valid sightings of pollinating insects. Environment Canada is responding to this proposal by expanding its Nature Watch programs (which include Plant Watch and Frog Watch) to include insect pollinators. As part of the Pollinator Watch program, observers will be asked to identify the differences among the four insect orders that most frequently visit flowers without resorting to destructive sampling. While an effective watch program requires a few rules about observing and keeping records, it will not turn volunteers into instant entomologists, or ask for species identification.

The first step towards launching a pilot watch program was taken last fall in the Waterloo/Cambridge area. A two-hour training session included basic pollinator ecology and identification of the most important insects. Throughout the coming growing season participants will be asked to monitor a flowerbed or specific wild patch on a weekly basis to see changes in the pollinators using the plants. If the pilot is successful the program will be extended to all of Canada.

*Jim Dyer is an environmental consultant on climate change and biodiversity issues in agriculture who lives in Cambridge, Ontario.*



Bronze copper butterfly and bee on a unidentified species of goldenrod

they joined our native bumblebees, solitary bees and other bee species as our most important insect pollinators; floral products are their sole food source. Wild bees have evolved as specialists. For example, squash bees are pollinators dedicated to cucurbits (members of the gourd family), since both are native to the New World.

Many insects have the ability to recognize and memorize floral characteristics. Most bees, butterflies and some flies can distinguish numerical differences in radial patterns in

# Lying Low on Hawke Hill

by Glenda Quinn

The Avalon Peninsula, on the eastern edge of Newfoundland, juts out into the North Atlantic Ocean. It is the most densely populated area of the island with the capital city of St. John's just a few kilometres away from the most easterly point in North America, Cape Spear. A few kilometres in the opposite direction from the old seaport capital, is a unique habitat, an alpine heath barren.

The highest point on the Avalon Peninsula (300 metres or 328 yards above sea level), Hawke Hill was designated an ecological reserve in 1990 and is representative of the Alpine Heath Ecoregion - "An excellent display of features related to the latest glaciation", according to the *Newfoundland and Labrador Traveller's Guide to the Geology*. The Hawke Hill Ecological Reserve - a little over a square kilometre (about two-fifths of a mile) - is also home to some interesting plants. Bracing winds and cooler temperatures have forced the species that live there to adapt to the daily rigours of a very harsh local climate. No aliens here, it's too inhospitable! A permit is needed to visit the reserve but many of the arctic-alpine species that characterize the Alpine Heath Ecoregion grow outside the perimeter and it's a wonderful place to explore. These plants are rare in eastern Newfoundland and most people driving by Hawke Hill, on a highway meandering through a boreal forest, are unaware of the significance of the site.

Lilliputian plants are dispersed all over the hilltop. The diva of the hill is diapiensia (*Diapensia lapponica*), a tiny plant that helped Hawke Hill obtain its special status. This glossy little alpine grows in a mound or cushion, its striking growth pattern illustrating just how wonderfully it has adapted to its environment. An evergreen, diapiensia's leaves are tightly compacted to help the plant retain heat and moisture. It has two blooming periods, one in late May/early June, the other in mid-to late July. Perhaps the scientific community can offer an explanation for this peculiar occurrence. I once visited the hill a little too late to catch the little alpine in its glory. How kind of this plant to give me a second chance to see it bloom, a little later in the summer. The flowers of diapiensia are white with five rounded petals. To see a close-up of this diva of the hills, go to John Maunder's web site,



Diapensia at Hawke Hill in Newfoundland

PHOTOGRAPH COURTESY HAL HORWITZ

<http://nfmuseum.com/flora.htm>, where it is featured on the homepage, and more fully, on the *Diapensiaceae* Family page, [http://nfmuseum.com/flora.\\_diapensiaceae\\_index.htm](http://nfmuseum.com/flora._diapensiaceae_index.htm).

Goldthread, one of our daintiest plants, conjures up imaginative thoughts: Perhaps fairies use the bright yellow, tangling, thread-like roots to mend their tattered clothes! I once found one of these spring beauties nestled beside a moist depression, across the path from a small colony of moccasin slippers (*Cypripedium acaule*).

At first glance, goldthread could be confused with starflower (*Trientalis borealis*) because its five to seven petal-like white sepals look as if they could be twinkling celestial bodies. If you look closely with a lens, you can see five to seven small, fleshy, yellow-tipped, spoon-like petals below numerous slender stamens and three to nine peculiar long-stalked pistils.

The scientific name for goldthread is *Coptis trifolia* [= *groenlandica*]. *Coptis* translated from Greek means "to cut," referring to the divided leaves; *trifolia* means three leaves. Like the other plants of Hawke Hill, these little evergreens are mini versions of the goldthread growing in less severe habitats. *C. trifolia* is a member of the *Ranunculaceae* family and holds the distinction of being one of the few evergreen perennials in that family. In constant demand in earlier times, goldthread was used by indigenous peoples to treat mouth ulcers.

Neighbouring plants thriving (or should I say, clinging for dear life) on the acidic barrens are: wild lily-of-the valley (*Maianthemum canadense*), Newfoundland dwarf birch or *Betula michauxii* which can grow up to two

metres (two yards) in other locales but is shorter on the hill, chokeberry (*Aronia* sp.), mountain-holly (*Ilex* [= *Nemopanthus mucronata*] and chuckley-pear (*Amelanchier* sp.). I have always wondered about this curious common name - chuckley-pear. Could this be the explanation? Some early settler mistook the shrub for a tiny pear tree whose growth was retarded by a short growing season. When he excitedly showed the fruit to a botanist, he made the botanist chuckle!

Also present on the hill are representatives of the heath family: bog rosemary (*Andromeda glaucophylla*), mountain bilberry (*Vaccinium uliginosum*), bog laurel (*Kalmia polifolia*), alpine bearberry or *Arctostaphylos alpina*, a most attractive trailing shrub with deeply netted veins on the shiny leaves, Labrador tea (*Rhododendron* [= *Ledum*] *groenlandicum*) and northern blueberry (*Vaccinium boreale*). For me, the most intriguing heath of all is the alpine azalea (*Loiseleuria procumbens*), a small shrubby evergreen, whose pink flowers are the size of a dried split pea. For trivia buffs: the plant was named for Jean Louis Auguste Loisleur-Delongchamps (1774-1849), a French botanist.

Since botany is a hobby for me I can be selective over the plants that interest me and quickly dismiss the plant families that are complicated and difficult to identify, especially if they don't have a colourful corolla. Club-mosses, lichens, sedges, grasses, and rushes can be interesting but distinguishing one from another takes patience and skill in using keys. At least for the flowering plants there are field guides with helpful descriptions and pictures.

Just getting to know the contents of *Newcomb's Wildflower Guide* as it applies to the province is challenge enough. Hmm, but the clubmosses. . . well, maybe. After all, there are only a dozen. After one visit to the hill with John Maunder, Curator of Botany for our local museum, I could identify three of them. It would be fun to visit Hawke Hill again, to search for them and note their differences. Nice way to idle away a morning or afternoon.

Clubmosses are primitive vascular plants that evolved 375 million years ago. The ones existing today are relics of huge tree-like forms that inhabited the earth during the Carboniferous Period. They eventually formed our modern-day coal deposits. Millions and millions of years later, clubmosses hug the ground. Unless you were an ant, it would be difficult to visualize members of this family, the *Lycopodiaceae*, as they existed on earth eons ago.

More closely related to ferns than mosses, clubmosses do not have flowers, fruits or seeds, but reproduce by spores. They are vascular plants because of their nutrient- and water-conducting system, have true roots and leaves (unlike mosses) and the reproductive structures (strobili) have a club-shaped appearance. Clubmosses generally grow horizontally on acidic soils in the temperate

regions, but in tropical zones some species are epiphytes, giving them something in common with exotic orchids and bromeliads!

These plants and the spore powder they produce have been used for some weird and wonderful things. When photography was in its infancy, spore powder, which is very flammable, was used in the photographic flash. Whole plants were used for upholstery stuffing; powdered infusions made from the plant treated flatulence; and a dusting agent was developed from the spore powder for sterilizing surgical gloves. At holiday times *Lycopodium clavatum* was fashioned into wreaths and decorations. Many of these uses have been discontinued because of habitat destruction and over-collecting.



Hal Horwitz photographing *Diapensia lapponica*

PHOTOGRAPH COURTESY GLENDA QUINN

I was surprised to learn that there were at least seven species of clubmosses on the hill. In addition to *L. clavatum*, common clubmoss, a large plant that runs over the ground for quite some distance and has club-shaped spore-producing structures, John identified five more on our recent visit: *Diphasiastrum complanatum*, *Diphasiastrum sitchense*, *Diphasiastrum tristachyum*, *Huperzia selago*, and *Lycopodium annotinum* (commonly known as northern running-pine, sitka clubmoss, blue ground-cedar, northern firmoss and bristly clubmoss respectively). He didn't find the rare one, fan clubmoss (*Diphasiastrum digitatum*) because it is very similar to *D. complanatum* and really needs mature fruiting structures to be spotted on such terrain.

I recommend a visit to John Maunder's *A Digital Flora of Newfoundland and Labrador Vascular Plants* at <http://nfmuseum.com/flora.htm> where you will find excellent photographs of clubmosses and arctic alpine species. A virtual exposure is better (and less windy) than no exposure at all to these arctic alpine!

*Glenda Quinn is the president of the Newfoundland and Labrador Wildflower Society and has been studying and enjoying the province's flora for 16 years.*

## Calendar of Events

May 8, 2004

NORTH AMERICAN NATIVE PLANT SOCIETY  
ANNUAL PLANT SALE  
Toronto, Ontario  
Visit [www.nanps.org](http://www.nanps.org) for details.

May 11-15, 2004

BIODIVERSITY AND ARCHIPELAGO II:  
Connecting Mountain Island and Desert Seas  
Tucson, Arizona  
A conference on the natural and cultural resources of the Madrean Archipelago of sw United States and nw Mexico. Conference website: [www.madreanconference.com](http://www.madreanconference.com).

May 17-19, 2004

RIPARIAN RESTORATION ESSENTIALS WORKSHOP  
Wildflower Center, Texas  
Sponsored by the Texas Society of Ecological Restoration.  
Visit <http://www.wildflower.org/?nd=professional&view=full&key=92>.

May 21-23, 2004

CONFERENCE OF NORTHWEST HERBARIA  
Moscow, Idaho  
Presented by the Stillinger Herbarium at the University of Idaho.

For details or to register visit their website at [www.sci.uidaho.edu/biosci/herbarium/index.html](http://www.sci.uidaho.edu/biosci/herbarium/index.html).

May 29, 2004

ONTARIO NATURE – FEDERATION OF ONTARIO  
NATURALISTS — 73RD ANNUAL GENERAL  
MEETING AND GATHERING  
Black Creek Pioneer Village  
Toronto, Ontario  
Contact Deanna Coop at  
[deannac@ontarionature.org](mailto:deannac@ontarionature.org) or  
call 416-444-8419 x224.

August 8-12, 2004

19TH NORTH AMERICAN PRAIRIE CONFERENCE  
Madison, Wisconsin  
Visit [www.napc2004.org](http://www.napc2004.org) for more information.

August 23-27, 2004

RESTORATION ON THE EDGE  
Society for Ecological Restoration Annual Meeting and Conference  
Victoria, British Columbia  
SER's 16th annual conference will include a symposium on Restoration of Garry Oak Ecosystems. Details at [http://www.serbc.info/public/ser\\_seminar](http://www.serbc.info/public/ser_seminar).

September 12-15, 2004

SECOND NATIONAL CONFERENCE ON COASTAL  
AND ESTUARINE HABITAT RESTORATION  
Seattle, Washington  
Call for Presentations and Posters  
([http://www.estuaries.org/objects/2004RAEC\\_FP.pdf](http://www.estuaries.org/objects/2004RAEC_FP.pdf))

October 1-3, 2004

GARDENS OF DIVERSITY, GROWING ACROSS  
CULTURES  
American Community Gardening Association conference  
Toronto, Ontario  
Visit [www.communitygarden.org](http://www.communitygarden.org) for details.

October 5-7, 2004

1ST FLORIDA DRY PRAIRIE CONFERENCE  
Sebring, Florida  
Sponsored by the Florida Center for Environmental Studies – <http://www.ces.fau.edu/fdpc/>.

October 13-16, 2004

31ST NATURAL AREAS CONFERENCE  
Emerging Issues: Possibilities and Perils  
Chicago, Illinois  
For more info: <http://64.92.126.53/03conference/2004conf.htm>.

# Aleutian Islands' Flora

by Suzi Golodoff

Alaska's Aleutian Islands extend across the map like a long line of geese heading west. The curve of volcanic islands stretches towards eastern Asia across the stormy North Pacific, hemming in the Bering Sea to the north.

Unalaska Island, in the eastern Aleutians, lies at 54 degrees north, roughly the same latitude as Prince Rupert, British Columbia and Harrison Inlet, Labrador. Rugged, windswept, cold and wet, the Aleutians are a region of treeless subarctic tundra. Mean annual temperature is 40° F (5 C). Winter temperatures seldom drop below 15° F (-10 C), while summer days rarely warm above 70° F (21 C). There is no permafrost in the Aleutians, or sea ice in the winter.

It is early February as I write from my home on Unalaska Island, the teeth of a winter gale gnawing at the eaves. Heavy snows blanket the hills and the islands look bleak and barren. The Aleutians are notoriously storm-wracked. Low-pressure systems continuously sweep across the islands bringing months of intermittent blizzards and freezing rain. Summers are windy and chilly but in early June the wildflowers begin to bloom.

The Aleutians possess a unique vegetation even within the vast reaches of Alaska. Eric Hultén, the renowned Swedish botanist, famous for his work on the arctic flora, distinguished four major floral regions in Alaska. Yet he acknowledged that "the Aleutian Islands should perhaps be regarded as a fifth floral region". The arctic plants that are widely distributed throughout the world's northern regions are practically absent in the central islands. While many circumpolar and arctic alpine species are present in the eastern and western islands, the central islands chiefly consist of Bering Sea and northern Pacific plants. Scoured to some extent by past glaciations, the pattern of plant life today reveals a migration of species into the islands, expanding their ranges from both east and west.

On a summer day, if we were to pull up our skiff on an Aleutian beach and take a short hike, we'd quickly discover a diversity of habitats. Just past the tide line is a mix of lyme grass (*Elymus mollis*), sunny yellow seabeach senecio (*Senecio pseudo-arnica*) and beach greens (*Honckenya peploides*). These hardy plants are salt-tolerant and withstand being washed over during storms and high tides. Also common along the shore is bedstraw

(*Galium aparine*), oysterleaf or sea lungwort (*Mertensia maritimus*) and beach pea (*Lathyrus maritimus*), whose rose-purple blossoms sprinkle the dunes. Brilliant sun above the lens of coastal fog warms the damp sandy soil.

Miles of formidable sea cliffs rim parts of the Aleutian coast. Seabirds circle the guano-streaked bluffs, the ledges a niche for cinquefoil, (*Potentilla villosa*) and bracted saxifrage (*Saxifraga bracteata*). Thriving in the crevices too are northern and Kamchatka rock cress (*Draba borealis* and *Arabis lyrata*). In the loose scree below the cliffs are clumps of Bering chickweed (*Cerastium beeringianum*) with its delicate mass of white flowers and spoonwort (*Cochlearia officinalis*). Where fresh water seeps down damp mossy walls one finds brook saxifrage (*Saxifraga punctata*) and mist maidens (*Romanzoffia unalascensis*).

Did you note the root *Unalaska* in that last plant's name? Many of the named species were first collected and described on this island by the naturalists working aboard the ships of early explorers. Throughout history, Unalaska's protected anchorage has made it a way point for ships, and as one can imagine, after weeks of miserably rolling about at sea, the lure of emerald hills was irresistible. Often the naturalists' names were given to the plants.

Just beyond the beach, the growth is so tall one 'swims' through it. Here the beach or lyme grass is mixed with tall monkshood (*Aconitum maximum*), fireweed (*Epilobium angustifolium*), artemisia (*Artemisia unalascensis*), and lupine (*Lupinus nootkatensis*). Step carefully. One is apt to stumble into an ancient house pit, part of the village sites of the Native Aleut or Unangan people. The Unangan, famous for their kayaking and seafaring skills, once thrived throughout the Aleutians. All of their resources were concentrated on the coast: sea mammals, fish, birds, and the intertidal feast on the reefs. They also had extensive

knowledge of their plants. The beach grass was made into matting and is still woven into some of the finest baskets in the world. Monkshood, which contains the deadly poison aconite, is believed to have been used on the tips of their ancient whaling harpoons. (They named the plant bumblebee house, since the blue hooded blossoms are a favourite sleeping place for bees.) Strongly scented artemisia is still used in the traditional steambath, slapped against the skin to ease sore muscles and arthritis.

We finally break through the tallest growth once we get a bit inland. Before the foothills rise we come upon coastal meadows and low-lying wetlands surrounding the salmon streams and lakes. In the meadows we find a mix of cranesbill (*Geranium erianthum*), coastal paintbrush (*Castilleja unalascensis*), fleabane (*Erigeron peregrinus*) and buttercup (*Ranunculus bongardii*). A fragrant member of the rose family, Sitka great burnet (*Sanguisorba stipulata*), grows alongside the delicate



Seabeach senecio is common along the Bering Sea and Pacific coasts of Alaska.

PHOTOGRAPH COURTESY SUZI GOLODOFF

pinkish knotweed or ptarmigan grass (*Polygonum viviparum*). Among these is the rather unpleasant-smelling Kamchatka lily (*Fritillaria camschatcensis*), also called chocolate lily, for its dark brown bell-shaped flowers. Locally

it is known as the stinky flower and also as rice root, and here the plant's redeeming quality is revealed. At the base of the tall woody stem is a squat white root bulb, covered with small rice-like bulblets. Once an important food source, the starchy bulbs were gathered and dried for later use. They are still occasionally dug and boiled like potatoes although the taste can be somewhat bitter. More commonly used are two edible members of the parsley family, the tall robust cow parsnip (*Heracleum lanatum*) and beach lovage or petruski (the local Russian loanword for *Ligusticum scoticum*).

In the fall one finds these meadows full of bright yellow Chamisso arnica (*Arnica chamissonis*) and large patches of pearly everlasting (*Anaphalis margaritacea*). Another lovely plant is Siberian spring beauty (*Claytonia sibirica*), whose rose-pink star-like flowers and edible spoon-shaped leaves are welcomed very early in the spring. One of its Unangan names, Lapland longspur flower, denotes the blooming time of the flowers; just as these songbirds return to the islands the first spring beauties bloom.

Just back from the present day coast are low-lying areas once inundated by the sea. Here good-sized lakes pour out meandering rivers. Cottonflowers (*Eriophorum russeolum* and *E. angustifolium*) bloom across the vast acres of wetlands and wild iris (*Iris setosa*) unfurl their purple flags. The Unangan people likened the shape of iris petals to whale flukes. A gust of Aleutian wind carries the fragrance of bog orchids across the marsh, both snow-white *Platanthera dilatata* and the taller greenish *P. convallariaefolia*. Both have upright single stems bearing long spikes of tiny blossoms. About a dozen species of orchids have found their way into the Aleutians, and some are quite rare. The Bering bog orchid (*P. tipuloides*), one of North America's rarest orchids, is found only in Japan, Kamchatka and the western Aleutians. The tiny Choris bog orchid (*P. chorisiana*), also rare, grows in Japan, the Aleutians and is scattered along the coast south to Washington. The purple orchid (*Dactylorhiza aristata*) has extended into the Aleutians from Asia, while hooded ladies tresses (*Spiranthes romanzoffiana*) came from Canada and the western U.S.

The cold wet soil of the marshes is acidic and nutrient-poor, the organic matter slow to decompose. Two peculiar little species have found a way to adapt. Both round-leaved sundew (*Drosera rotundifolia*) and butterwort

(*Pinguicula vulgaris*) produce a sticky substance on their leaves, which they use to trap insects. The plants then absorb the additional nutrients. Riverbanks are lined with violets (*Viola langsdorffii*), marsh marigold (*Caltha palustris*), purple cinquefoil (*Potentilla palustris*) and shrub willows, members of the *Salix* family. Our only native 'trees' in the Aleutians, they thrive across the valley bottoms sometimes forming dense thickets.

Now the foothills rise, unfolding a mosaic of alpine heaths and meadows. The constant Aleutian winds and the resulting pattern of snow cover has the strongest influence on plant communities here. The protecting snows lie deep in these upper meadows, which in summer brim with wildflowers. The fragrant May flower (*Anemone narcissiflora*) is one of the first to bloom. The Unangan name, 'seagull flower', may refer to the ivory-coloured petals or it may denote the fact that it blooms just as the gulls start laying their eggs. Here, too, one finds the delicate blue Steller speedwell (*Veronica stelleri*), yellow anemone (*Anemone richardsonii*) and snowbed buttercup (*Ranunculus eschscholtzii*). The tiny wedge-leaved primrose (*Primula cuneifolia*), with its magenta petals and yellow eye, favours wet meadows, too. In the highest alpine meadows and seeps, with luck, one sees the rare and exquisite Chukchi primrose (*P. tshuktschorum*). Another rare find, and an Aleutian specialty, is the lovely Chamisso lousewort (*Pedicularis chamissonis*). The tall single stem bears whorls of fern-like leaves and is topped in a spike of lavender flowers. This lousewort's range is eastern Asia, throughout the Aleutians and Pribilofs, and as far east as the Alaska Peninsula, but you won't find it anywhere else in Alaska. These upper meadows are fragile and one needs to be watchful walking here. In some of these boggy spots the mossy vegetation simply floats over water-filled holes and seeps, and you can sink well past your legs.



The lady slipper orchid, *Cypripedium guttatum*, grows in Eurasia, throughout the Aleutians, and into interior Alaska and the Yukon.

PHOTOGRAPH COURTESY SUZI GOLODOFF

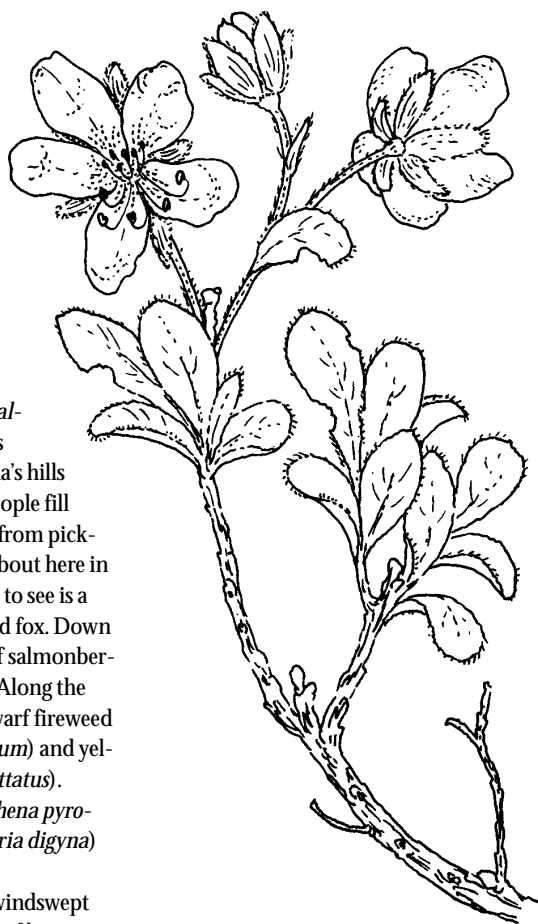
Let's flop down for a rest on the hillside. For miles around us these volcanic islands are covered with a dense evergreen mantle of crowberry and heath. This deep springy hillcover protects the soil from wind and erosion. The foothills split open with wild ravines and are rimmed by precarious cliffs. One can easily get lost up here. The weather is unpredictable. Wind-driven rain squalls and dense fog move in without warning, closing down visibility, making one stretch of tundra indistinguishable from the next. But the hills can be gentle under a summer sun, so let's examine what's here.

A sample patch is densely woven of crowberry (*Empetrum nigrum*) and Aleutian heather (*Phyllodoce aleutica*). Threaded through are other members of the heath community, the tiny-leaved lingonberry (*Vaccinium vitis-idaea*), and kinnikinnick and alpine bearberry (*Arctostaphylos uva-ursi* and *A. alpina*). The showy magenta blossoms of Kamchatka rhododendron (*Rhododendron camtschaticum*) cling to the steeper slopes. The dense heath provides a hold for other plants, the trailing vines of twinflower (*Linnæa borealis*) and the long yellow rhizomes of goldthread (*Coptis trifolia*). Rose-pink wintergreen (*Pyrola asarifolia*) and bright yellow

*Geum calthifolium* accompany the lady slipper orchid, (*Cypripedium guttatum*) whose creamy petals and pouch are mottled with purplish-brown. Dwarf dogwood (*Cornus suecica*) is almost everywhere.

And blueberries! *Vaccinium ovalifolium*, the highbush blueberry, is wonderfully abundant in Unalaska's hills and ravines. Late into fall, local people fill their buckets, hands stained dark from picking. There are no bears to worry about here in the Aleutian Islands; all you're apt to see is a flock of ptarmigan or a curious red fox. Down in the ravines are dense thickets of salmonberries (*Rubus spectabilis*) and ferns. Along the gravel bars of brooks one finds dwarf fireweed or river beauty (*Epilobium latifolium*) and yellow monkey flowers (*Mimulus guttatus*). Leather-leaved saxifrage (*Leptarrhena pyrolifolia*) and mountain sorrel (*Oxyria digyna*) grow here, too.

As we scramble up to the high windswept ridges, plant life thins out. Patches of bare ground are exposed and at this elevation snowbeds remain all year. The thin layer of volcanic tephra and rocky scree supports only the hardiest of species. Most of the plants are



*Kamchatka rhododendron*

short-cropped, having adapted dense cushions and tufts to protect themselves from scouring

ILLUSTRATION BY SUZI GOLODOFF

Aleutian winds. The dwarf *Salix* species, arctic and netleaf willows, cling to exposed outcroppings along with single-headed and pink pussytoes (*Antennaria monocephala* and *A. rosea*). Only a few inches high, bluebells shudder in the cold wind, *Campanula lasiocarpa* and the rare *C. chamissonis*, which is only found in Japan, Kamchatka and the Aleutians. Ross avens (*Geum rossii*) thrives in these conditions as do the louseworts (*Pedicularis langsdorffii* and *P. capitata*). The alluring and fragrant *Lagotis glauca* offers its pale blue tube-like blossoms alongside the bright yellow Unalaska arnica (*Arnica unalaschcensis*). Far below us now, the Bering Sea glints as we slowly make our descent back to the beach.

So with this, it's been my delight to accompany you on a summer day in the Aleutians, from the very western edge of your North American plant boundaries!

*Suzi Golodoff is an artist and naturalist with a special interest in the birds, flora and fauna, the conservation of natural resources, and the Native culture and history of the Aleutians. She is the author of Wildflowers of Unalaska Island: A Guide to the Flowering Plants of an Aleutian Island, published by the University of Alaska Press, Fairbanks.*

## Water Conservation in New Mexico

by **Eloise Apple Colocho**

Last month Albuquerque City Council passed an ordinance prohibiting property associations – both residential and commercial – from requiring more than 20% high water-use grass in their landscaping. Neighbourhood groups can no longer force homeowners to have grassy yards.

Opponents of the ordinance say it infringes on the right of neighbourhood associations to enforce covenants that protect property values and give subdivisions a uniform appearance. Proponents of the bill argue that it slows down depletion of Albuquerque's limited ground-water supply and is justified by the city's high-desert environment.

Scott Varner of the Xeriscape Council of New Mexico ([www.xeriscapenm.com](http://www.xeriscapenm.com)) is ecstatic about the decision saying, "This ordinance enables every resident to voluntarily conserve – but it took seven years to enact."

Albuquerque may be the first municipality in the United States to pass such a bill.

It is not known how many subdivisions in Albuquerque have covenants requiring grassy yards, but they were common before the 1990s when new data about overpumping of the city's ground-water supply surfaced and concerns about environmental degradation became widespread.

Albuquerque adopted a Water Conservation Landscaping Ordinance in 1995 limiting usage of high-water turf in new construction and offering conservation incentives and rebates. To qualify for rebates, a xeriscape must contain 50% coverage by low-water plants.

Native plants are already widely used for xeriscaping in New Mexico. Some of my favourites are white-flowered *Gaura lindheimerii* (colloquially known as apple blossom grass or whirling butterflies), the tall, stately, late-summer bloomer Maximilian sunflower (*Helianthus maximiliana*), horse cripler cac-

tus (*Echinocactus texensis*) whose delicate powder-pink flowers belie its alarming name, autumn sage (*Salvia greggii*) and desert willow (*Chilopsis linearis*). Autumn sage draws broad-billed and rufous hummingbirds in mid-summer. Desert willow attracts bees, bumblebees and pipevine swallowtail butterflies as well as house finches and other birds that feed on its dry flower seeds during the winter. As a tree, it offers a peaceful aspect to the garden not achieved by green grass alone.

Passage of Albuquerque's new water conservation ordinance is a monumental step, one that may result in many more xeriscape gardens of native plants.

*Eloise Colocho started planting flowers from seed as a child in North Carolina, but adapted to xeric gardening when she was transplanted to the desert. She especially loves apple blossom grass since Apple is her maiden name.*



# Backyard Naturalization in Markham

Gardening and lawn care practices can have a strong impact on the health of nearby watersheds. Use of chemical fertilizers and pesticides, gardening with exotics and over-use of sprinklers can all contribute to a decline in the quality of the natural environment.

Bearing this in mind, Toronto and Region Conservation (TRCA) developed the Green Neighbourhoods project with support from EcoAction, Rouge Park, TD Friends of the Environment Foundation, local community and environmental groups and the Town of Markham, Ontario. The pilot project, launched in summer 2003, was aimed at homeowners in six subwatersheds in urban Markham. Information packages containing fact sheets on naturalization were distributed to residents. Interested homeowners were given the opportunity to apply for a subsidized native plant kit for their yard. To maximize wildlife corridor linkages, priority was given to yards that were closer to natural features.

Enthusiasm for the program was high: over 600 information packages were distributed and 100+ people came to the two workshops. Those who were ready to start naturalizing their yards paid \$30 for a native plant kit that contained 25 perennials, one tree seedling, two shrubs and two birdboxes. Three designs were available based on homeowners' needs and site conditions: semi-shade, dry & sunny (mostly prairie species) and butterfly gardens. The TRCA took a flexible approach, adapting the species' list as needed, and staff was available for siting and planting advice. All 60 kit recipients committed to maintaining the new plantings to the best of their ability for a minimum of 10 years.

Homeowners in new blank-canvas subdivisions were especially keen, but wildlife-lovers from established neighbourhoods participated as well. Carol McKnight, who moved into a house built in the mid-50s a year ago, wanted to attract more birds to her heavily treed yard. With nothing but lawn – and trees – she had lots of room for additional plantings.

Carol's backyard is a mix of bright sun for part of the day and heavy shade the rest, so she incorporated native plants from different habitats, including nannyberry (*Viburnum lentago*), grasses, Jack-in-the-pulpit (*Arisaema triphyllum*) and Solomon's seal (*Polygonatum biflorum*). Her home is close to a tributary of the Rouge River, which runs through a large marsh where Carol has seen birds feasting on elderberries (*Sambucus* sp.) and American

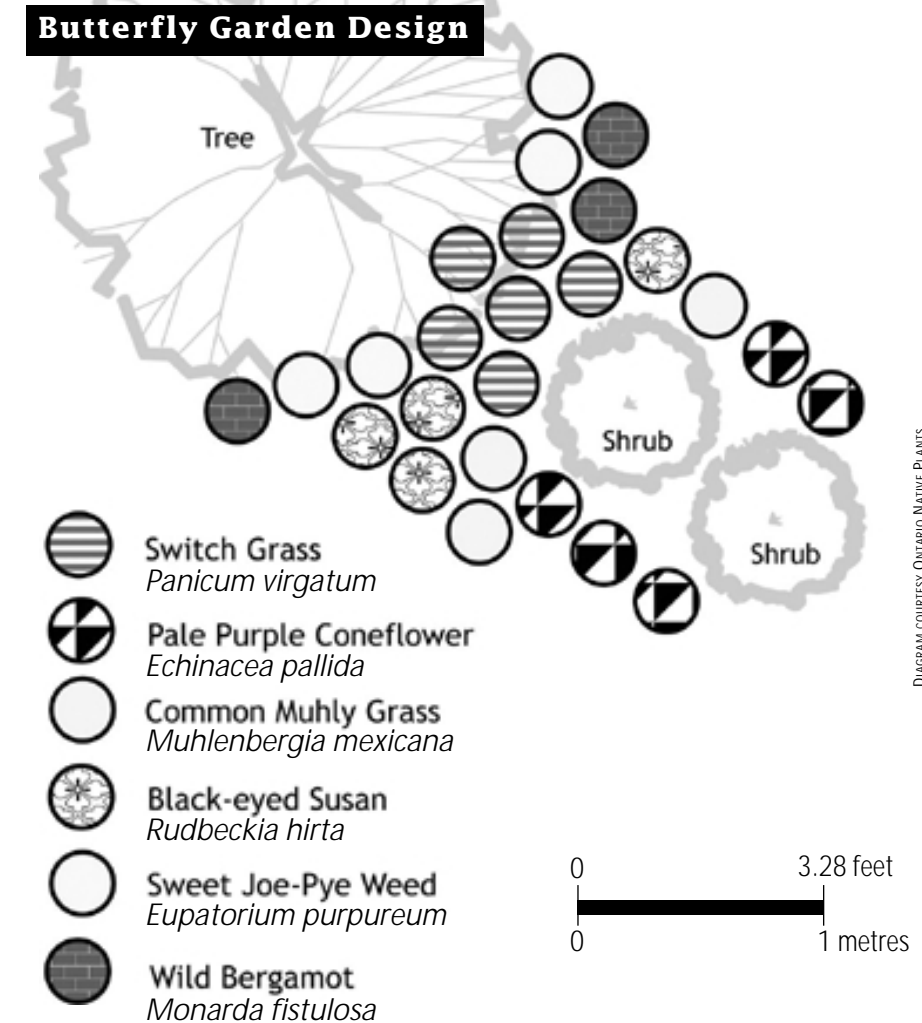


DIAGRAM COURTESY ONTARIO NATIVE PLANTS

bittersweet (*Celastrus scandens*). She plans to incorporate these plants and other natives into her yard this spring.

Mary Andrews lives in a newer subdivision where the houses across the street back onto a small ravine. Her garden, which started out as almost end-to-end lawn, has been three years in the making. After removing all the Kentucky blue grass and situating rocks and stones in strategic places, she started adding plants that a friend was thinning out of her garden. Among them were black-eyed Susans (*Rudbeckia hirta*), wild columbine (*Aquilegia canadensis*) and evening primrose (*Oenothera biennis*). Her neighbour's children would sit out in the evening and watch the primrose blossoms come to life.

From TRCA Mary obtained a kit including more *Rudbeckia* and columbines, plus Joe-pye-weed (*Eupatorium* sp.), a green ash tree (*Fraxinus pennsylvanica*), two different dogwoods (*Cornus* sp.) and more perennials.

She was pleased that native plants require less (or no) watering (once they've become established) – reason enough for Mary and many other homeowners in Markham to “go native”.

The North American Native Plant Society is partnering with TRCA on a proposed two-year expansion of this project. If fundraising is successful, the expanded program will provide more learning opportunities and on-the-ground projects to encourage backyard naturalization in Markham. NANPS has committed to providing complimentary one-year memberships to all participants, allocating space on our website for Green Neighbourhoods, providing brochures and other publications for display at TRCA events and hosting a native plant sale and seminar as part of our fall Annual General Meeting at the Markham Civic Centre. We hope all local NANPS members will join us on October 2, 2004 for our AGM.

# Wild Ones' Philosophy\*\*

## Wild Types: Differentiating between Native Plants and Horticultural Specimens

by *Maryann Whitman*

Bill Schneider of Wildtype: Design, Native Plants and Seeds, Ltd. and a Wild Ones' member in southern Michigan offers this opinion: "The landscaping-with-native-plants-movement really blurs the lines between gardening and restoration, between cultivation and naturalization. We really do not know to what degree it matters though we have plenty of evidence that we are not nearly as smart as we think we are which is what compels me to stick with local genotypes."

A question often arises that is phrased something like this: Red and blue lobelias are native to my part of the country. I just saw some white ones at my garden center. Why shouldn't I plant a couple of flats in my wetland? They would add such a spark of color! The immediate answer is that the hummingbirds and insects that feed on and in turn pollinate red and blue lobelias, do so because they recognize and know what to do with them. They might not recognize the white ones. So while the white ones are "eye candy" to people, they won't do anything for the wetlands ecosystem into which you plan to introduce them but they will take up space that might have been occupied by an interactive native wild type.

**Genetic lineage.** At the heart of the differentiation between native wild types and horticultural specimens is their parental or genetic lineage. For a native plants person, "provenance" covers questions of ecoregion and ec niche: from which area of which county, in which state (or province), did the plant come; how long has the stand of related plants existed in the area; how did the seed arrive - on the wind, riding the fur of an animal or by human hand; and, who were the likely parents?

**Sexual reproduction.** This last question would cover the genetic lineage of the plant and whether uncontrolled sexual reproduction was involved. When plants or animals

reproduce by sexual reproduction, the parental DNA in the gametes (the sperm and the ova, or egg) is mixed and matched so that each offspring is genetically different from either parent and from the other offspring. A stand of wild blue lobelia (*Lobelia siphilitica*), for example, is composed of genetically different plants that together represent the local genotype. A white lobelia appearing in a stand of blue ones represents a phenotypic (visible) reflection of the genetic variability of the



ILLUSTRATION BY KIM DU

stand, that is, what the stand is capable of producing in this environment. The stand evolved by interacting with and adapting to its environment. A white lobelia is an accidental product of a wild stand and a genetic rarity, something special to enjoy but then let go of. It either passes on its genes to future generations or not. Wild Ones argues that the natural order of things involves much more than that single plant, rather the whole ecosystem that the plant grows in, including other plants, mammals, birds, bees, microbes and so on. All are interrelated and interdependent.

**Maximum predictability in horticulture.** While horticulturists are equally interested in the provenance and parental lineage of a specimen, their goals are quite different from those of Wild Ones. Horticultural specimens are reproduced in a controlled manner to ensure maximum predictability in the appearance of the offspring. Indeed large numbers of horticultural plants are genetic clones, the plants having been reproduced vegetatively: hence our fast food chain landscaping across the country. The same plants appear from east to west. The several flats of white lobelia available at a garden center are more than likely vegetatively reproduced.

**Genetic diversity in the wild.** The genetic diversity contained in a stand of plants that are wild types allows them to change over time with their environment. Species that lack genetic diversity and the capability to adapt, are moribund. And every individual life form that interacts with or depends on that species is then also likely on the path toward extinction. We need to keep in mind that plants are the bottom of the food chain. They alone are capable of photosynthesis, converting the energy of the sun into a chemical form that feeds all life on this planet.

So there we have it: unrestrained sexual reproduction produces genetic diversity, which permits adaptation over time to changes in the ecosystem. The furnace of evolution is fueled by natural selection and survival through adaptation within naturally occurring systems. We became members of Wild Ones to promote, protect and try to restore the integrity and biodiversity of the natural ecosystems that surround us.

\*\* *Wild Ones is a U.S. not-for-profit educational organization whose mission is to educate its members and the public about the benefits of using native plant species in natural landscaping.*

*Maryann Whitman is the Features Editor of Wild Ones Journal. This article was reprinted with permission from the July/August 2003 issue.*

**GENOTYPE:** The genetic constitution, latent or expressed, of an organism, as contrasted with the phenotype; the sum total of all the genes present in an individual.

**PHENOTYPE:** The physical appearance of an organism; the phenotype results from the interaction between the genetic constitution (genotype) of the organism and its environment.

**WILD TYPE:** In genetics, the phenotype or genotype that is characteristic of the majority of individuals of a species in a natural environment.

*From P. Raven's Biology of Plants, 6th edition; WH Freeman and Co/Worth publishers, 1999.*

## New & Noted

### *On the Living Edge: Your Handbook for Waterfront Living*

by Sarah Kipp and Clive Callaway (Rideau Valley Conservation Authority et al, 2003, p.b., 148 pages, Ontario edition. To order contact The Living By Water Project, (613) 692-3571; shorelines@lrconline.com)

Cottage country...sigh. Visions of wilderness, dips in the lake, loon calls, tranquility on the deck. The reality, unfortunately, is often different. Increasingly, cottage retreats are turning into suburban outposts, complete with manicured lawns and SUVs in paved driveways. The traffic jams en route to the country are matched by the roar of powerboats careening across water. In short, we seem intent on loving paradise to death.

*On the Living Edge*, which is available in six editions tailored to different regions in Canada, is a comprehensive guide to living responsibly and carefully on a waterfront property. The author's goal is to provide information and tips to ensure that the 13 percent of Canadians (approximately 3.9 million people) who live on properties with water frontage, or water running through the property, protect and enhance their shoreline rather than degrade it.

The importance of protecting existing native plants and landscaping disturbed areas with native vegetation is emphasized throughout this handbook. Useful tips for dealing with wildlife are included, as are instructions for maintaining a healthy buffer zone along shorelines. Lists of appropriate native species, along with alerts about invasive exotics, are provided. I have some minor quibbles with the resource section: the Muskoka Heritage Foundation should be listed, but isn't, and the North American Native Plant Society is listed under "Native Plants" but not under "Garden-

ing". Also a list of native plant nurseries would have been helpful. Still, there is enough resource information to lead readers to useful sources.



### *Ontario Wildflowers: 101 Wayside Flowers*

by Linda Kershaw (Edmonton: Lone Pine, 2002. 144 pages, p.b., \$16.95 CDN, ISBN 1-55105-285-7)

I'm a long-time fan of books published by Lone Pine—they're consistently gorgeous and they're always handy reference guides, sturdy enough to take into the field for a day of exploration. *Ontario Wildflowers: 101 Wayside Flowers* features the common native and naturalized wildflowers that can be found in meadows, trails, roadsides, orchards and other "wayside" areas of Ontario. Each plant gets a page, two photographs (a general view and a close-up of the flower), a well-written text and a descriptive guide for identification.

Although it is not intended as a gardening guide, the entries do include some helpful cultivation tips as well as cautions. These would include not digging yellow lady's slipper orchids (*Cypripedium calceolus*) from the wild.

For people like me who are forever forgetting whether orange hawkweed (*Hieracium aurantiacum*), for example, is native or non-native and naturalized, the distribution section lists origin and range ("Europe; naturalized

in southeastern Canada and northeastern U.S." for this particular plant). Sometimes this information is confusing: selfheal (*Prunella vulgaris*) is described as "native and partly introduced from Newfoundland to B.C., Alaska and Texas," which I can't quite figure out.

The 101 species covered in the guide are separated into five major sections based on the structure of the flowers. But there's also a colour guide at the beginning, with small photos of each flower, so finding your way through the book is easy, whatever your experience level. Beginners will find the illustrated key and the illustrated glossary especially useful.

Lone Pine has also published *Manitoba Wayside Flowers*; *Alberta Wayside Flowers*; and *Saskatchewan Wayside Flowers*, all by Linda Kershaw and all following a similar format.



Reviews by Lorraine Johnson

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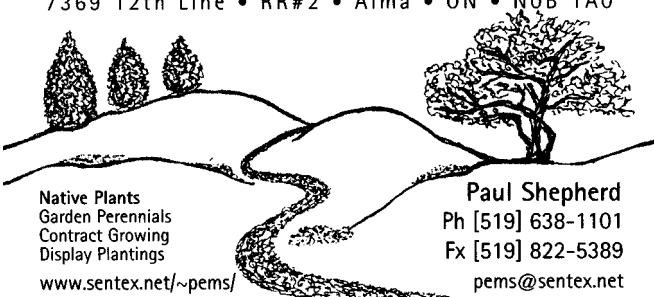
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Continued from page 1

dolomite rocks quite a distance from the escarpment, pushed there by glaciation. The bigger the rock in a wooded ravine, the better the chance of finding walking ferns growing on its shady side.

Fanciful nature lovers might imagine the walking fern will follow them out of the woods, but the plant actually gets its name from its unusual

reproductive strategy. The walking fern produces offspring when the slender tips of its fronds touch the plush moss and send out new roots. As many new plants grow, this creates a mat with overlapping fronds arching into the moss, covering the top (and often spreading down the sides) of limestone rocks. Although many artists envision walking ferns as growing by themselves on rocks I have never found this to be true.

Few people have seen this fern that is unique among the ferns of eastern North America. The frond is simple-cut, 10-30 centimetres (four-12 inches) long. It is cordate (heart-shaped) or auriculate (with

ear-like lobes) at the base prolonged into a slender apex with a bud at the tip, most often producing a new plant in a blanket of moss. The veins are areolate (netted or chained like a fish-net). Sori or spores are elongated along

Escarpment to the other.

Hunting out the dolomite rocks where I have found the walking ferns in the past is like visiting old friends. To find the plants in good shape and spreading further across the rock is



ILLUSTRATION BY BRIGITTE GRANTON

the veins and appear scattered on the underside of the frond. The six to seven fronds grow from a small, erect, unbranched rhizome with dark brown scales. The stalk is reddish-brown at the base shading to green near the blade. Fertile fronds are somewhat larger than sterile ones.

*Asplenium rhizophyllum* is the symbol of the Bruce Trail, the Niagara Escarpment hiking trail that extends from the Niagara River to Tobermory. This lovely fern follows the escarpment in leaps and jumps, then seems to peter out north of Lion's Head Promontory only to reappear on Manitoulin Island at a few stations on the dolomite rocks.

Once a member of the genus *Camptosorus*, the walking fern was moved to the *Asplenium* genus due to the frequency of hybridization between it and other *Aspleniums* such as ebony spleenwort (*A. platyneuron*), maiden-hair spleenwort (*A. trichomanes*), hart's tongue fern (*A. scolopendrium*) and others which inhabit the same ecosystem.

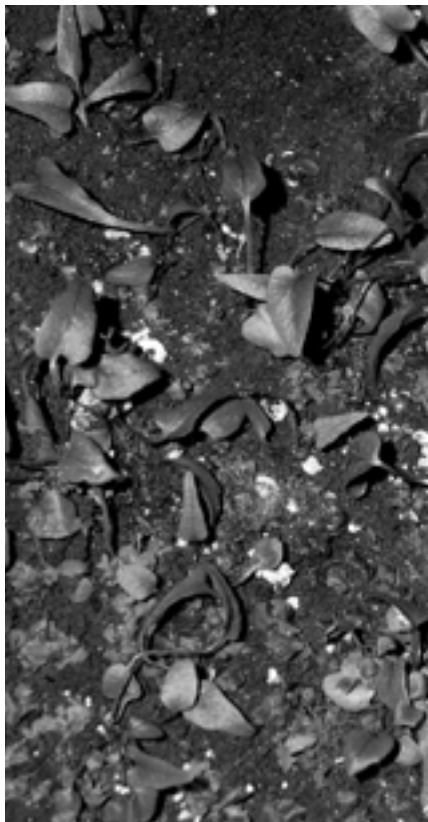
Many of the limestone rocks that are home to the walking fern harbour other fern species. The fragile (*Cystopteris fragilis*) is the earliest to put out new growth (and the first to die back in September), quite often on the same rock where a multitude of bulblet ferns (*Cystopteris bulbifera*) may appear a week later. The common polypody or rock cap fern (*Polypodium virginianum*) can form a dense mass on top of a boulder, easily able to endure the dry exposed conditions. If the rock is large enough it will have the marginal shield fern (*Dryopteris marginalis*), a large fern that is plentiful from one end of the Niagara

cause for great elation. But sometimes I am sad to find a rock stripped by an ignorant person who does not understand that these ferns cannot be removed like an orange peel and put back on another limestone rock in their garden and expected to grow. A walking fern may have taken up to five centuries to adapt to that particular rock. Its roots extend into all the little pockets in the rock, modifying the soil beneath the moss. No other fern creates a symbiotic relationship like this.

I have been trying to grow walking ferns from spores, with little or no success until this last year. I now have about three dozen sprouts under 10 centimetres (four inches) in height. It should take two years from starting the spores to planting outside. I will surgically cut them into the moss on a 10-ton dolomite rock with plenty of shade from maple trees. About one-fifth of the rock is buried in the ground so as to hold moisture in the years to come. I will be ecstatic if I have a 50% success rate in three or four years.

*Nelson Maher is a hobby naturalist and lifelong fern lover.*


*For information on other ferns or instructions for growing ferns from spores consult A Guide to the Ferns of Grey and Bruce Counties, Ontario published by the Owen Sound Field Naturalists, Box 401, Owen Sound, ON N4K 5P7.*



PHOTOGRAPH COURTESY NELSON MAHER

*Propagating Asplenium rhizophyllum*

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