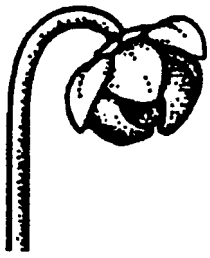
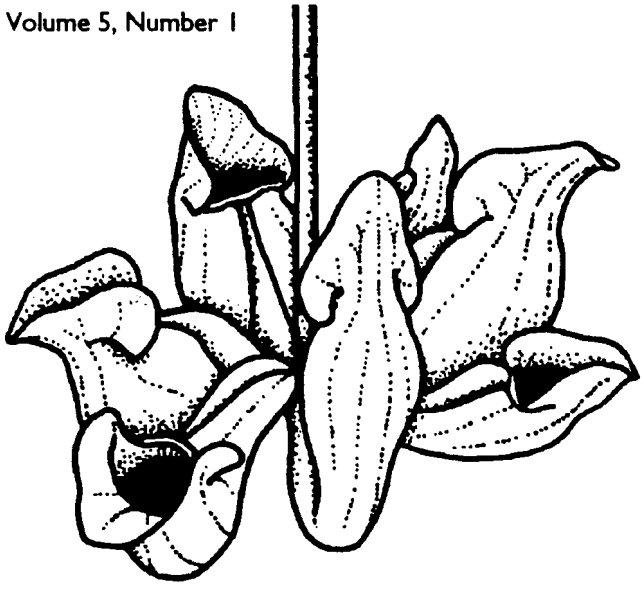


SARRACENIA

Newsletter of the Canadian Wildflower Society - Newfoundland Chapter
Volume 5, Number 1
Fall 1994



Contents

Fall Schedule

October 5: Highlights of the Summer

Sue Meades will lead this informal meeting, which features many members' slides from their summer explorations. Included will be photos of the rare fairy slipper orchid, Hooker's orchid, and the Tilt Cove *Dactylorhiza*.

October 26: Plants of the Eastern Arctic

by Dr. John Chardine, CWS

We will join the Rock Garden Club for a special meeting to hear Dr. Chardine's presentation on plants of the Eastern Canadian Arctic. 8 p.m., School of Pharmacy, 3rd Floor, Lecture Room I (that's capital i - *not* 1), Room 3444. School of Pharmacy entrance - east side of the HSC.

November 2: Exotic Trees in St. John's

by Dr. Joanne MacDonald, Forestry Canada

Joanne will show slides and discuss some of the attractive introduced tree species planted throughout St. John's - A continuation of her September walk in Bowring Park.

December 7: Hawaiian (?) Wildflowers

by Todd Boland

Take your mind off our usually cold, damp Decembers by joining Todd for a slide presentation, which will feature Australian exotics that have replaced much of Hawaii's native flora.

A Note About Dues and Meetings

Since our society was founded in May of 1989, our fiscal year runs from June to May. Dues may be paid between June and October. We will place the main renewal notice in the Summer newsletter, with a reminder in the fall. 1995 dues many be sent to Tom Smith, 10 Beech Pl., St. John's, Nf., A1B 2S7, or paid to Alice at the next meeting.

Regular meetings are held at 8 P.M. on the first Wednesday of each month (Oct. - Dec., Feb. - June). Members will be notified by telephone of special meetings. Cancellation due to storms will occur *only* if the Garden is closed down. Call the Garden if you are unsure of the weather situation. This year's meetings are scheduled to be held in the interpretation room at the Botanical Garden, as long as the Garden can accomodate us on a regular basis. If there are any changes, you will be notified by phone.

Staff Changes at the Garden

We were all very dissappointed to hear that Todd Boland did not have his contract renewed - *and* that Gerry Yetman has been relieved of his duties at the Botanical Garden, as his position has been declared redundant! These unfortunate changes are certainly a great loss to the Garden and future improvements will be hard to accomplish without their dedication and hard work. One has to wonder if the University administration has any real understanding of the Garden's value to the community. Perhaps it would be better run as part of Pippy Park. Nevertheless, I am sure that we will be hearing good news about Todd and Gerry's future endeavors before too long. Good luck to you both and thank you for your cooperation with our Wildflower Society while you were employed at the Garden.

- Sue Meades, *Sarracenia* editor

General Announcements

The 1994-95 Executive & numbers to call for information about future meetings, newsletters, or field trips are as follows:

Sue Meades, president	335-2669
Tom Smith, secretary	754-0949
Alice Close, treasurer	579-1474
Todd Boland.	753-6027
Howard Clase	753-6415
Caroline Harley	895-2606
Jane Smith	754-0949
Mary Woodruff, *Sarracenia* staff	738-3001

Any member who would like to write an article for the newsletter or submit a black and white graphic (preferably pen and ink), please contact Sue or Mary. Articles should be submitted on computer disk (if possible) in Word Perfect, IBM (PC) compatible; illustrations should be no larger than 4 X 6 inches. Articles and artwork published in the newsletter may not be reproduced without the authors' or artists' written consent.

Next Year's Field Trip

We are currently making plans for next year's field trip, which will take place during late July, 1995. This 4-5 day trip will focus on the northeast portion of our province, with stops at Terra Nova NP, Cape Freels, Twillingate, and Tilt Cove. We plan to schedule the trip so that we arrive at peak flowering time for the Tilt Cove *Dactylorhiza*. Members interested in this field trip should contact Sue or Todd before December 10th. Group leaders do not charge for their services, and transportation, lodging, meals, and insurance are the responsibility of participants. We do organize the schedule and make advance reservations for the group, but participants may make alternate arrangements, if desired.

Highlights of the '94 Field Season:
Calypso bulbosa and *Crepis nana* rediscovered!

by Sue Meades

My little Mazda hatchback took quite a beating this summer, as I added 6500 Km to the odometer reading and replaced two wheel bearings. Nevertheless, my car took me and my family to some of the most intesting sites we have ever explored.

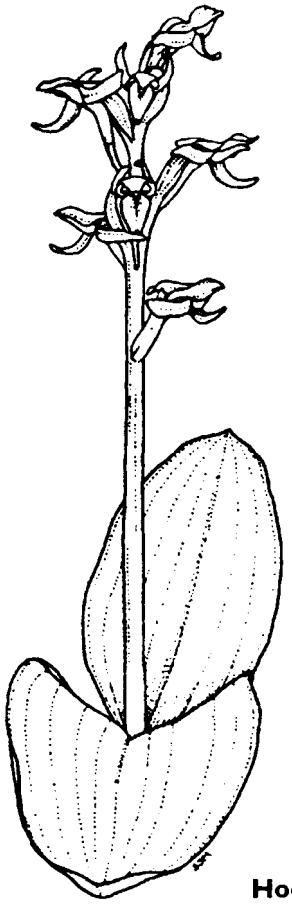
In July, Henry Mann and I joined up with a group of 12 American botanists, lead by Paul Martin Brown, for part of their trip. On Sunday, July 10, Henry took us to a beautiful marl seepage (the outflow of Watson's Pond, south of Corner Brook). Although this site is adjacent to an industrial complex, with steep hills of rubble bulldozed along one edge of the fen, a surprisingly diverse flora grows there. These species are found consistently in calcareous wetlands throughout western Newfoundland and the Northern Peninsula. The most attractive of these species includes the pink-flowered **bird's-eye primrose** (*Primula mistassinica*) and **hyssop-leaved erigeron** (*Erigeron hysoppifolius*), **small-flowered grass-of-parnassus** (*Parnassia parviflora*), the insectivorous **butterwort** (*Pinguicula vulgaris*), the delicate **brook lobelia** (*Lobelia kalmii*), and the yellow-rayed **balsam groundsel** (*Senecio pauperculus*). Less showy, but equally interesting plants include the **sticky tofieldia** (*Tofieldia glutinosa*), **small false asphodel** (*Tofieldia pusilla*), **seaside arrow-grass** (*Triglochin maritima*), **marsh arrowgrass** (*Triglochin palustre*), and **maidenhair fern** (*Adiantum pedatum*).

Young plants of **yellow mountain-saxifrage** (*Saxifraga aizoides*) grew everywhere, including along the disturbed roadsides. This amazed everyone in Paul's group, since one must hike high into the mountains to see this plant in New England. However, yellow mountain-saxifrage was only the first of many plants to surprise our American visitors. Paul showed us how to differentiate between the **northern green orchid** (*Platanthera hyperborea*) and the **tall northern green orchid** (*Platanthera huronense*). *Platanthera hyperborea* has a yellowish-green lip that is more rhomboidal and more abruptly tapered than the greenish-white lip of *P. huronense*, which tapers gradually to the tip. I found it easier to notice *P. huronense* in the field by the greenish-white color of the flowers. According to Paul, the latter species may have originated as a hybrid between the northern green orchid and the **white bog orchid** (*Platanthera dilatata*), but it is now considered a distinct species. *Platanthera* X *media*, the hybrid species, is no longer considered valid. Along the roadsides and in the fen, there was also an abundance of

northern green orchid
insert: flower detail
Platanthera hyperborea

two introduced species - the common **colts-foot** (*Tussilago farfara*) and the delicate **fairy flax** (*Linum catharticum*), which, at first glance, can easily be mistaken for a sandwort. However, the small, spherical, 5-valved capsules should quickly lead you to the Flax Family.

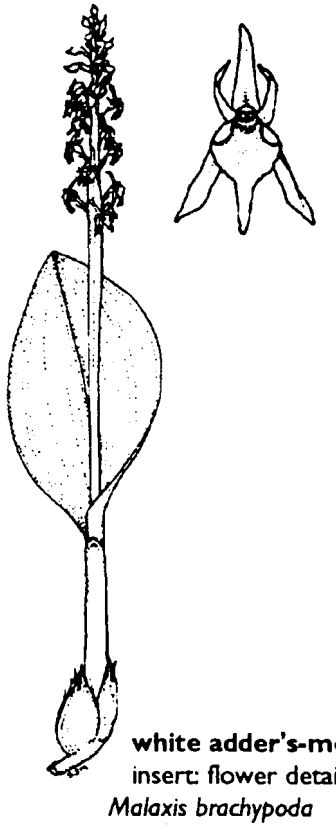
On Monday, I lead Paul's group to a stretch of limestone barren north of Bellburns that had scores of **flat-petalled yellow lady's-slippers** (*Cypripedium calceolus* var. *planipetalum*). Many were the flat-petalled form, but the typical variety, with twisted, brown, lateral petals (var. *parviflorum*), and numerous intermediate forms were also present. This would be a good site to study the taxonomy of the yellow lady's-slipper orchid. Many orchid experts consider the *planipetalum* variety to be merely a geographic gradient. Nevertheless, its delicate beauty and the sheer number or these orchids delighted everyone. A few days later, on a return trip to this site, Paul discovered the first of over 40 counted plants of our endemic **Hooker's orchid** (*Platanthera hookeri* var. *abbreviata*), which has two rounded, basal leaves and a short spike of greenish flowers that look like tiny gargoyle faces in silhouette. This is a very rare orchid, so it wasn't possible to collect a specimen. Instead, I did a field sketch, which was not as easy as expected, stretched out flat on the barren with my sweater pulled up over my head to ward off the swarms of mosquitoes. Other interesting plants we observed were **white-plumed arnica** (*Arnica chionopappa*), **American hedysarum** (*Hedysarum alpinum*), the diminutive **Newfoundland oxytrope** (*Oxytropis campestris* v. *terrae-novae*), numerous clusters of the white-flowered **bastard toad-flax** (*Comandra umbellata*), and the unusual **moonwort** fern (*Botrychium lunaria*). In the crevices of rocks along the coast, we found many interesting pools, some of which sported **seaside crowfoot** (*Ranunculus cymbalaria*), **white water-crowfoot** (*Ranun-culus trichophyllus*), and, much to the delight of Henry Mann, masses of **stoneworts** (*Chara*).



Hooker's orchid
Platanthera hookeri var. *abbreviata*

A few kilometres north, the barrens on both sides of the road were covered with masses of purple and blue **field oxytrope** (*Oxytropis campestris*), which flowered continuously from mid-July through the end of August. The oxytrope carpets were dotted with **whitlow grass** (*Draba spp.*) - small, white-flowered crucifers, and tiny **eyebrights** (*Euphrasia americana* and the smaller *E. randii*). Later, during our August Wildflower Society trip, Tom Smith located some very large-leaved specimens of the **white adder's-mouth** (*Malaxis brachypoda*) at this site - on the east side of the highway next to a gravel pit.

On July 12th, we travelled to Cape Norman, located at the tip of the Great Northern Peninsula. On the way, we stopped to see the beautiful **Newfoundland Orchid** (*Pseudorchis albida*) at a small bog near Anchor Point that my friend Mary Walker, from Massachusetts, had located 2 years previously. The white flowers of the dense spike are bent down so that only the top and 3-pronged lip of the flowers are visible. In addition to many of the species found at Watson's Pond, we also found **Kotzebue's grass-of-parnassus** (*Parnassia kotzebuei*) and **sea thrift** (*Armeria labradorica*). At the Cape, the view across the Strait of Belle Isle was fabulous, with a few bright-white icebergs framed by the hazy clouds in the straits. We parked by the helipad and gradually worked our way past the lighthouse, stopping to photograph **alpine chickweed** (*Cerastium alpinum*), **moss campion** (*Silene acaulis*), purple-flowered **stemless dwarf raspberry** (*Rubus acaulis*), and the attractive rosettes of **round-fruited scurvygrass** (*Cochlearia cyclocarpa*). Within minutes, Paul located several plants of **velvet bells** (*Bartsia alpina*), a scroph with downy, deep royal-purple flowers; the **frog orchid** (*Coeloglossum viride*), which is entirely green except for the straight, purple-brown lip; and a variety of the **blunt-leaved orchid** that is endemic to Cape Norman (*Platanthera obtusata* var. *collectanea*). The latter species has all the flowers clustered at the top of the short spike. This is also the site at which C.A. Leur photographed this variety and other species for his comprehensive 1975 book, *The Native Orchids of the United States and Canada*. As people were busy exploring, photographing, and taking turns shielding a few choice plants from the wind, no one took notice that the sky was being obscured by dark clouds. Suddenly, a storm of pea-sized hailstones descended on



white adder's-mouth
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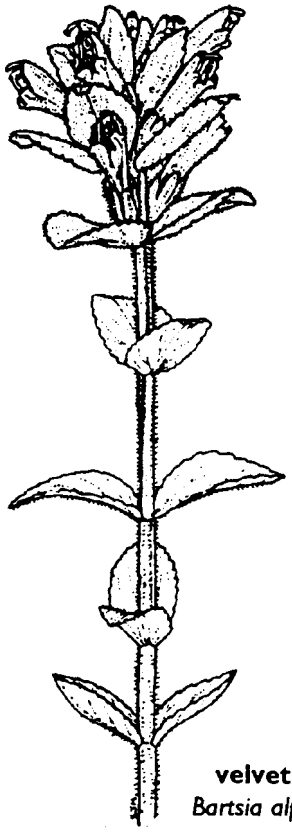
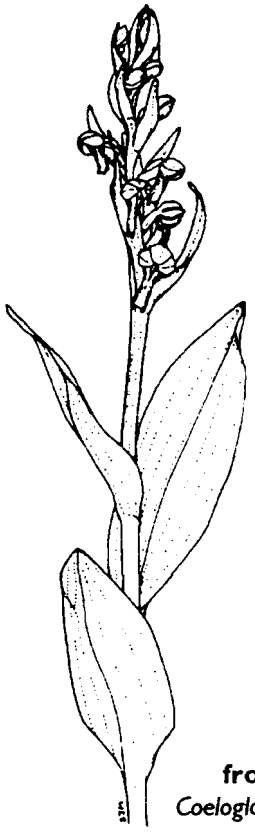
Malaxis brachypoda



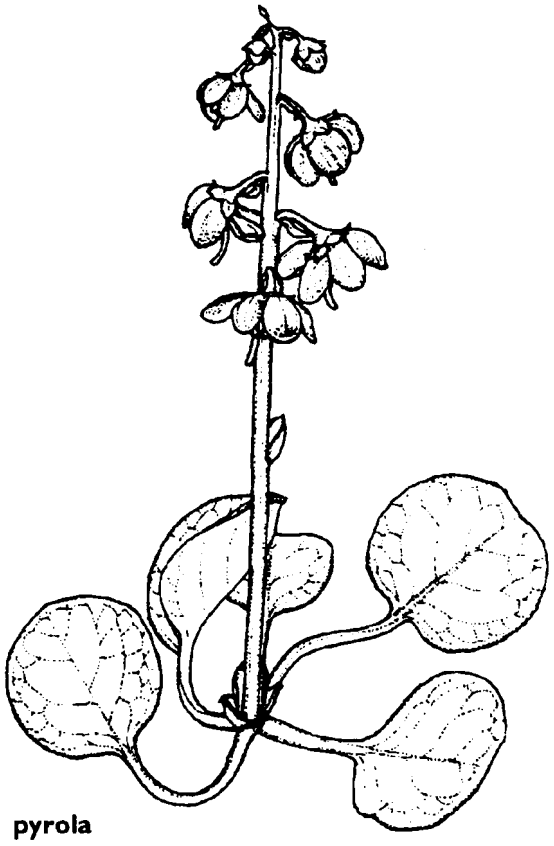
velvet bells
Bartsia alpina



frog orchid
Coeloglossum viride

our group. The hail and subsequent rain showers were short-lived, but provided our guests with first-hand experience of Newfoundland's changeable weather.

Among the other interesting plants that drew much attention that afternoon were the barren form of **pink pyrola** (*Pyrola asarifolia* var. *purpurea*), with its short cluster of pink blooms and loose rosette of round, leathery leaves; the **dwarf tansy** (*Tanacetum huronense*), which has yellow button-like heads and feathery, dissected leaves; **Crantz's cinquefoil** (*Potentilla crantzii*), a beautiful yellow cinquefoil with orange spots near the base of each petal; and two attractive dwarf willows, the **net-veined willow** (*Salix reticulata*) and **hairy willow** (*Salix vestita*). Present throughout the area were **small lady's-mantle** (*Alchemilla minor*) and **wild strawberry** (*Fragaria virginiana*) in surprising quantities.



pink pyrola
Pyrola asarifolia v. *purpurea*

Although everyone was fascinated by the unique flora, there was much disgust expressed at the quantity of garbage behind the lighthouse - one large pile of broken glass was right next to the only located site for the rare var. *collectanea* of the blunt-leaved orchid. As I descended the grassy, terraced slopes behind the lighthouse, the crunching sound of layers of rusting cans being compressed beneath my feet brought a realization that much of the garbage from the lighthouse had been dumped over the edges of these terraces. Although now covered by grass and no longer visible, this dump site is certainly a hazard. Others noticed that abandoned equipment from the lighthouse had casually been tossed over the sides of the cliffs, rather than be salvaged. Although we didn't locate any near the lighthouse, Cape Norman is the type locality for the Newfoundland Orchid (the robust North American variety of *Pseudorchis albida* - originally called *Platanthera albida* var. *straminea*). It is very disturbing that such an important botanical site has been treated with such disrespect.

Wednesday we explored the areas around Plum Point and Reef's Harbour - the first community on the New Ferrolle Peninsula. This was a site that Bill and I discovered last summer and that I discussed in last year's newsletter, *Sarracenia* 4(2). It is the best site I know of for the rare **white adder's-mouth** (*Malaxis brachypoda*) and, in August, the ground is practically covered with **gentians** (*Gentiana nesophila*, *Gentianella amarella*, and *Gentianella propinqua*), **marsh felwort** (*Lomatogonium rotatum*), **northern grass-of-parnassus** (*Parnassia palustris*), and moonworts. This July we also found the purple-flowered **northern bog violet** (*Viola nephrophylla*) and **mare's tail** (*Hippuris vulgaris*), which has whorls of 6-12 leaves covering the entire length of the emergent stems. Placed in the axil of each leaf

of the middle and upper whorls, is one minute flower, composed of one ovary with a sessile, feathery stigma and one, short stamen with a red anther. Petals are absent and the calyx is reduced to a simple sheath that tightly surrounds the ovary.

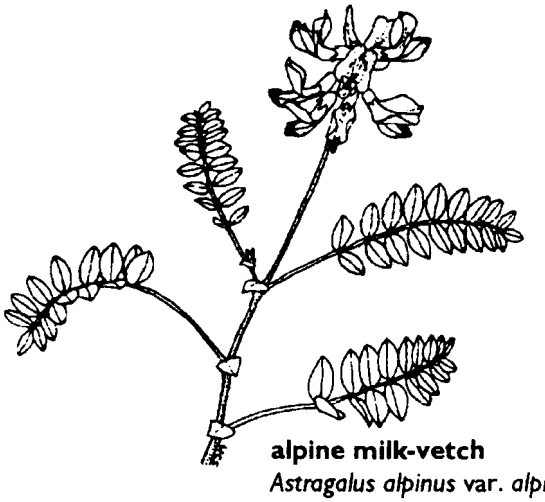
The following day - one that I will always regret not being part of - Paul took his group over to Burnt Island and L'Anse-aux-Meadows while I returned to Rocky Harbour to work on my drawings. The "island" is connected to Raleigh by a causeway and the road continues up the centre of the island, branching in several directions. Much of this area is disturbed, as there is an active gravel excavation at the tip of the island and most road branches are dotted with gravel test-holes and scrapings. At first glance, there seems to be nothing growing on the bare dolomite, but once you get out of your car and walk around, you discover one rare plant after another. Paul held true to his form on that July 14th. Not only did he relocate the delicate **fairy slipper orchid** (*Calypso bulbosa*) - about 30 plants, which hadn't been found since Fernald first discovered it in 1929, but he found a new color form (solid pink with a yellow beard)! He will soon officially describe this form in a refereed journal. This orchid grows in dense tuckamoor, is less than 1 dm tall, and consists of a single, basal, petiolate-ovate leaf and one small, slipper-like, pink flower with a white lip and yellow beard at the lip's throat (typical form). We will pass on any new information in future newsletters.

Paul also found three plants of the **dwarf hawk's-beard** (*Crepis nana*), another long unseen plant, last collected in 1925 by Fernald *et al.* This small composite is a perennial with a flat rosette of thick, spatulate leaves and a cluster of tiny, nearly sessile, dandelion-like flowers emerging from the center of the rosette. In Newfoundland, it has only been found on Burnt Island, however it can also be found in high Arctic areas of eastern Canada and in the Rockies. At this site and others, Paul also found plants of the Newfoundland orchid, **small round-leaved orchid** (*Amerorchis rotundifolia*), and **northern holly fern** (*Polystichum lonchitis*). At the end of two weeks, when his group returned to the States, Paul had led them to all but 2 [**northern twayblade** (*Listera borealis*) and **Menzies' rattlesnake plantain** (*Goodyera oblongifolia*)]of our 36 native orchid species. If Paul couldn't find them, I doubt they still occur in Newfoundland.

Before I go any further, I must tell you more about Paul Martin Brown. Although Paul had never been to Newfoundland before, he was consistently able to locate every rare species in any site. It's as if he had a guardian angel sitting on his shoulder directing his steps. Whether you attribute his success to keen eyesight and excellent field experience or the spirit of M.L. Fernald, it was a pleasure to accompany this New England botanist in the field. His powers of observation were only exceeded by his sincere delight at each new discovery. During a farewell dinner with his group at the Seven Seas, we discussed his ability to locate rare plants and, in true humility, he offered that two or three hundred years ago his uncanny skills would probably have gotten him burned at the stake!

When I finally visited Burnt Island in August with my family, Anne Marceau, Michael Burzynski, and Roger Smith, the fairy slipper orchid was past flowering and thus impossible to see amongst the tuck. Nevertheless, we also made some exciting finds. At one of the highest points of the island, on coarse-textured gravels, we found fruiting specimens of the **snowy cinquefoil** (*Potentilla nivea*) along with the **Burnt Cape Cinquefoil** (*Potentilla usta-capensis*), named by Fernald after the only known site for this species - Burnt Cape on

Burnt Island. The latter cinquefoil has a more dissected and woollier leaf than the snowy cinquefoil. Bedrock carpeted with a shallow, but dense, moss cover was the preferred habitat of the **white mountain-saxifrage** (*Saxifraga aizoön*) and **purple mountain-saxifrage** (*Saxifraga oppositifolia*), whose respective basal rosettes or 4-ranked stem leaves are tipped with calcium exudate. Two rare, disjunct species that we found on fine-textured gravels were the **alpine milk-vetch** (*Astragalus alpinus* v. *alpinus*) along with about a dozen specimens of the **dwarf hawk's-beard** (*Crepis nana*) - a second *Crepis* site! The alpine milk-vetch is a delicate plant with pinnately compound leaves (5-11 pairs of oval leaflets) and small, pale lavender and white flowers that are lined with darker purple on the standard (the wide, upper petal) and with a dark tip on the keel (the two, united, lower petals).



alpine milk-vetch
Astragalus alpinus var. *alpinus*

In the disturbed gravels near the road, Bill found a few specimens of **purple rock-cress** (*Braya purpurascens* v. *fernaldii*), a rare crucifer endemic to the upper Northern Peninsula. Other rare or not often encountered plants that we found on Burnt Island were **red bearberry** (*Arctostaphylos rubra*), **American hedysarum** (*Hedysarum alpinum*), white-plumed arnica, frog orchid, a small, purple-flowered, woolly **Williams' eyebright** (*Euphrasia williamsii*), the large magenta flowers of **river-beauty** (*Epilobium latifolium*), and the **elegant pussy-toes** (*Antennaria eucosma*) which has long, oblanceolate, woolly leaves.

The next week, our Wildflower Society field trip began. Participants were Marian Bailey, Todd Boland, Leila & Howard Clase, Alice Close, Ken Knowles, Andrée Liddell, Henry Mann, Sue, Bill, Debby & Shawn Meades, Tom & Jane Smith, and Bob & Eileen Stevens. In addition to our planned stops, we added the Arches, L'Anse-aux-Meadows, and the old stretch of French Shore, near Port au Choix, to our itinerary. The trip was wonderful! As a bonus to all the interesting plants we saw, the meals and accommodations were excellent, especially the partridgeberry pie and bakeapple parfaits. Having several birdwatchers and a geologist in the group greatly increased the amount of information we learned about each site. And although our children do not share my passion for wildflowers (yet), they thoroughly enjoyed exploring the barrens and beaches, looking for fossils and keeping track of the wildlife we encountered. They were particularly taken with the silver fox we all watched at Port au Choix.

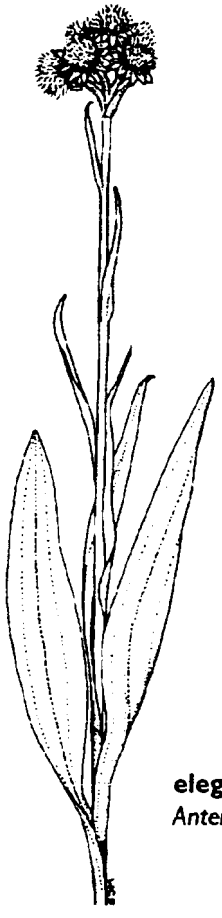
For me, the highlight of that trip was the lentic marsh, north of Port au Choix, to which Henry Mann led us. On topo maps, the pond is called Indian Pond and it is one of the most picturesque spots on the Northern Peninsula. The pond is fairly large, with sedge borders in several areas. We have stopped there several times over the years, looking at the scenery and watching the terns dive for fish, however, we had not previously explored the margins of the marsh. Henry discovered this site the week before our trip, while searching for new stonewort sites. The most notable plants we saw were the beautiful **calla lily** (*Calla palustris*), an aroid with a large white spathe, and

tufted loosestrife (*Lysimachia thyrsiflora*), which differs from our **yellow loosestrife** (*Lysimachia terrestris*) in that it has miniature racemes of small yellow flowers in the axils of mid-stem leaves. Tucked in amongst the sedges, I discovered a few plants of **marsh yellow cress** (*Rorippa palustris* var. *hispida*), an uncommon yellow-flowered crucifer with short, ovoid fruits, which was only known from the Humber River area. The Indian Pond marsh is a new site for the rare (in Newfoundland) calla lily and tufted loosestrife; it is also the northernmost location for the loosestrife and the marsh yellow cress. Many more interesting species grow here, including the very poisonous **bulbous water-hemlock** (*Cicuta bulbifera*), but I will let Henry tell you more about them in the next newsletter.

Before returning to the Northern Peninsula in August, Bill and I led a field trip to Seal Cove, in Conception Bay. This is a site that we visit regularly with the Society because of its great diversity and this return trip did not disappoint us. The cheery yellow, 3-petalled flowers of **yellow-eyed grass** (*Xyris montana*) were in full bloom, and there were dozens of **screwstem** (*Bartonia paniculata*), a diminutive gentian, less than 5 cm tall, which has no leaves on its spirally-lined stem, but bears a tiny raceme of 1 to 7 small, white flowers. (Later in the year, we also found the screwstem at Point Le Haye Provincial Park on the southern Avalon.) While working our way toward a population of white-flowered **ragged orchid** (*Platanthera lacera*), Glenda Quinn's sharp eyes spied two bronze-flowered plants of this species growing in a drier site along the path to the bog. Tom discusses more of our finds in his article *Sweltering in Seal Cove* (page 10).

Last September, Todd Boland found a new location, south of Eddies Cove West, for **pipsissewa** (*Chimaphila umbellata*). This plant was known previously from only 2 locations - one south of Halls Bay (South Pond) and the other from west of Botwood (New Bay Lake). Todd led us back to this new site in August, but unfortunately, the plants were not flowering. Another colony has been located near Pasadena by a colleague of Henry Mann's. These are both significant finds that greatly increase the known range of pipsissewa in Newfoundland. Recent introductions also noticed this summer include the feathery-pink **rabbits-foot clover** (*Trifolium arvense*), along the TCH in Terra Nova NP, and the purple-flowered **alfalfa** or **Lucerne** (*Medicago sativa*), along the TCH near Grand Falls.

This has been a most productive and exciting summer for us all and next year promises to be equally interesting.



elegant pussy-toes
Antennaria eucosma

Sweltering in Seal Cove: Flowers and Water

by Tom Smith

"Mad Dogs and Englishmen go out in the mid-day sun." Noel Coward 1899-1973

"So that the sun shall not burn thee by day." (For Sue) *Prayer Book* 1662

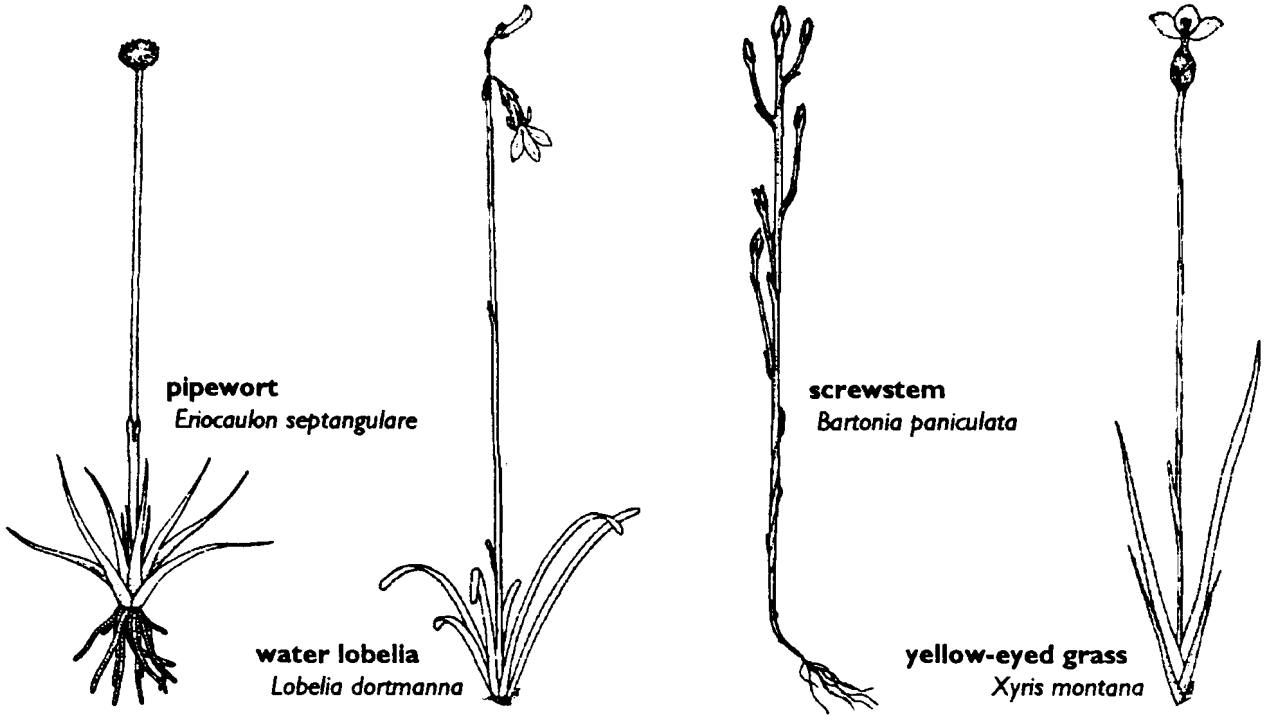
Sunday, August 7th, was just perfect for our Seal Cove field trip. Warm sunny weather and holiday enthusiasm were the right combination for our eleven participants. Really twelve counting Maggie - Sue's dog, not mad literally, but frisky and friendly and who certainly taught us a valuable lesson in keeping cool. But more about that later.

Norway was more obviously prominent than England as country of origin of our guests, once introductions were made in the parking lot of the Arts and Culture Centre. However, we all set off in anticipation into the approaching mid-day sun of Seal Cove. The floodplain of the Seal Cove River encompassed a variety of interesting and different habitats molded by the river and by man, and we were not to be disappointed.

The trail from the road to the river bed led to a very meandering gravelly riverbed with many dry watercourses connected to the main, which equally meandered, often ending blindly. Obviously these lesser waterways would be very important in the spring runoff. The riverbanks were heavily wooded with low **black spruce** (*Picea mariana*) and **mountain alder** (*Alnus crispa*), but slightly higher elevations had stands of **white spruce** (*Picea glauca*), **balsam fir** (*Abies balsamea*), and **larch** (*Larix laricina*). **Chuckley-pears** (*Amelanchier spp.*) were very abundant; fruiting, mostly ripe and delicious, providing nibbles all along the smaller waterways. Bill's keen eye found the hidden **creeping dogbane** (*Apocynum androsaemifolium*) - one of the highlights of the walk with its pretty pink bell-like flowers and interesting leaves, but certainly not the only one of that afternoon. (Eat your heart out Todd Boland - maybe next year.)

The predominant colour of trails and paths was yellow - **yellow rattle** (*Rhinanthus crista-galli*) everywhere, **fall dandelion** (*Leontodon autumnalis*) were underfoot, as were the tiny **Canada St. Johnswort** (*Hypericum canadense*). Occasionally **swamp candles** or **yellow loosestrife** (*Lysimachia terrestris*) and **narrow-leaved goldenrod** (*Solidago graminifolia*) lined the edges with **shrubby cinquefoil** (*Potentilla fruticosa*) - almost in bloom. **Purple-stemmed** and **rough-leaved asters** (*Aster puniceus and A. novi-belgii*), **spotted joe-pye-weed** (*Eupatorium maculatum*), **and black knapweed** (*Centaurea nigra*) grew along most streambanks, while **turtlehead** (*Chelone glabra*) put in an

swamp candles
Lysimachia terrestris



appearance further down the river near the marshes. **Common eyebright** (*Euphrasia americana*) lived up to its name, with **shining rose** (*Rosa nitida*) and **Virginia rose** (*Rosa virginiana*) equally common.

Winterberry (*Ilex verticillata*) and **bush honeysuckle** (*Diervilla lonicera*) were soon identified, both in bloom, and were distintive along the brook's edge. **Red-osier dogwood** (*Cornus stolonifera*) with showy white fruits and **northern wild raisin** (*Viburnum cassinoides*) with greenish-white developing fruits were noticed everywhere. Occasional **squashberry** (*Viburnum edule*) shrubs were ripening as were multiple **pin cherry** (*Prunus pensylvanica*) trees. However many ripened **low-bush blueberries** (*Vaccinium angustifolium*) were the edible prizes most easily obtained all along the trails and river banks.

Quiet pools and backwaters were filled with **pipewort** (*Eriocaulon septangulare*) and **water lobelia** (*Lobelia dortmanna*), while many areas around pools and bogs had the abundant **round- and spatulate-leaved sundews** (*Drosera rotundifolia* and *D. intermedia*). With great aplomb, Sue produced an excellent specimen of **bur-reed** (*Sparganium americanum*) from a secret area along the river.

Before lunch a small bog yielded the most interesting finds. My favourite - **yellow-eyed grass** (*Xyris montana*) far outshone (in my eyes) the diminutive, uncommon **screwstem** (*Bartonia paniculata*), although Sue was most enthusiastic about the latter. Such tiny plants are easily overlooked. **Bog goldenrod** (*Solidago uliginosa*) was not easy to overlook however, neither were some of our more common orchids, the **ragged orchid** (*Platanthera lacera* var. *terrae-nova*), the **white bog orchid** (*Platanthera dilatata*), **hooded ladies'-tresses** (*Spiranthes romanzoffiana*), **green adder's-mouth** (*Malaxis unifolia*), **green woodland orchid** (*Platanthera clavellata*), and, already in fruit, the **rose pogonia** (*Pogonia ophioglossoides*).

Beyond the bog lay a similarly sized pond with lots of **yellow pond lily** (*Nuphar variegatum*), **fragrant water lily** (*Nymphaea odorata*), and near shore, **horned bladderwort** (*Utricularia cornuta*). The path around and beyond this pond had **cotton grasses** (*Eriophorum virginicum* and *E. spissum*) and **deergrass** (*Scirpus cespitosus*), leading shortly to a pleasant elevated lunch site in the middle of a small but typical *Kalmia* barrens. With our derrières solidly ensconsed on lichen covered rocks, we munched and shared assorted lunches with Maggie and found **caribou lichens** (*Cladonia boryii, C. arbuscula, C. mitis, C. rangiferina*) and **rock tripes** (*Umbilicaria spp.*). All about, the Ericaceae surrounded us, **sheep laurel** (*Kalmia angustifolia*), **leatherleaf** (*Chamaedaphne calyculata*), **Labrador tea** (*Ledum groenlandicum*) and **rhodora** (*Rhododendron canadense*). Interspersed were islands of **large** and **small cranberries** (*Vaccinium macrocarpum* and *V. oxycoccus*) forming fruit. **Gall-of-the-earth** (*Prenanthes trifoliolata*) projected from clumps of **black crowberries** (*Empetrum nigrum*).

It would be blasphemous in Newfoundland to say that the sun was TOO hot, but by lunchtime it had visably dampened spirits and escape to cooler environments was paramount. Maggie looked cool and refreshed rushing through pools, bogs, and rivers. Those of us who previously avoided getting our feet wet, now tramped and waded, seeking delicious coolness. Our return trip was noticeably quicker, but we did find **royal fern** (*Osmunda regalis*), **cinnamon fern** (*O. cinnamonea*), **spinulose woodfern** (*Dryopteris spinulosa*), and **bracken fern** (*Pteridium aquilinum*). Various **sedges** (*Carex flava, C. nigra, C. michauxii, C. rostrata,* etc.), **rushes** (*Juncus gerardii, J. canadensis, J. bufonius*), **three-way sedge** (*Dulichium arundinaceum*), and **beak rush** (*Rhynchospora alba*) were documented. Tiny **creeping spearwort** (*Ranunculus reptans*) were growing in almost bare, exposed rocks in quieter pools. The diminutive **marsh willowherb** (*Epilobium palustre*), the **marsh St. Johnswort** (*Triadenum fraseri*) and **bugleweed** (*Lycopus uniflorus*) were abundant, as was the **bristly sarsaparilla** (*Aralia hispida*).

This field trip was most interesting and informative for all, thanks to Sue and Bill. The Seal Cove River floodplain site was excellent, close to home and very productive, even though surrounded by suburbia and in many places disturbed by man. On Sunday, August 7, 1994, Newfoundland was the hottest spot in all of Canada, with the temperature recorded at 34 degrees Celsius! What better way to enjoy this beautiful hot Newfoundland ourdoors!

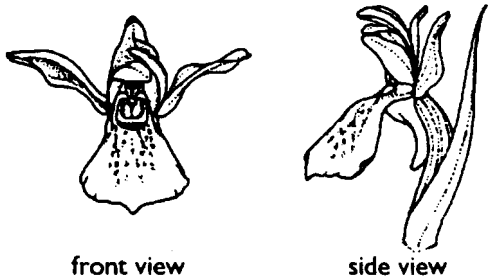
ragged orchid
insert: flower detail
Platanthera lacera

The Tilt Cove *Dactylorhiza*

by Sue Meades

A **European marsh orchid**, *Dactylorhiza*, was first collected in Tilt Cove, on the Baie Verte Peninsula, by André Bouchard, Stuart Hay, and Luc Brouillet in 1988. The first population of *Dactylorhiza* known to the botanical community consisted of 10 plants in a wet seepage on the northwest side of Windsor Lake, in Tilt Cove. Since then, not much had been made of this site, as it was first assumed that the orchid must have been brought over as a garden plant. However, when botanists visited the site this summer, Don Collins, the mayor of Tilt Cove brought them to another site that he and his wife discovered near their strawberry patch. This new site is a seepage fen located at the base of the slope beneath the old mine site. The fen is less than ¼ of an acre in size, but there are approximately 6-700 flowering plants, with many more basal rosettes, growing in the thin layer of wet organic material. Word has spread fast about this new site and Tilt Cove was visited throughout the summer by botanists from various parts of North America, including Tennessee, Ohio, New England, and Texas (this man reportedly spent $7,000 to see the Tilt Cove *Dactylorhiza*). I visited the site in late July, followed by Anne Marceau and Michael Burzynski.

The flowers of the Tilt Cove *Dactylorhiza* are all the same shade of magenta-purple, except for a few albinos. Many showy flowers are crowded on each usually dense, 5-8 cm spike, which terminates the 3dm-tall stem. Upper portions of the stem are hollow and each flower is subtended by a narrow, acuminate bract. Lower bracts are about 2 cm long, upper bracts are smaller. The lip is widest near the base, with rounded sides and a broad point at the center; the 4.5 mm spur is curved slightly forward, but hidden from the front by the longer, spotted lip. As the flower matures, the sides of the lip fold back (reflex), making it appear narrower from the front. The lateral petals curve forward under the upper sepal, forming a loose "hood". The lateral sepals are attached at an angle to the main axis of the flower, but bend abruptly upward and often curl forward. From on oblique view, the flowers are reminiscent of hovering terns, paused before a dive.



front view side view

Tilt Cove *Dactylorhiza* flower detail

The light green, lanceolate leaves, at the base of the plant, are wider and blunter, often with slightly hooded tips; upper leaves are progressively smaller with acuminate tips. There is no spottings on the leaves, as in other European marsh orchids.

While talking to some local residents, including Don Collins, I learned that this site had been bulldozed 20 years previously, so this seepage fen is a newly established site. However, Cecil Short, a native of Tilt Cove, told Paul Martin Brown that as a small boy, some 75 years ago, his mother had shown him this orchid! How *Dactylorhiza*, which is a common European genus, ever became established in Tilt Cove has been a question that botanists have been trying to answer since its recent "discovery". The original mine in Tilt Cove was established at the end of the 19th century and was active throughout the early

1900's. At one time, about 1500 people lived and worked in Tilt Cove. Many immigrant mine workers, along with machinery, ship ballast, and bricks came over from Britain at that time. It is possible that the minute seeds from *Dactylorhiza* may have been introduced accidentally when equipment was moved from a European site to Tilt Cove. It is less likely that one of the immigrants brought along a rhizome of this plant and successfully cultivated it in a garden. Since the orchid is not growing in ordinary garden soil - only wet seepage areas and fens, this seems very unlikely.

Slag from the copper and nickel mining operation has been dumped in Windsor Lake and along its shores for decades. Mining operations were resumed during the 1950's and barracks for the mine workers were constructed along the northeast shore of the lake. When the mine closed down in the '70's, all of the barracks were bulldozed down to bare soil (slag) - this is the location of the new *Dactylorhiza* site. Don Collins and his wife told me that the orchid is found in a number of other sites around the community, but in fewer numbers. I tried to find the source of the seepage that probably brought seeds of the orchid to this recent site and was successful in locating a large fen north of the old mine that contained numerous *Dactylorhiza* plants. Paul Martin Brown's group explored the area around Castle Rock, south of the community, and also found the *Dactylorhiza* growing in fens there. Obviously, this orchid has successfully naturalized in the Tilt Cove area. It is interesting to note that, in addition to one endemic *Dactylorhiza* (*D. aristata*) in Alaska, the only other *Dactylorhiza* (*D. maculata*) in North America is in Timmons, Ontario - another copper mining town.

Also growing in the recent fen site are the **white bog orchid** (*Platanthera dilatata*), **common horsetail** (*Equisetum arvense*), and the weedy **tall buttercup** (*Ranunculus acris*), **red clover** (*Trifolium pratense*), **coltsfoot** (*Tussilago farfara*), **yellow rattle** (*Rhinanthus crista-galli*), and **green sorrel** (*Rumex acetosa*). Fens with *Dactylorhiza* above the community do not contain the weed species, but do have the white bog orchid, plus the **northern green orchid** (*Platanthera hyperborea*), **bottle-brush** (*Sanguisorba canadensis*), and several species of *Carex* and *Juncus*.

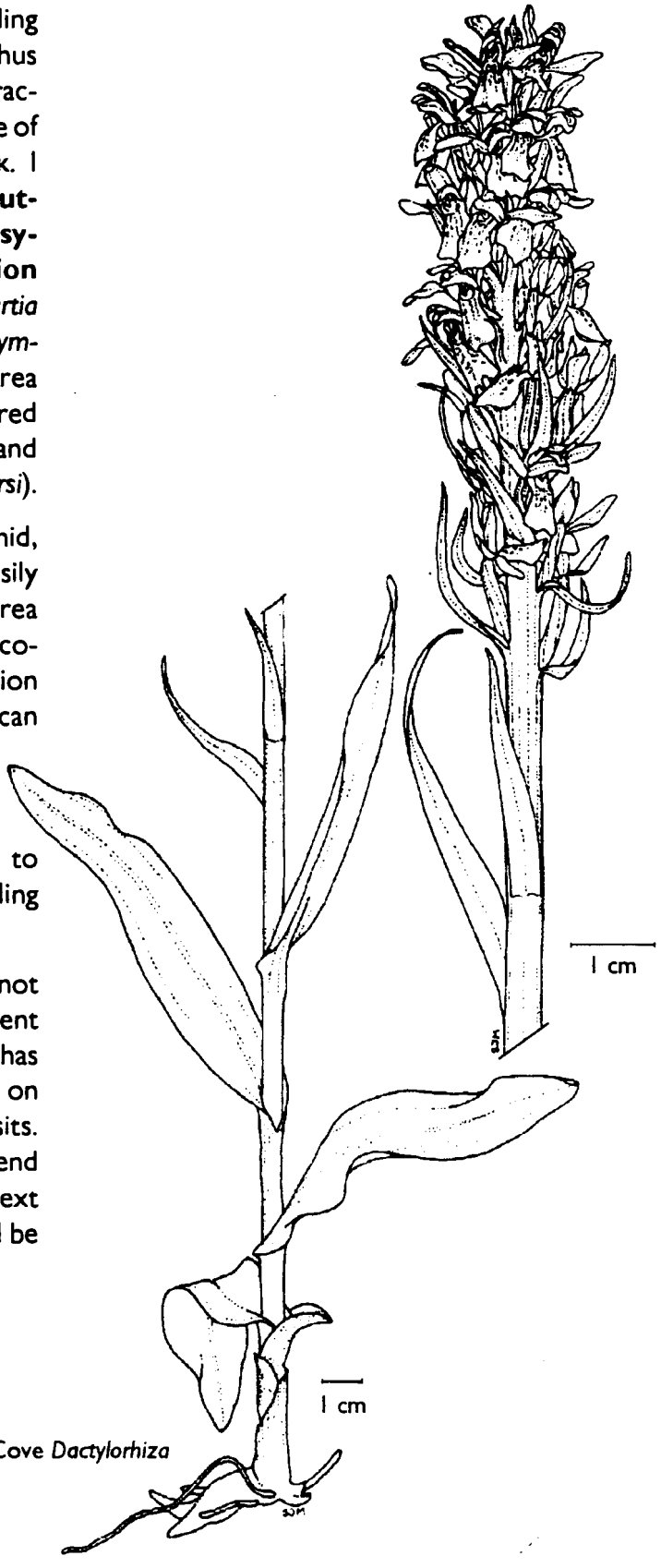
Because of the tendency of *Dactylorhiza* species to be extremely varible and to hybridize freely, it is often difficult to make a correct identification. This is the case with the Tilt Cove *Dactylorhiza*. At first it was identified as the species *Dactylorhiza incarnata*, but after examining the original herbarium sheet, one expert (Dr. Richard Bateman of Oxford) believes it may be *Dactylorhiza majalis*, subspecies *praetermissa*, the **southern marsh orchid**.

Other *Dactylorhiza* species have flowers that vary in color from white with red-spotted lips or pale pink to darker shades of pink or purple - all variously spotted; also, the leaves of other marsh orchids are often spotted. The flowers of the Tilt Cove population are all the same shade of bright magenta-purple and their leaves were all unspotted. Due of the morphological uniformity of the Tilt Cove plants, it is likely that they have come from one gene pool - one original plant, which was self-fertilized. Since this plant has been isolated from other gene pools for so many years, it is possible that it has developed morphological traits that are unique enough to warrant a new varietal status. Paul Catling, an orchid and *Carex* expert with the Biosystematics Section of Agriculture Canada, in Ottawa, is currently looking at the taxonomic status of the Tilt Cove *Dactylorhiza*. We will keep you informed about the latest information and any nomenclatural changes.

Much of the area surrounding Tilt Cove contains serpentine-type bedrock, including the old mine site and the Castle Rock area, thus many plants are found here that are characteristic of basic and ultrabasic soils, like those of the Tablelands of Gros Morne National Park. I noticed **alpine campion** (*Lychnis alpina*), **cut-leaved anemone** (*Anemone multifida*), **pussy-toes** (*Antennaria rupicola*), **moss campion** (*Silene acaulis*), **reddish sandwort** (*Minuartia rubella*), and the **limestone oak fern** (*Gymnocarpium robertianum*). Also found in this area were the more commonly encountered **partridgeberry** (*Vaccinium vitis-idaea*) and **common bearberry** (*Arctostaphylos uva-ursi*).

With the attraction of a rare orchid, unique to North America, and the easily accessible serpentine flora, the Tilt Cove area has the potential to become an important eco-tourism site. I am preparing an information sheet for the community, which they can distribute to tourists wishing to learn more about this orchid. Ferns are not tolerant of high traffic, so if enough people visit this site, it may become necessary to protect this large population from trampling feet.

The area above the old mine site is not considered very stable, having suffered 2 recent cave-ins. However, Mines and Energy has supplied me with a map that will keep us on stable ground during our return visits. Members of our wildflower society that intend to participate in our week-long field trip next year will be spending a day at this site. It will be interesting to see what else we discover.



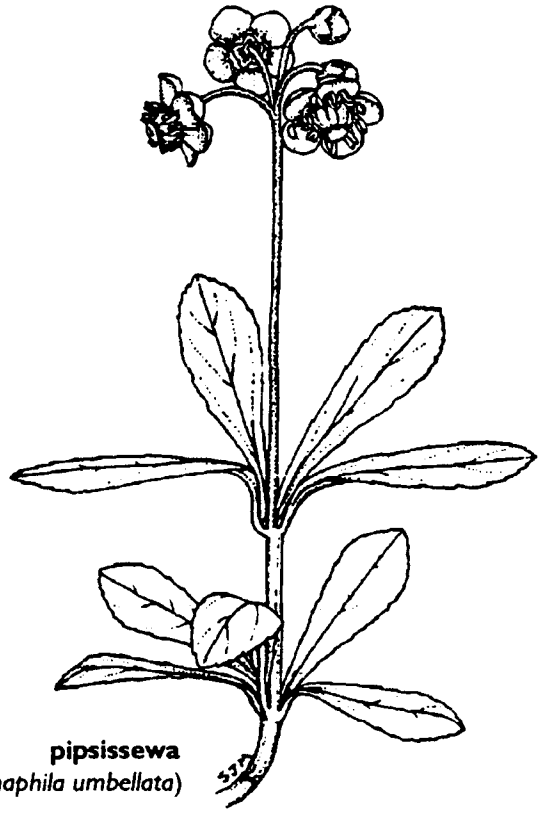
stem and flowering spike of the Tilt Cove *Dactylorhiza*

A New Site for Pipsissewa (*Chimaphila umbellata*)

by Todd Boland

Chimaphila umbellata, commonly known as **pipsissewa**, is a wide ranging species found throughout the northern hemisphere. Despite its vast distribution, this species is listed as rare in Newfoundland. Previously, it was recorded at only two areas on the island - one near the head of Halls Bay (two sites) and one site near Botwood. On September 8, 1993, a new site was discovered in a balsam fir-Hylocomium forest just south of Eddies Cove West on the Great Northern Peninsula.

The chance discovery happened when I was on a collecting trip for the Memorial University Botanical Garden last year. The purpose of the trip was to collect calciphile alpine and/or arctic species. On the spur of the moment I decided to stop in a forested area to investigate if there were any potential woodland species to collect. The highway between Port-au-Choix and Eddies Cove West is one of the few areas on western side of the Northern Peninsula where the road traverses a forested region. The specific site was located at the base of a steep, east-facing slope. After passing through the bordering alder, I found myself in a well-drained balsam fir forest, with a scattering of white birch. The rocky, forest floor was covered by a thick (up to 15 cm) layer of feathermosses with relatively few herbaceous plants. About 50 m up the slope I found the colony of *Chimaphila*. Although there were about 20 growing plants, only one was in bloom. After a thorough search of the vicinity, no other plants were found. This past August, during the Newfoundland Wildflower Society's fieldtrip, I revisited the site to collect an herbarium specimen to officially document the site. Much to my dismay, no plants were blooming this year. I suspect that these *Chimaphila* rarely flower since none of the plants showed any old flowering stems. However, plants do spread by underground stolons, suggesting that this colony may have arisen from a single individual.



pipsissewa
(*Chimaphila umbellata*)

As previously noted, there were few understorey herbs present, and those present were widely scattered. Some species were typical forest wildflowers such as **corn lily** (*Clintonia borealis*), **crackerberry** (*Cornus canadensis*), **one-flowered wintergreen** (*Moneses uniflora*) and **one-sided wintergreen** (*Pyrola secunda*). There were a surprising number of orchids present. **heart-leaved twayblade** (*Listeria cordata*) and **blunt-leaved orchid** (*Platanthera obtusata*) were quite common. Within one meter of the *Chimaphila* was a colony of **dwarf rattlesnake plantain** (*Goodyera repens*). As with the *Chimaphila*, the search of the area did not show any other *Goodyera* other than this single colony.

This site was only discovered by chance. Further investigations in this area may discover more colonies of *Chimaphila*. This area of the Northern Peninsula contains other rare Newfoundland plants; some of which will be discussed in our next newsletter. Further botanical surveys of this portion of the island seems to be warranted and may lead to the discovery of other rare species or possibly new additions to the flora of Newfoundland.

Editorial: Ecotourism's Future in Newfoundland

by Sue Meades

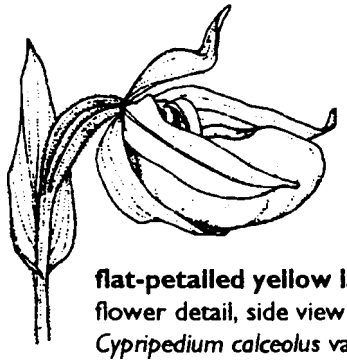
Ecotourism is the new buzz word in the Newfoundland tourist industry, however, this summer's experience has shown me that Government has much to do before ecotourism becomes a viable, sustainable industry in our province. We have a very diverse flora, easy access to wildlife, and enough breathtaking scenery to attract countless naturalists. But the Province is either unaware of, or turns an unseeing eye towards, the ongoing destruction of sensitive habitats, such as limestone barrens.

In many areas, there is also an unacceptable tolerance of garbage and illegal dumping, particularly at abandoned sites, such as automated lighthouses. This summer, I saw first hand that everyone I accompanied in the field, whether they were Newfoundlanders or American tourists, EVERYONE, was disgusted at the masses of garbage and refuse that litter most of our prime rare plant sites. How can we encourage eco-tourism while we are continuously apologizing for the garbage and disturbance in these areas?

This problem was most severe on the Northern Peninsula. When I visited Tilt Cove, the local people seemed very proud and protective of their unique orchid. Visitors to the site are often met by one or more residents who will share their knowledge of the orchid's history, but politely request that visitors not disturb the site by digging up any orchids. It is good to see that the townspeople value this site enough to protect it from unneccessary disturbance. This kind of local concern must be encouraged in all communities that wish to participate in the rewards of ecotourism.

At our recent executive meeting, we discussed the need to do something positive about the poor condition of so many of the sites we visited. We realize that the condition of many of these sites is primarily the result of lack of knowledge - not knowing the location and importance of sites and not being aware of the extent to which dumping and disturbance has occurred. Therefore, we plan to enter into an ongoing dialogue with Government, offering our assistance to improve this situation.

Since members of our Society are continuously exploring our province for rare and interesting plant locations, we plan to share our information with Government departments that can initiate and follow through with information exchange and policy changes. One thing is certain - if we don't try to do something, no change will occur. If any other members would like to become involved, please contact me or Tom. We will keep you informed about our progress.



flat-petalled yellow lady's slipper
flower detail, side view
Cypripedium calceolus var. *planipetalum*

Book Review:

by Mary Woodruff

'and some brought flowers', Plants in a New World

Selected by Mary Alice Downie and Mary Hamilton. 1970. University of Toronto Press.

I discovered this book, ***'and some brought flowers', Plants In A New World***, in the library of the Botanical Garden at Oxen Pond. It provides delightful reading, and the seventy full colour watercolours are exquisite. Here is the opening paragraph.

> *"When Martin Frobisher reached the coast of Labrador in 1576 he found the prospect forbidding. There was, he tells us, 'so great store of ice all the coast along, so thick together, that hardly his boat could pass unto the shore. At length, after divers attempts, he commanded his company. of by any possible means that could get ashore. to bring him whatsoever thing they could first find, whether it were living or dead, stock or stone. in token of Christian possession... and some brought flowers...".*

The seventy plants and flowers described here provided shelter, food, transportation, and medicine in abundance to the early settler to Canada. They are listed alphabetically by their common name, followed by a botanic and geographic description, and illustrated by one of E.J. Revell's eye-catching paintings.

Quotations from these early explorers, soldiers, naturalists, settlers, and other travellers accompany each painting evoking a strong picture of life in the new land. Sir Richard Henry Bonnycastle (1791-1847) was a commandant of the Royal Engineers both in Upper Canada and Newfoundland. When on leave, he travelled extensively through the colonies writing about his journeys on his return. Like most educated men of his time, he had a keen interest in botany and all aspects of nature, and several of the quotations are from his works *"The Canadas in 1841"* and its sequel *"Newfoundland in 1842"*. Here is what he had to say about the pitcher plant.

> *"But of all the natural productions of the swamps none is more singular then the water-bearer, pitcher-plant, or side-saddle flower, Sarracenia purpurea, so named after Dr. Sarrazin of Quebec, which is an herbaceous perennial. Its leaves are tubular or pitcher-shaped, and are always filled with about a wine glassful of the purest water in which many insects find a grave, and as the receptacles are lined with inverted hairs, preventing escape, it is probable that these insects contribute to the food of the plant. The flower is purple, large, and handsome. Anspach observes that the flower, shaped like a lady's saddle, is surrounded with a vast number of pitchers, the lids of which expand or shut according to necessities of the plant &c.; these pitchers are of so strong a texture that they bear heat enough for some minutes to boil water in them."*

This book was donated to the Gardens by Dr. C. Neville-Smith. I was unable to trace it in either the public or QE library, but members of FOG, and others, are allowed to borrow books, other than those in constant use, from the Gardens.