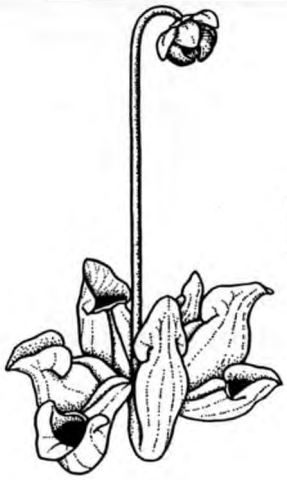

Sarracenia

Volume 13, Number 2 Summer 2005

Newsletter of the Wildflower Society of Newfoundland and Labrador
c/o Botanical Garden, Memorial University of Newfoundland, St. John's, NL, A1C 5S7

Contents:

Any articles from members would be most welcomed and may be sent via email to todd.boland@warp.nfld.net or via regular mail

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President's Message:

On behalf of all wildflower members I wish to extend a sincere thank you to Glenda Quinn who has served as our president for the past two years. Glenda has been a source of constant inspiration to all of us. During her term our membership has grown, with increased attendance at both our indoor meetings and field trips. I feel that those beautiful digital images that she so regularly sent to us had something to do with this. I do hope that we continue to enjoy them. Glenda will continue to offer us her wisdom and guidance in her role as past-president. In addition, I would like to welcome Heather Saunders back on our Board in her role as secretary.

The Newfoundland Rock Garden Society is still looking for volunteers to help with the field trips planned for the July 14-17 NARGS Conference.

If you would like to help please call Todd Boland at 753-6027.

If any member has a suggestion for a possible guest speaker for our fall 2005 season, please contact me over the summer at 722-0121 or at abcrhynd@nl.rogers.com.

May your summer bring many wildflower delights!

Carmel Conway

Summer Field Trips

June 19: Botanical Interpretive Hike/East Coast Trail Association. Micheleens Path, Witless Bay- South Head. Return 6.5 km, approx. 4 hours. Rating: Easy. Meet at 9:30 in the parking area in Witless Bay North. No car shuffle is planned. This will be a leisurely stroll identifying and studying plants and also birds. Pre-registration by June 15th is required, maximum of 20 participants-if more than 20 register; preference will be given to ECTA members. This will be leisurely stroll identifying and studying plants but also birds. Bring along your bird/plant field guide. Leader: John Maunder can be contacted at 335-2462 or jem@nl.rogers.com.

June 25: Bill Titford Memorial Walk. Long Pond Trail. 10:00 a.m. Meet at the parking lot of the Fluvarium. We will be wild flowering at one of Bill and June's favorite spots. Leader: Carmel Conway.

June 26-July 2: Summer Field Trip- Traveling up the tip of the Northern Peninsula. Leader: John Maunder.

August 3: Regatta Day- Exploring Ferns. Meet at the Botanical Garden at 10 a.m. Leader: Todd Boland.

September 5: Labour Day Walk & Barbecue: Details not yet confirmed but we are hoping to explore aquatic plants.

October 2: Fall Tree Walk. Details not yet confirmed. Leader: Ross Traverse.

Book Review
The Garden by Freeman Patterson

Reviewed by: Carmel Conway

When I recently interviewed nature photographer Lydia Snellen, I finished off by asking her whose photography she admired. Her response came quick "Oh, that's easy! It would be Freeman Patterson!" Until that time I had never heard of Freeman Patterson, but since then, and some several books later, I now know his work very well and I feel that my answer would have been exactly the same.

Freeman Patterson's latest book, The Garden, isn't just another glossy picture book but for anyone interested in picture taking, it is a great learning tool. Patterson has deliberately taken the hard toil of his cultivated garden and used it to accentuate in rather simple form the splendor of his natural surroundings. He has very tastefully combined the domestic with the native and with his photographic genius has brought these images to life.

His garden is Shamper's Bluff, a high, forested, rocky peninsula in Belleisle Bay in the lower St. John River valley. It consists of about five hundred acres, half of which he has donated to

the Nature Conservancy of Canada in return for life tenancy.
Patterson strolls us through the reserve as though we were passing through time. He encourages us to look more closely at nature, to notice it's subtle beauty- different textures, the secondary hues like the browns, beiges, and creams that make an in- between month like November far more interesting and provide endless photographic possibilities. In addition, I found his text both insightful and calming.

The author is clearly captivated by ferns. I thought that his photograph of the hay-scented ferns pushing through the previous years old growth was spectacular, as well as his very moody fern walking path. One of my favorites was the white moth on a white window divider. I cannot possibly describe here the brilliance of each image- those gorgeous red trilliums, or wake robins, the deep purply blue wood violets or the multi-colored sumacs. This is a great book for any nature lover, as it draws you out of the house, and out where it is all taking place, the garden. If any member would like to borrow my book, please contact me at abryhynd@nl.rogers.com

What has happened to *Juniperus communis* variety *saxatilis*?

By John Maunder

What? You didn't know it was missing?

Well, it *is* ... at least according to the recent "Flora of North America", volume 2 [http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=200005424].

In his "Gray's Manual of Botany" (1950), Merritt Lyndon Fernald recorded *three* varieties of the Common Juniper (*Juniperus communis*) from the Island of Newfoundland: var. *depressa*, var. *saxatilis*, and var. *megistocarpa* - noting that var. *saxatilis* was also found in Labrador.

However, the "Flora of North America" records only var. *depressa* and var. *megistocarpa* for the Province - and, indeed, for the entire eastern section of the North American mainland!

What has happened since 1950?

To be strictly accurate, var. *saxatilis* has *not* actually disappeared, *entirely,* from the "Flora of North America" publication; though it *has* been renamed [as *Juniperus communis* var. *montana* - one of the *many* existing synonyms for this variety (including: var. *nana*, var. *alpina*, var. *siberica*, etc.)].

The critical point is that the FNA no longer recognizes var. *saxatilis/montana* from eastern North America, west of Greenland! That's right; the FNA has simply "erased" the variety from the entire eastern North American mainland! Poof! Gone!

Why have they done this? It all sounds a bit drastic!

Well.... Settle back in your chair for a spell. It's a strange and curious tale, indeed.

Variety *saxatilis/montana* is a usually prostrate, though sometimes slightly ascending shrub, which has short [3-8 mm (4-10 mm *in* Adams, 2004)], narrow [2 mm (1-2 in Adams, 2004)], non-parallel-sided, somewhat in-curved leaves, which are about the same length as its smallish [6-9 mm long (4-7 mm diameter, *in* Adams, 2004)] berries [which are, of course, actually *cones*!]. It occurs in Europe and Asia, as well as in Greenland, Iceland, and western North

America, but has also long been understood to inhabit eastern North America. It is a plant of dry, rocky soil, on slopes and summits.

Variety *depressa* is a somewhat more ascending shrub which has medium length leaves [to 15 mm] which are straighter, slightly narrower [1.6 mm], more parallel-sided, and a little more spreading, than those of var. *saxatilis/montana*. It has similar smallish berries [6-9 mm long], and is the typical North American form, occurring, like var. *saxatilis*, on rocky soil on slopes and summits.

Variety *megistocarpa* was originally described as a prostrate shrub with noticeably larger berries [9-13 mm long], and "*boat-shaped*" leaves which are about intermediate in length [7-10 mm] between those of var. *depressa* and var. *saxatilis/montana*, and about the same width [1.6 mm] as those of var. *depressa*. It is apparently an Eastern Canada "endemic" [ie. it is unique to that area], of restricted range, found only on the Magdalen Islands (the "type [ie. originally-described-from] locality") and Sable Island on sand dunes; and possibly, also [since it has long been reported from there], in western Newfoundland, on limestone, serpentine, and subalpine barrens.

But, what are the chances of an ordinary layperson actually telling these three varieties apart? The descriptions provided above seem to address features that are rather vague, and likely to vary a lot!

Well, luckily, the "Flora of North America" gives an additional identification aid - a set of apparently critical measurements for the *width of the bluish-white "stomatal band" running along the upper side of each leaf* (see: Photos 1-3).

So. Identification of the three varieties *should* be pretty simply, huh? Well ... not necessarily.

If you actually get down on your hands and knees and start looking at live plants, you may really start to wonder!

In more sheltered areas, you will probably find many plants with somewhat straight, somewhat spreading, long-pointed leaves, that are a little longer than the berries, and that have stomatal bands about equally as wide as each of the two lateral green bands [or perhaps *a little wider*!] (Photo 1). These will *probably* be variety *depressa*. OK. You're on a roll!

However, in more exposed coastal areas, and on higher ground, you may notice that most of the leaves you examine will exhibit stomatal bands that may be about twice as wide as each of the two lateral green bands [or, *often a little narrower*!] (Photo 2). In addition, the leaves will be generally curved inward, not excessively long-pointed, and about the same length as the berries! Variety *saxatilis*! Right? No doubts!

... Or are there? Small-berried plants with stomatal bands that are about 1.5 times as wide as the lateral green bands may be very hard to nail down. Look at lots of leaves to see just how straight, and long-pointed they are, on average - especially leaves closer to the ground.

Very occasionally, you may find a few plants that look generally like var. *saxatilis/montana*, but have somewhat larger [9-11 mm] berries (Photo 6), and stomatal bands that are consistently about 1.5 times [!] as wide as the lateral green bands. Variety *megistocarpa*?

No. Not necessarily. In Newfoundland, var. *megistocarpa* has only been reported [during the 1920's!] from exposed serpentine rock barrens on the Blomidon Hills, from subalpine

gabbro/volcanic barrens at nearby Lark [Harbour] Mountain (both places near Corner Brook), and from coastal limestone barrens at Brig Bay, near Plum Point [all specimens are in the Gray Herbarium, and have not been seen by this author].

... It is interesting to note that a few slightly more recent west coast Newfoundland specimens, identified as *J. communis* var. *megistocarpa* by Ernest Rouleau [specimens are in the Memorial University Herbarium, and at the Université de Montréal], do *not* appear (at least to this author) to represent this taxon!

As far as larger berry length goes, it should be appreciated that alpine and Mediterranean forms of var. *saxatilis/ montana* from Europe tend to have berries that are actually about 10-11 mm long! Hmmm!

Photo 2: Variety *saxatilis/montana* - typical "small-berried form". Stomatal bands almost twice as wide as each of the two green lateral bands (or a bit narrower); leaves curved, leaf tips less long-tapering. Bay Roberts North.

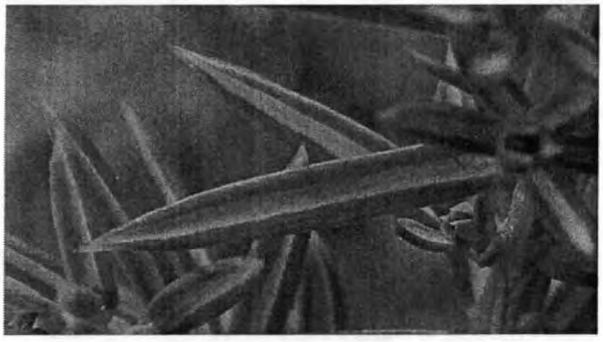

Photo 1: Variety *depressa*: stomatal bands about equally as wide as each of the two green lateral bands (or a bit wider); leaves straight, leaf tips long-tapering. Bay Roberts North.

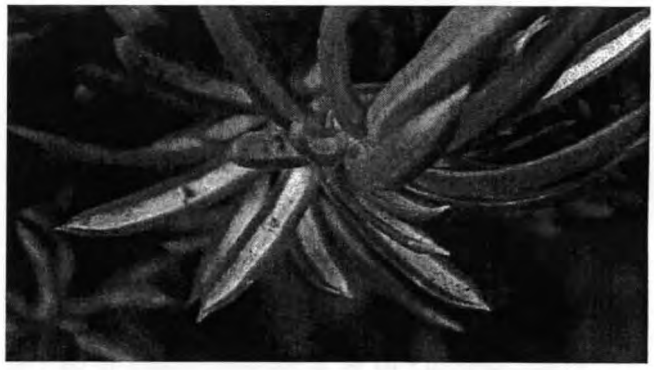

Photo 3: Variety *saxatilis/montana* - the "larger-berried form". Stomatal bands about 1.5 times as wide as each of the two green lateral bands; leaves somewhat curved, leaf tips medium sharp. Burnt Head, Cupids.

Considering that there does not appear to be any *sharp distinction* between larger-berried [9-11 mm] examples (Photo 6) and smaller-berried [5-8 mm] examples (Photo 5) of plants resembling var. *saxatilis/montana*, found in their same general vicinity in Newfoundland, it seems likely that larger berry size is just a local environmental thing?

Perhaps, the *real* riddle here is - "does var. *megistocarpa* actually occur in Newfoundland, at all?"

Amongst other things, the range of habitats supposedly occupied by this *single, rare* variety (ie. sand dunes, and serpentine, limestone, and subalpine barrens) seems just a little too diverse to make any real sense.

Could it even be that the originally-described sand dune form of var. *megistocarpa,* from the Magdalen Islands and Sable Island, is nothing more than an ecological variant of var. *depressa*, growing lushly, and larger-berried, on the sands - the "boat-shaped" leaves being simply the result of wind exposure or other environmental factors?

There is little doubt that environment greatly affects the overall form of *J. communis* in Newfoundland! Have a look at Photo 4, which appears to be a stunted example of var. *depressa*[!] with unusually small [4-6 mm], very strongly curved, very crowded leaves. The specimen illustrated [from the Memorial University Herbarium] seems rather typical of plants from *extremely* exposed sites in this Province!

Are you still with me? Good. Because, believe it or not, we are only just getting *started*!

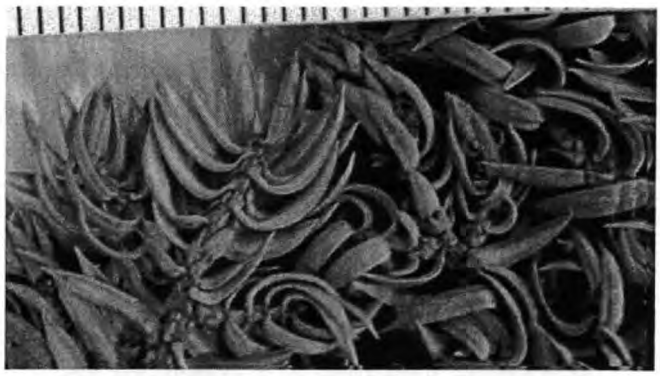

Photo 4: Variety *depressa* - stunted specimen from exposed limestone site on the Batteau Barrens. Millimetre scale along top. Note the small leaf size, and the extreme curl.

A very interesting DNA study has just been completed by R. P. Adams and colleagues (2003). The group found that *Juniperus communis* is clearly comprised of two distinct genetic groups: a North American group and a Eurasian group. They further concluded that the North American group includes: var. *depressa* and var. *megistocarpa*; while the Eurasian group includes: var. *communis* and var. *saxatilis/montana*.

As well, their data clearly shows a very pronounced genetic drift, within var. *saxatilis/montana*, that progresses westward, across the North Atlantic, from Europe to Iceland and then Greenland! The obvious implication of this finding would seem to be that any var. *saxatilis/montana* that might be found in Newfoundland and Labrador should represent a rather "way out in left field" version of the original European form.

Even more interestingly, the work of the Adams group clearly disqualifies var. *megistocarpa* (as a member of the North American group) from being a close relative of var. *saxatilis/montana*, as has sometimes been assumed.

Unfortunately, Adams and his colleagues failed to include any Newfoundland or Labrador samples in their wide-ranging genetic study! Thus, while extremely useful in many respects, their study is fatally flawed, in that it apparently dismisses the occurrence of var. *saxatilis/ montana* in eastern North America, not because the taxon does, or does not, occur there, but rather, because sampling effort employed in the region was woefully incomplete!

Photo 5: Small-berried [5-8m] var. *saxatilis/montana* from Burnt Head, Cupids. [17.5 mm diameter Canadian 10 cent coin]

Photo 6: Large-berried [9-11 mm] plant from Burnt Head, Cupids. [17.5 mm diameter Canadian 10 cent coin]

Adams (2004) *does*, however, note that the status of var. *saxatilis* in North America is still being actively investigated.

... As well it might be! Any "mature" North Atlantic Rim [ie. potentially amphiatlantic] plant distribution that includes Scandinavia, Iceland, and Greenland, *should*, also, typically, include Labrador and Newfoundland (though not necessarily areas much farther to the west). On this basis, alone, var. *saxaltilis/montana should* be expected to occur in Newfoundland and Labrador.

So far so good. But, the plot gets murkier still! Enter the Europeans!

There is apparently a move afoot in Europe to consider var. *saxatalis*/montana a completely *separate* species, *Juniperus siberica*! This *does* make some sense, in light of the clear genetic separation between North American and European varieties detected by Adams and his colleagues.

... There. Got all that?

It would certainly be helpful if Newfoundland and Labrador *Juniperus communis* specimens could be subjected to some serious DNA analysis!

It would be nice to know, for instance, if both vars. *depressa* and *saxatilis/montana* really *do* occur in Newfoundland and Labrador. It would also be nice to know - if such is indeed the case - whether both varieties were possibly isolated together in the eastern North American region during recent glacial maxima, to the point where their genetics/morphology has significantly converged (perhaps explaining the tendancy for the two to be so very hard to tell apart,

sometimes).

But, for now, all that can really be concluded is that a *maximum* of three varieties of *Juniperus communis* (in a broad sense!) *may* occur in the Province, and that they at least approximate: var. *depressa*, var. *saxatilis/montana*, and, *possibly*, var. *megistocarpa*. The larger-berried form [illustrated in Photo 6] is most probably just a larger-berried form of var. *saxatilis/montana* ... I suppose!

As is usual in natural history, much more work remains to be done!

It has been said that "to be confused is to remain curious"!

... Well. I, for one, remain *confused*!

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Dispersal of Queen Anne's Lace (Daucus carota L.) in Newfoundland

by Henry Mann

In Sarracenia 5(3): 3-8 (1995) I commented on how Queen Anne's Lace was everywhere along roadsides in Cape Breton, but distinctly uncommon in Newfoundland, and I wondered why this was so. At that time I had seen a few plants in the Codroy Valley at the Upper Ferry Bridge, and records existed for Loch Leven and the Humber Valley. To my knowledge there were no occurrences east of Little Rapids in the Humber Valley. One record was known from Goose Bay, Labrador. A map for Daucus is not included in the Rouleau and Lamoureux "Atlas", but the common horticultural carrot is listed under "Cultivated Species". All of the local Newfoundland lists and studies I have seen, including some specifically addressing adventive/weedy species, fail to record it.

Three years ago a flourishing population of D. carota was discovered along Riverside Drive in Corner Brook. It now extends for 1.5 kilometers from the Lafarge Gypsum Plant to the Ready Mix Concrete site at Brake's Cove. No plants are known locally east or west of this population nor above along the Humber Road or the Trans-Canada Highway. This area on the shore of the Humber Arm at Humbermouth is an industrial and commercial site with considerable waste space and disturbed meadows. The location was familiar to me since the late seventies and from 1978 to 1993 was travelled regularly. Being familiar with the species from elsewhere in Canada and always on the lookout for roadside wildflowers, I would have noticed this large herb if it had been present. Its features are distinctive even at a distance. In addition, the area was commonly frequented by myself and students collecting specimens for the flora course at the Sir Wilfred Grenfell College. It can therefore be concluded that this is a recent introduction or a rapid expansion of a tiny pre-existing population. The Newfoundland Railway, discontinued in 1988, also ran directly through this site. In the area now occupied by Daucus, the plants are common and vigorous, and remind me of similar sites in Nova Scotia.

Queen Anne's Lace is also known as "Wild Carrot" because our cultivated garden carrot is derived from it by selection and plant breeding to produce the thick soft juicy edible taproot from the rather woody unpalatable root of the wild plant. Although it usually is a biennial or weak perennial, occasionally even garden carrots will flower in the first year producing the tall stems topped with large compound umbels of tiny white flowers. Often, but not always, the central tiny flower of the umbel is purple. As the inflorescence matures, the umbel closes upwards to produce a characteristic "bird's-nest" appearance so readily recognizable at a distance and easily distinguishing it from a close and similar relative, Caraway (Carum carvi L.). The many small fruits ("seeds") which mature in the bird's-nests have rows of spines which permit ready adhesion to fur, feathers, and human clothing. It is therefore not surprising that once established in an area with many people, dogs, cats, and rats, that its local spread will occur rapidly.

Wild Carrot is a plant of waste places and roadsides. It is not known as a troublesome weed of cultivated areas, nor will it become an invasive weed of our undisturbed native vegetation, and as such should probably be considered a welcome addition to our flora. The bird's-nest heads

are sometimes used in dried flower arrangements. Selected varieties with large petals are even grown as ornamentals. The nutritive value of Wild Carrot herbage is reported to be similar to that of legumes (clover, alfalfa, etc.) and sheep, cattle, and horses will feed on it when available. On the negative side of the equation, commercial seed production of the cultivated carrot is not possible in areas where Wild Carrot is common as it freely hybridizes with garden carrots to produce inferior seed. Wild populations may also harbour disease and insect pests. Like its large cousin, Cow Parsnip (Heracleum maximum), it can also taint milk if eaten in quantity by dairy cattle.

Table 1 lists presently known sites for Wild Carrot. The Marystown location is surely a separate introduction. It is possible that unattended garden carrots may produce seed that genetically reverts back to the wild state to establish local populations. Whether this actually occurs and how frequently is not known. Other than this isolated collection the eastern-most record is Little Rapids in the Humber Valley recorded from 1975, however, this area of the Humber valley has been fairly well botanized since that time and no plants have been seen. It can be assumed that the Corner Brook/Brake's Cove population will eventually spread eastward along the valley. How long will it be before it reaches Pasadena, Deer lake, Grand Falls? Will there be separate introductions to localities such as Bonne Bay, Baie Verte, St. John's? What is the state of the Marystown population and will it act as a centre for dispersal on the Avalon Peninsula? We can but wait and see what the future brings.

Other species are no doubt at this very moment marching up the TCH from Port aux Basques, and others are raining from the skies on their parachutes or embedded in the feathers and bowels of birds. It would be a shame if we were so myopic, seeing only rare species or pretty "native" wildflowers so as to miss this invasion which began thousands of years ago and will likely continue for thousands more. These "come-from-aways" may do more to shape our future flora, even perhaps the fate of some rare species, than you or I will ever accomplish in a lifetime. Most newcomers will be benign additions to our flora, but some will have the ability to become invasive and destructive. These especially require recognition and monitoring.

What an opportunity for botanists and plant lovers on our island! Let's start paying attention to what is going on botanically right "under our noses" apparently undetected and unappreciated. We need to document what is happening at this moment in time much more than dwelling on endless unresolvable speculations of what may have happened thousands of years ago. Here is where Wildflower Society members can accumulate much valuable information for future generations. Most weedy species are readily identifiable and with a little effort their distribution on the Island or a portion of the Island can easily be documented and monitored. They tend to inhabit places of human disturbance and so their habitats are readily accessible to everyone without a great deal of effort or expense. Each of us could pick a species or two and keep records on our travels. Table 2 lists a few weedy species chosen at random for which there appears to be little distributional information; there are many more. Are they truly uncommon on the Island or have we just never bothered to look, record and

Table 1. Currently Known Sites for Daucus carota L. in Insular Newfoundland

Date	Location	Collectors	Specimen in SWGC Herbarium
August 8, 1975	Along shoulder of TCH near Little Rapids, Humber Valley	I. J. Green	Yes
July 28, 1979	Waste land, Loch Leven, St. Georges District	I. J. Green	Yes
August 13, 1992	Roadside, Upper Ferry Bridge, Codroy Valley	H. Mann and E. Andrews	Yes
August 8, 2001	Roadside waste field, Brake's Cove, Corner Brook	T. Bennett, C. Pollard and M. Vassallo	Yes
August 26, 2001	Edge of walking path, Creston South, Marystown, Burin Peninsula	Anne Marie Hynes	Yes
Fall 2001 Semester, SWGC	Christopher's Cove, North Shore Humber Arm, between Summerside and Meadows	Jason Goosney	No Specimen seen and confirmed by HEM as part of Envs 3110 course project
August 1, 2002	Disturbed roadside, York Harbour, Bay of Islands	M. Burridge and J. Humber	Yes

Table 2: A Selection of "Weedy" Species That are Probably Under-reported for Newfoundland

Aegopodium podagraria - goutweed
Anthemis cotula - mayweed chamomile
Campanula rapunculoides - creeping bellflower
Cichorium intybus - wild chicory
Coronopus didymus- lesser swinecress
Crepis biennis - rough hawk's-beard
Crepis tectorum - narrowleaf hawk's-beard
Echium vulgare - blueweed
Erigeron philadelphicus - Philadelphia fleabane
Fallopia japonica - Japanese knotweed
Fallopia sachalinensis - giant knotweed
Melitotus alba - white sweetclover
Melitotus officianalis - yellow sweetclover
Senecio jacobaea - tansy ragwort
Silene vulgaris - bladder campion
Sonchus asper - spinyleaf sowthistle
Trifolium arvense - rabbitfoot clover
Trifolium campestre - pinnate hop clover
Many more

collect these species? How will we know if they increase in the future if we do not know their present status?

One of our worst weeds of disturbed areas as well as our native vegetation is Coltsfoot (Tussilago farfara) yet we have no good documentation of its total distribution on the Island. There is little doubt that Coltsfoot is having an effect on our vegetation, but it appears that no one is watching! Like Coltsfoot, some of our other weedy species have potentially negative attributes, but are often also showy wildflowers which sometimes have other features that we admire. All plants, however mundane, show surprising design when examined carefully with a handlens, including our "weeds".

Thanks to students Gail Martin and Danika Jackson who cheerfully helped with all sorts of botanical matters during the summer of 2004, including the Daucus carota Corner Brook survey. Also thanks to Monique Vassallo who originally brought the Brake's Cove population to my attention. Readers who are aware of other Wild Carrot populations are encouraged to send a note to the editor of Sarracenia for inclusion in an issue of the newsletter.