

SARRACENIA

Newsletter of the Canadian
Wildflower Society,
Newfoundland Chapter.

Winter 1991/92

Society Meetings.....Organized by Gordon Ringius

Meetings are held at 8.00 p.m. on the first Wednesday of each month, in room S-3125A, Science Building, M.U.N. There is no meeting in January 1992.

February 5, 1992.

Speaker: Bill Meades, CWS, Forestry Canada, St. John's, NF.
Title: Ecoregions of Newfoundland.

March 4, 1992.

Speaker: Peter Scott, CWS, Biology Department, MUN.
Title: Botanists: Native and CFA's who have studied the flora of Newfoundland.

April 1, 1992.

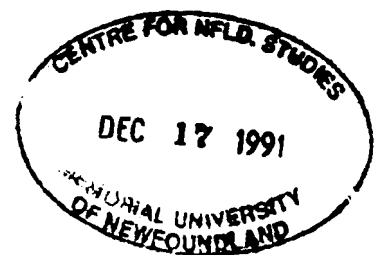
Speaker: Sue Meades, CWS, Torbay, NF.
Title: The Fern World.
Speaker: Todd Boland, CWS, St. John's, NF.
Title: Orchid Platter.

May 6, 1992. Our Annual General Meeting

Speaker: Peter Scott, CWS, Biology Department, MUN.
Title: Workshop on the Rose Family.

June 3, 1992.

Speaker: Bruce Roberts, Forestry Canada, St. John's, NF.
Title: Rare and Unusual Plants of Newfoundland (Tentative).



Note from Editor.....Janet Craske

As always, I thank all those who have contributed to this edition of our newsletter. I notice that the article from Dr. J. K. Crellin starts with a number "1". I hope that this implies further information to come, upon Medical Plants of Newfoundland.

But, this time no-one gave me any illustrations to accompany their articles. I searched my collection of flower prints and found one of Lychnis orientalis (see page 5) which is of the family Caryophyllaceae, the topic of Introductory Botany, by Todd Boland, in this issue. This illustration was originally drawn for an old French Flora which was printed in two versions, one in Latin, *Institutiones Rei Herbariae* (1700), and the other in French, *Elemens de Botanique* (1694), and was drawn and engraved by Claude Aubriet. I have no information on "The Wonderful Plant" (see page 11), but I find it a beautiful engraving, so think of it as my Christmas card to all of you fellow members.

Our parent organization, the Canadian Wildflower Society gave three Conservation Awards this year, one of which was presented to Mr. Bernard Jackson, to whom we extend our congratulations. He has written for *Sarracenia* the following, thought promoting article.

The next edition of *Sarracenia* is due out in March. All contributions would be most welcome, the final date for submissions is 28th. February. Please contact Mary Woodruff 738 3001 or Janet Craske 895 2071.

Exotics and Natives; Is there a Place for Both?

.....Bernard S. Jackson

Some mornings ago I took a leisurely walk through a shallow gully not too distant from downtown Toronto. The area was a tiny remnant of a great deciduous forest that was once comprised of thousands upon thousands of beautiful acres. Among other native species pointed out to me were two types of Oak, American Beech, Black Cherry and, just past flowering, the lovely Witch-Hazel. Nuthatches and Blue Jays called, while a tiny brook chuckled its way towards Lake Ontario; a pleasant place, indeed, and one well worth protecting whatever the cost.

But, there are unnoticed enemies to such places, enemies other than bulldozers, chainsaws and vandals. Such enemies sneak in quietly, unobtrusively; disguised in green. They are the uninvited ones; aliens from another place; flora away from their indigenous soils - weeds. Creeping into this gully were, among other things, Norway Maple, Snowberry and, perish the thought, Japanese Knotweed. All useful plants in the right place, but

surely not in a remnant native oak and beech wood. Many alien plants have evolved such a tenacious nature and fecundity that they can very soon swamp and eventually annihilate more desirable native species. Surely they should be dragged out and destroyed forthwith. This is, of course, the purists attitude, but I, personally, believe it to be the right approach for such areas.

Unfortunately, convincing the man on the street, even the average gardener and amateur naturalist, that this is the way to go is not always as easy as one might hope. Many people, thank goodness, are now 'thinking green', but, unfortunately, comparatively few of these converts actually realize that there are different shades and qualities of green. This is understandable and we may find that it takes a few generations to span the gap between the turf grasses and Blue Spruce fraternity, and those who believe that only truly native plantlife should ever be deliberately planted.

In a world of troubled, torn-up environments there is, I believe, room for, and even value in, the two schools of thought. There is, I think, room for an intermediate green; a green that bridges the gap between man-made desolation and pure nature. Bridges between the festering sores of open sewers and abandoned factory lots, and those sparkling streams and native meadows in pristine countryside so essential to a healthy ecosystem.

Who knows, it may not be possible to rejuvenate thoroughly degraded landscapes to self-sustaining 'natural' habitats. Indeed, I wonder if one could ever actually recreate the authentic deciduous woodland, prairie or muskrat swamp. And what of natural succession? Maybe the best we can do is to graft a green patina over the bruised and abraded flesh of earth.

This green patina may, through availability, economics and public pressure, simply have to be constructed through orthodox landscaping and tough, showy non-native ornamentals. This would, at least, be a good start. Our next step would be to educate 'the public' into a more sophisticated thinking so that they would want to go onto the next step - massed plantings of native flora, and the recreation of once native habitats to as near natural as is humanly possible.

The sad truth is that we must not only gather support to rectify our past abuses, but we must also encourage opposition against the wanton destruction of the natural areas we have left. Whether it be the needless felling of thousands of acres of woodland or the filling of some tiny bog in suburbia, we should encourage the populace to tell the various powers-that-be, "enough, no more, desist."

Natural countryside and wild flora is our heritage, it belongs to us all. We should not give a few individuals the

right to desecrate and pillage it. Surely, we should make it very plain that we will no longer necessarily swallow what is spoon-fed to us, or meekly follow like sheep. I, for one, do not want a world created by power hungry, avaricious, non-green individuals.

Happily there are now plenty of individuals who recognize the necessity to maintain a green and pleasant landscape. Indeed, the number of such persons is, I think, steadily growing. This increase is due, in no small measure, to the enthusiastic activities of such groups as The Canadian Wildflower Society and its regional chapters. Such groups and individuals deserve a big THANK YOU from the rest of us.

Introductory Botany: Caryophyllaceae - the Pink Family

.....Todd Boland

The Pink Family acquired its name from one of the prominent members of this family, the carnation, Dianthus caryophyllus. The genus Dianthus, which has typical characteristics of the Caryophyllaceae, includes the various garden Pinks, Carnations and the Sweet William.

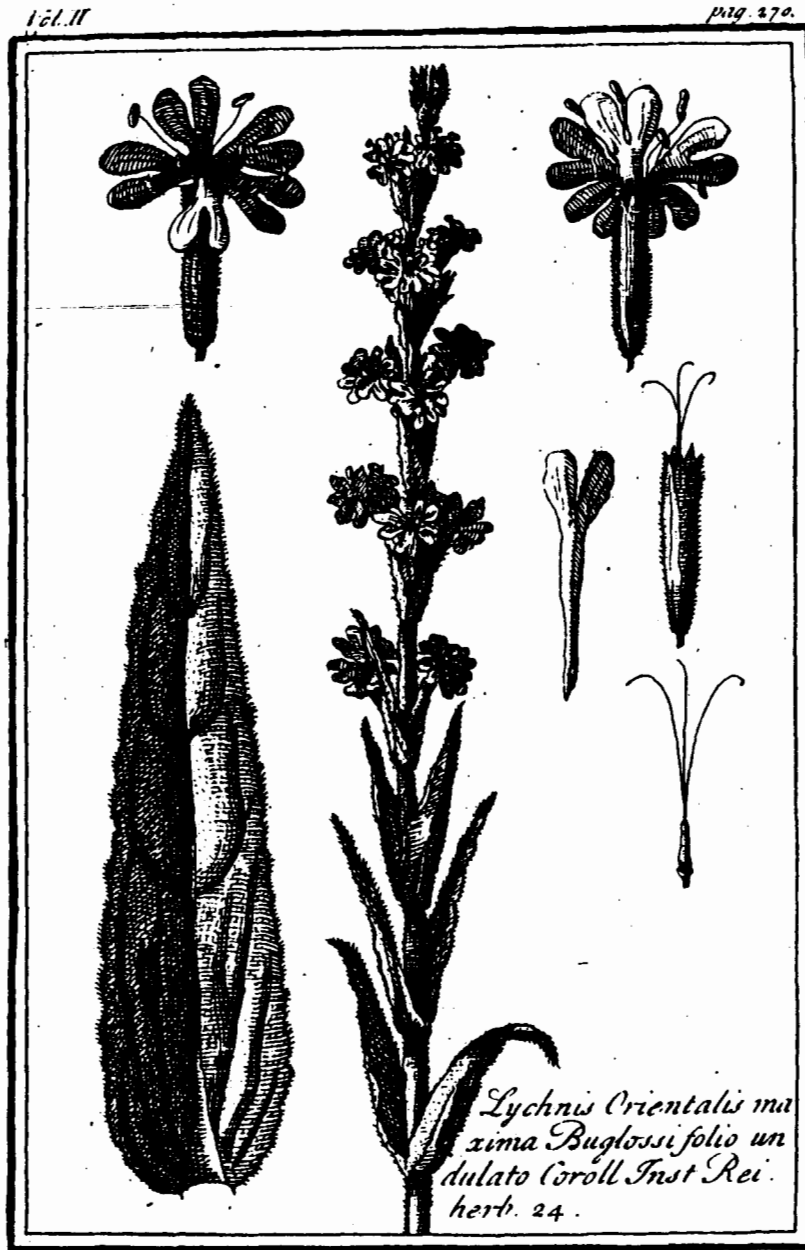
However, most of our native species of the Caryophyllaceae have far less attractive flowers than Dianthus. Indeed, many of our native members of the pink family are common garden weeds, including the various Chickweeds (Cerastium spp. and Stellaria spp.), the Stitchwort (Stellaria graminea), and Corn Spurrey (Spergula arvensis). A few are relatively showy, but are generally rare and restricted to limestone or serpentine regions of the island. These include the Pink Alpine Campion (Lychnis alpina), the Pink Moss Campion (Silene acaulis) and some Alpine Arenaria, Stellaria and Cerastium whose white flowers are very similar to Snow-in-Summer.

All local members of the Caryophyllaceae are herbaceous plants with a trailing nature. Most have relatively long and narrow leaves which are produced in pairs (i.e. they have opposite leaves). The leaves are often united at their base and the stems are swollen at the leaf joints. Most flowers have five petals, but some have lobed petals which make the blooms appear to have ten petals. The most common colour for the flowers are white or pink. However, some have no petals at all, only five green sepals.

Local genera of the pink family include Spergularia (1 species), Spergula (1 species), Sagina (2 species), Arenaria (7 species), Stellaria (9 species), Cerastium (6 species), Lychnis (1 native, 2 garden escape species) and Silene (1 species).

The only types worth growing in the garden are the various

alpine species. However, most require specific soil conditions if they are to survive, and often they succumb to the heat of non-montane areas. Most alpine species are rather local in their distribution, thus are not commonly encountered. It is probably best to leave them where they are growing.



"What was the name of that little blue flower?".....Howard Clase

Was a question that we asked ourselves the summer before last (1990), remembering a discovery we made at least twenty years before when walking along the cliffs to the south of Northern Bay Sands. It was growing in a cliff-top meadow amongst grass a few inches tall and consisted of a leafy spike about 10 cm high with a clusters of small globular purple blue flowers among the leaves near the top. Temporarily naming it Cyanoflora amnesia, we eventually remembered that it was Halenia deflexa, the Spurred Gentian. We had come across it once since growing with two other gentian species on the west coast limestone in the area of "The Arches" just north of Gros Morne National Park, but had never met it again on the Avalon.

We knew that it must have been late summer when we last visited the area and needing an excuse for a few days out of town we decided to see if we could find it again. So we booked a couple of nights at Gushues' Bed and Breakfast in Northern Bay for August 1-2 and set out on our search. The first afternoon Pat Gushue gave us a lift back along the road and showed us how to get across to the cliff-top and we set out to walk the couple of kilometres back, only to discover that what had been an easy walk twenty years before was now overgrown with dense spruce and fir about 15 ft high. We were just about to give up when we saw a small clearing ahead and burst through into a tiny meadow about 40 ft by 10 right on the cliff edge, and there, amongst the grass were the purple-blue flowers we were looking for, about a dozen of them in all. The spot is easy to identify since it is just where a narrow ridge sticks out into the sea for a couple of hundred feet or so - the sort of ridge that is only safe to walk along if you are fitted with wings - so we left that to the Herring Gulls!

For the next couple of days we toured the area stopping at any likely sites to look for our little blue flower, but it certainly didn't seem to be widespread; we only found it at two more locations both just north of Northern Bay.

And that was the end of the story until this autumn when we took some late August visitors to see the Gannet colony at Cape St. Mary's. We had never been there so late in the year before because most of the other bird species have left by then, so that was probably why we had never discovered Halenia deflexa there. It was growing in the closely grazed grass near the car park, and was extremely short, no more than 5 cm high, a habit encouraged no doubt by the local sheep. So it is probably more widespread on the Avalon than we had thought. We would be interested to hear of any locations nearer to St John's. We should like to try to grow it from seed, which Gray states to be numerous.

The only book we have that mentions the species is Gray's Manual of Botany (eighth edition); it doesn't seem to be listed in the more popular flower guides. In habit it looks a bit like an *Ajuga* with three-veined pointed oval 2 cm leaves in opposite pairs and the small clusters of flowers growing above the leaves out of the leaf axils. The flowers are like small globes 5 mm across with four short aqualegia like spurs at the back. They are initially reddish purple turning bluer as they get older. My Northern Bay slides show that the flowers were fairly early in their development on Aug 1st 1990 and that some of the leaves have an extra pair of veins, although not as strong as the three inner ones.

This is the only species of *Halenia* mentioned in Gray, and is clearly more tolerant of acid soil than the true gentians found in Newfoundland, which seem to prefer limestone. It is an annual or biennial, and our variety is restricted to S. Labrador, Newfoundland, Cape Breton and the Magdalen Islands; this is called *Halenia deflexa* var. *Brentoniana* in Gray, who describes a quite different plant as the typical "mainland" form. This is much larger in all its aspects, growing up to 90 cm tall in damp cool woods with green or bronze flowers - it is difficult to believe that it is the same species!

The Botany Column.....Peter J. Scott

It has been a long dreary cool season this year and as of the end of November there are still a number of shrubs with their leaves still attached. The cold season now begins and there are many days when a walk will yield a lot of good botanizing. It is a good time to look at leaves and fruit (berries and capsules) still clinging to some plants as well as twigs and winter buds. There will still be long winter evenings for contemplation and just plain dreaming but no need to hang up the hand lens.

One aspect of this past summer which surprised me was how wet it seemed to us and yet how dry the soil was. My neighbour cut away a bank on his property in August and, although we had had day after day of rain and drizzle, only the upper inch or so was damp. The soil below that was completely dry. This was reflected in the autumn when the mushroom crop on my usual field was virtually nonexistent. This turned my thoughts to plants and how some can manage to get water when the ground is dry or there is some moisture around but not much rain.

A lot of the soils on the island are quite free-draining, particularly in the heath and barrens areas. The plants there will often have a deep root system to reach down to the ground water. The Aizoon Saxifrage (*Saxifraga aizoon*) grows in calcareous soil on the west coast of the island and on the

Northern Peninsula and, with little water present in the soil, the water that it takes up with its roots is often concentrated in minerals, particularly calcium. The leaves have chalk glands along the margins at the base of each tooth which secrete lime in the form of calcium bicarbonate. The lime is then seen as solid calcareous deposits and the quantity of lime secreted is governed by the amount of calcium in the soil. The plant is presumably forced to take up excess calcium with other nutrients from the soil and this excess is secreted. Other alpine species, but not in our flora, do the same thing.

The Partridgeberry (Vaccinium vitis-idaea) uses another ploy. On rocky barren hills where the soil is usually dry and the winds are drying, these plants are especially adapted to take advantage of any moisture such as fog. Small club-shaped hairs sunken in the leaf surface quickly absorb any water and transfer it to tissues that carry on photosynthesis. Another interesting fact: many of these dwarf plants which grow in exposed environments are ~~often~~ very old. It has been reported that Partridgeberries do not start to flower until they are 14-20 years old.

There is so much to observe and learn. We are fortunate to have a great workshop in which to do these things.

Some Aspects of Wildflower Research.....Todd Boland

All of our society has some love of wildflowers, either for their aesthetic value or for a more serious matter. Most of our newsletter articles are based on personal experience, and deal mostly with Newfoundland wildflowers.

However, worldwide, there are a large number of scientific researchers who undertake serious studies on various aspects of wildflowers. One has only to look at the wide range of scientific journals available, to see the evidence of this research. The purpose of this article is to give an overview of the various ways in which wildflowers can be studied.

It seems that the most popular studies on wildflowers are aspects of their physiology and biochemistry. Such studies concentrate on the internal aspects of a plant. They can include such topics as water movement, mineral utilization, the effects of certain substances on plant growth or metabolism, rates of photosynthesis and protein and nucleic acid synthesis in germinating seeds, just to name a few. Such research is occurring locally at Memorial. Just recently, a researcher at MUN was involved in a study which looked at nitrogen fixation in certain alpine Leguminosae (Pea Family) plants which grow on the Long Range Mountains.

Many aspects of plant physiology or biochemistry is rather esoteric, but some aspects of such studies can be of interest to most people, such as the effects of acid rain or certain toxic chemicals on the growth of plants. With today's interest in our environment, the latter studies are becoming more common.

Other studies on wildflowers are based on their taxonomy. As more information becomes available on a particular plant species, taxonomists will often reclassify a plant to a new species or genus. The Orchid Family has possibly been studied in this aspect more than other plant families. Orchids, especially those from the tropics, are constantly being reclassified as more information on these rare plants is gathered. Other taxonomy studies are based on describing different varieties of a particular species. For example, the familiar beach pea Lathyrus japonicus is now described as having six distinct varieties, depending on their geographical location.

Genetic studies on wildflowers, which are often based on isozyme similarities or differences, can also give insight into the taxonomical relationship between closely related wildflowers. Such a study is currently being undertaken by a researcher at MUN. This researcher is studying the isozymes of our native Empetrum (Crowberry) to further our understanding of the taxonomic relationship within this genus.

Some wildflower researchers study various wildflower communities. Examples could include the collection of plants which grow on a particular mountainside, marsh or shoreline. Often, a particular wildflower will grow only in association with other certain wildflowers. Others look at the phytogeography of a species i.e. the occurrence of a particular species in an area not previously known to contain that species. Such studies give a more detailed account of the distribution of a particular wildflower.

Perhaps of most interest to society members are those studies done on the ecology of wildflowers. Such aspects concentrate on why a specific wildflower grows in a particular area, how the plant reproduces and who are the plants pollinators. A recent scientific article from MUN researchers was on the flowering and fruiting pattern of three local peatland orchid species. Present ecological studies at MUN include the floral biology of Platanthera dilatata (Scent-Bottle Orchid) and the ecology and distribution of Platanthera blephariglottis (White-Fringed Orchid) and P. clavellata (Club-Spur Orchid) on Avalon peatlands.

The previously described aspects of wildflower research is very much an overview of the subject. There are many other aspects of a plant that a researcher can study. Hopefully, this

article will give you some added appreciation for wildflowers. There can be more to a wildflower than a pretty bloom or a great photographic subject.

Medical Notes on Newfoundland Flowering Plants.....J.K. Crellin

1. Pitcher plant.

Newfoundland's provincial flower, Sarracenia purpurea, the "northern" pitcher plant, attracted limited professional and lay medical interest in the 1800s. In the first half of the century when Newfoundland traveller, W.E. Cormack, indicated that the root was known to Indians for treating spitting of blood and pulmonary conditions, professional medical interest had already been expressed in a growing reputation for relieving stomach ailments. More intense interest, however emerged--at least for a while--in whether or not the root was of value in treating smallpox. C. Millspaugh, in his influential *American Medicinal Plants* (1892), referred to American Indian use of an infusion of the root for the disease (as had P. Tocque when writing on Newfoundland in 1878). Millspaugh, however, reminded readers that an 1861 meeting of the Medical Society of Nova Scotia had felt that there was no "reliable data upon which to ground any opinion in favour of its value as a remedial agent" against smallpox.

Medical opinions commonly differ over therapy. Standard medical texts of the 1890s still mentioned the plant, although one stated that it is "now but little used in medicine" as a diaphoretic, diuretic and stomachic and for atonic dyspepsia. Employment for venereal disease by the "Indians of Nova Scotia" was also noted as was usage of an alcoholic rather than aqueous extract of the root. Further, an account of Newfoundland in 1888 promoted the plant, particularly as an excellent remedy against the "gout."

It is unclear whether or not twentieth-century references to Micmac and other Indian usage for treating smallpox, "consumption" (tuberculosis) and blood-spitting--also noted in the recently recorded Newfoundland oral tradition--reflect persisting active interest or memory.

The astringency of the pitcher plant root probably contributed to the belief that it could stop bleeding from the lungs or the upper gastrointestinal tract, although there is presently no scientific basis for this action. The frequent association of spitting of blood with tuberculosis possibly explains suggestions that the pitcher plant may be helpful in treating the disease. Astringency also rationalized usage for stomach complaints, and perhaps, too, it was linked to relieving fevers and hence smallpox.

Modern chemical and pharmacological studies might offer

alternative explanations for past usages--including the reputation as a diuretic and strong laxative--but the historical record hardly suggests that the pitcher plant is a wonder drug waiting to be discovered.

Any information on twentieth-century Newfoundland usage would be welcome.



Sarracenia
The Wonderfull Plant