

# Sarracenia

Volume 17, Number 1.

Winter 2009

Newsletter of the Wildflower Society of Newfoundland and  
Labrador.

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*Aralia hispida* on Penney Crescent.

Howard Clase

## From the Editor.

You may be surprised to get another Sarracenia so soon, but this issue is more or less on time; it was that previous one that was late. At the March meeting the winners of our photo competition were announced. This issue contains the five first prize winners scattered throughout its pages.

## Upcoming Meetings.

**April 1<sup>st</sup>** - Todd Boland will share his images "*Flora and Fauna of Trinidad.*"

**May 6<sup>th</sup>** - Dr. Wilf Nicholls will explain "*How the Figwort Family (Scrophulariaceae-Snap Dragons) got all shook up.*"

### The 2007-8 Executive

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## Why Are Some Wildflowers Uncommon?

By Henry Mann

We know that some wildflowers like Partridgeberry (*Vaccinium vitis-idaea*) are commonly found throughout the Island. Others like Knotty Figwort (*Scrophularia nodosa*) are less frequently encountered. Some like Wild Calla (*Calla palustris*) are distinctly uncommon or rare. The new series initiated in Sarracenia Volume 16 #3 (Summer 2008) "Uncommon Wildflowers of Newfoundland" will feature some of these species. Some readers, depending on where they live, how widely and frequently they travel, and how observant they are, will be familiar with some of these. Keep in mind that the series will feature species that I perceive to be uncommon, but not necessarily rare, from my own experience and observations and the sources I have available, but that this will not always correspond with the experience of others. Any one individual can only have a limited knowledge and experience. This Sarracenia

newsletter is an excellent vehicle to add to information that may be misleading or incomplete, and readers are encouraged to do so. One of the purposes of such a series is to help "flesh out" provincial distributions of species which appear to be uncommon and which often receive scant attention from most of us.

The terms "uncommon" and "rare" are synonyms, however, traditionally they mean something different in botany. Rare plants have a "pedigree" in the sense of an ancestral line of historical importance. For example in the most recently published compilations of Newfoundland rare species (Bouchard et al. 1991, Meades et al. 2000) a plant is only considered to be rare if it is a native (indigenous) species; introduced species (come-from-aways) do not get on the list regardless of how uncommon or rare they may be. The rare plant classification also categorizes native

species on the danger of them being exterminated from the province which implies that no one really cares if introduced species may acquire the same fate. This "dandelion rationality" assumes that introduced species are usually undesirable aliens that should never have gotten here in the first place. A few certainly deserve this attitude if they have the potential to create havoc with native populations, but most should probably be welcomed and cherished for adding variety to our depauperate insular flora.

Rare species are grouped according to their degree of rarity based on their distribution and how many reports exist usually in the form of herbarium specimens. For more details of rarity classification, individuals should consult the Bouchard et al. (1991) publication which lists 291 indigenous species as rare on the Island. This is about 20 to 25 percent of our flora of approximately 1300 vascular plants.

A considerable portion of our flora (400 plus species) is made up of introduced (non-indigenous) species, and many of these are also uncommon, so combined with the pedigreed rare species this could mean that possibly a third of our species would not be often encountered by the average person in the area in which they live and interact. These will all have varying degrees of uncommonness or rarity.

The arbitrary distinction between “native” and “introduced” begins to blur when one expands the time frame. “Native” most often means that plants arrived naturally without the intervention of humans in prehistoric times, that is, coming before the Europeans, or at least, before the availability of written records. In reality almost all our plants arrived in the last 10,000 years or so since the last glaciers receded, some thousands of years ago and some only hundreds of years ago or less, coming by air and sea across the Gulf and the Straits on “their own” without the help of humans. Only in the last 100 years do we have reasonably good botanical records, before that no one really knows how and when most species arrived so the distinction is somewhat tenuous at best. Most European species that prefer disturbed habitats (i.e. that are weedy) probably were introduced by the European migrations in fairly recent times, but not necessarily. For example the rare Brayas on the Great Northern Peninsula who require disturbed habitat and so

might be considered weedy, are probably relicts of the “Great

nature study, encountering, observing and enjoying wildflowers, all are best simply designated as common or uncommon. The uncommon species featured in the series will hopefully stimulate some interest and provide some impetus to search out, locate and report new records in our summer travels.

This brings the narrative back to the original question, “Why are some plants uncommon?”, and a secondary question, “Why is such a large portion of our flora uncommon?” If we can suggest answers to these questions we should also be able to reason out the other side, why some plants are very common. Much has been said and written about these questions nationally and internationally, but I will

attempt to localize and simplify some ideas under the following headings; **Perception, Habitat, Climate, and Introductions.**

### **Perceptions (Falsely Uncommon Species)**

Some plants seem uncommon because we do not notice them or recognize them even though they may commonly inhabit our local area. Many aquatic species fall into this category, especially submerged species and those with small non-showy flowers such as pondweeds (*Potamogeton* spp.). Some aquatics like the bladderworts (*Utricularia* spp.) do not bloom every year or may not bloom profusely; some species have tiny widely scattered flowers easily overlooked at a distance.

#### **Plant Portraits – Flowers:**

#### **Joint First Prize**



Field Horsetail Cones.

John Bridson

Northern Revegetation” that followed the receding glaciers, either from the south or the north. Currently a number of our northern species occur across Greenland, Iceland, and northern Europe and are considered native to both sides of the Atlantic.

Dispersal of plants and the mechanisms they have developed to get around is a fascinating story on its own, far too broad a topic to delve into in a brief article such as this. For the purposes of this series I will prefer to use the term “uncommon” for both native and introduced species based on how often a plant is likely to be encountered in an Island-wide perspective. Native rarity classification for the purposes of species conservation is certainly important, but for the purposes of

Many individuals, even naturalists, avoid close contact with these habitats and their mud and flies. Although not flowering plants, charophytes (stoneworts) are submerged aquatic macrophytes known worldwide as significant contributors to freshwater ecology. Until fairly recently only a few vague reports of three stonewort species existed for the Island and no verifiable records were known simply because no one ever bothered to look. We now know of eleven species, at least four of which are very common and widely distributed in the province. As important vegetation that acts as nursery beds and food for aquatic invertebrates as well as food for waterfowl, it is amazing that this “plant” group has been almost totally ignored by those studying our freshwaters.

Dwarf mistletoe (*Arceuthobium pusillum*), a tree parasite and our smallest shrub, is rarely noticed because its tiny brown stubs are scattered amongst and are about the same size as the spruce needles. Listed by Bouchard et al. (1991) as a rare species, it is certainly more common than our records indicate especially in western and central Newfoundland. When specifically searched for it is not too difficult to locate. Some plants are only recognizable by most individuals as members of a group such as the grasses or the sedges. The groups are common and widespread throughout the Island, but we are unable to recognize individual species so the distribution records for

many are extremely sketchy. The preparation of detailed local species lists of parks, reserves, communities, and habitats across the province would produce a clearer picture of commonness and distributions of poorly studied and recorded species.

and widely distributed habitats in Newfoundland so plants adapted to one of these would also be expected to be common and widely distributed as well. For example on our acid bogs throughout the Island one can easily find Roundleaf Sundew

(*Drosera rotundifolia*), the Pitcher Plant (*Sarracenia purpurea*), and the Marshberry (*Vaccinium oxycoccus*). On the other hand, plants adapted to serpentine peridotite soils which only occur in a few restricted localized areas, would not be encountered unless one was in that habitat and even within the preferred habitat some may be uncommon. A few examples include Alpine Campion (*Lychnis alpina*), Dryleaf Sandwort (*Minuartia marcescens*), and Maidenhair Fern (*Adiantum aleuticum*).

Likewise, exposed limestone soils that are found mostly on the west coast harbour certain species only found on that substrate such as Silky Willow (*Salix vestita*), Mountain Avens (*Dryas integrifolia*), Yellow Ladyslipper (*Cypripedium parviflorum*), Arctic Bladderpod (*Lesquerella arctica*), and many others. Locally within the limestone barrens some of these species may appear to be quite common, but provincially they are uncommon. A few other examples of habitats that are uncommon on the Island include the following, many more than this occur: salt marshes, freshwater marshes, brackish ponds, snowbeds, etc. Meades (1990) and Meades and Moores (1994) are excellent references for a fuller range of plant habitats and communities. It has been suggested that Insular Newfoundland may have a lesser

Plant Portraits – Flowers:

Joint First Prize



Indian Pipes

Judith Blakely

Relatively recently introduced weedy and pioneer species of disturbed areas, roadsides, town-sites, and agricultural areas are no doubt under-reported and under-recorded. Our records of many species are woefully incomplete.

**Habitat:**

Each species of plant has become adapted to certain physical environmental factors such as soil type, acidity, wetness, shading, shelter, and many others. In its preferred habitat a species flourishes, but elsewhere may struggle or be absent. Some species have broad tolerances while others have fairly narrow ones. How common their preferred habitat is will determine how common or uncommon they are. Sphagnum bogs, spruce forests and rocky barrens are three broad, common

variety of habitats than found on the mainland and therefore may be expected to harbour fewer species. Whether this is true or not is debatable. However, habitats like salt marshes, sandy shores, brackish ponds, true freshwater marshes, etc. tend to be smaller in area and more isolated from one another and thereby limit chances of natural introduction and dispersal. For example, the marsh inhabiting Sweetflag (*Acorus americanus*) reported historically from the Codroy Valley may have difficulty dispersing beyond the valley if no sizeable marshes occur in close proximity. This species seems to have no problem flourishing and setting seed in our west coast climate as at least one introduction in Corner Brook has shown. Likewise, Duckweed (*Lemna turionifera*) is normally transported by ducks and other waterfowl adhering to their feet and feathers as they fly from pond to pond. It may take some time before it is able to disperse more widely from the small pool near Corner Brook where it has flourished at least since 1993 especially because the nutrient rich ponds that it prefers are uncommon throughout much of the Island.

## Climate

Climate is such an overriding factor in the shaping of habitats and plant communities both globally and locally so that it is best dealt with separately. Climate varies on a continental scale from north to south and with nearness to the ocean and other large bodies of water. Insular Newfoundland finds itself in a unique climatic position being influenced by weather systems from the south, north and west and with winters being moderated because it is surrounded by water. The cold Labrador Current produces cool

overcast summers limiting the amount of direct sunlight normally available to species growing on the mainland. Plants adapted to warmer climates like Curlygrass Fern (*Schizaea pusilla*) and Yellow Bartonia (*Bartonia virginica*) are able to survive at the northern limits of their climatic range only in southern warmer parts of the Island. At the same time some arctic species are able to survive on the Island at the southern climatic range limits on the colder Great Northern Peninsula and the Long Range Mountains, e.g. Velvetbells (*Bartsia alpina*), Newfoundland Orchid (*Pseudorchis albida*), etc. In both cases these plants are restricted to small areas of the province where the climate remains suitable for their survival so they tend to be uncommon provincially. Sometimes warm pockets occur on a small scale such as the sheltered valleys of the west coast permitting growth of species not found elsewhere such as the Two-eyed Berry (*Mitchella repens*) in the Codroy Valley or Alternateleaf Dogwood (*Cornus alternifolia*), and Black Ash (*Fraxinus nigra*) in some of these valleys. Cold arctic-like tundra occurs in the Straits region such as on Burnt Cape providing climatic conditions for arctic species such as Dwarf Hawk's Beard (*Crepis nana*) and Burnt Cape Cinquefoil (*Potentilla usticapensis/pulchella*).

We can expect that if climate change occurs, this will lead to a change in the distribution and commonness of our plants, some becoming more common and others becoming less common, and perhaps with an accelerated increase in new species. For example, Red Pine (*Pinus resinosa*) now only occurs as a few limited isolated stands in the warmer parts of the Island on easily warmed, well drained sandy soils. It

is thought to have arrived and flourished thousands of years ago when the climate was somewhat warmer. In the last few thousand years the Island's climate has cooled somewhat and it appears that Red Pine is a relict species in decline, but hanging on in a few choice sites where conditions are still marginally favourable. If it is able to survive, and if and when climate warming occurs, it may once again flourish and increase its distribution and become more common. We should, however, keep in mind that other factors are also in play besides climate, such as logging, forest fires, disease, insect pests, competition with other forest species and so on.

Two classic papers by A.W.H. Damman (1965, 1976) should be consulted by individuals, and especially students, who wish to delve more deeply into the physical factors of habitat and climate that shape our flora and the distribution and commonness of our species.

## Introductions

New species are continually showing up on our shores as they have been for thousands of years either "naturally" or increasingly more recently assisted by humans. Those with more easily dispersed seeds will have a better chance of getting here unassisted, but in very recent times a massive trade and transport of species from all parts of the globe has developed for agricultural, horticultural and other purposes. Those that can find suitable habitat and climate may survive and become part of the permanent flora, others may be able to hang on in a tenuous existence associated with the haunts of humans (e.g. Deptford Pink, *Dianthus armeria*), and some will only have a fleeting existence, unable to reproduce and establish even when continually

introduced. Some introductions that appear to have successfully established include such aggressives like Coltsfoot (*Tussilago farfara*), White Sweet Clover (*Melilotus albus*), Queen Anne's Lace (*Daucus carota*), Canada Thistle (*Cirsium arvense*), Creeping Buttercup (*Ranunculus repens*), and many others. Some like Coltsfoot and Purple Loosestrife (*Lythrum salicaria*) are becoming invasives in the natural flora; many tend to be benign wildflowers of roadsides, urban areas and other disturbed locations. Stinking Willie (*Senecio jacobaea*), a beautiful wildflower in its own right, is considered a noxious agricultural weed because of its toxicity to sheep and cattle. Garden escapes can be found throughout the province in villages, old homesteads and cemeteries. Most are localized and may or may not become part of the long term flora. Some of these include various horticultural roses (*Rosa* spp. e.g. *Rosa rugosa* "Blanc Double De Coubert"), Monkshood (*Aconitum* spp.), Cypress Spurge (*Euphorbia cyparissias*), Mossy Stonecrop (*Sedum acre*), Meadow Geranium (*Geranium pratense*), and many others.

Several factors also need to be considered related to the time and location of introduction. Is a species population size and distribution on the increase, decrease, or fairly stable? Has the species been present long enough in suitable locations where spreading is possible or likely? Increased habitat alteration may also be a factor. If more disturbance occurs, whether natural or man-made, we may expect an increase in numbers and distributions of species that prefer these habitats. For example, Cattail (*Typha latifolia*) has been observed

spreading fairly rapidly in the last 30 years from west to east in ditches as Trans-Canada Highway rebuilding has occurred. This species prefers wet exposed mineral soils and appears to "enjoy" road salt runoff as well as coastal locations. It is still relatively uncommon in the natural undisturbed interior of the province. The Lundrigan's Marsh cattail swamp just north of Pleasantville, St. John's is possibly a separate local introduction. If the climate becomes warmer/colder, drier/wetter, summers longer/shorter, sunnier/cloudier, etc.

Island species compared to their mainland counterparts that need to be recognized and studied, a goldmine of opportunity and activity for students of the future.

Plants designated as "rare" are considered special because they are "native" and their demise would lessen the biodiversity or variety on the Island. On the other hand, uncommon introduced species whose coming increases the biodiversity and who have the potential to increase in numbers and distribution are not considered rare, and most often are considered as undesirables. The presence of certain species can sometimes have dramatic effects on the ecology of habitats. Invasives like Creeping Buttercup and Coltsfoot appear to be having major effects on our flora by carpeting vast areas and crowding out native species. However, who can say that the increase in these or other introduced species like the clovers, some grasses, etc. are good or bad for the flora and fauna in the short or long term? As well, would the disappearance of certain native rare species such as Black Ash, Yellow Mountain Avens (*Dryas drummondii*) or the Brayas be of

**Plant Portraits - Other: Joint First Prize**



Dogberries

Gene Herzberg

then shifts will occur in our flora which will reflect those trends.

In the long term, species finding themselves on the Island isolated sexually from other members of their species on the mainland may mutate and adapt to become new variants or even new species in their own right. This is presumably what has happened to our own few endemics such as the Brayas (*Braya fernaldii* and *B. longii*) and the Barrens Willow (*Salix jejuna*). Because of this isolation there are many more variations and differences in our

any overall or far reaching significance?

The natural world is all about change. Those botanists and conservationists who yearn for a "pure" native flora and look upon immigrants as undesirable aliens will find their efforts unrealistic and futile. The flora is changing and will change in the future and the best we can do is protect some of our rarer habitats in hopes that this will also protect some of our rarer species. If we can control and limit the ravages of the

“human weed” we may be able to “save” some of our rare species in the short term. Nature will determine who survives in the long term. We have no choice but to welcome continually introduced species, but surely we must monitor their increase or decrease and resulting effects. Unfortunately at the moment we are largely ignorant of the dynamics of incoming species because there is no effective long-term monitoring of such change. We don’t have good knowledge of which introductions are spreading, which are integrating into the native flora, and which appear to remain localized. For example, is the invasive Purple Loosestrife spreading as fast and as extensively as it

appears to be, and what will be its future effect on our natural wetlands? Some effort at the provincial level is being made to improve distributional records of our species, but professional botanists are uncommon, in fact, distinctly “rare”. However, in terms of vegetation dynamics, workers are few and little is happening. We amateurs in the Wildflower Society can do much to help through our observations, records and reports.

These are some thoughts about why our vegetation is the way it is at this point in the Island’s history. In a brief general article such as this one can only lightly touch upon the answer to the originally posed

question, “Why are some wildflowers uncommon?” An overriding theme is that a flora is dynamic, ever changing as the physical and biological surrounding factors change. Perhaps some of these ideas will allow us to look at our plants in new ways and stimulate us to observe and record what appears to be happening on our watch. Look for future Sarracenia articles in the ongoing series “Uncommon Wildflowers of Newfoundland”.

I wish to thank John Maunder for reading the draft manuscript of this article and for the many helpful comments and suggestions.

Happy Botanizing!

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## Re-vegetation of a Suburban Roadside Verge.

By Howard Clase.

Half a dozen years ago our mailbox was moved to a location in Penney Crescent 100 m beyond the bridge over the small river which forms the back boundary of our

property. (This river is called “Parson’s River” on our deeds, but is now more generally known as the Virginia River.) There is a linear park on the far side of the river with one of

the Johnson Family Foundation trails running through it and a trunk sewer running underneath it. This meant that we could now walk to pick up our mail by crossing to Penney Crescent

at the back of the Hindu Temple and walking along a new concrete sidewalk. Between the sidewalk and the second growth forest of the linear park was a strip about 5 m wide of roughly levelled subsoil, which had been left by the developer's bulldozer

without any attempt at re-vegetation. It was fascinating to watch the new plants appearing in this strip, but it didn't occur to me until last summer that I ought to have been recording what I was seeing – so belatedly I made a list (Table 1) of the 48 plants

I could identify. There were also some more grasses and sedges that I'll try to key out next summer, and there are likely to be other new finds.

The site is on the western side of the road and in full sun. There is a

**Table 1: List of Roadside Plants**

<b><i>Abies balsamea</i></b>	Balsam Fir	<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Acer sp. *</i>	Maple	<i>Linaria repens</i>	Striped Toadflax
<i>Achillea millefolium</i>	Common Yarrow	<i>Linaria vulgaris</i>	Butter and Eggs
<b><i>Alnus viridis</i></b>	Mountain Alder	<i>Linaria x sepium</i>	Hedge Toadflax
<b><i>Amelanchier laevis</i></b>	Smooth Chuckly Pear	<i>Matricaria discoidea</i>	Pineapple Weed
<b><i>Anaphalis margaritacea</i></b>	Pearly Everlasting	<i>Oenothera biennis</i>	Biennial Evening Primrose
<b><i>Aralia hispida</i></b>	Bristly Sarsaparilla	<i>Phalaris arundinacea</i>	Canary Reed-grass
<b><i>Betula papyrifera</i></b>	White Birch	<i>Plantago major</i>	Common Plantain
<i>Centaurea nigra</i>	Black Knapweed	<b><i>Prunus pensylvanica</i></b>	Pin Cherry
<i>Cerastium fontanum</i>	Mouse-eared Chickweed	<i>Ranunculus repens</i>	Creeping Buttercup
<b><i>Chamerion angustifolium</i></b>	Fireweed	<b><i>Rubus idaeus</i></b>	Wild Red Raspberry
<i>Digitalis purpurea</i>	Foxglove	<i>Rumex acetosella</i>	Sheep's Sorrel
<i>Dipsacus fullonum *</i>	Teasel	<i>Senecio jacobaea</i>	Tansy Ragwort
<i>Epilobium montanum</i>	Broad-leaved Willowherb	<i>Senecio viscosus</i>	Sticky Groundsel
<b><i>Euthalmia graminifolia</i></b>	Lance-leaved Goldenrod	<i>Solidago rugosa</i>	Rough-stemmed Goldenrod
<i>Gnaphalium sylvaticum</i>	Heath Cudweed	<b><i>Sorbus decora</i></b>	Showy Mountain Ash
<i>Hieracium aurantiacum</i>	Orange Hawkweed	<i>Spiraea alba</i>	Broad-leaved Meadowsweet
<i>Hieracium flagellare</i>	Whiplash Hawkweed	<i>Stellaria graminea</i>	Lesser Stitchwort
<i>Hieracium lachenalii</i>	Common Hawkweed	<i>Taraxacum officinale</i>	Common Dandelion
<i>Hieracium pilosella</i>	Mouse-eared Hawkweed	<i>Trifolium aureum</i>	Large Hop Clover
<i>Hypericum perforatum</i>	Perforated St. Johnswort	<i>Trifolium pratense</i>	Red Clover
<b><i>Iris versicolor</i></b>	Blueflag	<b><i>Vaccinium angustifolium</i></b>	Lowbush Blueberry
<i>Impatiens glandulosum *</i>	Himalayan Balsam	<i>Veronica officinalis</i>	Common Speedwell
<i>Leontodon autumnalis</i>	Fall Dandelion	<b><i>Viburnum nudum</i></b>	Northern Wild Raisin

**Plants considered native to the province printed in bold type.** \* Garden escapes.

steep bank down to the original forest floor level so that the verge is also well drained. About halfway along, a small tributary of the main stream cuts under this bank and crosses diagonally under the road through a conduit. The nearby forest is a closely packed mixture of balsam fir and black spruce 10-15 m high.

As well as natural re-vegetation

there seems to have been an attempt by one of the neighbours to help things along; the maple and dogberry seedling come into this category but are not growing too well. I think the himalayan balsam was also deliberately planted initially and while it found the soil on the verge too poor and dry it did manage to shoot some of its seeds into the moister soil down

at the forest edge and along the banks of the streamlet. Although it is an attractive plant it is a potential invasive which has become a serious problem in Britain and elsewhere, where it clogs up shallow slow-flowing waterways. The course of the streamlet on the other side of Penney Crescent is full of it. It also occurs in Pippy Park in some of the



streams on the north side of Long Pond. We should keep an eye on it.

A couple of the natives are also of interest, a single blue flag seems to be surviving despite the apparent unsuitability of the site and the bristly sarsaparilla is doing well (see cover picture). This is an interesting development since while it normally grows in open woodland sites it does seem to be colonising roadside verges all across the Island. In July it's easy to recognise the 5 cm wide fuzzy green balls of its inflorescences held above its leaves as you drive along the TCH at 100 km/h, and it seems to be quite common.

The picture of a rather fine fireweed plant also shows some of the other plants on the verge and the trees behind. The lance-leaved golden-rod in the background is probably the most abundant plant on the site and you can also see pearly everlasting and St John's wort beside it. The tall grasses at the back are reed canary-grass.

Few of the tree species listed are of any size and there are very few of them. The only ones doing well are a couple of pin cherries and an alder or two. The sides of the Johnson Trail which cuts into my patch have become alder thickets. Alder can grow on poor soils as, like the

members of the pea family (e.g. clovers and lupins), it has a close relationship with a nitrogen fixing bacterium. Both these small trees are first growth plants on disturbed soil improving the fertility and paving the way for more demanding species to follow.

habitats do not appeal to our natives, and if it were not for the introduced species they would be much poorer. I am in full agreement with Henry as to the value of these cosmopolitan temperate introductions in clothing what would otherwise be eyesores and providing interest to us botanists.

You cannot blame the plants, they are doing what plants do – finding a suitable habitat and growing in it. If anyone is to blame it is us for creating the habitats and supplying the seeds, even if accidentally.

This is the kind of project we amateurs can do – surely there a bit of new road somewhere near you that you can watch and record. It would be interesting to follow one right from the beginning. Another kind of site to look out for is a small relic of the original forest that is still hanging on in the city surrounded by development, and where natives like the cornlily, *Clintonia borealis*, and the crackerberry, *Cornus canadensis*, still grow.



A view of the verge with fireweed.

Howard Clase

The suburban roadside verge is a new habitat that has arisen in recent years, and as you will see from the list one which is much favoured by introduced plants. Despite the close proximity of “native” forest, natives form only just over one quarter of the species. In fact this is probably a larger proportion than along most suburban verges. Such disturbed

The Mundy Pond area is one everyone knows, but there are several other smaller sites here and there, generally where the terrain isn't suitable for development.

This is just an interim report, I know I've missed a few species and I'm sure there are more to come. As Henry says, you can do it too – get out and botanise!

## Uncommon Wildflowers of Newfoundland 2: Knotty Figwort (*Scrophularia nodosa* L.)

By Henry Mann

Upon hearing the common name of this plant, ears often perk up anticipating a licentious story, but this plant is not naughty, only knotty. Nevertheless, there is a story that can be narrated in various ways depending on one's intent. The common name is derived from the

cures of afflictions for those parts of the body. "Scrofula", also known as the "King's Evil", is a disease characterized by infection and swelling of the lymph nodes, usually but not always in the neck region, producing obvious lumps and "knots" in the skin. In addition to treatment

*grow painful and fall down, and for other such knobbes or kernels that sometimes grow in or around the Fundament."*

with figwort, it was believed that one could be cured by being touched by the king in the time of King Henry II and his successors (Herein lies another story which history buffs may wish to pursue). "Figs" was also a vulgar term for raisins (e.g. figgy pudding, figgy duff) or any small bump or lump resembling raisins, including haemorrhoids. The old English word for "plant" is "wort" (with an o), however, growths, tumours, or "warts" (with an a) of the genitals (fundaments!) were apparently also known as "fig



Figure 1: Rhizome of *S. nodosa* showing characteristic "knots".

short underground stem or rhizome which is composed of a number of bumps, lumps, knobs or "knots"(Figure 1). According to an ancient belief, the "Doctrine of Signatures", plants exhibiting features suggestive of the human body or its deformities had medicinal properties that could be used as

warts". Following is an interesting quote from a seventeenth century writing regarding this plant (Coffey 1993): "... *effectual for the King's Evil or any other knots, kernels, bunches or wennes growing in the flesh wheresoever; it is of singular good use to be applied for the hemorrhoids or piles, when they*

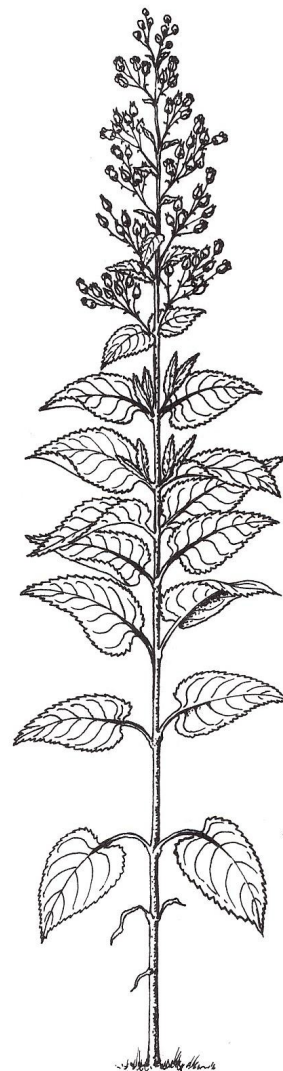


Figure 2: Illustration of a one meter tall plant in bloom.

Perhaps "naughty" is not such an irrelevant interpretation after all!

Although the Doctrine of Signatures is now only considered curious folklore, the modern scientific

literature does indicate that the plant contains a number of biologically active compounds which are useful medicinally. Also recent validated books such as Potter's Herbal Cyclopedia (Williamson 2003) record it as a vulnerary (wound healing), anti-inflammatory, diuretic and a mild laxative. Richters Herb Catalogue (2008) lists Knotty Figwort as a skin medication and sells 100 grams of seed for \$ 350.00 and one kilogram of dried herb for \$ 85.00. At these prices perhaps there exists a potential Newfoundland cottage industry for some enterprising Newfoundland naturalist!

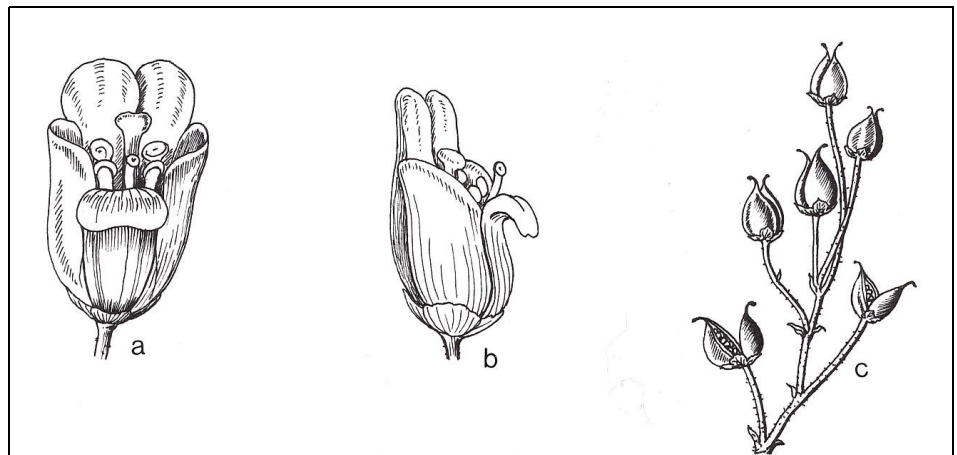


Figure 4: Flower and fruit illustrations. a. Face view of flower showing four stamens, pistil stigma and style, and a large staminode against two upper "ears" of corolla. b. flower side view showing rolled back lower lip of corolla. c. Several seed capsules beginning to release seeds.



Figure 3: Flowers and flower buds.

*Scrophularia nodosa* is a tall perennial wildflower of a meter or more in height with square stems and opposite leaves (Figure 2). Many flowers are produced at stem tips in large loose panicle-like clusters. Flowers are small, only about one centimetre in length and are not very showy with the naked eye, but still quite interesting when viewed with a hand lens (Fig 3). We are perhaps more familiar with other closely related genera such as the snapdragons, eyebrights, toadflaxes, etc. whose flowers are similarly

structured but more colourful and eye-appealing. Some of these are also small, but strikingly beautiful when magnified. Like all members of this group, figwort flowers are two-sided when viewed from the front, that is, they have a left side, a right side, a top and a bottom, unlike many familiar blossoms whose parts radiate outward from a central point like those of a rose or a chickweed.

A short calyx with five rounded lobes encases the base of the corolla tube which terminates in five petal lobes, two upright like "ears", two side, and one lower lip with the tip rolled back to form a little platform for pollinators (Figure 4). Flowers are greenish

suffused with reddish-brown. Inside the corolla are found four functional stamens producing pollen and one "fat" non-functional purple stamen (staminode) on the upper side. The single pistil has a "roll" at its base which secretes nectar especially sought after by wasps (Figure 5). On

a warm summer day plants are usually "abuzz" with hordes of wasps whose heads just nicely fit into the flower's opening allowing their short tongues to lap up nectar from the ovary base. The whole plant, especially when crushed, produces a strong "musky" odour which apparently draws in pollinating insects, especially wasps.



Figure 5: Wasp lapping nectar from the nectary gland at the base of the pistil.

Prior to the Meades et al. (2000) list, and in the classical authoritative manuals and lists (Fernald 1950, Gleason & Cronquist 1991, Rouleau 1978, Rouleau & Lamoureux 1992, Scoggan 1978), the

Scrophulariaceae, the Figwort or Snapdragon Family, in Newfoundland included some 16 genera and over 50 species. Only two genera, *Scrophularia* and *Verbascum*, each with one species remain in the most recent list (Meades et al. 2000). The other genera have been moved to separate families. Root parasitic species have been placed in the Orobanchaceae (Broom-Rape Family). i.e. *Euphrasia* (eyebrights), *Pedicularis* (louseworts), etc., and the others, e.g. *Linaria* (toadflax), *Veronica* (speedwells), etc. placed in the Plantaginaceae which used to be called the Plantain Family, but is now the Snapdragon Family, leaving the Scrophulariaceae just known as the Figwort Family. Much to the dismay of many naturalists, as taxonomists become more “enlightened” or perhaps even more knowledgeable about species, they tend to “shuffle the deck”, believing that the new organization more closely resembles the actual true ancient relationships of the species. This process has been going on for hundreds of years, but in the last 25 or so there has been an “explosion” of changes because of the new DNA analysis techniques. The developing Flora of North America (FNA) reflects some of this ongoing revision and no doubt more will be coming down the pipeline. For those of us who just want to identify and get to know our wildflowers this “moving target” can be a source of frustration, but in some ways it is irrelevant to many naturalists. The plants have not changed, only the way some humans have decided to group them, sometimes with accompanying name changes (Mann 2003). Thankfully, usually the common names by which we know them have not changed.

We need not get caught up in this academic exercise in order to observe, study, photograph and marvel at the awesome beauty, form, colour and variety exhibited by our flora.

Now, some of you may wonder why Knotty Figwort is being featured in the Uncommon Wildflower series since you seem to find it everywhere in your walks and outings. This species is currently known from only two major areas, the Bay of Islands/Humber Valley and Bonne Bay in western Newfoundland, and the eastern Avalon around Conception Bay, St. John's and south. In these areas, where its actual habitat probably comprises less than 5% of the Island, *S. nodosa* may be relatively common and frequently encountered in its preferred habitat of moist woods and clearings. Apparently it is absent from the rest of the Island based on current knowledge. Most authorities consider it an introduction from Europe, brought into some of the major ports by the offloading of ship's ballast, although Fernald (1950) considered it native to Newfoundland. Knotty Figwort is geographically uncommon provincially because of its restricted distribution, but other species may be more widely dispersed although numerically uncommon throughout their range. There are many reasons for uncommonness as well as several ways of defining this designation. A number of these will be explored in this series. Some other Newfoundland species also follow this distribution pattern exhibited by Knotty Figwort. The Showy Ladyslipper (*Cypripedium reginae*) in its limited west coast habitat can be noted blooming in profusion in certain fens and one may sometimes wonder why it is classified as a rare species.

However, province wide it only occurs in a rather small restricted area. In addition it is also increasingly falling victim to the shovels of collectors and so may become endangered provincially.

Unlike the showy *C. reginae* orchid, Knotty Figwort does not “stand out” from its surrounding crowding vegetation and can be easily overlooked by those unfamiliar with its features despite its rather large stature. Even in habitats where it is relatively common it may be “pseudo-uncommon” to those who are not able to distinguish it from the surrounding vegetation. I suspect that many of our non-showy wildflowers are likewise falsely uncommon simply because they are not recognized and therefore not recorded thus leaving big gaps in our distribution records. Rectifying this situation could/should be one of the major goals of our Wildflower Society, of course not forgetting that those “damn weeds” are also wildflowers and important members of our ever changing flora. Many of these also have marvellous structural intricacy and beauty even if miniature, and I always recommend purchasing and using a 10x hand lens to see what our eyes often miss (Mann 1991, 1992).

Pen and ink drawings are by Warwick Hewitt, retired graphic artist at the Sir Wilfred Grenfell College and are part of the permanent herbarium collection of botanical illustrations. Photographs are by the author. Thanks to John Maunder, Michael Burzynski, Claudia Hanel of Provincial Wildlife, and Meherzad Romer of the ACC Data Centre for responses to my queries on Knotty Figwort distribution.

Happy Botanizing!

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Plant Portraits - Other :

Joint First Prize

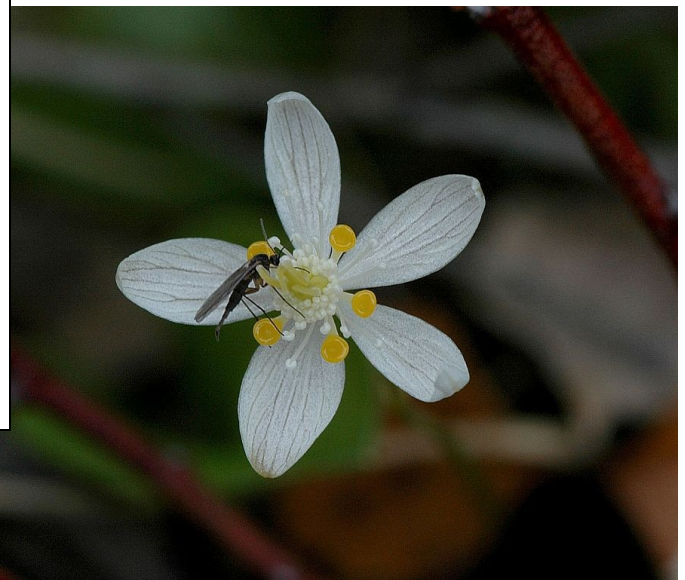


Wild Rose Gall

Mary Bridson

Plant Animal Interactions:

First Prize



Mosquito on Goldthread

Judith Blakely

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### Submission Information.

The editor welcomes articles relevant to the botany of Newfoundland and Labrador. They should be submitted in electronic form with minimal formatting. Pictures and tables should be submitted as separate files and not embedded in the text. Contact me for further information at [sarracenia@nl.rogers.com](mailto:sarracenia@nl.rogers.com).