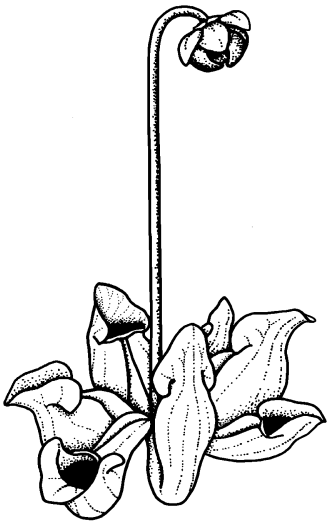

Sarracenia

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Uncommon Wildflowers of Newfoundland 5: Spotted Knapweed (*Centaurea stoebe* L. subsp. *micranthos* (S. G. Gmelin ex Gugler) Hayek; = *C. biebersteinii* de Candole*;* = *C. maculosa* Lamark)

By Henry Mann

Some see pesky weeds
Some see pretty flowers
Those who can see both
Have joy for many hours

Yes, I like weeds. Perhaps it is my agricultural background on the prairies where weeds were and still are big-time players, or perhaps because one cannot help but admire these tough gutsy world travelers who have beaten anything that man has thrown at them. Weeds, of course, do not exist in nature, only in the minds of humans, and the dilemma of "invasive species" threatening the biodiversity of a region is also a human induced artefact tied to the coattails of the human invasions. In the timeline of humans, these aliens appear to be problems, in nature's timeline they are not. "Weeds" are rapid colonizers of disturbance whether naturally produced or more commonly created by the upright two-legged "weed". As such they are nature's great healers of the earth's wounds. Our human battle with weeds stems from our ignorance and stubborn refusal to cooperate with them rather than treating them as competitors and enemies. Those interested in pursuing this bohemian line of thought are encouraged to read an old classic ("Weeds; Guardians of the Soil" by Joseph A. Cocannouer) now completely available on line at http://journeytoforever.org/ in their "Small Farms Library". Many "weeds" like this issue's featured species, Spotted Knapweed, are also beautiful wildflowers in their own right, as are the much maligned Dandelion, the cursed Canada Thistle, and the despised Purple Loosestrife.

Spotted Knapweed originated in eastern Europe, appearing in North America just prior to 1900 and now has spread across the continent in the northern USA and southern Canada. To my knowledge it has not been reported previously for Newfoundland, but here it is, a nice patch of about two dozen flowering plants plus many seedlings on a gravelly roadside about one kilometre east of Pasadena proper where the old TCH (now part of Main Street) passes through an agricultural area. Forty meters to the east another lone plant hugs the road. The plants are not easy to spot from a moving vehicle because they blend into the roadside flora with similar flower colour like tall Red Clover, Black Knapweed, and Fireweed.

On the dry prairie rangelands of the west Spotted Knapweed is considered a troublesome plant outcompeting the more desirable cattle forage species. (Interestingly, in the literature some weed specialists see it as **causing** overgrazing of the native vegetation by cattle, but fail to mention that its "invasion" into the natural grasslands was and is promoted by the disturbances **caused** by overgrazing of domestic herds whose numbers and confinement often exceed the ecological carrying capacity of the range.) In addition to its bounteous seed production, tall stature and vigorous growth, *C. stoebe* has an additional weapon in its arsenal, an allelopathic chemical known as "catechin" which exudes from its roots preventing other species from crowding it. Apparently the chemical secretion is stimulated by certain soil fungi which are not affected by it, but the roots of other plants are destroyed as well as microbial soil pathogens. One scientist has dubbed catechin as a botanical "weapon of mass destruction". This substance is now being developed by scientists into a natural, more environmentally friendly herbicide. What other "virtues" of our "weeds" will be discovered in the future should we increase our efforts to investigate their biology?

In Newfoundland Spotted Knapweed is not likely to become a worrisome "weed" as it can only reproduce by seed and is easily controlled by normal cultivation practices unlike some more pesky species such as Canada Thistle, Coltsfoot, Field Horsetail and the like which can regenerate plants from underground stem and root fragments. It is a species of poor dry soils, not competing well under wet or shady conditions so its status here will likely be relegated to a showy wildflower of roadsides and the neglected haunts of humans. Chances are that it may also already be found in other agricultural areas of the west coast should anyone take the time to look.

Centaurea stoebe is a perennial herb from a deep taproot up to one meter tall in the Pasadena population, but reported up to 1.5 meters elsewhere in North America (Figure 1: See Cover). Individual plants have been reported to survive up to nine years. Unlike our other perennial knapweeds, its principal stem leaves are deeply pinnately divided into a number of narrow segments (Figure 2). Upon germination in spring a rosette of ground-hugging leaves is produced in the first year (Figure 3). Leaves and stems are covered with fine "cob-webby" hairs producing a greyish-green appearance, best seen with a hand lens. The upper surface of the leaves also have a spotted glandular appearance under magnification. Like other members of the Aster Family (Asteraceae/Compositae), it aggregates its tiny flowers into larger compact heads, each head encased in an involucre of overlapping bracts (phyllaries) at its base. These bracts or phyllaries are quite distinct in this genus and can be used to identify the species. Figure 4 compares the phyllaries of the four perennial *Centaurea* species likely to be encountered in Newfoundland. When a Spotted Knapweed head is viewed from the side the dark phyllary tips produce a "spotted" appearance to the involucre, hence the name (Figure 5). Corollas of the flower head are normally deep pink-magenta, but white sports are reported to occasionally occur. Probably all of our *Centaurea* species may produce white mutant flowers infrequently. Flower colour in Spotted Knapweed is similar to that of Canada Thistle, Red Clover, Black Knapweed, Fireweed and Joe-Pye Weed, all of which may be in bloom about the same time, mid-July, August and early September. (You may wish to guess why so many common species with the same flower colour are blooming at the same time!)

Three other perennial knapweeds are known from Newfoundland. The most common of these is the Black Knapweed, *Centaurea nigra*, a "weed" of roadsides and waste places across much of the Island (Figure 6a, b). It is quite variable and apparently sometimes hybridizes to produce fertile offspring like *C. x moncktonii* Britt., which has been reported from the province.

Figure 2: Stem leaves of Spotted Knapweed, upper to lower.

Figure 3: First Year leaf rosette of Spotted Knapweed.

Figure 5: Side view of Spotted Knapweed head showing "spotted" appearance of involucre.

Figure 4: Comparison of the phyllaries of our four perennial knapweed species:
upper row – Black Knapweed,
second row – Spotted Knapweed,
third row – Mountain Knapweed,
fourth row – Persian Knapweed.

Figure 6: Black Knapweed: a. side view of flower head. b. stem leaves, uppermost to lowest.

Figure 7: Mountain Knapweed: a. side view of flower head. b. upper and lower stem leaves.

Figure 8: Persian Knapweed:
above: compound lower stem leaf..
right: face view of flower head, note pale centre.
far right: side view of flower head showing overlapping phyllaries. c.

Mountain Knapweed or Mountain Bluet (*Centaurea montana*) is commonly grown in perennial gardens and is occasionally seen as an escape (Figure 7a, b).

One plant called Persian Knapweed (*Centaurea dealbata* Willd.) is a showy garden perennial often sold in nurseries as cultivar “Steenbergii” or “Skanbergii” and sometimes others. It is very similar to *C. hypoleuca* cultivar “John Coutts” also horticulturally cultivated. There is some suggestion that these two are not actually separate species but simply selected varieties or cultivars of the same species. In any event, plants which I call Persian Knapweed (*C. hypoleuca* DC) have been seen in gardens from the Baie Verte Peninsula to the Humber Valley and also as escapes in disturbed locations in this region (Figure 8a, b, c).

The other knapweed that occasionally escapes from cultivation is the annual Bachelor Button (*Centaurea cyanus*) also known by a variety of common names including Cornflower, Bluebonnets, Bluebottle, Blue Poppy and others. Flowers are normally bright blue, but white, pink and deep maroon variants are also available from seed suppliers. Most gardeners will be familiar with this species.

Knapweeds (*Centaurea spp.*) are showy plants with pretty flowers. Generally they are copious nectar and pollen producers highly esteemed in the honey industry. Mono-floral honey from Spotted Knapweed is reported to be light and tangy and reputed to be one of the finest honeys produced in the USA. Also, another chemical from its aerial stems and leaves (cnicin) has been shown to have antimicrobial and anti-cancer properties and has been successfully tested for termite control.

What a “weed”!

Happy Botanizing!

Cuscuta gronovii confirmed: a new species for Newfoundland

By John Maunder.

Cuscuta gronovii Howard Clase

In July of 2006, a field trip of the Wildflower Society of Newfoundland and Labrador discovered a species of dodder (*Cuscuta* sp.), parasitic on *Symphyotrichum novi-belgii* (New York Aster) in the big saltmarsh at Gambo, eastern Newfoundland. The occurrence proved to be quite extensive, and appeared to be naturally occurring.

There was some initial discussion as to the identity of the dodder, but we eventually settled on *Cuscuta gronovii* Willdenow *ex* Schultes.

This identification was tentatively confirmed, from some of my photos, by *Cuscuta* expert, Dr. Mihai Costea, Assistant Professor & Curator of the Herbarium, Department of Biology, Wilfrid Laurier University; but, understandably, Dr. Costea wanted to see samples of both flowers and seed capsules, just to be sure.

Flower samples were already in hand, since we had made herbarium collections, however, we had no seed capsules. An October trip back to the Gambo saltmarsh, by me, secured further herbarium collections, including seed capsules.

Flower and seed capsule samples were eventually sent off to Wilfrid Laurier University, and Dr. Costea has **CONFIRMED** that the species occurring on the Gambo saltmarsh is indeed *Cuscuta gronovii*

For Newfoundland photos of *Cuscuta gronovii*, see the "Digital Flora" at:

http://digitalnaturalhistory.com/flora_convolvulaceae_index.htm#cuscutagronovii

For much more, see Dr. Costea's astounding Dodder website: http://www.wlu.ca/page.php?grp_id=2147&p=8968 . See, in particular, the photo galleries.

Avalonia Field Trip Memories 2009
Day 3 - Tuesday, July 21

By Ed Hayden

Early Tuesday morning I drove from St. John's to Bay Roberts for Day 3 of the Wildflower Society Avalonia Field Trip. I lounged about on the wharf timbers in front of the Klondyke Hotel and watched the elevating rays of the early morning sun glisten off the tiny waves in the harbour. Seaweed swirled on the beach beneath the water. Two adult Herring Gulls, drifting in the shallow cove formed by the hotel parking lot and the shoreline, were close enough for me to see their orange-yellow orbital rings through my binoculars. What a delightful way to start an expedition in the first week of my holidays – sittin' on the dock of the bay, wastin' time! Only too quickly, though, at 8:45 a.m., our guide John Maunder was on the ball, getting fellow trippers organized into a convoy heading north to the old pine plantations on the nearby Tilton Barrens.

Tilton Barrens

After a five-minute drive, we parked on the side of the old highway to Harbour Grace. We strolled across the road and into a lightly wooded area beyond the now rail-less bed of the old Conception Bay North spur railway, which was begun in 1884 and abandoned, sadly, a hundred years later, in 1984[1].

The Newfoundland Department of Natural Resources established a tree nursery on the Salmonier Line, in 1938, as part of an overall plan to provide conifer seedlings for transplanting on the fire-burnt barrens of the Bonavista and Avalon peninsulas. Between 1938 and 1952, significant numbers of seedlings were produced, mostly various species of pine, spruce and larch.

Three kinds of pine were transplanted to the Tilton Plantation in 1949 and 1950 – Scots Pine (*Pinus sylvestris*), Jack Pine (*Pinus banksiana*) and Red Pine (*Pinus resinosa*). On our visit there we also saw a few White Pine (*Pinus strobus*) and Japanese Larch (*Larix kaempferi*), in addition to a scattering of native larch, spruce and fir. Until the 1990s, the Tilton Plantation did extremely well. However, in the years that followed, strong winds unaccountably toppled most of the larger trees, so that the previously dense stand is now largely depleted!

Like the pines, the Japanese Larch (*Larix kaempferi*), the European Larch (*Larix decidua*) and their vigorous hybrid, the Dunkeld Larch (*Larix* x *marschlinsii*), were widely planted in eastern Newfoundland, both in government plantations and on private land. All of these "exotic" larch have cones that are much larger than those of the native Larch (*Larix laricina*), which in Newfoundland is commonly called Juniper. Interestingly, the Boy Scouts also planted exotic larches and other species at a number of places throughout the province during the early 1980s. Residents of St. John's may be familiar with a particularly successful planting near Long Pond, behind the flume tank building at Memorial University, a stand now pleasantly referred to as the Larch Forest. This stand includes mostly European Larch and Dunkeld Larch, although a few Japanese Larch also grow there. In response to a question about whether Japanese Larch is an alien invasive species, John advised that, contrary to general opinion, European and Japanese larches often reproduce successfully in Newfoundland, but their spread seems to be very slow to date and does not appear to constitute an imminent threat to our local flora.

Still at the Tilton Plantation, we found Mountain Holly (*Ilex mucronata*), its drupes not yet fully ripened into the extraordinary tint of red, somewhere between crimson and maroon, which is so striking in the fall. Surely we will soon see Mountain Holly as the name of an attractive new paint or crayon colour.

We also identified American Mountain Ash (*Sorbus americana*), commonly called Dogberry in Newfoundland because of its inferior berries, which robins, crows and waxwings love to eat in the fall and winter. The American Mountain Ash has characteristic widely-spaced, longish, pointy leaflets and a red leaf mid-rib, unlike the Showy Mountain Ash, which has more closely-spaced, shorter leaflets that more abruptly taper to a point, and a greener leaf mid-rib. The Showy Mountain Ash has larger flowers that start blooming earlier – thus the name.

1 http://www.heritage.nf.ca/society/rhs/cf_listing/029.html

Sheep Laurel

Sheep Laurel (*Kalmia angustifolia*), sometimes called Lambkill because it is poisonous to livestock, was still in bloom. Leaning closer, we were captivated by the dark-red anthers of the ten bowed stamens tucked neatly into ten small, deep dents inside the rich-pink, saucer-shaped flowers, ready, when touched, to spring out and flick their pollen into the wind (Figure 1).This is pure genius on their part. These are the football players of the plant world: for a delightful kick-off, touch here! The genus *Kalmia* is named for Peter Kalm, a student of Linnaeus who traveled and collected plants in America in the 18th century.

When we came upon Blueberry (*Vaccinium angustifolium)*, John brazenly insisted that it is not a "true berry" at all, but, rather, a "false berry." This news did not go over well. It was received with a healthy dose of skepticism accompanied by a perceptible raising of eyebrows, low-level taunts and downright mockery, barely within earshot. If John had told this to my grandmother in her day, she would have driven him off her front bridge and told him to come back when he had a grain of sense. Any other berry he might get away with, but calling into question the veracity of the blueberry or partridgeberry (or 'patridgeberry,' as it is often known in Newfoundland), was bound to elicit a protective stance.

John, however, having thrown down the gauntlet, was not to be deterred. Ignoring the general ribbing and doubtful looks, he persisted in his elucidation. He explained that a true berry has a "superior" ovary sitting naked atop a receptacle, with remnants of the petals and sepals attached to the base of the fruit. Thus, in true berries, such as tomato, grape, False Lily-of-the-Valley (*Maianthemum canadense*) or Bittersweet Nightshade (*Solanum dulcamara*), the top of the fruit is pretty much as smooth as a baby's bottom. A false berry, on the other hand, has an "inferior" ovary enclosed by an adhered, cup-like flower tube or, "hypanthium" (derived from the fused bases of the sepals, petals and stamens), so that what you see is a "crown" of sepals (sepal tips, really) sitting atop the berry; a characteristic of blueberries, partridgeberries and gooseberries. Simply put, John said, if a berry has "sepals on top," it's likely to be a false berry – unless, of course, it's a "hip" or a "pome!" Oh me nerves! (see: Maunder 2008)

Bittersweet:- true berries.

Blueberry:- false berries.

Compare the true berries of Bittersweet Nightshade (*Solanum dulcamara)* (with false berries of Blueberry (V*accinium angustifolium*)

Both wild roses grow at the Tilton Plantation. The Northeastern Rose (*Rosa nitida)*, identified by its numerous fine bristles *(Memory Aid: Northeastern Rose has numerous fine bristles, with a 'b,' as in the northeasterly breeze)*, while the less common Virginia Rose (*Rosa virginiana)* has scattered, stout, rigid, thorny prickles. The fruit of the rose, which will develop later in the season, has its sepals attached at the top of the berry like a false berry, but, since it is actually an open-topped, fleshy cup, with multiple ovaries/seeds arranged upon its inner surface, it is actually a "hip." Fair warning to John: I and one or two other members of the flock may need another go at this at the upcoming 2010 Burin Peninsula field trip. I was with you right up to the part about the rose hips!

Also at the Tilton plantation, we found two different shrubs with like-sounding names: the low-growing Purple Chokeberry (*Photinia prunifolia*), about a metre high, with which, astoundingly, the Mountain Ash hybridizes (Hayden 2009a) and the much taller Choke Cherry (*Prunus virginiana*). Both berries are edible; the name "choke" likely comes from their astringent taste – sharp and acidic. Peter Scott (Scott 2006 p. 106) advises that when making cherry jam or jelly one should not boil the seeds a second time, as they contain poisonous hydrogen cyanide.

Driving further along the highway towards Harbour Grace, we encountered, along the hillside on the right, a second area of pines, known as the Harbour Grace Plantation.

These pines, planted at the same

time as those in the Tilton Plantation, are in three sections. Going towards Harbour Grace, the first section is Jack Pine, the second Scots Pine and the third Red Pine. The pines in this area have escaped the wind damage that has afflicted the trees in the Tilton Plantation. However, the trees in the Scots Pine section exhibit severe crown defoliation, which has been attributed to infestations of the European pine sawfly, and possibly to the pine bark beetle. Although we didn't have time to hike up to investigate, John told us about a smaller plantation, the Lewis Plots, containing Sitka Spruce (*Picea sitchensis*) and Norway Spruce (*Picea abies*), situated on the high ridge above the Red Pine stand.

The Tilton Barrens plantations have been actively harvested over the years. Indeed, a large sawmill still operates across the road from the Harbour Grace Plantation, producing pallets and similar products, although now, apparently, mainly from other sources.

Identifying pines can be a wonderful game! Pine needles grow in fascicles, or clusters. White Pine, more common on the western and central parts of the island than in the east, usually has five soft and flexible needles in each cluster *(Memory Aid: five letters in 'white' for the five needles of White Pine)*. Memory aids, though, like pines, can be tricky business. For example, a participant, who shall remain nameless to protect the innocent, who told me about the White Pine having five letters to correspond to its five needles, which is true, also noted that the three letters of Red Pine (*Pinus resinosa*) correspond to its three needles. Not true! I wish it were correct, though, because what an easy gem it would be to remember – five for white and three for red! Sadly, Glen Ryan (1978) notes, and other sources confirm, that Red Pine has only two needles per fascicle, which snap cleanly when doubled. Scots Pine also has two needles, as does Jack Pine. In summary, then, White has five – easy – but Red, Scots and Jack all have two. One distinguishing mark of the Jack Pine is that its cones are slightly curved and joined in a vee, with their tips pointing towards the tip of the branch, while the cones of Scots Pine do not point toward the tip of the branch. Also, the cones of Jack Pine tend to stay closed until a fire opens them, although very hot, dry weather can sometimes do the trick.

Riverhead, Harbour Grace

At our next stop, Riverhead, Harbour Grace, we gathered down by the harbour at a small grassy park near the tourist chalet where a big DC-3 aircraft named *The Spirit of Harbour Grace* offered shade from the midday sun. The S. S. Kyle, built almost a hundred years ago, in 1913, as part of the Reid Newfoundland Company's Alphabet Fleet and named for a Scottish town, was grounded here over forty years ago, in 1967, after breaking from its moorings in a hurricane[2]. The Kyle is the most well known ship in Newfoundland, partly because of its history as a coastal boat, sealing ship and gulf ferry, but immortalized by Ted Russell, my first-year English professor, in his famous recitation Smoke Room on the Kyle. Also in this field stands a bronze sculpture of Amelia Earhart, who, in 1932, took off from the Harbour Grace airstrip and flew to Londonderry, Northern Ireland, to become the first woman to fly solo across the Atlantic.

Just south of Amelia's statue, we strolled down towards the harbour through a gorgeous boggy oasis between the main road and the beach. There was plenty of Common Speedwell (*Veronica officinalis)* here. The genus name *Veronica* is said to

Jack Pine cones

Red Pine cone

Scots Pine cones

2 See a brief history of the Kyle at http://www.sskyle.com/ss_kyle.htm

be derived from the Greek words 'vera,' meaning true, and 'eicon,' meaning icon or image, alluding to a legend concerning the true image of Christ received by St. Veronica, for whom the flower was named (Hayden 2010b)

We came upon Sweet Vernal Grass (*Anthoxanthum odoratum*), which is used, along with Sweet Grass (*Hierochloe odorata*), in aboriginal peace and healing rituals, and Marsh Willow Herb (*Epilobium palustre*), with its leaves much narrower than the species that is more common in St. John's, the Northern Willow Herb (*Epilobium ciliatum*). The "Not-so-Evil Sow Thistle" (*Sonchus arvensis*), as John calls it, with its big yellow dandelion-like flower head, a cousin of yesterday's "Evil Sow Thistle" (Hayden 2009b), was also evident here. As well, there was a pretty star chickweed here (*Stellaria media*), and Water Dock (*Rumex orbiculatus,* now called *R. britannica*), with its long, flat, red leaves.

This little oasis, a veritable George Street of wetland plants, is a luscious hot spot of abundant variety and colour. We lingered there to see the lovely sedges (of course, with edges) growing in profusion, including the classic Awlfruit Sedge (*Carex stipata*) and the Yellow Sedge (*Carex flava*). We looked closely at the inflorescence of the Yellow Sedge to see that, different from the Awlfruit Sedge, the inconspicuous male flowers were crowded in a narrow, terminal, brownish spike, while the sharp, pointy, vase-shaped female flowers formed separate, larger, crowded, yellowish-green balls below.

Yellow Sedge

Soft Rush (normal form)

Lots of Rushes grew there, too, including the refined Gerard's Rush (*Juncus gerardii*), and the striking Clustered Soft Rush (*Juncus effusus* variety *conglomeratus*), with its compactly clustered flowers – quite unlike the more loosely spreading flowers of the more common variety of the same name (*Juncus effusus* variety *effusus*), ubiquitous in wet areas throughout the province.

Clustered Soft Rush

Bulbus Rush "mane"

present was the Jointed Rush (*Juncus articulatus*), in the tubular leaves of which you can both see and feel a series of internal horizontal septae (i.e., cross-walls). *Articulatus* refers to clear or separate things, such as articles of clothing, articulated speech and the clearly distinguishable parts of the *Juncus articulatus.*

In a clear stream nearby, we were entranced by the characteristic reddish-green, submerged "manes" of the Bulbous Rush (*Juncus bulbosus)* waving gently in the current. What a grand spot this is. Surrounded by reminders of early modes of travel in the meadow and the harbour, and with the sun glancing off the reds and greens in the stream, this little spot is simply a gorgeous oasis just below main street. The short stroll from the culvert to the beach, surrounded by friends beneath hats and sunglasses, mucking about in rubber boots and galoshes, peering at sedges and rushes and listening to water run over our boots: these are the gifts we take away with us, the treasures we carry home and, in our mind's eye, see again from time to time.

About the conspicuous Flat-topped White Aster (*Doellingeria umbellata*), just starting to bloom, Peter Scott (Scott 2006 p169) muses philosophical: "Non-conformists are often difficult to accept within a society but yet are part of it, and so it is with asters. Most have mauve or blue flowers and, when a white-flowered species is encountered, it receives a second glance." Canada Burnet, also known as Bottlebrush, (*Sanguisorba canadensis*) was in bud. Burnet is an old French word for brown, which is the colour of the flowers of the European species (*S. Officinalis*) (Niering 1979), ours are white. Our commonest orchid, Bog Candle or Scent Bottle (*Platanthera dilatata)*, our "stately fen beacon," (Voigt 2006) was in bloom there, too. Its two common names are derived from its cylindrical spike of white flowers and sweet scent.

At the beach, just down from the gully and boardwalk, along the bank, we found Seaside Plantain (*Plantago maritima*) and great gobs of Lamb's Quarters (*Chenopodium album*), with its characteristic red-ridged stems. Below this was Maritime Seablite (*Suaeda maritima*) - a relative of Lamb's Quarters – which grows only in the upper tidal zone. Beach Bindweed (*Fallopia convolvulus*), a relative of the knotweeds, persicarias and elephant's ears, was also in abundance.


Pennycress seedpods.

I was delighted to find Field Pennycress (*Thlaspi arvense)*, a member of the mustard family, with small white flowers in bloom at the top of each branch. Pennycress is easy to identify because its numerous flat, perfumed seed pods resemble pennies. In my garden on Penney Crescent – you see the connection – I nourish a few quiet and unassuming Pennycress plants each year to observe their pale green seed pods, their pennies, develop on leggy branches throughout the summer.

There were several chamomiles there too: notably, the Scentless Chamomile *(Tripleurospermum inodorum)*, which, no surprise, does not smell like pineapple, and Maritime Chamomile (*Tripleurospermum maritimum*), which was growing on the upper beach just below the cut-bank.

Little Pond

Little Pond, at the intersection of Back Track Road and New Harbour Road (Route 73), is a magical, out-of-the way place that one could easily drive by unnoticed unless someone, like John Maunder, were to pull over and say, "Here we are. This might be a good place to get out and muck around." And so it was.

Little Pond is shallow, with a soft, muddy bottom and nowhere deep enough to swim. Numerous angular brown rocks poke above the water. Stepping down off the road onto the pond edge, the first plant you see is the only species of the Pipewort family in the province, the unmistakable White Buttons (*Eriocaulon aquaticum*), also known by the equally descriptive name Hat Pins, with its small, white, flattened clusters of flowers atop leafless stems sticking out of the shallow water. The name Pipewort is from its shape and the Anglo-Saxon *wort*, meaning plant. The Pipewort's

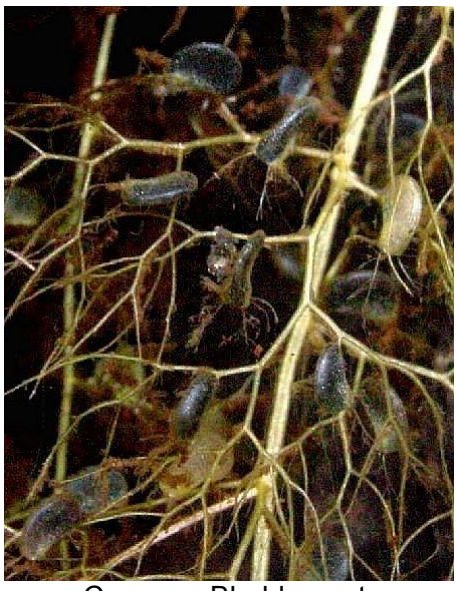

Pipewort flowers (close-up).


Water Lobelia (close-up).

companion here, and in shallow ponds throughout the province, is the delicate Water Lobelia, (*Lobelia dortmanna*), with its white tubular flowers tinged with mauve, also atop leafless stems. Under water, short, grass-like leaves form a rosette at its base.

Of the several carnivorous plants that grow in Newfoundland and Labrador, three grow here: Flat-leafed Bladderwort (*Utricularia intermedia*), Horned Bladderwort (*Utricularia cornuta*) and Intermediate

Sundew (*Drosera intermedia*). When we were children, my friends and I hated bladderworts. Back then, the metre-long leafy branches of the large bladderwort, probably Common Bladderwort (*Utricularia macrorhiza),* were horrible, vile creatures to be avoided in the pond. We were disgusted when its feathery leaflets touched our bare legs or arms, and we screamed 'Arrgghh, lice.' The older boys flung them ashore to help keep our pond 'clean.' The bladder-bearing leaves looked as if they had black lice attached to them. I know now that these 'lice' are actually bladder traps. When an aquatic creature touches the very sensitive trigger on a negatively-pressured bladder, a trapdoor pops open for an instant, and the creature is sucked inside to its fate. However, in an interesting parallel to pitcher plants, it seems that these bladders also usually harbour a minute living flora and fauna.



Common Bladderwort.

Though not yet reconciled with this plant, I am in recovery. Thus, as a respectable, or at least spectacled, member of wildflower and natural history societies, upon seeing this plant floating near the edge of a pond, I now restrain the urge to grab it with a stick and clean up the pond by flinging it into the woods.

And I am not the only person whose thinking about this plant has been reformed. Here's Charles Darwin (Darwin 1875) on his 'aha' moment with *Utricularia*:

'It has always been taken for granted that these little bladders were made to float the plant, although I had noticed that the stems most heavily laden with bladders sank most heavily in the water. About a year ago (in December, 1873), a young man now at Cornell University and myself, on placing some of the bladders under microscope, noticed anamalcules – dead Entomostraca, &c,-- apparently imprisoned therein. But our attention was not sufficiently aroused to follow up the subject very closely; we laughingly called it 'our new carnivorous plant.' But as the bladders always seemed to be open, the significance of the fact of the imprisoned animal was not very apparent. We thought it could hardly be for the purpose of feeding the plant, but a kind of wanton cruelty. Still, my curiosity was aroused. I soon found larger animals in some of the bladders – dead larvae of some aquatic insect – large enough to be seen distinctly with the naked eye. But I was not aroused to earnest work until I watched the movements of an imprisoned living larva and saw its struggles and final death. This was in October 1874. I now visited the ponds and procured abundant material.

Horned Bladderwort

Also growing along the wide, marshy edge of the pond was the bright yellow Horned Bladderwort (U*tricularia cornuta*), which has flowers with a spur or 'horn' hanging down from its lower petals, as is evident in the photo below. (*Memory Aid: cornuta means horn, as in cornucopia, the copious horn or horn of plenty).* Its leaves have tiny traps, which grow uniquely *underground*. We were lucky to see a third carnivorous plant in bloom, the Intermediate Sundew (*Drosera intermedia*), since sundew flowers are very short-lived, lasting only an hour or so each. A great variety of grasses and sedges were doing well on the boggy shore, including Water Milfoil (*Myriophyllum* sp.), Mannagrass (*Glyceria* sp.), Wool Grass (*Scirpus cyperinus*), Michaux's Sedge (*Carex michauxiana*) and Bedstraw (*Galium* sp.). We also found two orchids here: Little Club Spur Orchid (*Platanthera clavellata*) and Bog Candle or Scent Bottle (*Platanthera dilatata*), which emits a pleasant aroma, especially noticeable when you kneel down beside it for a close-up sniff**.**

It was while kneeling in the marsh, bent over a Bog Candle with my eyes closed and breathing in its aroma, that I heard a loud shriek from across the shallow end of the pond, no more than forty metres away, and a shout of, "Oh Jesus, I'm gone down in a hole." I swerved around and looked in the direction of the commotion to see Ken Knowles and John Maunder rush towards a woman in a pink shirt, take a camera from her outstretched arm and pull her from the sucking ooze, which by now was almost to

her knees. Botany can be very exciting sometimes!

As we dawdled and wended our way back along the shore to our cars, the elongated leaves of a lovely plant we admired yesterday by a culvert across from Collins Pond, on our way to Cape St. Mary's, the aquatic Pondweed (*Potamogeton epihydrus*), could be seen floating on the water. A legion of Military Rush (*Juncus militaris*) stood at attention as we trudged by, sticking straight up in the pond.

Spaniard's Bay Spit

The clear blue sky and sunshine continued as we arrived back on the Conception Bay coast and throughout the afternoon. At the Spaniard's Bay Spit, John introduced us to the vertical zonation of shore plants that is typically found in sheltered, gravelly, inter-tidal zones in eastern Newfoundland:

- Zone 1 – Seaside Plantain (*Plantago maritima)*, at high tide mark,
- Zone 2 – Maritime Sea Blite (*Suaeda maritima*)
- Zone 3 – Northern Sand Spurry (*Spergularia canadensis*)
- Zone 4 – Eelgrass (*Zostera marina*), under water, below the low tide mark.

Strewn along the high tide line of the spit were mats of dead, black Eelgrass, contrasting sharply with an emerald-green meadow of living Eelgrass growing in the shallow salt water between the spit and the harbour road. Eelgrass is important because it provides habitat for numerous invertebrates, including crabs, starfish, clams, snails and crustaceans. Many fish spend part of their life cycle in eelgrass meadows. Nearby, oodles of small periwinkle snails (*Littorina saxatilis* sensu lato) were suspended in a spectacular oval mass of green algae, over a metre wide, floating in the water within arm's reach of the beach. A little further along the spit, Judy Blakely invited us to look through her tripod-mounted Nikon camera, with its 105 mm lens, to view a stunning close-up of a Northern Sand Spurry (*Spergularia canadensis*), so tiny that I would not have noticed it had Judy not offered us this treat. I was delighted to see her gorgeous photograph of this plant exhibited at the Wildflower Society Annual Christmas party.

We roamed around the spit, and John pointed out the brown stalks of last year's Evening Primrose (*Oenothera biennis*); Small Primrose *(Oenothera parviflora)*; the bright yellow Wormseed Mustard (*Erysimum cheiranthoides)*, which can be poisonous to cattle; Sea Rocket (*Cakile edentula*), great for nibbling at the beach, which we did yesterday on the wide sandy beach at Gooseberry Cove in Placentia Bay; Beach Bindweed (*Fallopia convolvulus*), which we found also earlier today at Harbour Grace, on the beach outside Amelia Earhart's

Quack Grass

sculpture; and a very hardy relative of the Dusty Miller, the Beach Wormwood (*Artemisia stelleriana*), with its spreading, but compact, mats of bright, silvery-white, wooly, scalloped leaves. The wooliness, on both the top and bottom of the leaves, provides protection from the hot sun and drying winds – very useful out here on this exposed spit. Growing here, too, is the perennial Quack grass (*Elymus repens*). John showed us an intriguing way of looking at the flowering spike of this grass by bending it in a curve to see its distinctive, individual, flower-containing spikelets (see illustration below left).

Further out on the spit, we had excellent views through binoculars and spotting scopes of the relatively new colonies of Common Tern and Ring-billed Gulls, with growing chicks darting to and fro around their nests. Their dark head spots were still evident. Walking back along the spit to the cars, we came upon a small bit of old wharf timber driftwood, about 20 cm long, riddled with holes and rusty hollows. "Gribble holes,' said John. 'What in the name of God are Gribbles?' I asked, never having heard this word before but thinking it might be like calling the Bladderwort 'lice.' Not so. Gribbles (*Limnoria lignorum*), John explained, are tiny marine isopod crustaceans that bore into exposed pilings of wharves and buildings that are built over salt water. They cause enormous damage at great cost by gradually eating off pilings below the water. Destruction notwithstanding, they also make attractive driftwood, such as can be seen in amazing photos on Jessica's Nature Blog[3].I pocketed this small bit of Gribble driftwood and brought it

3 http://natureinfocus.wordpress.com/2009/11/24/driftwood-with-holes-made-by-gribbles-shipworms/

home, imagining it as a lovely addition to our living room décor. My wife, though, was not as enthusiastic about Gribbles as I had hoped. Nevertheless, it is still sitting atop the Bateman print of a nest of squawking young gulls in our porch. 'Honey,' my wife says from time to time, with a pained look, when she eyes the Gribble wood or other outdoor souvenirs, 'please remember that this is a house and not a stage.' I catch her drift; sometimes without a word of explanation I find my 'treasures' moved to my study at the back of the house or to my work bench in the basement. An explanation is no longer expected, and I raise no objection. At the time of writing this article, my Gribble wood is still atop the Bateman print in the porch, though of late I have seen the telltale signs, the glances and harrumphs that signal the end of Gribble wood in the shared portion of our quarters.

Later in the afternoon we adjusted our schedule to visit the 550-million-year-old Ediacaran fossil site along the shore at Upper Island Cove, in front of the Crazy Cat Studio. We strolled across wide, flat boulders and bedrock where we saw exposed some fine examples of the oldest multi-cellular fossils in the world. Though soft-bodied, these living organisms had their shapes preserved during rapid burial by ash or sand during a volcanic eruption.

What a grand way to wind down another glorious day outdoors. Driving east to St. John's, with the late afternoon sun at my back, it was a pleasure to recall the delightful images and activities of the day: the high, dry ground of the plantations along the abandoned railway where we strolled in the morning, the wetland oases near the Amelia Earhart sculpture at Harbour Grace and at Little Pond near mid-day, followed by the Spaniard's Bay Spit and the Ediacaran shoreline, with not a cloud in the sky from sunrise to sunset. These memories are balm for the soul, even of an atheist, and will stay with me for a very long time.

Acknowledgment: *Thanks to John Maunder for reviewing an earlier draft and providing many helpful suggestions. Remaining errors and omissions are undoubtedly due to flights of fancy, inattention and downright stubbornness on my part. Thanks, as well, to John for permission to use the pictures from his Digital Flora website at* www.digitalnaturalhistory.com *. A caution, however, is in order: opening the Digital Flora website may be injurious to the remaining time you will have available to attend to other matters, as the photos are gorgeous, all matched with Latin and common names, and you will want to stay here though you promised yourself to do only ten more hits, and you haven't started supper yet, and people are hungry and with good reason because it's well past time. My advice is to stay clear and don't get hooked!*

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Notices, etc.

Annual General Meeting.

This year's AGM has been postponed to our September meeting. This was mainly due to the difficulty of holding such formal procedings during a joint meeting with the Rock Garden Society, and not a desperate attempt to hold onto power by our President: quite the opposite, she hopes that the extra time will enable a successor to emerge. She requests all members to consider either offering their own services or trying to persuade a friend to take on the position.

Local Field Trips.

Last year we tried a new time for local walks, Wednesday evenings, and these were quite sucessful. We discovered some botanically interesting areas in

what seemed like unpromising places, such as among the box stores along Stavanger Drive. We also discovered two new species for the Province on our Regatta Day visit to Bell Island. *(More details of these in the next Sarracenia I hope. Ed.)* The executive will be meeting shorlty to discuss this year's program and we would welcome suggestions from members. If you know of a short walk in your area with a variety of habitats, especially if it includes water, let us know. These walks generally start at 6.00 p.m. and continue for a couple of hours, or dusk, which ever comes first.

Memberships.

Karen would be delighted to receive memberships ($10) from any members who have overlooked the matter. New members joining now will receive 2010 – 11 memberships at no extra charge.

Fees should be sent to "The Treasurer, Wild Flower Society" at the address on the front page.

Index of Scientific Names of Plants

(Scientific names without authorities follow: "Annotated Checklist of the Vascular Plants of Newfoundland and Labrador" by Susan J. Meades, Stuart G. Hay, and Luc Brouillet, 2000. http://www.digitalnaturalhistory.com/meades.htm) (including synonyms.)