

Sarracenia

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Bouncing Bet with semi-double flowers. (See p.20)

H. Mann

News and Gossip.

2012 Summer Trip.

As hinted at in the last issue there are plans to go out of province next year. Charles Cron and Carl Munden are very enthusiastic about the whole matter, and are already hatching possible plans. The focus of the trip would be the fascinating "Coastal Plain" flora found primarily in the western end of that Province. The trip would take place sometime during the first two weeks of August. Carl is also offering a 2-3 day advance tour of Cape Breton for anyone interested.

[see: <http://www.speciesatrisk.ca/coastalplainflora/guide/>]

The success of this trip will obviously depend upon how many of our members would be prepared to go as it will take more time and cost more money than usual. But we are likely to be joined by more Nova Scotians than usual too.

If you are interested but haven't indicated this yet please let our president know ASAP.

October Meeting.

Our first regular indoor meeting of the season will take place on Wednesday October 5th at 7.30 p.m. In the field centre of the Botanical Garden.

We will begin with a finger food and wine social and the main event will be an illustrated talk by **Gene Herzberg** entitled "The Northern Peninsula, two trips, different results." No doubt Gene will slip in a few bird pictures as well as wild flowers. We will also discuss the proposed summer field trip for 2012 and this year's winter program.

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November meeting.

The **AGM** will be held during our November 2nd meeting. It's time we had some new faces bringing new

ideas to our board, so we hope that some other members will be offering their services. Please consider it!

An addition to our provincial list.

Anything new on the Avalon is almost certain to be an alien these days, but they keep coming. In June, Nathalie Djan-Chékar, noticed the first recorded specimen of Garlic Mustard, *Alliaria petiolata*, growing along the sidewalk on Long's Hill in St. John's.. As its name suggests this is a mustard with four petalled white flowers that smells strongly of garlic. It's a common ornament of British roadsides and woods in spring and has become widely introduced in North America, where it is considered to be a bit of a nuisance.- e.g. in Ontario. Keep an eye open for it - if it's on Long's Hill it's likely to be elsewhere.



Garlic Mustard on Long's Hill

N.D-C.

Heracleum discussion.

There has been an e-mail discussion initiated by John Maunder about the various *Heracleum* species to be found on the Avalon. As well as the infamous Giant Hogweed, *H. mantegazzianum*, that hit the headlines last summer there are two smaller but still sizeable species to be found here and there. The native one is the Cow Parsnip, *H. maximum* (syn. *H. lanatum*); this is much more common on the Northern peninsula. We also have the similar Common Hogweed, *H. sphondylium*, introduced from Europe. This seems to be concentrated on the southern Avalon, especially around Trepassy, but also occurs in a couple of spots in St John's.

Continued on p.24....

Uncommon Wildflowers of Newfoundland 9: Bouncing Bet (*Saponaria officinalis* L.)

By Henry Mann

In the Humber Valley, Bouncing Bet can be found on the upper sandy shores of Deer Lake where it forms vegetatively spreading patches (Figure 1). Introduced to North America by early European settlers, it now is a common naturalized herb of roadsides and disturbed habitats across most of the continent, even considered an invasive weed in a few jurisdictions. However, it is not likely to become “weedy” in Newfoundland

where it will remain one of our pretty wildflowers, probably retaining its current uncommon status. The Rouleau and Lamoureux Atlas (Fleurbec 1992) only indicates a single record for the Island in the Conception Bay area of the Avalon Peninsula, and John Maunder’s Digital Flora Website records a population from Cupids. As a garden escape it might still be seen in some other older communities, but despite

its long association with humans, it appears to no longer compete horticulturally with the more showy monster blossoms now adorning our gardens. And its one-time household uses have been superseded by more convenient products of the modern industrial chemical complex. Nevertheless, it is still listed by some nurseries, in some seed catalogues, and as well, grown in heritage and herbal gardens.



Left: Figure 1: Bouncing Bet with single 5-petaled flowers growing on sandy shores of Deer Lake.

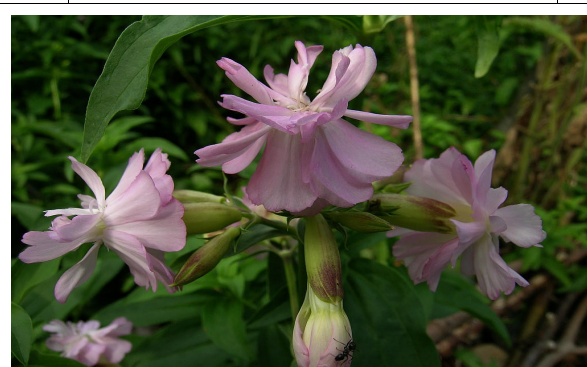
Above: Figure 3: Two-part appendage at base of petal limb.

Bouncing Bet belongs to the Family Caryophyllaceae, sometimes known as the Chickweed Family, but now more properly referred to as the Pink Family. After all, how could one use the term “weed” for a family that contains Carnations, Sweet Williams, and Maltese Crosses? Both the Scientific name (*Saponaria officinalis*) and the many common names tell us of its importance to humans and why it was included in every garden for uncounted centuries in the past. The genus name refers to chemical compounds known as “saponins” produced in all parts of the plant. When actively mixed with water, saponins produce a cleansing soapy lather that has been used to wash clothing and delicate fabrics. To see whether the popular printed botanical folklore in this case was supported by practical reality, I crushed a few leaves and rubbed them vigorously between my palms, and sure enough, produced a nice frothy lather of rather pleasant aroma. Linda Kershaw in her book “Ontario Wildflowers” (Lone Pine Publishing, 2002) provides the following comment, “A cup of fresh leaves and 2 cups of water, whirled in a blender, produces a good soap for dishes and fine laundry.” However, apparently the roots and creeping rhizomes contain the greatest concentrations of saponins and were chopped and boiled as the main source for laundry and other purposes. Bouncing Bet saponins were also used to wash raw wool because its gentle action left wool soft and pliable unlike harsher soaps and detergents. Apparently it is still used by some herbal enthusiasts as a mild shampoo and as a skin rinse to relieve itchiness.

A number of other species in the

Pink Family as well as plants from some other families also produce saponins. Our Buffalo Berry (*Shepherdia canadensis*) from the Oleaster Family is one such species. These compounds tend to be toxic in high concentrations and it is suggested that they evolved as chemical defences against bacterial, fungal and herbivore attack. Like many bio-active plant compounds they have found uses both as culinary additives and medicinally in regulated concentrations. Being an intestinal irritant, saponins have been utilized for “internal cleansing”, the cleansing route said to be dependent on the ingested dosage. This aspect of Bouncing Bet utility does not peak my interest sufficiently to practically investigate the literature claims; I leave that to readers.

The specific epithet “*officinalis*” has been applied to many plants from differing families which have been used by humans for specific purposes (cleansing, medicines, spices, etc.) and which could be purchased in local shops and pharmacies. Plants that have had a long domestic association with man also tend to have very many common names in every language where they have been grown and utilized. So far



Fully double form in the editor's garden

I have encountered over 30 such names in the English language including Soapwort, Latherwort, My-

Lady's-Washbowl, Boston Pink, Lady-By-The-Gate, London Pride, Hedge Pink, Sweet Betty, Bouncing Bess and others. The question still remains, “How did Betty bounce and why?” Women who were employed in laundries and scrubbed clothes by hand were known in England as Bouncing Bets due to the vigorous up-and-down motion as they worked at their washboards. I have witnessed that bounce first hand (in my early youth!) as washboards and tubs were still used on some prairie farms in the forties, however, I believe homemade soap was used at the time.

S. officinalis is an herbaceous plant of about 30-60 cm tall. Like all Pinks it has opposite leaves and swollen nodes. Flowers are 2.5 cm across with five slightly notched petals, white or pale pink, sometimes double (Figure 2: see cover). Petals have a long claw within the tubular calyx. On the expanded portion of each petal emerging from the calyx (the limb) can be found a small appendage easily seen with a hand lens and which is characteristic of the genus (Figure 3). Flowers produce a sweet fragrance which becomes stronger in the evening to attract “long-tongued” night flying moths for pollination. The fragrance is often still noticeable in the early morning. This season *S. officinalis* was seen in full bloom in the Humber Valley on August 10, 2011. Anyone interested in Bouncing Bet and its many current and heritage uses (not all were mentioned in this brief article) might consider a small patch of this pretty flower in their gardens. It spreads slowly vegetatively, but is not overly aggressive and can readily be confined by normal cultural practice.

Happy Botanizing!

More on Names.

By Andrus Voitk

"I find these old Latin names so cold, formal and unimaginative. They make flowers remote and inaccessible to people. Common names are much more romantic."

We were taking a walk behind my niece's Blackbird Coffee House in the Crowsnest Pass through the Rockies and had just found a beautiful flower. I did not know it, but emailed its picture to Henry Mann and got the reply: yellowbell or *Fritillaria pudica*, which I passed on to my sister, eliciting the above reply. Good thing she had not read Howard Clase's *Names within names* in **Sarracenia Vol 19#1**.

"OK, let's consider this beautiful flower's unromantic name. The plant looks like a tulip with a beautiful, small, single yellow blossom. But what is the most striking feature of this flower?"

"Here's a whole lot of them. All the flowers are turned downwards. A bit incongruous: such a beautiful flower yet turned away from full view. A shy little beauty."

True story. She actually said this. Played right into my hands. "*Fritillaria*" is interesting enough, but I



Fritillaria pudica Andrus Voitk

chose to ignore it and go straight to her words, "shy little beauty". "Pudica", Latin for "shy", is surely a much more romantic and apt descrip-

tion than "yellowbell". After all, unprompted my sister had seized on the semblance of shyness, not the yellowbelledness, as the most striking feature of this flower. To describe something by colour or shape is scientific (and cold). But to attribute sensibility and feeling to a plant, now that is romantic! And that is what Friedrich Traugott Porsch, the first botanist to describe this flower for science, noted down for eternity. The etymology of "pudica" adds another layer of complexity to the name, allowing us to enjoy its romantic roots even more. "Pudica" derives from "pudenda", the Latin word for what we euphemistically refer to as "privates", the exposure of which causes shame, thus promoting their coverage out of decorum or shyness. This is a common theme in art, where nudes cover up their exposed genitalia with limbs, fruit, flowers or fabric, appropriately hung with studied carelessness. By nodding, our little *Fritillaria* also hides its reproductive structures from our eyes.

Authorities

And what about Howard's theme of *Names within names*? Again, for now let us skip Linnaeus, who described the genus, in order to go straight to Pursh, a man whose colourful life holds drama of Biblical proportions. An uneducated Saxon, exposed to botany, takes to it like a duck to water and comes to seek his fortune in the New World. A story of success, international intrigue, even theft and murder, finishes with tragedy, disappointment and death in

Montréal as a destitute alcoholic at age 46. If you wish a rollicking and romantic tale, the life of Pursh is hard to beat. But I digress.

The visit to Crowsnest Pass had long since faded from memory, until I saw John Bridson's photo of creeping snowberry, *Gaultheria hispidula*, in the last WFS photo competition slide show. It reminded me that in the ensuing discussion at my sister's dinner table, the topic was raised once again, and the snowberry was one

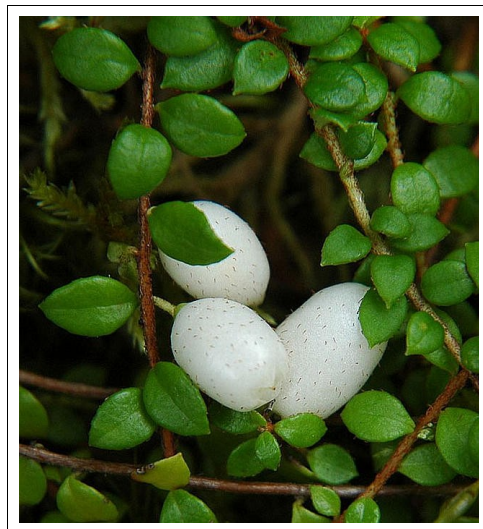
example I brought up to suggest that scientific names are as romantic, if not more, as common names. I am not knocking "creeping snowberry", which nicely describes the habit as well as the colour of the fruit, but just does not hold a candle to *Gaultheria hispidula*.

Would there be any record of Jean-François Gaultier, were it not for *Gaultheria*? Why should we have such a record, why remember this man? Well, first, we do not have too

many Canadian botanists preserved for the world through plant names. Perhaps jingoism is reason enough. Gaultier was a French physician with a strong proclivity for natural history, who was named the King's Physician (to Louis XV of France) in New France, i.e. Canada, in 1741. He died from typhus at the age of 47, while treating patients during a typhus outbreak. Perhaps the nobility and sacrifice of the man warrants his remembrance. While serving in Québec, he made numerous natural history observations, collected many specimens and described new finds. He was the foremost scientist in the colony. This was at the time of Linnaeus, who did his work from his

homeland, Sweden. Linnaeus described and named a huge number of organisms from all over the world, but these were either sent to him by a number of correspondents across the world, or brought to him by several "apostles" who made foreign excursions to collect material for the master. One of Linnaeus' best-known apostles was Pehr Kalm, a member of Finland's Swedish minority. When Kalm made an excursion to the New World, during his Canadian sojourn he naturally stayed with Gaultier (and at the expense of France!). Gaultier took him botanizing and helped him collect and describe many new species. On his return, these were duly reported by Linnaeus (properly cred-

ited), who named the genus *Kalmia* after Kalm, and at Kalm's suggestion because of Gaultier's large contribution, named the genus *Gaultheria* after the latter. Thus, it was not jingoism or the man's nobility, but his interest in natural history that kept his name immortalized. To my mind, the story of Gaultier and *Gaultheria* has far more romantic human-interest appeal than any "creeping", no matter how aptly descriptive. By the way, note the wry hand of human inconsistency in the naming. Gaultier spelled his name with a T, without the H, but used IE. The genus uses the more common TH, but omits the I of the IE. Go figure!



Gaultheria hispidula.
Left: Berries by John Bridson

{Second Prize, Category B:
(Portraits – Ferns, horsetails, quill-
worts, seeds, berries, old cones,
buds, leaves, bark)}



Right: Flower by Andrus Voitk

I was even more struck with the species epithet, *hispidula*. Translated as "hairy", it is not very exciting, and on the surface "snowberry" seems more appealing. But how it must have gotten that epithet fires the imagination. We have all seen the plants—long creeping branches lined with nice round, shiny leaves, carrying beautiful oblong, white berries in the fall. Perhaps we have missed the little flowers, blooming in early June, because they are small and on the underside of the branches creeping on the ground. Either with or without

the flowers, the entire plant looks nice and smooth, crisp, clean and shiny. Nothing even remotely fuzzy to suggest hairiness. When I first became aware of these berries, of course I photographed them. Looking at them enlarged on the computer screen at home, I was totally surprised to see that the smooth white berries were actually covered with sparse, short, stiff, adpressed hairs. So were the stems and leaves. When I looked up its name, imagine my delight when I learned that it is called "hairy". Immediately I felt a kinship

with Gaultier: centuries apart, we had shared the same moment of discovery. The name to this day speaks of his surprise, to find that this smooth and shiny plant was covered with small hairs, when examined with a magnifying glass. Why else would he name this plant "hairy", not really a big feature of the plant, visible only under magnification? It must be the surprise that impressed him enough to name it thus. "Snowberry" is nice, yes, and describes the unsullied and pure appearance seen with the naked eye. But it gives no hint of what

more is to be seen or of the genuine surprise this finding provoked in the first careful observer.

Thus it is with scientific names. There is no end to warmth, romanticism, wit, humour, keen observation, excitement and human interest hid-

den in them. Dry, cold, or formal is the last thing they are. You just have to dig for it a bit. Try *Armillaria nab-snona* or *Lycoperdon perlatum*, the genus *Phallus*, or find out why *Ascocoryne turficola* was renamed *Sarcoleotia turficola*, at least for a while (and why the British, true to their bull-

doggish stubbornness, still retain that error). Aah, the beauty of natural history: as sorties into the wilderness become an increasing chore, you can sit at home and continue deriving enjoyment from your favourite avocation by mining these glorious names and the names within them.

A New Way to View Flowers, What Darwin Didn't Know.

By Robin Day

On Nov. 2 in Brazil and later in Ecuador, 2006-2007, I had the insight that the flower and seed clusters of Palm trees are **not** branches or stems as generally stated in textbooks and on wikipedia. Based on anatomical evidence I conclude they are **fertile leaves** which have evolved away from a flatter 2D green and photosynthetic role to become stronger thickened leaflets that spread out in 3 dimensions exposing the little flowers and seed-nuts they bear. These fertile flower-and-nut-bearing leaves are usually green and fibrous but not woody like the main trunk. They age and dry, abscise, and fall off the stem when over-mature **just as photosynthetic leaves do, and unlike branches**. In fact palm trunks branch very very rarely, doing so only when the growing tip is damaged. The flower clusters of palms remain

photosynthetic, for a time, in many species and even the smaller divisions are somewhat flattened as in photosynthetic leaves. The petiole is also flattened and its base wraps around or embraces the trunk to secure it. Wikipedia and many botany texts have it all wrong. Botanists have accepted uncritically what they were taught in the past. The flowering cluster of a palm (and possibly the monocot grasses, bananas, lilies, daffodils, and perhaps Eudicots like apple and bean, so I'm investigating) is therefore **not a branch** of the trunk but a **single fertile leaf** which bears many little flowers (and later nut-seeds). This vital insight may not be original but was developed independently. It may take years to find additional observations (hypotheses) published earlier and in several places.

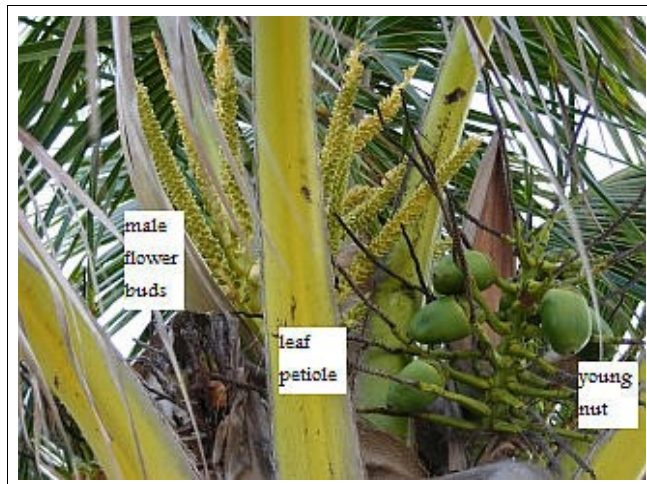
Grasses Bananas etc. show fusion of the clasping Petiole

The fertile flowering leaves of grasses and banana etc. terminate the shoot. In *Aloe vera* and palms etc. the fertile leaf comes off the trunk-stem in a *lateral* position not a *terminal* one. This basic difference in anatomy divides monocots into two large groups. The fertile leaf petiole or leaf base sheath encloses the true growing shoot tip in grass and banana and has fused *completely*, forming a solid, or hollow, or pith-filled cylinder and now appears to be a stem, but it is **not**. It is a fertile leaf bearing many flowers. In grasses this terminal flower cluster is fine and delicate and in banana huge and heavy. From these insights we can imagine (using reverse extrapolation or reverse engineering) that ancient Fern-like plants which bore spore clusters

(something like existing ferns) gave rise in time to leaves bearing naked female seeds (ovules) and/or male pollen sacs. This was the appearance of the now extinct Seed Ferns. This should surprise no botanist, or student of 2nd year botany, as many existing ferns still have small seed-shaped spore clusters or spore cases on their specialized fertile leaves. Think of the fertile leaves of these Newfoundland ferns, *Onoclea sensibilis*, Sensitive Fern; *Botrichium virginianum*, Grape Fern; and *Matteuccia struthiopteris*, Fiddlehead Fern, or look up photos on internet or in a field guide. These particular Ferns have specialized spore clusters, sporangia, but did not evolve further like modern plants to form ovules/seeds, pollen sacs and flowers.

Figure 1. Coconut palm showing many small yellowish unopened flower buds (left) on a young hand-shaped fertile leaf. The thick petiole of a large photosynthetic leaf (center) and one of several young green nuts (right) growing on a maturing green fertile leaf. The flower buds of this palm resemble those of corn *Zea mais* and in fact grasses are closely related to palms in the evolutionary tree or scheme of Soltis, Soltis and Edwards.

<http://tolweb.org/Angiosperms/20646>



Conclusion Regarding the fertile leaves of Palms, Grasses, Bananas, Lillies etc.

The flowers of Palms, and perhaps the grass flower, banana, daffodil etc., have evolved on a **leaflet of a single fertile leaf**, not a stem branch. I call this The Fertile Leaf Theory. Palms can be viewed or seen as a missing link, evolved Seed Ferns where the seeds have evolved a modern fruit wall covering.

In light of this discovery/insight the anatomy of all flowers, worldwide, now need re-evaluation.

(This is an abstract of a much longer article that Robin is hoping to have published in a serious botanical journal. Ed.)

News and gossip, continued from p.18



Heracleum sphondylium seeds, Linscott St.
John Maunder

John reports finding *H. sphondylium*, on Pennywell Road between the bottom of Linscott Street and the old Prince of Wales Arena and on the Johnson Family trail just below Logy Bay Rd.

Interestingly, although there are no reports of rashes caused by Giant Hogweed in St John's, Claudia Hanel has had two reports of rashes from people who have been "weed-wacking" *Heracleum* species on the southern Avalon, probably the introduced species. Sue Meades in Ontario is aware of children getting rashes when they have been swimming in rivers whose banks are covered with the native *H. maximum*. Many other related plants contain the furocoumarin chemicals responsible for this photodermatitis, so take care when weed-wacking any umbellifer.

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