Sarracenia

Contents

Sea Lavender plant, see p 10.

Uncommon Wildflowers of Newfoundland 8:
Sea Lavender (*Limonium carolinianum* (Walt.) Britton)

By Henry Mann

One of the highlights of the Wildflower Society "Northeasterly Gales" Field trip of 2006 was the salt marshes on Chapel Island and vicinity. Salt marshes are low flat coastal areas that get flooded and drained with the daily tides. They occur in sheltered sites with gradually sloping shores and little wave action so that flooding is rather gentle compared to more open areas. The lower sea-side zone of the marsh which is flooded daily hosts plant species tolerant of sea water (halophytes), while upper landward zones are flooded less often, have lower salinity, and exhibit a less tolerant group of species which inter-grade with normal terrestrial plants. Salt marshes are highly productive areas for marine organisms as well as aquatic and shore birds.

Salt marshes are relatively small, scattered, and uncommon in Newfoundland therefore one would expect that species characteristic of this habitat would also be rather uncommon. The flora of the salt marsh habitat is often poorly understood or appreciated. Unlike forests, ponds, streams, barrens, and even bogs, few individuals are regularly drawn to salt marshes. This issue's featured species, Sea Lavender, is one of the beauties we observed and photographed in bloom back in late July of 2006. A few other characteristic species of the Newfoundland salt marshes include Saltwater Cord grasses (*Spartina* spp.), Seaside Goldenrod (*Solidago sempervirens*), Seaside Milkwort (*Glaux maritima*), Seaside Plantain (*Plantago maritima*), Glasswort (*Salicornia* spp.), Arrowgrass (*Triglochin maritima*) and various sedges and rushes.
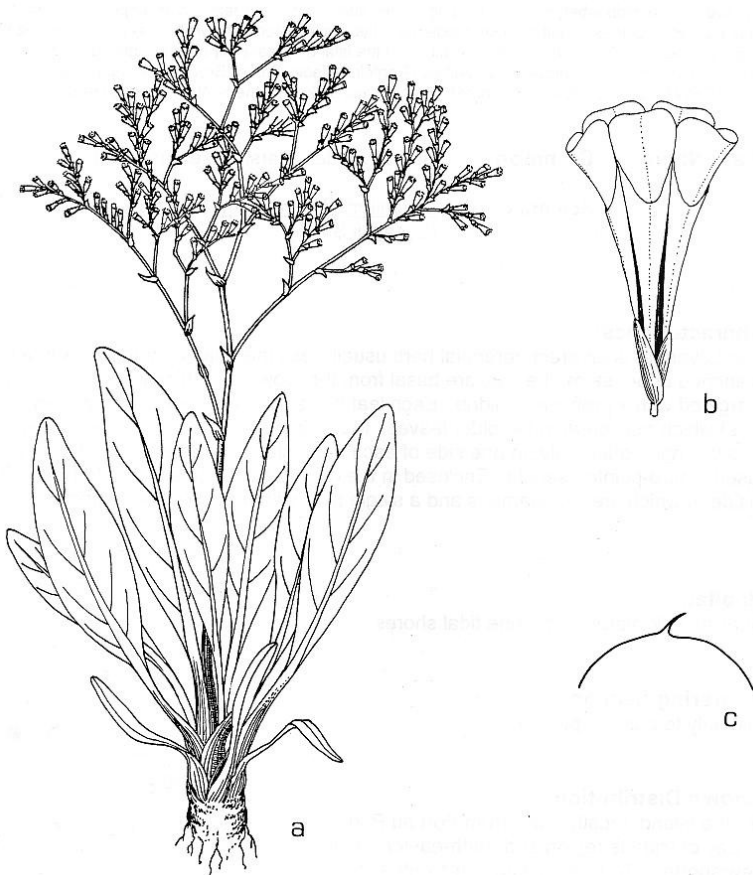

Figure 1: (Left) Illustration of Sea Lavender by Graphic Artist Warwick Hewitt, courtesy of SW Grenfell Campus Herbarium, MUN.

a. Entire plant,
b. enlarged single flower,
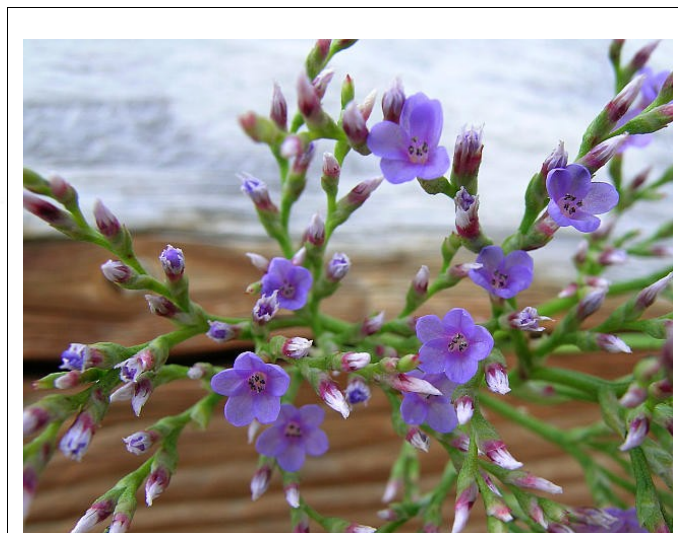c. tip of leaf showing tiny spine.

Figure 3: Flowers.

Sea Lavender is also known by a number of other common names including Marsh Rosemary, Canker-root, Statice, Lavender-thrift, American Thrift, Seaside Thrift, Inkroot, and Marsh-root. It is an upright herb 15 – 50 cm tall with smooth-margined basal leaves arising from a thick root-crown. Each leaf tip has a sharp spine easily seen with a hand lens which may break off in older leaves (Figure 1). The stem branches into an open, much divided panicle type of inflorescence. Many tiny flowers, each about 6 mm long, arise singly or in small clusters along the panicle branches (Figure 2 - see cover). The tips of five lavender petals protrude from the mouth of a sharply pointed tubular calyx (Figure 3). Blooming occurs from mid-July to early September.

Sea Lavender ranges along the Atlantic coast from Labrador to Texas. At one time it was divided into a number of species and varieties from north to south, however, currently all eastern North American populations are considered to be one somewhat variable species (*L. carolinianum*) with continuous variation for a number of minor morphological features.

Throughout its range where readily accessible, *L. carolinianum* is collected from the wild to be used in the florist trade. Flowers retain their colour upon drying and the open branching inflorescences add to the aesthetics of floral arrangements. In more populated regions of North America there is some concern about over-collecting in addition to other destructive human activities affecting entire salt marshes. The species has also been used medicinally. Roots contain tannins that are powerfully astringent. The dried powdered root is sometimes applied to ulcers and piles. Root extracts have been reported as remedies for diarrhoea, dysentery, and to treat sore mouths and cankers.

Happy Botanizing!

Notes from the editor.

This issue is in a slightly different format from the earlier ones during my editorship. While Sarracenia is intended to be a printed magazine I am aware that many members do not actually print it out, but read it on screen. Some of these have pointed out that the three column format with text running from top to bottom of the page means that they have to be continually scrolling up and down to read the text, so in this issue, while preserving the three column format , I have broken it into shorter sections, which should be visible in their entirety on screen at once. This also makes it easier for me to insert pictures since they no longer have to be embedded in the text. So, when you get to a picture don't look for the continuation of the text under the picture, but at the top of the next column. This applies of course whether you are reading a paper copy or an electronic one. And I hope it will look good in either format. I should welcome any feedback on this.

There are only two articles in this issue, but I hope they will be of interest. I am promised more material, but since it hasn't materialised yet I didn't want to get too far behind with the "four issues per year" pattern I am trying to maintain. I would, of course, welcome more articles. They should either be about the plants of this Province or on botanical matters that would be of general interest to our members. (See Vol 18, 3-4, p.30 for details.)

I write this just after the return of participants in the annual long field trip and I gather a good time was had by all even if it was a bit less interesting botanically than last year. Leila and I are very sorry that personal circumstances prevented us from attending, especially as we missed another serving of Ross's Codfish Stew. (I'm sure that the recipe would be of general interest to our members Ross even if it's not too botanical!)   At gatherings towards the end of the trip the conversation usually gets around to "Where shall we go next year?" In recent years the possibility of our Nova Scotia members introducing us to the flora of their province has come up and I hear that this was being taken more seriously this year. Wherever it is we hope to be able to go.

One Photo is not Enough: Stitching, Stacking, and Stretching.

By John Bridson

Getting good photographs is hard work and as I am naturally rather lazy, motivation is sometimes a struggle. But enthusiasm comes easily when I have a new project in mind and this year I have three! I have so often been disappointed with the technical results of a single shot that I started looking at the creation of composite photographs. I have started working on depth stacking, panoramas, and HDR this Spring, and in the process discovered a lot of material to be learned and understood before even picking up my camera. In terms of flower photography all three techniques can be valuable depending on the problem you are facing, and there are software packages available for download which are either free or can be tried with limited functionality before purchase. Helicon Focus(1) and Photomatix(2) were so good in the trial downloads that I eventually bought them.

In situations requiring multiple exposures it is important that the camera be kept still for all shots (or at least level for panoramas), so a tripod is needed. Minor movements can be corrected by the software but larger displacements can result in failure.

Photo 1: Cinnamon Fern (*Osmunda cinnamomea).* (Panorama of two shots side by side.)

Stitching: Panoramas

The technique of creating a panorama from side by side pictures "stitched" together is most often used in landscape photography. It is easy to imagine a meadow full of wild flowers which might benefit from this treatment, but panoramic composites need not be exclusively horizontal. A tall flower might be shot as a closeup, but including basal leaves as well as the flower might require two shots. Why not then stitch them together in a vertical panorama? The marketing of cameras has tended to concentrate on resolution of the sensor - "Mine has more pixels than yours" - but anyone can increase resolution by taking four photos and stitching them vertically and horizontally. This can be very useful if you are planning to create a large print for framing. The task facing would-be panorama creators is avoiding anomalies at the joins, either incorrect line-up, or mismatched colours and brightness. If you can lock the exposure on your camera this will minimize colour and brightness anomalies. Stitching photos together can be done with regular image processing software but there are programs out there designed specifically for this task. I use HUGIN(3) which is very powerful and - miraculously - free! Stitching software will correct minor displacements of the camera; the real test in my opinion is the correction of colour and brightness

anomalies, and HUGIN is particularly good at this. A more subtle problem with panorama creation is difference in depth of field of adjacent shots resulting from changes of aperture. If you have locked the exposure just make sure that aperture will remain the same for each shot and this problem goes away! Finally bear in mind that it is impossible to take two or more photographs simultaneously with the same camera, and any moving objects (including clouds, ripples on water, or wind disturbed foliage) can be in different places where photos overlap. Specialized stitching software can deal with this effect, called "ghosting".

Stacking: Improving Depth of Field.

We live in a three dimensional world and panoramic photography explores just two of those dimensions. The third dimension, depth, can be the Nemesis of flower photography, particularly in close-ups. Depth of field can be extremely limited in macro photography, but there is a technique which can circumvent the problem. If a series of photos are taken in which each part of the subject is in focus on at least one shot, the photos can be combined in a process called stacking. If you are familiar with the use of layers in photo-imaging software packages like Photoshop, each photo in the series can be imagined to be on a layer of transparent film. When these are stacked it is possible to delete the out-of-focus portions in each photograph and combine what is left into a single perfectly (?) focused shot. The process of picking the correctly focused regions on each picture is a daunting task. I do not own the most recent Photoshop, but I have heard suggestions that this capability is available. Unfortunately Photoshop costs an arm and a leg so I use a stacking program called Helicon Focus. This is free with limitations, but the fully functioning version sells for a very modest sum and I consider it money well spent. As is the case with stitching software, Helicon Focus shifts, rotates, and scales individual photos before selecting the sharply focused regions and combining them. The same precautions must be taken in this technique as in panorama creation - use a tripod and lock the exposure.

Bog Myrtle bud. (*Myrica gale*)

Photo 2a:

Single macro shot – very poor depth of field.

Photo 2b:

Stacked macro photograph from 14 originals.

High Dynamic Range photography

Photo 3: Leatherleaf *(Chamaedaphne calyculata).*
HDR with exaggerated enhancement of highlight detail from 5 originals.

High Dynamic Range photography (HDR) has been around for a few years but it has recently become "all the rage". It often happens that the key feature, perhaps a white or yellow flower with delicate markings has been over exposed while the rest of the frame is OK. Alternatively an area of shadow which had interesting features appears as a flat black region in the final photograph. In both cases detail has been lost because neither film nor a digital sensor can record the full range of light intensity in high contrast subjects. The easy(?) solution is to take multiple photographs from a tripod at different exposures and then cut-and-paste them using layer techniques with imaging software, taking the correctly exposed portions of each photograph. This is a lot of work, and creating a composite without obvious boundar-ies can be very difficult. There is also a more serious problem with this approach in that the range of intensities in the final picture will not vary in a continuous "natural" way; it will be very obvious that the brightest parts of the shot have been darkened and vice versa. Using black and white photography as a simplified example, the correctly exposed picture will have brightness ranging from 0% (black) to 100% (white) with a natural range of greys in between. By cutting and pasting to see the detail in the shadows and highlights we have introduced areas which have the SAME ranges - say 0 to 10, and 90 to 100 - as areas in the correctly exposed picture. What we really need to do is extend (stretch) the range by introducing regions with -10 to 0 and 100 to 110 brightness values. If 0 corresponds to the darkest black your monitor/printer can reproduce, and 100 corresponds to the brightest reproducible white, it becomes obvious that this "stretched" intensity range cannot be viewed. It is a concept which only exists in a digital file.In theory, using our cut-and-paste approach, we could adjust the brightness range of the correctly exposed photo to the 10-90 range before introducing the additional, extreme regions. I have tried this and, take my word, it is enormously time consuming and gives very poor results! The labour becomes even more arduous when individual colours have to be dealt with independently. Specialized software comes to the rescue and is able to generate intermediate HDR files which cannot be viewed and then compress the range evenly back to viewable limits.

I use Photomatix, available in a free limited version or fully functional at a modest price. Programs like this first line up the photographs to avoid discrepancies from very slight camera movements and then assess every shot to find regions of under or over exposure. I use five bracketed shots with exposure adjustments of -2,-1,0,+1,and +2 EV. If this sounds too technical, simpler instructions would be: take a correctly exposed shot which might for example have an aperture of F16 and a shutter speed of 125th second. Now take additional shots with the same aperture but shutter speeds of 30th, 60th, 250th, and 500th second. Then turn the software loose to create your final picture. Choosing how the software compresses the HDR file to a viewable picture allows lots of opportunity for creativity – and in Photo 3 a rather surreal effect!

Ghosting artifacts are a headache in HDR photography and I have been disappointed so far with the Photomatix de-ghosting mechanism. Perhaps it is best to avoid moving content in HDR shots altogether.

Bunchberry
(Cornus canadensis)

Photo 4a:
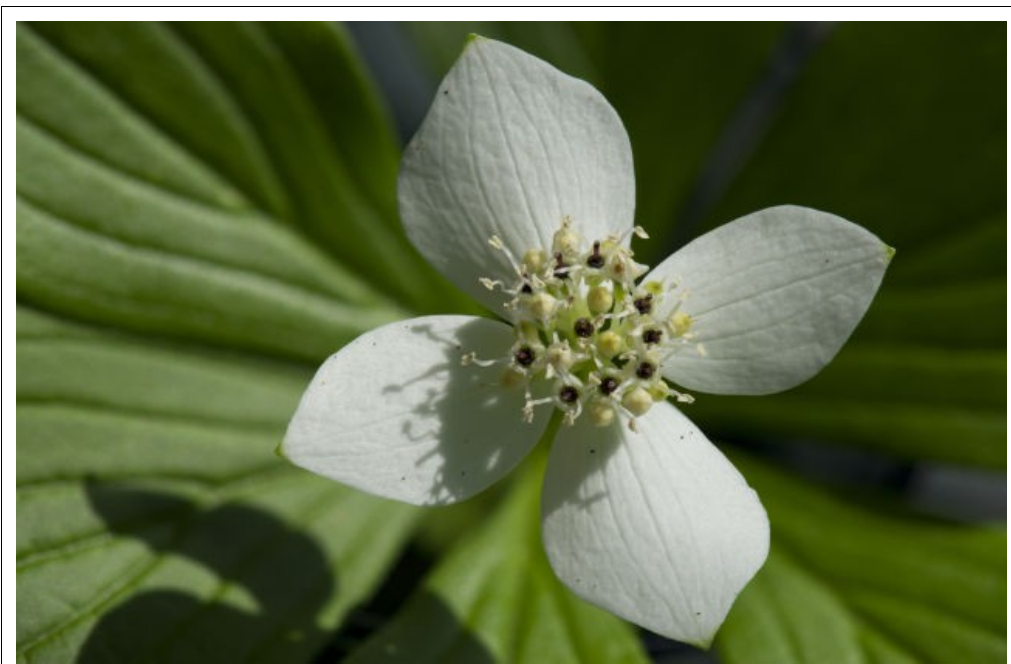**Single shot with macro lens – poor depth of field.**

Photo 4b:
Stacked from 13 shots with different focus planes.

Photo 4c:

39 originals at 3 exposures and 13 focus planes, stacked to 3 combinations then exposure enhanced by HDR to give final photo.

Multiple shots may make work and obviously can consume a lot of time, but the results can be worth it - give it a try, it gets easier with practice!

Sources for the software I use follow - there are many other programs available, some of which I have tried with varying degrees of success.

1. Helicon Focus from www.heliconsoft.com

2. Photomatix available from www.hdrsoft.com

3. HUGIN from hugin.sourceforge.net

Since our fungus field trip on Aug 14 has been cancelled due to a shortage of fungi, here's another picture from last year's competition.

Third prize; Category C:

Portraits – Mosses, liverworts, algae (including seaweed), mushrooms, and lichens.

Orange Peel Fungus *(Aleuria aurantia)*

Gene Herzberg

Index to Scientific Names

Wildflower Society of Newfoundland and Labrador
Membership Form

Name _____

Street/PO Box _____

Town/City _____ Province/State _____ Postal Code _____

Country (if not Canada) _____ Telephone (H) _____(W)_____

Email address **_____** Sarracenia by email? Yes __ no__

Renewal ($10) or New Member (see below*)? Amount Enclosed $ ____
DATE_____

Our subscription year runs from September to August, please renew soon. Annual subscription is $l0.00. Please save the Society postage/copying expenses by agreeing to receive the Sarracenia electronically if possible. Also, you will find the colour images are excellent. For those members who do not receive the Sarracenia electronically but would like a colour copy, the fee is approximately $4.00-$4.80 per issue (depending on the size of the Sarracenia).

*For anyone joining for the first time during January to April the fee is $l5.00, which also includes membership for the following September to August.

Please mail completed form and cheque/money order to:

> **Membership Secretary**
> **Wildflower Society of Newfoundland and Labrador**
> **c/o Memorial University Botanical Garden**
> **St. John's, NL, Canada, A1C 5S7**

A receipt will be sent to you by email, unless you do not have access to email.

Or bring completed form and cheque to next indoor meeting. Karen Herzberg, our Membership Secretary will be available on most of wildflower walks and Summer 2010 Field Trip to accept new and renewing membership monies.