sault naturalists

Ferns, Lichens & Mosses Outing Report

October 20, 2019

By Mark Harvey / Val Walker

The focus for this day was on non-flowering plants and more specifically mosses, clubmosses, ferns and lichen. Technically lichens are not plants. They are composites of algae and fungi that form a symbiotic relationship and function as a single unit.

As we slogged our way through a black spruce swamp, Mark Harvey pointed out two common clubmosses. One being ground pine and interrupted clubmoss. Both produce spores in structures called strobili that for these two species, extend from the tips of the branches.

We passed over an extensive carpet of spongy peat moss, saturated from the recent rain. Three common species of sphagnum (peat) moss that covered much of the forest floor were pointed out. Each could be distinguished by the colour of the leaves, branches and stems; the arrangements of branches; its overall form and how the stem breaks (snappy or not). The habitat is also a good starting point for identification.

Mixed in with the sphagnum mosses and growing on an old rotten stumps was three lobed liverwort. Liverworts are very close relatives of mosses. The three lobed liverwort has scaly leaves that resemble shingles on a roof. Each leaf has 3 small lobes on the leaf tip.

Lichens come in a variety of colours and forms. They cling to rock, soil or trees for support but they have no roots and are not harmful to supporting vegetation. Pendant lichens are hair or beard- like with leafless branches. Two species of pendant lichen were observed. Old man's beard and spruce moss (a.k.a. boreal oakmoss) were growing on a small spruce branch.

Lichens with flat leaf-like structures are a foliose growth form. Two species representing this growth form were found on a small, dead, black spruce branch. They were waxpaper lichen and monk's hood lichen. Both lichens have a similar appearance. They are light grey to bluish grey with patches of a fine grey powder called soredia. This soredia is produced by the fungal and algal portion of the lichen and is used as a means of reproducing more lichen asexually.

Common green peat moss (Sphagnum girgensohnii)

Waxpaper lichen (Parmelia sulcata)

Intermediate wood fern (Dryopteris intermedia)

Our lunch spot at nearby Mary Ann Lake was also the site for two more commonly seen lichen: Reindeer lichen (which is grey) and Yellow-green lichen. Both are very similar in structure but easily distinguish by their colour. Pincushion moss and Broom moss were also spotted, scattered in patches on the red pine forest floor.

Our third location, off the Mark's Bay access road, offered several species of common ferns. Mark pointed out that where the spores are produced is dependent on the species of fern.

The spore producing portion of the frond (or fertile portion) on royal fern is on the frond tips with the vegetative portion of the frond (or sterile portion) below. These are combination fronds with spores separated from the vegetative part, but on the same frond.

Cinnamon fern has two distinct and separate types of fronds. One is sterile or strictly vegetative and the other is fertile. The fertile fronds come out in the late spring/summer and then shrivel up. They look like giant cinnamon sticks.

Interrupted fern has both sterile and fertile fronds. The fertile fronds are just like the sterile fronds but they have a number of reduced fertile pinnae (leaflets) part way up the axis (stem). These fertile pinnae are dark in colour and are bordered above and below by the leafy green portion of the frond. As a result, the frond looks "interrupted", hence its common name.

Further down the trail, a few more mosses like haircap moss, spiky dicranum and wavy-leaved moss were identified as well as two cup lichens, specifically pixie-cup and powder horn.

Thankfully the rains held off for the day although the sky remained overcast. Our troupe of twelve, now well informed on non-flowering plants and lichens, paused at the nearby Boots & Saddles Roadhouse for a warm beverage and reflection.

Thanks to Mark for leading this interesting outing and all that participated.

For more photos: Ferns Lichens Mosses

For a species list: See below

Royal fern (Osmunda regalis)

Pixie-cup lichen (Cladonia chlorophaea)

SPECIES LIST Mark's Bay Area - Oct 20, 2019
Clubmosses
Interrupted clubmoss (*Lycopodium annotinum)*
Ground pine (*Lycopodium dendroideum)*
Mosses and Liverworts
Common green peat moss (*Sphagnum girgensohnii)*
Wulf's peat moss (Sphagnum wulfianum)
Midway peat moss (*Sphagnum magellanicum)*
Broom moss (*Dicranum scoparium)*
Pincushion moss (*Leucobryum glaucum)*
Plume moss (*Ptilium crista-castrensis)*
Haircap moss (*Polytrichum commune)*
Red-stemmed feathermoss (*Pleurozium schreberi)*
Wavy-leaved moss (*Dicranum polysetum)*
Spiky dicranum (*Dicranum flagellare)*
Three-lobed liverwort *(Bazzania trilobata)*
Lichens
Old Man's beard (*Usnea sp.)*
Waxpaper lichen (*Parmelia sulcata)*
Monk's hood lichen (*Hypogymnia physodes)*
Spruce moss lichen/ Boreal oakmoss lichen (*Evernia mesomorpha)*
Reindeer lichen (*Cladina rangiferina)*
Yellow-green lichen (*Cladina mitis)*
Powder horn lichen (*Cladonia coniocraea)*
Pixie-cup lichen (*Cladonia chlorophaea)*
Ferns and Allies
Field horsetail (*Equisetum arvense)*
Interrupted fern (*Osmunda claytoniana L.)*
Royal fern (*Osmunda regalis)*
New York fern (*Thelypteris noveboracensis)*
Lady fern (*Athyrium filix-femina)*
Intermediate wood fern (*Dryopteris intermedia)*
Cinnamon fern (*Osmundastrum cinnamomeum)*
Bracken fern (*Pteridium aquilinum)*