

# MOSSES

There are hundreds of moss species in Ontario and Quebec. Chances are that these common species grow near you.



**Silvery bryum**  
*Bryum argenteum*

Silvery bryum forms irregular cushions of silvery-green or whitish shoots. The color is due to the lack of green plant pigment, chlorophyll, in most of the upper leaf cells. This moss is common on exposed ground both in natural and urban settings. It is resilient when subject to human disturbance, and is frequently found in cracks of city sidewalks.



**Fire moss**  
*Ceratodon purpureus*

Fire moss forms dense tufts or cushions, especially at disturbed sites. It is often found on exposed, dry soils. After a forest fire, it may be one of the first pioneer plants to re-establish, and create an environment where other plants can grow. Much more tolerant of pollution than most other mosses, it is common in urban and industrial environments.



**Woodsy leafy moss**  
*Plagiomnium cuspidatum*

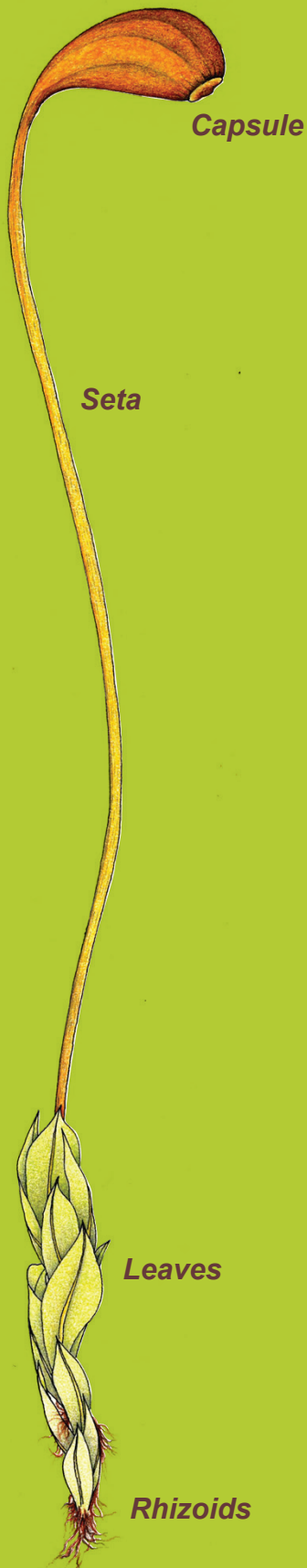
Also called Woodsy thyme moss or Baby tooth moss because of its tiny pointed leaves, this moss is common on stream banks, rotten logs, tree bases, and rocks, and in shady places in gardens and lawns. Its nodding, yellowish spore capsules at the ends of rigid stalks, called setae, give it another of its common names: Paper lantern moss.



**Lindberg's plait moss**  
*Hypnum lindbergii*

The curly leaves of Lindberg's plait moss must have reminded someone of braided ("plaited") hair or thread. Plucking a strand of this moss and looking at it closely from the side will show all the leaves curving over to one side of the stem. Lindberg's plait moss is very common in moist areas of park and residential lawns, and among the grasses along creeks and ditches.

## MAIN PARTS of a moss



### WHAT ARE MOSSES?

Mosses are green plants that grow in many land and freshwater habitats. We often notice them most easily on moist, shady rocks, logs, soil, the bases of trees and in our gardens and lawns. They do not have roots to absorb nutrients and water. Instead, they absorb water and nutrients directly through their surfaces, like a sponge. Hair-like structures called **rhizoids** help to anchor moss plants and to hold water against their surfaces.

Mosses, along with liverworts and hornworts, are known as bryophytes, which are the oldest lineage of land plants, and a key link in the evolution of land plants from those of strictly aquatic environments. Mosses still require moisture to reproduce: at least a thin layer of water is needed for the sperm to swim to the egg and fertilize it.

### HOW DO MOSSES REPRODUCE?

Mosses use spores (not seeds) to disperse and start new colonies. The spores are released from **capsules** that are often held above the level of the **leaves** by a stalk called a **seta**. When a spore lands in a suitable habitat, it germinates to become a green, leafy plant that produces sperm and/or eggs. The sperm must swim through moisture in the moss's environment to accomplish fertilization. The fertilized egg, still attached to the leafy plant, develops into the **seta** and **capsule**, starting the cycle again.

There is a quicker way for mosses to disperse and reproduce, though: virtually all moss fragments can regenerate clones of the plant from which they were broken. Even a few moss cells that get stuck between the toes of a passing rabbit, bear, or partridge can be transported to new homes, where they can grow into complete plants once again.

### OF WHAT VALUE ARE MOSSES?

Mosses help make the world liveable for other plants and animals. Like all plants,

1. They consume carbon dioxide - a greenhouse gas.
2. They release oxygen, without which we animals could not exist.
3. They provide food, shelter and nesting material for many animals from insects and birds to mice and muskox.
4. They stabilize the soil, moderate its temperature and accumulate organic matter, so other plants can grow.

Unlike other plants,

5. They can live in some of the harshest climates on earth, in part because they are able to dry out completely without dying. On bare rock or sand, few other plants can grow until moss has made it more hospitable.
6. They are among the most sensitive indicators of pollution and environmental change. Their health helps to clue us in to local changes in moisture, light and chemicals, including pollutants that could impact animals and larger plants.

If you're more interested in economic value, consider peat mosses:

7. They are used for fuel, horticulture, and a variety of absorbent products. World peat production was over 23 million metric tonnes in 2010<sup>a</sup>. Peat, almost all of it for horticulture, contributed \$150 million to Canada's GDP in 2012<sup>b</sup>.

<sup>a</sup> [http://www.indexmundi.com/en/commodities/minerals/peat/peat\\_t9.html](http://www.indexmundi.com/en/commodities/minerals/peat/peat_t9.html)

<sup>b</sup> [http://peatmoss.com/?page\\_id=224](http://peatmoss.com/?page_id=224)