

Botany For Public Schools.—VI.

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I am writing this number Saturday, December 23rd. The rain is falling in torrents. At this moment, many a teacher is driving home to spend the Christmas vacation. In spite of the rain, citizens are finishing their Christmas shopping. Merchants feel that Fate is unkind; for the storm prevents some customers from reaching them.

But what is the significance of this rain botanically? This afternoon I shall don my raincoat and enjoy a trip to the woods. There, I shall find the Mosses and Lichens apparently glorying in the abundant supply of water. When dry or frozen, a mossy bank is not particularly beautiful or interesting. But what a transformation when the life of this bank is revived during a good rain!

The student or teacher who is unacquainted with our common mosses has missed fully one-half of the botanical joy that is due her. For, in this country, the flowering plants claim our attention not more than six months of each year; whereas, if mosses and lichens are added, we have something of interest throughout the year.

To describe all the mosses here that one can see on any trip to the woods, is, perhaps, out of place. However, I shall venture to mention a few of them by *common name*, hoping someone will become interested, and pursue the study farther. Any teacher, by collecting a dozen specimens and sending them to someone for identification, could soon make a good beginning. Mosses and lichens are easily collected and easily preserved. Therefore, a school collection is within the reach of all.

It is frequently urged that plant names and plant collections have little educational value. But one must begin somewhere; and I find that the student who can name a plant when it is presented, feels an acquaintance that can be established in no other way.

In naming a few common mosses, I shall dismiss the Hair-cap at once. It is described in all our botanical text-books. To these, therefore, let me refer the reader. It may be wise to say, however, that we have three or four quite common species of the Hair-cap (*Polytrichum*.) Pronounced pol-ri-kum, with the accent on the second syllable.

Growing abundantly in bunches four to eight inches in diameter are several species of Broom Moss (*Dicranum*.) They grow in more or less dry situations. Frequently they are on stones or on old logs. They are of a bright green color;

and are, in most cases, easily recognized from the fact that the leaves all point to one side—as if a strong wind had blown them in that direction. In shape, they resemble a counter brush. This gave them their common name.

Another moss that grows in round tufts is the White Moss (*Leucobryum*.) It is easily distinguished from all others, however, by the compactness of its growth. Someone has well likened these tufts to pin-cushions. The moss is a pale whitish green on the outside. The inner part of the tuft, however, is decidedly grayish-white, owing to absence of light. The whole tuft becomes whitish on drying.

Not very different in appearance from the broom moss is the Apple Moss. It is more delicate than either the Hair-cap or the Broom Moss. Moreover, its leaves are not turned one way as in the latter. I have always found it on wet rocky cliffs. Where a brook flows through a rocky gorge would be a good place to look for it. When not in fruit, it is hard to recognize; but can be known at a glance when in fruit. As everyone has noticed, most mosses bear their spores in somewhat cylindrical or ovoid capsules or cases. The Hair-cap bears somewhat cubical capsules. But the Apple Moss bears spherical capsules—somewhat apple-shaped—hence its name.

Wherever one finds patches of ground recently burned, there one is almost sure to find the Purple-fruited Moss. Looking through a mass of it towards the sunlight, the purple tinge is quite evident. Under other conditions, wine-color possibly describes it better.

The mosses thus far described grow without branching, or with very little branching. Very different in appearance are those which branch profusely. Among the latter group we find those that cover the ground more densely over greater areas. Some of this group, however, grow in small patches.

Perhaps the commonest of all wood-land mosses is Schreber's Moss—named in honor of a man of that name. The moss is a hard one to describe. It will be sufficient to say, however, that any moss in spruce woods that covers an area of ten feet or more each way is likely to be Schreber's (*Hypnum Schreberi*.)

More showy, but covering smaller areas, are the two Fern Mosses—the Mountain Fern Moss and the Delicate Fern Moss. Their name suggests their appearance. The former has the peculiar