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THE OTTAWA NATURALIST

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SOME OF THE BEST NATIVE PLANTS FOR CULTIVATION.

By W. T. Macoun,

Horticulturist and Curator of the Arboretum and Botanic Garden, Central Experimental Farm, Ottawa.

There are in Canada about 4,000 species of flowering plants, and 76 species of ferns. In the Province of Ontario alone there are nearly 2,000 species of flowering plants, and 46 species of ferns. This flora stretches from the Atlantic to the Pacific and from latitude 49° to as far north in the Arctic regions as the Canadian territory extends. Over this wide area there are many variations in climate, each great climatic region being again subdivided into habitats, where the different species are found. Some species have a very wide range, extending from the Atlantic to the Pacific and from the 49th parallel to the Arctic circle, while others, such as the Tulip Tree, *Liriodendron tulipifera*, American Crab Apple, *Pyrus coronaria*, Common Papaw, *Asimina triloba*, Flowering Dogwood, *Cornus florida*, Virginian Cowslip, *Mertensia pulmonariodes*, and other plants I might mention are confined to very limited districts in south-western Ontario, though having considerable range south in the United States.

There is no difference of opinion among lovers of plants as to the beauty of the Canadian flora. The great variety, the charming forms, the lovely colours, and the blending of the whole when under natural conditions give us innumerable and varied pictures of which we may well feel proud.

There is a growing sentiment in Canada in favour of Canadian things. We are becoming more proud of our country every year. We are looking for an individuality which will stand for Canada, and one of the best ways we can impress our individuality on the people of other countries and our own is to make Canadian trees, shrubs, and herbaceous plants a prominent feature of our landscapes. We have too often in the

past planted our parks and public grounds with plants which were native of other countries when we might have made them beautiful with our own.

Every city should have a by-law regulating the planting of avenue and shade trees along the streets of the city, and while, in all cases, it might not be desirable to confine the planting to native species, yet everything possible should be done to encourage the planting of them. The merits of the different species should be brought prominently before our people. A proposed by-law of this kind is before the Ottawa City Council now.

Let us now look at the material there is to draw upon, beginning with the trees, shrubs and vines which are, perhaps, our most effective plants.

The Norway Maple, *Acer platanoides*, is a good shade tree, but it is not as desirable for street planting as the Hard Maple, *Acer saccharum*. The chief drawbacks to the Norway Maple, as I have observed it, are that it forms too low a head and if pruned up does not look well. This tree is being planted in greater numbers every year, chiefly due, in my judgment, to the fact that it grows rapidly in the nursery, and hence is a more profitable tree to grow. But let us stick to our Hard Maple, the best maple by all odds. It grows to a great height and size and its brilliant colouring in autumn gives Canadian cities an individuality.

As the Hard Maple is the best maple to plant, so is our American Elm, *Ulmus americana*, the best elm. The rapid growth of this tree in most soils, the great height to which it grows, and its graceful form, make it one of the most desirable trees for street planting. Moreover, it lends itself to high pruning, which is so necessary in our cities, where there is such a mass of wires. The higher the American Elm is pruned the better it looks when the tree is large, and this is a very important matter. In some places two species of European elms have been planted instead of the American. This is a great mistake as they are inferior trees to our own and everything possible should be done to confine the planting to the American Elm.

With the Hard Maple and American Elm conceded to be the two best trees for street planting, there are few other trees which need to be considered, as they should constitute by far the greater part of the planting. But for variety, a few other desirable species may be used. Why the Red Oak, *Quercus rubra*, has not been more planted as a street tree is a mystery to me. It is a most beautiful tree, the fastest growing of the oaks, and as rapid a grower, I believe, as the Hard Maple. Its leaves, which are usually highly coloured, remain on the tree until winter and give a colour to the streets long after the leaves of

most other trees have fallen. Pin Oak, *Quercus palustris*, is also another fine species, but a slower grower, but its finely cut leaves give quite a characteristic feature to an avenue of this species. It is, however, much tenderer than the Red Oak and should only be planted in the milder parts of Ontario.

Other good native trees for street planting for some sections of the country are the Silver and Red Maples for wet ground, the Sycamore or Buttonwood for south-western Ontario.

For park purposes there are so many good native trees that one would have to name almost all of them, but a few of the best deciduous trees are those previously mentioned for streets and the Basswood, Beech, Yellow Birch, Canoe Birch, Mountain Ash, White Ash, Kentucky Coffee Tree, Cork Elm, Hickory, Scarlet Haw, Cockspur Haw, Honey Locust, and Tulip Tree and Sassafras (for western Ontario).

Canada is rich in evergreens and why the Scotch Pine, Austrian Pine, and Norway Spruce are used to the almost exclusion of our native pines and spruces can only be explained by the apparent preference for something exotic.

The Scotch Pine, *Pinus sylvestris*, cannot be compared in beauty with our White Pine, *Pinus Strobus*, which is the most beautiful pine that grows. The Scotch Pine is stiffer in habit to begin with and soon becomes scraggy and unsightly, while the beauty of the White Pine increases as it grows older if given plenty of room so that it may hold its branches to the ground.

The Austrian Pine, *Pinus Laricio nigricans*, is a fine tree, but it also has a stiffer outline than our Red Pine, with which it may be fairly compared. We usually think of Red Pine, *Pinus resinosa*, as it is seen in the woods, a tall tree with a clean trunk and apparently a few leaves at the top, but well grown specimens of Red Pine branching to the ground are most attractive.

The Norway Spruce, *Picea excelsa*, is a beautiful tree when young, being a rapid grower and very graceful, but for permanent effect it cannot be compared with our native White Spruce, *Picea alba*, particularly those with a bluish tinge, as anyone who has seen a well-grown specimen of White Spruce sixty or seventy feet high will bear me out. The Colorado or Rocky Mountain Blue Spruce, *Picea pungens*, is a close competitor of the White Spruce and the best specimens are bluer in colour and it is undoubtedly one of the best spruces to plant, but it is a very stiff tree and it is not a favourite with many people on that account. Moreover, it is expensive, which makes it more or less prohibitive.

The Hemlock, *Tsuga canadensis*, is a very graceful tree, and while a rather slow grower there is no other tree which does well in eastern Canada that looks anything like it. For

park effect and for blending with other trees it is one of the most desirable. From British Columbia we have the Douglas Fir, Bull Pine, and Englemann's Spruce, all fine trees and doing well in eastern Canada. The best Englemann Spruce resembles very much the Colorado Blue Spruce, but is more graceful.

Among the most ornamental Canadian shrubs I mention the Viburnums, of which there are eight good species which succeed under cultivation. Perhaps the best of these is the High-bush Cranberry, *Viburnum Opulus*, which is ornamental both in summer and winter, the brightly coloured fruit being very attractive. Our wild roses are very useful, among the best being *Rosa lucida*, the glossy leaves of which make this very ornamental even when out of flower. Two of the best species of Mock Orange are natives of British Columbia, namely, *Philadelphus Gordonianus* and *Philadelphus Lewisii*. Flowering Dogwood is a very effective shrub in spring in Western Ontario, while the Amelanchiers make masses of white in the early spring. For autumn effects the Aromatic and Stag-horn Sumachs cannot be beaten.

Among the hedge plants there is no evergreen so satisfactory as the native American Arbor Vitæ or Cedar. Rarely injured by insects or diseases, standing pruning well and needing comparatively little pruning, it is undoubtedly the best. It is not so rapid a grower as the Norway Spruce, which is sometimes used for hedge purposes, but is more permanent and takes up less room. The White Pine is also proving an excellent hedge plant at the Experimental Farm. The Hemlock makes a very fine hedge if rapid growth is not desired, being compact and of a pleasing shade of green.

While few of our deciduous plants are used for hedge purposes we see no reason why some of them should not be used with good effect. The native beech is doing well as a hedge plant at Ottawa and there is no good reason why it should not become as popular in this country as the European Beech is in England. The Moosewood, *Dirca palustris*, should make a splendid hedge plant with its soft, light green leaves. The Scarlet Hawthorn should make a desirable one, and where a hedge for holding back stock is required the Honey Locust is one of the best plants to use in the warmer parts of Ontario. This is taking the place of the Osage Orange in those districts where the latter succeeds. There are other shrubs with attractive foliage, such as the Viburnums and Hamamelis which should do well as hedges.

Among the climbing hardy plants we have three native woody species which can scarcely be excelled. These are the Virginian Creeper, the Wild Clematis or Virgin's Bower, and the

Climbing Bitter Sweet, and to these might be added for some purposes the Wild Frost Grape.

For beauty of autumn colouring the Virginian Creeper stands alone among climbing plants. Where leaf-hoppers are troublesome its attractiveness is marred during the latter part of summer by the withering of the leaves. There is, however, a self-fastening variety brought into notice by the Experimental Farm, which is now becoming quite common about Ottawa. This does not need support but climbs walls by means of its discs and tendrils almost as well as the *Ampelopsis Veitchii*. The foliage of this variety is somewhat downy and the insects seem to be repelled by the hairs, at any rate they trouble it very little.

The Virgin's Bower or Wild Clematis is a very rapid grower, has clean foliage which is very seldom affected by insects, and bears a profusion of small white flowers in summer. This, and the European Traveller's Joy, *Clematis Vitalba*, which is much like ours, if planted alternately will give a continuity of bloom from early summer almost until *Clematis paniculata* is in bloom.

The Climbing Bittersweet, *Celastrus scandens*, should be more planted than it is as it has a very clean, attractive foliage and the orange and scarlet fruit in autumn and early winter lengthens its season of usefulness very much. In parks or large grounds this can be used very effectively.

One might write much more about the beauties and advantages of our trees and shrubs. Something must, however, be said about the best native herbaceous plants.

It has often been remarked, especially by those coming from other countries, how few species of Canadian wild flowers are found growing along the roadsides or borders of cultivated fields in eastern Ontario. If we take out the Golden-rods and Asters there are few prominent plants left. But one might say: "There is the Canada Thistle; that surely is common enough!" But the Canada Thistle is a European plant and we should protest against its being called under that name. Furthermore, practically all our bad weeds are European plants. The reason why so few attractive Canadian wild flowers are found along our roadsides and in our uncultivated ground is that most of our best wild flowers are woodland species and when the woods disappear they disappear with them. To retain and make use of the many beautiful woodland species we must preserve the woods or make for them in our parks and gardens conditions approaching those they get in their native wilds. But fortunately, there are a number of beautiful flowers, among the best in fact that are available anywhere, which will succeed under cultivation without any very special selection of situation or soil, and first among these I mention *Trillium grandiflorum*

There is no other white flowered perennial of its season of bloom which approaches it for beauty. It has a comparatively long season of bloom for a spring flower, quickly becomes established and multiplies rapidly. A clump of about three roots planted ten years ago, now produces more than fifty flowers annually, most of very large size. These could be used with splendid effect in parks or private grounds if massed.

The Virginian Cowslip, *Mertensia pulmonariodes*, or, as it used to be called, *Mertensia virginica*, is another spring flowering herbaceous perennial which should have a place in every garden. The flowers which open at Ottawa during the second week of May are of a lovely shade of pale blue and when in bud are pink at the base. This plant soon withers after blooming and by early summer is not seen above ground.

Another charming wild plant which does well under cultivation is the Wild Sweet William or Blue Phlox, *Phlox divaricata*. This blooms at Ottawa from the middle of May to June 10th, and is one of the most admired plants at that time. The flowers vary from soft tints of lilac to mauve, and a white variety is found in western Ontario which is very beautiful.

A dwarf phlox native of south-western Ontario is the Moss Pink, *Phlox subulata*, blooming early in spring and particularly useful for rockeries. It can be had now in many varieties.

Although some of the best of the later blooming Columbines are not natives of Canada, yet two of the best early species are *Aquilegia canadensis*, and *A. coccinea*, which, if not so common, would be more appreciated.

Among the first flowers to open after the snow goes is the Prairie Anemone or Prairie Crocus, *Anemone patens*, var. *Nuttalliana*. This is common in the prairie provinces. It is very showy, even in small clumps, but if massed would be very effective in early spring and be a contrast to the early flowering bulbs, which are in bloom at the same time.

One of the showiest native plants we have and particularly attractive on account of its odd but pleasing colour, is the Butterfly Weed or Pleurisy Root, *Asclepias tuberosa*. The flowers are a bright orange and the plant remains in bloom from early in July to early in August.

The Oswego Tea or Bee Balm, *Monarda didyma*, is a native which is considerably used in planting in the United States and could be used much more in Canada with good effect. The plant being from three to four feet high and the flowers being bright crimson or scarlet, it is a striking object wherever planted. It blooms from early in July to September. While mentioning scarlet flowers one must not forget the Cardinal Flower, *Lobelia*

cardinalis, which does very well in a moist place in the herbaceous border.

There are many species of herbaceous Spiræas growing at the Central Experimental Farm, but there are none of them as handsome or as effective as the Goat's Beard, *Spiræa Aruncus*, a native of British Columbia. It grows 4½ feet high and from early in June to early in July it is a mass of large, plume-like panicles of creamy white flowers.

Among lilies, what is more effective than our native *Lilium superbum*, attaining a height of 4½ to 7 feet at Ottawa?

Of hardy native orchids of great beauty which do well under cultivation with special preparation of soil and partial shade, may be mentioned *Cypripedium spectabile*, *Cypripedium pubescens*, and *C. parviflorum*. One of our lovers of wild plants at Ottawa has also been very successful with *C. acaule*. *Orchis spectabilis* and *Habenaria psycodes* can also be cultivated.

Other well known native wild flowers which are very desirable and do well under cultivation are *Coreopsis lanceolata*, *Gaillardia aristata*, *Polemoniums* of several species, Violets of several species, *Anemone canadensis*, *Papaver nudicaule*, *Cimicifuga racemosa*, *Thalictrum purpurascens*, *Dicentra eximia*, *Echinacea purpurea*, *Hepatica acutiloba* and *triloba*, *Sanguinaria canadensis*, *Eupatorium ageratoides*, *Aster novæ-angliæ*, and other species, *Solidago canadensis*, and many other beautiful plants from the western provinces..

Nor must we close without reference to the ferns, of which we have so many beautiful species that may be readily cultivated. Among the best are:—

1. Maidenhair Fern, *Adiantum pedatum*.
2. Male Shield Fern, *Aspidium Filix-mas*.
3. Marginal Shield or Evergreen Wood Fern, *Aspidium marginale*.
4. Spinulose Wood Fern, *Aspidium spinulosum*.
5. Narrow-leaved Spleenwort, *Asplenium angustifolium*.
6. Ostrich Feather Fern, *Onoclea Struthiopteris*.
7. Sensitive Fern, *Onoclea sensibilis*.
8. Cinnamon Fern, *Osmunda cinnamomea*.
9. Royal Fern, *Osmunda regalis*.
10. Fragile Bladder Fern, *Cystopteris fragilis*.
11. Bulblet Bladder Fern, *Cystopteris bulbifera*.
12. Lady Fern, *Asplenium Filix-femina*.

NEW CONTRIBUTIONS TO CANADIAN BRYOLOGY.

BY N. CONR. KINDBERG, PH.D., UPSALA, SWEDEN.

(Continued from page 143).

36. GRIMMIA (SCHISTIDIUM) DIVERSIFOLIA.

Leaves large, channelled or concave, diversiform; the lower broader, subovate obtuse and muticous; the upper broadly ovate-lanceolate, obtusate or short-acuminate, recurved all around, muticous or rarely with a short and broad hairpoint; cells not sinuous. Perichetial leaves larger. Capsule immersed; peristome orange, brittle. Stem 2-3 cm. high. Tufts blackish-brown.

On rocks in Pipestone Pass, eastern slope of Rocky Mountains, Alta., altitude 7,300 feet, July 5th, 1904. No. 119a.

37. GRIMMIA HARTMANI SCH.

Gaspe, 1907.

38. GRIMMIA PAPILLINERVIS.

Capsule smooth oval; teeth nearly entire, reddish-yellow or yellowish; stomata not distinct; pedicel exserted, *curved* when moist. Leaves ovate-lanceolate, broadly acuminate subacute, carinate, slightly or not recurved, sometimes papillose at borders, not large, faintly appressed when dry; cells quadrate, not sinuous; the upper somewhat small and chlorophyllose, the lower larger, nearly uniform and hyaline; hairpoint long, denticulate or nearly smooth; costa papillose. Monoecious (subparoecious). Tufts pulvinate, densely cohering, about 1 c.m. high dark or glaucous green when dry. Lid and calyptra not seen.

British Columbia, Skagit summit. J. M. Macoun, 1905.

39. GRIMMIA HAMULOSA, LESQ.

Vancouver Island, Nanaimo Biological Station, June, 1908. New to Canada.

40. GRIMMIA COGNATA, CARD. ET THER.

Alberta, Lake Louise, alt. 6,000 ft. 13th Sept., 1904. New to Canada.

41. GRIMMIA SUBPAPILLINERVIS.

Agrees with *G. papillinervis*. Leaves with not sinuous cells, the upper cells subquadrate; costa papillose. Differs from it. Leaves longer, long-subulate; lower cells rectangular, the alar more distinct; hair-point smooth. Capsule oblong-cylindric.

Differs also from *G. alpestris* in the longer leaves and the curved pedicel of capsule, etc.; from *G. subsulcata* in the longer, not striate leaves.

British Columbia 1908. A. Brinkman.

42. GRIMMIA STIRTONI, SCHIMPER; BRAITHWAITE.

Capsule oval, smooth; pedicel straight, slightly exserted above the (with very long and rough hair-point furnished) perichetial leaves. Hitherto found only in sterile state.

Vancouver Island, Mount Benson, 1893.

43. GRIMMIA SERRATA.

Differs from the resembling *G. robustifolia*. Capsule oblong; distinctly costate. Leaves serrate above; upper cells not sinuous. Tufts green.

British Columbia, Rossland, 15th Aug., 1902. J. M. Macoun.

44. RACOMITRIUM DEPRESSUM, LESQ., VAR. NIGRICANS.

Tufts blackish when dry; leaves sometimes furnished with a hairpoint.

The sterile specimens agree with the description in Manual of Mosses of North America by Lesquereux and James; the true *R. depressum* is found in Yosemite Valley, but I have not seen authentic specimens. Perhaps the capsule is different.

Collected on Southampton Island, near Fullerton, northwest of Hudson Bay, by Commander A. P. Low in 1904, also at Whale River, Labrador, in 1896.

45. SCOULERIA MUELLERI, KINDB.

Differs from *S. aquatica* in its leaves being broader at the middle; inner basal cells very numerous. These characters are sufficient to make a proper species when they are constant and easily observed.

Collected on a rock in the Klondike River near Dawson, Yukon, August 8th, 1902. No. 295.

46. BARBULA SUBCYLINDRICA, BROTH.

Vancouver Island 1908 and 1909, also fruiting. New to Canada. Pedicel twice longer and neither curved nor exserted.

47. BARBULA ANDREÆOIDES.

Leaves small and short, broadly ovate and subcochleariform, obtusate, mostly obtuse, more or less reflexed, distinctly papillose, appressed when dry, straight suberect and rufescent when moist; cells small subquadrate; costa percurrent redbrown. Perichetial leaves broadly ovate-lanceolate acuminate

acute; costa long-excurrent. Tufts blackish-brown when dry, dense, 2-3 cm. high. Stem capillary. Dioecious. Capsules not seen.

On rocks, summit of McArthur Pass, western slope of Rocky Mountains, B.C., altitude 7,500 feet, August 10th, 1904. No. 241.

48. BARBULA SUBANDREÆOIDES.

Resembles *B. andreæoides* in the stem being often proliferous with long shoots, also in perichetial leaves and in habit.

Differs from it: Leaves longer, generally subovate-oblong short-acuminate and not reflexed. Tufts pulvinate, about 1 cm. high.

On rocks, near Twin Falls, Yoho Valley, western slope of Rocky Mountains, B.C., altitude 6,800 feet, September 6th, 1904.

49. BARBULA INCLINATA (HEDW. FIL.) SCHWAEGR.

On damp rocks at Laggan, eastern slope of Rocky Mountains, altitude 5,200 ft., June 26th, 1904. No. 113. New to Canada.

50. DIDYMODON BRACHYDONTIUS (BRUCH) WILS.

(*Trichostoman mutabile* Notaris).

British Columbia, fruiting: A. Brinkman, 1908.

51. ENCALYPTA ALASKANA, KINDB.

"*E. flaviseta*," Kindb. in letter to Macoun, 1890.

Leaves recurved, not limbate obtuse or subobtuse. Capsule faintly sulcate when dry; pedicel soon red; calyptra not fringed.

Collected on rocks at Sicamous, B.C., July 3rd, 1889, on the Yoho Pass, B.C., September 2nd, 1904; also at Laggan, Alta., June 27th, 1904.

52. MEESEA MACOUNII.

Synœcious. Leaves decurrent, from a dilated base tapering to a gradually attenuate, acute, entire or near the apex sparingly dentate acumen; the upper reflexed at the borders and with an excurrent costa; basal cells larger than the upper ones. Pedicel of capsule to 7 cm. long.

M. longiseta differs in the leaves not being reflexed and with an abbreviate costa. In *M. Albertinii* the leaves are entire, their basal cells small; the pedicel of the capsule is not so long.

In a small log at Laggan, eastern slope of Rocky Mountains, Alta., altitude 5,500 feet, July 25th, 1904. No. 37.

53. MIELICHHOFERIA RECURVIFOLIA.

Leaves small and smooth, broadly ovate, obtusate or very shortly acuminate, slightly denticulate above, often recurved

on the borders, appressed when dry; nearly all cells quadrate; costa percurrent. Tufts compact, decolorate with green branch-tips, about 3 cm. high, in the lower part filled by earth. Capsules and flowers not seen.

On earth by Lake Agnes above Lake Louise, eastern slope of Rocky Mountains, altitude 7,500 feet, September 14th, 1904. No. 34.

54. PHILONOTIS MICROCARPA.

Allied to *Philonotis marchica*, agreeing in the leaves being uniform, small and serrate, also in the stem being high and not thick; differs in the leaves being sometimes reflexed at the borders, the inner perichetial long, reaching far above the vaginula, broad and acute with a not percurrent costa; capsule very small.

The tufts are tomentose, about 6 cm. high; lid of capsule conic; pedicel capillary, 2, 2.5 cm. long. Male plants not seen.

In other allied species (*Ph. Macounii et al*) tufts are very much lower, the stems thinner and subcapillary.

Bogs along Pipestone Creek, eastern slope of Rocky Mountians, altitude 6,000 feet, July 8th, 1904. No. 75.

55. PHILONOTIS FONTANA (L.) BRID., VAR. MICROTHAMNIA, KINDB. New variety.

Tufts dense, nearly wholly tomentose. Shoots of male plants very slender, 1-1.5 cm. long; barren branches shorter; stem capillary. Leaves small recurved acuminate acute, spreading or falcate with double mamillæ; the upper longish with long-excurrent costa; the lower shorter with shorter costa. All perigonial leaves obtuse; costa faint or obsolete.

Collected in a peat bog along Hunker Creek, Yukon, July, 1902. No. 152.

56. FUNARIA MICROSTOMA BRYOL. EUR.

Vancouver Island, 1908. New to Canada.

57. PHYSCOMITRIUM MICROCARPUM.

Leaves *entire*, limbate by one yellow cell-row, ovate-oblong short-acuminate, not recurved; the upper with short-excurrent costa. Capsule small; lid convex; spores rough; pedicel pale, finally pale-reddish.

Brit. Columbia. A. Brinkman, 1908. New to Canada.

58. MNIUM SELIGERI, JURATZKA & MILDE.

On rocks near Fort Albany, west coast of James Bay, Hudson Bay, August 9th, 1904. Coll. Mr. W. Spreadborough.

No. 369. On rocks and earth at Ottawa, October 10th, 1905. New to Canada.

59. MNIUM MEDIUM BR. EUR. * BOREALE, KINDB.

Near Fort Albany, James Bay, Hudson Bay, August 9th, 1904. Coll. W. Spreadborough.

New to Canada. Also found in Illinois by C. F. Baker.

60. MNIUM BLYTTII BR. EUR., VAR. MICROPHYLLUM, KINDB. new variety.

Leaves smaller, obtusate (not acuminate), generally obtuse and elliptic, rarely with a very short point; only shoot-leaves green, the others purplish-red.

In bogs along Hunker Creek, Yukon. Not uncommon. Collected in July, 1902. Nos. 218, 219, 213 in part.

61. MNIUM MACOUNII.

Agrees with *M. riparium*, Mitt., in the leaves of the barren stems being loosely disposed and crisped when dry.

Differs in leaves being very much smaller, nearly always *simply* dentate (or entire at least below the middle), very rarely doubly dentate; nearly all cells of the same size (not smaller towards the margins), also (and principally) in the *short* costa.

Leaves generally obtusate (short-pointed or acute), more or less (or not) decurrent; the lower leaves smaller and broadly oval often reddish; the upper generally oval (or rarely oblong); all with a border of 2-3 rows of narrow and often finally red cells; costa finally red, not dentate, abbreviate, generally ceasing far below the apex. Stem purplish. Tufts large, very radiculose at the base, dense, 1 cm. high or lower. Dioecious. Capsules not seen.

In peat bogs along Bonanza and Hunker Creeks, Yukon, July, 1902. Nos. 212, 233b.

62. BRYUM CYCLOPHYLLOIDES.

Differs from *B. cyclophyllum* (Schw.) Br. eur.

Upper leaves more concave, crowded (and green), the lower rufescent; cells somewhat larger, the alar rufous; costa percurrent, often red. Capsules not seen

In a small pool by Pipestone Creek, eastern slope of Rocky Mountains, altitude 6,500 feet July 6th, 1904. No. 84.

63. BRYUM PENDULUM (HORNSCH.) SCHIMPER., * NANUM.

Differs in capsule being minute, pedicel less than 1 cm. long, stem very short with gemmiform shoots.

On Cape Henrietta Maria, west side of James Bay, Hudson Bay, August 9th, 1904. Coll. Wm. Spreadborough. No. 364.

64. BRYUM PENDULUM * LONGIPES.

Differs in its narrow capsule with a mamillate lid, costa of leaves short-excurrent.

On earth at Laggan, eastern slope of Rocky Mountains, altitude 5,200 feet, June 26th, 1904. No. 132.

65. BRYUM SUBPERCURRENTINERVE.

Leaves crowded, concave, not decurrent, diversiform, entire, not large, twisted when dry; cells dilated subrhombic; costa red. Older leaves with red insertion. Upper stem-leaves oval-oblong subacute, mostly limbate and reflexed; costa percurrent or rarely short-excurrent. Shoot-leaves and lower stem-leaves oval, not distinctly limbate, slightly or not reflexed, very obtuse, arrounded at the apex; costa not percurrent. Capsules not seen; pedicel capillary, 1.5 to 2 cm. long. Dicœcious. Tufts dense, green above, 2-3 cm. high.

Very peculiar in the round-obtuse shoot-leaves with their abbreviate costa.

Bogs along Pipestone Creek, eastern slope of Rocky Mountains, altitude 6,000 feet, July 8th, 1904. No. 89.

66. BRYUM (B. PARVULUM Kindb in Revue Bryolgique) MACOUNII (New name).

Capsule suboval, not constricted, brown and pendent, small, neck longish; lid large convex mamillate, red and nitid; teeth brown; endostomial segments entire, pale; cilia wanting; pedicel 1 cm. long; spores about 0.03 mm. Leaves small and short, ovate-oblong, short-acuminate acute, recurved and entire, more or less limbate; insertion red; cells rhombic; costa red, percurrent. Tufts low and compact; stems subgemmiform. Synœcious. Habit of *Bryum archangelicum*; it differs in monœcious inflorescence, costa of leaves excurrent, etc. *B. lacustre* differs in the small lid of the capsule, endostomial segments fenestrate, narrower leaf-cells, loose tufts, etc.

On wet earth and rocks at Gaspe Basin, Gaspe County, Que., August, 1907. Coll. John Macoun.

67. BRYUM (WEBERA VEL POHLIA) OBTUSATUM.

Leaves small and distant but neither decurrent nor reflexed, ovate-oblong or ovate, obtusate, generally obtuse; distinctly denticulate to the middle; cells somewhat wide; costa abbreviate. Lower leaves shorter, round-obtuse, sometimes faintly rose-red. Perichetial leaves suboblong shortish, not acuminate, generally obtuse, rarely subacute. Stem red. Shoots long with capillary stem and short, much distant and patent leaves. Tufts 7 cm. high. Dicœcious. Capsule not seen.

In the railway ditch at Hector, western slope of Rocky Mountains, B.C., altitude 5,200 feet, August 4th, 1904. No. 265a.

68. BRYUM ALPINIFORME, KINDB.

Cat. Can. Plants, p.271.

Hitherto found only in a sterile state. Capsule sometimes asymmetric; cilia appendiculate; spores 0.01 mm. Stem 4-5 cm. high.

In the railway ditch at Hector, with the preceding species, on same date. No. 274 in part.

69. BRYUM SUBOBTUSIFOLIUM, C. MUELLER, MUSCI TSCHUCHTSCHICI.

Differs from *B. obtusifolium*, Lindb, leaves less loosely disposed, shorter-decurrent and often limbate. Sterile. The tufts are 7 cm. high.

On Southampton Island, Hudson Bay, August 9th, 1904 Coll. Commander A. P. Low. No. 337. New to America.

70. BRYUM (WEBERA) SUBCUCULLATUM, C. M. & KINDB.

Cat. Can. Plants, p.113.

It seems to be a good species, when the inflorescence is parœcious. It was regarded by me (in Eur. and N. Amer. Bryineæ) as a subspecies of *B. commutatum*.

Collected on the "Saddle" above Lake Louise, eastern slope of Rocky Mountains, altitude 7,300 feet, July 20th, 1904. No. 77.

71. BRYUM AURIMONTANUM.

Nearly allied to *Bryum arcticum* in peristome, spores and synoecious inflorescence.

Differs from it: Leaves shorter, subovate, dentate near apex, yellowish (not red-) limbate; capsule less narrowed to the mouth.

On earth at Dawson City, Yukon, July 14th, 1902. No. 163.

72. BRYUM SUBMICANS.

Allied to *Bryum arcticum*; but capsules are less narrowed to the mouth; leaves yellowish-limbate.

Differs from *Bryum micans*, Limpr. Capsule longer, oval-oblong (not subglobose). Leaves longer, broadly (not narrowly) limbate, the upper with long-excurrent costa. Pedicel of capsule longer, 3-4 cm.

Inflorescence and spores as in *B. micans* and not *B. arcticum*.

In peat bogs along Bonanza Creek, Yukon, July 18th, 1902. Coll. John Macoun. No. 173 in part.

73. BRYUM SUBNEODAMENSE.

Differs from *Bryum neodamense Itz.* Leaves very much smaller and broader, suborbicular, not or slightly decurrent: limb of only 2-3 cell-rows. Capsule not seen. Habit of *Mnium hymenophylloides*. "It is not identical with *Bryum suborbiculare*. Philib." Brotherus has written so to me.

Borders of Bonanza Creek, Yukon, July 18th, 1902. No. 211a. Coll. John Macoun.

74. BRYUM PALLESCENS, VAR. GRANDE.

Leaves narrowly lanceolate long-acuminate entire. Pedicel of capsule 5-6 cm. long. Spores very small, 0.01 mm. Synœcious.

On rocks at Goldstream, Vancouver Island, June 8th, 1908.

75. BRYUM LOWII.

Synœcious. Leaves small, red, round-oval obtuse (or the uppermost subacute), entire and not limbate, not (or only the uppermost) reflexed at borders, somewhat loosely disposed, slightly or not decurrent; insertion pale; cells subrhombic; costa red abbreviate. Ripe capsules not seen, pedicel capillary, 1 c.m. long. Tufts dense, 1-2 c.m. high. Probably allied to *B. erythrophyllum* Kindb.

Hudson Bay, Southampton Island: Commander A. P. Low, 1904.

76. BRYUM JULACEUM.

Fruiting stem gemmiform; shoots julaceous or gemmiform. Capsule brown, oblong, not large; neck short; lid large convex mamillate; cilia appendiculate; spores about 0, 01 m.m.; pedicel 2-3 c.m. long. Leaves reflexed but not limbate, ovate-oblong entire, more or less acuminate; insertion red; cells small rhomboidal; costa long-excurrent, denticulate above, finally red. Tufts low and dense. Diœcious. Allied to *Bryum Kunzei*, Hornsch.

British Columbia, Pipestone Pass, 7,400 ft. Alt. 1904.

77. BRYUM NEODAMENSE, ITZIGS.

Ottawa, 1907. New to Canada.

78. BRYUM GLACIALE.

Polygamous or monœcious. Capsule small brown, oblong strangulate; neck short; lid conic mamillate; teeth yellowish; cilia appendiculate; spores about 0, 01 m.m.; pedicel 1 c.m. long. Leaves small and generally flat (rarely recurved) at borders, crowded and not decurrent, ovate or ovate-oblong acute, entire and not distinctly limbate; insertion red; cells

short, somewhat wide; costa of stem-leaves long-excurrent but of shoot-leaves mostly short-excurrent. Tufts dense, green above, 2-3 c.m. high. Stem radiculose, neither julaceous nor gemmiform. Allied to *B. cæspiticium*, L.

British Columbia, Skagit Summit, about 6,000 ft. Alt. J. M. Macoun, 1905.

79. BRYUM INTERMEDIUM (LUDW.) BRID. SUBSP. OVATIFOLIUM.

Capsule not curved; cilia long-appendiculate; spores 0, 025 m.m. Leaves generally ovate or ovate-oblong, those of the shoots decurrent; costa of lower leaves not excurrent.

British Columbia, Pipestone Creek, 6,500 f. a. s., 1904.

80. BRYUM NANO-CÆSPITICIUM.

Synœcious. Stem very short with gemmiform shoots. Leaves subovate acute, neither decurrent nor recurved, narrowly limbate, red at base; costa short-excurrent. Capsule brownish; teeth yellow with red base; cilia appendiculate; spores about 0, 01 m.m.; pedicel 3 c.m. long.

Yukon district, Hunker Creek, 1902.

81. BRYUM BRACHYNEURON, KINDB.

British Columbia, Ucluelet, 1909. New to Canada.

82. BRYUM DREPANOCARPUM, PHILIB.

Scarcely distinct from *B. meeseoides*. New to Canada.

British Columbia, Ucluelet, 1909.

83. BRYUM CAMPTOCARPUM, CARDOT ET THERIOT.

Differs from *B. meeseoides* in monœcious inflorescence.

Newfoundland. A. C. Waghorne.

ADDENDUM.

84. ANACOLIA BAUERI (HAMPE), PARIS.

(Philonotis leiophylla, Kindb., in Canadian Musci).

(Bartramia Menziesii Turn.; Sullivants Icones), found only in California, differs principally in the not-excurrent costa of the leaves. All specimens, related to it in Catal. of Canad. Musci, are belonging to *A. Baueri*.

85. CAMPTOTHECIUM MEGAPTILUM SULLIV.

Vancouver Island, 1908. New to Canada.

86. ISOTHECIUM HOWEI, KINDB.

Vancouver Island, 1908. New to Canada.

87. OLIGOTRICHUM HERCYNICUM (EHRH.) LAM.

British Columbia, 1908: Brinkman.

88. BRACHYTHECIUM VELUTINUM, BR. EUR. SUBSP. CURVIRAMEUM.

Leaves smaller, sometimes recurved below; cells generally wider, lanceolate, the alar well-distinct; costa longer, ceasing in the acumen. Perichetial leaves faintly denticulate. Branches subjulaceous, often curved. Capsule smaller than in the common form.

Quebec, 1905.

89. BRACHYTHECIUM (SECT. RUTABULA) LAXIRETE.

Leaves ovate-lanceolate acuminate, not plicate, long-decurrent, not or only at the base recurved, nearly appressed when dry; alar cells quadrate numerous, not large; other cells lanceolate; costa mostly short, rarely percurrent. Stem-leaves short-acuminate, nearly entire; branch-leaves long-acuminate with subulate or filiform point, nearly entire below, serrate above. Tufts not glossy. Stem irregularly divided. Monœcious. Capsule unknown.

Differs from *B. rutabulum* in smaller, nearly appressed leaves, those of the branches longer-acuminate, wider leaf-cells, etc. Approved by Dr. Brotherus.

British Columbia: Brinkman, 1908.

90. BRACHYTHECIUM PAPILLIPES.

Monœcious. Capsule small, cilia appendiculate; annulus not seen; pedicel minutely papillose nearly in its whole length, 2 c.m. long. Leaves somewhat large, ovate-lanceolate acuminate, often with long filiform point, long-decurrent, not auricled, recurved below at one side, not plicate, entire below, slightly denticulate above; alar cells rectangular, not large, other cells linear; costa vanishing below the acumen, generally reaching to $\frac{2}{3}$.

B. mirabundum differs: Leaves longer, longer-acuminate, short-decurrent, distinctly denticulate at the acumen; alar cells not well-defined; costa vanishing in acumen.

British Columbia, 1908; Mr. A. Brinkman

91. HYPNUM (DREPANOCLADUS) JAMESII-MACOUNII.

("Hypnum conflatum subenerve" Kindb. in letter to Prof. J. Macoun).

Leaves small ovate-oblong, more or less abruptly tapering to a subfiliform, often curved point, entire and decurrent, neither striate nor recurved; insertion pale; alar cells large hyaline

and well-defined; other cells narrow, very small; costa thin, mostly indistinct, sometimes ceasing below or near the middle.

Diœcious. Stem irregularly divided, not creeping; paraphyllia none. Capsules unknown.

Differs from the resembling *H. Kneiffii* in small leaf-cells and indistinct or short and faint costa. Now approved by Mr. Renauld.

Alaska, St. Paul's Island. J. M. Macoun, 1892, No. 113; Ottawa, 28th September, 1907, No. 268. New to Canada.

92. ORTHOTRICHUM AFFINE, SCHRAD., SUBSP. SUBRIVALE.

Capsule and pedicel exserted. Leaves short-acuminate acute (not subulate).

Quebec, 1905, No. 69.

93. BARTRAMIA CIRCINNULATA, C. M. ET KINDB.

Capsule long-pedicellate, as in *B. pomiformis*.

Vancouver Island, 1908.

94. BRYUM HYDROPHILUM, KINDB.

Leaves of fruiting stem narrowly recurved in the lower part. Cilia of the endostome appendiculate. Spores small, about 0.01 m.m. Diœcious. Allied to *B. ventricosum*.

Vancouver Island, fruiting, 1908.

95. EURHYNCHIUM RUSCIFORME (WEIS) MILDE, VAR. OBTUSUM.

Leaves generally obtuse, often arrounded at the apex. Capsules not seen.

Vancouver Island, 1908.

96. CALLIERGON TRIFARIUM (WEB. ET MOHR), SUBSP. APICULATUM.

Stem much divided; branches curved; leaves short-apiculate, not arrounded at apex, less strongly appressed. Capsules unknown.

Vancouver Island 1908.

97. ISOTHECIUM MYUROIDES, KINDB.

("Isothecium aplocladum, Mitt.:" Kindb., Eur. and N. Amer. Bryineo)

Leaves shorter than in *I. myosuroides*; cells often oblong.

It is several times found, also 1908, in Vancouver Island.

98. WEISIA WOLFII, LESQ. ET JAMES.

("W. mucronata Br. eur.:" C. Mueller).

Peculiar in the large spores.

British Columbia, Ucluelet, 4th June, 1909, No. 143; Quebec, Hull, September 26th, 1907, No. 214; Ottawa, October 27th, 1900, No. 890.

99. HYPOPTERYGIUM CANADENSE, KINDB.

British Columbia, Ucluelet, 1909.

100. HYPNUM CALLICHROUM, BRID.

Labrador, 1892 and 1894; Rev. A. C. Waghorne. New to Canada.

101. BRYUM HAMICUSPIS, KINDB., HEDWIGIA, 1903.

Agrees with *B. pallescens:* Leaves ovate-lanceolate, long-attenuate, broadly limbate, recurved all around, not decurrent; insertion deep-red. Capsule somewhat narrow, strangulate, not pendent; lid large convex; teeth pale; cilia appendiculate. Tuft dense.

Differs from it: Leaves more distinctly denticulate; costa short-excurrent to a curved, not long point. Capsule brown with a short neck. Spores 0, 01 m.m. Dicœcious.

Ontario, Cape Vincent, Kingston: Prof. Fowler, 1881.

102. BRYUM COLUMBICO-CÆSPITICIUM, KINDB., HEDWIGIA, l.c.

Differs from *B. cæspiticium*: Capsule longer, subcylindric; pedicel often very (5-8 c.m.) long and geniculate. Synœcious. Costa of leaves mostly short-excurrent.

British Columbia, Revelstoke, 1890, Vancouver Island, Comox, 1887, No. 92.

103. DIDYMODON DIECKII, BROTH.

Vancouver Island, 1909.

104. THAMNIUM PSEUDO-NECKEROIDES, KINDB., HEDWIGIA, 1902, p. 219.

(Hypnum alleghaniense, Canad. Musci, No. 102).

It is more allied to *T. Leibergii*, Britton, than to *T. alleghaniense*, Bryol. eur.; but is perhaps only a subspecies. It differs indeed: nearly all leaves ovate-oblong with a subulate acumen. Stem sometimes with paraphyllia; branches after complamte. Dicœcious.

Ottawa, Owen Sound and Cape Breton, British Columbia, Ucluelet, 1909.

Obs. The species, subspecies and varieties, not marked with the name of the author, are already by myself described *as new* in the Journal "Revue Bryologique," the years 1904-1909.

A GANNET NEAR OTTAWA.

A very beautiful specimen of a juvenal of the Gannet, or Solan Goose (*Sula bassana*, Boie.) was shot, October 14th, at Shirley's Bay, seven miles above Britannia by Mr. J. H. Slack, 90 Elm St., Ottawa. When Mr. Slack first saw the bird it was apparently feeding about 300 yards from the shore and while he was endeavoring to decide how best to reach it with a rifle shot the bird rose and flew straight towards him. Fortunately Mr. Slack had a shot-gun with him and with that the bird was killed. It was secured for the Geological Survey Museum and is a valuable addition to the bird collection. The Solan Goose breeds abundantly in the Gulf of St. Lawrence and has been taken a few times on Lake Ontario, but this is the first record of its occurrence near Ottawa.

J. M. M.

CONTRIBUTIONS FROM THE HERBARIUM OF THE GEOLOGICAL SURVEY.

By JAMES M. MACOUN.

PHEGOPTERIS ROBERTIANUM, (Hoffm.) A. Br.

P. Dryopteris var. *Robertianum* (Hoffm.), Macoun Cat. Can. Pl. II.: 270.

On rocks, Hunker Creek, Yukon, No. 78, 293; four miles up Klondike River, Yukon, No. 78, 292. (*John Macoun*).

SPOROBOLUS UNIFLORUS, (Muhl.) Scribn. and Merr.

On rocks at Petawawa Falls, Algonquin Park, Ont., July 23rd, 1900, Herb. No. 21,915. (*John Macoun*). Not before recorded from Canada.

ELEOCHARIS NITIDA, Fernald.

In a swamp at Parker's, nine miles from Quyon, Que. No. 61,199. Only known station. This species and *E. Macounii*, collected by Mr. J. M. Macoun near North Wakefield, Que., are both described in the new edition of Gray's Manual and should be looked for in other localities by Ottawa collectors.

CAREX CEPHALOIDEA, Boott.

The only Canadian locality from which we have recorded this species is London, Ont. Later records are: Galt, Ont., No. 78,035 (*W. Herriot*); Hull, Que., No. 61,146; near Wakefield, Que., No. 78,179, and Tilsonburg, Ont., No. 33,732. (*John Macoun*).

SALIX TENERA, Anders.

This species was described from specimens collected by Lyall at 7,000 feet altitude on the International boundary in 1860 and was not collected in Canada again until found by the writer in 1905, probably on the same mountain on which Lyall first saw it. Second summit west of Skagit River, altitude 6,500 feet. No. 73,674.

ABRONIA UMBELLATA, Lane.

The record made for this species on page 148 of THE OTTAWA NATURALIST should have been credited to Mr. James Fraser instead of Mr. George Fraser.

RANUNCULUS LOBBII, A. Gray.

Abundant in Lost Lake near Victoria, Vancouver Island, Herb. No. 77,371, May 11th, 1908, in fine fruit. (*John Macoun*). Not before recorded north of Oregon.

CAKILE EDENTULA, (Bigel.) Hook.

C. Americana, Nutt.: Macoun, Cat. Can. Pl. I: 58.

Abundant at Long Beach, 20 miles north of Ucleulet, west coast of Vancouver Island, B.C., August 7th, 1909. Herb. No. 78,288. (*John Macoun*). Not recorded in Canada west of Lake Superior nor on the Pacific Coast north of California.

ALTHÆA OFFICINALIS, L.

Brother Victorin of Longueuil College reports this species to be very common in pastures at Oka, Que. We have no other record of its occurrence in Canada.

BARTONIA VIRGINICA, (L.) B S P.

The only specimens we have of this beautiful species were collected by Dr. Chas. A. Hamilton in pastures on both sides of the Feauxbourg Road just south of Mahone Bay, N.S. Dr. Hamilton reports it as growing quite plentifully over 30 or 40 acres of pasture. The soil was thin and peaty but not swampy. The plants associated with it were *Pteris aquilina*, *Myrica asplenfolia*, *Gaultheria procumbens*, etc. Herb. No. 78,291.

AMSINCKIA LYCOPSOIDES, Lehm.

Douglas, B.C. No. 76,744. (*Wm. Spreadborough*). Common in suitable localities on Vancouver Island but not before recorded from mainland of British Columbia.

COLEOSANTHUS OBLONGIFOLIUS, (Nutt.)

Brickellia oblongifolia, Macoun, Cat. Can. Pl. I: 207.

This plant, which is hardly distinguishable from *C. linifolius*, was collected by Lyall "on mountain slopes along the southern boundary of British Columbia" but not again until it was found by the writer in the Skagit Valley, B.C., in 1908. Herb. No.

76,863, probably near where Lyall found it, as he travelled along the same trail.

ANTENNARIA NEODIOICA, Greene var. GASPENSIS, Fernald. Ottawa Naturalist XIX: p. 156.

When this plant was described by Mr. Fernald it was known from the Bay of Chaleurs and the upper part of the Gulf of St. Lawrence. Specimens collected by Prof. Macoun at Jupiter River, Anticosti, August 20th, 1883, No. 70,448, have recently been determined as this variety by Mr. Fernald.

BIRDS OBSERVED AT COBOCONK, ONT.

BY J. A. MUNRO, TORONTO.

May 22nd, 23rd and 24th of 1909 were spent by the writer in the vicinity of Coboconk, Victoria County, and the following notes were made on the birds of the district:—

Observations were confined to a tract of about 400 acres, the greater part of which is covered with original forest, maple, elm, butternut, birch and a few hemlock, spruce and balsam. The second growth is chiefly oak, black ash, ironwood, birch and poplar. Between the wooded portion of the farm and the lake there are 60 acres of cleared ground, on which the stumps of the old pine forest, cut 40 years ago, are still standing. Some of these fire blackened stubs are ten to fifteen feet high and afford excellent nesting places for Robins, Bluebirds and Bronzed Grackles. Within the last few years a number of the stumps have been removed and piled at the edge of the clearing. The deep cavities between the roots were used as nesting sites by Robins and Song Sparrows.

Spotted Sandpiper—Two seen.

Ruffed Grouse—Slightly on the increase; one nest containing ten eggs was found within 500 yards of the farm house.

Sparrow Hawk—One seen.

Arctic Three-toed Woodpecker—One seen.

Red-headed Woodpecker—One seen.

Northern Flicker—Common; one pair nesting in a hemlock stub.

Whip-poor-will—Common.

Nighthawk—Common.

Kingbird—Common; they frequently build on top of the pine stumps near the water.

Crested Flycatcher—Common.

Phœbe—Common.

Olive-sided Flycatcher—Two seen, one of which was collected.
Wood Peewee—Two seen.
Least Flycatcher—Very common.
Blue Jay—Common.
American Crow—Five seen.
Cowbird—Common.
Meadowlark—Common.
Bronzed Grackle—Very common; two nests each containing five eggs were found. The first was a bulky nest, made of roots, weed stalks, cedar bark and dry grass, lined with fine roots and wiry grass. The bottom was reinforced with clay. It was placed in a depression at the top of a fifteen foot pine stub. The second nest consisted of a few pieces of dry grass and twigs, lining the bottom of a deserted woodpecker's hole, twelve feet from the ground in a pine stub.
American Crossbill—One pair seen.
American Goldfinch—Common.
Vesper Sparrow—Common.
White-throated Sparrow—Common.
Chipping Sparrow—Common; one empty nest found.
Slate-colored Junco—Six seen; one nest containing 3 eggs was found.
Song Sparrow—Common; one nest, built between the roots of an overturned pine stump and containing four eggs. One nest, five feet from the ground in a birch and containing 4 eggs.
Rose-breasted Grosbeak—Common.
Cliff Swallow—Common.
Barn Swallow—Common.
Tree Swallow—Common; in this locality they invariably select for nesting sites the cavities in the many stumps which stand in the water close to shore.
Cedar Waxwing—Common.
Red-eyed Vireo—Common.
Black and White Warbler—Three seen.
Black-throated Blue Warbler—Five seen.
Myrtle Warbler—Four seen.
Magnolia Warbler—Common.
Chestnut-sided Warbler—Very common.
Blackburnian Warbler—Two seen.
Black-throated Green Warbler—One seen.
American Redstart—Two seen.
Catbird—Common.
Brown Thrasher—Common; one nest containing 4 eggs was found.

House Wren—Common; a pair were nesting in a cavity in the top rail of a snake fence.
Chickadee—Common.
Wilson's Thrush—Common.
Olive-backed Thrush—One seen.
Hermit Thrush—Common.
American Robin—Seven nests were found within the radius of 400 yards: one in a small spruce, one in a white pine, two on the tops of pine stumps and three between the roots of upturned pine stumps.
Bluebird—Common; one nest containing 6 eggs, in a woodpecker's hole, 20 feet from the ground in a hemlock stub.

FLETCHER MEMORIAL FUND.

The Committee in charge of this Fund recently met in the Carnegie Library, and a further circular was drafted to be sent to members of the Club and friends of the late Dr. Fletcher who had subscribed to the Fund but had not remitted to the Secretary-Treasurer, (Mr. Arthur Gibson, Central Experimental Farm) the amount of their subscription. Another circular was also prepared, to be mailed to those who had received the first circular, but who had not responded. Both of these circulars were sent out in December, and the Committee are so far much gratified at the results. There still, however, are many members of the Club, whom the Committee feel sure desire to contribute, and these and others who have not as yet sent in their subscription to the Secretary-Treasurer, are requested to attend to this matter as soon as possible, in order that the Committee may make final arrangements for the work in connection with the Memorial, which, as our readers are aware, is to take the form of a drinking fountain at the Central Experimental Farm.

SOIREES.

The first lecture of the winter series was held on Tuesday, November the 9th, 1909, the lecturer of the evening being our esteemed member, Mr. W. E. Saunders of London, Ont. "Home Birds and Wanderers" was the subject chosen by the speaker, and it proved a most interesting one to the large audience which filled the Assembly Hall of the Normal School. Mr. Saunders spoke in a delightfully interesting manner, and illustrated many of his remarks with the calls and songs of the birds he loved and described. Preserved specimens of many of the birds referred to were exhibited.

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