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THE OTTAWA NATURALIST.

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OTTAWA, JUNE, 1898.

No. 3.

THE CRYPTOGAMIC FLORA OF OTTAWA.

BY PROF. JOHN MACOUN, M.A., F.L.S., F.R.S.C.

Continued from the May Number.

299. *Physcia stellaris*, (L.)

Very common on trunks and dead or living branches. On black ash trees in a swamp in Stewart's Bush, April 12th, 1895; on dead and living trees at Rockcliffe Park, Beechwood, Ottawa East, Dow's Swamp and Skead's Farm, Richmond Road, and common at Britannia; common on trees in woods at Leamy's Lake; on balsam trees at Stittsville; on trunks and rails, King's Mountain, Chelsea, Que., May 22nd, 1897.

Var. *aiPOLIA*, Nyl.

Same range as the species. On the bark of trees at Ottawa, 1884; on a black ash trunk in a swamp west of Beechwood Cemetery; on beech and maple trees in woods one mile south-east of Billing's Bridge; on trees in woods, Leamy's Lake; on tamarack and other trees at Stittsville, May 14th, 1897.

300. *Physcia astroidea*, (Fr.) Nyl.

On old rails and trunks. On old rails near Hintonburg, April 18th, 1896; abundant on the upper part of a fallen hemlock near McKay's Lake, Beechwood, Sept. 29th, 1896; also on old rails at Aylmer, Que.

301. *Physcia hispida*, (Schreb.) Tuckerm.

On trees, but generally on boulders with us. On black ash trees in a swamp in Stewart's Bush along the C.A.R., April 12th, 1895; on boulders in a pasture along Brigham's Creek, near Leamy's Lake, May 7th, 1897.

302. *Physcia obscura*, (Ehrh.) Nyl.

Trunks, dead wood and rocks. On the bark of white cedar in Stewart's Bush, April 12th, 1895; on granite boulders, Rockcliffe Park; on trees and limestone and granite boulders at Britannia; common on trees and rocks at Hull and Aylmer, Que.; on trunks in Dow's Swamp; and on stones in Ottawa East; on old fence boards at Billing's Bridge; on trunks and boulders between Brigham's Creek and Leamy's

Lake, Hull, Que.; on old boards at Stittsville; on rocks, trunks and old rails, King's Mountain, Chelsea, Que., May 22nd, 1897.

303. *Physcia setosa*, (Ach.) Nyl.

On rocks, and upon mosses, and trunks. On trunks along the Beaver Meadow, west of Hull, Que., April 26th, 1891; on trunks "Pine Hill," Rockcliffe Park; on black ash trunks, Cowley's Farm, west of Hintonburg; on black ash trunks amongst moss in woods north of Beechwood Cemetery; on beech trees in woods one mile south-east of Billings' Bridge, on various trees in woods at Leamy's Lake; on trees in a swamp at Stittsville, May 14th, 1897.

304. *Physcia adglutinata*, (Flörk.) Nyl.

On trees and shrubs. On beech trunks at Beechwood Cemetery, April 23rd, 1892.

IX. PYXINE, Fr.

305. *Pyxine soredata*, Fr.

On trunks in woods. On black ash in Stewart's Bush, April 12th, 1895; on beech trunks, "Pine Hill," Rockcliffe Park; in woods north of Beechwood Cemetery; on ash, balsam fir and other trees in woods west of Beaver Meadow, Hull, Que.; on trees at Britannia; on trunks in woods at Leamy's Lake, May 7th, 1897.

X. UMBILICARIA, Hoffm.

306. *Umbilicaria Muhlenbergia*, (Ach.) Tuckerm.

On perpendicular rocks near the summit of King's Mountain, west of Chelsea, Que., Sept., 1884; also May 22nd, 1897.

307. *Umbilicaria vellea*, (L.) Nyl.

On the face of a perpendicular rock near the summit of King's Mountain west of Chelsea. May 22nd, 1897.

308. *Umbilicaria Dillenii*, Tuckerm.

On the faces of perpendicular rocks near the summit of King's Mountain west of Chelsea, May 22nd, 1897.

XI. STICTA, (Schreb.) Fr.

309. *Sticta amplissima*, (Scop.) Mass.

On large trunks in old woods, not rare. Common in Rockcliffe Park and McKay's woods, April 16th, 1891; in Dow's Swamp; on rear of Skead's Farm, Richmond road; also on trees at Carleton Place; on trees in the swamp west of Hull Station; on basswood trunks in woods near Hull Cemetery; on trunks King's Mountain and near Chelsea, May 22nd, 1897.

310. *Sticta pulmonaria*, (L.) Ach.

On large old trees in thick woods, common. Common in Rockcliffe Park and McKay's woods and woods north of Beechwood Cemetery, April 20th, 1891; on trees at Carleton Place; on trees in a swamp at Stittsville; on trunks King's Mountain and near Chelsea, May 22nd, 1897; on trees in a swamp west of Hull Station.

XII. *NEPHROMA*, Ach.311. *Nephroma Helveticum*, Ach.

On rocks at King's Mountain, west of Chelsea, Sep., 1884; also on rocks below the summit, May 22nd, 1897.

312. *Nephroma lævigatum*, Ach.

On large boulders in old woods. In woods north of the Aylmer road and west of Hull, Que., April 27th, 1895; in McKay's woods and in Beechwood Cemetery; on rocks near the summit of King's Mountain, May 22nd, 1897.

313. *Nephroma parile*, Nyl.

On rocks at King's Mere, west of Chelsea, Que., Sept. 3rd, 1884.

XIII. *PELTIGERA*, (Willd.) Fee.314. *Peltigera venosa*, (L.) Hoffm.

On earth along the broken bank of the Lievre River at Buckingham, Que., May 14th, 1896.

315. *Peltigera apthosa*, (L.) Hoffm.

On rocks, logs and earth and among mosses in swampy woods. On earth and old logs in wet woods east of the Beaver Meadow, west of Hull, Que., April 26th, 1891; on damp rocks by the Lievre River, Buckingham, Que.; on dead logs at Carleton Place; on old logs in a swamp at Stittsville, May 14th, 1897.

316. *Peltigera horizontalis*, (L.) Hoffm.

On moist rocks amongst mosses. In woods near the lake at the head of the Beaver Meadow west of Hull, Que., May 16th, 1896.

317. *Peltigera rufescens*, (Neck.) Hoffm.

On earth, rocks, the bases of trees and amongst moss. On rocks in Rockcliffe Park, Beechwood Cemetery, and Ottawa East on a boulder; on rocks rear of Cowley's Farm west of Hintonburg; on old logs Dow's Swamp; on earth at Britannia; common on earth and rocks south of the Aylmer road, Hull, Que.; on earth in a swamp at Stittsville; on rocks near summit of King's Mountain, May 22nd 1897.

318. *Peltigera canina*, (L.) Hoffm.

On earth, rocks and the bases of trees in cool woods. On earth in pine woods Rockcliffe Park; on earth Ottawa East; on earth and rocks in woods west of the Beaver Meadow, Hull, Que.; on old logs in woods Carleton Place; on the earth at the base of trees in woods, Leamy's Lake; on earth in a swamp at Stittsville; very common on earth, old wood and rocks, King's Mountain, May 22nd, 1897.

XIV. *SOLORINA*, Ach.319. *Solorina saccata*, (L.) Ach.

On calcareous earth in the damp crevices of the limestone ledges facing the Ottawa below Governor's Bay, Rockcliffe Park, April 17th, 1895.

XV. *PANNARIA*, Delis.320. *Pannaria lanuginosa*, (Ach.) Kœrb.

On limestone ledges along the cliffs of Rockcliffe Park, April 17th 1895; on overhanging rocks along the Beaver Meadow west of Hull, Que.; also along the Ottawa River on limestone cliffs near Tetreauville, Little Chaudiere; on limestone rocks Ottawa East; also near the Experimental Farm; very common on the faces of damp rocks King's Mountain, May 22nd, 1897.

321. *Pannaria leucosticta*, Tuckerm.

On trunks and rocks, rare. On bark of, balsam poplar in woods south of the Aylmer road, west of Hull, Que., April 27th 1895; on boulders Rockcliffe Park; and on stones West End Park; on beech trunks in woods one mile south east of Billings Bridge; on beech trunks north of Beechwood Cemetery; on rocks King's Mountain, May 22nd, 1897.

322. *Pannaria microphylla*, (Schm) Delis.

Forming a thick crust on rocks. On boulders in woods north of Aylmer Road, west of Hull, Que., April 27th, 1895; on boulders, "Pine Hill," Rockcliffe Park and in Beechwood Cemetery; quite common on damp boulders, King's Mountain, May 22nd, 1897.

323. *Pannaria lepidiota*, Fr.

On earth and amongst moss on rocks. On moss on a stone in woods, south of Aylmer Road, west of Hull, Que., April 27th, 1895.

324. *Pannaria nigra*, (Huds.) Nyl.

On limestone rocks by the cliffs along the Ottawa, Rockcliffe Park, April 16th, 1891; on limestone rocks in a field by the Beaver Meadow

Creek, west of Hull, Que.; on limestone rocks at Leamy's Lake; on limestone rocks between Aylmer and King's Mountain, May 22nd, 1897.

XVI. COLLEMA, Hoffm.

325. *Collema myriococcum*, Ach.

Growing on moss, on limestone rocks by the Ottawa, below Governor's Bay, Rockcliffe Park, April 16th, 1891.

326. *Collema pulposum*, (Bernh.) Nyl.

On earth on limestone rocks "Pine Hill," Rockcliffe Park, April 16th, 1896

327. *Collema crispum*, Borr.

On calcareous earth in the cutting for the Aylmer Railway west of Hull, Que., April 27th, 1895; on earth in crevices of rocks at King's Mountain near Chelsea, Que., May 22nd, 1897.

328. *Collema limosum*, Ach.

On calcareous earth in the cutting for the Aylmer Railway west of Hull, Que.; very rare. April 27th, 1895.

329. *Collema fuculosa*, Nyl.

On limestone rocks below Governor's Bay, Rockcliffe Park, April 17th, 1895; on naked limestone rocks in woods south of the Aylmer Electric Railway, west of Hull, Que.; very rare, May 16th, 1895.

330. *Collema tenax*, (Ach.) Tuckerm.

On calcareous earth on wet rocks in the cutting for the Aylmer Electric Railway west of Hull, Que., April 27th, 1895; on calcareous earth along the limestone ledges at Rockcliffe Park, April 12th, 1896.

XVII. LEPTOGIUM, Fr.

331. *Leptogium tenuissimum*, (Dicks.) Koerb.

On sandy earth, on old fence rails along the Richmond Road west of Hintonburg, April 18th, 1896.

332. *Leptogium lacerum*, (Ach.)

On limestone rocks amongst moss in the cutting for the Aylmer Electric Railway, west of Hull, Que., April 27th, 1895; on limestone rocks by the Ottawa below Governor's Bay, Rockcliffe Park; on damp rocks, King's Mountain, May 22nd, 1897.

333. *Leptogium pulchellum*, (Ach.) Nyl.

On trees in woods, Rockcliffe Park, Sep. 16th, 1889, very rare

334. *Leptogium Tremelloides* (L.) Fr.

On rocks and trunks ; common. On boulders and trees north of the Aylmer Road, west of Hull, Que., April 27th, 1895 ; on trees in Dow's Swamp ; on boulders in Beechwood Cemetery ; in McKay's woods, and on "Pine Hill," Rockcliffe Park ; on old logs and rocks King's Mountain, May 22nd, 1897.

335. *Leptogium chloromelum*, (Sw.) Nyl.

On old rails near Aylmer and on damp rocks near the summit of King's Mountain, west of Chelsea, May 22nd 1897.

336. *Leptogium respulinum*, Ach.

On limestone rocks near the Ottawa below Governor's Bay, Rockcliffe Park, April 16th, 1891.

XVIII. PLACODIUM (DC.)

337. *Placodium elegans*, (Link.) DC.

On a large boulder in woods, Governor's Bay, Rockcliffe Park, April 16th, 1895.

338. *Placodium aurantiacum*, (Lightf.)

On trees and rocks ; also on dead wood. On a granite boulder in woods, Governor's Bay, Rockcliffe Park, April 17th, 1895 ; on limestone rocks at Britannia ; on boulders in woods west of Hull and on boulders at Leamy's Lake, Oct. 9th, 1896.

339. *Placodium cerinum*, (Hedw.)

Common on trees, on dead wood and mosses. On maple and poplar bark Stewart's bush near the C. A. R. track, April 12th, 1895 ; on dead trees and living ash bark at Britannia ; on poplar bark south of the Aylmer Electric Road, west of Hull, Que. ; on black ash Ottawa East ; on trunks in woods at Leamy's Lake ; on poplar trees in a swamp at Stittsville ; on old rails and trunks King's Mountain, May 22nd, 1897.

340. *Placodium vitellinum*, (Ehrh.)

On dead wood and rocks. On old pine rails at Britannia, April 20th, 1895 ; on cedar rails Ottawa East ; on boulders in pasture by Brigham's Creek - on old rails and logs, King's Mountain, May 22nd, 1897.

341. *Placodium vitellinum*, (Ehrh.) var. *aurellum*, Ach.

On granite boulders in woods, Governor's Bay, Rockcliffe Park, April 17th, 1895 ; on boulders in woods north of the Aylmer road west of Hull, Que. ; on boulders Ottawa East ; on boulders in pastures by Brigham's Creek, May 7th, 1897.

XIX. LECANORA, Ach.

342. *Lecanora muralis*, (Schreb.) var. *saxicola*. Schaer.

Very common on both granite and limestone boulders, Governor's Bay, Rockcliffe Park, April 17th, 1895; quite common on boulders south of the Aylmer road and west of Brigham's Creek, Hull, Que.; on rocks between Chelsea and King's Mountain, May 22nd, 1897.

343. *Lecanora pallida*, (Schreb.) Schaer.

On young pine trees Carleton Place, May 7th, 1892; on a pine trunk Rockcliffe Park; on trunks in woods west of Hull station, also in woods near Leamy's Lake; on trunks in a swamp at Stittsville; on rails and trunks, King's Mountain, May 22nd, 1897.

344. *Lecanora pallida*, (Schreb.) var. *cancriformis*, Tuck.

On living pine trees in woods near the C. P. R. bridge over the Ottawa, west of Hull, April 27th, 1895; on beech trees, Rockcliffe Park.

345. *Lecanora subfusca*, (L.) var. *allophana*, Ach.

On living pine trees in woods near the C. P. R. bridge, over the Ottawa, Hull, Que., April 27th, 1895; on old cedar rails in McKay's woods and Ottawa East; on maple and beech trunks Rockcliffe Park and Beechwood; on maple trunks one mile south east of Billings Bridge; on basswood bark in Dow's Swamp; on trees in a swamp west of Hull station and on boulders in a field by the Aylmer Road; on trunks in woods by Leamy's Lake and on boulders by Brigham's Creek; on trunks in a swamp at Stittsville; on trunks, common, King's Mountain, May 22nd, 1897.

346. *Lecanora subfusca*, (Schreb.) var. *coilocarpa*, Ach.

On beech bark in woods, Rockcliffe Park, April 15th, 1891; on beech bark in woods one mile south east of Billings Bridge; on trunks on King's Mountain, May 22nd, 1897.

347. *Lecanora subfusca* var. *argentata*, Ach.

On small trees at the western base of King's Mountain, west of Chelsea, May 22nd, 1897.

348. *Lecanora Hageni*, Ach.

On old rails near McKay's Lake, April 23rd, 1891; on cedar bark on fences, Ottawa East; on old cedar rails along the Richmond Road above Hintonburg, April 18th, 1896.

349. *Lecanora atra*, (Huds.) Ach.

On young beech trees at Buckingham, Que., May 14th, 1896; on limestone shingle at Britannia, April 20th, 1895.

350. *Lecanora badia*, (Pers.) Ach.

On limestone rocks in woods, north of the Aylmer Road, west of Hull, Que., April 27th, 1895.

351. *Lecanora varia*, (Ehrh.) Nyl.

On bark of trees old boards and fence rails. On pine bark in woods near the C. P. R. bridge west of Hull, Que., April 27th, 1895.

352. *Lecanora varia*, var. *symmicta*, Ach.

On trees and fences; not rare. On bark of living pine trees in woods west of the Beaver Meadow, Hull, Que., April 27th, 1895.

353. *Lecanora varia*, var. *sæpincola*, Fr.

On the board fence in the cutting for the Aylmer Electric Railway, west of Hull, Que., April 27th, 1895; on old fences at Stittsville; on old fences between Aylmer and King's Mountain, May 22nd, 1897.

354. *Lecanora pallescens*, (L.) Schaer.

On birch trees near Ottawa 1884; on trunks at the base of King's Mountain, May 22nd, 1897.

355. *Lecanora privigna*, var. *pruinosa*, Auct.

On limestone rocks, in woods, south of the Aylmer Road, west of Hull, April 27th, 1895; on boulders along the road and in fields, Rockcliffe Park; on limestone boulders in a pasture by Brigham's Creek; abundant on rocks, King's Mountain, May 22nd, 1897.

XX. RINODINA, Mass.

356. *Rinodina Ascociscana*, Tuck.

On beech trees in McKay's woods near the Lake, April 24th 1891; on beech trees in woods one mile south-east of Billings Bridge, April 19th, 1897.

357. *Rinodina sopherodes*, (Ach.) Nyl.

On bark of young red maples in Stewart's bush south of the C. A. R. track April 12th, 1895; very common on bark of young and old red maple trees along the lake at Britannia; on beech trees in woods one mile south-east of Billings Bridge, April 19th, 1897.

358. *Rinodina constans*, Nyl.

On beech trees in Beechwood Cemetery, April 20th, 1891.

XXI. PERTUSARIA, DC.

359. *Pertusaria multipunctata*, (Turn.) Nyl.

On old trees in Rockcliffe Park and Beechwood Cemetery, April 27th, 1892; on butternut trees along the Aylmer Road west of Hull; on trunks of the same near the entrance to Hull Roman Catholic Cemetery; on old cedar rails between Aylmer and King's Mountain, May 22nd 1897.

ENTOMOLOGY.
NOTES FOR APRIL IN VANCOUVER ISLAND.

By REV. GEO. W. TAYLOR, F.R.S.C.

The past month, April, has been exceptionally mild and the season so far as many of the insects are concerned, is fully three weeks in advance of last year.

As early as the 22nd of March, in the course of an afternoon walk, I was able to collect no fewer than 40 species of Coleoptera. These were mostly found under bark and perhaps the best capture was *Elaphrus Clairvillei* of which rare beetle I took 3 specimens. Thus far I seem to have been giving most attention to Coleoptera though collecting in all orders. Consequently I have more to report in the beetle line than in any other.

Among notable captures during April I may mention as occurring under bark the rare Carab *Psydrus piceus* together with *Clinidium calcaratum* and *Peltis Pippingskoeldi*, both very common. *Adelocera profusa*, *Hylastes cavernosus*, *Gnathotrichlus retusus*, *Dendroctonus rufipennis*? *Rhizophagus sculpturatus*, the strange looking *Phellopsis porcata* and the curiously flat *Pediacus subglaber*. Under dead crows (these are the only kind of crows a farmer in these parts cares to see) were found, the very abundant and always in season *Necrophilus hydrophiloides*, *Silpha Lapponica*, two species of *Choleva*, *Hister fœdatus*, *Saprinus lugens*, and two or three *Histeridæ* not yet determined; also of course *Creophilus villosus* and many smaller *Staphylinidæ*. An inspection of the fences brought to light *Hylesinus sericeus* (common), numerous specimens of *Haltica*, *Malachius auritus*, *Ellychnia Californica*, *Trogosita virescens*, an unknown *Lasconotus*, *Platycerus Oregonensis*, *Clerus sphægeus* and *abruptus*, *Hylotrupes ligneus* (very common) and an interesting little beetle, *Listrus Motschulskii* which I took last year, for the first time, on the same fences. Under logs I found two *Ditylus gracilis* and *Ipthimus serratus* and very many *Carabidæ*. Hiding in crevices *Plectrura spinicauda* and two kinds of *Helops*, *pernitens* and *latus*. On the wing in the bright sunshine I have taken many

specimens of the beautiful *Cucujus puniceus* and the equally brilliant *Eros simplicipes* and *E. latus*, *Odonteus obesus*, *Synalpheta Quexii*. This last named insect attacks the willow and some years ago I took more than twenty specimens from a heap of dead willow branches in my yard.

On flowers there have not yet been many beetles, the only captures perhaps worth noting being *Anthaxia œneogaster*, *Lathrinæum pictum* and *Grynocharis pilosula*. Assisting me to rid my fruit trees of Aphides are 11 species of Lady birds and their efforts are seconded I think by *Podabrus pruinosus*. This insect is very common on the affected trees and I believe its errand is a friendly one. Lastly in my pantry, in stale bread left there as a bait, I have found many beetles, *Omosita discoidea*, *Colastus truncatus*, a *Cryptophagid* for which Professor Wickham cannot give me a name and numerous small fry which have not yet been determined.

By the way there is one other beetle I must mention as it is both rare and curious, *Nosodendron Californicum*, I found this for the first time on May 13th last year, when I took about twenty in an old wound on the trunk of a balsam fir (*Abies grandis*). This year I have taken other specimens in the same place, the earliest date being April 26th, but I cannot find a single specimen elsewhere.

Among the Lepidoptera I have not been doing much. The hibernated Graptas with *V. Antiopa* and *Milbertii* put in an appearance before the end of March. By the beginning of April the early Blues, *Thecla Siva*, *T. melinus* and *T. iroides*, *Anthocaris ausonides* and *A. stella* and *Pieris venosa* were all abundant. A single specimen of *Papilio Eurymedon* was observed on April 24 a month before its proper time of appearance. The larvæ of *Limenitis Lorquinii* left their hibernacula on the apple trees and spiræas before a leaf was out, but managed to satisfy their hunger by nibbling the buds. The larva of *Anthocaris* (I am not sure which species) was also to be found at the end of the month feeding on *Arabis perfoliata*.

Of moths I have hardly made any notes this season, but I remember seeing *Hemaris rubens* (which is a very common insect with us, the larvæ feeding on *Symphoricarpos*) in the last week of March. Towards the end of April I cut some pupæ of *Sesia tipuliformis* from my currant bushes and on the last day of the month I bred a fine specimen of *Telca Polyphemus* from one of three larvæ taken on willow last September.

Among the *Hymenoptera* our enemy *Gynnonychus appendiculatus* appeared on April 1st and all through the month has been busy oripositing on the currant and gooseberry bushes. Two other saw flies, *Strongylogaster distans* and *Dolerus sericeus* have also been abundant; but I think they do not meddle with our cultivated plants. Wasps and bees have been in hundreds and in thousands at the gooseberry blossoms (both wild and cultivated kinds) but as yet I know not their names. Of ants I have collected nearly 20 kinds but these too are as yet undetermined. I have also found under bark some other curious apterous Hymenoptera which I intend to send to Mr. Harrington in my next box.

In other orders I have not taken many species. The smaller of our two kinds of Cicada appeared on April 13th, very much in advance of its usual season. Our earliest and smallest grasshopper (*Tettix granulatus* I believe) has been swarming since the beginning of the month and I have also taken a few specimens of another orthopterous insect, to wit the curious little cricket *Myrmecophila Oregonensis* described and figured by Bruner in Can. Ent. XVI. p. 41-43. These I found under bark of fir logs apparently associating with a honey-coloured species of ant.

But I must stop this lengthy enumeration, having said enough I am sure to show my Ottawa brothers of the Ottawa Field Naturalists' Club that April has not been an unprofitable month for us Entomologically in Vancouver Island and to make you, Mr. Editor, wish that you could have a little of our British Columbia early spring in exchange for some of your prolonged, but healthy and pleasant Ottawa winter.

Gabriola Island, Nanaimo, B.C.,

May 18, 1898.

EXCURSION No. 1 TO CHELSEA.

The first General Excursion of the year was held on May 28th to Gilmour's grove at Chelsea. This beautiful spot overlooking the rapids of the Gatineau, never loses its charms for our members. Here all, whatever their tastes, can be satisfied, the wild grand scenery, the cool woods and rocks rich with specimens of all kinds, and the facility of reaching the locality, all tend to make this an ideal spot for a naturalist's hunting ground.

About 175 Members of the Club and their friends left Ottawa by the 1.30. train. The weather was proclaimed on all sides to be simply perfection and the afternoon passed all too quickly. Mr. Shutt, the always reliable, Chairman of the Excursion Committee had made the arrangements so well that everything went off with the smoothness of clock-work, except perhaps that he had not arranged to have the sun put back an hour to give the Excursionists more time to enjoy themselves. Specimens of many kinds were collected by eager hands, plants, insects, shells, minerals, etc. The lovers of birds were peering into every tree and bush with eyes no less sharp than those of the birds they were observing.

The Botanists brought in many specimens for the leaders to name and explain the characters of—*Cypripedium acaule* was found in some numbers, the beautiful flowers calling the attention of the most unobservant. One enthusiastic botanist was seen ruthlessly picking off the flowers from a clump of plants "to prevent thoughtless people digging up the roots which they cant grow and cleaning out the locality" he said.

The small but striking flowers of *Corydalis glauca* and Canada Columbine were found on the rocks, as well as the vines of *Epigea repens*. *Viburnum lantanoides* was one of the most beautiful flowering shrubs observed, but most of the bushes were past flowering.

Viola Cucullata was in great beauty and a few fungi were collected. The most interesting being a very large specimen of

the Morell, *Morchella esculenta*, of the remarkable size of 10 inches from the bottom to the apex, found by Mr. Conrad Ostrom.

Insects were abundant and the leaders' hearts were, made happy by taking no less than 5 specimens of the rare and beautiful longicorn *Anthophylax Malachiticus*. Mr. C. H. Young was the lucky captor of a beautiful specimen of *Amblyscirtes Samoset* a pretty little Skipper butterfly only twice before taken here.

The President, Prof. Prince, called the meeting to order at the end of the afternoon and two excellent addresses were listened to, the first from Prof. Bailey F.R.S.C. of Fredericton, N. B. and a Member for many years of the Club, who spoke on the Geology of the locality and another by Prof. Macoun who spoke of some of the more interesting plants collected. He alluded to some very interesting investigations which had been made by Mr. James Macoun on the violets of the locality and pointed out that undoubtedly 4 or 5 distinct species had been confounded under the name *V. Cucullata*.

The whistle of the train at 7.30 warned the excursionists that their pleasant afternoon in the woods had come to an end and all returned to Ottawa happy, satisfied and very tired.

SUB-EXCURSIONS.

No. 4.—To Dow's Swamp. May 7. The day was clear, bright and hot. The President, Prof. Macoun, Miss Marion Whyte and Mr. Attwood led the party. The Spring had advanced considerably since the last sub-excursion on the previous Saturday, Trilliums, Uvularias and Claytonias were in perfection. The President and Prof. Macoun struck out into the swamp to visit the small lake (the true Dow's Lake) *Caltha palustris* was conspicuous with its golden cups and rich green leaves. *Salix candida* too, with its striking crimson anthers, was much admired. Prof. Prince caught among other interesting denizens of the lake, the Mud Minnow. The majority of the party remained with Miss Whyte on the higher ground which

skirts the swamp and worked their way towards Billings Bridge. The Sugar maples were now just at the fullest glory of their golden splendour. How strange it is that, often as the maple is written of and depicted, little is said of the extremely beautiful flowers which hang in copious silken tassels from the tip of every twig, their yellow flowers and anthers hanging on the slender thread-like pallid pedicels contrasting with the delicate green of the expanding foliage and making up for their small size by the profusion in which they are produced. Passing on towards Billings Bridge the only Ottawa locality for *Claytonia Virginica* was visited. Close by fine specimens of *Viola Cucullata* in varying forms were collected. Before the close of the Excursion Mr. Frank T. Shutt joined the party and added to the interest of the outing. The wild Plum was one of the conspicuous ornaments of the open woods.

No. 5.—To New Edinburgh, May 14th. A rather dull morning with a sharp shower was followed by an exquisite afternoon and a most pleasant outing was enjoyed in the woods between Rideau Hall, Hemlock Lake and Beechwood. The party was led by Dr. Fletcher, Miss Whyte and Mr. Halkett. The rocky hill by the Governor General's bay produced many interesting specimens—*Hepatica triloba* with pink, blue and white flowers attracted the attention of all. *Corydalis aurea* and *Pedicularis Canadensis* were first recorded to-day for this season. *Aquilegia Canadensis* was found in quantities. This pretty plant sometimes called inaccurately "Honeysuckle" seems to have given its namers some trouble, its Latin name, *Aquilegia*, is derived from *Aquila*, an eagle while its English name, Columbine, comes from *Columba*, a dove. Several birds attracted attention, among these the beautiful Brown Thrasher and its relative the Catbird, both close kinsmen of the true Mocking bird and themselves mockers of no mean attainments. The Purple Finch poured forth his delightful song with special fervour in honour of his visitors. In the cedar woods near Crichton Lodge the naturalists had a good opportunity of examining closely a fine American Hare which

surprised and surrounded in his lair, remained in view for a minute or two before he scampered off. No plants of special rarity were collected but the woods were full of beautiful flowers. *Orchis spectabilis* was found in bud, *Viola Canadensis*, and *V. pubescens* were in great profusion and beauty. The Sugar Maples and Beeches still bore many flowers and other plants were noted in bloom for the first time this season.—J. F.

RESURRECTION PLANTS.

Our attention has been called to the above subject by the Hon. R. B. Dickey, who has very kindly furnished the editor with notes on these plants, as well as with the interesting extract given below from a letter written by Mr. H. E. Milner, of London, England.

Certain members of the vegetable kingdom are possessed of such remarkable tenacity of life that their vital spark seems well nigh unquenchable. For such the most unfavourable and adverse conditions, such as being submitted to long periods of drought, or even being broken into small pieces, are not sufficient to kill entirely, though they may arrest life and growth and even cause an appearance of death. With the return of favourable conditions, as the presence of moisture and warmth, these plants spring forth again into renewed life and growth. Plants with this great vitality are apt to become troublesome enemies of the agriculturist. It is only necessary to mention such succulent plants as the Live-for-Ever (*Sedum Telephium*) and the common Purslane (*Portulaca oleracea*), the latter of which will continue to expand flowers and ripen seeds for weeks, when pulled up and hung on a nail against a brick wall in the full blaze of an August and September sun. Those plants which have an extensive system of underground stems, like the Field Convolvulus (*Convolvulus arvensis*), the so-called Canada Thistle (*Cnicus arvensis*), and Couch grass (*Agropyrum repens*), are thereby enabled to withstand much aggression from the farmer

Plants with fleshy compact stems, like Cacti, Euphorbiæ, etc., or with bulbous roots such as many of the *Liliaceæ* are able to remain a long time in a dormant condition. This is particularly the case with the Onions, the difficulty of drying which, as botanical specimens, unless the bulbs are scalded at the time of pressing, collectors of plants know well. Some of the plants which possess this marvellous recuperative power are known as Resurrection plants, though the name might imply that these plants die and come to life again, which is not actually the case. In the animal world this condition would be called "suspended animation." This extraordinary ability of apparently coming to life again, or of re-vegetating, is possessed by members of many widely divergent genera of plants; most of which grow naturally in deserts or in arid districts, and it is easy to understand how this exceptional power must assist in the perpetuation of the species when the plants are subjected to severe, and in the case of ordinary plants, fatal conditions of environment. It is not our purpose, however, to discuss now this interesting phase of physiological botany, but to bring before our readers brief accounts of the three species most frequently spoken of under the title of Resurrection plants.

SELAGINELLA LEPIDOPHYLLA.



This is a cryptogamous plant allied to the Lycopodiums or Club-mosses. It is a vivid green, rosulate, branching plant, covering a space on the ground of from five to eight inches in

diameter. When dry it rolls up into a dull grayish ball, but upon the return of moisture expands again into a beautiful green flat rosette, The Hon. Senator Dickey writes as follows of a specimen which was brought to him by a friend from Mexico :

“The habitat of this strange plant is in the crevices of mountain rocks, to which it clings as a dry nest-like ball of twigs, in the dry season. In the rainy season the stems uncurl and the plant flourishes as a beautiful rosette of brilliant green. On the return of the dry season, it again curls up to be brought back again to life the next year with the return of the rainy season. The peculiarity of this plant is that you can witness the phenomenon of its opening and shutting as often as you please, when the plant is, so to speak, in confinement. I had the opportunity of testing this repeatedly last summer after my friend had brought it in his trunk from Mexico, and before I sent it on another 3,000 miles to my son-in-law in London, who has had the same experience. As a dry roll of brittle tangled fibres, it can be sent for thousands of miles rolled up in a piece of brown paper, and a few hours after being placed in a saucer filled with water, will gradually present an appearance of the greatest beauty.”

The following extract is from a letter received by Mr. Dickey from his son-in-law, Mr. H. E. Milner :

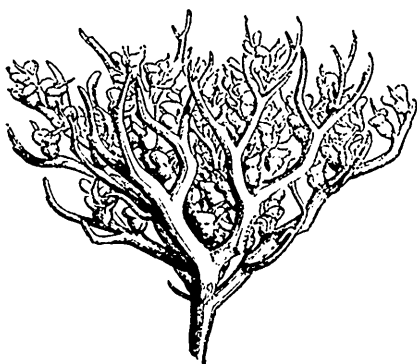
“The name of your Resurrection plant is *Selaginella convoluta*, a species which occurs from Mexico right through tropical America. There are several Resurrection plants ; a Japanese one is a *Selaginella* nearly allied to the species you sent over. The plant usually called Resurrection plant and connected with the Holy Land is a small Crucifer, *Anastatica Hierochuntina*, but opinion, in which Mr. Nicholson, the Curator of Kew shares, now is that the true thing is a Composite. The plant appears on the arms of some of the old crusader families and certainly the plant there figured is not the Crucifer, but the Composite.”

Another opinion with regard to the Resurrection plant of heraldry, referred to above, is that it is a species of *Mysembryanthemum*.

The interesting *Selaginella* spoken of by Mr. Dickey is apparently not the same species as that usually sold in shops in

Europe and America, under the name of Resurrection plant; but is closely allied with it and has almost the same range. The form most usually seen in curiosity shops is *S. lepidophylla*, which extends from Texas to Peru and of which an excellent figure is given herewith, copied from the American supplement of the Encyclopedia Britannica. These plants, like the mosses, nearly all of which—as pointed out by John Ruskin—may be called Everlasting plants and will regain their green colour and former beauty upon being moistened, even when they have been quite dead for years.

ROSE OF JERICHO—(*Anastatica Hierochuntina*.)



Probably the plant most widely known under the name of Resurrection plant—the generic name of which, indeed, is derived from the Greek word *Anastasis*, resurrection—is a small annual Crucifer belonging to the Cress family, which grows wild in Syria. It is a curious little plant, with thick stems, fleshy leaves and small white flowers. The leaves fall from the plant after flowering, and the many branches and branchlets thickly beset with short seed-pods then become dry and woody and rising upward, bend inward at their points. In this condition the dry plant becomes separated from the ground, and like the “Tumbling-weed” of our western plains, is driven long distances across the desert by the winds. It is stated in Nicholson’s Dictionary of Gardening that this is supposed by some commentators to be

the "rolling thing before the whirlwind" mentioned by Isaiah. This plant does not resume vitality or even the appearance of it as in the case of the Club moss mentioned above; but upon the application of moisture, first the hard woody branches, and then the copious, 2 to 4-seeded pods open up and the seeds are discharged. The plant can be easily grown from seed even after the stems have been kept dry for a great many years. The living plant, however, is of no beauty, and but for its associations, is of little interest. It is frequently to be seen exposed for sale in curiosity shops both in Europe and in this country.

The figure given herewith is from a photograph taken by Mr. Shutt of a plate in Nicholson's Dictionary of Gardening.

LEWISIA REDIVIVA.

By far the most beautiful of the plants, which from their power of resuming active growth after being for a long time dry and to all appearances dead which have been called Resurrection Plants and received specific names indicating their recuperative power, is the charming member of the *Portulaca* family named above, of which specimens were found by Capt. M. Lewis who accompanied Capt. Clark, in his celebrated journey to the Rocky Mountains at the end of the last century. Specimens were brought back by these travellers and sent home to Europe as dried botanical specimens; when, however, these were unpacked many months afterwards the roots were found to have thrown out healthy leaves. Some of the roots were planted and were the first plants of *Lewisia rediviva* ever cultivated in Europe.

There are only two species in the genus *Lewisia*, one extending from California to the interior of British Columbia, with leaves terete and succulent, growing in tufts, from the apex of the tapering fleshy rootstock. These die down before the flowers appear (in June at Ashcroft B. C.) and then the large and beautiful flowers, four or five from each root are produced. These are somewhat like those of a cactus, opening out from three to four inches in diameter, pink at the outside and shading towards the centre where they are almost white. The scapes

are from 1 to 2 inches high and each bears besides the one large flower, 3 bracts just below it on the stem.

The calyx is conspicuous and adds much to the beauty of the flower being waved at the margins and of a rich brownish-red. The stamens are indefinite in number, about 36. The pistil is compound, seven-cleft.

This interesting plant is very abundant in some parts of the interior of British Columbia. I have found it in the Okanagan valley and the Hon. Senator Cornwall sent me some years ago roots from Ashcroft, and at the same time described the great beauty of the flowers as they lay close to the sandy ground in every direction around his house.

The root of *Lewisia* is eaten by the Indians and has various designations among different tribes. It is the "Bitter Root" of some writers, "Spætlum" of others.

Many years ago Dr. Kellog, of the California Academy of Sciences showed me specimens found by him in California which had instead of grass-like terete leaves much shorter spatulate leaves from a quarter to $\frac{3}{8}$ inch in diameter. This I presume is the other species mentioned by authors. J. FLETCHER

ORNITHOLOGY.

(Edited by W. T. MACOUN.)

BIRD NOTES FOR APRIL AND MAY.

- April 1. American Herring Gull—*Larus argentatus* *Smithsonianus*. Mr. W. A. D. Lees. On 2nd, Mr. G. R. White.
- " 3. American Merganser, Goosander—*Merganser Americanus* Mr. White.
- " 3. Pigeon Hawk—*Falco columbarius*—Mr. C. H. Young.
- " 9. Tree Swallow—*Tachycineta bicolor*. Mr. Young.
Other records are four days later.
- " 10. Horned-crowned Kinglet—*Regulus calendula*. Mr. White.
- " 10. Horned Grebe—*Colymbus auritus*. Mr. White.
- " 12. Chipping Sparrow—*Spizella socialis*. Dr. Fletcher.

- April 14 Vesper Sparrow—*Pooecetes gramineus*. Miss G. Harmer and Mr. Lees. A flock was seen at the Experimental Farm on the 19th.
- “ 14. Belted Kingfisher—*Ceryle Alcyon*. Mr. White.
- “ 15. Downy Woodpecker—*Dryobates pubescens*. Mr. Lees.
- “ 16. Flicker—*Colaptes auratus*. Mr. Young.
- “ 16. Savannah Sparrow—*Ammodramus sandvicensis savanna*. Dr. Fletcher and Mr. Lees.
- “ 16. Great Blue Heron—*Ardea Herodias*. Mr. White.
- “ 17. Ivory Gull—*Gavia alba*. Mr. Young.
- “ 17. Rusty Blackbird—*Scolecophagus carolinus*. Mr. White.
- “ 20. Yellow-bellied Woodpecker—*Sphyrapicus varius*. Mr. White.
- “ 21. Fox Sparrow—*Passerella iliaca*. Mr. Young.
- “ 21. Purple Martin—*Progne subis*. Mr. Young.
- “ 23. Loon—*Urinator imber*, Mr. White.
- “ 23. American Osprey—*Panhalia etus carolinensis*. Mr. Young.
- “ 23. Pied-billed Grebe—*Podilymbus podiceps*. Mr. White.
- “ 27. White-throated Sparrow—*Zonotrichia albicollis*. Mr. White. On 29th, Miss Harmer.
- “ 28. Barn Swallow—*Chelidon erythrogaster*. Mr. White.
- “ 30. American Bittern—*Botaurus lentiginosus*. Mr. White.
- “ 30. Hermit Thrush—*Turdus aonalaschkei Palasii*. Mr. White.
- “ 30. Wood Thrush—*Turdus mustelinus*. Prof. J. Macoun.
- May 1. Swamp Sparrow—*Melospiza georgiana*. Mr. Lees.
- “ 1. Crested Flycatcher—*Myiarchus crinitus*. Mr. Lees.
- “ 1. Cliff Swallow—*Petrochelidon lunifrons*. Mr. Lees.
- “ 1. Bank Swallow—*Clivicola riparia*. Mr. Lees. On 3rd, Mr. White.
- “ 3. Chimney Swift—*Chaetura pelagica*. Miss Harmer and Mr. White.
- “ 5. Spotted Sandpiper—*Actitis macularia*. Mr. White.
- “ 5. Yellow Warbler—*Dendroica aestiva*. Mr. Kingston.
- “ 6. Least Flycatcher—*Empidonax minimus*. Mr. Lees.
- “ 7. Myrtle Warbler—*Dendroica coronata*. Mr. White.
- “ 8. American Goldfinch—*Spinus tristis*. Mr. Lees. On 22nd, in full breeding plumage, Mr. White.
- “ 8. Red-shoulder Hawk—*Buteo lineatus*. Mr. Kingston.
- “ 8. Golden-crowned Kinglet—*Regulus satrapa*. Mr. Kingston.

- “ 10. Baltimore Oriole—*Icterus galbula*. Mr. Lees. On 12th, Mr. Kingston.
- “ 10. Catbird—*Galeoscoptes carolinensis* Mr. White. On 12th, Miss Harmer.
- “ 10. Kingbird—*Tyrannus Tyrannus*. Mr. Kingston. On 12th, Mr. White.
- “ 10. House Wren—*Troglodytes aedon*. Mr. Lees. On 12th, Mr. White.
- “ 10. Black and White Warbler—*Mniotilta varia* Mr. White.
- “ 10. Nashville Warbler—*Helminthophila ruficapilla*. Mr. White.
- “ 10. Magnolia Warbler—*Dendroica maculosa*. Mr. White.
- “ 10. White-crowned Sparrow—*Zonotrichia leucophrys*. Mr. W. T. Macoun. On 12th, Mr. Lees.
- “ 10. Warbling Vireo—*Vireo gilvus*. Mr. Lees.
- “ 11. Bobolink—*Dolichonyx oryzivorus*. Mr. Macoun.
- “ 11. Wilson's Snipe—*Gullinago delicata*. Mr. White.
- “ 11. Greater Yellow-legs—*Totanus melanoleucus*. Mr. White.
- “ 12. Brown Thrasher—*Harporhynchus rufus*. Seven were seen by Mr. Macoun at the Experimental Farm, four were in one tree at the same time.
- “ 12. Killdeer—*Egialitis vocifera*. Mr. White.
- “ 12. American Pipit—*Anthus pennsylvanicus*. Mr. White. On 15th, Mr. Kingston.
- “ 14. Hairy Woodpecker—*Dryobates villosus*. Miss Harmer
- “ 14. Blue Jay—*Cyanocitta cristata*.—Mr. Lees.
- “ 14. Solitary Sandpiper—*Totanus solitarius*.—Mr. White.
- “ 14. American Redstart—*Setophaga ruticilla*.—Miss Harmer. On 15th, Mr. Kingston and W. T. Macoun.
- “ 14. Chestnut-sided Warbler—*Dendroica pennsylvanica*.—Miss Harmer.
- “ 14. Black-throated Green Warbler—*Dendroica virens*.—Miss Harmer.
- “ 15. Wilson's Thrush—*Turdus fuscescens*.—Miss Harmer.
- “ 15. Red-eyed Vireo—*Vireo olivaceus*.—Mr. Lees.
- “ 15. Rose-breasted Grosbeak—*Habia ludoviciana*.—Mr. Kingston and Mr. Macoun.
- “ 15. Maryland Yellow-throat—*Geothlypis trichas*.—Mr. Macoun.
- “ 15. Ruby-throated Humming-bird—*Trochilus colubris*. Mr. Lees.

- " 15. Night Hawk—*Chordeiles virginianus*—Mr. Kingston.
On 19th Prof. Macoun.
- " 18. Whip - Poor - Will—*Antrostomus vociferus*—Miss Harmer.
- " 18. Blackburnian Warbler—*D. ndroica Blackburnia*—Mr. White.
- " 18. Tennessee Warbler—*Helminthophila peregrina*—Mr. White.
- " 18. Black-poll Warbler—*Dendroica striata*—Mr. White.
- " 18. Orange-crowned Warbler—*Helminthophila celata*—Mr. White.
- " 18. Black-throated Blue Warbler—*Dendroica caerulescens*—Mr. White.
- " 19. Scarlet Tanager—*Piranga erythromelas*—Mr. Kingston. On 28th Miss Harmer.
- " 19. Oven-bird—*Seiurus aurocapillus*—Mr. Kingston.
- " 19. Red-headed Woodpecker—*Melanerpes erythrocephalus*—Mr. Lees.
- " 21. Loggerhead Shrike—*Lanius Ludovicianus*—Mr. Kingston.
- " 23. Black-billed Cuckoo—*Coccyzus erythrophthalmus*—Mr. White.
- " 24. Cedar Wax-wing—*Empidonax cedrorum*—Mr. Kingston.
- " 24. Wood Pewee—*Contopus virens*—Mr. Kingston.
- " 24. Olive-backed Thrush—*Turdus ustulatus Swainsonii*.—Mr. White.
- " 26. Yellow-billed Cuckoo—*Coccyzus Americanus*—Miss Harmer.
- " 26. Wilson's Warbler—*Sylvania pusilla*.—Mr. White.
- " 26. Bay-breasted Warbler—*Dendroica castanea*—Mr. White.
- " 27. Traill's Flycatcher—*Empidonax pusillus Traillii*—Mr. White. On 28th, Mr. Lees.
- " 28. Blue-headed Vireo—*Vireo solitarius*—Miss Harmer, at Chelsea.
- " 29. Indigo Bunting—*Passerina cyanea*—Miss Harmer.

BIRDS' NESTS.

Mr. White sent in the following notes.

Crows started to build April 16th. The American Robin started to build April 16th. Young birds were able to fly on May the 24th, and on 28th, two eggs of the second brood were

laid. Bronzed Grackle started to build on April 14th and young were about to leave the nest on May the 20th. Song Sparrow started to build April 15th. Bank Swallow commenced to dig holes on May 8th. Catbird started to build on May 18th. House Wren started to build on May 15th.

On May 12th a Prairie Horned Lark's nest was found at the Experimental Farm containing four eggs. The nest was beside a large dandelion on the lawn in the arboretum. Miss Harmer found a nest of the same bird with young on the 11th. A Chickadee's nest was found by Miss Harmer on the 14th of May in a hollow stump, three feet high and four feet in diameter, the entrance to the nest was from the top of the stump the hole apparently being made by the birds, the nest was about 9 inches from the top.

A Purple Finch's nest was found by Dr. Fletcher near his house at the Experimental Farm on the 21st of May. The nest was in a white spruce tree, about 9 feet from the ground.

On the 28 of May, Miss Harmer found a Blue-headed Vireo's nest at Chelsea. It was only partly built and was composed of finely shredded birch bark, and down, probably brought from some willows near by. The nest was suspended from a horizontal branch of a young maple.

The following notes of arrivals of birds at London, Ontario were kindly furnished by Mr. W. E. Saunders. Flickers, March 17th, Belted Kingfishers, 18th, Cowbird, 19th, Red-shouldered Hawk, 20th, Vesper Sparrow, Phoebe, 27th, Fox-coloured Sparrow, April 3rd, Rusty Grackle, 5th, Chewink, 11th, Savannah Sparrow, 12th, Chipping, 14th, Tree Swallow, 14th, Yellow-bellied Wood-pecker, 16th, Dove, 17th, White-throated Sparrow April 23rd, Ruby-crowned Kinglet April 24th, Louisiana Water-Thrush, Hermit Thrush, Field Sparrow, Brown Thrasher, Barn Swallow, April 27th, Myrtle Warbler, Bobolink, Purple Martin, Chimney Swift, April 28th, Black-throated Green Warbler, Spotted Sandpiper, Warbling Vireo, Baltimore Oriole, May 1st, Least Flycatcher, Catbird, Water Thrush, Yellow warbler, Rose-breasted Grosbeak, Whip-poor-will, Maryland Yellow-throat, Ovenbird, Nashville warbler, Black and White Warbler, House Wren, May 2nd. W. T. M,

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