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# THE OTTAWA NATURALIST.

VOL. XI. OTTAWA, FEBRUARY, 1898.

No. 11.

## THE CRYPTOGAMIC FLORA OF OTTAWA.

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

Continued from December No.

163. **R. pseudo-serrulatum**, Kindb.

Leaves ovate or ovate-oblong, minutely denticulate, striate and chlorophyllose, not or indistinctly decurrent; cells lanceolate, the lower shorter and more dilated; costa thin, vanishing above the middle. Stem leaves, short-acuminate or filiform-pointed; branch-leaves with short subulate sometimes twisted point. Capsule arcuate; lid apiculate; pedicel rough very long. Stem subpinnate or irregularly divided. Tufts dark green, faintly glossy, radiculose at the base. Monœcious. Habit of *R. serrulatum*.

On earth and small stones in McKay's Woods near the lake, Oct. 12th, 1889,

164. **R. serrulatum**, (Hedw.)

On earth in McKay's Woods, Sept. 6th, 1889.

165. **R. rusciforme**, (Weis.) Schimp.

Abundant on stones in the brook that discharges Kingsmere four miles west of Chelsea, Que., Sept. 9th. 1889.

Var. **inundatum**, Kindb.

On rocks in the brook which discharges Kingsmere four miles west of Chelsea, Que., Sept. 9th, 1889; on rocks in a brook discharging into Meeche's Lake, north of Chelsea, Que., Sept. 23rd. 1893.

### LVI. THAMNIUM, Schimp.

166. **T. Alleghaniense** (C. Muell.) Bruch and Schimp.

In crevices of thick bedded limestone rocks near McKay's Lake under ledges along the cliffs Rockliffe Park, April 22nd, 1896.

### LVII. PLAGIOTHECIUM, Schimp.

167. **P. Passaicense**, Aust.

On cedar stumps and trees in Dow's Swamp, Sept. 6th, 1889.

168. *P. turfaceum*, Lindb.

Common on stumps in Dow's Swamp, Oct. 20th, 1885; on stumps at Carleton Place, May 30th, 1884; and on stumps "Pine Hill," Rockliffe Park, April 16th, 1896; on stumps west of Hull, Que., Oct. 24th, 1884.

169. *P. denticulatum*, (L.) Bruch and Schimp.

On the bases of trees at Britannia, Sept. 11th, 1890; in the swamp north of Beechwood Cemetery, Oct. 12th, 1889; on stumps in the Swamp along Bank street, on the Glebe property, April 27th, 1896; on earth Eastman's Springs, Aug. 26th, 1890; on base of trees Carleton Place, Oct. 30th, 1884.

170. *P. sylvaticum*, Bruch and Schimp.

On earth in damp woods borders of Dow's Swamp, Oct. 16th, 1884; also in wet woods at Britannia, Sept. 14th, 1891.

171. *P. Sullivantiae*, Schimp.

On earth on limestone ledges along the cliff north side of Rockliffe Park, May 7th, 1896; on earth at the roots of trees Meeche's Lake, north of Chelsea, Que., Sept. 23rd, 1893.

172. *P. membranosum*, Kindb.

Tufts dense, green and glossy. Leaves distichous, crowded and patent, flat, ovate-oblong, acute or short-acuminate, estriate, entire or denticulate above the middle, decurrent; cells very long and narrow, the alar large hyaline and subquadrate; costa none or obsolete. Capsule cylindrical-obovate, horizontally curved; teeth yellow; pedicel smooth, 2 cm. long. Lid unknown. Probably dioecious.

On dead wood in Dow's Swamp, Oct. 17th, 1884.

173. *P. brevipungens*, Kindb.

Tufts dense, dark green. Stems prostrate, irregularly pinnate; branches attenuate. Leaves crowded, scarcely decurrent, ovate-oblong, acute or short-pointed, auricled, not plicate nor reflexed on the borders, entire or slightly denticulate at the apex; upper cells long and narrow, the alar very distinct, quadrate, inflate and hyaline; costa very short, thick and simple or none. Capsule curved; lid short, conical; pedicel smooth. Monoecious.

On stones in McKay's Woods opposite the entrance to Beechwood Cemetery, May 21st, 1885.

174. *P. attenuatirameum*, Kindb.

Tufts green, faintly shining, loose, with few rhizoids. Primary stem very short; branches elongate, long-attenuate, finally flagelliform. Leaves sub-distichous, the lower broadly ovate, obtuse or obtusate,

entire, long-decurrent, concave, recurved at the borders from the base to the middle, at least at the one side ; cells chlorophyllose, somewhat dilated, the lowest very much wider and shorter, nearly uniform ; costa generally short and double, rarely simple and reaching to the middle ; the other leaves gradually smaller, narrower and more acute or acuminate. Barren.

On rocks in Gilmour's Park, Chelsea, Que., Sept. 6th, 1889.

#### LVIII. AMBLYSTEGIUM, Schimp.

##### 175. *A. Sprucei*, Bruch. and Schimp.

On old cedar stumps in Dow's Swamp, Oct. 16th, 1884.

##### 176. *A. subtile*, Bruch. and Schimp.

On the bases of large trunks in McKay's Woods, Oct. 10th, 1889 ; on the borders of Dow's Swamp, Oct. 16th, 1884 ; in Beechwood Cemetery, April 28th, 1896 ; also at Hog's Back, May, 1897.

##### 177. *A. confervoides*, Bruch. and Schimp.

On flat limestone rocks in woods north of the Experimental Farm ; along the Ottawa, west of Hull ; and in McKay's Woods near the Lake, Sept. 9th, 1889 ; also on the cliffs and flat rocks, Rockcliffe Park, April 16th, 1896.

##### 178. *A. Yuratzskæ*, Schimp.

On dead wood, stones and bases of trees, McKay's Woods, Oct. 12th, 1889 ; on earth at Dow's Swamp, Oct. 16th, 1884 ; on stones in Beechwood Cemetery, May 21st 1885.

##### 179. *A. serpens*, Bruch. and Schimp.

On earth in woods and at the roots of trees ; common ; on roots of trees, Rockcliffe Park, May 7th, 1896 ; at the base of trees, Hog's Back, May, 1897.

##### 180. *A. porphyhizum*, (Lindb.) Schimp.

On stones in McKay's Woods, Aug. 26th, 1889 ; also in woods at Carleton Place, Sept. 25th, 1889.

##### 181. *A. varium*, (Hedw.) Lindb.

On stones in damp parts of McKay's Woods and Beechwood Cemetery, Oct. 12th, 1889 ; on stones at Leamy's Lake, Hull, Que., 1896.

##### 182. *A. fluviatile*, Bruch. and Schimp.

On stones in the brook that discharges Kingsmere, four miles west of Chelsea, Que., Sept. 9th, 1889 ; on rocks in a brook at Meeche's Lake, north of Chelsea, Que., Sept. 23rd, 1893.

183. **A. curvipes**, Guemb.

In pools in Dow's Swamp, Oct. 16th, 1884.

184. **A. adnatum**, (Hedw.) Lesq. and James.

On flat stones in McKay's Woods, May 16th, 1885; and in woods west of Hull, Que.; on "Pine Hill," Rockcliffe Park, April, 16th, 1896.

185. **A. compactum**, (C. Muell.) Bruch. and Schimp.

On decayed wood in a swamp at Carleton Place, May 30th, 1884.

186. **A. riparium**, Bruch. and Schimp.

On sticks and roots in pools in woods near St. Patrick's Bridge; also in the swamp north of Beechwood Cemetery, Oct. 12th, 1884.

## LIX. HYPNUM, Linn.

187. **H. hispidulum**, Brid.

On the bases of trees around Ottawa; on earth at Carleton Place, 30 miles from Ottawa, Sept. 25th, 1889; bases of trees, Gilmour Park, Chelsea, Que., Sept. 9th, 1889.

188. **H. chysophyllum**, Brid.

On earth and roots of trees at Ottawa, Aug. 26th, 1889; common at Carleton Place, May 30th, 1884; on the cliff facing the Ottawa River, Rockcliffe Park, April 22nd, 1896.

189. **H. Sommerfeltii**, Myrin.

On earth at the bases of trees at Ottawa, Aug. 26th, 1889; on old logs near Leamy's Lake, Hull, Que., Nov. 9th, 1896.

190. **H. unicostatum**, C. M. and Kindb.

Differs from *Hypnum chysophyllum* in the dense tufts, the stem more irregularly branching, creeping, the leaves shorter-acuminate, the alar cells smaller, not yellow, the costa more distinct, the capsule smaller, the perichetial leaves gradually acuminate-subulate or filiform-pointed with acumen arcuate.

On earth in the Mer Bleue, close to the sulphur spring, near Eastman's Springs, Oct. 4th, 1890

191. **H. Kneiffii**, (Bruch. and Schimp.)

Bogs and swamps. In swamps north of Beechwood Cemetery, Oct. 22th, 1889; also in Dow's Swamp; in a bog at Britannia, six miles west of Ottawa, Sept. 14th, 1891; in a swamp near Hog's Back, 1897.

Var. **laxum**, Kindb.

In Dow's Swamp, Oct. 12th, 1884.

Var. **rectifolium**, Kindb.

On damp rocks in McKay's Woods, Aug. 26th, 1889.

Var. **platyphyllum**, Kindb.

Leaves very broad and short-acuminate.

On damp rocks in woods east of the end of the Electric Road, Rockcliffe Park, Aug. 26th, 1889.

192. **H. Sendtneri**, Schimp.

In water in Dow's Swamp; in a bog at Britannia, six miles west of Ottawa, Sept. 14th, 1891.

193. **H. fluitans**, Linn.

In a swamp along the Beaver Meadow west of Hull, Que., Oct. 16th, 1891; in boggy places north of Beechwood Cemetery and McKay's Lake, Sept. 25th, 1889.

194. **H. uncinatum**, C. M. and Kindb.

Quite common in wet woods north of Beechwood Cemetery, Oct. 12th, 1889; in Dow's Swamp and at the Hog's Back, May 22nd, 1897; also in the Mer Bleue, Oct. 4th, 1890.

195. **H. conflatum**, C. M. and Kindb.

Allied to *Hypnum Kneiffii*. Stem slender, subfiliform, distantly pinnate, not radiculose. Leaves small, concave, distant, denticulate all around; stem leaves decurrent, from a broad-ovate base suddenly narrowed into a very short, subulate-filiform, straight point; alar cells very large, hyaline or faintly yellowish, the other nearly uniform, oblong-lanceolate, conflated; costa pale-yellow, vanishing in the acumen; branch leaves narrower, oblong-lanceolate, more or less short-acuminate, curved or straight. Capsule very small, arcuate and contracted below the mouth. Dioecious.

In a swamp near Britannia, six miles west of Ottawa, Sept. 14th, 1891.

196. **H. rugosum**, Linn.

On dry rocks along the exposed cliffs facing the Ottawa River, Rockcliffe Park, April 22nd, 1896.

197. **H. crista-castrensis**, Linn.

On logs and on earth in damp woods around Ottawa. Collected near McKay's Lake, April 28th, 1896; in Dow's Swamp and at Casselman.

198. **H. molluscum**, Hedw.

On old logs in Dow's Swamp, Sept. 9th, 1889; on logs near the Lake in McKay's Woods, April 28th, 1896.

199. *H. reptile*, Michx.

Abundant on trunks of trees in woods around Ottawa. On trunks "Pine Hill," Rockcliffe Park, April 14th, 1896; on old logs in Beechwood Cemetery and along the Aylmer Road, Oct. 12th, 1887.

200. *H. pallescens*, Schimp.

On limestone rocks on an old stone fence along the Aylmer Road, near Tetreauville, west of Hull, Que., Sept. 24th, 1891; on boulders along the road leading east from the end of the Electric Road, Rockcliffe Park, May 7th, 1896.

201. *H. Canadense*, Kindb.

On old logs and stones at Rockcliffe near the end of the Electric Road, Rockcliffe Park, May 7th, 1886; on stones in woods west of Hull, Que., Sept. 11th, 1891; on rocks in Rockcliffe Park, Sept. 25th, 1889.

202. *H. fertile*, Sendt.

On old logs at Casselman, June 11th, 1892.

203. *H. imponens*, Hedw.

Common on rotten logs around Ottawa, at Chelsea and Casselman.

204. *H. arcuatiforme*, Kindb.

Tufts dense, green, not glossy. Stem creeping, subpinnate. Leaves arcuate, ovate-lanceolate, generally short-acuminate or sub-obtusate, entire, decurrent, not striate; alar cells large, well-defined, orange, the other pale and narrow; costa none or short and double. Capsule sub-cylindric, curved, not striate nor furrowed, constricted below the wide mouth; teeth when dry incurved, pale-yellow, hyaline-margined; cilia long, appendiculate; pedicel about 3 cm. long. Probably dioecious. Resembles in habit *Hypnum cupressiforme*. Lid and male flowers not found.

The allied *Hypnum Lindbergii*, Mitt. (*H. arcuatum*, Lindb.) differs at once in the not creeping, irregularly divided stem, the shorter pedicel, the larger capsule, &c.

On earth near the gate of Beechwood Cemetery, Sept. 29th, 1889

205. *H. Renauldii*, Kindb.

Agrees with *Hypnum curvisolium* in the stem being more or less pinnate, the inner basal leaf-cells finally yellow; with *Hypnum Lindbergii* in the leaves being decurrent, alar cells very much dilated, the capsule not plicate in a dry state; differs from both in the entire leaves. *Hypnum pratense* differs in the leaves not being striate nor decurrent, and alar cells not evolute.

On earth near the small lake at the head of the Beaver Meadow, west of Hull. Que., May 14th, 1891.

206. *H. curvifolium*, Hedw.

On old logs in damp or swampy woods around Ottawa.

207. *H. Lindbergii*, Mitt.

On earth on rocks along Leamy's Lake, Hull, Que., Nov. 9th, 1896.

208. *H. Haldanianum*, Grev.

Abundant on rotten logs around Ottawa. In woods at Leamy's Lake, Chelsea, Ironsides and Meeche's Lake, Que.; in woods at the south end of Cowley's Farm, west of Hintonburgh, April 18th, 1896; on logs in Beechwood Cemetery, Oct. 12th, 1889; rotten logs at Caselman, Aug. 20th. 1884.

209. *H. pseudo-drepanium*, C. M. and Kindb.

Tufts loose, green, faintly glossy. Secondary stems very long, flaccid, subpinnae, sparingly radiculose, faintly compressed; paraphyllia none; branchlets very short, curved at the apex. Leaves plicate, entire, from a short broad-ovate base narrowed into a short-incurved, acute acumen, crowded, loosely appressed when dry, not decurrent, not distinctly chlorophyllose; basal cells hyaline, dilated (the inner sometimes yellowish (thick-walled, the alar large sub-rectangular, well-defined, the other longer and narrower; auricles excavate; costa indistinct or short and double. Dioecious. Female plants not found.

On old logs in Dow's Swamp, Sept. 16th, 1889.

210. *H. stramineum*, Dicks.

In the Mer Bleue, near Eastman's Springs.

211. *H. cordifolium*, Hedw.

In wet woods and swamps; in holes in Dow's Swamp; in pools in the swamp north of Beechwood Cemetery, May 12th, 1897; swamp west of Hull, Oct. 16th, 1884.

212. *H. Richardsoni*, (Mitt.) Lesq. and James.

In water along the south end of McKay's Lake, near Beechwood Cemetery, Sept. 26th, 1893.

213. *H. giganteum*, Schimp.

In the spring creek in Dow's Swamp; also in the Beaver Meadow creek, west of Hull, Que., Oct. 3rd, 1893.



214. *H. Schreberi*, Willd.

Abundant on earth in old woods around Ottawa. In shady woods, Rockcliffe Park, April 22nd, 1896.

## LX. HYLOCOMIUM, Schimp.

215. *H. splendens*, (Hedw.) Schimp.

Very abundant in damp woods everywhere around Ottawa. In shady woods along the cliff facing the Ottawa River, Rockcliffe Park, April 22nd, 1896; Casselman, Aug. 20th, 1884.

216. *H. brevirostre*, Schimp.

On damp rocks near High Falls, Lievre River, near Buckingham, Que., May 19th, 1884.

217. *H. triquetrum*, (Linn.) Schimp.

Very common in old cool or damp woods. In shady woods along the cliff facing Ottawa River, Rockcliffe Park, April 22nd, 1896; Casselman, Aug. 20th, 1884.

218. *H. pyreniacum*, (Spruce) Lind.

On rocks by a brook, Meeche's Lake, north of Chelsea, Que., Sept. 23rd, 1893 (*Addendum.*)

219. *Didymodon trachneuron*, Kindb. (Just published)

Leaves short-attenuate, subacute, brittle; costa pale, papillose at back, sometimes excurrent. Tufts low, green. Capsules unknown.

On large boulders in a brook near North Wakefield, Que., Sept. 13th, 1893. (J. M. Macoun)

220. *Grimmia arctophila*, Kindb.

Leaves ovate-oblong, involute above, suberect when moist, appressed when dry, the uppermost not larger, basal cells generally short, the upper short-opaque; hair point not long; capsule sub-oblong, brownish; lid apiculate; annulus indistinct; pedicel straight. Tufts generally cohering, blackish when dry, about 3 cm. high.

On rocks, Paugan Falls, on the Gatineau River, Que., Aug. 24th, 1894.

## HEPATICÆ (LIVERWORTS).

## I. FRULLANIA, Raddi.

221. *F. Eboracensis*, (Gotts.) Lehm.

Very common, especially on beech trees in all the old woods around Ottawa. On bark of various trees, especially beech at Cassel-

man, Eastman's Springs, Carleton Place, Chelsea and near Hull; on beech trunks, Pine Hill, Rockcliffe Park, April 16th, 1896; Beechwood Cemetery on beech trees, Oct. 14th, 1884; on trees at Leamy's Lake, Hull, Que., Sept. 6th, 1889.

## II. LEJEUNEA, Libert.

### 222. *L. calcarea*, Libert.

On the bases of cedar (*Thuja occidentalis*) trees in Dow's Swamp, Sept. 21st, 1889; on cedar bark in woods, Rockcliffe Park, April 22nd, 1896. Very rare.

## III. RADULA, Dumortier.

### 223. *R. complanata*, Dumort.

Very common on rocks and the roots and bases of trees in woods around Ottawa. On rocks and trees in rear of Cowley's Farm, west of Hintonburg, at Chelsea, Kingsmere, Meeche's Lake, and near Hull, Que. on trees at Britannia and Carleton Place; very common in Beechwood Cemetery and McKay's Woods, April 14th, 1896; on rocks along the Ottawa River, Rockcliffe Park, Oct. 16th, 1889.

## IV. PORELLA, Dill.

### 224. *P. platyphylla*, (L.) Lindb.

Very common on the bases of trees by brooks and on ledges of damp limestone rocks around Ottawa. On trees by the brook in rear of Cowley's Farm, west of Hintonburg, April 18th, 1896; also on trees at Leamy's Lake, Hull, and on rocks near Tetreuville, west of Hull, Que., Oct. 12th, 1887; on trees in the swamp, Beechwood Cemetery, Aug. 24th, 1884.

## V. PTILIDIUM, Nees.

### 225. *P. ciliare*, Nees.

Very common on old logs and rocks. On old logs, Beechwood Cemetery, McKay's Woods, and Rockcliffe Park, April 14th, 1896; in woods at Carleton Place, Eastman's Springs and Casselman; Chelsea and Kingsmere, also Leamy's Lake, Hull, Que., Oct. 12th, 1884.

## VI. TRICHOCOLEA, Dumortier.

### 226. *T. tomentella*, (Ehrh.) Dumort.

In moss in a swamp at Meeche's Lake, north of Chelsea, Que., Sept. 23rd, 1893; in moss in Dow's Swamp, May 2nd, 1896.

## VII. PAZZANIA, S. F. Gray.

### 227. *B. trilobata*, S. F. Gray.

On old logs and stumps in swamps and wet woods around Ottawa.

In Dow's Swamp, Oct. 12th, 1884 ; and on old logs, McKay's Woods, April 28th, 1895.

### VIII. LEPIDOZIA, Dumortier.

#### 228. *L. reptans*, Dumort.

On old logs and stumps in cedar and other swamps. In the swamp near the head of the Beaver Meadow, west of Hull, Que., April 18th, 1896 ; in Dow's Swamy, May 2nd, 1896 ; on old logs, Casselman, Aug. 20th, 1884.

### IX. BLEPHAROSTOMA, Dumortier.

#### 229. *B. trichophyllum*, Dumort.

On very rotten logs and stumps in swamps and wet woods ; also earth and stones. On rotten wood in Dow's Swamp, May 2nd, 1896 ; on old logs in Beechwood Cemetery, May 8th, 1895 ; in a swamp at Casselman, June 18th, 1894.

### X. CEPHALOZIA, Dumortier.

#### 230. *C. Virginiana*, Spruce.

On old logs in damp woods. On rotten wood in Beechwood Cemetery, May 9th, 1885.

#### 231. *C. multiflora*, Spruce.

Very common on rotten wood in damp woods and swamps. On rotten wood in Dow's Swamp, May 2nd, 1896 ; also in the swamp on the Glebe property, Bank St., Ottawa, April 27th, 1896 ; on stones and old logs near Experimental Farm, April 16th, 1892 ; on old logs, Beechwood Cemetery, May 9th, 1885 ; on dead wood, Moose Creek, Sept. 5th, 1891 ; also at Eastman's Springs, Sept. 29th, 1892.

#### 232. *C. divaricata*, Dumort.

On dead logs in a swamp north of the Experimental Farm, April 16th, 1892.

#### 233. *C. pleniceps*, (Aust.)

On rotten wood and on stones around Ottawa. Rotten wood in the swamp opposite the entrance to Beechwood Cemetery, Oct. 12th, 1884 ; on stones in the brook by McKay's Lake, Aug. 26th, 1884.

#### 234. *C. bicuspidata*, Dumort.

On rotten wood in Dow's Swamp, May 2nd, 1896 ; rotten wood in the swamp opposite the entrance to Beechwood Cemetery, May 9th, 1885.

235. *C. curvifolia*, (Dicks.) Dumort.

On old logs in the swamp west of the old entrance to Beechwood Cemetery, May 8th, 1885.

## XI. ODONTOSCHISMA, Dumortier.

236. *O. denudata*, (Mart.) Lindb.

On a pine log in Beechwood Cemetery, May 9th, 1895.

## XII. KANTIA, S. F. Gray.

237. *K. Trichomanis*, (L.) S. F. Gray.

On dead wood in swamps and wet woods around Ottawa. Damp woods, Carleton Place, 30 miles west of Ottawa, May 20th, 1884; on dead wood in a swamp north of the Experimental Farm, April 16th, 1892.

## XIII. SCAPANIA, Dumortier.

238. *S. glaucocephala*, (Tayl.) Aust.

On elm and other logs at Ottawa. Along the Beaver Meadow, Hull, Que., Sept. 23rd, 1883; on old logs, Dow's Swamp, Oct. 20th, 1884.

239. *S. curta*, (Mart.)

On logs in Rockcliffe Park, Sept. 24th, 1897; in Dow's Swamp on old logs, Oct. 5th, 1884.

240. *S. nemorosa*, (Linn.) Dumort.

On rotten logs by a brook at Mecche's Lake, north of Chelsea, Que., Sept. 23rd, 1893; on earth on a wet bank by the Rideau River at the Hog's Back, May 14th, 1897.

## XIV. GEOCALYX, Nees.

241. *G. graveolens*, (Schrad.) Nees.

On dead wood and old stumps in the swamp on the Glebe property, Bank St., Ottawa, April 27th, 1896; on earth in a swamp north of the Experimental Farm, April 16th, 1892; on rotten logs in Dow's Swamp, Oct. 16th, 1885; on dead logs near Leamy's Lake, Hull, Que., April 23rd, 1892.

## XV. LOPHOCOLEA, Dumortier.

242. *L. bidentata*, (Linn.) Dumort.

On rotten logs at Eastman's Springs, 12 miles from Ottawa, Sept. 27th, 1892.

243. *L. minor*, Nees.

On limestone rocks and calcareous earth, Rockcliffe Park, April 22nd, 1896; on rocks at Carleton Place, May 30th, 1884; on dead wood in Dow's Swamp, Sept. 4th, 1889; on rocks north of Experimental Farm, April 16th, 1892.

244. *L. Macounii*, Aust.

On rotten wood, in woods west of the Beaver Meadow, Hull, Que., Sept. 23rd, 1883.

245. *L. heterophylla*, (Schrad.)

Quite common on rotten wood in swamps and wet woods at Ottawa. On rotten wood at Hintonburg, April 18th, 1896; on elm logs, Moose Creek, Sept. 6th, 1891; on rocks north of Experimental Farm, April 16th, 1892; on old logs, Beechwood Cemetery, April 23rd, 1892; by Leamy's Lake, Hull, Que., Sept. 29th, 1889.

XVI. *PLAGIOCHILA*, Dumortier.246. *P. porelloides*, (Torrey.) Lindb.

Common on earth and old logs along brooks at Ottawa. On old logs in the swamp near the entrance to Beechwood Cemetery, April 28th, 1896; on logs in Dow's Swamp, 16th Oct., 1889; on damp rocks, Meeche's Lake, Hull, Que., Sept. 24th, 1893.

247. *P. asplenioides*, (Linn.) Dumort.

On earth in wet woods at Ottawa, April 24th, 1885; on the margin of the brook west of Victoria Park, May 9th, 1884; on wet rocks in a brook at Meeche's Lake. Que. Sept. 23rd, 1893.

248. *P. interruptus*, (Nees.) Dumort.

On earth in Dow's Swamp, Sept. 24th, 1889.

XVII. *HARPANTHUS*, Nees.249. *H. scutatus*, (Web. and Mohr.) Nees.

On rotten logs in McKay's Woods, April 28th, 1896; also in woods at Leamy's Lake, Hull, Que., 16th Oct., 1892.

XVIII. *JUNGERMANNIA*, Micheli.250. *J. Schraderi*, Mart.

On dead logs in damp woods and swamps around Ottawa. On old logs in the swamp in rear of Cowley's Farm, west of Hintonburg, April 18th, 1896; Dow's Swamp, 1885; at Carleton Place, 1884; on old logs, Experimental Farm. April 16th, 1891.

## BIRD NOTES FOR DECEMBER.

The following notes were sent in by Mr. W. T. Macoun, Associate Editor in Ornithology :

FOX SPARROW.—On the 4th of December I observed a fox sparrow on the Aylmer Road. This is a very late date for this sparrow.

BRUNNICH'S GUILLEMOT—On Sunday the 12th of December this bird passed up the Ottawa river in large numbers, in fact there were considerably over one thousand. The birds, in flocks of from 20 to 100, were passing Rockliffe from 10 a.m. until 3 p.m. Several were shot. On Monday the 13th inst., one was caught alive in a field between Metcalfe and Osgoode stations, which lived for two days. On examination, the stomach was found empty. All of the birds obtained were in very poor condition.—GEO. R. WHITE.

PINE GROSBEAK—A small flock of Pine Grosbeaks was seen by Mrs. Ridley, of Vittoria street, eating mountain ash berries, on the 21st December. This is the earliest date recorded for this winter.—W. T. MACOUN.

THE WESTERN AMERICAN GOSHAWK, *Accipiter atricapillus*. var. *striatulus* is hardly entitled to sub-specific rank and should only be regarded as a geographical race, as complete *intergrading* occurs, and the adults, unless typical, are inseparable. West of the Cascades the dark form (*striatulus*) is resident, the typical form only occurring in winter; here, at Vernon, B.C., in the Okanagan district, I believe both forms breed, and I have taken very dark plumaged young (in the beginning of August) in the Gold Range district, forty miles to the east. There are, I think, no differences in the markings of the two forms, at all events in the adult; the whole difference lies in the darker plumage of the western form. Typical young of each form look very different, but are not nearly so constant as the young of *Falco columbarius* and *F. columbarius suckleyi*, as to markings. As a rule the adult of the western form has a scarlet, and the eastern, an orange or yellow iris, but this is not to be relied on. However, the two forms are more entitled to separation than the four sub-

species of Ruffed Grouse, or the Great Horned Owls ; typical specimens of all the sub-species of these birds can be taken here, in one district, except perhaps, *B. Virginianus arcticus*.—ALLAN C. BROOKS, Vernon, B.C.

THE AMERICAN GOSHAWK, *Accipiter atricapillus*.—This beautiful hawk is rare at Ottawa although occasionally seen. When seen flying it looks to be almost white. Mr. W. E. Brooks, now of Mount Forest, Ont., but who has done good ornithological work in India and British Columbia, writes under date Dec. 10th, 1897 : " I got a fine female *Accipiter atricapillus* last week which measured 24 inches, and a Snowy Owl, *Nyctea nyctea*, about a week before. Goshawks were much more common at Chilliwack, B.C., than they are here. They used to take our poultry, and sometimes pounced upon mallards I had shot, before I could pick them up ; but the Goshawk could not carry off a mallard and was easily secured as well as the duck."—J. FLETCHER.

AN ALBINO SPARROW.—An almost white variety of *Passer domesticus*, Linn., frequented one of the public squares of Montreal during the year 1897. It was a dirty white, having the feathers which characterise the ordinary male bird, of a dun color. I watched, at the close of the nesting season for additions to the flock with the same markings, but none had the slightest peculiarity. It was tamer than its less conspicuous companions. Its haunt is a busy thoroughfare for pedestrians, and it is remarkable that it did not fall a victim to some curiosity-hunter's shot. I have not seen it for some time, and fear such has been its fate.

A WINTER BOARDER.—A solitary sea-gull spent all last winter in the fields around Point aux Trembles, Montreal Island. I was never near enough to determine the species. The motor-men of the Montreal Belt Line tried in vain to shoot it. It was too wary for them and lived to join its comrades in the spring.—CHARLES STEVENSON, Montreal.

*List of Birds, with dates when last seen in Autumn of 1897,  
by Geo. R. White.*

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| Tree Swallow. 10th July.                        | Golden-winged Woodpecker. 8th October.  |
| Great Crested Flycatcher. 4th August.           | Yellow-bellied Woodpecker. 9th October. |
| Bank Swallow. 4th August.                       | Ruby-crowned Kinglet. 9th October.      |
| Purple Martin. 6th August.                      | Surf Duck. 9th October.                 |
| Barn Swallow. 8th August.                       | Hudsonian Godwit. 9th October.          |
| Redstart. 20th August.                          | Velvet Duck. 9th October.               |
| Black-billed Cuckoo. 23rd August.               | Pintail Duck. 9th October.              |
| Chimney Swift. 24th August.                     | Blue-wing Teal. 9th October.            |
| Summer Warbler. 26th August.                    | Mallard. 11th October.                  |
| Black and White Warbler. 28th August.           | Ruffle-headed Duck. 12th October.       |
| Kingbird. 29th August.                          | Song Sparrow. 13th October.             |
| Rose-breasted Grosbeak. 29th August.            | Bluebird. 13th October.                 |
| Cliff-swallow. 6th September.                   | Kingfisher. 13th October.               |
| Whip-poor-will. 6th September.                  | White-throated Sparrow. 16th October.   |
| Night Hawk. 7th September.                      | Junco. 24th October.                    |
| Solitary Vireo. 9th September.                  | Myrtle Warbler 24th October.            |
| House Wren. 11th September.                     | Greater Yellow-legs. 25th October.      |
| Pigeon Falcon. 16th September.                  | Bronzed Grackle. 25th October.          |
| Ruby Humming-bird. 16th September.              | Pied-billed Grebe. 25th October.        |
| Spotted Sandpiper. 17th September.              | Solitary Sandpiper. 25th October.       |
| Red-headed Woodpecker. 18th September.          | Tree Sparrow. 26th October.             |
| Sparrow Hawk. 18th September.                   | Pectoral Sandpiper. 26th October.       |
| Vesper Sparrow. 19th September.                 | Black-bellied Plover. 26th October.     |
| Phoebe. 19th September.                         | Marsh Hawk. 27th October.               |
| Goldfinch. 19th September, in breeding plumage. | Virginian Rail. 28th October.           |
| Holhoell's Grebe. 20th September.               | Goosander. 28th October.                |
| Black-throated Green Warbler. 22nd September.   | American Bittern. 28th October.         |
| Northern Phalarope. 22nd September.             | Wood Duck 29th October.                 |
| Savannah Sparrow. 23rd September.               | American Pipit. 29th October.           |
| Chipping Sparrow. 25th September.               | Green-wing teal. 30th October.          |
| Fish Hawk. 28th September.                      | Hooded Merganser. 30th October.         |
| Golden Plover. 30th September.                  | Black Duck. 30th October.               |
| White-headed Sparrow. 7th October.              | Rusty Grackle. 30th October.            |
| Cat-bird. 7th October.                          | Redwing Blackbird. 30th October.        |
| Hermit Thrush. 7th October.                     | Blue Heron. 30th October.               |
| Fox Sparrow. 8th October.                       | Herring Gull. 30th October.             |
|   | Robin. 4th November.                    |



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DEATH OF A DISTINGUISHED AMERICAN AMATEUR  
GEOLOGIST AND PALÆONTOLOGIST.—S. A. MILLER.

On December 18th, 1897, HON. DR. SAMUEL A. MILLER, of Cincinnati, Ohio, died of cancer of the liver, after a three weeks' illness, at the age of 60 years. Although a prominent member of the Cincinnati bar, with a large and lucrative practice, as well as a politician and public speaker in the front rank of his party, yet he found time to so devote himself to scientific research that his published works on palæontology are more voluminous and contain more original descriptions and figures of new forms than are to be found in those of many an eminent professional palæontologist. We learn from the Cincinnati *Enquirer* that "every morning he arose with the dawn and worked on his geological books until 9 or 10 o'clock; he attended to his law practice during the rest of the day, and early evening found him at work at his books again."

Dr. Miller's first great work was "American Palæozoic Fossils," published in 1861, undertaken with a view to smooth the way of the student of palæontology by furnishing a complete index of original descriptions of North American palæozoic fossils. This unique work was in use by all palæozoic palæontologists, by whom it was considered indispensable, until replaced by his later and more comprehensive work "North American Geology and Palæontology," published in 1889. The latter work, together with its appendixes, published in 1892 and 1897 respectively, contain descriptions of all the published American palæozoic genera and an index of all the species, filling 793 octavo pages and illustrated by 1,457 generic illustrations consisting of about 3,000 separate figures. Such a work in itself should be considered a proud record for the life work of one amateur—but we find the work of this man appearing in the geological reports of five States of the American Union, viz., Illinois, Missouri, Indiana, Ohio and Wisconsin, for which he figured and described about 800 species of fossils, the greater part crinoids, besides figuring and describing about 300 species of fossils, a part in the Cincinnati Journal of Science (1874-75) and the remainder in its successor, the Journal of the Cincinnati Society of Natural History. In 1881 he published a review of the bibliography, etc., of North American Mesozoic and Cainozoic Palæontology, covering 338 pages.

He was one of the leading founders of the Cincinnati Society of Natural History; a graduate in Arts, Law and Philosophy of Ohio University and the deserving recipient of academic and other honors from many sources. His great integrity, benevolence, love of justice in public and private affairs and his eminence as a public speaker and jurist, are alluded to at great length by the Cincinnati daily papers.

W. R. B.

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