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THE OTTAWA NATURALIST.

VOL. XIII.

OTTAWA, MARCH, 1900.

No. 12

NOTES ON HUDSON BAY SPONGES.

BY LAWRENCE M. LAMBE, F. G. S.

The number of species of recent marine sponges known to occur in the waters of Hudson Bay and Strait is, up to the present, only four in number, viz., taking them in the order in which they have been collected, *Phakellia ventilabrum*, Johnston, *Reniera mollis*, Lambe, *Suberites montalbidus*, Carter and *Craniella cranium*, (Müller).

The specimens representing these species are in the collection of the Geological Survey.

Two specimens of *Phakellia ventilabrum* were obtained by Dr. Robert Bell, of the Geological Survey, in 1880, one at York Factory, the other between York Factory and Fort Severn, and later, in 1896, Mr. A. P. Low, of the Geological Survey, collected another specimen of the same species on the east coast of Hudson Bay, near Great Whale River. This species has been recorded in North American waters from the North Pacific Ocean, Behring Sea and the Arctic Ocean in the west, and from the River and Gulf of St. Lawrence, and the north-east coast of the United States in the east, (vide Transactions, Royal Society of Canada, vol. xii, 1894, and second series, vol. ii, 1896).

The second species is represented by a fragmentary specimen dredged by Mr. Low in 1897, in Wakeham Bay, Hudson Strait, in 10 fathoms, mud bottom. *Reniera mollis*, like *P. ventilabrum*, has been found on both the Pacific and Atlantic coasts of the continent, in Elk Bay, Discovery Passage, Vancouver Island, B. C., and off the coast of Labrador and at the entrance to the Baie des Chaleurs (vide Transactions, Royal Society of Canada, vol. xi, 1893, and second series, vol. ii, 1896).

One specimen of each of the remaining species *Suberites montalbidus* and *Craniella cranium* was dredged by Mr. Low in June, 1899, in Richmond Gulf, Hudson Bay, in from 15 to 30 fathoms, soft mud bottom.

Suberites montalbidus has a wide northern distribution and it is not surprising to find it in Hudson Bay. Its range includes Behring Sea and Strait, Beaufort Sea, the Siberian Arctic Ocean, the Kara Sea, the European Arctic Ocean, Barent's Sea, and the sea west from Greenland (vide Transactions, Royal Society of Canada, vol. xii, 1894). The Hudson Bay specimen is irregularly pear-shaped, higher than broad, broader above than below where it has apparently been attached to some hard object; height 6 cent., greatest breadth a little over 4 cent., colour in alcohol a dark grayish brown, surface rough (except on the top, where it is comparatively smooth), covered with small, irregular elevations separated from each other by a net-work of wrinkles or furrows. A single osculum, about 8 mm. in width, occupies the centre of the summit, and in the sides are numerous small openings, having a maximum width of about 1 mm., which are probably the entrances of inhalent canals. The sponge is soft and yielding to the touch and probably the roughness of the surface is exaggerated by shrinkage. The spicules agree in size and shape with those of the specimen from Unalaska Island referred to by the writer in volume xii of the Royal Society's Transactions.

Craniella cranium is also well known from North Atlantic waters generally and Fristedt in his "Sponges from the Atlantic and Arctic Oceans and the Behring Sea" mentions three specimens obtained off the east and west coasts of Greenland. Mr. Low's specimen is somewhat ovate in shape, broadly rounded above and prolonged downward below where the basal strands have the appearance of having been attached to some foreign object; total height 10 cent., maximum breadth 4.5 cent., surface uneven, monticulose. The extreme summit is abraded. The measurements of the spicules agree with those given by Sollas in his description of the species (vide Report Tetractinellida, Challenger Expedition vol. xxv). A point of some interest is that the spicules of *Craniella Loganii*, Dawson, from the Leda clay at Ottawa and Montreal, are practically identical in shape and size with those of Mr. Low's

specimen. The spicular similarity between the Leda clay sponge and *Craniella cranium* has already been pointed out by the writer, (vide Transactions. Royal Society of Canada, second series, vol. ii, 1896). Mr. Whiteaves has recognized amongst the shells dredged by Mr. Low with this sponge, some of the species considered typical of the Leda clay in eastern Canada, notably—*Pecten Grønlandicus*, Sowerby, *Modiolaria discors*, L., *Portlandia glacialis*, (Wood), *Nucula tenuis*, Mntagu, *Macoma sabulosa*, Spengler (*calcarca*, auct.) and *Saxicava arctica*, L. Judging from this we evidently have in Hudson Bay a deposit, in course of formation, that has a fauna to a large extent the same as that revealed to us by the Pleistocene fossils of the Leda clay.

APPENDIX TO PRESIDENT'S ADDRESS DELIVERED
BEFORE THE OTTAWA FIELD-NATURALISTS'
CLUB.

SIR JOHN WILLIAM DAWSON has contributed so many papers, volumes and articles to Science, Education and Literature in general that it will be some time before a complete list of his writings can be produced.

I have attempted, in this issue of THE NATURALIST, to submit as complete a list of Sir William's writings as I have been able to gather to date. It forms part of my presidential address, delivered November 28th, 1899, before the Ottawa Field-Naturalists' Club, and especially to that portion (pp. 270—274) referring to the life and works of Sir William Dawson.

I desire to acknowledge with thanks valuable assistance received from Dr. G. M. Dawson; the Librarian of the Parliament of Canada, Mr. Martin J. Griffin; the Librarian of the Peter Redpath Library of McGill College, Montreal, Mr. C. H. Gould; Mr. Scott, Librarian of Princeton University, Princeton, New Jersey; Prof. D. P. Penhallow; Sir John Bourinot, Hon. Sec. of the Royal Society of Canada, Ottawa, and Prof. David White, of the Smithsonian Institution, Washington, D.C.

H. M. A.

BIBLIOGRAPHY OF SIR JOHN WILLIAM DAWSON.

1841.

Species of Meriones in Nova Scotia. Edinburgh Philosophical Journal (Illustrated). Edinburgh.

1842.

A Geological Excursion in Prince Edward Island. Haszard's Gazette.

1843.

On the Lower Carboniferous or Gypsiferous Formation of Nova Scotia. Proc. Geol. Soc., Vol. 4, pp. 272—281. (Six woodcuts, and Dr. A. Gesner's geol. map of Nova Scotia.) London, Eng.

1845.

On the Lower Carboniferous Rocks, or Gypsiferous Formation of Nova Scotia. Quart. Journ. Geol. Soc., Vol 1, pp. 26—35. London, Eng.

On the Newer Coal Formation of the Eastern part of Nova Scotia. Proc. Geol. Soc., London, Vol. 4, pp. 504—512, (with geol. map section, notes on fossils, etc., by J. W. D. ; also Vol. 1, pp. 322—330. Same paper, published in two volumes). London, Eng.

On the Newer Coal Formation of the Eastern part of Nova Scotia. Quart. Journ. Geol. Soc., Vol. 1, pp. 322—330, (with appendix on the Junction of the Carboniferous and Silurian System at Maccaras). London, Eng.

1846.

Notice of some Fossils found in the Coal Formation of Nova Scotia. Quart. Journ. Geol. Soc., Vol. 2, 1846, pp. 132—136. London, Eng.

Report on the Coal Fields of Caribou Cove and River Inhabitants. Journ. Nova Scotia Legislature. Halifax.

1847.

On the Destruction and Partial Reproduction of the Forests of British North America. Edinb. New. Phil. Journ. 42. 1847. pp. 259-271. Silliman's Journ. Vol. 4. 1847. pp. 161-170 ; Froriep, Notizen, 5., 1848, col. 65-72.

1848.

On the Mode of Occurrence of Gypsum in Nova Scotia, and on its probable origin. Proc. Roy. Soc. Edinb. Vol. 2, pp. 141-142. Edinburgh.

On the New Red Sandstone of Nova Scotia. Quart. Journ. Geol. Soc. Vol. 4., 1848, pp. 50—59. London.

Notice of Specimens of the Wheat Midge from Nova Scotia. Acad. Nat. Sci. Phila. Proc. 4, 1848-9, pp. 210-211 ; Ann. & Mag. Nat. Hist., vol. 5, 1850, pp. 152—154.

1849.

On the Colouring Matter of Red Sandstones and of Grayish and White Beds

Associated with them. (Read, May 17th, 1849.) Quart. Journ. Geol. Soc., Vol. 5, 1849, pp. 25—30. London, Eng.

Notice of the Gypsum of Plaister Cove in the Strait of Canseau. Quart. Journ. Geol. Soc., Vol. 5, 1849, pp. 335—339. London, Eng.

1850.

Account of a Halo observed at Pictou, Nova Scotia, August 23, 1849. Edinb. New Phil. Journ., Vol. 48, 1850, pp. 65—68. Edinburgh.

On the Metamorphic and Metalliferous Rocks of Eastern Nova Scotia. (Read March 13th, 1850.) Quart. Journ. Geol. Soc., Vol. 6, pp. 347—364. 1850. London, Eng.

1851.

On the Boulder Formation and Superficial Deposits of Nova Scotia. Proc. Roy. Soc. Edinb., Vol. 2, 1851A., pp. 140—144.

Notice of the Occurrence of Upright Calamites near Pictou, Nova Scotia. (Read March 12th, 1851.) Quart. Journ. Geol. Soc., Vol. 7, 1851, pp. 194—196. London, Eng.

1852.

Additional Notes on the Red Sandstones of Nova Scotia. (Illustrated.) (Read June 16th, 1852.) Quart. Journ. Geol. Soc., Vol. 8, 1852, pp. 398—400. London, Eng.

Handbook of the Geography and Natural History of Nova Scotia. (Map.) Pictou and Edinburgh.

On the Remains of a Reptile and of a Land Shell discovered in the interior of an Erect Tree in the Coal-Measures of Nova Scotia. (Lyell and Dawson.) Quart. Journ. Geol. Soc., Vol. 9, pp. 58—63. London, Eng.

1853.

On the Albert Mine, Hillsborough, New Brunswick. Quart. Journ. Geol. Soc., Vol. 9, 1853, pp. 107—115. London, Eng.

1854.

Notice of the Discovery of Bapheies Planiceps (Dawson and Owen.) Journ. Geol. Soc., London, Vol. 10, pp. . . London, Eng.

On the Structure of the Albion Mines Coal Measures, Nova Scotia. (Dawson and Poole.) Quart. Journ. Geol. Soc., London, Vol. 10, pp. 42—47. London, 1852. 1857 (enlarged edition).

Scientific Agriculture in Nova Scotia. Halifax.

On the Coal-Measures of the South Jorjina Nova Scotia. Quart. Journ. Geol. Soc. Vol. 10. 1854. pp. 142, London, England.

On Fossil Coniferous Wood from Prince Edward Island. Proc. Acad. Nat. Sci. Phila., Vol. 7, 1854-55, pp. 6-14. Philadelphia.

1855.

Acadian Geology, an account of the Geological Structure and Mineral Resources of Nova Scotia and portions of the neighbouring provinces of British America. 1st edition, xii pp. & 388 pp. 1855, (illustrations and map.) Edinburgh, Scotland.

Notice of the Discovery of a Reptilian Skull in the Coal of Pictou. (Read Nov. 1st, 1854.) Quart. Journ. Geol. Soc., Vol. 11, pp. 8-9. London, Eng. (Issued 1855.)

On a Modern Submerged Forest at Fort Lawrence, Nova Scotia. Quart. Journ. Geol. Soc., Vol. 11, 1855, pp. 119-122. London, Eng.

On the Course of Collegiate Education adapted to the circumstances of British America. The Inaugural Discourse of the Principal of McGill College, Montreal. 29 pp. H. Ramsay, Montreal. 1855. (Canadian Pamphlets, No. 83, Library of Parliament, Ottawa, Canada.)

1856.

Remarks on a Specimen of Fossil Wood from the Devonian Rocks (Gaspé Sandstones) of Gaspé, Canada East. Proc. Amer. Assoc. Adv. Sci., 1856. Pt. 2, pp. 174-176. Mass.

On the Species of Meriones and Arvicole Found in Nova Scotia. Brit. Assoc. Rep., 1855, Pt. 2, p. 110; Edinb. New Phil. Journ. III, 1856, pp. 1-4.

Remarks on a Specimen of Fossil Wood from the Devonian Rocks (Gaspé sandstones) of Gaspé, Canada East. Proc. Amer. Assoc. Adv. Sci., 1856, Pt. 2, pp. 174-176. (Boston meeting), Mass.

1857.

Natural History in its Educational Aspect. Barnard's Amer. Journ. of Education, pp. 428-436, Art. II, June, 1857. (Extracts from the introductory Lecture of the popular course of the Natural History Society of Montreal.) Hartford, Connecticut.

On the parallelism of the Rock Formations of Nova Scotia with those of other parts of America. Proc. Amer. Assoc. Adv. Sc. Part 2, pp. 18-25. (Albany.) Cambridge, Mass.

Archæia, or Studies of the Narrative of the Creation in Genesis. Montreal, 1857.

On the Varieties and Mode of Preservation of the Fossils known as Sternbergia. Proc. Amer. Assoc. Adv. Sci., 1857. (pt. 2) pp. 64-74; Can. Journ. 2, 1857, pp. 476-479, Toronto; Can. Nat. and Geol., vol. 2, No. 4, Sept., 1857, pl. 5, pp. 299-305. Montreal.

On the Newer Pliocene Fossils of the St. Lawrence Valley. Proc. Amer. Assoc. Adv. Sci., 1857. pt. 2, pp. 74-75. See also Review Can. Nat. Geol. vol. 2, No. 4, pp. 279-280. Montreal.

On the Geological Structure and Mineral Deposits of the Promontory of

Maimansea, Lake Superior. Can. Nat. and Geol., Art. 1, vol. 2, No 1, pp. 1—12. (Illustrated.) March, 1857. Montreal.

The Testimony of the Rocks, by Hugh Miller. Can. Nat. and Geol. Art 9, vol. 2, No. 2, pp. 81—92. May 1857. Montreal.

Recent Geological Discoveries. Can. Nat. and Geol., vol. 2, No. 3, pp. 188—195. (Review of suppl. to 5th ed., Lyell's Manual of Geology. London. 1857.) July. 1857. Montreal.

On the Newer Pliocene and Post Pliocene Deposits of the vicinity of Montreal, with notices of Fossils recently discovered in them. Can. Nat. & Geol., Vol. 2, No. 6, December, 1857, pp. 401—426. Montreal.

1858.

On the Newer Pliocene and Post Pliocene Deposits of the vicinity of Montreal, with notices of Fossils recently discovered in them. Can. Nat. & Geol., 1858. Issued as separate. 28 pp. Montreal.

Things to be Observed in Canada, and especially in Montreal and its vicinity. Can. Nat. & Geol., Vol. 3, 1858, pp. 1—12. Montreal.

Report of the Geological Survey of Canada. Can. Nat. & Geol., Vol. 3, pp. 32—39, 81—96. Montreal.

Permian Fossils in Kansas and elsewhere in America. Can. Nat. & Geol., Vol. 3, No. 1, p. 80. February, 1858. Montreal.

Agassiz's Contributions to the Natural History of the United States. Vols. 1 & 2. Boston. Can. Nat. & Geol., Vol 3, No. 3, Art. 22, pp. 201—212 June, 1858. Montreal. (Concluded in) Can. Nat. & Geol., Vol. 3, No 4, Art. 24, pp. 241—260. August, 1858. Montreal.

Coal in Canada. The Bowmanville Discovery. Can. Nat. & Geol., Vol. 3, No. 3, Art. 23, pp. 212—223. June, 1858. Montreal.

A Week in Gaspé. Can. Nat. & Geol., Vol. 3, 1858, pp. 321—331. Montreal.

On Sea Anemones and Hydroid Polyps from the Gulf of St. Lawrence. Can. Nat. & Geol., Vol. 3, 1858, pp. 401—409. Montreal.

1859.

On Fossil Plants from the Devonian Rocks of Canada. Quart. Journ. Geol. Soc., Vol. 15, 1859, pp. 477—488. London, Eng.

On the Lower Coal Measures as developed in British America. (1858.) Quart. Journ. Geol. Soc., Vol. 15, 1859, pp. 62—76. London, Eng. Can. Nat. & Geol., Vol. 4, 1859, pp. 303—305. Montreal.

On the Vegetable Structures in Coal. Quart. Journ. Geol. Soc., Vol. 15, 1859, pp. 626—641. Can. Journ., Vol. 5, 1860, pp. 305—307. Toronto.

Additional Notes on the Post Pliocene Deposits of the St. Lawrence Valley. Can. Nat. & Geol., Vol. 4, No. 1, 1859, pp. 23—39. February. Montreal.

On the Microscopic Structure of Some Canadian Limestones. Can. Nat. & Geol., Vol. 4, 1859, pp. 161—169. Montreal.

On a Specimen of Aboriginal Pottery in the Museum of the Natural History Society of Montreal. Can. Nat. & Geol., Vol. 4, 1859, pp. 186—190. Montreal.

Geological Survey of Canada. Can. Nat. & Geol., Vol. 3, 1859, pp. 220—228. Montreal. (A Review.)

Recent Researches in the Devonian and Carboniferous Flora of British America. Proc. Amer. Assoc. Adv. Sci., 1859, pp. 308—310. Can. Nat. & Geol., Vol. 4, 1859, pp. 297—298. Montreal.

Post-Tertiary of the St. Lawrence Valley. Silliman's Journal, vol. 27, 1859, pp. 434—437.

On a New Species of Stickleback. (Gasterosteus gymnetes.) Can. Nat. & Geol., Vol. 4, 1859, pp. 321—324. Montreal.

1860.

On the Fossil Plants of the Devonian Rocks of Canada, Can. Nat. & Geol., Vol. 5, 1860, pp. 1—14. Montreal.

On the Vegetable Structures in Coal. Quart. Journ. Geol. Soc. (London), pp. 626—641, (with plates 17, 18, 19, 20). February. London, Eng.

Archæia, or Studies of the Cosmogony and Natural History of the Hebrew Scriptures. 400 pp. B. Dawson & Son, Montreal; Sampson, Low, Son & Co., London, Eng.

On a Terrestrial Mollusk, a Chilognathous Myriapod, and some new species of Reptiles from the Coal Formation of Nova Scotia. Quart. Journ. Geol. Soc., Vol. 16, 1860, pp. 268—277. London, Eng. Abstract of paper Can. Nat. & Geol., Vol. 5, No. 3, pp. 222—223. June, 1860. Montreal.

On the Tubicolous Marine Worms of the Gulf of St. Lawrence. Can. Nat. & Geol., Vol. 5, 1860, pp. 24—30. Montreal.

Review of "Darwin on the Origin of Species by means of Natural Selection." Can. Nat. & Geol., Vol. 5, No. 1, Art. III., Feb., 1860, pp. 100—120. Montreal.

On the Silurian and Devonian Rocks of Nova Scotia. Can. Nat. & Geol., Vol. 5, pp. 132—143. Montreal. (Same title and subject—published as separate pamphlet, 28 pp.)

Notice of Tertiary Fossils from Labrador, Maine, &c., and Remarks on the Climate of Canada, in the Newer Pliocene or Pleistocene Period. Can. Nat. & Geol., Vol. 5, No. 3, Art. XV, June, 1860, pp. 188—200. Montreal.

Professor Hall's Report on the Geology of Iowa. Vol. 1, Pts. 1 & 2. Can. Nat. & Geol., Vol. 5, No. 3, pp. 213—215. June, 1860. (Review) Montreal.

Paleontological Note by Dr. Dawson in Paper by Rev. D. Honeyman on new Localities of Fossiliferous Silurian Rocks in Eastern Nova Scotia. Can. Nat. & Geol., Vol. 5, No. 4, Art. 41, pp. 297—299 (printed 197—199) August, 1860. Montreal.

Notes on the Coal Fields of Picton, by Henry Poole. Can. Nat. & Geol., Vol. 5, No. 4, pp. 285—286 and 291—293 (printed 192—193). August, 1860. Montreal. (Paleontological and other notes by J. W. D. at pages indicated.)

Notes on the Earthquake of October, 1860. Can. Nat. & Geol., Vol. 5, 1860, pp. 363—372. Montreal.

Notes on Aboriginal Antiquities recently discovered in the Island of Montreal. Can. Nat. & Geol., Vol. 5, No. 6, Dec., 1860, Art. 52, pp. 430—449. Montreal.

Supplementary Chapter to Acadian Geology. 12mo. 70 pp. Wood engravings of fossils. Edinburgh.

On an undescribed Fossil Fern from the Lower Coal Measures of Nova Scotia. (Abstract) Can. Nat. & Geol., Vol. 5, No. 6, Dec., 1860, pp. 460-461. Montreal. Quart. Journ. Geol. Soc., Vol. 17, 1861, p. 5. London, Eng.

Note on a Specimen of Neera collected by Mr. R. S. Fowler, and exhibited to the Natural History Society of Montreal. Can. Nat. & Geol., Vol. 5, No. 6, Dec., 1860, pp. 461-462. Montreal.

Note on Relics of the Red Indian of Newfoundland collected by Mr. Smith McKay, and exhibited to the Natural History Society. Can. Nat. & Geol., Vol. 5, No. 6, half page 462. Dec., 1860. Montreal.

1861.

Archéologie Canadienne. De quelque sépultures d'anciens indigènes de l'Amérique découvertes à Montréal. (Traduit du "Canadian Naturalist" et annoté pour le "Journal de l'Instruction Publique.") 24 pp. Impr. Eusebe Senecal, Montreal, 1861. (Canadian Pamphlets, Nos. 473 & 104, Library of Parliament, Ottawa, Canada.)

Notes on the Geology of Murray Bay, Lower St. Lawrence. Can. Nat. & Geol., Vol. 6, pp. 138—151. (With list of Cambro-Silurian and Post-Tertiary fossils and description of *Lingula Eva*, by E. Billings, p. 150.) Montreal.

On the Precarboniferous Flora of New Brunswick, Maine, and Eastern Canada. Can. Nat. & Geol., Vol. 6, 1861, pp. 161—180. Montreal.

The Earthquake of July 12, 1861. Can. Nat. & Geol., Vol. 6, No. 4, p. 329, August, 1861. Montreal.

On the Recent Discoveries of Gold in Nova Scotia. Can. Nat. & Geol., Vol. 6, 1861, pp. 417—433. Montreal.

On an Erect Sigillaria from the South Joggins, Nova Scotia. Journ. Geol. Soc., Vol. 17, 1861, pp. 522—524. Can. Nat. & Geol., Vol. 7, 1862, pp. 106—111. Montreal.

Note on a Carpolite from the Coal Formation of Cape Breton. Journ. Geol. Soc., Vol. 17, 1861 pp. 525-526. Can. Nat. & Geol., Vol. 7, 1862, pp. 111—113. Montreal.

1862.

Synopsis of the Course of Zoology McGill University (Montreal), Session 1862-63. 17 pp. (General view, functions and classification of the Animal Kingdom.) Montreal.

Notice of the Discovery of Additional Remains of Land Animals in the Coal Measures of the South Joggins, Nova Scotia. Quart. Journ. Geol. Soc., Vol. 18, 1862, pp. 296—328. Silliman's Journ., Vol. 35, 1863, pp. 311—319.

Note on Mr. Leslie's Paper on the Coal Measures of Cape Breton. Proc. Phil. Soc. Amer., Vol. 9, 1862-63, pp. 165—170.

On the Flora of the Devonian Period in North Eastern America. Quart. Journ. Geol. Sec. vol. 18, pp. 296—330. (0. Localities; N. Y., Maine, Canada, N. Br. 2. Descriptions of Species. 3. Conclusion.) Nov. 1862, London, Eng. (Opposite page 329 an additional page or appendix, bearing date September, 1862, was inserted.)

Notes on the Flora of the White Mountains, in its Geographical and Geological Relations. Can. Nat. & Geol. vol. 7., 1862. pp. 80—102. Montreal.

On the Erect Sigillaria a Carpolite, from Nova Scotia. Can. Nat. & Geol. vol. 7, pp. 106-113. Montreal.

On the Footprints of Limulus as compared with the Protichnites of the Potsdam Sandstone. Can. Nat. & Geol., vol. 7, 1862, pp. 271—277. Montreal.

Zoological Classification of Calenterata and Protozoa versus Radiata. Can. Nat. & Geol. vol. 7, 1862. pp. 438—443. Montreal.

On the Footprints of Limulus as compared with the Protichnites of the Potsdam Sandstone. (Abstract of paper in Can. Nat. and Geol.) Amer. Journ. Sc., vol. 34, ser. 2, pp. 446-447. New Haven, Conn. U. S. A.

1863.

The Duties of Educated Young Men in British America. (Being the Annual Alumni lecture of McGill University, Montreal. Session of 1863-4.) 24 pp.; John Lovell, Montreal, 1863. (Canadian pamphlets, No. 527, Library of Parliament, Ottawa, Canada.)

Further Observations on the Devonian Plants of Maine, Gaspé and New York. Quart. Journ. Geol. Soc., vol. 19, 1863, pp. 458—469.

Notice of a New Species of Dendropeleon, and of the Dermal Coverings of certain Carboniferous Reptiles. Quart. Journ. Geol. Soc., vol. 19, 1863. pp. 469-473.

On American Devonian. Silliman's Journ. or Amer. Journ. Sci., ser. 2, vol. 35, 1863, pp. 309-311. New Haven.

Air Breathers of the Coal Period. A descriptive account of the land animals found in the Coal Formations of Nova Scotia, with remarks on their bearings and theories of the formation of Coal and of the origin of species. 81 pp.; (with illustrations), June, 1863. Dawson Bros. Montreal.

Further Observations on the Devonian Plants of Maine, Gaspé and New York. Quart. Journ. Geol. Soc., London, pp. 458—469, pls. 17-19. Nov., 1863. London, Eng.

The Air-breathers of the Coal Period in Nova Scotia. Can. Nat. & Geol. Vol. 8, 1863, pp. 1—12, 81—88, 150-160, 161—175, 268—295. Montreal.

Synopsis of the Flora of the Carboniferous Period in Nova Scotia. Can. Nat. & Geol., Vol. 8, 1863, pp. 431—457. Montreal.

1864.

On Some Points in the History and Prospects of Protestant Education in Lower Canada. A lecture delivered by Principal Dawson before the Association of Teachers, in connection with the McGill Normal School, Dec., 1864. Printed by J. C. Becket, Montreal. 1864. 20 pp. (Canadian Pamphlets, 142, Library of Parliament, Ottawa, Can.)

Agriculture for Schools. Montreal.

Address of the President of the Natural History Society (of Montreal). Can. Nat. & Geol., N.S., Vol. 1, No. 3, pp. 218—229. June, 1864. Montreal.

On the Fossils of the Laurentian and Boulder Drift of Canada. Amer. Journ. Sci., Vol. 38, 1864, pp. 231—239. New Haven, Conn.

Elementary Views of the Classification of Animals. Can. Nat. & Geol., N.S., Vol. 1, No. 4, pp. 241—258. August, 1864. Montreal.

On the Fossils of the Genus Rusophycus. Can. Nat. & Geol., N.S., Vol. 1, pp. 363—367. October, 1864. (An illustration of Rusichnites Acadicus to accompany description on page 458, Dec., 1864.) Montreal.

Synopsis of the Flora of the Carboniferous Period in Nova Scotia. Amer. Journ. Sci., Vol. 37, 1864, pp. 419—427. New Haven, Conn.

1865.

Elementary Views of the Classification of Animals. In Can. Nat. & Geol., August, 1864 (Review of the above by Rev. Prof. Wm. Hind, F.L.S., in Can. Journ., Vol. 10, No. 4, pp. 19—30, January, 1865.) Toronto.

The Palaeozoic Floras in North-eastern America. Brit. Assoc. Rep., Vol. 35, 1865, (Sect.) pp. 50—51. Geol. Mag., Vol. 2, 1865, pp. 568—569. London, Eng.

On the Fossil Plants of the Post-Pliocene Deposits of Canada, in connection with the Climate of the Period, and the formation of Boulder Clay. Brit. Assoc. Rep., Vol. 35, 1865, (Sect.) p. 50. Geol. Mag., Vol. 2, 1865, pp. 561—563.

On the Structure of Certain Organic Remains in the Laurentian limestones of Canada. (1864) Quart. Journ. Geol. Soc., Vol. 21, 1865, pp. 51—59. Can. Nat. & Geol., Vol. 2, 1865, pp. 99—111, 127—128. Montreal. Phil. Mag., Vol. 29, p. 76, 1865.

Notes on Post-Pliocene Deposits at Rivière du Loup and Tadoussac. Can. Nat. & Geol., Vol. 2, 1865, pp. 81—88. Montreal.

The President's Address. Can. Nat. & Geol., N.S., Vol. 2, No. 4, pp. 300—304, August, 1865. Montreal.

1866.

On the Conditions of the Deposition of Coal, more especially as Illustrated by the Coal Formations of Nova Scotia and New Brunswick. (1865.) Quart. Journ. Geol. Soc., Vol. 22, May, 1869, pp. 95—169. (13 pl.) London, Eng.

Geological Map of Canada and the Adjacent Regions. Geol. Sur. Can. Sir W. E. Logan, &c., and also "from the labours of Dr. J. W. Dawson." Scale 25 miles to 1 inch. Paris, France.

On Flint Implements. Can. Nat. & Geol., N.S., Vol. 3, No. 1, pp. 20-21. February, 1866. Montreal.

The Evidence of Fossil Plants as to the Climate of the Post-Pliocene Period of Canada. Can. Nat. & Geol., 7 pp., February. Montreal.

Note on the Supposed Burrows of Worms in the Laurentian Rocks of Canada. Quart. Journ. Geol. Soc., Vol. 22, 1866, pp. 608-609, with fig. 1-5. London. Phil. Mag., Vol. 31, p. 158; Vol. 32, p. 234. Can. Nat. & Geol., Vol. 3, 1868, pp. 321-322. Montreal.

1867.

On Recent Geological Discoveries in the Acadian Provinces of British America. Proc. Amer. Assoc. Adv. Sci., Vol. 16, 1867, pp. 117-119.

On Some Remains of Palæozoic Insects recently Discovered in Nova Scotia and New Brunswick. Amer. Journ. Sci., Vol. 44, 1867, p. 116. New Haven, Conn. Geol. Mag., Vol. 4, 1867, pp. 385-388. London, Eng. Can. Nat. & Geol., Vol. 3, 1867, pp. 202-206. Montreal.

Coal Discoveries and Primordial Fossils in Nova Scotia and New Brunswick. Geol. Mag., Vol. 4, 1867, pp. 73-74. London, Eng.

On Certain Discoveries in regard to Eozoon Canadense. Geol. Mag., Vol. 4, 1867, pp. 222-223. London, Eng.

Notes on Fossils recently obtained from the Laurentian Rocks of Canada, and on Objections to the Organic Nature of Eozoon, with notes by W. B. Carpenter. Quart. Journ. Geol. Soc., vol. 23, 1867, pp. 257-264. London. Amer. Journ. Sci., vol. 44, 1867, pp. 367-376. New Haven, Conn. Phil. Mag., vol. 34, 1867, pp. 318-319. Can. Nat. & Geol., vol. 3, 1868, pp. 312-321. Montreal.

On the Discovery of a New Pulmonate Mollusk (Zonites, Conulus priscus, Carp.) in the Coal Formation of Nova Scotia. With a description of the species by Philip P. Carpenter, M.D. Quart. Journ. Geol. Soc., vol. 23, 1867, pp. 330-333. London. Phil. Mag., vol. 34, 1867, p. 398.

Post-Pliocene Climate in Canada. Journ. of Botany, vol. 5, 1867, pp. 121-125.

Note (on a Subdivision of the Acadian Carboniferous Limestones, with a description of a section across these rocks at Windsor, N.S.) Can. Nat. & Geol., N.S., vol. 3, No. 3, p. 224. May, 1867. Montreal.

On Eozoon Canadense. (With notes by W. B. Carpenter, M.D., F.R.S.) Can. Nat. & Geol. Reprinted from Q. J. G. S., August, 1867. Montreal.

1868.

Acadian Geology, the Geological Structure, Organic Remains and Mineral Resources of Nova Scotia, New Brunswick and Prince Edward Island. 2nd ed., revised and enlarged, with a geological map and numerous illustrations.

694 pp. Macmillan & Co. London, 1868. Abstract. Can. Journ., N.S., vol. 1, pp. 39-48. Toronto, 1856. By E. J. Chapman. Reviewed by E. Billings. Can. Nat. & Geol., vol. 5, pp. 450-455. Abstract of Supplement to second edition, by author. Amer. Journ. Sci., 3rd series, vol. 15, pp. 478-480. New Haven.

On Recent Geological Discoveries in the Acadian Provinces of British America. Can. Nat. & Geol., N.S., Vol. 3, No. 4, pp. 295-297. January, 1868. Montreal.

The Food of the Common Sea Urchin. Amer. Nat., vol. 1., 1868. pp. 124-125. Philadelphia.

Comparisons of the Icebergs of Belle Isle, with the Glaciers of Mount Blanc, with reference to the boulder clay of Canada. (1866.) Can. Nat. & Geol. vol. 2, 1868. pp. 33-44. Montreal

The Evidence of Fossil Plants as to the Climate of the Post-Pliocene Period in Canada. (1866.) Can. Nat. & Geol. (new series), vol. 3, 1868, pp. 69-76. Montreal.

Notes of Some Remarkable Genera of the Coal Formation. Can. Nat. & Geol., vol. 3 (new series), 1868, pp. 362-374. Montreal.

The Removal and Restoration of Forests. Can. Nat. & Geol., vol. 3, 1868. pp. 405-417. Montreal.

On New Specimens of Eozoon Canadense with a Reply to Professor King and Rowney, (with notes by W. B. Carpenter.) Amer. Journ. Sci., vol. 46. ser. 2, pp. 245-257, 2 pl. New Haven, Conn. U.S.A.

Acadian Geology. The Geol. Structure, Organ. Rem. & Min. Resources of Nova Scotia, New Brunswick and Prince Edward Island. 2nd edition, with geol. map, and illus. London. Eng.

1869.

Notes on a Visit to Scientific Schools and Museums in the United States. Can. Nat. & Quart. Journ. Sci., N.S., vol. 4, No. 1, pp. 1-10, 1869. Montreal.

On the Wakefield Cave. Can. Nat. & Quart. Journ. Sci., vol. 4. No. 1, p. 71. Montreal.

On Geological Time. Can. Nat. & Quart. Journ. Sci., vol. 4, No. 1, 73. Montreal.

(Review of) *Scroll on Geological Time.* Can. Nat. & Quart. Journ. Sci., vol. 4, No. 1, pp. 73-78. 1869. Montreal.

Deep Sea Dredging in its Relations to Geology. Can. Nat. & Quart. Journ. Sci., vol. 4, No. 1, pp. 78-81, 1869. Montreal.

On Modern Ideas of Derivation. Can. Nat. & Quart. Journ. Sci., N.S., vol. 4, No. 2, pp. 121-138. July, 1869. Montreal. (Presidential Address delivered May, 1868.)

On some new Fossil Plants, &c., from Gaspé. Can. Nat. & Geol., vol. 4, 1869, pp. 464-465. Montreal. (Summary.)

On the Graphite of the Laurentian of Canada. Quart. Journ. Geol. Soc., vol. 25, 1869, p. 406. Vol. 26, 1870, pp. 112—117. London. Can. Nat. & Geol., vol. 5, 1870, pp.—13—20. Montreal. Phil. Mag., vol. 39, 1870.

On Calamites. Ann. & Mag. Nat. His. vol. 4. 1869. pp. 272-273. London.

Fossil Plants Discovered in Perry, Me. Proc. Portland Soc. Nat. Hist., vol. 1, pt. 2, pp. 99-100. (plate, 9 figs.) (Dated Nov. 26, 1862. McGill College, Montreal.) Portland, Me.

1870.

Science Education Abroad. (Being the annual University Lecture of the session, 1870-71, delivered in the William Molson Hall, Nov. 18, 1870.) 15 pp. Gazette Printing House, 1870. Montreal. (Canadian pamphlets, No. 294, Library of Parliament, Ottawa, Canada.)

A Plea for the Extension of University Education in Canada, and more especially in connection with the McGill University, Montreal. 31 pp. Montreal. J. C. Becket, 1870. (Canadian pamphlets, Nos. 337 & 221, Library of Parliament, Ottawa.)

Notes on New Points and Corrections in Acadian Geology. Trans. Nova Scotian Instit. Nat. Sci., vol. 2, pt. 3, pp. 166—169. Halifax.

Notes on the Structure of Sigillaria (1866). Quart. Journ. Geol. Soc., vol. 26, 1870, pp. 165-166. London. Phil. Mag., vol. 40, 1870, pp. 74-75.

Notes on some New Animal Remains from the Carboniferous and Devonian of Canada (1869). Quart. Journ. Geol. Soc., vol. 26, 1870, pp. 166. London. Phil. Mag., vol. 1870, p. 75.

On the Structures and affinities of Sigillaria, Calamites and Calamodendron. Quart. Journ. Geol. Soc., vol. 26, 1870, pp. 488-490. London; vol. 27, 1871, 147—161, 4 pl., May. London. Phil. Mag., vol. 40, 1870, pp. 384—386.

On the pre-Carboniferous Floras of North-eastern America, with special reference to that of the Erian (Devonian) period. Roy. Soc. Proc., vol. 18, 1870, pp. 333—335. Ann. & Mag. Nat. Hist., vol. 6, 1870, pp. 103—105.

Handbook of Zoology, with examples from Canadian Species, recent and fossil, Invertebrata. Part 1, 264 pp. Dawson Bros. Montreal.

Notes on the Structure of Sigillaria. (Abstract.) Can. Nat. & Quart. Journ. Sci. vol. 5, No. 1, pp. 98. March, 1870. Montreal.

Note on some new Animal remains from the Carboniferous and Devonian of Canada. (Abstract.) Can. Nat. & Quart. Journ. Sci., vol. 5, No. 1, pp. 98-99. March, 1870. Montreal.

Science Education Abroad. What is Science Education? (Extracts from a lecture by Principal Dawson.) Can. Nat. & Quart. Journ. Sci., vol. 5, No. 3, pp. 263—281. Sept. 1870. Montreal

The Earthquake of October 20th, 1870. Felt in Canada. Can. Nat. & Geol. vol. 5, 1870. 262-289. Montreal. Reprinted as separate in amended form, 8 pp. Montreal, 1870.

On Spore Cases in Coals. Can. Nat. & Geol. vol. 5, 1870, pp. 369-377. Montreal. Amer. Journ. Sci. vol. 1, 1871, pp. 256-263. New Haven, Conn., Ann. & Mag. Nat. Hist., vol. 7, 1871, pp. 321-329. Monthly Microsc. Journ., vol. 6, 1871, pp. 90-97. New York.

1871.

Report on the Geological Structure and Mineral Resources of Prince Edward Island. (Assisted by B. J. Harrington, B.A., Ph.D.) Printed by authority of the Government of Prince Edward Island. 52 pp. 1871. Montreal.

The Fossil Plants of the Devonian and Upper Silurian Formations of Canada. Geol. Surv. Can. 92 pp., 20 pl. Montreal.

Handbook of Canadian Geology. 1st edition, pp. Montreal.

Annual Address of the President of the Natural History Society of Montreal. (Delivered May 19, 1871) Can. Nat. & Quart. Journ. Sci., vol. 6, No. 1, pp. 1-9. Montreal. (Whole volume issued 1872.)

Geological Survey of Canada. Alfred R. C. Selwyn, Director. Rep. Prog. 1866-69, (Review of). Can. Nat. & Quart. Journ. Sci., vol. 6, No. 1, pp. 60-89. Montreal. (Whole volume issued 1872.)

On the Bearing of Devonian Botany on Question as to the Origin and Extinction of Species. Amer. Journ. Sci. vol. 2, 1871. pp. 410-416. New Haven, Conn.

The Primitive Vegetation of the Earth. Amer. Nat., vol. 4, 1871. pp. 474-583. Proc. Roy. Instit., vol. 6, 1872, pp. 165-172. London, Eng.

Some New Facts in Fossil Botany. Geol. Mag. vol. 8, 1871, pp. 236-237. London, Eng.

On Some New Tree-Ferns and Other Fossils from the Devonian. Quart. Journ. Geol. Soc., vol. 27, 1871, pp. 269-274. Phil. Mag., vol. 42, 1871, pp. 231-232. London.

1872.

Note by Dr. Dawson on the Fossil Plants Referred to in Mr. Richardson's Report. Geol. Sur. Can., Rep. of Prog. for 1871-72. Appendix I, p. 98. Montreal.

The Story of Earth and Man. 12mo. 420 pp. London.

Footprints of Sauropus Unguifer. (Illustrated) Geol. Mag., Dec. No. vol. 9, pp. London, Eng.

Annual Address of the President of the Natural History Society of Montreal, May, 1872. Can. Nat. & Quart. Journ. Sci., N.S., vol. 7, No. 1, pp. 1-11. 1873. Montreal.

The Story of the Earth and Man. 420 pp. Dawson Bros, Montreal.

Address to the Natural History Society of Montreal, 19th May, 1871. Can. Nat. & Quart. Journ. Sci., vol. 6, 1872, pp. 1-9. Montreal.

The Post-Pliocene Geology of Canada. Can. Nat. & Quart. Journ. Sci.,

vol. 6, 1872, pp. 19--42, 166--187, 241--259, 369--416. Maps and plates. Montreal. Published as separate, 112 pp. 1872. Montreal.

On the Physical Geography of Prince Edward Island. Can. Nat. & Quart. Journ. Sci., vol. 6, 1872, pp. 342--344. Montreal.

Notes on the Geology of Prince Edward Island, in the Gulf of St. Lawrence. Geol. Mag., vol. 9, 1872, pp. 203--209. London, Eng.

Note on Footprints from the Carboniferous of Nova Scotia in the collection of the Geological Survey of Canada. Geol. Mag., vol. 9, 1872, pp. 251--253. London, Eng.

1873.

Note on a New Sigillaria, showing scars of fructification. Proc. Amer. Assoc. Adv. Sci., vol. 22, 1873, pt. 2, pp. 75-76.

On the Geological Relations of the Iron Ores of Nova Scotia. Proc. Amer. Assoc. Adv. Sci., vol. 22, 1873, pt. 2, pp. 138--146. Ibid. Can. Nat. & Quart. Journ. Sci. No. 3. vol. 7, 1873, pp. 129-138. Montreal.

Impressions and Footprints of Aquatic Animals and Imitative Markings on Carboniferous Rocks. Amer. Journ. Sci. vol. 5, 1873. pp. 16--24. New Haven, Conn. Can. Nat. & Quart. Journ. Sci., vol. 7, No. 2, 1873, pp. 65--74. Illustrated. Montreal.

Note on the Relations of the Supposed Carboniferous Plants of Bear Island, with the Palaeozoic flora of North America. Quart. Journ. Geol. Soc., vol. 29, 1873, pp. 24-25. London, Eng.

Note on the Vindication of Leptophleum rhombicum, and Lepidodendron Gaspianum. Quart. Journ. Geol. Soc., vol. 29, 1873, pp. 369--371. London, Eng.

American Lake Basins and Arctic Currents. Geol. Mag., vol. 10, pp. 137-138. 1873. London.

Fossil Plants of the Lower Carboniferous and Millstone Grit Formations of Canada. Geol. Sur. Can. 47 pp. 10 pl. Montreal.

On a Sigillaria Showing Marks of Fructification. Can. Nat. & Quart. Journ. Sci., vol. 7, No. 3, p. 171. (Note.)

Notes on Prototaxites. Can. Nat. & Quart. Journ. Sci., vol. 7, No. 3, pp. 173--178. Montreal.

Remarks on Mr. Carruthers' views of Prototaxites. Monthly Microsc. Journ., vol. 10, 1873, pp. 66--71. (Published as a separate pamphlet, 7 pp. August, 1873.)

On the Introduction of Genera and Species in Geological Time. Quart. Journ. Sci., vol. 3, 1873, pp. 363--366.

Note on Eozoon Canadense. (1871) Proc. Irish Acad., vol. 1, 1873-74, pp. 117--123, 129--131. Dublin, Ireland.

Notes on the Fossil Plants collected by Mr. J. Richardson in 1872. Geol. Survey, Canada, Rep. of Progress for 1872-73, (Appendix I to Mr. Richardson's Report, pp. 66--71. (Plate.) 1873. Montreal.

Abstract of same. Amer. Journ. Sci., ser. 3, vol. 7, pp. 47-51. 1874. New Haven, Conn.

1874.

Note on Fossil Woods from British Columbia, collected by Mr. Richardson. Amer. Journ. Sci., vol. 7, pp. 47-51, 1874. New Haven, Conn.

On the Upper Coal Formation of Eastern Nova Scotia and Prince Edward Island in its relation to the Permian. Quart. Journ. Geol. Soc., vol. 30, pp. 209-219. 1874. London.

Abstracts. (1) Can. Nat. & Quart. Journ. Sci., N.S., vol. 7, pp. 303-304. 1875. (2) Amer. Journ. Sci., 3rd ser., vol. 8, p. 401. 1874. (3) Geo. Mag., vol. 1, pp. 281-282. 1874.

Annual Address delivered by the President before the Natural History Society of Montreal. Can. Nat. & Quart. Journ. Sci., vol. 7, No. 5, pp. 277-291. July 1874. Montreal.

1875.

The Dawn of Life. Being the History of the oldest known fossil remains and their relations to geological time and to the development of the Animal Kingdom. 239 pp. Dawson Bros. Montreal.

Origin and History of Life on our Planet. An address by Vice-President J. W. Dawson, before the Amer. Assoc. Adv. Sci. at Detroit, Mich., Aug. 1875. 26 pp. W. Drysdale & Co. Montreal, 1875.

Address delivered before the Natural History Society of Montreal. May 18, 1874. Can. Nat. & Quart. Journ. Sci., vol. 7, pp. 277-291. Montreal.

What do we know on the Origin and Life on our Planet? Vice-Presidential Address to the American Association, Natural History Section. Proc. Amer. Assoc. Adv. Sc., vol. 24, pt. 2, pp. 3-26. 1875. Amer. Nat. vol. 9, pp. 529-552.

On some new specimens of fossil Protozoa from Canada. Proc. Amer. Assoc. Adv. Sci., vol. 24, pt. 2, pp. 100-105.

Carboniferous confifers of the United States. Amer. Journ. Sci., vol. 10, pp. 301-302. New Haven, Conn.

Note on the Plants, collected by Mr. G. M. Dawson, from the Lignite Tertiary Deposits, near the forty-ninth parallel. Appendix A of "Report on the Geology and Resources of the Region in the vicinity of the forty-ninth parallel from the Lake of the Woods to the Rocky Mountains with lists of plants and animals collected, and notes on the fossils, by G. M. Dawson. Montreal, 1875.

1876.

On some new Fossil Protozoa from Canada. Proc. Amer. Assoc. Adv. Sci., vol. 24, pt. 2, pp. 100-105. Mass.

New facts relating to Eozoon Canadense. Proc. Amer. Assoc. Adv. Sci., vol. 25, pp. 231-234. Mass.

On the occurrence of Eozoon at Côte St. Pierre. Quart. Journ. Geol. Soc., 1876, pp. 66-75. Fig. & Pl. 10. London, Eng.

Note on the Phosphates of the Laurentian and Cambrian Rocks of Canada. Quart. Journ. Geol. Soc., vol. 32, pp. 282—285. 1876. London. Phil. Mag. vol. 1., pp. 558-559. 1876. Can. Nat. & Quart. Journ. Sci., (new series) vol. 8, pp. 162—170. 1878. Montreal.

Eozoon Canadense according to Hahn. Ann. & Mag. Nat. Hist., vol. 18, pp. 29—38. 1876. London, Eng.

On Mr. Carter's objections to Eozoon. (1875). Ann. & Mag. Nat. Hist., vol. 17, pp. 118-119. 1876. London, Eng.

Note on a specimen of Metadiabase from Connecticut Lake, supposed to be organic. Amer. Journ. Sci., vol. 12, p. 395. December, 1876. New Haven, Conn., U.S.A.

On a recent discovery of Carboniferous Batrachians in Nova Scotia. Amer. Journ. Sci., vol. 12, pp. 440-447., 1876. New Haven, Conn. Reprinted as separate pamphlet pp. 1—8. New Haven.

Carboniferous Land Shells. Nature, vol. 15, p. 317. London, Eng.

1877.

The Origin of the World, according to Revelation and Science. 438 pp. Montreal.

Annual address to Natural History Society of Montreal; Pleistocene History. Can. Nat. & Quart. Journ. Sci. (new series), vol. 8, No. 5, pp. 293—303. July, 1877. Montreal.

(*Remarks on Geology of Belœil and vicinity.*) Can. Nat. & Quart. Journ. Sci. (new series), vol. 8, No. 5, pp. 286—288. July, Montreal.

Note on a Fossil Seal from the Leda Clay of the Ottawa Valley. (Read before the Natural History Society [Montreal], October 29th., 877.) Can. Nat. & Quart. Journ. Sci., (new series,) vol. 8, No. 6, pp. 340-341. 1877. Montreal. Pamphlet, 1 page, issued Oct., 1877. Montreal.

The Earthquake of November 4, 1877. Can. Nat. & Quart. Journ. Sci., vol. 8, No. 6, pp. 342—345. December, 1877. Montreal.

Lower Carboniferous Fishes of New Brunswick. Can. Nat. & Quart. Journ. Sci., vol. 8, No. 6, pp. 337—340. Montreal. Published as separate. 4 pp Montreal.

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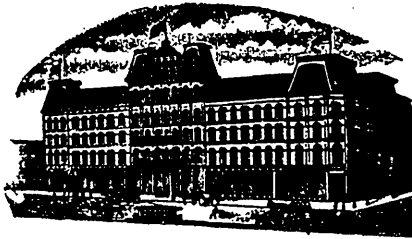
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