

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/  
Couverture de couleur
- Covers damaged/  
Couverture endommagée
- Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée
- Cover title missing/  
Le titre de couverture manque
- Coloured maps/  
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur
- Bound with other material/  
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/  
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/  
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments:/  
Commentaires supplémentaires:

- Coloured pages/  
Pages de couleur
  - Pages damaged/  
Pages endommagées
  - Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées
  - Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées
  - Pages detached/  
Pages détachées
  - Showthrough/  
Transparence
  - Quality of print varies/  
Qualité inégale de l'impression
  - Continuous pagination/  
Pagination continue
  - Includes index(es)/  
Comprend un (des) index
- Title on header taken from: /  
Le titre de l'en-tête provient:
- Title page of issue/  
Page de titre de la livraison
  - Caption of issue/  
Titre de départ de la livraison
  - Masthead/  
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

OCTOBER, 1895.

VOL. IX, No. 7.

# THE OTTAWA NATURALIST.

---

Published by the Ottawa Field-Naturalists' Club.

## CONTENTS.

1. List of Native Trees and Shrubs Growing at the Central Experimental Farm, Ottawa,  
(concluded). W. T. Macoun. .... 141
- 2, Excursion No. 3. .... 150
3. Geological Society of America.—Abstract of Papers Read at the August Meeting, 1895. .... 151
4. Notes, Reviews and Comments: 1. *Entomology*—Frail Children of the Air. 2. *Recent  
Geological Publications*. 3. *Conchology*. .... 154

OTTAWA, CANADA.

PRINTED AT THE OFFICE OF PAYNTER & ABBOTT,  
48 RIDEAU STREET.

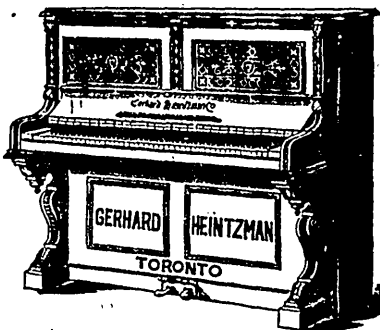
Canada's  
High  
Grade

## PIANOS

Mason & Risch,  
Nordheimer,  
Gerhard  
Heintzman.

Estey & Dominion  
Organs.

J. L. Orme & Son,  
113-115 Sparks St.



Sole Agents for  
STEINWAY,  
KNABE,  
CHICKERING.

A large assortment  
of second-hand in-  
struments. Terms  
to suit all purchas-  
ers.

J. L. Orme & Son,  
113-115 Sparks St.

J. G. BUTTERWORTH & Co.,  
All-Rail Scranton Coal.  
86 SPARKS STREET.

A. ROSENTHAL,

Jeweller and Optician.

87 SPARKS ST.

WELCH, MARGETSON & CO'S  
Shirts, Collars and Cuffs.

R. MCGIFFIN,  
49 SPARKS STREET.

KENNY BROS.,

Tailors to  
His Excellency  
THE GOVERNOR GENERAL.

C. H. THORBURN,  
Books and Stationery,  
FOUNTAIN PENS.  
Views of Ottawa. . 80 Sparks St.

WM. HOWE,

Importer of Artists' Materials and Artistic  
Interior Decorations. Manufacturer  
of White Lead, Paints & Colors.

Howe's Block, - - OTTAWA.

TRY

BATE & CO'S  
33 C.

English Blended Black Tea.

J. & T. BALLANTYNE,  
Best Grades of Hard and Soft Coal.  
OFFICE, COR. ELGIN & QUEEN STS.  
Telephones 586 and 579.

A. J. STEPHENS,  
FINE SHOES.  
39 SPARKS ST.

Boots and Shoes Made to Measure.

Wm. ROBERTSON,  
Bookseller and Stationer,  
69 Rideau Street.

Natural History Works supplied to  
order.

THE OTTAWA NATURALIST.\*

A MONTHLY MAGAZINE DEVOTED TO THE NATURAL SCIENCES.†

VOL. I. 1887-1888.

- ON A NEW GENUS AND THREE NEW SPECIES OF CRINOIDS. By W. R. Billings, p. 49.  
TESTIMONY OF THE OTTAWA CLAYS AND GRAVELS, &c. By Amos Bowman, p. 149.  
THE GREAT ICE AGE AT OTTAWA. By H. M. Ami, pp. 65 and 81.  
ON UTICA FOSSILS, FROM RIDEAU, OTTAWA, ONT. By H. M. Ami, p. 165-170.  
NOTES ON SIPHONOTRETA SCOTICA, *ibid.* p. 121.  
THE COUGAR. By W. P. Lett, p. 127.  
DEVELOPMENT OF MINES IN THE OTTAWA REGION. By John Stewart, p. 33.  
ON MONOTROPA. By James Fletcher, p. 43; By Dr. Baptie, p. 40; By Wm. Brodie, p. 118.  
SALAMANDERS. By F. R. Latchford, p. 105.

VOL. II. 1888-1889.

- DESCRIPTIONS OF NEW SPECIES OF MOSSES. By N. C. Kindberg, p. 154.  
A NEW CRUSTACEAN—DIAPLOMUS TYRRELLII, POPPE. Notice of.  
ON THE GEOLOGY AND PALEONTOLOGY OF RUSSELL AND CAMBRIDGE. H. M. Ami, p. 136.  
ON THE CHAZY FORMATION AT AYLMER. By T. W. E. Sower, pp. 7 and 11.  
THE PHYSIOGRAPHY AND GEOLOGY OF RUSSELL AND CAMBRIDGE. By Wm. Craig, p. 136.  
SEQUENCE OF GEOLOGICAL FORMATIONS AT OTTAWA WITH REFERENCE TO NATURAL GAS. H. M. Ami, p. 93.  
OUR OTTAWA SQUIRRELS. By J. Ballantyne, pp. 7 and 33.  
CAPRICORN BEETLES. By W. H. Harrington, p. 144.

VOL. III. 1889-1890.

- GEOLOGICAL PROGRESS IN CANADA. By R. W. Ells, p. 119-145.  
LIST OF MOSSES COLLECTED IN THE NEIGHBORHOOD OF OTTAWA. By Prof. Macoun, pp. 149-152.  
WHAT YOU SEE WHEN YOU GO OUT WITHOUT YOUR GUN, (Ornithological.) By W. A. D. Lees, p. 31-36.  
THE AMERICAN SKUNK. By W. P. Lett, pp. 18-23.  
THE BIRDS OF RENFREW COUNTY, ONT. By Rev. C. J. Young M.A. pp. 24-36.  
THE LAND SHELLS OF VANCOUVER ISLAND. By Rev. G. W. Taylor.  
DEVELOPMENT AND PROGRESS. By Mr. H. B. Small, pp. 95-105.

VOL. IV. 1890-1891.

- ON SOME OF THE LARGER UNEXPLORED REGIONS OF CANADA. By G. M. Dawson, pp. 29-40, (Map) 1890.  
THE MISTASSINI REGION. By A. P. Low, pp. 11-28.  
ASBESTUS, ITS HISTORY, MODE OF OCCURENCE AND USES. By R. W. Ells, pp. 11-28.  
NEW CANADIAN MOSSES. By Dr. N. C. Kindberg, p. 61.  
PALEONTOLOGY—A Lecture on. By W. R. Billings, p. 41.  
ON THE WOLF. By W. Pittman Lett, p. 75.  
ON THE COMPOSITION OF APPLE LEAVES. By F. T. Shutt, p. 130.  
SERPENTINES OF CANADA. By N. J. Giroux, pp. 95-116.  
A NATURALIST IN THE GOLD RANGE. By J. M. Macoun, p. 139.  
IDEAS ON THE BEGINNING OF LIFE. By J. Ballantyne, p. 127-127.

VOL. V. 1891-1892.

- ON THE SUDBURY NICKEL AND COPPER DEPOSITS. By Alfred E. Barlow, p. 51.  
ON CANADIAN LAND AND FRESH-WATER MOLLUSCA. By Rev. G. W. Taylor, p. 204.  
THE CHEMISTRY OF FOOD. By F. T. Shutt, p. 143.  
CANADIAN GEMS AND PRECIOUS STONES. By C. W. Willimott, p. 117.

\*Price \$1.00, per Vol. To Members: 60 cents.

† Some of the papers contained in the eight volumes already published.

ARE YOU IN ARREARS? Look at your label. The date on the address slip is that on which your subscription expired.

## THE OTTAWA NATURALIST.\*

A MONTHLY MAGAZINE DEVOTED TO THE NATURAL SCIENCES.

VOL. V. (Continued).

"EXTINCT VERTEBRATES FROM THE MIOCENE OF CANADA." Synopsis of. By H. M. Ami, p. 74.

A BOTANICAL EXCURSION TO THE CHÂTS. By R. B. Whyte, p. 197.

SOME NEW MOSSES FROM THE PRIBYLOF ISLANDS. By Jas. M. Macoun, p. 179.

DESCRIPTIONS OF NEW MOSSES. By Dr. N. C. Kindberg, p. 195-196.

ON DRINKING WATER. By Anthony McGill, p. 9.

LIST OF OTTAWA SPECIES OF SPHAGNUM. p. 83.

THE BIRDS OF OTTAWA. By the leaders of Ornithological section; Messrs Lees, Kingston and John Macoun.

VOL. VI. 1892-1893.

FAUNA OTTAWAENSIS: HEMIPTERA OF OTTAWA. By W. Hague Harrington, p. 25.

THE WINTER HOME OF THE BARREN GROUND CARIBOU. By J. Burr Tyrrell, p. 121.

THE MINERAL WATERS OF CANADA. By H. P. H. Brumell, pp. 167-196.

THE COUNTRY NORTH OF THE OTTAWA. By R. W. Ells, p. 157.

NOTES ON THE GEOLOGY AND PALAEOLOGY OF OTTAWA. By H. M. Ami, p. 73.

THE QUEBEC GROUP. *ibid.* p. 41.

FOOD IN HEALTH AND DISEASE. By Dr. L. C. Prévost, p. 172.

OVIS CANADENSIS DALLII. By R. G. McConnell, p. 130.

CHECK-LIST OF CANADIAN MOLLUSCA, p. 33.

ANTHRACNOSE OF THE GRAPE. By J. Craig, p. 114.

SOME OF THE PROPERTIES OF WATER. By Adolf Lehmann, p. 57.

VOL. VII. 1893-1894.

FAUNA OTTAWAENSIS: HYMENOPTERA PHYTOPHAGA. By W. H. Harrington, pp. 117-128.

NARRATIVE OF A JOURNEY IN 1890 FROM GREAT SLAVE LAKE TO BEECHY LAKE, ON THE GREAT FISH RIVER. By D. B. Dowling, pp. 85 to 92, and pp. 101 to p. 114.

FOOD AND ALIMENTATION. By Dr. L. C. Prévost, pp. 69-84.

NOTES ON SOME MARINE INVERTEBRATA FROM THE COAST OF BRITISH COLUMBIA. By J. F. Whiteaves, pp. 133-137.

NOTES ON THE GEOLOGY AND PALAEOLOGY OF THE ROCKLAND QUARRIES AND VICINITY. By H. M. Ami, pp. 138-47.

THE EXTINCT NORTHERN SEA COW AND EARLY RUSSIAN EXPLORATIONS IN THE NORTH PACIFIC. By George M. Dawson, pp. 151-161.

HYMENOPTERA PHYTOPHAGA, (1893). By W. H. Harrington, pp. 162-163.

NOTES ON CANADIAN BRYOLOGY. By Dr. N. C. Kindberg, p. 17.

CHEMICAL ANALYSIS OF MANITOBA SOIL. By F. T. Shutt, p. 94.

FOLLOWING A PLANET. By A. McGill, p. 167.

VOL. VIII. 1894-1895.

FAUNA OTTAWAENSIS: HEMIPTERA. By W. Hague Harrington, pp. 132-136.

THE TRANSMUTATIONS OF NITROGEN. By Thomas Macfarlane, F.R.S.C., pp. 45-74.

MARVELS OF COLOUR IN THE ANIMAL WORLD. By Prof. E. E. Prince, B.A., F.L.S., p. 115.

RECENT DEPOSITS IN THE VALLEY OF THE OTTAWA RIVER. By R. W. Ells, pp. 104-108.

1. NOTES ON THE QUEBEC GROUP; 2. NOTES ON FOSSILS FROM QUEBEC CITY. 1. By Mr. T. C. Weston; 2. By H. M. Ami. (Plate.)

ALASKA. By Otto J. Klotz, pp. 6-33.

FOSSILS FROM THE TRENTON LIMESTONES OF PORT HOPE, ONT. By H. M. Ami, p. 100.

FLORA OTTAWAENSIS. By J. FLETCHER, p. 67.

\*Price \$1.00 per Vol. To Members: 60 cents.

# THE OTTAWA NATURALIST.

Vol. IX.

OTTAWA, OCTOBER, 1895.

No. 7.

## LIST OF NATIVE TREES AND SHRUBS GROWING AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA, JULY, 1895.

By W. T. MACOUN.

Being continuation and completion of the paper which appeared in No. 5 and No. 6  
of the Ottawa Naturalist for August and September, 1895.

- (1364.) *VACCINIUM VITIS-IDAEA*, Linn. Cowberry, Cranberry.  
N.S. ; N.B. ; Que. ; Man. ; N.W.T. ; B.C.  
Low shrub ; hardy.
353. *ARCTOSTAPHYLOS*, Adms. (Bearberry.)  
(1370.) *A. UVA-URSI*, Spreng. Bearberry, Kinnikinick.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
Low Shrub ; hardy.
354. *GAULTHERIA*, Linn. (Aromatic Wintergreen.)  
(1375.) *G. SHALLOX*, Pursh. Salal.  
British Columbia.  
Shrub ; recently planted.
359. *CALLUNA*?, Salisb. (Heather.)  
(1385.) *C. VULGARIS*, Salisb.  
N.S. ; N.B.  
Low shrub ; hardy.
362. *KALMIA*, Linn. (American Laurel.)  
(1392.) *K. LATIFOLIA*, Linn. Calico-bush.  
Reported in Labrador.  
Shrub ; recently planted ; flowers ornamental.

- (1393) *K. ANGUSTIFOLIA*, Linn. Sheep Laurel, Lambkill.  
N.S. ; N.B. ; Que. ; Ont.  
Shrub ; hardy ; flowers ornamental.
364. *RHODODENDRON*, Linn. (Rose-bay, Azalea.)  
(1400.) *R. VISCOSUM*, Torr. Clammy Azalea.  
Reported in Canada.  
Shrub ; hardy ; flowers ornamental.
- (1401.) *R. SUDIFLORUM*, Torr. Purple Azalea.  
Reported in Canada.  
Shrub ; hardy ; flowers ornamental.

### LXI. OLEACEAE—Olive Family.

388. *FRAXINUS*, Linn. (Ash.)  
(1455.) *F. AMERICANA*, Linn. White Ash.  
N.S. ; N.B. ; Que. ; Ont.  
Large tree ; hardy.
- (1456.) *F. PUBESCENS*, Lam. Red Ash or River Ash.  
N.S. ; Que. ; Ont. ; Man.  
Tree ; hardy.
- (1457.) *F. VIRIDIS*, Michx. Green Ash.  
Ont. ; Man.  
Tree ; hardy.
- (1458.) *F. QUADRANGULATA*, Michx. Blue Ash.  
Western Ontario.  
Large tree ; semi-hardy.
- (1460) *F. SAMUICIFOLIA*, Lam. Black or Swamp Ash.  
N.S. ; N.B. ; Que. ; Ont.  
Large tree ; hardy.

### LXXIII. BIGNONIACEÆ—Bignonia Family.

464. *TECOMA*, Juss. (Trumpet-Creeper.)  
(1740.) *T. RADICANS*, Juss.  
Western Ontario.  
Woody climber ; semi-hardy ; flowers ornamental.

**LXXXVII. LAURACEÆ—Laurel Family.**

524. SASSAFRAS, Nees. (Sassafras.)  
 (1919.) S. OFFICINALE, Nees.  
 Western Ontario.  
 Tree ; Semi-hardy ; ornamental.
525. LINDERA, Thunb. (Wild Allspice.)  
 (1920.) L. BENZOIN, Meisner. Spice Bush.  
 Ontario.  
 Tall shrub ; semi-hardy, leaves and flowers ornamental.

**LXXXVIII. THYMELÆACEÆ—Mezereum Family.**

527. DIRCA, Linn. (Leather-wood, Moose-wood.)  
 (1922.) D. PALUSTRIS, Linn.  
 N.B. ; Que. ; Ont.  
 Shrub ; hardy ; ornamental.

**LXXXIX. ELÆAGNACEÆ—Oleaster Family.**

528. ELÆAGNUS, Linn. (Silver Berry.)  
 (1913.) E. ARGENTEA, Pursh.  
 Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
 Tall shrub ; hardy ; leaves ornamental.
529. SHEPHERDIA, Nutt. (Shepherdia.)  
 (1924.) S. CANADENSIS, Nutt. Canadian Shepherdia.  
 N.B., Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
 Shrub ; hardy ; fruit ornamental.
- (1925.) S. ARGENTEA, Nutt. Buffalo-Berry.  
 Man. ; N.W.T.  
 Shrub ; hardy ; fruit ornamental.

**XCIII. URTICACEÆ.—Nettle Family.**

535. ULMUS, Linn. (Elm.)  
 (1946.) U. FULVA, Michx. Slippery or Red Elm. .  
 Que. ; Ont.  
 Large tree ; hardy.



(1947.) *U. AMERICANA*, Linn. American Elm.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
Large tree ; hardy.

(1948) *U. RACEMOSA*, Thomas. Rock Elm.  
Que. ; Ont.  
Tree ; hardy.

536. *CELTIS*, Linn. (Nettle Tree)

(1949.) *C. OCCIDENTALIS*, Linn. Sugar-Berry.  
Que. ; Ont.  
Tree ; hardy.

539. *MORUS*, Linn. (Mulberry.)

(1952.) *M. RUBRA*, Linn. Red Mulberry.  
Western Ontario.  
Small tree ; hardy.

#### XCIV. PLATANACEÆ.—Plane-Tree Family.

545. *PLATANUS*, Linn. (Button-Wood.)

(1963.) *P. OCCIDENTALIS*, Linn.  
Western Ontario.  
Large tree ; hardy ; leaves ornamental.

#### XCV. JUGLANDACEÆ.—Walnut Family.

546. *CARYA*, Nutt. (Hickory.)

(1964.) *C. ALBA*, Nutt. Shell-bark Hickory.  
Que. ; Ont.  
Large tree ; hardy.

(1966.) *C. PORCINA*, Nutt. P'g-nut or Brown Hickory.  
Western Ontario.  
Tree ; recently planted.

(1967.) *C. AMARA*, Nutt. Bitter-nut Hickory.  
Que. ; Ont.  
Tree ; hardy.

- 547 JUGLANS, Linn. (Walnut.)  
 (1968.) *J. CINEREA*, Linn. Butternut.  
 Que. ; Ont.  
 Large tree ; hardy.  
 (1969.) *J. NIGRA*, Linn. Black Walnut.  
 Western Ontario.  
 Large tree ; hardy.

### XCVI. MYRICACEÆ—Sweet Gale Family.

548. MYRICA, Linn. (Wax Myrtle.)  
 (1970.) *M. GALE*, Linn. Sweet Gale.  
 N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
 Shrub ; Hardy.

### XCVII. CUPULIFERÆ.—Oak Family.

549. BETULA, Linn. Birch.  
 (1974.) *B. LENTA*, Linn. Cherry or Black Birch.  
 N.S. ; N.B. ; Que. ; Ont.  
 Large tree ; hardy.  
 (1975.) *B. LUTEA*, Michx. Yellow Birch.  
 N.S. ; N.B. ; Que. ; Ont.  
 Large tree ; hardy.  
 (1977.) *B. PAPYRIFERA*, Michx. Canoe Birch.  
 N.S. ; N.B. ; Que. ; Man. ; N.W.T. ; B.C.  
 Large tree ; hardy.  
 (1978.) *B. OCCIDENTALIS*, Hooker. Western Birch.  
 N.W.T. ; B.C.  
 Tree ; hardy.  
 (1879.) *B. PUMILA*, Linn. Low Birch.  
 N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
 Shrub ; hardy.  
 550. ALNUS, Gærtn. (Alder.)  
 (1985.) *A. INCANA*, Willd. Common Alder.  
 N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
 Tall shrub or small tree ; hardy.

- (1986.) *A. VIRIDIS*, DC. Green Alder.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T., B.C.  
Tall shrub ; hardy.
551. *CARPINUS*, Linn. (Hornbeam.)  
(1987.) *C. CAROLINIANA*, Walter. Blue Beech.  
Que. ; Ont.  
Tree ; hardy.
552. *OSTRYA*, Scop. (Ironwood.)  
(1988.) *O. VIRGINICA*, Willd. Lever-wood.  
N.S. ; N.B. ; Que. ; Ont.  
Tree ; hardy.
333. *CORYLUS*, Linn. (Hazel-nut.)  
(1989.) *C. ROSTRATA*, Ait. Beaked Hazel-nut.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
Shrub ; hardy.  
(1990.) *C. AMERICANA*, Walt. Wild Hazel-nut.  
Ont. ; Man. ; N.W.T.  
Shrub ; hardy.
554. *QUERCUS*, Linn. (Oak.)  
(1991.) *Q. ALBA*, Linn. White Oak.  
Que. ; Ont.  
Large tree ; hardy.  
(1994.) *Q. MACROCARPA*, Michx. Mossy-cup Oak.  
N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
Large tree ; hardy.  
(1996.) *Q. PRINUS*, Linn. Rock Chestnut Oak.  
Western Ontario.  
Tree ; hardy.  
(1997.) *Q. PRINOIDES*, Willd. Yellow Oak, Chestnut Oak.  
Ontario.  
Tree ; hardy.  
(1998.) *Q. RUBRA*, Linn. Red Oak.  
N.S. ; N.B. ; Que. ; Ont.  
Large tree ; hardy ; leaves ornamental in Autumn,

- (1999.) *Q. COCCINEA*, Wang. Scarlet Oak.  
Ontario.  
Large tree ; hardy ; leaves ornamental in Autumn.
- (2000.) *Q. TINCTORIA*, Bartram. Yellow Oak.  
Western Ontario.  
Large tree ; hardy.
- (2001.) *Q. PALUSTRIS*, Du Roi. Pin Oak.  
Western Ontario.  
Tree ; hardy
555. *CASTANEA*, Gært. (Chestnut.)  
(2002.) *C. VULGARIS*, Var. *AMERICANA*, A. DC.  
Western Ontario.  
Large tree ; hardy.
556. *FAGUS*, Linn. (Beech.)  
(2003.) *F. FERRUGINEA*, Aiton. American Beech.  
N.S. ; N.B. ; Que. ; Ont.  
Large tree ; hardy ; leaves ornamental in Autumn.

### XCVIII. SALICACEÆ—Willow Family.

557. *SALIX*, Linn. Willow.  
(2012.) *S. CANDIDA*, Willd. Hoary Willow.  
Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
Tall shrub ; hardy.
- (2015.) *S. CORDATA*, Muhl. Heart-leaved Willow.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
Tall shrub or small tree ; hardy.
- (2016.) *S. DISCOLOR*, Muhl. Glauous Willow.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
Tall shrub or small tree ; hardy.
- (2024.) *S. HUMILIS*, Marshall. Low Willow.  
N.S. ; N.B. ; Que. ; Ont.  
Shrub ; hardy.

- (2028.) *S. LUCIDA*, Willd. Shining Willow.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
Tall shrub or small tree ; hardy ; leaves ornamental.
- (2048.) *S. TRISTIS*, Ait.  
Nova Scotia.  
Low shrub ; hardy.
558. *POPULUS*, Linn. (Poplar.)  
(2053.) *P. TREMULOIDES*, Michx. Aspen.  
N.S. ; N.B. ; Que., Ont. ; Man. ; N.W.T. ; B.C.  
Tree ; hardy.
- (2056) *P. ANGUSTIFOLIA*, James. Black Cottonwood.  
N.W.T.  
Tree ; hardy.
- (2058.) *P. MONILIFERA*, Aiton. Cottonwood.  
Que. ; Ont. ; Man. ; N.W.T.  
Large tree ; hardy.
- CI. CONIFERÆ—Pine Family.**
562. *THUYA*, Linn. (Arbor-Vitæ.)  
(2062.) *T. OCCIDENTALIS*, Linn. White Cedar.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
Tree ; hardy ; ornamental.
563. *JUNIPERUS*, Linn. (Juniper.)  
(2067.) *J. VIRGINIANA*, Linn. Red Cedar.  
N.S. ; Que. ; Ont.  
Tree ; hardy ; ornamental.
- (2068.) *J. COMMUNIS*, Linn. Common Juniper.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
Shrub ; hardy.
564. *TAXUS*, Linn. (Yew.)  
(2071.) *T. BACCATA*, L. var *CANADENSIS*, Gray. American Yew.  
N.S. ; N.B. ; Que. ; Ont. ; Man. ;  
Shrub ; hardy.

565. PINUS, Linn. (Pine.)  
 (2072.) P. STROBUS, Linn. White Pine.  
 N.S. ; N.B. ; Que. ; Ont. ; Man.  
 Large tree ; hardy ; ornamental.
- (2076.) P. RESINOSA, Ait.-D. Red Pine.  
 N.S. ; N.B. ; Que. ; Ont.  
 Large tree ; hardy ; ornamental.
- (2077.) P. PONDEROSA, Dougl. Heavy-wooded Pine.  
 British Columbia.  
 Large tree ; hardy ; ornamental.
- (2079.) P. MURRAYANA, Balfour. Black Pine.  
 N.W.T. ; B.C.  
 Tree ; hardy ; ornamental.
- (2080.) P. RIGIDA, Miller. Pitch Pine.  
 N.B. ; Que. ; Ont.  
 Tree ; hardy.
566. PICEA, Link. (Spruce.)  
 (2082.) P. NIGRA, Link. Black Spruce.  
 N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T. ; B.C.  
 Tree ; hardy ; ornamental.
- (2083.) P. ALBA, Link. White Spruce.  
 N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
 Tree ; hardy ; ornamental.
- (2084.) P. ENGELMANNI, Engelm. Engelmann's Spruce  
 N.W.T. ; B.C.  
 Large tree ; hardy ; ornamental.
567. TSUGA, Cass. (Hemlock.)  
 (2086) T. CANADENSIS, Carr. Hemlock.  
 N.S. ; N.B. ; Que. ; Ont.  
 Large tree ; hardy ; ornamental.

568. PSEUDOTSUGA, Carr. (Red Fir.)  
 (2089.) P. DOUGLASH, Carr. Douglas Fir.  
 N.W.T. ; B.C.  
 Large tree ; hardy ; ornamental.
569. ABIES, Juss. (Balsam.)  
 (2090.) A. BALSAMEA, Miller. Canada Balsam Fir.  
 N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
 Tree ; hardy ; ornamental.
- (2019.) A. SUBALPINA, Engelm. Mountain Balsam.  
 N.W.T. ; B.C.  
 Tree ; hardy ; ornamental.
- (2083.) A. AMABILIS, Forbes. White Fir.  
 British Columbia.  
 Tree ; hardy ; ornamental.
570. LARIX, Mill. (Tamarack, Larch.)  
 (2094) L. AMERICANA, Michaux Tamarack, Black Larch.  
 N.S. ; N.B. ; Que. ; Ont. ; Man. ; N.W.T.  
 Tree ; hardy ; ornamental.

## EXCURSION NO. 3.

The last field day of the O. F. N. Club for the season of 1895 was held, as announced, on 14th. September. The objective point was the Pagan Falls on the Gatineau River near Low Station, about 40 miles from Ottawa.

About 120 members and friends of the club were present, but there was a dearth of leaders of sections, and owing to this cause and the rapidly advancing autumn, the collection of specimens made was unusually meagre. On the reassembling of the party in the afternoon, however, and after a short introductory address by the president, Mr. F. T. Shutt, M. A., the leaders in Botany discussed the flowers and plants collected, Mr. R. B. Whyte giving particular regard to the *composite* to which order as he pointed out most of the autumn flowers belonged.

Mr. Craig drew attention to the number and variety of the coniferous trees standing near and made some interesting remarks upon their nature and uses.

After a short address by Mr. R. H. Cowley upon the importance of natural history studies in education, the train for home drew up, and the party reached Ottawa at 8 p. m.

GEOLOGICAL SOCIETY OF AMERICA, SPRINGFIELD,  
MASS., 1895.

Abstracts and Titles of Papers Read at the August Meeting.

1. *On the Glacial Deposits of South-western Alberta, in the Vicinity of the Rocky Mountains.* By George M. Dawson and R. G. McConnell, Ottawa, Canada.

This paper presented the facts obtained during a recent examination of the glacial deposits of a portion of the south western of the Canadian Great Plains, in the foot-hills and along the base of the Rocky Mountains, where phenomena of particular interest are met with in connection with the relations of the western and eastern drift. (Cordilleran and Laurentide.) A brief summary of previous observations is followed by a description of sections along two main lines of approach to the mountains at relatively low levels and an examination of the conditions surrounding the glacial deposits at the highest levels, found in the form of terraces with rolled shingle at 5,300 feet on the Porcupine Hills. In conclusion, the observed facts are briefly discussed, attention being practically confined to the particular region treated in the body of the paper.

2. *The Champlain Glacial Epoch.* By C. H. Hitchcock, Hanover, N. H.

The Champlain was a true glacial epoch, when the land was considerably depressed. Glaciers from the north and south discharged bergs into an estuary. The fauna was arctic. Moraines and both the marine and fluvial clays covered till of an earlier ice-sheet. It is possible to harmonize the conflicting theories of glacial and ice-berg action by referring the greater ice-sheets to the earlier, and the floating ice phenomena to the later, Champlain epoch.

3. *Drumlins and Marginal Moraines of Ice-sheets.* By Warren Upham, Cleveland, Ohio.

4. *The Glacial Genesee Lakes.* By Prof. H. L. Fairchild, Rochester, N. Y.

The direction, inclination and extent of the Genesee Valley made possible the production, during the retreat of the ice-sheet, of a succession of glacial lakes with different outlets. The paper described, with the aid of a map, (1) the present topography and hydrography of the valley, (2) the ancient drainage channels, (3) the complex lacustrine phenomena.

5. *The Archean and Cambrian Rocks of the Green Mountain Range in Southern Massachusetts.* By Prof. B. K. Emerson, Amherst, Mass.

Description of a series of Archean anticlines partly overturned and thrust westward, and of the uniformity of the Cambrian conglomerate gneiss upon the old rocks.

6. *The Triassic in Massachusetts.* By Prof. B. K. Emerson, Amherst, Mass.

The stages of deposition and deformation of the sandstones and the relations of the effusive traps and tuffs and the intruded traps to the sandstones.

7. *Notes on Relations of Lower Members of Coastal Plain Series in South Carolina.* By Mr. N. Darton, Washington, D. C.



8. *Resume of General Stratigraphic Relations in the Atlantic Coastal Plain from New Jersey to South Carolina.* By Mr. N. H. Darton, Washington, D. C.
9. *Cretaceous Plants from Martha's Vineyard. Results Obtained from an Examination of the Material Collected by David White in 1889.* By Mr. Arthur Hollick, New Brighton, N. Y.
10. *On Asbestos and Asbestiform Minerals.* By Dr. George P. Merrill, Washington, D. C.

The paper treats of the composition, mode of occurrence and mineralogical nature of the various minerals commercially grouped under the name of asbestos, and attempts to explain their fibrous structure as due to abnormal elongation of the mineral parallel to the vertical axis, the individual fibres being in part at least by prismatic faces, that is by the planes of easiest cleavage. The primary cause of this elongation is believed to be mainly dynamical, a result of shearing and other earth movements such as are productive of uraltic hornblendes, schistosity or even slaty structure and slickensided surfaces, where actual fracturing takes place.

11. *Pre-Cambrian Volcanoes in Southern Wisconsin.* By Prof. Wm. H. Hobbs, Madison, Wis.

A preliminary report on the study of a group of isolated areas of igneous rocks which protrude through the Potsdam sandstone in the valley of the Fox River, Wisconsin. Some of these areas represent local outflows of rhyolitic lava which exhibits superb examples of spherulitic, peritic, fluxion, and breccia structures. The originally glassy ground mass of these rocks has become devitrified—hence they are apophyllites, and they have been subjected to dynamic metamorphism and subsequent infiltration of silica. They are intruded by dikes of both basic and acid rocks. Specimens and photographic sections were exhibited.

12. *A Geological Sketch of the Sierra Tlayacac, in the State of Morelos, Mexico.* By Prof. A. Capen Gill, Ithaca, N. Y.
13. *Syenite-Gneiss (Leopard Rock) from the Apatite Region of Ottawa County, Canada.* By C. H. Gordon, Beloit, Wisconsin.

The rock here described appeared in the exhibit of the Canadian Geological Survey, at the World's Fair under the title of "Concretionary Veinstone," from the apatite region. It consists of irregular ellipsoidal or ovoid masses of feldspar, with more or less quartz, separated by narrow, anastomosing bands of interstitial material consisting chiefly of green pyroxene. The ellipsoidal masses are of all sizes up to two or three inches in cross section, and several inches long. The field study at High Rock Mine, Ottawa County, shows this rock to occur in dikes intersecting the pyroxenites and quartzites. In some places the rock is very coarse with no indications of the ellipsoidal structure, while in others it is a distinctly banded gneiss whose identity with the ellipsoidal rock is evident from the anastomosing of the augite bands on a cross fracture face. Ordinarily the rock has very little quartz and corresponds to a pyroxene-syenite, but in some places the quartz is much more abundant thus alloying it to the pyroxene-granites. In view of its gneissic structure and usually sparing amount of quartz the rock is here referred to generally as syenite-gneiss, though grading locally into forms which may more fittingly be regarded as granite-gneiss.

The presence of a distinct gneissic microstructure, taken in connection with other facts appears to establish the conclusion that the peculiar ellipsoidal structure is due to orographic forces acting upon a coarsely crystallized rock in which principal constituents (feldspar and pyroxene) are more or less irregularly distributed. The breaking of the rock under pressure has been attended by the recrystallization of the

augite and other constituents along the original fracture planes, which were probably, in part, determined by the arrangement of the two chief constituents.

The points of interest brought out in the study are: (1) that this peculiar distribution of the pyroxene is due to dynamic processes, (2) the importance to be attached to the process of solution and recrystallization in the formation of gneisses, (3) the significance of the original character of the rock with reference to the product derived from it by dynamic processes, and the differences resulting from variations in the extent to which it has been affected by orographic agencies, and (4) the evidence showing the derivation of a gneiss out of a syenite, and establishing the term syenitic-gneiss as the name of a distinct rock type.

14. *The Titaniferous Iron Ores of the Adirondacks.* Prof. J. Kemp, New York City.

The paper opens with a brief statement of the characters of the two kinds of iron ores which are afforded by the region, the merchantable magnetites and the titaniferous. The former are in gneisses; the latter in the gabbros and anorthosites of the Norian, which are believed to be intruded through the gneisses. A list of localities of the titaniferous ores is given and distinction is made between the smaller bodies which are, so far as can be seen, basic developments of gabbro, and the enormous ore bodies at the old Adirondack Iron works, in the heart of the mountains. These latter are in massive, anorthosite, which is almost entirely formed of large, blue-black crystals of labradorite. The largest ore body, which is the one crossing Lake Sandford, contains numerous included labradorite crystals, each of which is surrounded by a reaction rim 5-10 mm. across. It is further shown that the wall rocks show no signs of the widespread crushing that is exhibited in the general "mortar structure" of the Adirondack and Canadian anorthosites but are plutonic rocks, free from evidences of dynamic metamorphism. The argument is then made that the ores are segregations from an igneous magma formed during the process of cooling and crystallization.

15. *The Decomposition of Rocks in Brazil.* By J. C. Brauner, Stanford University, Calif.

16. *The Bearing of Physiography on Uniformitarianism.* By Prof. W. M. Davis, Cambridge, Mass.

The conditions and processes postulated in the physiographic study of land forms—Geomorphology of some authors—are among the cardinal principles of uniformitarianism. The success in the interpretation of nature by means of this kind of study confirms the correctness of its postulates, and thus brings to the support of uniformitarianism a large class of facts, whose bearing on this theory was not at all perceived when its early advocates announced it.

17. *Analysis of Folds.* By Prof. C. R. Van Hise, Madison, Wis.

As ordinarily treated folds are considered as simple flexures in two dimensions. As they occur in nature folds are compound flexures in two dimensions. The analysis of simple folds given by Margerie and Heim is summarized. For the sake of simplicity folds are first treated in two dimensions. A composite fold is produced by the combination of various simple folds. Composite folds include both normal composite folds and abnormal composite folds. The genesis of each is discussed, and each is classified into upright, inclined, and overturned anticlinoria and synclinoria.

When composite folds are cross folded, these are called complex folds. The character and origin of complex folds are discussed. Rules are given for observation in regions which are folded in a complex manner. The use of folds in the discovery of unconformity and the secondary changes which accompany folding are summarized.

## NOTES, REVIEWS, AND COMMENTS.

**Entomology.**—\*FRAIL CHILDREN OF THE AIR. Another of Mr. Scudder's delightful books has just come to hand, with the above pretty title. It is a tastefully bound 8vo. of 279 pages, containing 31 short chapters, 9 plates, on the habits and structure of butterflies, written in a graceful, but clear and popular, style, which will make the book entertaining to many who have never taken any special interest in butterflies and will, we believe, realise the author's hope, expressed in the preface, "gain for our butterflies a deeper interest and closer attention on the part of the observing public." This is really an excellent selection from a series of papers which ran through Mr. Scudder's large and costly work, "The Butterflies of the Eastern United States and Canada," and, although forming a "consistent whole," each chapter is complete in itself. The following titles of some of the subjects treated will give a slight idea of the scope of this attractive little volume:—Butterflies in Disguise, Butterflies as Botanists, Butterfly Sounds, The Eggs of Butterflies, How Butterflies pass the Winter, Protective Colouring in Caterpillars, The Procession of the Seasons, Some Singular Things About Caterpillars, The Friends and Associates of Caterpillars, Butterflies of the Past.

J. FLETCHER.

**Geology.**—RECENT PUBLICATIONS:—

1. CLAYPOLE, PROF. E. W.—"*Glacial Notes from the Planet Mars.*" American Geologist, Vol. XVI, No. 2 pp. 91—100, August, 1895.
2. UPHAM, WARREN.—"*Correlations of Stages of the Ice-Age in North America and Europe.*" *Ibid*, pp. 100—113.
3. JAMESON, CHARLES D.—"**Portland Cement,**" "*a monograph.*" The Transit: Vol. III; No. 1, 192 pp. Iowa City, 1895.
4. RANSOME, PROF. F. LESLIE.—"*On Lawsonite, a New Rock-forming Mineral from the Tiburon Peninsula, Marin Co., California*" Bull. Dept. Geol. Univ. Calif.; Vol. I, No. 10, pp 301—312, pl. 17; Berkeley, May, 1895,

Lawsonite is named in honor of Prof. A. C. Lawson, M.A., Ph D., etc., etc., Professor of Geology in the University of California, and formerly on the staff of the Geological Survey of Canada.

---

\*Frail Children of the Air—Excursions into the World of Butterflies—By Samuel H. Scudder, Cambridge, Mass. \$1.50.

5. VOGDES, A. W.—“*A Supplement to the Bibliography of the Paleozoic Crustacea.*” Extr. Proc. Cal. Acad. Sc., Ser. 2, Vol. V., pp. 53—76.
6. MATTHEW, Dr. G. F.—“*On the Organic Remains of the Little River Group*,” Nos. II and III. Trans. Roy. Soc. Can. Section IV, pp. 89—111, plate 1, figs. 1 to 11. Eight new species and one new genus are herein described for the first time from the “Devonian” of New Brunswick, as follows :

## INSECTA :

1. *Homothetus erutus*, n.sp.

## MYRIAPODA :

2. *Paleocampa* (?) *obscura*, n.sp.  
 3. *Euphoberia atava*, n.sp.  
 4. *Eilatius* (?) *antiquus*, n.sp.  
 5. *Hyodes* (?) *attenuata*, n.sp.  
 6. *Chilopus dubius*, n.g. et. sp.

## ARACHNOIDEA :

7. *Paleophorus arctus*, n.sp.

## PULMONIFERA :

8. *Pupa primaeva*, n.sp.

Besides the above Dr. Matthew also figures: *Eoscorpium carbonarius*, Meek and Worthen, from the Carboniferous of Illinois; *Paleophonus nuncius*, Thorell and Lindstrom, from the “Silurian” of Sweden, and a species of *Euphoberia*, from Plant Bed No. 2. The whole is a most valuable contribution to science. H. M. AMI.

7. WINCHELL, PROF. N. H.—“*A Rational View of the Keweenawian.*” Amer. Geol., Vol. XVI, No. 3, pp. 150—162, Sept, 1895. This forms the seventh article of a series on “Crucial points in the Geology of the Lake Superior Region” by Prof. Winchell.
8. BEECHER, DR. CHARLES E.—“*The Larval Stages of Trilobites.*” *Ibid.*, pp. 166 to 197, Plates VIII—X.

In this important contribution to our knowledge of the trilobites in their earliest stages, Dr. Beecher shows that “all the facts in the ontogeny of trilobites point to one type of larval structure.” To the earliest larval stage, the name “*protaspis stage*,” is given. Then follows a review of larval stages of trilobites, derived from such forms as *Solenopteura robbi*, Hartt; *Liostracus ouangondianus*, Hartt; *Ptychoparia lunnarssoni*, Walcott; *Ptychoparia kingi*, Meek; *Sao hirsuta*, Barrande; *Triarthrus becki*, Green; *Acidaspis tuberculata*, Conrad; *Arges consanguineus*, Clarke; *Proetus parviusculus*, Hall; *Dalmanites socialis*, Barrande.

**Conchology.** — A large land shell, new to the Ottawa list, was found at Casselman on May 23rd. It is *Helix palliata*. Three specimens were found, one west of the South Nation river, and two on the east side, below the falls, in the woods where the beautiful *Phlox divaricata* was then in full bloom. *H. palliata* is about three quarters of an inch in diameter, and differs from *H. dentifera*, which it most resembles in general appearance, in having the upper lip prolonged inward at two points into what are commonly called "teeth". A similar process is formed upon the body whorl. These projections permit the soft tissues of the builder to pass, but oppose a pearly barrier to beetles and other enemies who would intrude upon the dweller within. The three teeth on the shell of *H. palliata* and other American land shells have been considered a peculiarity sufficiently distinctive to warrant the grouping of such species in a sub-genus, under the name *Triodopsis*. The study of the inhabitants of the shells grouped under this term has shown that many are less closely allied to other *triodopses* than they are to the *mesodons*, or shells of which *H. albolabris* and *H. thyroides*, also found at Casselman, may be regarded as the types. The shell alone can, in fact, be seldom relied on in arranging a natural classification of molluscs.

CASSELMAN SHELLS — A mere list of names is dry reading at best, and is of little interest to the general reader. In years to come, however, THE NATURALIST will be referred to, to ascertain what plants or shells at a particular time occurred in certain places. Any record, therefore, is likely to be of some use. At Casselman on May 23rd and 24th, a number of shells were noticed. No great effort was made to collect anything but what came in the way of a few members of the Club, while on a botanical excursion. This may account for the absence from the following list of such shells as *H. dentifera* and *H. thyroides*, which are known to occur at Casselman. The species noted were:— *Helix albolabris*, *H. sayi*, *H. palliata*, *H. alternata*, *H. concava*, *H. monodon*, *H. nitida*, *H. arborea*, *H. radiatula*, *H. fulva*, *H. striatella*, *H. pulchella*, *H. binneyana*, *Succinea ovalis*, *S. obliqua*, *Vitrina limpida*, *Limax campestris*, *Teb. Carolinensis*, *Vertigo ovata*, *Per. subeliniaria*, *Carychium exiguum*, *Gor. livescens*, *Camp. decisum*, *Limnea palustris*, *L. caperata*, *Physa heterostropha*, *P. billingsii*, *Planorbis trivolvis*, *Pl. bicarinatus*, *Pl. parvus*, *Aucylus parallelus*, *Unio complanatus*, *U. luteolus*, *Anodonta fluviatilis*, *Sphaerium sulcatum*, *S. occidentale*, *Pisidium abditum*. L.

J. ROBERTS ALLAN, Chemist and Druggist,  
76 Rideau Street, Ottawa.

If you want nice PHOTOS, go to MR. JARVIS, 117 Sparks Street.

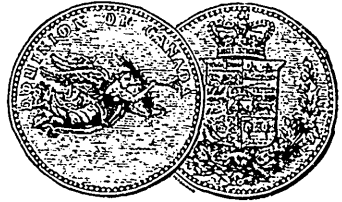
**NATIONAL MFG CO.**  
160 SPARKS ST. OTTAWA



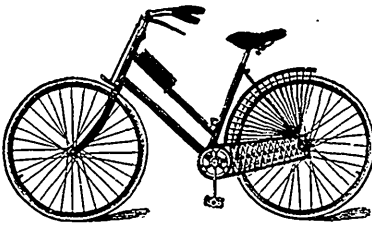
TENTS . FLAGS . CAMP FURNITURE,  
SPORTING GOODS &c  
SEND STAMP FOR ILLUSTRATED CATALOGUE

**Tents, Flags,  
Camp Furniture,  
Hammocks.**

We profess to manufacture our goods in a superior manner and of better material than any other house in the trade. In proof of this we may state that we have been awarded 203 gold and silver medals and first prizes at the leading exhibitions in Europe, America and Australia, and never had to take second place.



Our prices are as low as any on the continent. Send stamp for Catalogue.



Our line of bicycles are, we think, the largest in Canada, including Beeston Humber, Up-to-date, Rudge, Premier, Rambler, Crescent, Wanderer, Chainless, Whitworth, Hyslop, Spartan, &c. Our prices run from \$45.00 upwards. You can save money by purchasing from us.

**COLE'S NATIONAL MFG. CO.,**  
160 SPARKS STREET, OTTAWA.

JAMES HOPE & CO., Importing and Manufacturing Stationers, Booksellers and Bookbinders, Ottawa. Depository Ottawa Auxiliary Bible Society.

**PITTAWAY'S PHOTO STUDIO,**  
58 SPARKS STREET.

# CANADA ATLANTIC RAILWAY.

OTTAWA, ARNPRIOR AND PARRY SOUND RAILWAY.

FAST SHORT LINE TO

Montreal,                      The Adirondacks,  
          Quebec,                      Seaside Resorts,  
                  Halifax,                      Summer Resorts,  
New York,                      Boston,                      Philadelphia.

## NEW EQUIPMENT. PULLMAN PARLOR CARS.

Special inducements to Societies, Sunday Schools, etc., for excursions to a large number of pic-nic grounds, scenic resorts, etc., within a short distance of Ottawa.

For full information apply at City Ticket Office, Russell House Block, or to

E. J. CHAMBERLIN,

General Manager.

C. J. SMITH,

Agent.



THE  
Russell House,  
OTTAWA.  
F. X. ST. JACQUES,  
Proprietor.

## Transactions of the Ottawa Field-Naturalists' Club, 1880-86.

Complete in Two Volumes, containing Parts 1, 2, 3, 4, 5, 6 and 7.

Vol. I, price \$1.00; to members 70 cents.

Vol. II, price \$1.00; to members 50 cents.

### TRANSACTIONS.

VOL. I.	{	Pt. 1, not sold singly.		VOL. II.	{	Pt. 5, price 30 cts; members 20 cts.
		" 2, price 25 cts; members 15 cts.				" 6, " 40 cts; " 25 "
		" 3, " " " "				" 7, " 30 " " 20 "
		" 4, " " " "				

THE OTTAWA NATURALIST, \$1.00 per annum, MONTHLY PARTS, 10 cts, to members, 5 cts. QUARTERLY PARTS, 25 cts; to members, 15 cts. EXTRAS—1. Lecture on Palæontology. Walter R. Billings. Eleven pages. Price, 5 cents. 2. Asbestos; its History, Mode of Occurrence and Uses. Dr. R. W. Ellis. Twenty-four pages. Price 10 cts.

SHOES SOLD BY RETAILLACK WEAR WELL. 63 SPARKS STREET.

Olmsted & Hurdman, Diamonds, Watches, Jewellery,  
67 Sparks St., Ottawa.  
Telephone 76.

HENRY WATTERS,

Chemist and Druggist,

Corner of Sparks and Bank Streets,

OTTAWA.

**TOPLEY,**

132 Sparks Street.

COME IN AND SEE LATEST PHOTOS.

Kodaks to Rent.

**THOMAS LIGGET**

Has removed his Stock of

CARPETS, ETC.,

to new premises.

177 AND 179 SPARKS ST.

**G. M. HOLBROOK,**

102 Sparks Street,

OTTAWA.

Trouser Stretchers, 50c. per pair.

JOHN MURPHY & CO.,

IMPORTERS

FANCY AND STAPLE DRY GOODS,

66 and 68 Sparks Street,

OTTAWA.

ESTABLISHED 1836.

J. DURIE & SON,

Booksellers Stationers,  
Publishers.

SPARKS STREET, OTTAWA.

**R. A. McCORMICK,**

Prescription Druggist,

75 SPARKS STREET,

Phone 159. Ottawa.

ALEX. SPITAL & CO.,

PITTSTON COAL.

All Sizes. Lowest Prices.

161 SPARKS STREET,

Telephone 971.

M. M. Pyke, Men's Outfitter and Proprietor of Pyke's Steam Laundry.

J. & R. CRAIG, Tailors, 105 Sparks St., Ottawa.



JUN 1 3 1886

# THE OTTAWA FIELD-NATURALISTS' CLUB, 1895-1896.

**Patron:**

THE RT. HONOURABLE THE EARL OF ABERDEEN,  
GOVERNOR-GENERAL OF CANADA.

**President:**

MR. F. T. SHUTT, M.A., F.I.C.

**Vice-presidents**

Mr. A. G. Kingston. Dr. H. M. Ami, M.A., F.G.S.

**Librarian:**

Mr. S. B. Sinclair, B.A.  
(Normal School.)

**Secretary:**

Mr. Andrew Halkett,  
(Marine and Fisheries Dept.)

**Treasurer:**

Mr. D. B. Dowling, B.A.Sc.  
(Geol. Survey Dept.)

**Committee:**

Prof. E. E. Prince, B.A., F.L.S.	Miss A. Shenick, B. Sc.
Mr. James Fletcher, F.L.S., F.R.S.C.	" G. Harmer.
Mr. W. F. Ferrier, B.A.Sc., F.G.S.	" A. M. Living.

**Standing Committees of Council:**

*Publishing:* Dr. Ami, Prof. Prince, Mr. Dowling, Mr. Kingston, Mr. Ferrier.  
*Excursions:* Mr. Kingston, Mr. Dowling, Dr. Ami, Miss Shenick, Miss Living.  
*Soirees:* Prof. Prince, Mr. Sinclair, Mr. Fletcher, Mr. Halkett.

**Leaders:**

*Geology:* Dr. Ellis, Mr. Ferrier, Dr. Ami.  
*Botany:* Mr. Whyte, Prof. Macoun, Mr. Craig.  
*Entomology:* Mr. Fletcher, Mr. Harrington, Mr. MacLaughlin.  
*Conchology:* Mr. Latchford, Mr. Halkett, Mr. O'Brien.  
*Ornithology:* Mr. Kingston, Miss Harmer, Mr. Lees.  
*Zoology:* Prof. Prince, Mr. Whiteaves, Mr. Small.

## "THE OTTAWA NATURALIST."

**Editor:**

HENRY M. AMI, M.A., D.Sc., F.G.S.

**Associate Editors:**

DR. R. W. ELLS, F.R.S.C. - Geological Survey of Canada - Department of *Geology*.  
MR. W. F. FERRIER, B.A.Sc., F.G.S. - Geological Survey of Canada - Department of *Mineralogy*.  
PROF. JOHN MACOUN, M.A., F.L.S. - Dominion Botanist, Geological Survey of Canada - Department of *Botany*.  
MR. F. R. LATCHFORD, B.A. - Department of *Conchology*.  
MR. A. G. KINGSTON - Public Works Department - Department of *Ornithology*.  
MR. JAMES FLETCHER, F.L.S., F.R.S.C. - Botanist, etc., Central Experimental Farm - Department of *Entomology*.  
PROF. E. E. PRINCE, B.A., F.L.S. - Commissioner of Fisheries for Canada - Department of *Zoology*.

*A Monthly Magazine devoted to the Natural Sciences.*

Yearly Subscription, - - - - - \$1.00.

**PRICE OF AUTHORS' EXTRAS.**

Covers.	No. of Pages.	Price.	Covers without title.
Without	1 to 8	\$1.25 per C.	.....
Without	8 to 16	\$2.25 per C.	.....
With	1 to 8	\$2.25 per C.	\$2.00 per C.
With	8 to 16	\$3.25 per C.	\$3.00 per C.