

ADDENDA TO 1895.

1875 to 8—Revised and in part rewrote "Anchaia" and published it in London and New York, under the name "Origin of the World." Prepared "Supplement to Acadian Geology," and revisited several parts of Nova Scotia to collect new facts. Collected and published additional Fossil Reptiles from the South Joggins, and published papers on carboniferous plants and other fossils; also some further work as to Eozoon.

1879.—Occupied in spring in excavating fossil trees at Joggins, aided by Mr. W. Bell Dawson, and in preparation for Royal Society memoir on these trees and their contents, published in 1882. In June, delivered the Phi Beta Kappa oration at Cambridge, U. S., in presence of a brilliant audience, including Lord Dufferin, who was a guest of the society. This address was published under title "Rights and Duties of Science." Published little book "Links in the Chain of Life," a popular view of the succession of extinct animals and plants.

1880.—Published "Fossil Men and their Modern Representatives," and Revision of Palæozoic Land Snails in American Journal of Science, and prepared "Hand-book of Canadian Geology."

1881.—Invited graduates to a Banquet, on occasion of 25th year of my Principalship. 350 attended and Mr. P. Redpath announced his intention to found a museum. The preparation of our collections for this, and improvement in our College course in arts, occupied much time in this and following year.

1882.—Invited by Lord Lorne, Governor-General of Canada, to aid in the organization of the Royal Society of Canada as its first President; a gigantic labour encompassed with difficulties, and which occupied much time. Elected President of American Association for its meeting in Montreal, on which occasion the Peter Redpath Museum was opened with a conversazione provided by the President. Honoured by Her Majesty with C. M. G. Awarded Lyell Medal of London Geological Society, for important discoveries in geology.

1883.—Travelled in the North-West, and prepared notice of the geology for the Geological Society. Delivered address as retiring President at the American Association in Minneapolis; subject, "Unsolved Problems in Geology." Went over to England and attended the meeting of the British Association at Southport in the interest of the meeting in Montreal in 1884. Left in November with wife and daughter for Italy, Egypt and Syria, where spent the winter, and wrote articles for *Leisure Hour* and *Geological Magazine* on these countries.

1884.—Attended meeting of British Association in Montreal, and took an active part in its organization and proceedings. On this occasion received the honour of Knighthood. Found lady applicants for admission to college. Endeavoured with aid of Rev. Dr. Wilkes and Rev. Canon Norman to provide means for their education. The problem solved by the handsome

endowment of Sir Donald A. Smith, leading to commencement of classes in this year with eight students. The beginning of a work which caused much labour and anxiety, and led to much vexatious opposition and controversy, requiring both caution and firmness; but which has been very successful in its educational effects. Considered it a duty not to enter into controversy, but to devote myself to carrying on the work and to overcoming opposition by substantial results.

Before returning to Canada, attended the ter-centenary of the University of Edinburgh, as representative of McGill, and received the degree of LL.D. In the winter of 1884, began the study of western fossil plants of the Cretaceous and Tertiary, collected by Dr. G. M. Dawson and others, and published the first of a series of papers on the successive floras from the Lower Cretaceous onwards, which have appeared in the transactions of the Royal Society of Canada. Elected President of the British Association.

1886.—Returned to England and presided at the meeting of the British Association at Birmingham—a large and successful meeting. Delivered Presidential address on “Geological History of the North Atlantic.”

1887.—Lectured at the Lowell Institute, Boston, on the “Geological History of Plants”; and published the substance of the course as a volume of the International Scientific Series. Papers on Genesis in the *Expositor*.

1888.—Completed and published Eastern researches under title “Modern Science in Bible Lands.” From this time gave more attention to study of recent criticisms of the Old Testament, and published articles in magazines and reviews on the subject.

1889.—Much occupied with University work and with completing study of collections and preparing them for publication.

1890.—Published “Modern Ideas of Evolution”—a survey of the whole subject for popular use.

1891.—Much occupied with changes and enlargements of the College under Workman and W. C. McDonald benefactions, so that little could be done in scientific or literary work.

1892.—Much occupied in early part of the year with contemplated changes in the University, and complications arising therefrom, with schools, public bodies and the parents of intending students. In autumn, illness of my wife followed by my own prostration by pneumonia, leading to exile in winter to the south. Had prepared, and now read proofs of reproduction of papers and addresses, under title “Salient Points in the Science of the Earth.” On return to Montreal, made arrangements to resign University position, and have since laboured on my own scientific and other work. Presided in Dec. 1893, at the Boston meeting of the Geological Society of America, delivered address on “Recent Discussions on Geology,” and lectured at the Lowell Institute. These lectures have been published under the title “Meeting-place of Geology and History.” Have also condensed papers on Pleistocene Geology, under title “Canadian Ice Age” and published revisions of Land Animals of the Coal period and Bivalve Shells of the coal-measures. Work of this kind with view to publication is proceeding in 1895.

In 1847, was united in marriage to Margaret A. Y. Mercer, daughter of George Mercer, Esq., of Edinburgh; in all respects a worthy helpmeet and adviser in all the varied circumstances of life, and who has ever been prepared to discharge with grace and dignity and in a Christian spirit the duties of her position, whether of a public, social or domestic character. We have five surviving children, Dr. George Mercer Dawson, C.M.G., F.R.S., &c., Director of the Geological Survey of Canada; Wm. Bell Dawson, M.A., C.E., Engineer in charge of Tidal and Current Surveys for Canada; Dr. Rankin Dawson, M.A., M.R.C.S.E., L.R.C.P. (Lond.) a medical practitioner in England; Anna Lois, wife of Dr. B. J. Harrington, F.G.S., Professor of Chemistry and Mineralogy in McGill University; Eva, wife of Hope Tweeddale Atkin, Esq., of Birkenhead, England.

DEGREES, TITLES, MEMBERSHIPS, &c.

M. A. (Edin.) 1856; LL. D. (Edin.) 1884.
 LL. D. (McGill) 1857.
 D. C. L. (Bishop's College) 1881.
 Superintendent of Education, Nova Scotia, 1850.
 Fellow Geol. Society of London, 1854.
 Principal McGill University, 1855.
 Fellow of Royal Society, London, 1862.
 Lyell Medal of Geological Society, 1881.
 First President Royal Society of Canada, 1882.
 Created C. M. G., 1882.
 President, American Association, 1882-3.
 Created Knight Bachelor, 1884.
 President, British Association, 1886.
 President, Geological Society of America, 1893.
 Honorary President, Natural History Society of Montreal.
 Vice-President, British and Foreign Bible Society.
 President, Montreal Auxiliary Bible Society.
 Fellow Acad. Arts and Sciences, Boston.
 Fellow Am. Philos. Society, Phila.
 Fellow Geol. Soc'y of America.
 Associate Academie Internationale de Geographie Botanique.
 Hon. Fellow Edinr. Geological Society.
 Hon. Mem. Nat. Hist. Socy, N. Brunswick.
 Hon. Mem. Lit. & Phil. Socy, Manchester.
 Hon. Mem. Maryland Academy.
 Hon. Mem. New York Acad. Science.
 Hon. Mem. Philos. Socy, Princeton.
 Hon. Mem. Philos. Society, Leeds.
 Hon. Mem. Boston Soc'y Nat. History.
 Hon. Mem. Geographical Soc'y of Australia.
 Hon. Mem. N. Scotia Soc'y Mining Engineers.
 Hon. Mem. Canadian Soc'y Civil Engineers.

Hon. Mem. Geol. Association, Liverpool.
 Hon. Mem. Essex Institute, Salem.
 Hon. Mem. Societe Belge de Geologie, Palaeontologie, &c.
 Hon. Mem. Brooklyn Institute.
 Hon. Mem. North Western Historical & Literary Society, Iowa.
 Cor. Mem. Ac. Nat. Science, Phila.
 Cor. Mem. Portland Soc'y Nat. History.
 Cor. Mem. Nova Scotia Institute.
 Cor. Mem. Geol. Soc'y, Manchester.
 Cor. Mem. Lyceum Nat. History, New York.
 &c., &c.

A complete list of books and scientific papers will be found in the
 "Bibliography of the Royal Society of Canada, Ottawa, 1895."

1895— Eden Inst & War, London
 pp 226 Course of Lectures
 in Lowell Institute on
 Beginnings of Life,

1896— Summer in England
 Port of Liverpool, Paper
 on Pre-Cambrian Fossils,
 Public Waiver of Claims,
 Newark Convention on

1897 "Relics of Life Removal"
 London pp 336 Report
 of Lowell Inst Lectures

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P R O G R A M M E
FOR
W E D N E S D A Y , A U G . 1 2 , 1 8 5 7 .

General Session at 10 o'clock.

- 1.—Prayer by the Right Rev. FRANCIS FULFORD, D.D., Lord Bishop of Montreal.
- 2.—Meeting opened by Professor A. CASWELL, Vice-President of the Association.
- 3.—Address of Welcome in behalf of the Local Committee and the Citizens, by Sir W. E. LOGAN, F.R.S., L.L.D.
- 4.—Address in behalf of the Natural History Society, by its President, Principal DAWSON, L. L. D.
- 5.—His Excellency the Administrator of the Government, General Sir WM. EYRE, K. C. B., is expected to be present, and will be requested to address the Meeting.
- 6.—General Business.
- 7.—Adjournment for one hour to organize in sections.

Dawson letter

WEDNESDAY, AUGUST 12, 1857.

ELEVENTH MEETING

OF THE

AMERICAN ASSOCIATION

FOR THE

ADVANCEMENT OF SCIENCE:

COMMENCING

Wednesday, August 12, 1857, at 10 o'clock, A.M.

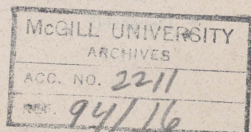
AT THE

COURT HOUSE IN THE CITY OF MONTREAL, C.E.

MONTREAL:

JAMES POTTS, PRINTER, HERALD OFFICE.

1857.



OFFICERS OF THE ASSOCIATION.

Professor J. W. BAILEY,* ELECTED PRESIDENT.
Professor ALEXIS CASWELL, VICE PRESIDENT.
Dr. JOHN LECONTE, GENERAL SECRETARY.
Professor JOSEPH LOVERING, PERMANENT SECRETARY.
Dr. A. L. ELWYN, TREASURER.

STANDING COMMITTEE.

Professor J. W. BAILEY.*
Professor JOSEPH LOVERING.
Dr. A. L. ELWYN.
Professor ALEXIS CASWELL.
Professor JOHN LECONTE.
Professor JAMES HALL.
Dr. B. A. GOULD, Jr.

LOCAL COMMITTEE.

Sir WILLIAM E. LOGAN, F. R. S., L. L. D., PRESIDENT.
A. N. RENNIE, Esq., SECRETARY.

HIS WORSHIP THE MAYOR OF MONTREAL.
THE LORD BISHOP OF MONTREAL.
THE PRESIDENT OF THE BOARD OF TRADE.
THE PRESIDENT OF THE MECHANICS' INSTITUTE.
THE PRESIDENT OF THE INSTITUT CANADIEN.
THE PRESIDENT OF THE MERCANTILE LIBRARY ASSOCIATION.
PROF. J. BARNSTON, M. D.
C. E. BELLE, Esq.
WM. BRISTOW, Esq.
HON. P. J. O. CHAUVEAU, L. L. D.
HENRY CHAPMAN, Esq.
REV. J. CORDNER.
BROWN CHAMBERLIN, M. A., B. C. L.
C. S. CHERRIER, Esq.
C. J. COURSOL, Esq.
PROF. J. W. DAWSON, L. L. D., F. G. S.
A. A. DORION, M. P. P.
HON. JUDGE DAY, L. L. D.
J. J. DAY, Esq.
W. H. A. DAVIES, Esq.
C. DUNKIN, M. A.
HON. S. DE BEAUJEU.
JACOB DEWITT, M. P. P.
HON. L. T. DRUMMOND, M. P. P.
A. H. DAVID, M. D.
A. M. DELISLE, Esq.
REV. J. FLANAGAN.
HON. J. FERRIER.
REV. DONALD FRASER.
IRA GOULD, Esq.
LUTHER H. HOLTON, M. P. P.
W. H. HINGSTON, M. D.
AUGUSTUS HEWARD, Esq.
PROF. T. STERRY HUNT.
PROF. A. HALL, M. D.
T. W. JONES, M. D.
REV. ALEX. KEMP.
DAVID KINNEAR, Esq.
HENRY LYMAN, Esq.
L. A. H. LATOUR, Esq.
REV. CANON LEACH, D. C. L., L. L. D.
W. LUNN, Esq.
F. J. LECLAIRE, Esq.
W. B. LAMBE, B. C. L.
JOHN LEEMING, Esq.
HON. GEORGE MOFFATT, D. C. L.
REV. A. MATHIESON, D. D.
COLONEL MUNRO, C. B., F. L. S.
L. MARCHAND, Esq.
D. MASSON, Esq.
A. MORRIS, M. A.
HON. JUDGE McCORD, D. C. L.
J. G. MACKENZIE, Esq.
J. B. MEILLEUR, M. D., L. L. D.
COLONEL ORD, R. E.
L. J. A. PAPINEAU, Esq.
D. A. POE, Esq.
E. G. PENNY, Esq.
O. DE LINIERE PERRAULT, Esq.
HON. L. RENAUD.
J. ROSE, Q. C.
PROF. C. SMALLWOOD, M. D., L. L. D.
M. H. SEYMOUR, Esq.
REV. W. TAYLOR, D. D.
JACQUES VIGER, Esq.
H. H. WHITNEY, M. P. P.
REV. H. WILKES, D. D.
W. WORKMAN, Esq.
N. S. WHITNEY, Esq.
HON. JOHN YOUNG, M. P. P.

℞ Members will find their letters at the Post Office in the Court House.

* Deceased.

RULES OF MEMBERSHIP.

RULE 1—Those persons whose names have already been enrolled in the published Proceedings of the Association, shall be considered Members on subscribing to the Rules.

RULE 2—Members of Scientific Societies, or Learned Bodies having in view any of the objects of this Society, publishing transactions, shall likewise be considered members on subscribing to the Rules.

RULE 3—The Collegiate Professors of Natural History, Physics, Chemistry, Mathematics and Political Economy, and of the Theoretical and Applied Sciences generally, also Civil Engineers and Architects who have been employed in the Construction and Superintendence of Public Works, may become members on subscribing to the Rules.

RULE 4—Persons not embraced in the above provisions may become members of the Association upon nomination by the Standing Committee, and by a vote of the majority of the members present.

RULE 5—The amount of the annual subscription by each member of the Association shall be two dollars; and one dollar in addition, shall entitle him to a copy of the proceedings of the annual meeting.

NOTICE.

The Court House will be open for the meetings of the Association. The general meeting will be held in the Circuit Court Room—the section meetings in other convenient rooms of the Court House.

A register will be placed in the Hall of the Court House, in which members are requested to record their names as early as convenient after their arrival.

Members of the Local Committee will be in attendance at the Court House during the meeting, to give such information as may be desired.

Members will direct their correspondents to address "AMERICAN ASSOCIATION, &c.," and their letters will be delivered from the post-office in the Court House.

ÉTAT DE L'ACADÉMIE

AU 1^{er} JANVIER 1894

Directeur :

G. ROUY.

Secrétaire perpétuel :

M. H. LÉVEILLÉ.

Trésorier :

M. CH. LE GENDRE.

Membres d'honneur :

MM. DUCHARTRE.
G. KING.

MM. ROUY.
TREUB.

Membres titulaires :

MM. L. BORDI.
E. GONOD D'ARTEMARE.
J. A. HENRIQUES.
HÉRIBAUD JH.
BAPON ED. HISINGER.
G. DE LAGERHEIM.

MM. CH. LE GENDRE.
H. LÉVEILLÉ.
ED. MARÇAIS.
BAPON FERD. VON MUELLER.
A. POSADA-ARANGO.
FERD. RENAULD.

Membres correspondants :

MM. CH. GRAY.
H. LISBOA.

MM. A. SADA.
W. TRELEASE.

Associés libres :

MM.
W. BEAL.
C. F. WHEELER.
J. CHRISTIAN BAY.
O. DEBEAUX.
E. GADECEAU.
DAV. PRAIN.
ERN. OLIVIER.
AITCHISON.
LANGE.
ASCHERSON.
IS. BALFOUR.
G. BECK.
DAWSON.

MM.
BEDDOME.
GREENE.
GOODALE.
DE HELDREICH.
BALLÉ.
DE SAPORTA.
H. CORREVON.
SIR HOOKER.
PH. HEINSBERGER.
EUG. AUTRAN.
CAS. DE CANDOLLE.
A. ACLOQUE.
A. S. HITCHCOCK.

MM.
AMB. GENTIL.
KAMIENSKI.
MACOUN.
MAC. OWAN.
PHILIPPI.
RADDE.
RIDLEY.
DON SEBASTIAN VIDAL.
TRIMEN.
WATT.
WILKOMM.
CH. FLAHAULT.
JOHN BRIQUET.

Exploiteurs :

PAUL DUPUIS.

EMILE DESCHAMPS.

CONSTITUTIONS DÉFINITIVES

DE

L'ACADÉMIE INTERNATIONALE DE GÉOGRAPHIE BOTANIQUE

STATUTS

I. — Il est formé, sous le nom d'*Académie internationale de Géographie botanique*, une Société composée de 20 membres.

II. — Les membres se divisent en membres titulaires, membres d'honneur et membres correspondants. Les premiers sont au nombre de 12, les seconds au nombre de 4, et les troisièmes également au nombre de 4.

III. — Les membres sont élus à la majorité des suffrages des membres titulaires. Il appartient toutefois au directeur nommé pour l'année de choisir les membres d'honneur.

IV. — Les membres de l'Académie sont élus à vie. Il en est de même du Secrétaire qui prend le nom de Secrétaire perpétuel de la Société.

V. — La Société a pour but : 1^o de publier un *Traité de Géographie botanique* accompagné d'un *Atlas* indiquant quelle est, à la surface du globe, la répartition des espèces ; 2^o de promouvoir l'étude de la Géographie botanique au moyen d'herborisations et d'explorations méthodiques dans les parties du monde encore inexplorées ou insuffisamment connues au point de vue botanique.

VI. — L'*Académie de Géographie botanique*, présidée par chacun de ses membres titulaires ou d'honneur, élu directeur à tour de rôle, admet les botanistes de toute nation et reçoit volontiers les dons et offrandes. Elle a son siège là où se trouve le Directeur en fonction. La seule cotisation exigée de ses membres est le montant du prix de la Revue qui sert d'organe à l'Académie ; ils peuvent aussi contribuer par des dons volontaires à la publication des travaux de l'Académie.

VII. — Les membres de l'Académie doivent concourir de toutes leurs forces au but de la Société et être prêts à fournir, soit par eux-mêmes, soit indirectement, les renseignements nécessaires touchant la dispersion des espèces végétales.

RÈGLEMENT.

ARTICLE PREMIER. — L'Académie Internationale de Géographie botanique a pour organe « *Le Monde des Plantes.* »

ART. II. — Le Directeur de l'Académie est élu pour un an et n'est pas immédiatement rééligible.

ART. III. — Les membres de l'Académie correspondent entre eux et avec le Secrétaire perpétuel par la voie postale et par la voie du *Monde des Plantes*, organe de la Société.

ART. IV. — Le bureau de la Société est composé du Directeur, du Secrétaire et du Trésorier, ce dernier nommé pour dix ans par le Directeur, sur la présentation du Secrétaire.

ART. V. — Il sera tenu, s'il est nécessaire, des réunions à des temps et des lieux désignés par le Directeur d'après le vote des membres de la Société.

ART. VI. — L'Académie a son herbier et sa bibliothèque qui lui sont propres,

ART. VII. — Par décision du Directeur, il sera nommé tous les cinq ans des délégués parmi les académiciens.

ART. VIII. — Parmi ces délégués les uns seront chargés de la réunion des matériaux de travail, les autres de la consultation des herbiers, ceux-ci des expéditions scientifiques, ceux-là des relations avec les sociétés savantes et enfin d'autres des bibliothèques ou des muséums.

ART. IX. — Le nombre des délégués pour chacune de ces matières ne pourra pas dépasser deux. Il appartiendra au Directeur de donner des délégations temporaires. La durée maximum de ces délégations sera d'un an. Les missions scientifiques ne seront accordées aux naturalistes explorateurs que d'après le vote de tous les membres de l'Académie et sur la proposition du bureau.

ART. X. — L'Académie étant une société purement scientifique, ne s'occupe que de questions exclusivement scientifiques concernant la botanique.

Elle s'efforcera d'amener au point de vue de la Géographie botanique une entente entre les Muséums, les sociétés savantes et les botanistes du monde entier. De plus elle établira de tous côtés des comités qui auront pour but l'étude de la botanique pure et appliquée.

ART. XI. — Aucune modification ne pourra être apportée aux constitutions de l'Académie (Statuts, Règlement et Décisions antérieures à 1894) que sur la proposition de 3 membres titulaires et d'après le vote des deux tiers des académiciens à quelque titre d'ailleurs qu'ils appartiennent à l'Académie.

DÉCISIONS

L'Académie accordera le titre d'Associé libre à tout botaniste qui offrira à l'Académie son concours ou sa collaboration.

Le nombre des Associés libres est fixé à *soixante*. C'est parmi les Associés libres que l'Académie choisira ses membres correspondants. Toutefois un Associé libre pourra demeurer tel toute sa vie s'il se refuse à faire partie effectivement de l'Académie.

*Acad
de Botanique*

Les membres titulaires seront choisis parmi les membres correspondants.

Les membres d'honneur seront pris soit parmi les membres titulaires, soit parmi les botanistes *éminents* jusque-là étrangers à la Société.

Les Associés libres seront nommés par simple décision du Directeur sur leur demande ou sur la présentation de l'un des Académiciens.

Le Secrétaire perpétuel de l'Académie est chargé de la Direction et de la Rédaction du *Monde des Plantes*, organe de l'Académie.

L'Académie accordera le titre de membre auxiliaire de l'Académie à toute personne qui paiera une cotisation annuelle de 10 francs.

Le nombre des membres auxiliaires est illimité.

Les membres auxiliaires recevront en échange de leur cotisation le *Monde des Plantes*.

Tout membre auxiliaire qui deviendra *Associé libre* ou membre correspondant, titulaire ou honoraire de l'Académie, verra sa cotisation s'abaisser de 10 francs à 6 francs, montant du prix de la Revue.

Les membres titulaires seront nommés sur leur demande par simple décision du Directeur de l'Académie.

Un diplôme spécial pour les *seuls* membres de l'Académie internationale de Géographie botanique est institué et sera délivré à tous les membres de l'Académie qui en feront la demande.

Le prix de ce diplôme est fixé à 3 francs.

En cas de mort du Directeur en exercice ou du refus du Directeur nouvellement élu d'accepter cette charge, le Directeur de l'année précédente exercera en son lieu et place les fonctions de Directeur et jouira des prérogatives attachées à ce titre jusqu'à l'élection du nouveau titulaire.

DISTINCTIONS HONORIFIQUES

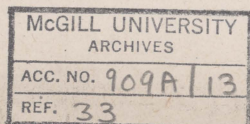
I. — Un *Conseil* composé du *Bureau* et des *Membres d'honneur* de l'Académie confère *gratuitement* et par *décision motivée* des Médailles réservées aux *hommes de science*, plus particulièrement aux botanistes qui se sont distingués soit par des travaux scientifiques remarquables, soit par des institutions utiles à l'avancement des sciences.

II. — Ces médailles, dont la distribution a lieu le 1^{er} janvier et le 1^{er} juillet de chaque année, donnent à leurs titulaires droit au titre de *Lauréats de l'Académie*.

III. — Le nombre des *Lauréats* est fixé à 200 pour le monde entier; dont 5 du premier degré, 20 du second et 175 du troisième.

Ils forment, *aux yeux de l'Académie* un véritable *Ordre scientifique*.

Le Mans. — Typographie Edmond Monnoyer.



American Association for the Advancement of Science.

RECOMMENDATION TO MEMBERSHIP.

No.....

.....187

The undersigned recommend to Membership of the
American Association for the Advancement of Science,

[Give Name in full.]

[Give Post-office Address, Town,
County and State.]

[Give any information thought des-
irable, as to profession, etc., of
the person recommended.]

[To be signed by two members or
fellows of the Association.]

Laid before the Standing Committee at its meeting

on

Action of the Committee,

General Secretary.

If the person recom-
mended is to be pres-
ent at the meeting,
write the word *present*
in space under this.

NOTE.—Only *one person* is to be recommended on this blank. After filling out the blank it must be sent by mail to the PERMANENT SECRETARY before the meeting, or given to the GENERAL SECRETARY, at the meeting. The *General Secretary* will number the Blanks consecutively as received, and bring them before the *Standing Committee* for action at the next regular committee meeting after receipt. He will then endorse the action of the Committee on each blank, and give them to the *Permanent Secretary*. The names of members elected will be published in the daily programmes. New members, if present, are expected to call at the desk of the Permanent Secretary for their tickets. Copies of this blank will be furnished by the Permanent Secretary on application.—F. W. PUTNAM, *Permanent Secretary, Salem, Mass.*

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American Association for the Advancement of Science.


BLANK FOR TITLE OF COMMUNICATION.

..... Meeting.

Title No. Section

Received by the Permanent Secretary, 187 .

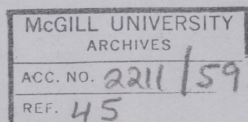
Abstract of the paper here recorded, received by the Permanent Secretary
on 187 .

 Please write *only* in spaces left below.

I propose to present the following communication at the meeting
of the Association, which, if accepted, and the Sectional Committee
can so arrange, I should like to have on the programme for the
..... day of the meeting.

It will occupy about minutes.

.....
NOTE.—This slip must contain the full title, *legibly written*, and the name of
the author in full. The time estimated for reading the paper must be given in
the proper space above. If the author can be present during only a part of the
meeting, the request to have the paper assigned to a particular day will be duly
considered by the Sectional Committee. Only one paper is to be entered on this
slip. The slips must be sent to the Permanent Secretary, when practicable, *before*
the day appointed for the Association to convene. A rule was made at the
Buffalo Meeting by which titles will not be received after the fourth day of the
meeting. *Abstracts of communications must be received by the Permanent Sec-
retary before action can be taken on the paper by the Standing Committee.* When
possible, it is requested that the abstract be forwarded with the title. Attention
to this matter and the early entry of titles will greatly facilitate the labors of
the Committees. Copies of this blank can be had on application to the Perma-
nent Secretary.—F. W. PUTNAM, *Permanent Secretary, Salem, Mass.*



Victoria Institute.
10, ADELPHI TERRACE,
LONDON, W.C.

PAPERS.

(See *By-Laws*, Sec. 6.)

THE Session consists of eight "Ordinary" and four "Intermediate" meetings, which take place on the First and Third Mondays in each Month, from December to June (only one meeting in December and June).

ORDINARY Meetings are those at which Papers can be read which have been specially prepared for the Society, or Papers which, although not specially prepared for this Society, have never been printed and published.

INTERMEDIATE Meetings are those at which Lectures can be delivered, or Papers read, upon subjects of minor importance, not demanding permanent record in the Transactions.

It is desirable that the MS. of all Papers proposed to be read should be sent in beforehand, in order that the Council may be able to make arrangements in regard thereto.

When the reading of a Paper at an Ordinary Meeting is fixed, proof copies are printed for the greater convenience of the Author and friends attending the meeting at which it is to be read.

[OVER.

The usual time allotted for the reading of a Paper is about three quarters of an hour, and it is desirable that, if possible, its reading should not take more than one hour and a quarter.

When an Author on account of residing abroad, or from other causes, is unable to read his own Paper, it can be read for him by a private friend, or by one of the Members of the Institute.

After a Paper has been read, and the proof finally corrected by the author, it appears in due course in the Journal of Transactions, and the Author is entitled to 25 copies of his Paper (or a larger number according to arrangement) bound in covers.

. The *Transactions* now extend to ten volumes. Some papers are purely scientific, such as, *e.g.*, the paper on the Isomorphism of Crystalline Bodies, and some take up those questions of Science or Philosophy which bear upon the truths revealed in Scripture,—these latter are taken up on account of the assaults made in the name of Science or Philosophy upon Revelation, and with a view to elucidating *facts*, and getting rid of such philosophic or scientific theories as may prove baseless. Theological questions, being naturally outside the Institute's objects, are left to be dealt with by other Societies and by ministers of religion.

MCGILL UNIVERSITY ARCHIVES	
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SUMMARY FOR 1878.

SPECIAL COMMUNICATION.

It will be seen that the Institute must no longer be considered as a London Society supported only by Members resident in the Metropolis; recent experience amply proves that its organization can be made useful to Members living even far beyond the limits of the United Kingdom, and that in not a few instances these, by contributions to the Journal, by making the Institute known, &c., greatly enhance the value of its proceedings.

THE following Members and Associates joined during 1878:—30 foreign and colonial, 57 country, 14 resident in London. Those adverse influences, which have affected every interest and Society, have prevented this addition raising the total strength of the Institute above 750.

New arrangements have been carried into effect, securing the greater usefulness of the "Journal of Transactions" to country and foreign members, and affording them facilities for expressing their opinions on the papers brought before the Institute prior to the appearance in the "Journal."

From the above figures it will be seen that the Institute is now making the *initiatory* efforts to extend itself to America and all the Colonies (see 1878 Report, paras. 2 and 16; also Preface vol. XII.). The success that has already attended these *initiatory* efforts, and the correspondence received, has proved the importance of the object sought, and which can now be carried out if the Society continues to be maintained in a thorough state of efficiency; this, however, depends on the STEADY SUPPORT OF ALL, and their co-operation in raising the strength of the Institute by introducing new members and associates.

The published list of distinguished men (among whom are four American and other authors) who have prepared papers this year shows that the Institute maintains its position.

FINANCE.—The early payment of the 1878 subscriptions was a valuable item towards the success of the year's work. The expenses did not exceed the receipts. Salaries were £57. The audit, by two specially qualified unofficial members, was as thorough as usual.

The Institute's ordinary work was supplemented by the following

ADDITIONAL WORK.

LECTURES.—In many places, at home and abroad, the papers in the journal continue to be used both by members and non-members, as the basis of lectures, and several letters have been received commending them as "being just what was needed," &c.; one most active and popular lecturing member writes: "Without them I should be unable to give my lectures;" another says, "Had it not been for the publications of the Institute I should never have read a paper on such a subject." (In this case the audience, a metropolitan one, among whom were 300 clergymen, requested the publication of the lecture.) The works of Reference in the Library are also utilized by members giving public lectures, and every effort is made that the Organization of the Institute shall be as useful as possible.

THE PEOPLE'S EDITION is much used by lecturers, and its popularity is very encouraging. The *Special Fund* has to a considerable extent enabled the Society to carry out the second proposal in the last Report, in communicating in regard to the Society's work with leading men in the United States, and in every British possession throughout the world.* It has also enabled them to reply to the communications from the Australian colonies pressing the great necessity for a brief effective *reply* to Matthew Arnold's last work, which had become very popular in those colonies. Professor Lias' "Reply"—which was so arranged as to supply the want and bring the Society's objects before its readers—was sent to almost every minister and several of the laity throughout the whole of the Australian colonies (including New Zealand). A special request from India, where it was urged that Straus' works were fast becoming very popular, was met by a People's Edition of the Rev. Preb. Row's "Reply" being similarly got up, and almost as extensively circulated throughout the three Presidencies.—The Institute has sought to make all these communications as effective as possible.

The republication in America of some of the Institute's Papers continues, and cannot be without a good effect.

THE BOOKSELLER AGENTS continue to sell the People's Editions especially to members of artisans' clubs, and others.

THE NEWSPAPER PRESS generally has been communicated with, and the Institute and its objects are indebted to it, both in England, in many of the colonies, and especially in the United States.

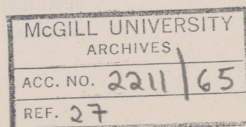
It will interest many to know that one of the Society's members resident in the southern hemisphere, is now founding a fellowship and two scholarships (of £200 a year in all) in one of our home universities, for the purpose of promoting the same object which the Institute was founded to carry out. It is not often that the value of a society's main object is so emphatically recognized.

The increasing favour with which the Institute is regarded is evidenced in various ways, and its good relations with scientific men and leading scientific societies continue.

F. PETRIE, *Hon. Sec.*

VICTORIA INSTITUTE,
 Or, Philosophical Society of Great Britain,
 7, Adelpi Terrace, London, W.C.

* Bishop Cotterill's paper (specially arranged so as to bring the Institute's objects before its readers) was used in doing this. In regard to this paper (vol. XII., p. 312), which has attracted much attention, Canon Cook, the editor of the *Speaker's Commentary*, says, "It deals with the deepest questions in a way that will carry conviction into the minds of candid and perplexed inquirers, and shake deeply-rooted prejudices which have long obscured intellects of high order." The author's correspondence in regard to this paper "shows that it has reached readers in every part of the world."



TERTIARY FOSSILS.

Post Pliocene.—(Land and Freshwater).

Localities.—Copford, Barnwell, Erith, &c.

Genera.—*Helix*, *Zonites*, *Pupa*, *Vertigo*, *Zua*, *Azeca*, *Planorbis*,
Succinea, *Bithynia*, *Valvata*, *Limnæa*, *Corbicula*, *Cyclas*,
Pisidium Unio, *Anodon*, &c.

25 species mounted in Glass Case, 7/6; 45 ditto 15/-

N.B.—The next Postpliocene Beds I intend to work will, if the tides and weather permit, be in the MARINE DEPOSIT OF SELSEY.—See Dixon's *Geology of Sussex*, 2nd edition, 1878.

Pliocene.—(Suffolk and Norfolk).

30 species from all the divisions of the Crag, 10/-

50 ditto ditto 17/6

Eocene.—(Upper and middle), including Bagshot Leafbeds, Barton and Bracklesham Sands, and London Clay.

30 species mounted in Glass Case, 10/-; 50 ditto, 17/6

Thanet Sands.—Herne Bay, Pegwell Bay, &c.

Genera.—*Pholadomya*, *Cyprina*, *Cytherea*, *Venus*, *Cucullæa*,
Corbula, *Kellia*, *Astarte*, *Modiola*, *Thracia*, *Leda*,
Nucula, *Dentalium*, *Natica*, &c.

15 species in separate Square Glass Capped Boxes, 12/6;

20 ditto ditto 17/6.

* * * The larger series includes *Glycimeris*, *Sanguinolaria*,
Ostrea, and others of the rarer forms.

PROSPECTUS
OF THE
American Quarterly Microscopical Journal,

Edited by ROMYN HITCHCOCK.

This journal will appear on or before the first day of November, 1878, and succeeding numbers will be issued regularly thereafter. It will contain, besides original articles from such prominent writers as are named below, reprints and translations of the most important papers found in current English, French, and German publications, and the Transactions of the New York Microscopical Society.

It is intended that this journal shall give a complete synopsis of all microscopical matters, and to this end abstracts will be given of every article published during each quarter to which the editor has access, or, where abstracts are inadmissible, titles of the papers will be given.

It will thus be seen that the intention is to spare no pains to make a journal of the utmost value to those subscribers who, engaged in practical work, desire to keep themselves posted in the advances of the science without the expense of a large number of periodicals.

The journal being absolutely independent of any business enterprise, and published entirely in the interests of microscopical science, will be carefully conducted and made worthy of the support of scientific men.

Especial pains will be taken with the illustrations and press work.

The first number will contain a valuable monograph by Prof. J. D. Hyatt, president of the New York Microscopical Society, on "Stings of the Honey Bee," with a two-page lithograph.

We invite contributions from Histologists, Lithologists, and all who are engaged in microscopical investigations.

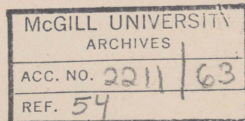
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The following gentlemen who have promised contributions and their hearty support are sufficient to guarantee its character.

TERMS :

One Year, \$3.00. Single Copies, 75c. To Foreign Subscribers, 13s. 6d. sterling.

Address all communications to "The American Quarterly Microscopical Journal,"
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This Journal will appear on or before the first day of
November, 1878, and succeeding numbers will be issued regu-
larly thereafter. It will contain besides original articles from
such prominent writers as are named below, reports and
translations of the most important papers found in current
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of the New York Microscopical Society.

It is intended that this Journal shall give a complete
summary of all microscopical matters and in this and other
ways to give up every thing that is of interest to the
writer the editor has access to what abstracts are available
with titles of the papers will be given.

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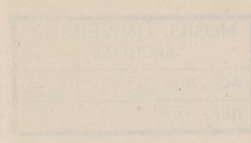
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all who are engaged in microscopical investigations.

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Prof. Hooker
Miss Mendenhall

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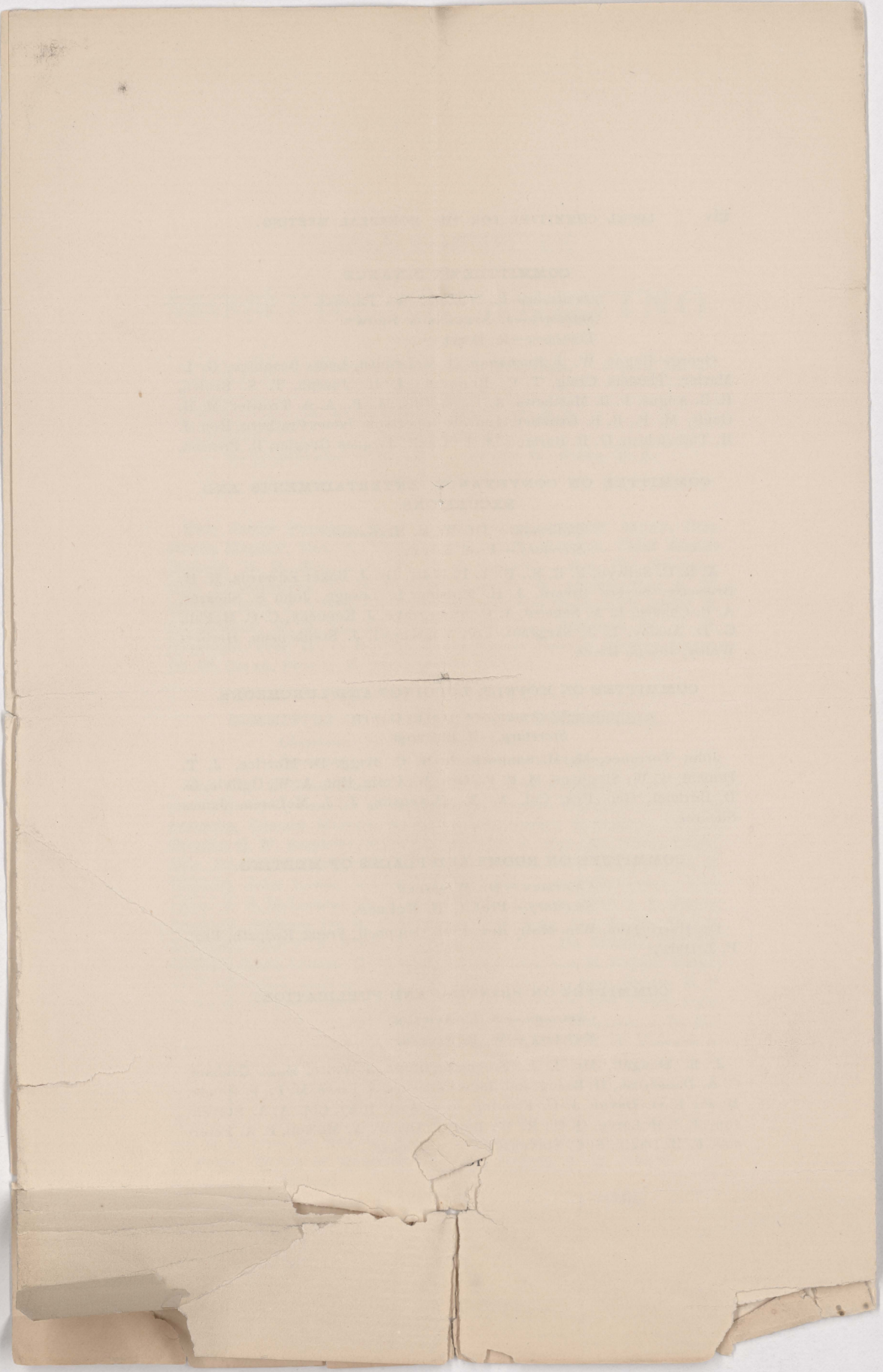
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CIRCULAR LETTER.

To the Geologists of America:

At a meeting of the geologists in attendance at the Cincinnati session (1881) of the American Association for the Advancement of Science, the undersigned were appointed a committee to correspond with American geologists, respecting the formation of an *American Geological Society*, the result of such correspondence to be reported at the next meeting of the American Association for the Advancement of Science.

Pursuant to such instructions, it is deemed best to present sundry considerations, some of them brought forward at Cincinnati, which seem to render it desirable that such a society be organized in America, and which have been approved, and hereby are presented jointly by the committee.

The committee are desirous of eliciting opinions from all active and professional geologists, to the end that more judicious and effective action may be taken at the next meeting.

1. The science of geology, with its kindred branches of palæontology and lithology, has made rapid progress in America—perhaps more rapid than in any other country—in the last twenty years.

2. The literature of geology is largely distributed through numerous scientific journals, and in the proceedings of miscellaneous scientific societies, to procure which is difficult and expensive.

3. The present facilities afforded through the American Association for the Advancement of Science are insufficient, and are unavailable by the working geologists of the country—because: (a.) The meetings are held in the summer, which is the geologist's working season. In order to be present he must interrupt his work and leave the field, often at considerable expense especially if he has a party with him. (b.) Its brief meetings partake largely of the nature of vacation pleasure-parties, and much of the time is engrossed by reception, gratulation and excursions. (c.) There is no sufficient avenue of publication of the work of geologists and especially of palæontologists. (d.) The association has become so large, wide-spread and popular in its work, membership and organization that its spirit necessarily, and properly, is not favorable to the development of any special work through its own agency.

4. The geologists, as a body, have no way of expressing their views on important state, national or international measures, except through the medium of the American Association, at the meetings of which there is a perceptible and increasing lack of attendance and interest on the part of geologists, in consequence of which the actual views of the geologists of the country on such questions can not be obtained and expressed correctly.

5. There is a need of co-ordination of the results of state surveys, to the establishment of greater uniformity in nomenclature and classification.

6. There is a need of co-operation on the part of palæontologists, and of some system in describing and publishing new species.

7. There is no strictly geological magazine or journal in America.

8. There is no strictly geological society in America.

9. There are numerous such societies and journals in Europe, as well as journals and societies devoted exclusively to the branches of palæontology and mineralogy.

The committee desire also to disclaim any intention to trespass on the field and plans of the American Association for the Advancement of Science, or to criticise it in any way as to the discharge of its functions. Its tendency is to popularize science and to advance its acceptance by the world by diffusing scientific knowledge, and by announcing

important discoveries, and as such its sphere of activity is one that no special scientific body can occupy, but which still will be aided by the existence of tributary organizations, such as that contemplated by this circular.

Persons to whom this circular is addressed are requested to communicate promptly their views and recommendations to any member of the committee, in order that a report may be presented at the Montreal meeting of the American Association, embodying such recommendations as may be warranted by the correspondence, and summarizing the same.

Signed:

N. H. WINCHELL, State Geologist of Minnesota,
Minneapolis, Minn.

JOHN R. PROCTER, State Geologist of Kentucky,
Frankfort, Ky.

HENRY S. WILLIAMS, Professor of Palæontology,
Cornell University, Ithaca, N. Y.

JOHN COLLETT, State Geologist of Indiana,
Indianapolis, Indiana.

G. C. SWALLOW, Professor of Geology, etc.
University of Missouri, Columbia, Mo.

WM. J. DAVIS, Palæontologist,
Assistant Geol. Sur. of Ky., Louisville, Ky.

S. A. MILLER, Palæontologist,
Cincinnati, Ohio.

Circular
Sediments
Museum

Southport, 1883.

It is proposed that the usual DEVOTIONAL MEETING of Members of the British Association should be held on Sunday, September 23rd, at half-past Three o'clock, in St. Andrew's Hall, Part Street, (Section F). It will last about an hour.

Your attendance is invited, and you will oblige by making the Meeting known to other friends present at the Association, whether Ladies or Gentlemen.

Conveners.

THE MAYOR (DR. WOOD),

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TAONURUS.		6
T. marginatus, Lesqx.		7
T. Colletti, Lesqx.	W	7
T. Cauda Galli, Vanux.	W	8
PALÆOPHYCUS.		9
P. Milleri, Lesqx.	W	10
P. gracilis, Lesqx.	W	11
P. divaricatus, Lesqx.	W	11
ASTEROPHYCUS.		12
A. Coxii, Lesqx.	W	12
A. simplex, Lesqx.	W	13
CONOSTYCHUS.		14
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ANNUAL REPORT.

The Geographical Society of Quebec has to report during the past year a truly splendid work of development going on in the Dominion. On all hands there is progress making. The great transcontinental railway, the Canada Pacific, will run through trains before the end of this year, and some progress will be made in a steamboat communication with the continent of Asia.

An oceanic survey of the Hudson Bay is now in operation, several winter stations (seven) having been posted to report on the glacial action of that inland sea. This survey will return within the year. Also, a combined survey is on foot, undertaken by the Dominion and the Province of Quebec, to ascertain certain facts as to the land between Quebec and the North-East territory, and especially as to a large lake or a so-described "Inland Sea" named Mistassini. This Society is devoting much attention to these Northern rediscoveries, for though a great deal of information is imperfectly known, or has got lost in the archives of public offices, yet the public do not believe, that within one century thirty millions of Canadians may find homes within the Dominion, of whom one-half will probably speak the French language; the question naturally comes up, where are these populations to be located? The answer is, in the North, which from being situated in the temperate zone is that portion of North America where a white woman may more easily and with less risk to her health attain the honorable position of mother and so help to educate the next generation in all those qualities which are characteristic of Canadians in sociability, order, union, association, good humor and perseverance.

A white man can live in almost every country of the world, but it is not so with a white woman. She is of a more delicate construction and requires peace and quietness to excel in that direction, which is the peculiar field of women. It is in Canada on a farm the white races have hitherto shown their most perfect organization, producing a hardy race of free men, commonly called farmers or voyageurs, who in all matters connected with their callings cannot be surpassed; that Canada may be looked upon as the most orderly and the best governed country in the world. Geography in the past has been promoted by warriors, by commerce, by missionary effort, in our day it is advanced by the noblest of all feelings, viz, a love of knowledge, consequently the rediscovery of anything new, such as a mountain, a lake or even a fish is welcome. General Wolseley has discovered a new military force in the shape of the amphibious "Voyageur," who armed with his canoe (the reindeer of the waters) is now assisting the camel of the desert in a military enterprise on the banks of the Nile. Canadians have a character to maintain, they have therefore to remember, that inasmuch as the Esquimaux are the strongest and most enduring Indians of the world, so it may fall to their lot to be the most valued fresh water sailors, capable

of any effort and in any country, where the Queen or the interests of the Empire require their services.

This Society being strongly imbued with the above facts and possibilities invite all Canadians to aid in a common effort to open up our Northern Lands to our young people, who look to their Patriarchs for advice and direction.

This Society has already received partial reports from Lake Mistassini, which will be placed before you in the shape of two hitherto unpublished papers by Professor Galbraith, who visited the Lake in 1881, and Mr. Bignell, jr., who has just returned from the Lake, 1884.

In the Spring of the year the Royal Society of Canada again invited our Society to attend and assist at their annual meeting; we were represented by our President, who read a report. The Society also received the high honor of having its President named Vice-President of Section E., Geography, at the great meeting of the British Association in Montreal, General Sir H. Lefroy being the President of the Section.

Monsieur LaProfessor Laflamme, of the University Laval, who had also been named one of the Secretaries, addressed the section on the subject of our North-eastern country, stating that though the Laurentides were their general characteristics, yet that there were breaks in the system, showing good land and that the whole subject merited a close attention in the future.

The President is happy to report in his communications with public officers, and more particularly with Doctor Selwyn and the members of the Geological Survey, Ottawa, that he has received every attention and support.

In Mr. Tache, of the Crown Lands, Province of Quebec, Geography has a sure friend.

The Society cannot close this report without expressing a regret at the economy of both the Dominion and the Provincial Governments in withdrawing their monied grants to the Society. This action compares badly with the liberality of numerous scientific societies of the world, who by every mail enrich our library by many valuable and costly contributions and who can only receive our thanks and our bulletin in return; that we cannot but deplore this neglect of a society, whose object is educational and who are endeavoring to procure for Canada a better knowledge of its own possessions and of its duties toward the large populations, who alone can convert our counties of forest and our acres of prairie into homesteads for the white man.

A free man owning his own land is generally imbued with a strong religious feeling and is otherwise estimable in all respects; there can be therefore, no danger to the commonwealth in promoting "rural interests" and in continuing the generous public policy of inviting Foreign Nations to participate with us in the singularly happy position of life in Canada.

The funds of the Society show a balance of \$154 24.

We want more members and especially more workers, so that our young people may not be called upon to covet other lands, but that they may occupy themselves principally with those duties which Providence has called upon them to perform, viz: the creation of homesteads for a large population of the white race of mankind.

The whole respectfully submitted,

W. RHODES,
President.

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The next edition of the *Directory* will be issued about Jan. 10th, and will be confined to America. As many desire to have the work arranged by states, and others desire the alphabetical arrangement, it has been decided to issue the new edition with both arrangements, provided a sufficient number of subscribers are secured. As this will require just double the number of pages and increase the cost in the same proportion, a considerable increase in the subscription list will also be necessary. The price will be \$1.50 bound in paper, or \$2.00 bound in cloth, including postage if paid promptly. After publication of the work the price will be increased to \$2.50 for paper copies, if any are left over.

A blank for new names is sent herewith and the editor will be greatly obliged if you will hand it to some one whose name should be inserted. A commission of 20 per cent will be paid for subscriptions from parties whose names are not in the last edition.

Yours respectfully,

S. E. CASSINO.

Naturalists' Directory for 1886.

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1115 Dawson, Sir J. W., LL.D., F.R.S., Prin. McGill Coll., Montreal, Can. *Geol., Palæontology, especially fossil plants.**

.....1885.

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IV.—GEOLOGICAL AND BIOLOGICAL SCIENCES.

BAILEY, L. W., M.A., Ph.D., University of New Brunswick, *Fredericton.*

BELL, ROBERT, M.D., C.E., F.G.S., Geological Survey, *Ottawa.*

BURGESS, T. J. W., M.D., *London, O.*

DAWSON, G. M., D.Sc., A.R.S.M., F.G.S., Geological Survey, *Ottawa.*

DAWSON, SIR J. WILLIAM, C.M.G., LL.D., F.R.S., Principal of McGill University, *Montreal.*

FLETCHER, JAMES, *Ottawa.*

GILPIN, EDWIN, M.A., F.G.S., Inspector of Mines, *Halifax.*

GRANT, J. A., M.D., F.G.S., *Ottawa.*

HONEYMAN, REV. D., D.C.L., Museum, *Halifax.*

JONES, J. M., F.L.S., *Halifax.*

LAFLAMME, REV. J. C. K., D.D., M.A., *Quebec.*

LAWSON, G., Ph.D., LL.D., *Dalhousie University, Halifax.*

MACOUN, J., M.A., F.L.S., Geological Survey, *Ottawa.*

MATTHEW, G. F., M.A., *St. John, N.B.*

PENHALLOW, D. P., B.Sc., McGill University, *Montreal.*

SAUNDERS, W., *London, O.*

SELWYN, A. R. C., LL.D., F.R.S., F.G.S., Director of Geological Survey, *Ottawa.*

ST. CYR, D. N., *Quebec.*

WHITEAVES, J. F., F.G.S., Geological Survey, *Ottawa.*

WRIGHT, R. RAMSAY, M.A., B.Sc., University of Toronto, *Toronto.*

CORRESPONDING MEMBERS.

THE MARQUIS OF LORNE.

BONNEY, T. G., D.Sc., LL.D., F.R.S., *London, England.*

DOUCET, CAMILLE, secrétaire perpétuel de l'Académie française, *Paris, France.*

MARMIER, XAVIER, de l'Académie française, *Paris, France.*

PARKMAN, FRANCIS, LL.D., *Boston, Mass.*

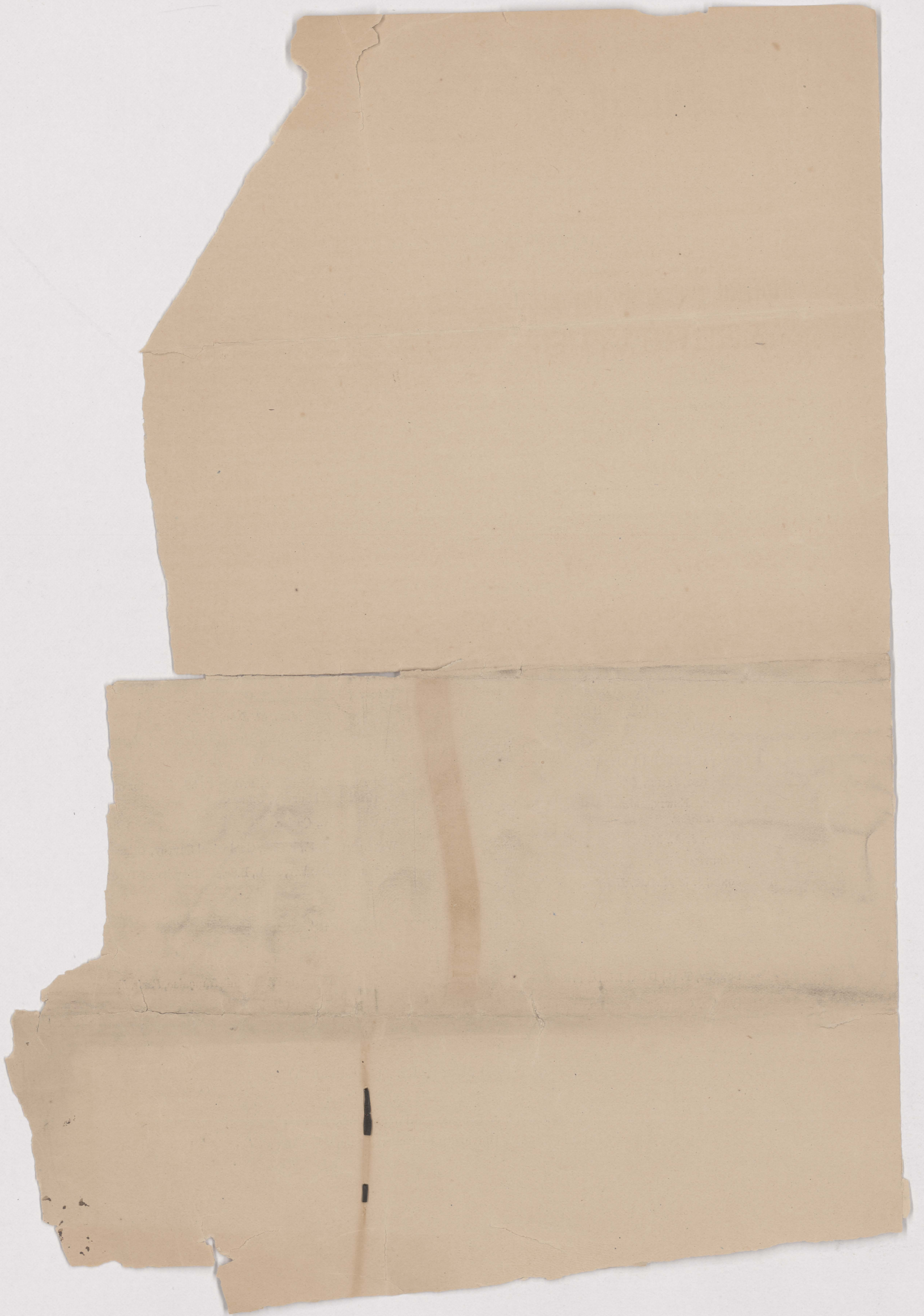
RAMEAU DE SAINT PÈRE, E., *Adon, Loiret, France.*

RETIRED MEMBERS. (See RULE 7.)

BOURASSA, NAPOLÉON, *Montebello.*

GILPIN, J. BERNARD, M.D., M.R.C.S., *Halifax.*

OSLER, W., M.D., University of Pennsylvania, *Philadelphia, Pa.*



ROYAL SOCIETY OF CANADA.

MONTREAL MEETING, 1891.

SIR,—

In response to an invitation from the Natural History Society of Montreal, the Royal Society of Canada, at its meeting in May last, decided to hold its next session in this City in the latter part of May, 1891.

As this will be the first occasion on which the Royal Society has met elsewhere than at Ottawa, the Natural History Society feel that it is incumbent upon them, and upon the citizens of Montreal, to extend to the distinguished literary and scientific men who will then visit us, a reception which will be worthy of the eminent position occupied by that body.

In order that this city may suitably perform its part on this occasion, it is necessary that an influential Local Committee should be constituted, including Sub-Committees charged with detailed arrangements. With a view to the formation of such a Committee, you are hereby respectfully invited to attend a meeting to be held in the Lecture Hall of the Natural History Society, 32 University Street, on THURSDAY, THE 13TH NOVEMBER, 1890, at 8 o'clock P. M.

All citizens willing to aid in this work are invited to attend.

B. J. HARRINGTON, B. A., Ph. D.,
President Natural History Society.

ALBERT HOLDEN,
Secretary.

Pequeley

ROYAL SOCIETY OF CANADA

MONTEREAL MEETING, 1891.

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Yours faithfully,

B. J. BARRINGTON, B. A., F. R. S.,
President, Natural History Society.

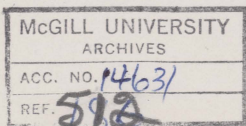
ALBERT HOLDEN,
Secretary.

FELLOWS OF THE AMERICAN ASSOCIATION WHO ATTENDED THE
MONTREAL MEETING.

- Atwater, W. O., Middletown, Conn.
Baker, Marcus, U. S. Coast and Geodetic Survey, Washington.
Bickmore, Albert J., New York.
Blake, Eli W., jun., Providence, Rhode Island.
Bowditch, H. P., Boston.
Brewer, Professor W. H., Yale College.
Brush, George J., Yale College.
Colvin, Verplanck, Superintendent of New York State Land Survey,
Albany, New York.
Carhart, Henry S., North Western University, Illinois.
Chandler, Charles H., Ripon College, Ripon, Wis.
Claypole, E. W., B.A., F.G.S., Buchtel College.
Capen, F. L., Boston.
Dall, Mrs. Caroline H., Washington.
Dimmock, George, Cambridge, Mass.
Eddy, Professor H. T., University of Cincinnati.
Edmonds, J. Rayner, Harvard College Observatory, Cambridge, Mass.
Elsberg, Louis, M.D., New York City.
Fletcher, J., Ottawa.
Gilbert, G. K., Geological Survey, Washington.
Green, Traill, M.D., Easton, Pennsylvania.
Hale, Horatio, Clinton, Ontario.
Hill, G. W., Washington.
Hitchcock, C. H., New Hampshire.
Hunt, George, Providence, Rhode Island.
Jenkins, G. Hilton, New York.
Jewell, Theo. F., Torpedo Station, Newport, Rhode Island.
Lewis, Professor H. Carvill, Acad. Nat. Sciences, Philadelphia.
Lintner, J. A., New York State Museum.
Lull, Captain Edward P., U. S. Navy.
Lupton, N. T., Vanderbilt University, Nashville.
Mabery, C. F., Cleveland, Ohio.
Mendenhall, T. C., Ohio State University.
Merriman, C. C., Rochester, New York.
Michelson, Albert A., Cleveland, Ohio.
Minot, Charles Sedgwick, Boston, Mass.
Moore, J. W., M.D., Easton, Pennsylvania.
Morley, Edward W., Cleveland, Ohio.

*Fellows
at Montrose
Mass*

Munroe, Professor Charles E., U. S. N. A., Annapolis.
Newberry, J. S., Columbia College, New York.
Nipher, Francis E., St. Louis.
Perkins, G. H., University of Vermont.
Phillips, A. W., Yale College, New Haven.
Powell, J. W., Director U. S. Geological Survey, Washington.
Putnam, F. W., Cambridge, Mass.
Ranch, John H., Chicago.
Rogers, W. A., Harvard College Observatory, Cambridge, Mass.
Roosevelt, Clinton, New York.
Sampson, W. T., U. S. N., Washington.
Saunders, William, President of Entomological Society, Ontario.
Scudder, Samuel H., Cambridge, Mass.
Smiley, Charles W., U. S. Fish Commission, Washington.
Smith, Mrs. Erminie A., Jersey City.
Smith, Francis H., University of Virginia.
Spencer, J. W., Missouri.
Stallo, J. B., Cincinnati.
Stephens, W. Hudson, Lowville, New York.
Stockwell, John N., Cleveland, Ohio.
Thurston, Robert H., Stevens Institute of Technology, Hoboken.
Van der Weyde, Dr. P. H., President of New York Electric Society.
Ward, R. H., M.D., Polytechnic Institute, Troy, New York.
Warner, James D., Brooklyn, New York.
Wead, Charles K., University of Michigan.
Webb, Professor J. Burkitt, Cornell University, Ithaca.
Webster, N. B., Principal of Webster Institute, Norfolk, Virginia.
Wheeler, C. Gilbert, Chicago.
Winchill, N. H., Minneapolis.
Würtell, Louis C., Acton Vale, Quebec.
Wylie, T. A., Indiana University.



AMERICAN GEOLOGICAL SOCIETY.

THE Annual Meeting of the AMERICAN GEOLOGICAL SOCIETY will be held in the large hall of the American Museum of Natural History, beginning on December 26th, 1889, at 10 A. M., and continuing three days.

The Museum is at 77th Street and Eighth Avenue. Fellows arriving at the Grand Central Depot will go two full blocks west to the Elevated Railroad at Sixth Avenue and 42d Street, where they will take the HARLEM train to 81st Street Station. Those arriving by the Erie will cross by the Chambers Street Ferry and take the Elevated road at the Warren Street Station on Greenwich Street, one block below Chambers. Those arriving by the Pennsylvania will take the Elevated road at Greenwich and Desbrosses Streets; in all cases they will get off at the 81st Street Station.

HOTELS.

Fellows arriving at the Grand Central Depot will find directly opposite the depot the Grand Union Hotel, on the European plan, where the rooms are one dollar per day and upward. The Park Avenue Hotel, on the American plan, is at 33d Street and Fourth Avenue, and the rates are \$3.50 per day and upward. The Ashland House, at 26th Street and Fourth Avenue, is on both the European and the American plan; the charges are, for the former one dollar per day and upward, and for the latter two dollars per day. The Morton House, on the European plan, is at Broadway and 14th Street, the rates are one dollar per day and upward. All of these hotels are reached by the Fourth Avenue cars passing directly from the depot. Fellows arriving by the Erie, will take the Chambers Street line to Centre Street and there take the Fourth Avenue car up town to any one of these hotels. Those arriving by the Pennsylvania will take the Grand Street car, starting from the Desbrosses Street Ferry, and will change to the Fourth Avenue car at the Bowery. All of these hotels are within five minutes walk of Elevated Railroad Stations on Sixth Avenue; those on 14th and 42d Streets are passed by cross-town railroads.

TRANSPORTATION.

It is not certain whether or not reduced rates can be obtained on the railroads, as the number likely to attend the meeting may fall short of one hundred. In case arrangements can be made, notice will be sent at once with full directions.

NOMINATIONS.

Blanks for nominations accompany this circular. The Executive Council will meet at the close of the meeting, when nominations will be considered. Fellows are earnestly requested to state in detail the qualifications of candidates, so that no injustice may be done by the Council, either to the Society or to the Candidates.

ADDRESSES.

The Executive Council has instructed the Secretary to proceed with the publication of the material now in his hands; a correct list of the Fellows is necessary for publication and for the distribution of the Bulletin. Fellows are requested to inform the Secretary at once of any change in address, and of any inaccuracy known to them.

PAPERS.

The preliminary programme, with abstracts, accompanies this circular. It is especially important that those, who send titles of papers after the receipt of this notice, remember to state the probable length, in order that there may be less difficulty in preparing the daily programme. Those who have failed to attend to this matter when sending their abstracts, will be good enough to give the information as soon as possible. The papers should be handed to the Secretary after the reading, so that they may be sent to the proper committees at once for consideration with reference to publication.

BALLOTS.

Three ballots are sent out in the same mail with this. Each must be enclosed in its own envelope and sealed. The three envelopes are to be enclosed in the addressed envelope, on which each Fellow *must endorse* his name after sealing—otherwise the envelope cannot be opened for canvass. Especial attention is called to the ballot for the Constitution; it is necessary that Fellows cast this ballot, as an affirmative vote of three-fourths of all the Fellows is necessary for adoption of amendments to the Constitution.

FEES.

The dues for 1890, ten dollars, can be paid to Prof. H. S. Williams, of Ithaca, N. Y., at the meeting.

JOHN J. STEVENSON,

Secretary.

AMERICAN GEOLOGICAL SOCIETY

The Annual Meeting of the American Geological Society will be held in the City of New York, at the Hotel Hamilton, on the 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, and 31st of December, 1890. The President of the Society is Dr. J. D. Dana, and the Secretary is Dr. J. W. Foster. The meeting will be held in the City of New York, at the Hotel Hamilton, on the 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, and 31st of December, 1890.

HOTELS

Persons desiring to attend the Annual Meeting of the American Geological Society should secure their accommodations at the Hotel Hamilton, 15th Street, New York City. The Hotel Hamilton is a first-class hotel, and is well adapted for the purpose. The rates are reasonable, and the service is excellent. The Hotel Hamilton is a first-class hotel, and is well adapted for the purpose. The rates are reasonable, and the service is excellent.

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DIRECT

EXHIBITS

EXHIBITS

The dues for 1890, ten dollars, can be paid to Prof. H. S. Williams, of New York, at the meeting.

JOHN A. WILSON

Secretary

The Geological Society of America,



The Semi-annual meeting of the Geological Society of America will be held in the State House, Indianapolis, Indiana, on Tuesday, August 19, 1890., at 10 A. M.

Any Fellow desiring to have a paper read in his absence will send it to

PROF. J. J. STEVENSON,

University of the City of New York, N. Y.,

so that it may be in hand not later than August 5th. Those desiring to read in person will send the abstract and the estimate of length so as to be received not later than August 10th.

Ballots for Fellows accompany this circular. As a *very small number of negative votes* now suffices to exclude a candidate, fellows are cautioned to observe the distinction between *Blank* and *Negative* votes. Nominations for Fellowship will be laid before the Council at the close of the Society's meeting.

Fellows are requested to inform the Secretary of any inaccuracies in the list of Fellows.

No special railroad or hotel rates have been obtained for the Society. Fellows who are not members of the American Association for the Advancement of Science, may avail themselves of many advantages by joining that Association. The circular containing full information can be obtained from

ALFRED F. POTTS, ESQ.,

Local Secretary of A. A. A. S.,

Indianapolis, Indiana.

The Society's headquarters will be at the Denison House, ~~July 1, 1890.~~

JOHN J. STEVENSON,

Secretary.

The Geological Society of America

The semi-annual meeting of the Geological Society of America will be held in the State House, Indianapolis, Indiana, on Tuesday, August 19, 1890, at 10 A. M.

Any fellow desiring to have a paper read in his absence will send it to

Prof. J. J. Stevenson,

University of the City of New York, N. Y.

papers may be in hand not later than August 15th. Those desiring to read in person will send the abstract and the estimate of length so as to be received not later than August 10th.

Ballots for Fellows accompany this circular. As a very small number of original votes now suffice to exclude a candidate, fellow are cautioned to observe the district on ballots. Votes and names of voters must be returned to the Secretary of the Society before the meeting.

Fellows are requested to inform the Secretary of any inaccuracies in the list of fellows.

No special railroad or hotel rates have been obtained for the Society. Fellows who are not members of the American Association for the Advancement of Science, may avail themselves of many advantages by joining that Association. The circular containing full information can be obtained from

Arthur F. Torres, Esq.,

Local Secretary of A. A. S.,

Indianapolis, Indiana.

The Society's headquarters will be at the Denison House, July 4, 1890.

JOHN J. STEVENSON,

Secretary.

John J. Stevenson
1890

The proposed geological society. Geologists will recall the fact of the appointment of a committee of their number at the meeting of the A. A. S. in 1881 to consider the advisability of forming an *American Geological Society*. This committee sent out circulars asking for opinions, and received 126 answers to their inquiries, all but two of which expressed a belief in the expediency of organizing such a society. These facts were reported at Montreal in 1882. It was there voted expedient to establish a geological magazine. A proposed constitution for a society was presented, discussed and laid upon the table for future consideration. At the adjourned meeting in 1883 at Minneapolis the questions of the magazine and society were further considered. Little was accomplished beyond the appointment of a committee to confer with the Mineralogical and Geological section of the *Philadelphia Academy of Natural Sciences*. For various reasons no meeting was called to discuss the subject at Philadelphia. Since then regret has been expressed by some who were at first opposed to the project that the effort had not been pressed. At the New York meeting of the International Congress Committee (A. A. A. S.), August, 1887, the following resolution was passed: "That the American Committee of the International Congress will approve of a call for the meeting of an American Geological Congress, whose object shall be the discussion of important geological questions."

The chief objection to the establishment of an American Geological Society has been the fear that its existence would impair interest and attendance at the meetings of the American Association for the Advancement of Science. But if the new society could be made identical with Section E, retaining the officers chosen at the meetings of the A. A. A. S., and having the power to assemble at other times during the year, adopting necessary regulations for the extra sessions, it would seem as if the geologists might obtain all the advantages of a special organization.

The chairman and secretary of the above named committee of American geologists would therefore call upon all American geologists to assemble with them at Cleveland, Ohio, at 3 P. M., of Tuesday, August 14th, the day before the next session of the A. A. A. S., and if deemed expedient, organize a society subject to the following limitations:

1. The members of the society shall be also members of the A. A. A. S.
2. The president and secretary of the new society shall be the gentlemen elected to these offices by the A. A. A. S.
3. It will be recommended to Section E. at its formal session to offer an amendment to the constitution of the A. A. A. S. that Section E may be allowed to hold meetings at such time and place as they may desire, independently of the other sections, subject to their own regulations.

[Signed,]

N. H. WINCHELL, Chairman,
C. H. HITCHCOCK, Secretary.

Give us your views

Murphy
Seal King

American Geological Society.

The Executive Council will offer the following candidates for election by the Fellows in December.

- FRANK DAWSON ADAMS, Montreal, Canada, Lecturer at McGill College, Montreal, and engaged on Inorganic Geology. Nominated by G. H. Williams, S. F. Emmons, W. B. Clark.
- ALBERT SMITH BICKMORE, American Museum of Natural History, N. Y. City, Professor of Natural History, Curator of Anthropology, and Secretary of the Museum. Now engaged on Physical Geography. Nominated by J. J. Stevenson, C. D. Walcott, G. K. Gilbert.
- JOHN M. CLARKE, State Museum, Albany, N. Y., Assistant Palæontologist of State of New York. Engaged in study of Brachiopoda. Nominated by James Hall, N. H. Winchell.
- AARON HODGMAN COLE, Hamilton, New York, Lecturer on Natural History at Madison University, and now engaged on Invertebrate Palæontology. Nominated by W. B. Clark, W. S. Bayless.
- THOMAS STERRY HUNT, New York City. Now engaged on Chemical Geology. Nominated by James Hall, I. C. White, C. A. White.
- R. D. LACOE, Pittston, Pa., Palæobotanist. Nominated by I. C. White, H. S. Williams.
- ALFRED CHURCH LANE, Houghton, Mich., Assistant on Michigan Geological Survey. Engaged on Petrographical work. Nominated by M. E. Wadsworth, W. M. Davis, N. S. Shaler.
- ALEX. RICHARD CECIL SELWYN, Ottawa, Canada, Director of Geological and Natural History Survey of Canada. Nominated by J. J. Stevenson, G. K. Gilbert.
- BAILEY WILLIS, Washington, D. C., in charge of the Appalachian Division of the U. S. Geological Survey. Nominated by G. K. Gilbert, W. M. Davis.
- LORENZO G. YATES, Santa Barbara, Cal., Botanist. Engaged on study of fossil mammals of Pacific Coast. Nominated by N. H. Winchell, H. V. Winchell.

Members Prof
Am. Acad. Sci.

WILL NOT BE OPENED FOR CANVASS.

OUTER ENVELOPE

BALLOTS NOT ENDORSED ON THE

Secretary.

JOHN J. STEVENSON.

The Executive Council, having considered the proposals, reports that the foregoing candidates are eligible and recommends them for election.

- THOMAS FREEMAN MOSES, Urbana, Ohio, President of Urbana University : Dynamical
Geology. Proposed by E. Orton, J. J. Stevenson.
- FREDERICK H. NEWELL, U. S. Geological Survey, Washington, D. C. Geologist;
R. A. F. PENROSE, Jr., Geological Survey, Austin, Texas, Ass't on Geological Survey;
Geology of Eastern Texas. Proposed by R. T. Hill, Alpheus Hyatt, J. J.
Stevenson.
- CHARLES W. ROBERTS, Campaign Co., Ill., Prof. of Geology in University of
Illinois. Proposed by J. J. Stevenson, James Hall.
- HENRY M. SEELY, Middlebury Vermont, Prof. of Geology in Middlebury College;
Cambrian Stratigraphy and Paleontology. Proposed by J. J. Stevenson, G. H.
Cook.
- ORRESTES HAWLEY SR. JOHN, Topeka, Kansas, Geologist; Southwest Coal-field, Pro-
posed by J. S. Newberry, J. J. Stevenson, Alpheus Hyatt.
- GEORGE CLINTON SWALLOW, Helena, Montana, Formerly Geologist of Missouri, Kansas
and Montana. Proposed by Alpheus Hyatt, G. H. Cook, J. J. Stevenson.
- MAURICE THOMPSON, Crawfordville, Indiana, Lately State Geologist of Indiana.
Proposed by J. J. Stevenson, G. H. Cook.
- JOSEPH BURR TYRRELL, Geological Survey, Ottawa, Canada, Geologist; Geology of
Manitoba and Northwest Territories. Proposed by R. W. Ellis, J. J. Stevenson.
- CHARLES WACHSMUTH, Burlington, Iowa, Paleontologist. Proposed by W J McGe-
e.
- WALTER HARVEY WEED, U. S. Geological Survey, Washington, D. C., Geologist.
Proposed by C. D. Walcott, J. W. Powell.
- CHARLES DAVID WHITE, U. S. Geological Survey, Washington, D. C., Paleontologist,
Paleobotany. Proposed by G. K. Gilbert, C. D. Walcott, W J McGe-
e.
- LESTER F. WARD, U. S. Geological Survey, Washington, D. C., Geologist; Paleobot-
any. Proposed by J. W. Powell, G. K. Gilbert, C. D. Walcott, W J McGe-
e.
- ROBERT SIMPSON WOODWARD, U. S. Geological Survey, Washington, D. C., Civil
Engineer; Mathematical Geology. Proposed by I. C. Russell, G. K. Gilbert.

- Frederic P. Dewey, Smithsonian Institution, Washington, D. C., Curator of Met-
alurgy, National Museum; Economic Geology. Proposed by C. D. Walcott, G.
P. Farnsworth, Clinton, Iowa, Prof. of Materia Medica in State University;
engaged on Geology of Eastern Iowa. Proposed by W J McGee, C. D. Walcott,
N. H. Darton. Curator of State Museum: Ass't on State Geological
Survey. Proposed by J. R. Procter, J. J. Stevenson.
M. J. Giroux, Geological Survey, Ottawa, Canada, Ass't Geologist on Geological
Survey of Canada. Proposed by R. W. Ellis, G. H. Cook.
Arnold Hager, U. S. Geological Survey, Washington, D. C., Geologist. Proposed
by J. W. Powell, S. F. Emmons, G. K. Gilbert, C. D. Walcott.
Charles Willard Hayes, U. S. Geological Survey, Washington, D. C., Geologist;
Stratigraphical Geology. Proposed by G. K. Gilbert, I. C. Russell, W J McGee, AVE.
Clarence Luther Herrick, 11 Mitchell Ave., Mt. Auburn, Cinn., Ohio, Prof.
of Geology and Biology in University of Cinn.; Waverly Group and Devonian.
Proposed by E. Orton, J. J. Stevenson.
Frank A. Hill, 208 Center St., Pottsville, Pa., Geologist in Charge of Anthracite
District, 2d Geological Survey of Penn. Proposed by J. P. Lesley, Alpheus
Hyatt.
Mary E. Holmes, Rockford, Ill., Invertebrate Paleontology. Proposed by Alex.
Winchell, James Hall.
John B. Hastings, Ketchum, Alturas Co. Idaho, Mining Engineer. Proposed by J.
J. Stevenson, J. S. Newberry.
Samuel B. Howell, 1513 Green St., Philadelphia, Pa., Professor of Mineralogy and
Geology in University of Penn.; Petrology and Lithology. Proposed by J. P.
Lesley, Alpheus Hyatt.
Joseph Kaxson Idings, U. S. Geological Survey, Washington, D. C., Geologist;
General Geology and Petrography. Proposed by C. D. Walcott, G. K. Gilbert,
J. W. Powell.
Thomas Moore Jackson, Morgantown, W. Va., Prof. of Civil Engineering in W. Va.
University; Carboniferous Geology. Proposed by I. C. White, J. J. Stevenson.
Alexis Anstey Julian, Columbia College, New York City, Instructor in Columbia
College; Petrography. Proposed by J. S. Newberry, J. J. Stevenson, H. S.
Williams.
Arthur Keith, U. S. Geological Survey, Washington, D. C., Geologist; Stratigraphi-
cal Geology. Proposed by G. K. Gilbert, I. C. Russell, W J McGee, AVE.
Clarence King, 18 Wall St., New York City, Lately Director of U. S. Geological
Survey. Proposed by J. W. Powell, G. K. Gilbert, G. H. Cook, J. S. Newberry, AVE.
Frank Hall Knowlton, U. S. National Museum; Washington, D. C., Ass't Curator
in Botany, National Museum; Paleobotany. Proposed by C. D. Walcott, W J
McGee, G. K. Gilbert, AVE.
Daniel Westler Langdon, Jr., University, Alabama, Ass't on Geological Survey of
Ala.; Eocene Tertiary. Proposed by L. C. Johnson, E. A. Smith.
Andrew C. Lawson, Ottawa, Canada, Geologist; Archaean Geology. Proposed by J.
J. Stevenson, Alex. Winchell.
Robert H. Louderback, Columbia, S. C., Prof. of Agricultural Chemistry in University
of S. C.; Lately Ass't Geologist on Kentucky Geological Survey. Proposed by
J. A. Holmes, J. J. Stevenson.
Thomas H. McBride, Iowa City, Iowa, Professor of Botany in State University;
Paleontology. Proposed by W J McGee, C. D. Walcott, N. H. Darton, AVE.
Henry McCallie, University, Ala., Chemist and Ass't Geologist on Alabama
Geological Survey; Paleozoic Geology. Proposed by Lawrence C. Johnson, E.
A. Smith.
Richard G. McConnell, Geological Survey, Ottawa, Canada, Geologist; Stratigraphy.
Proposed by R. W. Ellis, J. J. Stevenson, AVE.
William McInnes, Geological Survey, Ottawa, Canada, Field Geologist. Proposed
by R. W. Ellis, J. J. Stevenson.
Olivier Marcy, Branson, Cook Co., Ill., Prof. of Natural History in Northwestern
University. Proposed by J. J. Stevenson, Alpheus Hyatt, AVE.
Othniel Charles Marsh, Yale College, New Haven, Conn., Professor of Paleontol-
ogy in Yale University. Proposed by J. J. Stevenson, H. S. Williams, J. W.
Powell, J. S. Newberry, AVE.

[OVER.]

- Sir J. William Dawson, McGill College, Montreal, Canada, Principal of McGill University: Paleontology. Proposed by Alpheus Hyatt, J. W. Powell, J. S. Newberry. AVE.
- George Mercer Dawson, Geological Survey, Ottawa, Canada, Asst. Director of Geological Survey; Western Geology. Proposed by Alpheus Hyatt, J. W. Powell, J. S. Newberry. AVE.
- Russell W. J. McGillivray. AVE.
- Charles Whitman Cross, U. S. Geological Survey, Washington, D. C., Geologist, Engaged in Field Geology and Petrography. Proposed by G. K. Gilbert, I. C. Russell W. J. McGillivray. AVE.
- W. W. Clendenin, Columbia, Missouri, Instructor in Geology in University of Missouri. Proposed by G. C. Broadhead, J. J. Stevenson. AVE.
- Frederick D. Chester, Newark, Delaware, Prof. of Geology and Botany in Delaware College; Petrography. Proposed by J. J. Stevenson, G. H. Cook. AVE.
- Robert W. Ellis, J. J. Stevenson. AVE.
- Robert Chambers, Geological Survey, Ottawa, Canada, Field Geologist. Proposed by R. W. Ellis, J. J. Stevenson. AVE.
- School of Mines. Proposed by I. C. Russell, S. F. Emmons, Alpheus Hyatt. AVE.
- Franklin R. Carpenter, Rapid City, Dakota, Dean and Prof. of Geology in Dakota Washington and Lee University. Proposed by W. M. Fontaine, J. J. Stevenson. AVE.
- Henry Donald Campbell, Lexington, Virginia, Prof. of Geology and Botany in Washington and Lee University. Proposed by W. M. Fontaine, J. J. Stevenson. AVE.
- Ezra Bainard, Middlebury, Vt., President of Middlebury College. Engaged on Fossils of Lower Silurian. Proposed by C. H. Hitchcock, J. J. Stevenson. AVE.
- Stephen Bowers, San Buena Ventura, California, Geologist on California Mineralogical Survey. Proposed by Alexander Winchell, J. J. Stevenson. AVE.
- Amos Bowman, Geological Survey, Ottawa, Canada, Engaged on Geology of British Columbia. Proposed by R. W. Ellis, G. H. Cook. AVE.
- Stevenson. AVE.
- Robert Bell, Geological Survey of Canada, Ottawa, Canada, Asst. Director of the Geological Survey; Geology of Azolic Rocks. Proposed by R. W. Ellis, J. J. Stevenson. AVE.
- Charles Emerson Brecher, Peabody Museum, Yale University, New Haven, Conn. Engaged on Invertebrate Paleontology. Proposed by J. C. Smock, Alpheus Hyatt. AVE.
- S. Williams. AVE.
- Henry M. Amey, Geological Survey, Ottawa, Canada, Asst. Paleontologist on Geological and Natural History Survey of Canada. Proposed by R. W. Ellis, H. S. Williams. AVE.
- Truman Hemingway Aldrich, 92 Southern Ave., Cincinnati, O., Mining Engineer; Engaged on Tertiary Geology and Paleontology. Proposed by E. A. Smith, J. J. Stevenson. AVE.
- Victor Clinton Alpersson, 6721 Honoré St., Englewood, Ill., Teacher of Geology; Proposed by Alexander Winchell, J. J. Stevenson. AVE.

FOR FELLOWS:

To vote Nay, strike out the word AVE. Two envelopes are sent with this list; place it in the smaller, seal and enclose that in the larger one. Write your name across the back of the latter after sealing and forward as addressed.

THE VOTE WILL CLOSE ON MAY 20TH 1899. BALLOTS MUST BE IN THE HAND OF THE SECRETARY ON OR BEFORE THAT DAY.

BALLOT FOR FELLOWS.

American Geological Society.

NOT TO BE OPENED FOR SIGNATURE

ORDER ENCLOSED

NOT TO BE OPENED ON THE

1881

The enclosed contains a list of the names of the persons who have been elected to the office of

Faint, illegible text, likely a list of names or a table of contents, appearing as bleed-through from the reverse side of the page.

Wm. Scott

464

SPENCER F. BAIRD,

Commissioner.

OFFICIAL BUSINESS.

Any person using this card to avoid the payment of postage on private matter of any kind, will be subject to a fine of \$300.

Division of Records and Publications,

U. S. Commission of Fish and Fisheries,

WASHINGTON,

D. C.

(464)

[Please fill out and return this Receipt.

No. *1516*.....

Received from the **United States Fish Commission**, *one copy of the following named publication:*

Quarto fishery report,
Vol. 1 in 2 parts.

Name.....

P. O. Address.....

Date.....

188.....

(464)

SPENCER F. BAIRD,
Commissioner.

OFFICIAL BUSINESS

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Vol. 1 in 2 parts.

Name.....

P. O. Address.....

Date *188*

British Association for the Advancement of Science.

REPORT OF THE COUNCIL
FOR THE YEAR 1885-86.

THE Council have received reports during the past year from the General Treasurer, and his account for the year will be laid before the General Committee this day.

Since the Meeting at Aberdeen, the following have been elected Corresponding Members of the Association:—

Professor PUTNAM.
Rev. Dr. RENARD.

Dr. MAX SCHUSTER.
M. JULES VUYLSTEKE.

As Professor HUXLEY was unable to accept the office of a Vice-President for the present meeting, the Council have nominated in his stead Professor STOKES, Pres. R.S.

The Council have received a letter from Sir CHARLES TUPPER, High Commissioner for the Dominion of Canada, enclosing important communications from the Government of that Dominion, in reference to the record and preservation from obliteration of such traces as still remain of the indigenous characteristics of the native races of America, which subject, the General Committee will recollect, was mentioned in the Report of the Council at the Aberdeen Meeting. Copies of this correspondence will be communicated to the Sections interested in the subject.

Invitations have been received from Bath and from Sydney for the year 1888; and the invitation from Melbourne, given at Montreal, has been renewed.

The following resolutions were referred by the General Committee to the Council for consideration, and action, if desirable:—

- (a) "That the Council be requested to consider the desirability of admitting ladies as Officers of the Association, or as Members of the General or Sectional Committees."

The Council, after careful consideration of the question, are of opinion that the time has not yet come when it would be for the advantage of the Association to depart from the established custom.

(b) "That the Council be requested to consider the advisability of rendering the special Reports of the Association more accessible to the scientific public by placing them on sale in separate form."

(c) "That the printed Reports on Special Subjects be offered for sale to the general public at the time of the Meeting, or as soon afterwards as possible."

There are several matters of detail, requiring careful consideration, in the subject of these two resolutions, and the Council, owing to exceptional circumstances during the past year, have not been able to come to a decision regarding them. They recommend that the question should be referred to the next Council.

(d) "That the Council be requested to so modify the Rules of the Association as to permit of a Sectional Meeting being held at an earlier hour than eleven, and the Sectional Committee previously, due notice being given to the Section on the previous day."

The Council have considered this recommendation, and think it undesirable to alter the general rules, the resolution passed at Southport three years ago meeting the particular case of Saturday.

(e) "That a memorial be presented to H.M. Government requesting them to enlarge the existing Agricultural Department of the Privy Council, with the view of concentrating all administrative functions relating to Agriculture in one fully-equipped Board and Department of Agriculture."

The Council, after a full consideration of this difficult and intricate question, are not at present prepared to memorialise the Government on the subject of the enlargement of the Agricultural Department of the Privy Council.

(f) "That the Council be requested to consider and take steps, if they think it desirable, to memorialise the Government to undertake the more systematic collection and annual publication of Statistics of Wages, and a periodical industrial census."

The Council, in view of the recent promise of the late President of the Board of Trade in Parliament as to the collection of Statistics of Wages, are of opinion that it is inexpedient at present to memorialise H.M. Government on the subject, but they empowered a Committee of their Members to communicate, if necessary, with the Department engaged in the collection of Statistics of Wages, with the view of eliciting information as to the method proposed to be employed, and to make such suggestions as appear to be expedient.

(g) "That a memorial be presented to H.M. Government in favour of the establishment of a National School of Forestry."

A Committee was appointed to consider this subject, but has made no report to the Council.

The General Committee will remember that the question of the feasibility of instituting a scheme for promoting an International Scientific Congress, described in the Report of the Council presented at Aberdeen, was in effect referred back to the Council to consider whether it would be possible to devise such a scheme. The question has been further considered during the past year, and the Council are of opinion that the difficulties and objections foreseen by several members of the Association, have not been met in any of the communications which have been laid before them, and are, in their judgment, so great that they cannot at present recommend any further steps being taken in the matter.

In accordance with the regulations, the five retiring members of the Council will be:—

Mr. J. W. L. GLAISHER.

Dr. H. C. SORBY.

Professor T. MCK. HUGHES.

Dr. W. H. PERKIN.

Mr. J. F. LA TROBE BATEMAN.

The Council recommend the re-election of the other ordinary Members of Council, with the addition of the gentlemen whose names are distinguished by an asterisk in the following list:—

ABNEY, Captain W. DE W., F.R.S.	HAWKSHAW, J. CLARKE, Esq., F.G.S.
BALL, Professor R. S., F.R.S.	HENRICI, Professor O., F.R.S.
* BARLOW, W. H., C.E., F.R.S.	* JUDD, J. W., F.R.S.
BLANFORD, W. T., Esq., F.R.S.	MARTIN, J. B., Esq., F.S.S.
BRAMWELL, Sir F. J., F.R.S.	M'LEOD, Professor H., F.R.S.
CROOKES, W., Esq., F.R.S.	MOSELEY, Professor H. N., F.R.S.
* DARWIN, G. H., F.R.S.	OMMANNEY, Admiral Sir E., C.B., F.R.S.
DAWKINS, Professor W. BOYD, F.R.S.	PENGELLY, W., Esq., F.R.S.
DE LA RUE, Dr. WARREN, F.R.S.	* ROBERTS-AUSTEN, W.C., F.R.S.
DEWAR, Professor J., F.R.S.	TEMPLE, Sir R., Bart., G.C.S.I.
FLOWER, Professor W. H., F.R.S.	THISLTON-DYER, W. T., Esq., C.M.G., F.R.S.
GLADSTONE, Dr. J. H., F.R.S.	* THORPE, T. E., F.R.S.
GODWIN-AUSTEN, Lieut.-Colonel H. H., F.R.S.	

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Dr. W. H. Patten
Dr. H. C. Sorenson
Dr. J. E. Brown

Report
Annual

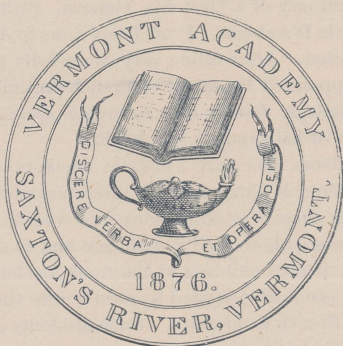
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VERMONT ACADEMY.



1888.

The next academic year will begin on Tuesday, September 4. Those wishing to secure rooms in the dormitories should make an early application. There will be accommodations for 20 more boys than heretofore, owing to the erection of the main building; still there will not be room to meet the demand.

The new main building will be ready for use in September. It is a large and fine structure and in every way adapted to the needs of the Institution. It contains large recitation and lecture rooms well heated, lighted and ventilated; a chemical and a physical laboratory; a library and reading room; rooms for the Young Men's Christian Association, and a Gymnastic Hall for the young ladies; also special rooms for the departments of Music and of Art and a large assembly hall capable of seating 800 persons. This building, when completed will be as well adapted to its purpose as any building of the kind in any similar institution.

It is the aim of the Trustees and Faculty of Vermont Academy to provide the very best opportunities for education in their Academic and Classical Courses of Study, and to make special provision for the departments of Language, Music and Art.

The Faculty, numbering ten instructors, has seven full college graduates. Students are fitted for any American University or Scientific School. Express provision is made for those who do not wish to pursue a collegiate course of study.

THE FRENCH DEPARTMENT.

Teachers or students desiring special advantages at reasonable rates for the study of French, will find the very best opportunity at this institution. Prof. Charles Roux, A. M., late Principal of the Feller Institute, Grande Ligne, has recently been appointed instructor in French. Prof. and Madame Roux are well known to many teachers and others in this country who have enjoyed their instruction. Born and educated in France and having studied for five years

at the Evangelical Seminary of L'Oratoire, Geneva, Switzerland, under the presidency of Dr. Merle D'Aubigné, Prof. Roux came to America with especial qualifications as a teacher. After filling very successfully important educational positions, he was appointed Professor of French and member of the College Council of Bishops College, Lenoxville, receiving special honors from the College in recognition of his superior scholarship.

Both Prof. and Madame Roux are excellent teachers of great experience. Their mastery of the French Language and Literature and their command of the English, insure the success of all persons who wish to make rapid progress in French and to become able to read it with ease and to speak it with fluency. Wishing to educate their own children at Vermont Academy, they have come to Saxton's River and are now prepared to receive into their family a few pupils desiring to make French a specialty. Such students can have at the same time the advantages offered by the Academy in its Courses of Study, in Music and in Art.

This opportunity of living in a French family of culture and refinement, of hearing and speaking French alone is second only to a residence in France.

A three years' course in French is provided for at the Academy. The students also have an opportunity for conversation in French with Prof. Roux and his able assistants, at the Academy dinner table.

The following prices have been fixed for special instruction in French.

Students rooming at Prof. Roux's will be charged for a furnished room, including fuel and lights, per term	\$15.00
Breakfast and Tea, per week	2.00
Daily Private Lessons, per term	18.00
French conversation at any time without extra charge.	

MUSIC.

The Department of Music is in charge of Mrs. M. F. Seymour, B. M. Mrs. Seymour, a graduate from the five years course in Music at Smith College, is thoroughly conversant with the subject and is an able, earnest and pains-taking teacher. By her thorough instruction, by her careful supervision of her pupils, and by her untiring efforts to train them to regard Music as having in itself an educational value rather than as a mere accomplishment, she has maintained a very high standard in her department and has given it such an impetus that large numbers of students have entered upon a course of study in Music. Mrs. Seymour has competent assistance in Miss A. M. Lothrop who is also an enthusiastic and accomplished teacher, a fine pianist and a thoroughly educated musician.

Large choral classes study and rehearse the works of the masters and public concerts are given each term in which the teachers and students are aided by prominent musicians. Piano recitals are also given from time to time to accustom the pupils to play without embarrassment.

In addition to the other facilities for the study of music, nine rooms in the new building have been devoted to the use of this department.

ART DEPARTMENT.

Mrs. C. H. Spooner has had the charge of this department for the past five years. Mrs. Spooner has had the best advantages offered by New York City and has had much experience in teaching in excellent schools. An enthusiastic lover of her work, with a very high order of ability, combined with a rare power of instruction, she has made the Art Department very successful.

Large classes are formed every year and the old classes continue from year to year pursuing the study with regularity and system. Beginning with simple flat copies, they are gradually taught geometrical, perspective and mechanical drawing. They are taught to draw from the natural object and to draw rooms, furniture, buildings, etc. placed in perspective. Private instruction is given in water-colors and oil painting, the students copying from pictures and also from nature. The decoration of China is also taught and the firing done in the school.

New drawing models are purchased from time to time. Competitive exhibits are occasionally made to encourage and stimulate the pupils.

Four large and convenient rooms with a Northern light have been provided for the art classes in the new building.

EXPENSES.

TUITION.

College Preparatory Course, per term,	-	-	-	-	\$12.00
Academic Course,	"	"	-	-	10.00
Preparatory Course,	"	"	-	-	10.00
Selected studies in English Branches,	-	-	-	-	10.00
Music per term (two half hour lessons per week,)	-	-	-	-	15.00
Music per term (one three quarter hour lesson per week,)	-	-	-	-	10.00
Singing in class per term,	-	-	-	-	1.00
Use of piano per term (one hour daily practice,)	-	-	-	-	1.50

No deductions made for lessons lost by the pupils, except in cases of protracted illness.

Tuition will be \$12 for a term in which a foreign language is studied.

BOARD.

Table board at the Academy, per week,	-	-	-	-	\$ 2.50
Room rent at the Academy, including heating and lighting, per term,					
for each occupant, for both fall and winter terms,	-	-	-	-	12.00
For the summer term,	-	-	-	-	10.00
Care of room at Farnsworth Hall, per week for each occupant,	-	-	-	-	.15
Ordinary washing, per dozen,	-	-	-	-	.40

*Bennett
Academy
1888*

TEACHERS.

PRINCIPAL.

HORACE M. WILLARD, A. M.

LADY PRINCIPAL.

MRS. RUTH B. PULSIPHER,

REV. E. J. COLCORD, A. B.

MAJ. CH. H. SPOONER, B. S.

EDWARD P. SEYMOUR, A. B.

MISS S. KENDALL, A. M.

MISS CLARA CONVERSE, A. B.

X REV. CHARLES ROUX, A. M. X

TEACHER OF DRAWING AND PAINTING.

MRS. C. H. SPOONER.

TEACHER OF MUSIC.

MRS. MARY FISHER SEYMOUR, B. M.

ASSISTANT IN MUSIC.

MISS A. M. LOTHROP

Linnaea
Beela

LINNAEA,
INSTITUTION FOR NATURAL HISTORY
BERLIN. — Germany.

This institution was founded in 1879 at Frankfort s. M. by a number of zoologists. The undertaking, an outgrowth of the Exchange Union (a branch of the German Malaco-Zoological Society) directed its chief energies to turning the collections of scientific travelers to advantage. The pressure of increasing business necessitated the removal of the Institution to the German capital. Nearly all well-known German explorers entrusted their collections to the Linnaea. We mention only DR. RICH. BÖHM, DR. G. FISCHER, FREIHERR VON MALTZAN, the brothers DRs. KRAUSE, E. HARTERT, DR. STOLL, CLEMENS DENHARDT, and many others. Not only the museums and academies of Germany, but also nearly all the principal institutes of the continent sustain regular intercourse with the Linnaea. Even to many transoceanic countries, particularly the United-States, Canada, Sth.-America, India, Australia etc. larger or smaller collections are often forwarded. Among others we name the following museums and institutes: the Royal Inst. of Natural History at Berlin, the National Museum at Vienna, London, Leyden, Brussels, Pesth. St. Petersburg etc. Among our N.-American correspondents we mention the museums at Washington, Philadelphia, Madison, Ittaca, Cambridge, Toronto etc.

Our stock is constantly replenished from various transoceanic countries in which collectors are at work in our behalf. The institution likewise sends out scientists into territories whose exploration appears necessary for the furtherance of its aims. In such cases any special requests handed in will, when possible, receive our careful attention.

Mammals.

The stock in mammals (**Skins, Skeletons and Skulls**) is constantly changing so that pricelists of earlier date cannot be implicitly relied upon. European species can always be obtained. Of non european specimens we gladly furnish written catalogues on application. Peculiar types and remarkably interesting forms, such as **Ornithorhynchus** and **Echidna** we endeavor always to keep on hand.

Birds' Skins and Birds' Eggs.

Very large assortment. Having lately purchased the collections of the deceased explorers **DR. G. FISCHER** (Victoria Njansa), **DR. RICH. BÖHM** (Tanganjika) and **FLEGEL HARTERT** (Niger-Benue) a particularly fine selection of African specimens is now at our disposal, as also numerous ornithological types of the Ancient World. Furthermore we possess an immense variety of **Birds' Eggs**, of which fresh catalogues appear at short intervals. Besides these we supply large and small collections of European and other **Birds' Nests** of peculiar formation.

Reptiles and Batrachia

to which our collectors are required to pay special attention, our stock embraces a great variety of species. As the representatives of this group are in great request, printed lists soon go out of date; we therefore furnish written catalogues when desired. (**Metopocerus cornutus** just arrived from Haiti!)

Fishes.

We supply **German Fresh-water Fishes** as well as many kinds of Fish from the **German, Baltic and Mediterranean Seas**, either in alcohol or prepared dry. We prepare the same by an entirely original method, whose peculiar merits are warmly and universally recognized. Of the most interesting types, like **Amia, Accipenser, Polypterus, Myxine** etc. we usually have specimens.

Recent Shells

(land, fresh-water and marine shells).

Our stock in Shells exhibits a wealth of forms and species such as can scarcely be found elsewhere. We would refer in the first instance to our catalogues; but we also arrange every description of collections to special order, as for instance for comparative studies in paleontology. In shells we carry on an average upwards of 12 000 species.

Mollusks in alcohol

mostly from the Mediterranean, can also be had. No less worthy of note is the stock of our

Insect Metamorphoses.

On demand we cheerfully furnish written lists of our Arachnida, Myriapods, Crustacea, Echinoderma as controlled by specialists. [Especially varied selections of Crustaceans, Echinoderms, Myriapods are now on Hand, large lots having been lately forwarded from Haiti.

Preparing Department.

The institution has its own preparing department in which all work of this class as stuffed animals, prepared skeletons and skulls, injections and anatomical preparations, as well as other alcoholic preparations etc. is performed under the supervision of experts. We are thus enabled to arrange and furnish complete collections for educational purposes, demonstration or exhibition in any or all departments of Zoology.

Our connections with zoological collections and institutions of natural history have rendered it necessary to draw

Paleontology

into our sphere of activity. In this connection we would call attention to our stock of Fossils of the Tertiary Period. From the Mayence basin (diluvium and tertiary) we have remains of mammals such as Elephas, Mastodon, Diustherium, Hippotherium, Paleomeryx, Aceratherium, Halitherium etc. of which we can furnish a special catalogue. We also beg to call attention to the fragmentary scales of Glyptodon claudipes Osw. from the S.-American Pampas formation. Besides the above we have a fine selection of fossils from the Lithographic slate of Solenhofen, from the Swabian Jura (Ichthyosaurus, Pentacrinus etc.) from the Bohemian silurian etc.

We are glad to buy suitable material or to effect exchanges. In this regard also we would request directors of Museums, Academies and Colleges, and likewise private collectors, scientific explorers etc. to enter into communication with our institution.

Dr. Aug. Müller.

BERLIN, Germany,

Luisenplatz 6.

(Opposite Royal Museum of Natural History.)



Hermann Kalle, Agent in the U. S. A.

33 Avenue A, New York.

WILL SEND SPEC. CATALOGUE ON APPLICATION.

Provisional
EXCHANGE LIST.

Shells of Vancouver Island and Neighbouring Seas.

(The Cephalopoda and Nudibranchiata are omitted.)

MARINE GASTEROPODA.

- | | |
|---|--|
| <p>Trophon multicosatus <i>Esch.</i>
 Trophon Orpheus <i>Gould.</i>
 Trophon tenuisculptus <i>Cpr.</i>
 Trophon Stuarti <i>E. A. Smith.</i>
 Trophon muriciformis <i>Dall.</i>
 Chrysodomus tabulatus <i>Baird.</i>
 Chrysodomus dirus <i>Reeve.</i>
 Chrysodomus liratus <i>Mart.</i>
 Chrysodomus rectirostris <i>Cpr.</i>
 Chrysodomus Hartordi <i>Stearns.</i>
 Nassa fossata <i>Gould.</i>
 Nassa mendica <i>Gould.</i>
 Nassa perpinguis <i>Hinds.</i>
 Amphissa corrugata <i>Reeve.</i>
 Amphissa versicolor <i>Dall.</i>
 Amyela gausapata <i>Gould.</i>
 Amyela tuberosa <i>Cpr.</i>
 Columbella carinata <i>Hds. var Hindsii</i>
 <i>Rve.</i>
 Purpura crispata <i>Chem.</i>
 Purpura canaliculata <i>Ducl.</i>
 Purpura saxicola <i>Val.</i>
 Ocinebra lurida <i>Midd.</i>
 Ocinebra interfossa <i>Cpr.</i>
 Cerostoma foliatum <i>Gmel.</i>
 Nitidella Gouldii <i>Cpr.</i>
 Priene Oregonensis <i>Redf.</i>
 Olivella buplicata <i>Sby.</i>
 Olivella baetica <i>Cpr.</i>
 Volutella pyriformis <i>Cpr.</i>
 Drillia incisa <i>Cpr.</i>
 Drillia cancellata <i>Cpr.</i>
 Surcula perversa <i>Gabb.</i>
 Mangelia levidensis <i>Cpr.</i>
 Mangelia tabulata <i>Cpr.</i>
 Mangelia interfossa <i>Cpr.</i></p> | <p>Mangelia crebricostata <i>Cpr.</i>
 Mangelia sculpturata <i>Dall.</i>
 Bela fidicula <i>Gould.</i>
 Bela excurvata <i>Cpr.</i>
 Bela Trevelyana <i>Turton.</i>
 Daphnella filosa <i>Cpr.</i>
 Daphnella effusa <i>Cpr.</i>
 Cancellaria modesta <i>Cpr.</i>
 Trichotropis cancellata <i>Hinds.</i>
 Trichotropis inermis <i>Hinds</i>
 Cerithiopsis tuberculata <i>Mont.</i>
 Cerithiopsis columna <i>Cpr.</i> }
 Cerithiopsis munita <i>Cpr.</i> }
 Natica clausa <i>Brod & Sby.</i>
 Lunatia Lewisii <i>Gould.</i>
 Lunatia pallida <i>Brod & Sby.</i>
 Velutina laevigata <i>Linn.</i>
 Velutina prolongata <i>Cpr.</i>
 Lamellaria Stearnsii <i>Dall.</i>
 Odostomia muciformis <i>Cpr.</i>
 Odostomia satura <i>Cpr.</i>
 Odostomia inflata <i>Cpr.</i>
 Odostomia tenuisculpta <i>Cpr.</i>
 Odostomia straminea <i>Cpr.</i>
 Chemnitzia torquata <i>Gould.</i>
 Chemnitzia tridentata <i>Cpr.</i>
 Eulima micans <i>Cpr.</i>
 Bittium filosum <i>Gould.</i>
 Triforis adversa <i>Mont.</i>
 Bivonia compacta <i>Cpr.</i>
 Caecum crebricinctum <i>Cpr.</i> }
 Mesalia reticulata <i>Mighels.</i> }
 Mesalia lacteola <i>Cpr.</i>
 Scalaria Indianorum <i>Cpr.</i>
 Opalia borealis <i>Gould.</i></p> |
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- | | |
|--|---|
| <p><i>Leptamer despecta Linn.</i>
 " <i>Behringii Midd</i>
 <i>Siphon Verkrugeri Kobelt</i>
 <i>Buccinum polare</i>
 <i>var Compactum Dall</i></p> | <p><i>Bela violacea Mighels</i>
 <i>Eulima incurva Ren</i>
 <i>Cancellaria circumcincta Dall</i>
 <i>Admete viridula Fab.</i></p> |
|--|---|

- Assimineia subrotundata *Cpr.*
~~Hydrobia~~
 Rissoa compacta *Cpr.*
 Alvania reticulata *Cpr.*
 Alvania filosa *Cpr.*
 Fenella pupoidea *Cpr.*
 Barleeia subtenuis *Cpr.*
 Littorina Sitchana *Phil.*
 Littorina scutulata *Gould.*
 Lacuna vincta *Mont.*
 Lacuna porrecta *Cpr.*
 Lacuna exaequata *Cpr.*
 Lacuna solidula *Loven.*
 Lacuna variegata *Cpr.*
 Isapis fenestrata *Cpr.*
 Crepidula dorsata *Brod.*
 Var bilobata *Reeve.*
 Crepidula adunca *Sby.*
 Crepidula navicelloides *Nutt.*
 Galerus fastigiatus *Gould.*
 Galerus contortus *Cpr.*
 Hipponyx cranioides *Cpr.*
 Pachypoma gibberosum *Chem.*
 Leptothyra sanguinea *Linn.*
 Chlorostoma funebreale *A. Ad.*
 Chlorostoma brunneum *Phil.*
 Calliostoma canaliculatum *Mart.*
 Calliostoma annulatum *Mart.*
 Calliostoma costatum *Mart.*
 Calliostoma variegatum *Cpr.*
 Phorcus pulligo *Mart.*
 Gibbula parcipicta *Cpr.*
 Gibbula funiculata *Cpr.*
 Gibbula succincta *Cpr.*
 Gibbula lacunata *Cpr.*
 Margarita cidaris *A. Ad.*
 Margarita pupilla *Gould.*
 Margarita inflata *Cpr.*
 Margarita lirulata *Cpr.*
 Margarita Vahlii *Möll.*
 Margarita helicina *Mont.*
 Margarita tenuisculpta *Cpr.*
- Solaricella peramabilis Cpr*
- Haliotis Kamtschatkana *Jonas.*
 Fissurella volcano *Reeve.*
 Fissurellidea bimaculata *Dall.*
 Glyphis aspera *Esch.*
 Puncturella galeata *Gould.*
 Puncturella cucullata *Gould.*
 Nacella instabilis *Gould.*
 Acmaea patina *Esch.*
 Acmaea scutum *Esch.*
 Acmaea pelta *Esch.*
 Acmaea persona *Esch.*
 Seurria mitra *Esch.*
 Cryptobranchia concentrica *Midd.*
 Dentalium Indianorum *Cpr.*
 Dentalium rectius *Cpr.*
 Mopalia ciliata *Sby.*
 Mopalia Hindsii *Gray.*
 Mopalia vespertina *Gould.*
 Mopalia lignosa *Gould.*
 Mopalia Wosnessenskii *Midd.*
 Mopalia sinuata *Cpr.*
 Mopalia imporcata *Cpr.*
 Cryptochiton Stelleri *Midd.*
 Katherina tunicata *Sby.*
 Tonicella lineata *Wood.*
 Tonicella submarmorea *Midd.*
 Tonicella marmorea *Fab.*
 Nuttallina scabra *Reeve.*
 Choetopleura Hartwegii *Cpr.*
 Choetopleura Nuttallii *Cpr.*
 Ischnochiton interstinctus *Gould.*
 Ischnoradsia trifida *Cpr.*
 Lepidopleurus Mertensii *Midd.*
 Trachydermon dentiens *Gould.*
 Trachydermon retiporosus *Cpr.*
 Trachydermon flectens *Cpr.*
 Siphonaria thersites *Cpr.*
 Tornatina eximia *Baird.*
 Haminea hydatis *Linn.*
 Cylichna alba *Brown.*
 Cylichna cylindracea *Pennant.*
 Utriculus *sp*
- Cadulus aberrans Britton*
- Leptochiton cancellatus Sby*
 " *punctatus Britton*

TERRESTRIAL GASTEROPODA.

(Vancouver Island)

Macrocyclis Vancouverensis *Lea.*Limax ^{portella Gould} hyperboreus *West*Limax agrestis *Müll.*Z (Hyalina) arboreus *Say.*Z (Hyalina) minusculus *Binney.*Z (Hyalina) Binneyanus *Morse.*Z (Hyalina) conspectus *Bland.*Z (Conulus) fulvus *Drap.*Vitrina Pfeifferi *Newc.*Patula striatella *Anth.*Microphysa ^{astoricensis} Lansingi *Bland.*Microphysa pygmaea *Drap.*~~Anisa~~ " *stearnsi Bland**Prophyron* *Hemphilli Holm*

FRESH-WATER GASTEROPODA.

(Vancouver Island.)

Valvata simplex *Say.*Limnaea stagnalis *Linn.*Limnaea palustris *Müll.*Limnaea Adelinae *Tryon.*Limnaea ferruginea *Hald.*

Limnaea

Physa

Physa

Ariolimax Columbianus *Gould.*Stenotrema germanum *Gould.*Mesodon Columbianus *Lea.*Mesodon ? *Sevius Gould*Aglaja fidelis *Gray.*Pupilla corpulenta *Morse.*Vertigo ovata *Say.*Vertigo simplex *Gould.*Ferrussacia subcylindrica *Linn.*Succinea *Beyouensis Lea*Succinea *Mutalliana Sa*Succinea *rusticana Gould*Onchidella borealis *Dall.**Carychium* *erigunum*

FRESH-WATER GASTEROPODA.

(Vancouver Island.)

Planorbis trivolvis *Say.*Planorbis opercularis *Gould.*Planorbis vermicularis *Gould.*Planorbis lenticularis *Lea.*Ancylus caurinus *Cooper.*Ancylus fragilis *Tryon.*

Ancylus

MARINE CONCHIFERA.

Placunanomia macrochisma *Desh.*Ostraea lurida *Cpr.*Pecten hastatus *Sby.*Pecten Hindsii *Cpr.*Amusium caurinum *Gould.*Hinnites giganteus *Gray.*Bryophila setosa *Cpr.*Mytilus Californianus *Conr.*Mytilus edulis *Linn.*Modiola modiola *Linn.*Modiola recta var flabellata *Gould.*Adula stylina *Cpr.*Modiolaria laevigata *Gray.*Modiolaria marmorata *F & H.*Modiolaria nigra *Gray.**Pecten ? Alaskensis Dall**Limatula subauriculata Mont*Crenella decussata *Mont.*Axinea septentrionalis *Midd.*var subobsoleta *Cpr*Acila castrensis *Hinds.*Nucula tenuis *Mont.*Leda fossa *Baird.*Leda minuta *O Fab.*Leda ~~coolata Hinds.~~ *acuta. Conr.*Yoldia lanceolata *J. Sby.*Yoldia amygdala *Cpr.*Cardium corbis *Mart.*Cardium blandum *Gould.*Fulvia modesta *Ad & Rve.*Serripes Groenlandicus *Chem.*Serripes Laperousianus *Desh.**Yoldia thuraxiformis Storer.*

- Cryptodon serricatus *Cpr.*
 Cryptodon flexuosus *Mont.*
 Diplodonta orbella *Gould.*
 Lucina tenuisculpta *Cpr.*
 Lucina filosa *Stimpson.*
 Kellia Laperousii *Desh.*
 var *Chironii.* *Cpr.*
 Kellia suborbicularis *Mont.*
 Lasea rubra *Mont.*
 Pythina rugifera *Cpr.*
 Tellimya tumida *Cpr.*
 Lepton rude *Whiteaves.*
 Turtonia minuta *Fab.*
~~Montacuta~~
 Astarte Esquimalti *Baird.*
 Astarte compacta *Cpr.*
 Astarte ~~semisulcata~~ *Leach.* *undata* *Gould*
 Miodon prolongatus *Cpr.*
 Venericardia borealis *Conr.*
 var *ventricosa* *Gould.*
 Lazaria subquadrata *Cpr.*
 Psephis tantilla *Gould.*
 Psephis Lordi *Baird.*
 Clementia subdiaphana *Cpr.*
 Venus Kennerleyi *Reeve.*
 Tapes staminea *Conrad.*
 Tapes tenerrima *Cpr.*
 Saxidomus squalidus *Desh.*
 Saxidomus brevisiphonatus *Cpr.*
 Petricola carditoides *Conr.*
 Psammobia rubroradiata *Nutt.*
 Macoma secta *Conr.*
 Macoma nasuta *Conr.*
 Macoma inquinata *Desh.*
 Macoma edentula *Brod & Sby.*

- Macoma expansa *Cpr.*
 Macoma sabulosa *Spengler.*
 Macoma yoldiformis *Cpr.*
 Macoma Carlottensis *Whiteaves.*
 Macoma inconspicua *Brod & Sby.*
 Angulus modestus *Cpr.*
 var *obtusus*
 Angulus variegatus *Cpr.*
 Maera salmonea *Cpr.*
 Tellina Bodegensis *Hinds.*
 Semele rubrolineata *Conr.*
 Standella falcata *Gould.*
 Schizothaerus Nuttalli *Conr.*
 Darina declivis *Cpr.*
 Solen sicarius *Gould.*
 Machaera patula *Dixon.*
 Mya truncata *Linn.*
 Cryptomya Californica *Conr.*
 Sphaenia ovoidea *Cpr.*
 Neaera pectinata *Cpr.*
 Glycimeris generosa *Gould.*
 Clidiophora punctata *Conr.*
 Kennerlia filosa *Cpr.*
 Kennerlia grandis *Dall.*
 Thracia curta *Conr.*
 Lyonsia Californica *Conr.*
 Entodesma saxicola *Baird.*
 Mytilimeria Nuttalli *Conr.*
 Saxicava pholadis *Linn.*
 Zirphaea crispata *Linn.*
 Pholadidea penita *Conr.*
 Pholadidea ovoidea *Gould.*
 Netastoma Darwinii *Sby.*
 Xylotrya pennatifera *Blainv.*
 Xylotrya fimbriata *Jeffr.*

FRESH-WATER CONCHIFERA.

(Vancouver Island)

- Anodonta cognata *Gould.*
 Margaritana margaritifera *Linn.*
 Sphaerium patella *Gould.*
 Sphaerium securis *Prime.*
 Sphaerium

- Pisidium ferrugineum *Prime.*
 Pisidium compressum *Prime.*
 Pisidium ultramontanum *Prime.*
 Pisidium

BRACHIOPODA.

- Terebratulina unguicula *Cpr.*
 Terebratella transversa *Sby.*
 Laqueus Californicus *Koch.*

- Megerlia Jeffreysi *Dall.*
 Hemithyris psittacea *Gmel.*

THE Honorable the Minister for Mines invites contributions
of scientific publications, especially of such works as relate to
Geology, Mineralogy, Palæontology, and Mining, for the
Departmental Library.

It is requested that the publications be sent addressed to

THE HONORABLE

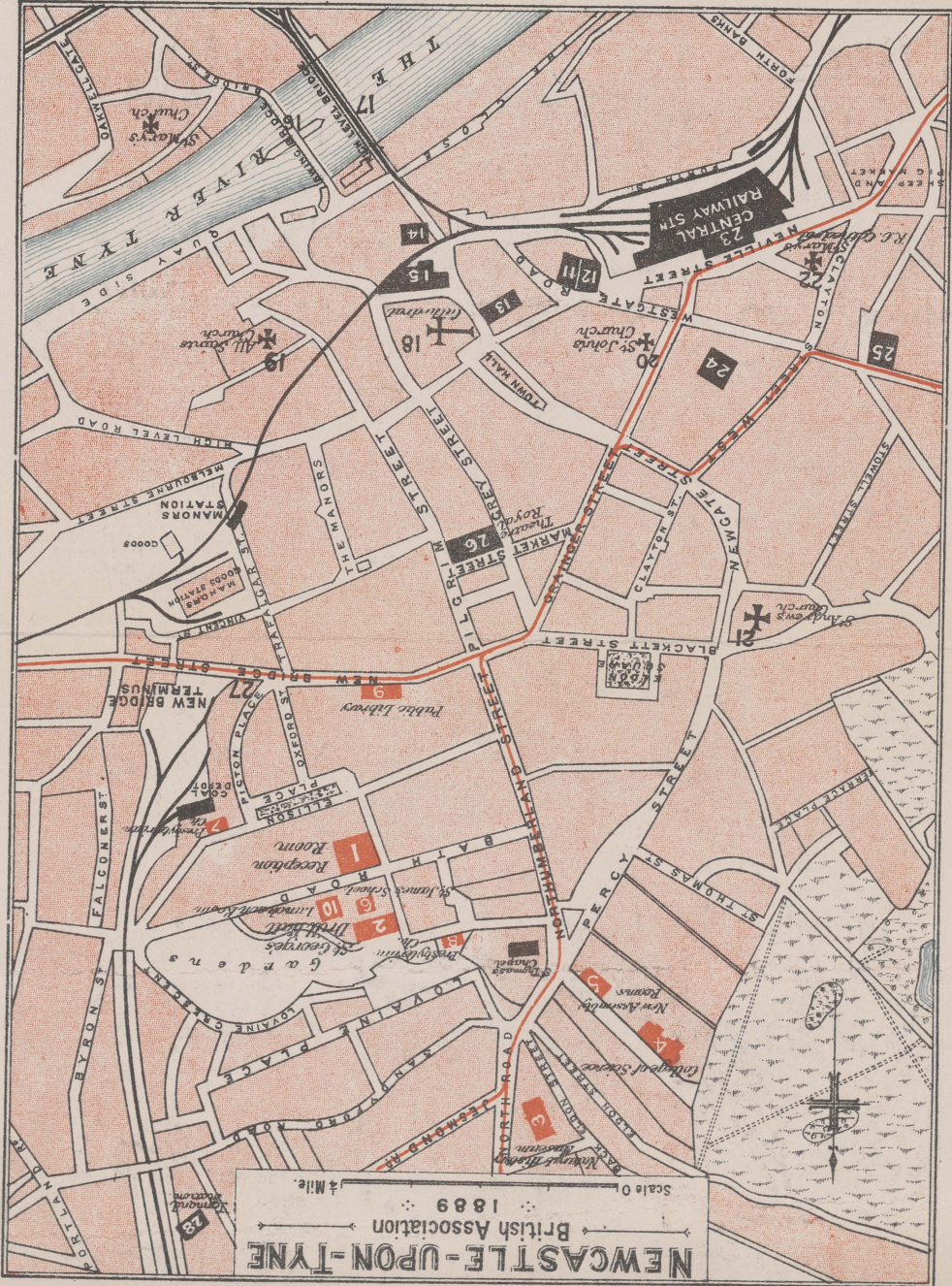
THE MINISTER FOR MINES,

DEPARTMENT OF MINES,

SYDNEY.

11a 125-88

*Dep't Mines
Sydney*



Newcastle-upon-Tyne
 British Association
 1889
 Scale 0 1/4 Mile.

* REFERENCE. *

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|--|--|--|
| <ol style="list-style-type: none"> 1. Reception Room.—College of Medicine. 2. President's Address and Evening Discourses.—St. George's Drill Hall. 3. Conversaciones.—Natural History Museum. 4. Section Rooms A and B.—College of Science. 5. Section Rooms C and D.—New Assembly Rooms. 6. Section Room E.—St. James's School. 7. Section Room F.—Presbyterian Church, Gresham Place. 8. Section Room G.—Presbyterian Church, Barras Bridge. 9. Section Room H.—The Public Library. 10. Luncheon Room.—Cambridge Hall. | <ol style="list-style-type: none"> 11. Literary and Philosophical Society. 12. North of England Institute of Mining and Mechanical Engineers. 13. General Post Office. 14. The Castle. 15. Black Gate and Antiquarian Museum. 16. Swing Bridge. 17. High Level Bridge. 18. St. Nicholas' Cathedral. 19. All Saints' Church. 20. St. John's Church. 21. St. Andrew's Church. 22. St. Mary's R.C. Cathedral. 23. Central Railway Station. 24. Old Assembly Rooms. 25. Tyne Theatre. 26. Theatre Royal. | <ol style="list-style-type: none"> 27. Blyth and Tyne Railway Station, New Bridge Street. 28. Blyth and Tyne Railway Station, Jesmond. |
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* HOTELS. *

- ALEXANDRA, Clayton Street.
- ALLIANCE (Temperance), New Bridge Street.
- CENTRAL EXCHANGE, Grey Street.
- CENTRAL STATION.
- COUNTY, West Grainger Street.
- CROWN, Clayton Street.
- CROWN AND MITRE, Grey Street.
- DOUGLAS, West Grainger Street.
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*The Holder of this Ticket must apply in the Reception Room for a numbered Seat.
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BRITISH ASSOCIATION
 FOR THE
Advancement of Science,
 FIFTY NINTH MEETING.
NEWCASTLE-UPON-TYNE 1889.

GENERAL
 CONFERENCE

MEMBER'S TICKET.

Signature of Holder _____

No. 787

Alex. W. Williamson Treasurer

CORRESPONDENCE relating to the Preservation of the Indigenous Characteristics of the Native Races of British North America.

(Enclos.)

9 VICTORIA CHAMBERS,
LONDON, S.W.,

June 18, 1886.

SIR,—I have the honor to transmit to you, herewith, a copy of a letter I have received from the Secretary of State of Canada, transmitting a copy of an approved Minute of Council on the subject of a letter from Lord Rayleigh, the President of the Council of the British Association for the Advancement of Science, in regard to the importance of recording and preserving from obliteration such traces of the indigenous characteristics of the native races of British North America as may still be capable of identification, together with copies of the correspondence that is referred to.

I beg that you will be so good as to place these papers before the President and Council of the British Association for the Advancement of Science.

I have the honor to be,

Sir,

Your obedient Servant,

CHARLES TUPPER,

High Commissioner.

The SECRETARY,
BRITISH ASSOCIATION for the
ADVANCEMENT OF SCIENCE.

(Copy.)

OTTAWA, CANADA,

May 21, 1886.

SIR,—I have the honor to transmit to you, herewith, for the information of the British Association for the Advancement of Science, copy of an approved Minute of Council covering copies of correspondence upon the subject of recording and preserving from obliteration such traces of the indigenous characteristics of the native races of British North America as may still be capable of identification.

I have, &c.,

(Sd.) G. POWELL,

Under Secretary of State.

The HIGH COMMISSIONER for CANADA,
9 Victoria Chambers,
London, S.W.

CERTIFIED COPY of a REPORT of a COMMITTEE of the HONORABLE the PRIVY COUNCIL, approved by HIS EXCELLENCY the GOVERNOR GENERAL in COUNCIL, on the 16th of November, 1885.

The Committee of the Privy Council have had before them a Memorandum from Your Excellency, transmitting a letter from Lord Rayleigh, President of the Council of the British Association for the Advancement of Science, in regard to the importance, in the interests of the Science of Ethnology, of recording and preserving from the obliteration which they are rapidly undergoing such traces of the indigenous characteristics of the native races of British North America as may still be capable of identification.

The Sub-Committee of Council to whom the question was referred submit a communication from the Director of the Geological Survey, and another from Mr. Dalton, an officer of the Department of Indian Affairs, of great experience among the Indian tribes.

The Committee submit the same for Your Excellency's information, and they respectfully suggest, if Your Excellency deems meet, that copies of the reports above referred to be transmitted to Lord Rayleigh for the information of the Council of the British Association for the Advancement of Science; and they further charge the Minister of the Interior with the duty of conferring with the Royal Society on this subject.

(Sd.) JOHN J. MCGEE,

Clerk, Privy Council.

To the HONORABLE
The MINISTER of the INTERIOR.

GEOLOGICAL AND NATURAL HISTORY SURVEY,

OTTAWA, *February 25, 1885.*

The very important investigation referred to in this correspondence, and to which \$40,000⁰⁰ has been devoted during the past year in connection with the Geological Survey of the United States (*vide American Journal of Science and Arts*, No. 170), has not been lost sight of by the Canadian Geological Survey; and the field parties are directed to lose no opportunity for collecting information relating to the past history of the aboriginal races.

Some large and interesting collections of Indian relics have been purchased, and are now exhibited in the Museum.

Some of them being the result of action taken on representations made in 1875, as shown by the annexed copy of letter then addressed by me to Dr. Powell.

Dr. Dawson, in 1878, prepared a most interesting report on the Haida Nation of Queen Charlotte Islands, which was published in the Geological Survey Report for 1878-79. He has since prepared, in conjunction with Dr. Tolmie of British Columbia, a vocabulary of the language of the tribes of the West Coast, with a coloured map of their distribution. This small commencement can only be regarded as evidence of our appreciation of the importance and value of the work to which His Excellency now invites the attention of the Government.

As regards future and more energetic action, I would now suggest for consideration the desirability of requesting the Royal Society—one of whose functions is that of advising the Government on scientific questions—to appoint a Committee to consider this subject, requesting it to report fully thereon, especially as to the probable cost and the best means of obtaining the desired information, and generally in regard to the publication and utilisation of the information to be acquired, or already available, relating to the history of the aboriginal races of Canada.

(Sd.) ALFRED R. C. SELWYN.

Would Mr. Dalton be so good as to make such remarks and suggestions as may occur to him in respect of the matter?

(Sd.) A. R. C. S.

February 26, 1885.

Memorandum.

DEPARTMENT OF INDIAN AFFAIRS,

OTTAWA, *March 2, 1885.*

To Dr. SELWYN, Director, Geological Survey.

The undersigned agrees with Dr. Selwyn that the Royal Society might render the Government invaluable assistance in arriving at a decision as

to the best means to be adopted in utilising the information already obtained, and in pursuing further investigations in regard to the early traditions, habits, customs, &c., &c., of the aborigines of the Dominion.

As authentic information on this subject is, it is apprehended, somewhat meagre, and it would be necessary to make considerable further researches, would it not be well, in the event of the Government deciding to carry on investigations to any extent, for some person (one whom it is intended shall take a prominent and leading part in the work) to visit the Bureau of Ethnology at Washington, towards the perfection of which a considerable amount of attention and money is devoted annually by the Government of the United States, with a view to gaining a thorough acquaintance with the system adopted by that Government in carrying out similar investigations and compiling and publishing the result? and although the Government of this country might not desire to enter into the subject so elaborately, there is no doubt it could be materially assisted by utilising to a great extent the experience acquired by those who have for years had charge of inquiries of a similar nature.

(Sd.) R. G. DALTON.

His Excellency wishes to invite for the accompanying letter from Lord Rayleigh the special attention of the Privy Council.

During the visit of the British Association several of its most distinguished members spoke to His Excellency upon the subject referred to by Lord Rayleigh, dwelling particularly upon the importance, in the interests of the Science of Ethnology, of recording and preserving from the obliteration which they are rapidly undergoing such traces of the indigenous characteristics of the native races of British North America as may still be capable of identification.

His Excellency suggests for the consideration of the Privy Council that Lord Rayleigh's letter might be referred to a small Committee, upon which one or two of the best-known scientific men of this country might be invited to serve, with instructions to report upon the best means of carrying out Lord Rayleigh's suggestion, and of utilising existing resources for this purpose.

By Command,
(Sd.) MELGUND,
Governor General's Secretary.

Government House,
Ottawa,
January 2, 1885.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE,
 22 ALBEMARLE STREET, LONDON, W.,
 December 15, 1884.

To His Excellency

The GOVERNOR GENERAL OF CANADA, G.C.M.G.,
 &c., &c., &c.

The Council of the British Association beg leave to draw the attention of the Government of the Dominion of Canada to the great importance of preserving systematic records of the Ethnology and other facts of interest connected with the native tribes in the Dominion.

The points of chief value with reference to these tribes are their language, traditions, laws, and customs, whether religious or civil; their habits of life, dress, weapons, and ornaments.

No time should be lost, for the influence of the European is spreading rapidly over the American Continent, and in a few years it may be difficult, if not impossible, to disentangle what is indigenous from that which has been acquired.

Indeed, many of the races have already fallen under European influence so largely as to render it well-nigh impossible to depict with accuracy their original condition; but tribes who are not so affected yet remain in considerable numbers in the more northern parts of the Hudson's Bay Territory, and in the western part of the Dominion, especially on the Pacific Slopes.

The Council of the British Association venture to call the attention of the Canadian Government to the important work in regard to the anthropology of the native races in the United States, which has for some time past been carried on by the Bureau of Ethnology, which is a Government Department under the charge of the Hon. J. A. Powell.

Here a small staff of competent observers is occupied in studying the more remarkable native tribes in their own districts, in reducing their language to grammatical record, and in noting their laws, customs, and traditions, besides collecting specimens of their manufactures for the National Museum.

The Peabody Museum, at Cambridge, Mass., has of late years also made, with great success, a distinctive feature of its Ethnographical Collection.

The Council of the British Association are well aware of the assistance which has already been rendered to anthropology by the Government of Canada by their grants in aid of the publication of more than one work on the native languages, and in the commencement of a Museum of Canadian Native Implements, &c., at Ottawa.

But the task which remains is one too great to be carried out without the systematic help of the Government.

A less complete organisation than exists in the United States would probably, owing to the different circumstances, suffice for Canada; and the Council venture to suggest that investigations such as those named above could be most simply and conveniently carried on in connection with the Geological Survey of the Dominion by the addition to its staff of some qualified observers, and, as a result of their work, by the publication of books and maps, and the formation of a Museum of Indian Ethnology, of which the collection already existing at Ottawa would naturally be the nucleus.

Signed on behalf of the Council,

RAYLEIGH,
President.

INTERIOR, *May 26, 1885.*

On the reference from Council of the 5th of January last, of a despatch from His Excellency the Governor General, transmitting a letter from Lord Rayleigh, President of the Council of the British Association for the Advancement of Science, in regard to the importance, in the interests of the Science of Ethnology, of recording and preserving from the obliteration which they are rapidly undergoing such traces of the indigenous characteristics of the native races of British North America as may still be capable of identification, and suggesting the reference of the subject to a small committee of scientific men, who should be instructed to report upon the best means of carrying out Lord Rayleigh's suggestion, and of utilising existing resources for this purpose:

The undersigned has the honor to report that the correspondence was referred to Dr. Alfred R. C. Selwyn, Director of the Geological Survey Branch of the Department of the Interior, and to Mr. R. G. Dalton, of the Department of Indian Affairs, with instructions to report upon the same.

The undersigned submits herewith the reports of Dr. Selwyn and Mr. Dalton, dated respectively the 25th February and the 2nd March last, for the information of Council.

Respectfully submitted,

(Signed) D. L. MACPHERSON,

Minister of the Interior.

VICTORIA, V.I., *November 10, 1875.*

MY DEAR DR. POWELL,—Referring to our conversation on the subject of an Indian Collection for the Centennial Exhibition, it has since occurred to me that it might be made the nucleus of a Museum in connection with the Indian Department, where specimens and documents of all kinds illustrative or descriptive of the past and present history, manners, customs, arts, and dialects of the various Indian tribes in B. N. America might be preserved and exhibited.

Whether regarded from an historical, ethnological, or archæological point of view, such collection would be extremely interesting, and of very great and yearly increasing value.

Would you kindly let me know what you think of the project, and the possibility or otherwise of carrying it out, also whether you would undertake the work in British Columbia, and what annual expenditure would suffice for the purpose?

If you think well of it, you might, perhaps, submit it for the consideration of the Minister, and induce him to sanction a small annual appropriation to meet the required expenditure.

Your official position would, of course, enable you to secure good specimens at a much less cost than they could be obtained through any other channel.

(Signed) ALFRED R. C. SELWYN.

S. W. POWELL, Esq., M.D.,
Indian Commissioner,
Victoria, V.I.

(Copy.)

OTTAWA, *January 28, 1885.*

DEAR DR. SELWYN,—I send you herewith a Memo. from His Excellency the Governor General, enclosing copy of a letter from Lord Rayleigh, recommending that steps be taken to preserve such traces of the indigenous characteristics of the native races of British North America as may still be capable of identification.

It was referred by Council to the Superintendent-General of Indian Affairs and the Minister of the Interior for report. I send it to you to be reported upon.

I asked Sir John Macdonald if there was anyone in the Indian Department whom he would like associated with you in the matter, and

*Answer
D. L. MacPherson*

I have a note before me from Vaukoughnet, naming Mr. Robert G. Dalton as the person.

I am inclined to think the better way will be for you to have a report prepared, and then invite Mr. Dalton to consider it with you, and to suggest whatever may occur to him calculated to advance the object of the inquiry.

Yours very truly,
(Signed) D. L. MACPHERSON.

Dr. SELWYN, *Director*,
Geological Survey, Ottawa.

ANNUAL REPORT.

The Geographical Society of Quebec has to report during the past year a truly splendid work of development going on in the Dominion. On all hands there is progress making. The great transcontinental railway, the Canada Pacific, will run through trains before the end of this year, and some progress will be made in a steamboat communication with the continent of Asia.

An oceanic survey of the Hudson Bay is now in operation, several winter stations (sever) having been posted to report on the glacial action of that inland sea. This survey will return within the year. Also, a combined survey is on foot, undertaken by the Dominion and the Province of Quebec, to ascertain certain facts as to the land between Quebec and the North-East territory, and especially as to a large lake or a so-described "Inland Sea" named Mistassini. This Society is devoting much attention to these Northern rediscoveries, for though a great deal of information is imperfectly known, or has got lost in the archives of public offices, yet the public do not believe, that within one century thirty millions of Canadians may find homes within the Dominion, of whom one-half will probably speak the French language; the question naturally comes up, where are these populations to be located? The answer is, in the North, which from being situated in the temperate zone is that portion of North America where a white woman may more easily and with less risk to her health attain the honorable position of mother and so help to educate the next generation in all those qualities which are characteristic of Canadians in sociability, order, union, association, good humor and perseverance.

A white man can live in almost every country of the world, but it is not so with a white woman. She is of a more delicate construction and requires peace and quietness to excel in that direction, which is the peculiar field of women. It is in Canada on a farm the white races have hitherto shown their most perfect organization, producing a hardy race of free men, commonly called farmers or voyageurs, who in all matters connected with their callings cannot be surpassed; that Canada may be looked upon as the most orderly and the best governed country in the world. Geography in the past has been promoted by warriors, by commerce, by missionary effort, in our day it is advanced by the noblest of all feelings, viz, a love of knowledge, consequently the rediscovery of anything new, such as a mountain, a lake or even a fish is welcome. General Wolseley has discovered a new military force in the shape of the amphibious "Voyageur," who armed with his canoe (the reindeer of the waters) is now assisting the camel of the desert in a military enterprise on the banks of the Nile. Canadians have a character to maintain, they have therefore to remember, that inasmuch as the Esquimaux are the strongest and most enduring Indians of the world, so it may fall to their lot to be the most valued fresh water sailors, capable

of any effort and in any country, where the Queen or the interests of the Empire require their services.

This Society being strongly imbued with the above facts and possibilities invite all Canadians to aid in a common effort to open up our Northern Lands to our young people, who look to their Patriarchs for advice and direction.

This Society has already received partial reports from Lake Mistassini, which will be placed before you in the shape of two hitherto unpublished papers by Professor Galbraith, who visited the Lake in 1881, and Mr. Bignell, jr., who has just returned from the Lake, 1884.

In the Spring of the year the Royal Society of Canada again invited our Society to attend and assist at their annual meeting; we were represented by our President, who read a report. The Society also received the high honor of having its President named Vice-President of Section E., Geography, at the great meeting of the British Association in Montreal, General Sir H. Lefroy being the President of the Section.

Monsieur LaProfessor Laflamme, of the University Laval, who had also been named one of the Secretaries, addressed the section on the subject of our North-eastern country, stating that though the Laurentides were their general characteristics, yet that there were breaks in the system, showing good land and that the whole subject merited a close attention in the future.

The President is happy to report in his communications with public officers, and more particularly with Doctor Selwyn and the members of the Geological Survey, Ottawa, that he has received every attention and support.

In Mr. Tache, of the Crown Lands, Province of Quebec, Geography has a sure friend.

The Society cannot close this report without expressing a regret at the economy of both the Dominion and the Provincial Governments in withdrawing their monied grants to the Society. This action compares badly with the liberality of numerous scientific societies of the world, who by every mail enrich our library by many valuable and costly contributions and who can only receive our thanks and our bulletin in return; that we cannot but deplore this neglect of a society, whose object is educational and who are endeavoring to procure for Canada a better knowledge of its own possessions and of its duties toward the large populations, who alone can convert our counties of forest and our acres of prairie into homesteads for the white man.

A free man owning his own land is generally imbued with a strong religious feeling and is otherwise estimable in all respects; there can be therefore, no danger to the commonwealth in promoting "rural interests" and in continuing the generous public policy of inviting Foreign Nations to participate with us in the singularly happy position of life in Canada.

The funds of the Society show a balance of \$154 24.

We want more members and especially more workers, so that our young people may not be called upon to covet other lands, but that they may occupy themselves principally with those duties which Providence has called upon them to perform, viz: the creation of homesteads for a large population of the white race of mankind.

The whole respectfully submitted,

W. RHODES,
President.

PRESIDENTS
OF THE
NATURAL HISTORY SOCIETY
OF
MONTREAL.

1827 — 1881.

- 1827-28. — Stephen Sewell.
1828-29. — Honorable Chief Justice Reid.
1829-30. — Honorable John Richardson, M. C. E.
1830-31. — Honorable Lewis Gagy.
1831-32. — Honorable Toussaint Pothier.
1832-33. — " " "
1833-34. — Revd. J. Bethune.
1834-35. — William Robertson, M. D.
1835-36. — Alexander Skakel, A. M.
1836-37. — Andrew F. Holmes, M. D.
1837-38. — " " "
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1840-41. — Andrew F. Holmes, M. D.
1841-42. — William Badgley.
1842-43. — John Brondgeest.
1843-44. — "
1844-45. — M. McCulloch, M. D.
1845-46. — John Brondgeest.
1846-47. — J. Crawford, M. D.
1847-48. — A. H. David, M. D.
1848-49. — A. C. Sewell, M. D.
1849-50. — A. H. David, M. D.
1850-51. — John Ostell.
1851-52. — " "
1852-53. — A. Charles Sewell, M. D.
1853-54. — Major R. Lechlan.
1854-55. — Revd. W. T. Leach, D. C. L.
1855-56. — The R. R. the Lord Bishop of Montreal and Metropolitan.
1856-57. — Principal J. W. Dawson, F. G. S.
1857-58. — " " "
1858-59. — " " "
1859-60. — The Lord Bishop of Montreal (Fulford).
1860-61. — " " "
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1862-63. — " " "
1863-64. — Principal J. W. Dawson, LL.D., F. R. S.
1864-65. — " " "
1865-66. — Charles Smallwood, M. D., LL.D., D. C. L.
1866-67. — T. Sterry Hunt, L. L. D., F. R. S.
1867-68. — Revd. Abraham De Sola, LL.D.
1868-69. — Principal J. W. Dawson, LL.D., F. R. S.
1869-70. — Sir William E. Logan, LL.D., F. R. S. S.
1870-71. — Principal J. W. Dawson, LL.D., F. R. S.
1871-72. — " " "
1872-73. — Georges Barnston.
1873-74. — Principal J. W. Dawson, LL.D., F. G. S.
1874-75. — A. R. C. Selwyn, F. R. S., F. G. S.
1875-76. — " " "
1876-77. — Principal J. W. Dawson, LL.D., F. G. S.
1877-78. — " " "
1878-79. — " " "
1879-80. — A. R. C. Selwyn, F. R. S., F. G. S.
1880-81. — Principal J. W. Dawson, LL.D., F. G. S.

PRESIDENTS
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- 1919-20 - " " "
- 1920-21 - " " "

*Reminders
C.V. W. King*

*Presby
Chas. W. King*

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 ARCHIVES
 MCGILL UNIVERSITY

ANNALS OF BRITISH GEOLOGY.

Published by DULAU & CO., 37, Soho Square, W.C.

THE Volume for 1893, now in the Press, is the fourth of the series. The first three have been issued at a considerable though steadily-decreasing loss, and the issue of the present has been delayed from want of funds. As, however, the MS. has been prepared it is determined to make one more attempt to make the Volume self-supporting—which it would be if every one whose contributions are noticed were a Subscriber. If you wish it to continue, may I ask you :

- 1.—If not a Subscriber, to become one.
- 2.—If you take the Volume through a bookseller, to inform me.
- 3.—On this occasion to send the Subscription in *Advance*.
- 4.—To recommend it to friends, and to local libraries.

Vol. I., for 1890, was issued to Subscribers at 5/-; Vol. II., for 1891, at 7/-; Vol. III., for 1892, at 10/-, all net. The Subscription price for the four Volumes, including the one about to be issued is 30/-.

J./F. BLAKE,

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LONDON, N.W.

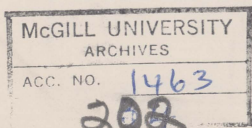
Dear Sir,

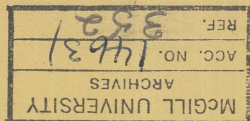
I send herewith enclosed the digest of your contributions to *British Geology*, i.e. either referring to, or published in Britain, during the year 1893 which I propose to insert in the "*Annals of British Geology*" for that year, and I would ask you to kindly examine it to see if it duly represents the gist or general character of your writings, and to ~~return it to me corrected, if necessary, within the week if possible, as if received later it may be too late to make any corrections in the proof.~~ If there is any other contribution of yours which I have overlooked, I should be obliged if you would tell me of it, and if you have any spare copies—if you would send me one to save delay.

I am,

Yours faithfully,

J. F. BLAKE.





In the same place on Friday morning at eleven o'clock, there will be a meeting of delegates from the Mining Society of Nova Scotia, the Ontario Mining Institute and the General Mining Association of the Province of Quebec, to consider a programme for the ensuing year, to arrange for united action on the subject of imports of Free Mining Machinery and other matters of interest to the Canadian mineral industries.

CANADIAN MINING INSTITUTE .

Smoking Concert.

Evening at 8 p.m.

By F. H. HOPKINS, Montreal.

Notes on Wire Ropes

By JOHN B. HOBSON, M.E., Vancouver, B.C.

Notes on Hydraulic Mining

Afternoon Session at 8 p.m.

FRIDAY, 10th JANUARY, 1895.

By R. W. BROCK, Kingston School of Mining.

Notes on the Archean with Reference to Certain Metalliferous Deposits Immediately North of Lake Huron, Ont.

By C. GARNET ROTHWELL, Kingston School of Mining.

The Chlorination Process for Extracting Gold

By RAOUL GREEN, McGill University (Engineering).

Notes on the Eustis Mine



8th, 9th and 10th JANUARY, 1895.

ON

WINDSOR HOTEL, MONTREAL

TO BE HELD IN THE

OF THE PROVINCE OF QUEBEC

GENERAL MINING ASSOCIATION

OF THE

6th Annual Meeting

PROGRAMME OF THE



Chas. Stewart

Syllabus of Meetings.

WEDNESDAY, 8th JANUARY, 1896.

Morning Session at 11 a.m.

- (a) Minutes of Previous Meetings.
- (b) Notices of Motion.
- (c) Secretary's Report.
- (d) Treasurer's Statement.
- (e) Election of New Members.
- (f) Election of President.
- (g) Election of Members of Council.
- (h) Other Business.

Afternoon Session at 3 p.m.

Review of the Mineral Industries of Quebec in 1895.

Iron Mining and Trade

By MR. G. E. DRUMMOND, Montreal.

Pyrites and Copper

By JOHN BLUE, C. & M.E., Capelton.

Asbestos Mining

By JOHN J. PENHALE, Black Lake.

Chromic Iron

By J. OBALSKI, Inspector of Mines Quebec.

Graphite

H. P. H. BRUMMELL, Ottawa.

Evening Session at 8 p.m.

Mica Mining and Trade

By H. C. BAKER, BA., SC., Templeton, Que.

Notes on the Occurrence of Gold in Quebec

By R. W. ELLS, Ottawa.

Notes on the Mining Law

By DR. R. W. RAYMOND, New York.

Imports of Canadian and Foreign Coal

By MR. B. T. A. BELL, Ottawa.

Phosphate

By MR. J. S. HIGGINSON, Buckingham.

THURSDAY, 9th JANUARY, 1895.

Afternoon Session at 3 p.m.

Electricity in Mining

Discussion of MR. W. F. DEAN's paper, presented at Quebec meeting.

Water Tube Boilers

By W. T. BONNER, Montreal.

Some Conditions to Successful Gold Mining

By MR. J. T. DONALD, Montreal.

Evening at 8 p.m.—Student's Session.

The HON. E. J. FLYNN, Commissioner of Crown Lands, in the Chair.

The following papers have been entered for competition in accordance with Sec. xi., Par 31, of the Constitution and By-Laws:—

The Petrolia Oil Industry

By W. MORTON WEBB, McGill University (Engineering).

A Rapid Volumetric Method for Estimating Sulphuric Acid and Sulphur

By F. J. POPE, Kingston School of Mining.

Royal Society of Canada.

1896.

NOMINATION FOR SECTION No. IV.

We, the undersigned Fellows of the Royal Society of Canada, beg to nominate Prof. Frank Adams, M. E., Ph. D. of McGill University, Montreal, for the vacancy in Section IV of that Society, caused by the death of Dr. Geo. Lawson.

ALFRED R. C. SELWYN.
ROBERT BELL,
GEORGE M. DAWSON,
JOHN MACOUN,
J. F. WHITEAVES,
R. W. ELLS.

Dr. Adams began his scientific career nearly twenty years ago in connection with the Geological Survey of Canada, and after graduating in the Faculty of Applied Science in McGill College, in 1879, was appointed to the permanent staff of the Survey. He acted as Assistant Chemist, Lithologist and Mineralogist until 1890, when he was appointed lecturer in Geology in McGill University. In 1894, he was appointed Logan Professor of Geology and Palæontology in that institution.

Dr. Adams has contributed many valuable papers on Geology, Mineralogy and Lithology, both in the reports of the Geological Survey of Canada, and in the leading scientific journals of Canada, the United States and Germany. Among these may be specially mentioned :—

The occurrence of Chlorine in Scapolite ; American Journal of Science, 1879.

On a Melilite bearing rock (alnoite) from Ste. Anne de Bellevue ; American Journal of Science, 1892.

On some Canadian rocks containing Scapolite, &c.; Canadian Record of Science, 1888.

Ueber das Norian oder Ober Laurentian von Canada ; Neues Jahrbuch, 1893.

On the typical Laurentian of Canada ; Journal of Geology, 1893.

Further contributions to our knowledge of the Laurentian of Canada ; American Journal of Science, 1895.

On the occurrence of a large area of Nepheline Syenite in Dungannon, Ontario ; American Journal of Science, 1894.

Geological Society of Canada

1888

NOMINATION FOR SECTION No. IV.

The undersigned members of the Royal Society of Canada, do hereby nominate the following

caused by the death of Dr. Geo. Lawson

ALFRED R. C. BELLAMY

ROBERT BELL

GEORGE M. DAWSON

JOHN JACOBUS

J. F. WHITEHEAD

R. W. HILL

Johnston
Recom. for R. Gray

The above named persons are qualified by their attainments in the Geological Sciences, and their practical experience in the field of Geology, to be nominated as members of the Geological Society of Canada, and to be eligible for election to the office of President of the Society.

The undersigned members of the Royal Society of Canada, do hereby nominate the following persons as members of the Geological Society of Canada, and to be eligible for election to the office of President of the Society.

On the occurrence of a large lot of *Nephelina* specimens in Dawson's Territory; American Journal of Science, 1884.

Further contributions to our knowledge of the Geology of Canada; American Journal of Science, 1885.

On the geology of the Canadian Northwest; Canadian Journal of Science, 1886.

Further contributions to our knowledge of the Geology of Canada; American Journal of Science, 1887.

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Dawson, George M.—Continued.

The Mineral Wealth of British Columbia with annotated list of localities of Minerals of Economic Value.

Annual Report, Geological Survey of Canada. (N. S.) Vol. III. 8vo., pp. 1R-163R.
(Also separately, same pagination.)

Glaciation of High Points in the Southern Interior of British Columbia,

Geological Magazine, August, 1889, London. 8vo., pp. 350-352.
(Also separately, same pagination.)

On the Earlier Cretaceous Rocks of the North-western Portion of the Dominion of Canada.

American Journal of Science, August, 1889, New Haven. 8vo., pp. 120-127.
(Also separately, same pagination.)

Notes on the Ore deposit of the Treadwell Mine, Alaska.

American Geologist, August, 1889, Minneapolis. 8vo., pp. 84-93.
(Also separately, same pagination.)

Notes on the Cretaceous of the British Columbian region. The Nanaimo Group.

American Journal of Science, March, 1890, New Haven. 8vo., pp. 180-183.
(Also separately, same pagination.)

On some of the Larger Unexplored Regions of Canada.

Ottawa Naturalist, May, 1890, Ottawa. 8vo., pp. 29-40.
(Also separately, pp. 1-12.)

Also printed in Appendix to Pike's Barren Ground of Northern Canada, 1892. London: Macmillan & Co. 8vo., pp. 277-289.

On the Glaciation of the Northern part of the Cordillera, with an attempt to correlate the events of the Glacial Period in the Cordillera and Great Plains.

American Geologist, September, 1890, Minneapolis. 8vo., pp. 153-162.
(Also separately, same pagination.)

On the later Physiographical Geology of the Rocky Mountain Region in Canada, with special reference to Changes in Elevation and the history of the Glacial Period.

Transactions Royal Society of Canada. Vol. VIII., Sec. 4. 1890. 4to., pp. 3-74.
(Also separately, same pagination.)

Report on a portion of the West Kootanie District, British Columbia.

Annual Report, Geological Survey of Canada. (N. S.) Vol. IV. Montreal, 1890. 8vo., pp. 1B-66B.
(Also separately, same pagination.)

Note on the Geological Structure of the Selkirk Range.

Bulletin Geological Society of America. February, 1891, Rochester. 8vo., pp. 165-176.
(Also separately, same pagination.)

Notes on the Shuswap People of British Columbia.

Transactions Royal Society of Canada. Vol. IX., Sec. 2. 4to., pp. 3-44.
(Also separately, same pagination.)

and Alex. Sutherland. Geography of the British Colonies. London: Macmillan & Co., 1892. 8vo., pp. I-XIII., 1-330.

Dawson, George M.—Continued.

and Baden Powell, Sir G. Report of the British Behring Sea Commissioners, London, Government, June, 1892.
pp. I-VII., 1-241.

Notes on the Geology of Middleton Island, Alaska.

Bulletin Geological Society of America. Vol. IV., 1892, Rochester. 8vo., pp. 427-431.

Mineral Wealth of British Columbia.

Proceedings of the Royal Colonial Institute. Vol. XXIV., 1893. 8vo., pp. 238-264.

Geographical and Geological Sketch of Canada with Notes on Minerals, Climate, Immigration and Native Races.

Baedeker's Dominion of Canada Hand Book, Leipzig, 1894. 12mo., pp. XXIII-XLVIII.

Notes on the Occurrence of Mammoth Remains in the Yukon District of Canada and in Alaska.

Quarterly Journal Geological Society, February, 1894. London, 8vo., pp. 1-9.
(Also separately, same pagination.)

Geological Notes on some of the Coasts and Islands of Behring Sea and vicinity.

Bulletin Geological Society of America, February, 1894. Rochester, 8vo., pp. 117-146.
(Also separately, same pagination.)

Dawson, Sir J. W.

Species of *Meriones* in Nova Scotia.

Edinburgh Philosophical Journal. (Illustrated.) 1841.

A Geological Excursion in Prince Edward Island.

Hasard's Gazette, 1842.

The Lower Carboniferous Formation of Nova Scotia.

Journal Geological Society of London. (Sections.) 1843.

The Newer Coal Formation of the Eastern Part of Nova Scotia.

Ibid. (Map and Sections.) 1844.

Fossils from the Coal Formation of Nova Scotia.

Ibid. (Illustrated.) 1845.

Report on the Coal Fields of Carribou Cove and River Inhabitants.

Journals of Nova Scotia Legislature, 1846.

The Reproduction of Forests Destroyed by Fire.

Edinburgh Philosophical Journal, 1847.

The Boulder Formation of Nova Scotia.

Proceedings Royal Society of Edinburgh, 1847.

The Mode of Occurrence of Gypsum in Nova Scotia.

Ibid., 1847.

The New Red Sandstone of Nova Scotia.

Journal Geological Society of London. (Map and Sections.) 1847.

The Colouring Matter of Red Sandstones.

Ibid., 1847.

The Gypsum of Plaister Cove, Cape Breton.

Ibid., 1847.

Hand-book of the Geography and Natural History of Nova Scotia. (Map.) Pictou and Edinburgh, 1848, and 3rd edition, 1852.

Metamorphic and Metalliferous Rocks of Eastern Nova Scotia.

Journal Geological Society of London. (Map and Sections.) 1848.

Complete list of
 publications by G.M.D.
 A printed catalogue sent
 July 14th to G.M.D. 1899

Dawson, Sir J. W.—Continued.

- The Mode of Occurrence of Erect Calamites near Pictou, Nova Scotia.
Journal Geological Society of London, 1848.
- Additional Notes on the Red Sandstone of Nova Scotia.
Ibid., 1849.
- Remains of a Reptile and Land Shell in an Erect Tree in the Carboniferous of Nova Scotia. (Lyell, Dawson, Wyman and Owen.)
Ibid. (Illustrated.) 1852.
- The Albert Mine, New Brunswick.
Ibid. (Illustrated.) 1852.
- The Structure of the Albion Mines Coal-field. (Dawson and Poole.)
Ibid., 1852.
- Scientific Agriculture in Nova Scotia*. Halifax, 1852, and enlarged edition 1857.
- Notice of the Discovery of *Baphetes planiceps*. (Dawson and Owen.)
Ibid., 1854.
- The Coal Measures of the South Joggins.
Ibid. (Figures and Sections.) 1853.
- Modern Submerged Forest at Fort Lawrence.
Ibid. (Section.) 1854.
- Acadian Geology*. 1st edition, 1855; now in 4th edition, 1891. (Illustrations and Map.)
- The Fossils known as *Sternbergia*.
Canadian Naturalist. (Illustrated.) 1857.
- Pleistocene Fossils of Montreal and vicinity.
Canadian Naturalist. (Illustrated.) 1857. And additional papers in subsequent volumes.
- Archaia*, or Studies of the Narrative of the Creation in Genesis. Montreal, 1857.
- The Copper-bearing Deposits of Maimanse, Lake Superior.
Canadian Naturalist, 1857.
- The Lower Carboniferous Coal Measures of British North America.
Journal of Geological Society. (Illustrated.) 1858.
- The Vegetable Structures in Coal.
Ibid. (Illustrated.) 1859.
- The Tubicolous Worms of the Gulf of St. Lawrence.
Canadian Naturalist. (Illustrated.) 1859.
- Fossil Plants from the Devonian of Canada.
Ibid. (Illustrated.) 1859.
- A Terrestrial Mollusk, a Millipede, and new Reptiles from the Coal Formation of Nova Scotia.
Journal Geological Society. (Illustrated.) 1860.
- A New Fossil Fern.
Ibid., 1860.
- The Silurian and Devonian Rocks of Nova Scotia and their Fossils. (Dawson and Hall.)
Canadian Naturalist. (Illustrated.) 1860.
- Arctic and Alpine Plants and their Geological History.
Canadian Naturalist, 1861.
- Additional Reptilian Remains from the Coal of Nova Scotia.
Journal Geological Society. (Illustrated.) 1861.
- Carpolite and Erect Sigillaria.
Ibid. (Illustrated.) 1861.

Dawson, Sir J. W.—Continued.

- Preliminary Notice of the Pre-Carboniferous Flora of New Brunswick, Maine and Eastern Canada.
Canadian Naturalist. (Illustrated.) 1861.
- The Recent Discoveries of Gold in Nova Scotia.
Ibid., 1861.
- The Flora of the Devonian Period in North America.
Journal Geological Society. (Illustrated.) 1861.
- Farther Observations on Devonian Plants from Maine, Gaspé and New York.
Ibid. (Illustrated.) 1862.
- A New Species of *Dendroperon* and on Dermal Coverings of Fossil Batrachians.
Ibid. (Illustrated.) 1862.
- Footprints of a Reptile from the Carboniferous of Cape Breton.
Canadian Naturalist. (Illustrated.) 1863.
- Synopsis of the Carboniferous Flora of Nova Scotia.
Ibid., 1863.
- Fossils of the Genus *Rusophycus* (*Rusichnites*).
Ibid. (Illustrated.) 1861.
- The Air-breathers of the Coal Period.
Ibid. (Plates.) 1863. And issued as a separate volume.
- Agriculture for Schools*. Montreal, 1864.
- Eozoon Canadense*. (Logan, Dawson, Hunt and Carpenter.)
Ibid. (Plates.) 1865.
- The Conditions of Accumulation of Coal, and the Coal Flora of Nova Scotia and New Brunswick.
Journal Geological Society. (Plates.) 1867.
- Notes on Laurentian Fossils. (Dawson and Carpenter.)
Ibid., 1867.
- A New Land Snail from the Carboniferous. (Dawson and P. P. Carpenter.)
Ibid., 1868.
- Structure of Calamites and Calamodendron.
Ibid., 1870.
- Report on the Geology of Prince Edward Island. (Map and Plates.) (Dawson and Harrington.) Montreal, 1871.
- Hand-book of Canadian Zoology*. Montreal, 1871.
- Report on the Flora of the Upper Silurian and Devonian of Canada.
Geological Survey of Canada. (Plates.) 1871.
- Report on the Flora of the Lower Carboniferous and Millstone Grit of Canada.
Ibid. (Plates.) 1872.
- Notes on the Post-pliocene of Canada*.
Republished from Papers in the *Canadian Naturalist*. (Plates, Cuts and Maps.) Montreal, 1872.
- Footprints of *Sauropus unguifer*.
London Geological Magazine. (Illustrated.) Vol. ix. 1872.
- The Story of the Earth and Man*. (Illustrated.) London, 1872.
- Impressions and Footprints of Animals on Carboniferous Rocks.
American Journal of Science. (Illustrated.) 1873.

Dawson, Sir J. W.—Continued.

- Sigillaria, Calamites and Lepidodendron.
Journal Geological Society, 1873.
- Relation of the Upper Coal Measures of Nova Scotia to the Permian.
Ibid. (Sections.) 1874.
- Nature and the Bible*. New York, 1875.
- Life's Dawn on Earth*. A summary of facts as to Eozoon. (Map and Illustrations.) London, 1875.
- Phosphates of the Laurentian Rocks.
Journal Geological Society, 1875.
- On the Occurrence of Eozoon Canadense at Cote St. Pierre.
Ibid. (Illustrated.) 1876.
- New Carboniferous Batrachians.
American Journal of Science, 1876.
- The Origin of the World*. London and New York, 1878.
- Carboniferous Fishes from New Brunswick.
Canadian Naturalist. (Illustrated.) 1878.
- Canadian Earthquakes.
Ibid., 1878, and subsequent years.
- Phoca Groenlandica* from Pleistocene.
Ibid., 1878.
- New Facts Relating to Eozoon.
Ibid., 1878.
- Supplement to Acadian Geology. (Illustrated.) London, 1879.
- Devonian Plants of Scotland.
Transactions Edinburgh Geological Society, 1879.
- Fossils Injected with Silicates and Forms of Stromatopora.
Journal Geological Society. (Plates.) 1879.
- Recent Controversies Respecting Eozoon.
Canadian Naturalist, 1879.
- Mobius on Eozoon Canadense.
American Journal of Science. 1879.
- Remarks on Recent Papers on the Geology of Nova Scotia.
Canadian Naturalist, 1879.
- Geological Relations and Fossils of the Silurian Iron Ores of Nova Scotia.
Ibid., 1880.
- Fossil Men*, and their American Analogues. (Illustrated.) London, 1880.
- Revision of the Land Snails of the Palaeozoic Period.
American Journal of Science. (Illustrated.) 1880.
- New Erian Plants.
Journal Geological Society. (Illustrated.) 1881.
- The Chain of Life in Geological Time*. (Illustrated.) London, 1881.
- Results of Recent Explorations of Erect Trees containing Reptilian Remains in the Coal Formation of Nova Scotia.
Transactions Royal Society of London. (Plates.) 1882.
- Second Report on Fossil Plants of the Upper Silurian and Erian of Canada.
Geological Survey of Canada. (Plates.) 1882.
- Cretaceous and Tertiary Floras of British Columbia.
Transactions Royal Society of Canada. (Plates.) 1882.

Dawson, Sir J. W.—Continued.

- New Fossils from the Lower Carboniferous of Nova Scotia.
Memoirs Peter Redpath Museum, 1883.
- Unsolved Problems in Geology. Presidential Address.
American Association for Advancement of Science, Minneapolis, 1883.
- Geology of the Canadian Northwest.
Journal Geological Society, 1883.
- Relations of Geological Work in Canada and the Old World.
Transactions Royal Society of Canada, 1884.
- Résumé of Pleistocene Geology of Canada.
London Geological Magazine, 1884.
- Mesozoic Floras of the Rocky Mountain Region.
Transactions Royal Society of Canada, 1885.
- Address on Canadian and Scottish Geology.
Transactions Edinburgh Geological Society, 1885.
- Fossils Collected by Mr. Bain in Prince Edward Island.
Canadian Naturalist. (Illustrated.) 1885.
- Papers on Geology of Egypt and Palestine.
London Geological Magazine. (Sections.) 1885.
- Points in which American Geological Science is Indebted to Canada.
Address to Section IV. Royal Society of Canada, 1886.
- Fossil Plants of the Laramie.
Transactions Royal Society of Canada. (Plates.) 1886.
- The Geological History of the North Atlantic. Presidential Address.
British Association, Birmingham, 1886.
- Rhizocarps in the Upper Erian Formation.
Transactions Chicago Academy. (Illustrated.) 1887.
- Fossil Woods of the Cretaceous and Laramie.
Transactions Royal Society of Canada, 1887.
- The Geological History of Plants*. (Illustrated.) London and New York, 1888.
- New Facts Relating to Eozoon.
Geological Magazine, 1888.
- Specimens of Eozoon Canadense in the Peter Redpath Museum.
Memoirs Peter Redpath Museum, 1888.*
- Eozoic and Palaeozoic Rocks of the Atlantic Coast of Canada, in comparison with those of Western Europe and the Interior of America.
Journal of Geological Society, 1888.
- Modern Science in Bible Lands*. (Map and Illustrations.) London and New York, 1888.
- Hand-book of Canadian Geology*. (Maps and Illustrations.) Montreal, 1889.
- New Cambro-Silurian Sponges from Little Metis.
Transactions Royal Society of Canada. (Plates.) 1889.
- Fossil Plants from the Laramie of Mackenzie and Bow Rivers.
Ibid. (Plates.) 1889.
- New Plants from the Erian and Carboniferous.
Memoirs Peter Redpath Museum, 1890.

* Contains reference to various minor notes and papers not in this list.

Dawson, Sir J. W.—Continued.

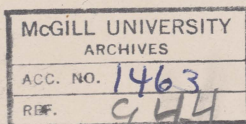
- Burrows and Tracks of Invertebrate Animals in Palæozoic Rocks.
Journal Geological Society, 1890.
- Modern Ideas of Evolution*. London, 1890.
- Tertiary Plants of Similkameen River.
Transactions Royal Society of Canada. (Plates.) 1890.
- Dendroperon Acadianum and Hylonomus Lyelli.
Geological Magazine. (Illustrated.) 1891.
- Fossil Plants from the Carboniferous of Newfoundland.
Bulletin Geological Society of America. (Illustrated.) 1891.
- Notes on Trees Cultivated on the Grounds of McGill University.
Canadian Record of Science, 1891.
- Pleistocene Plants of Canada. (Dawson and Penhallow.)
Transactions American Geological Society. (Illustrated.) 1892.
- Parka decipiens. (Penhallow and Dawson.)
Transactions Royal Society of Canada, 1892.
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- Prof. Tyndall's Belfast Address.
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- Colonial Copyright.
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- Sir Arthur Helps, Life and Works of.
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- The Geological Survey, Utility of.
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- Protestant Education in Quebec.
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- Rationale of the Ridsdale Judgment.
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- Prerogatives of the Crown. A Series of Papers on the Quebec (Letellier) Crisis.
Spectator, Montreal, 1878.
- The Chemistry of Cooking.
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- Specific Duties on Books.
American Publishers' Weekly, 1880.
- Montreal in the Days of James McGill.
Gazette, Montreal, 1882.
- Old Times in Montreal—1763 to 1830. With illustrations of old buildings.
Star, Montreal, Carnival Number, 1885.
- The Jesuits' Estates. Three papers.
Gazette, Montreal, 1888.
- The Parliament Buildings of Canada from the Conquest to Confederation. With illustrations.
Star, Montreal, Carnival Number, 1886.
- Christmas in Canada.
Ibid., Montreal, Christmas Number, 1888.
- The English Minority in Quebec. A series of seven papers on the Parish Law of Lower Canada.
The Week, Toronto, 1890.
- The Chase Copyright Bill.
Nation, New York, 1890.
- Problems of Greater Britain. Three papers on Sir Charles Dilke's book.
The Week, Toronto, 1890.
- The Constitutional Question.
Gazette, Montreal, 1873.
- Scientism. A paper read before the Athenæum Club of Montreal.
Belford's Monthly, Toronto, December, 1877.
- Nineteenth Century Progress. A paper read before the Athenæum Club of Montreal.
New Dominion Monthly, Montreal, January, 1878.
- Prayer and Modern Science.
Canadian Monthly, Toronto, December, 1875.
- The Massacre of the Cedars. An inquiry into the question of the employment of Indians during the Revolutionary War; a chapter of local history in 1776-7 on the frontier from the Cedars to St. Anne's.
Ibid., April, 1874.
- Champlain. A Poem. Montreal, 1890.
12mo., pp. 8.
Republished in the *Ottawa Owl*, 1892.
- Report on the relative positions of Bishop and Rector in Christ-Church, as Cathedral and Parish Church, under the Laws of England and Canada. Montreal, 1875.
8vo., pp. 100.
- Copyright in Books. An inquiry into its origin and an account of the present state of the Law in Canada. Montreal, 1882.
8vo., pp. 40.
- Episcopal Elections: Ancient and Modern. Montreal, 1877.
8vo., pp. 54.
- Yea or Nay. The Railway Crisis in Montreal in 1872.
- The Montreal Board of Trade. A Commercial History of the City from 1842 to 1892, with



The University of Tokio, Japan, has the honor to send to your address a Memoir on the Shell Mounds of Omori.

As the University is forming an Archaeological Museum and Library, it would gratefully receive books, pamphlets, specimens, or casts, relating to this subject. Books and specimens may be sent to

*EDWARD S. MORSE,
Salem, Massachusetts, U. S. A.*

And from time to time these will be forwarded to the University of Tokio.

Acknowledgments will be made by Mr. Morse on receipt of the objects, and a final acknowledgment will be made by

*H. KATO. Director of the
University of Tokio, Japan.*

Salem, Mass., Nov. 20, 1879.

*Muse
Exchanges for
Japan*

McGILL UNIVERSITY
ARCHIVES
ACC. NO. 2211
REF. 73/52

Natural History Society of Montreal,

INCORPORATED, 1832.

SESSION 1886-7.

President :

SIR WILLIAM DAWSON, LL.D., F.R.S.

Vice Presidents :

T. STERRY HUNT, LL.D., F.R.S.

SIR DONALD A. SMITH.

B. J. HARRINGTON, B.A., PH. D.

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JOHN S. SHEARER, *Chairman.*

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Honorary Curator :

ALFRED H. MASON, F.C.S., F.R.M.S.

Honorary Treasurer :

P. S. ROSS.

Honorary Corresponding Secretary :

D. P. PENHALLOW, B.Sc.

Honorary Recording Secretary

WM. T. COSTIGAN.

Honorary Librarian :

J. A. U. BEAUDRY.

The Regular Monthly Meeting will be held at the Lecture Hall of the Museum 32 University Street, on MONDAY EVENING next, March 31st. The Chair will be taken at Eight o'clock precisely.

Each Member has the privilege of introducing two visitors, and Ladies are invited to attend.

BUSINESS.

Reading of the Minutes of the previous meeting.
Announcement of donations.
Proposals for membership.
Election of members.
Miscellaneous Communications.

SPECIAL COMMUNICATIONS :

"On Jade as occurring in British Columbia," - - - - - By DR. G. M. DAWSON, F.R.S.

"Chemical Notes." - - - - - By J. T. DONALD, M.A.

All subscriptions are due in advance on the 1st of November, and may be paid to Mr. P. S. Ross, No. 18 St. Alexis Street.

The Librarian will be in attendance for convenience of members, every Friday from 4 to 6 p.m.

Members and others desiring to read Papers, or exhibit articles of interest, at the meetings of the Society or to contribute Books or Specimens, will oblige by communicating with Dr. Harrington, McGill University, or to the Hon. Rec. Secretary, No. 198 St. James Street.

32 UNIVERSITY STREET.

24th March, 1887.

WM. T. COSTIGAN,

Hon. Rec. Secretary.

Chas. H. King

BRITISH ASSOCIATION
FOR
THE ADVANCEMENT OF SCIENCE.

22 Albemarle Street, London, W.

February 28, 1890.

There will be a Meeting of the COUNCIL at this Office on Friday next, March 7, at 4 P.M.

Principal Agenda—

- (1.) To confirm the Minutes of the last Meeting.
- (2.) To receive replies from proposed Sectional Officers for the Leeds Meeting, and to fill certain vacancies.
- (3.) To nominate the President for 1891 (Cardiff).
- (4.) To receive a Report from a Committee of Council concerning the office of Assistant General Secretary.
- (5.) To receive a Report from a Committee of Council concerning the assigning of marks for physical qualifications in Civil Service Examinations.
- (6.) Invitation from Local Executive Committee to Mr. H. M. Stanley.

And other business.

A. T. ATCHISON,
Secretary.

Paul Spooner
Chas J G

BRITISH ASSOCIATION.

LEEDS MEETING, 1890.

Sir William Dawson C. M. G.
McGill University
Montreal Canada

British Association for the Advancement of Science.

SIXTIETH MEETING,

TO BE HELD IN LEEDS, SEPTEMBER 3RD TO 10TH, 1890.

FESTIVAL OFFICES,

MUNICIPAL BUILDINGS,

LEEDS, *May 1st*, 1890.

SIR,

We beg to remind you that the next MEETING OF THE BRITISH ASSOCIATION will be held at LEEDS, in the week commencing SEPTEMBER 3rd, under the Presidency of SIR FREDERICK AUGUSTUS ABEL, C.B., D.C.L., D.Sc., F.R.S., V.P.C.S., and, on behalf of the Local General Committee, we cordially invite you to attend the Meeting, and to take part in its proceedings.

Invitations are being sent to the most eminent men of science in America and upon the Continent, and special exertions are being made to ensure a large and representative gathering.

The Corporation and other public bodies of Leeds join in the invitation, and all necessary facilities will be given for the various meetings, as well as for visits to many works and factories in Leeds and the district.

Yorkshire affords very unusual opportunities for interesting excursions, and an ample list of places of natural or historical interest has been prepared by the Excursion Committee.

Later announcements will indicate the chief features of scientific importance which are expected to mark the Leeds Meeting.

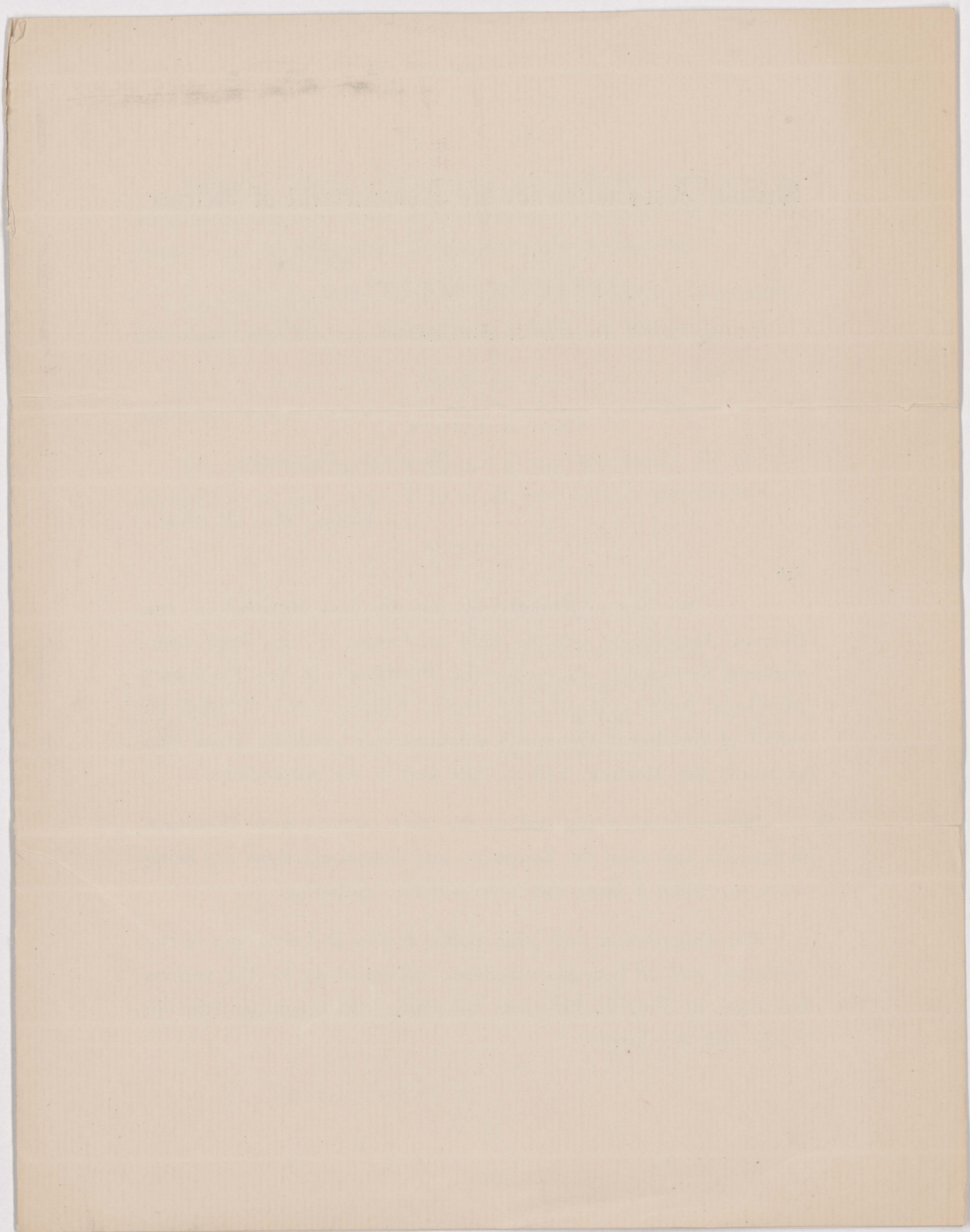
Lists of Hotels and Lodgings are being prepared, and will be forwarded in due course.

We shall esteem it a favour if you will kindly fill up the enclosed form, and return it to us at your earliest convenience.

We are,

Yours truly,

J. RAWLINSON FORD,	}	<i>Hon.</i>
SYDNEY LUPTON,		<i>Local</i>
L. C. MIALL,		<i>Secs.</i>
A. SMITHELLS,		



British Association for the Advancement of Science.

LEEDS MEETING, Sept. 3rd to 10th, 1890.

..... 1890.

*Insert
here "do"
or
"do not."

I*..... intend to be present at
the Leeds Meeting.

Name in full

Address in full

†Insert
here the
Names of
any
Members
of your
Family by
whom you
will be ac-
companied

I shall be accompanied by †

.....
.....
.....
.....
.....

TO THE HON. LOCAL SECRETARIES,
BRITISH ASSOCIATION,
FESTIVAL OFFICES, MUNICIPAL BUILDINGS,
LEEDS.

The HON. LOCAL SECRETARIES,
BRITISH ASSOCIATION,

Festival Offices,

Municipal Buildings,

LEEDS.

PENNY
STAMP.

To the *Ethnologists, Archæologists and Philologists of America.*

At the 24th Meeting of the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, held August last, at Detroit, a PERMANENT SUB-SECTION OF ANTHROPOLOGY was organized to go into effect at the Buffalo Meeting of the Association in August, 1876. The Hon. L. H. MORGAN, of Rochester, was chosen chairman of the Sub-section for the Buffalo Meeting, and a committee was appointed to invite the coöperation of all interested in either of the numerous departments of Anthropology, in order that the rapidly increasing interest and importance of the subject may be treated, in this country, with the breadth of thought which is now demanded. For this purpose it is hoped that Philology, as well as the more popular departments of Anthropology, will be represented at the forthcoming meeting, and that the Sub-section will more nearly correspond to that of the British Association, which annually gives so many important papers to the world.

It is desirable that students of Ethnology should attend the meetings of the Association, and contribute papers, for, notwithstanding the variety and richness of the materials for this science in America, it cannot be said that it has become fairly established among us. It is due from American scholarship that a complete exposition should be made of the arts, inventions, institutions, usages and customs, ethnical relations and religious beliefs of the early American people.

In relation to a better understanding of North American Archæology, very much will be gained by an annual meeting of investigators from all parts of the country to compare notes. In no other department is the necessity of direct comparisons of field notes and articles obtained in various parts of the country so important as in Archæology. Any worker, however well read in the labors of others, is necessarily biased by his own discoveries, until he has the means of comparison and discussion with those working in the same way in other localities. This truth was so evident at recent meetings of the Association that it leads the committee to mention it as an inducement for all workers to come forward with their papers and their specimens, and for each to give his share of information for the benefit of the whole.

It is particularly requested that all who can will take to the meeting not only such diagrams and illustrations as will elucidate their papers, but specimens as well. Arrangements will be made with the Local Committee to provide a safe place for a museum during the meeting, similar to those furnished by the British Association.

The committee is authorized to state that the citizens of Buffalo, in anticipation of a very large meeting, will do every thing in their power to provide means of entertainment and transportation, at the lowest possible rates, for parties attending the meeting.

The necessary blanks for application for membership will be furnished by the Permanent Secretary of the Association, upon request, and the regular circular, and that of the Local Committee, relating to the Buffalo Meeting, will also be forwarded to applicants. Early replies to this circular, addressed to the Secretary, are requested, and the expressed intention of reading papers or exhibiting specimens will be answered by the transmission of the proper blanks for the entry of titles, which the rules of the Association require shall be in the hands of the Permanent Secretary before the date of the meeting.

In conclusion, the committee extend a cordial invitation to all interested, who are not now members, to become members of the Association and to take part in this newly organized Sub-section of Anthropology.

L. H. MORGAN, of Rochester, N. Y., *Chairman.*
CHAS. WHITTLESEY, of Cleveland, Ohio.
S. F. BAIRD, of Washington, D. C.
E. T. COX, of Indianapolis, Ind.
N. S. TOWNSHEND, of Columbus, Ohio.
CHAS. RAU, of New York.
F. W. PUTNAM, of Salem, Mass., *Secretary,*
and *Permanent Secretary of the Association.*

} *Committee.*

To the Ethnologists, Archaeologists and Philologists of America.

At the 21st Meeting of the American Association for the Advancement of Science, held August 1st-5th, 1890, at the Hotel de Ville, New York, the Hon. Wm. Brewster, Secretary of the Association, was elected President of the Sub-section for the Buffalo Meeting, and a committee was appointed to invite the cooperation of all interested in either of the numerous departments of Anthropology, in order that the rapidly increasing interest and importance of the subject may be treated in this country with the breadth of thought which it demands. For this purpose it is hoped that Ethnology, as well as the more popular departments of Archaeology and Philology, will be represented at the forthcoming meeting, and that the Sub-section will receive many important papers to the world.

It is desirable that students of Ethnology should attend the meetings of the Association, and especially papers for notwithstanding the variety and richness of the materials for the science in America, it can be said that it has become fully established among us. It is due from American ethnologists a complete attention should be made of the more important institutions, libraries, and collections, and the results of the early American people.

In relation to a better understanding of North American Ethnology, very much will be gained by an annual meeting of investigators from all parts of the country to compare notes. In no other department is the necessity of direct comparisons of field notes and articles obtained in various parts of the country so important as in Anthropology. Any worker, however well read in the labor of others, is necessarily placed by his own observations, and holds the means of comparison and discussion with those working in the same way in other localities. Therefore, it is especially desirable that the members of the Association should be invited to mention it as an instrument for all workers to come forward with their papers and their specimens, and to give his share of information for the benefit of the whole.

It is particularly requested that all who can will take to the meeting not only such diagrams and illustrations as will elucidate their papers, but specimens as well. Arrangements will be made with the Local Committee to provide a safe place for a museum during the meeting, similar to those furnished by the British Association.

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Ethnologists
January 17/96

Committee.

- J. H. MORGAN, of Rochester, N. Y., Chairman.
- CHAS. WHITTELEY, of Cleveland, Ohio.
- S. F. RAIRD, of Washington, D. C.
- E. T. COX, of Indianapolis, Ind.
- N. S. TORREY, of Columbus, Ohio.
- CHAS. KAY, of New York.
- E. W. FETZAM, of Salem, Mass., Secretary.
- and Permanent Secretary of the Association.

ABSTRACT FOR THE MONTH OF JULY, 1890.
 Meteorological Observations, McGill College Observatory, Montreal, Canada, Height above sea level, 187 feet. C. H. McLEOD, Superintendent.

DAY.	THERMOMETER.				*BAROMETER.				† Mean relative humidity.	Dew point.	WIND.		SKY Clouded IN TENTHS.			Per cent of possible bright sunshine.	Rainfall in inches.	Snowfall in inches.	Rain and snow melted.	DAY.
	Mean.	Max.	Min.	Range.	Mean.	Max.	Min.	Range.			Mean velocity in miles per hour.	General direction.	Mean.	Max.	Min.					
1	76.45	87.1	65.2	21.9	29.8762	29.931	29.813	.118	57.2	59.5	S.E.	9.1	5.2	10	0	91	0.02		1	
2	71.03	87.0	68.5	8.5	29.7953	29.910	29.663	.117	71.3	61.7	S.W.	17.2	10.0	10	10	15	0.63		2	
3	71.37	81.0	64.1	16.9	29.6442	29.972	29.668	.048	81.8	64.3	S.W.	10.7	8.3	10	4	42	Inapp.		3	
4	70.23	81.0	60.3	14.7	29.7002	29.733	29.683	.038	73.5	55.2	S.W.	14.5	7.5	10	0	28			4	
5	63.98	71.2	50.5	19.9	29.9153	30.004	29.748	.256	55.2	55.2	S.W.	17.7	2.3	10	0	60			5	
SUNDAY..... 6	68.32	77.2	57.3	19.9	29.9522	30.047	29.838	.189	70.3	60.2	S.W.	14.0	9.0	10	0	67	0.01		6	
7	74.78	88.0	65.3	23.3	29.6177	29.747	29.501	.240	74.2	65.5	S.W.	7.0	9.0	10	0	25	0.06		7	
8	59.07	72.0	53.5	18.3	29.7915	29.902	29.519	.443	61.7	40.0	S.W.	22.9	9.5	10	0	40	0.10		8	
9	58.52	67.2	49.4	17.3	30.0882	30.148	30.011	.137	65.5	48.8	W.	20.2	4.2	10	0	76	0.03		9	
10	62.72	71.3	52.3	19.0	30.1852	30.259	30.128	.131	60.2	45.0	E.	9.5	5.8	10	0	58			10	
11	69.32	81.0	55.0	26.0	30.0410	30.146	29.953	.193	60.2	54.7	S.W.	5.4	3.8	10	0	92			11	
12	72.67	82.5	60.4	20.1	29.9307	30.076	29.880	.096	71.3	62.7	S.	10.1	3.8	10	0	97			12	
SUNDAY..... 13	76.28	80.5	68.2	18.3	29.8795	29.919	29.842	.077	69.7	64.8	S.W.	10.8	6.5	10	0	79			13	
14	73.52	81.9	65.9	16.0	30.0023	30.025	29.977	.048	62.2	57.8	S.W.	13.3	3.7	10	0	86	0.54		14	
15	63.02	72.0	52.9	15.0	29.8748	29.980	29.773	.4348	77.2	50.2	S.W.	9.7	2.8	10	0	95			15	
16	61.83	71.0	52.9	18.1	29.9345	29.977	29.888	.109	74.8	48.8	N.	13.5	3.5	10	0	99	0.13		16	
17	57.20	65.1	52.9	12.2	29.9302	30.047	29.849	.198	74.8	48.8	N.	11.2	7.7	10	0	24	0.33		17	
SUNDAY..... 18	67.6	49.8	49.8	17.8	30.2078	30.254	30.179	.075	61.3	45.5	N.W.	10.1	4.8	10	0	48	Inapp.		18	
19	70.8	75.7	54.0	21.3	30.1445	30.223	30.078	.145	62.0	51.5	S.	5.4	3.8	10	0	69			19	
SUNDAY..... 20	67.02	79.7	50.5	23.2	30.0432	30.081	30.004	.077	62.3	53.7	S.	7.3	3.3	10	0	94			20	
21	66.58	75.0	60.3	14.7	30.0315	30.059	30.002	.057	72.7	52.8	S.E.	12.7	10.0	10	0	18	0.02		21	
22	66.35	69.1	62.3	6.8	29.9245	29.831	29.831	.5702	88.0	64.7	S.W.	11.9	8.7	10	0	00	0.28		22	
23	72.37	82.0	65.3	16.7	29.7702	29.832	29.700	.132	78.3	64.7	S.W.	14.8	6.5	10	0	19?			23	
SUNDAY..... 24	74.45	80.0	66.1	18.8	30.1027	30.122	30.085	.037	68.3	62.5	S.W.	14.7	1.3	7	0	100			24	
25	74.92	87.0	64.8	22.2	30.0853	30.139	29.980	.159	71.5	63.2	S.W.	16.3	2.5	9	0	76			25	
26	75.45	86.8	66.7	20.1	29.8853	29.904	29.811	.153	71.3	64.8	S.W.	11.2	6.3	10	0	89	0.04		26	
27	72.87	80.9	67.9	13.0	29.7110	29.840	29.653	.6362	78.3	65.7	S.W.	19.0	7.0	10	1	66	0.58		27	
28	68.57	77.67	60.15	17.52	29.9233	30.000	29.800	.4915	69.9	57.7	S.W.	12.6	5.94	10	1	40			28	
29	68.99	77.36	60.96	16.40	29.8841	30.000	29.800	.5905	70.8	57.7	S.W.	12.6	5.45	10	1	59.1	4.16		29	
30	68.99	77.36	60.96	16.40	29.8841	30.000	29.800	.5905	70.8	57.7	S.W.	12.6	5.45	10	1	59.1	4.16		30	
31	68.99	77.36	60.96	16.40	29.8841	30.000	29.800	.5905	70.8	57.7	S.W.	12.6	5.45	10	1	59.1	4.16		31	
16 yrs. means for and including this mo.	68.99	77.36	60.96	16.40	29.8841	30.000	29.800	.5905	70.8	57.7	S.W.	12.6	5.45	10	1	59.1	4.16		16 yrs. means for and including this month.	

ANALYSIS OF WIND RECORD.

Direction.....	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
Miles.....	376	87	....	985	1748	4490	1145	575	....
Duration in hrs..	30	17	....	86	151	303	92	60	5
Mean velocity ...	12.5	5.1	....	11.5	11.6	14.8	12.4	9.6	....

Greatest mileage in one hour was 32 on the 31st.
 Resultant mileage, 6,210.
 Resultant direction, S. 89° W.
 Total mileage, 9,406.
 Average mileage, 12.64.

*Barometer readings reduced to sea-level and temperature of 32° Fahr.
 † Pressure of vapour in inches of mercury.
 ‡ Humidity relative, saturation being 100.
 ¶ Nine years only.

The greatest heat was 86.6 on the 8th; the greatest cold was 49.4 on the 10th, giving a range of temperature of 39.2 degrees. Warmest day was the 1st. Coldest day was the 19th. Highest barometer reading was 30.259 on the 11th; lowest barometer was 29.501 on the 8th, giving a range of 0.758 inches.
 Maximum relative humidity was 97 on the 3rd. Minimum relative humidity was 37 on the 1st.
 Rain fell on 17 days.
 An Aurora was observed on 1 night.
 Lunar halo on 1 night.
 Thunderstorms on 5 days, and lightning without thunder on 2 days.

ABSTRACT FOR THE MONTH OF JULY, 1890.
 Meteorological Observations, McGill College Observatory, Montreal, Canada, Height above sea level, 187 feet. C. H. McLEOD, Superintendent.

DAY.	THERMOMETER.					*BAROMETER.					WIND.	SKY ^{Clouded} IN TENTS.			Per cent of possible bright sunshine.	Rainfall in inches.	Snowfall in inches.	Rain and snow melted.	DAY.	
	Mean.	Max.	Min.	Range.	Mean.	Max.	Min.	Range.	† Mean relative humidity.	Dew point.		General direction.	Mean velocity in miles per hour.	Mean.						Max.	Min.
1	76.45	87.1	65.2	21.9	29.8762	29.931	29.813	.118	.5908	57.2	59.5	S.E.	9.1	5.2	10	0	91	0.01	.....	1
2	71.63	77.0	68.5	8.5	29.7593	29.810	29.693	.117	.5598	71.3	61.7	S.W.	17.2	10.0	10	0	15	0.02	.....	2
3	71.37	81.0	64.1	16.9	29.6422	29.672	29.606	.066	.6138	81.7	64.8	S.W.	10.7	8.3	10	0	42	0.63	.....	3
4	70.25	77.0	66.3	10.7	29.7062	29.733	29.685	.048	.6025	81.5	64.3	S.W.	14.5	7.5	10	0	28	Inapp.	.....	4
5	63.98	71.2	50.5	14.7	29.9153	30.004	29.748	.256	.4338	73.5	55.2	S.W.	17.7	2.3	10	0	60	.....	.....	5
SUNDAY..... 6	68.32	77.2	57.3	19.9	29.9522	30.047	29.888	.189	.5235	76.3	60.2	S.W.	14.0	3.0	10	0	67	0.01	.....	6
7	74.78	88.6	65.3	23.3	29.7447	29.747	29.501	.246	.6338	74.7	65.5	S.W.	7.0	9.0	10	0	25	0.06	.....	7
8	59.67	72.0	53.5	18.5	29.7915	29.962	29.519	.443	.3220	61.7	40.0	S.W.	22.9	9.5	10	0	40	0.10	.....	8
9	58.52	67.2	49.4	17.8	30.148	30.148	30.011	.137	.3225	65.5	46.8	W.	20.2	4.2	10	0	76	0.03	.....	9
10	62.72	81.0	55.0	26.0	30.1852	30.259	30.128	.131	.3985	60.2	48.0	E.	5.2	5.8	10	0	58	.....	.....	10
11	69.82	81.0	55.0	26.0	30.0410	30.146	29.953	.193	.4295	66.2	54.7	S.W.	5.4	3.8	10	0	92	.....	.....	11
SUNDAY..... 12	82.5	92.1	62.4	30.1	29.9307	29.976	29.880	.096	.5692	71.3	62.7	S.	10.1	6.5	10	0	97	.....	.....	12
13	72.67	82.5	60.4	22.1	29.8795	29.919	29.842	.077	.6222	69.7	64.8	S.W.	10.8	3.7	10	0	79	.....	.....	13
14	76.28	86.5	68.2	18.3	30.0023	30.025	29.977	.048	.4825	69.7	57.8	S.W.	13.3	2.8	10	0	80	0.54	.....	14
15	73.52	81.9	65.9	16.0	29.8748	29.950	29.773	.170	.4545	72.2	56.2	W.	9.7	10.0	10	0	95	0.13	.....	15
16	63.62	72.0	57.0	15.0	29.9777	30.047	29.888	.159	.3118	67.8	48.0	W.	10.7	10.0	10	0	02	Inapp.	.....	16
17	61.83	71.0	52.9	18.1	29.9302	30.047	29.849	.198	.3480	57.7	43.8	N.	13.5	3.5	10	0	99	.....	.....	17
18	57.20	65.1	49.8	12.2	29.9302	30.047	29.849	.198	.3480	74.8	46.0	N.	11.2	7.7	10	0	24	.....	.....	18
SUNDAY..... 19	67.6	77.6	49.8	17.8	29.9302	30.047	29.849	.198	.3480	61.3	48.5	N.W.	10.1	4.8	10	0	48	Inapp.	.....	19
20	62.17	70.8	54.0	16.8	30.2078	30.254	30.179	.075	.3402	61.3	48.5	N.W.	10.1	4.8	10	0	69	.....	.....	20
21	65.85	75.7	54.4	21.3	30.1445	30.223	30.078	.145	.3838	62.0	51.5	W.	5.4	3.8	10	0	89	.....	.....	21
22	67.62	79.7	50.5	23.2	30.0432	30.081	30.004	.077	.4123	62.3	53.7	S.	7.3	3.0	10	0	94	.....	.....	22
23	66.88	75.0	60.3	14.7	29.9315	30.059	30.002	.057	.4715	72.7	57.2	S.E.	12.7	8.3	10	0	20	.....	.....	23
24	66.35	69.1	65.3	6.8	29.9245	29.832	29.831	.132	.5702	88.0	62.8	S.E.	15.2	19.0	10	0	18	0.02	.....	24
25	72.87	80.9	66.7	13.0	29.7702	29.832	29.790	.132	.6157	78.3	64.7	S.W.	11.9	6.5	10	0	00	0.28	.....	25
SUNDAY..... 26	80.0	91.1	61.2	18.8	29.9253	30.122	30.085	.037	.5963	68.3	62.5	S.W.	14.7	1.3	10	0	100	.....	.....	26
27	74.45	84.1	66.1	18.0	30.1027	30.139	30.085	.037	.5963	68.3	62.5	S.W.	14.7	1.3	10	0	76	.....	.....	27
28	74.02	87.0	64.8	22.2	30.0853	30.139	30.085	.037	.5963	67.5	63.2	S.W.	16.3	2.5	10	0	89	.....	.....	28
29	75.45	86.8	66.7	20.1	29.8853	29.904	29.811	.153	.6177	71.3	64.8	S.W.	11.2	6.3	10	0	66	0.04	.....	29
30	72.87	80.9	67.9	13.0	29.7110	29.840	29.653	.187	.6362	78.3	65.7	S.W.	20.3	7.0	10	0	40	0.58	.....	30
31	68.57	77.67	60.15	17.52	29.9253	30.047	29.849	.198	.3480	69.9	57.7	.....	12.6	5.94	10	0	58.4	2.78	.....	31
16 yrs. means for & including this mo.	68.99	77.36	60.96	16.40	29.8841	.....	.....	.....	.5005	70.8	.....	.....	5.45	.....	.....	.....	59.1	4.16	.....	.....

ANALYSIS OF WIND RECORD.

Direction.....	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
Miles.....	376	87	.....	985	1748	4490	1145	575	.....
Duration in hrs..	30	17	.....	86	151	303	92	60	5
Mean velocity...	12.5	5.1	.....	11.5	11.6	14.8	12.4	9.6	.....

Greatest mileage in one hour was 32 on the 31st.
 Resultant mileage, 6,210.
 Resultant direction, S. 39° W.
 Total mileage, 9,406.

Average mileage, 12.64.

*Barometer readings reduced to sea-level and temperature of 32° Fahr.
 † Observed.
 ‡ Pressure of vapour in inches of mercury.
 § Humidity relative, saturation being 100.
 ¶ Nine years only.
 The greatest heat was 88.6 on the 8th; the greatest cold was 49.4 on the 10th, giving a range of temperature of 39.2 degrees. Warmest day was the 1st. Coldest day was the 19th. Highest barometer reading was 30.259 on the 11th; lowest barometer was 29.501 on the 8th, giving a range of 0.758 inches. Maximum relative humidity was 97 on the 3rd. Minimum relative humidity was 37 on the 1st.
 Rain fell on 17 days.
 An Aurora was observed on 1 night.
 Lunar halo on 1 night.
 Thunderstorms on 5 days, and lightning without thunder on 2 days.

ABSTRACT FOR THE MONTH OF JULY, 1880.

HOURS	TEMPERATURE		WIND		HUMIDITY		PRESSURE		STATE OF SKY		REMARKS	
	Max	Min	Dir	Vel	Rel	Abs	Bar	Therm	Clouds	Wind	Temp	Other
1	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
2	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
3	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
4	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
5	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
6	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
7	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
8	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
9	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
10	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
11	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
12	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
13	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
14	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
15	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
16	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
17	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
18	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
19	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
20	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
21	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
22	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
23	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	
24	84.0	70.0	SE	10	75	65	30.00	78	100	100	100	

ANALYSIS OF WIND RECORD.

Direction	Force	Frequency	Percentage
SE	10	24	100
Other	Other	0	0
Total	Force	Frequency	Percentage
	10	24	100
	Other	0	0
	Total	24	100

Meteorological Observations, McGill College Observatory, Montreal, Canada, Height above sea level, 187 feet. C. H. McLEOD, Superintendent.

ABSTRACT FOR THE MONTH OF JUNE, 1890.

DAY.	THERMOMETER.				*BAROMETER.						† Mean pressure of vapour.	‡ Mean relative humidity.	Dew point.	WIND.		SKY Clouded IN TENTHS.			Per cent of possible bright sunshine.	Rainfall in inches.	Snowfall in inches.	Rain and snow melted.	DAY.
	Mean.	Max.	Min.	Range.	Mean.	\$Max.	\$Min.	\$Range.	Mean velocity in miles per hour.	General direction.				Mean.	Max.	Min.							
SUNDAY..... 1	57.18	67.0	58.3	18.7	30.0358	30.092	30.074	0.118	2172	46.2	36.3	N.W.	19.9	3.2	8	0	0	100	.....	.....	.....	1
2	58.93	65.9	47.4	18.5	30.0373	30.172	30.026	0.146	2155	43.5	36.3	N.W.	17.8	3.2	8	0	0	84	.....	.....	.....	2
3	55.77	66.7	52.4	14.3	29.9608	29.991	29.870	0.121	4293	96.0	54.5	E.	4.0	6.7	10	0	0	56	.....	.....	.....	3
4	60.38	66.7	55.2	11.5	29.9600	29.931	29.869	0.092	4988	94.7	58.8	N.E.	7.2	10.0	10	0	0	0.89	.....	.....	.....	4
5	64.05	72.3	61.3	11.0	29.7978	29.916	29.640	0.276	5540	90.2	61.8	N.E.	5.0	10.0	10	0	0	0.22	.....	.....	.....	5
6	58.65	67.8	46.8	21.0	29.7085	30.070	29.632	0.438	3640	71.5	49.2	S.W.	4.4	10.0	10	0	0	0.05	.....	.....	.....	6
7	59.4	66.4	49.8	18.6	30.1085	30.257	30.033	0.224	2415	48.8	39.2	W.	20.2	9.5	10	0	0	67	Inapp.	.....	.....	7
8	62.47	71.0	54.4	16.6	30.1182	30.270	30.077	0.193	3518	48.2	48.2	W.	18.3	4.8	10	0	0	74	.....	.....	.....	8
9	66.93	81.0	57.3	23.7	29.8353	29.974	29.707	0.167	5305	72.8	60.7	S.W.	8.4	6.3	10	0	0	60	Inapp.	9
10	57.93	66.2	50.4	16.5	29.8472	29.880	29.818	0.062	4175	86.7	53.7	S.W.	13.4	9.2	10	0	0	76	.....	.....	.....	10
11	55.02	66.2	50.4	15.8	29.8052	29.874	29.850	0.074	4018	82.3	53.0	E.	14.0	10.0	10	0	0	0.25	.....	.....	.....	11
12	50.80	63.0	52.4	10.6	29.9502	30.040	29.881	0.159	3903	86.2	52.5	N.E.	7.7	10.0	10	0	0	0.25	.....	.....	.....	12
13	68.35	74.0	53.7	20.3	30.1445	30.196	30.060	0.136	5053	73.7	59.2	N.E.	16.2	9.8	10	0	0	0.08	.....	.....	.....	13
14	71.32	79.0	63.8	25.2	29.9087	30.081	29.741	0.340	5897	60.3	63.3	S.W.	18.3	8.0	10	0	0	55	.....	.....	.....	14
15	70.58	80.0	63.0	17.0	29.7200	29.779	29.692	0.087	5178	69.8	59.7	S.W.	6.5	5.2	10	0	0	69	.....	.....	.....	15
16	61.35	69.0	58.4	10.6	29.8880	30.105	30.010	0.303	3323	61.7	47.2	N.W.	20.6	4.2	10	0	0	82	.....	.....	.....	16
17	63.68	72.5	58.4	14.1	29.8880	30.105	30.010	0.155	3323	61.7	47.2	N.W.	11.7	4.7	10	0	0	48	.....	.....	.....	17
18	68.03	79.4	57.6	21.8	29.8910	30.002	29.824	0.178	4177	61.5	53.5	S.W.	1.8	1.8	6	0	0	100	.....	.....	.....	18
19	68.03	79.4	57.6	21.8	29.8910	30.002	29.824	0.178	4177	61.5	53.5	S.W.	1.8	1.8	6	0	0	97	.....	.....	.....	19
20	68.03	79.4	57.6	21.8	29.8910	30.002	29.824	0.178	4177	61.5	53.5	S.W.	1.8	1.8	6	0	0	97	.....	.....	.....	20
21	68.03	79.4	57.6	21.8	29.8910	30.002	29.824	0.178	4177	61.5	53.5	S.W.	1.8	1.8	6	0	0	97	.....	.....	.....	21
22	69.35	82.3	58.7	23.6	29.9108	29.943	29.868	0.075	5485	77.2	61.5	N.E.	11.2	6.3	10	1	1	13	Inapp.	22
23	69.22	80.4	62.3	18.1	29.8977	29.917	29.886	0.031	5842	82.3	63.5	S.W.	7.9	8.0	10	1	1	74	.....	.....	.....	23
24	72.65	83.0	62.3	21.3	29.7120	29.757	29.686	0.071	5842	82.3	63.5	S.W.	13.5	8.0	10	2	2	33	.....	.....	.....	24
25	68.92	79.0	59.2	19.8	29.7928	29.838	29.750	0.088	3833	65.7	60.8	W.	21.2	3.2	8	0	0	97	.....	.....	.....	25
26	66.60	75.7	58.3	17.4	29.8532	29.919	29.815	0.104	4058	62.3	51.8	N.W.	16.7	2.5	9	0	0	88	.....	.....	.....	26
27	68.75	77.8	60.1	17.7	29.7912	29.830	29.740	0.084	3940	57.2	52.3	N.E.	11.0	7.3	10	2	2	56	.....	.....	.....	27
28	75.63	85.3	66.2	22.0	29.8697	29.898	29.855	0.043	4757	54.5	57.5	E.	6.2	0.5	3	0	0	100	.....	.....	.....	28
29	64.45	72.88	55.63	17.25	29.9106	.....	.....	0.160	4232	69.7	53.4	S.W.	9.0	0.5	2	0	0	88	.....	.....	.....	29
30	64.46	73.10	55.92	17.17	29.8978	.....	.....	0.155	4225	68.9	53.4	S.W.	6.07	0.5	2	0	0	100	.....	.....	.....	30
16 Yrs. means for & including this mo.	64.45	72.88	55.63	17.25	29.9106	.....	.....	0.160	4232	69.7	53.4	.....	6.07	0.5	2	0	0	57.2	2.72	.....	.....	Sums

ANALYSIS OF WIND RECORD.

Direction.....	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
Miles.....	410	1121	337	404	413	2889	1417	1779	.....
Duration in hrs..	49	126	49	49	44	194	81	111	17
Mean velocity...	8.4	8.9	6.9	8.2	9.4	14.9	17.5	16.0	.....

† Resultant mileage in one hour was 29 on the 9th.
 ‡ Resultant direction, S. 85° W.
 § Total mileage, 8,770.

Note.—The mileage for the first 11 days of the month is for the greatest part taken from the City Hall record, which has been multiplied by 1.25 to reduce it to the mountain anemometer record.

* Barometer readings reduced to sea-level and temperature of 32° Fahr.
 † Observed.
 ‡ Pressure of vapour in inches of mercury.
 § Humidity relative, saturation being 100.
 ¶ Nine years only.

The greatest heat was 85.3 on the 30th; the greatest cold was 40.8 on the 8th, giving a range of temperature of 44.5 degrees. Warmest day was the 30th. Coldest day was the 8th. Highest barometer reading was 30.270 on the 10th; lowest barometer was 29.632 on the 7th, giving a range of 0.638 inches. Maximum relative humidity was 100 on the 4th. Minimum relative humidity was 29 on the 1st.

Rain fell on 14 days.
 Lunar halo on 1 night.
 Fog on 3 days.
 Thunder on 6 days.

ABSTRACT FOR THE MONTH OF JUNE, 1890.

Meteorological Observations, McGill College Observatory, Montreal, Canada, Height above sea level, 187 feet. C. H. McLEOD, Superintendent.

DAY.	THERMOMETER.				*BAROMETER.				WIND.		SKY CLOUDS IN TENTHS.			DAY.			
	Mean.	Max.	Min.	Range.	Mean.	\$Max.	\$Min.	\$Range.	Mean direction.	Mean velocity in miles per hour.	Mean.	Max.	Min.		Per cent of possible bright sunshine.	Rainfall in inches.	Snowfall in inches.	Rain and snow melted.
SUNDAY..... 1	57.18	77.0	58.3	18.7	30.0358	30.092	29.974	.118	N.W.	19.9	3.2	8	0	100	.....	.....	.....
2	58.93	67.0	49.4	17.6	30.0973	30.172	30.026	.146	N.W.	17.8	6.7	10	0	84	.....	.....	.....
3	59.72	65.9	47.4	18.5	29.9068	29.991	29.879	.121	E.	4.0	10.0	10	0	56	.....	.....	.....
4	63.32	60.7	52.4	7.0	29.9000	29.931	29.869	.062	N.E.	7.2	10.0	10	0	00	0.89	.....	.....
5	64.38	60.7	51.1	11.0	29.7878	29.916	29.640	.276	S.E.	5.0	10.0	10	0	00	0.22	.....	.....
6	58.65	72.3	61.2	11.3	29.7685	30.070	29.632	.438	S.W.	4.4	10.0	10	0	07	0.03	.....	.....
7	58.65	67.8	46.8	21.0	30.070	30.070	29.632	.438	S.W.	20.2	9.5	10	0	28	0.03	.....	.....
SUNDAY..... 8	58.78	59.4	40.8	18.6	30.070	30.257	30.033	.224	W.	18.6	4.8	10	0	67	Inapp.	.....	.....
9	62.47	71.0	54.4	16.6	30.1885	30.270	29.951	.319	W.	18.3	8.0	10	0	74	.....	.....	.....
10	66.68	81.6	57.3	24.3	30.1182	30.270	29.951	.319	S.W.	13.4	6.3	10	0	66	.....	.....	.....
11	66.68	81.6	57.3	24.3	29.8353	29.924	29.797	.127	S.W.	13.4	6.3	10	0	76	Inapp.	.....	.....
12	57.03	66.2	52.4	13.8	29.8472	29.880	29.818	.062	E.	14.0	10.0	5	0	00	0.25	.....	.....
13	57.03	66.2	52.4	13.8	29.8302	29.874	29.850	.024	E.	10.0	10.0	10	0	02	0.08	.....	.....
14	56.80	69.0	52.4	16.6	29.9502	30.040	29.881	.159	N.E.	16.2	9.8	10	0	02	.....	.....	.....
SUNDAY..... 15	68.35	74.0	53.7	20.3	30.070	30.166	30.060	.106	N.E.	5.0	8.2	10	0	63	.....	.....	.....
16	68.35	74.0	53.7	20.3	30.1445	30.081	29.741	.360	S.W.	6.5	5.2	10	0	55	.....	.....	.....
17	71.32	80.0	64.8	15.2	29.9687	30.081	29.741	.360	S.W.	15.4	8.2	10	0	69	.....	.....	.....
18	70.58	80.0	64.8	15.2	29.7290	29.779	29.692	.087	N.	20.6	4.2	10	0	82	.....	.....	.....
19	61.35	66.0	58.2	7.8	29.9388	30.105	29.802	.303	N.	12.8	4.7	10	0	48	.....	.....	.....
20	63.68	72.5	58.2	14.4	30.0880	30.105	29.802	.303	S.W.	11.7	1.8	10	0	100	.....	.....	.....
21	68.03	79.4	57.6	21.8	29.8910	30.002	29.824	.178	S.W.	15.2	1.8	6	0	97	.....	.....	.....
SUNDAY..... 22	70.0	79.0	58.7	20.3	30.070	30.166	30.060	.106	N.E.	11.2	11.2	10	0	13	Inapp.	.....	.....
23	69.35	83.3	62.3	21.0	29.9108	29.943	29.808	.135	S.W.	7.9	6.0	10	1	74	0.32	.....	.....
24	69.22	80.4	62.3	18.1	29.917	29.917	29.808	.109	S.W.	8.3	10.0	10	1	33	0.49	.....	.....
25	72.65	82.0	62.3	19.8	29.7120	29.837	29.683	.154	W.	13.5	3.2	8	0	01	.....	.....	.....
26	68.92	79.0	59.2	19.8	29.7028	29.837	29.683	.154	N.W.	16.7	2.5	9	0	97	0.01	.....	.....
27	66.60	75.7	58.3	17.4	29.8332	29.833	29.750	.083	N.W.	16.7	2.5	9	0	88	.....	.....	.....
28	68.75	77.8	60.1	17.7	29.8332	29.833	29.750	.083	N.W.	11.0	7.3	3	0	56	.....	.....	.....
SUNDAY..... 29	75.63	85.3	66.2	19.1	29.8697	29.898	29.835	.063	S.W.	6.5	0.5	2	0	88	.....	.....	.....
30	75.63	85.3	66.2	19.1	29.8697	29.898	29.835	.063	S.W.	9.0	0.5	2	0	100	.....	.....	.....
Means	64.45	72.88	55.63	17.25	29.9106	.....	.....	.160	.....	69.7	53.4	.....	.....	57.2	2.72	.....	.....
16 yrs. means for & including this mo.	64.46	73.10	55.92	17.17	29.8978	.....	.....	.155	.....	68.9	53.4	.....	.....	55.2	3.16	.....	.....

ANALYSIS OF WIND RECORD.

Direction.....	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
Miles.....	410	1121	337	404	413	2889	1417	1779	.....
Duration in hrs..	49	126	49	49	44	194	81	111	17
Mean velocity...	8.4	8.9	6.9	8.2	9.4	14.9	17.5	16.0	.....

(†) Greatest mileage in one hour was 29 on the 9th.
 Resultant mileage, 3,315
 Resultant direction, S. 85° W.
 Total mileage, 8,770.

* Barometer readings reduced to sea-level and temperature of 32° Fahr.
 † Observed.
 ‡ Pressure of vapour in inches of mercury.
 § Humidity relative, saturation being 100.
 ¶ Nine years only.
 The greatest heat was 85.3 on the 30th; the greatest cold was 40.8 on the 8th, giving a range of temperature of 44.5 degrees. Warmest month is for the greatest part taken from the City Hall record, which has been multiplied by 1.25 to reduce it to the mountain anemometer record.
 †† 0.638 inches. Maximum relative humidity was 100 on the 4th. Minimum relative humidity was 29 on the 1st.
 ††† Rain fell on 14 days.
 †††† Lunar halo on 1 night.
 ††††† Fog on 3 days.
 †††††† Thunder on 6 days.

Meteorological Observations, McGill College Observatory, Montreal, Canada, Height above sea level, 187 feet. C. H. McLEOD, Superintendent.

ABSTRACT FOR THE MONTH OF JULY, 1890.

DAY.	THERMOMETER.				BAROMETER.				WIND.				SKY (Clouded in TENS).				DAY.
	Mean.	Max.	Min.	Range.	Mean.	Max.	Min.	Range.	General direction.	Mean velocity in miles per hour.	Mean.	Max.	Min.	Per cent of possible bright sunshine.	Rainfall in inches.	Snowfall in inches.		Rain and snow melted.
1	76.45	87.1	65.2	21.9	29.9762	29.931	29.813	.118	S.E.	9.1	5.2	10	0	91	0.01	.....	.....
2	71.6	81.0	68.5	12.5	29.9753	29.810	29.693	.117	S.W.	17.2	8.9	10	0	15	0.02	.....	.....
3	71.37	81.0	64.1	16.9	29.9642	29.672	29.606	.066	S.W.	10.7	8.3	10	0	42	0.03	.....	.....
4	70.83	81.0	60.3	20.7	29.9702	29.733	29.733	.048	S.W.	14.5	7.5	10	0	28	Inapp.	.....	.....
5	69.93	81.2	50.5	30.7	29.9153	30.004	29.685	.256	S.W.	17.7	2.3	10	0	60	.....	.....	.....
SUNDAY..... 6	68.33	77.2	57.3	19.9	29.9522	30.047	29.858	.189	S.W.	14.0	3.3	10	0	67	0.01	.....	.....
7	68.33	88.0	62.3	25.7	29.9522	30.047	29.501	.535	S.W.	7.0	9.0	10	0	25	0.06	.....	.....
8	74.78	88.6	65.3	23.3	29.9522	30.047	29.501	.638	S.W.	22.9	9.5	10	4	40	0.10	.....	.....
9	74.78	88.6	65.3	23.3	29.9522	30.047	29.501	.638	S.W.	22.9	9.5	10	4	40	0.10	.....	.....
10	83.52	97.2	49.4	47.8	29.9153	30.148	30.011	.137	S.W.	20.9	4.2	10	0	76	0.03	.....	.....
11	83.52	97.2	49.4	47.8	29.9153	30.148	30.011	.137	S.W.	20.9	4.2	10	0	76	0.03	.....	.....
12	69.32	81.0	55.0	26.0	29.9153	30.148	30.128	.336	S.W.	5.4	5.8	10	0	58	.....	.....	.....
SUNDAY..... 13	82.5	62.4	20.1	62.4	29.9307	29.976	29.880	.096	S.W.	10.1	3.3	10	0	97	.....	.....	.....
14	76.24	86.5	68.2	18.3	29.9307	29.976	29.880	.096	S.W.	10.8	6.5	10	0	79	.....	.....	.....
15	76.24	86.5	68.2	18.3	29.9307	29.976	29.880	.096	S.W.	10.8	6.5	10	0	79	.....	.....	.....
16	73.52	81.9	65.9	16.0	29.9307	29.976	29.880	.096	S.W.	13.3	3.7	10	0	80	0.54	.....	.....
17	63.82	72.0	57.0	15.0	29.9307	29.976	29.880	.096	S.W.	9.7	10.0	10	0	95	0.13	.....	.....
18	63.82	72.0	57.0	15.0	29.9307	29.976	29.880	.096	S.W.	9.7	10.0	10	0	95	0.13	.....	.....
19	57.20	65.1	52.9	12.2	29.9307	29.976	29.880	.096	S.W.	13.5	3.5	10	0	99	Inapp.	.....	.....
SUNDAY..... 20	61.1	67.6	49.8	17.8	29.9307	29.976	29.880	.096	S.W.	10.1	7.7	10	0	24	0.33	.....	.....
21	65.85	70.8	54.0	16.8	29.9307	29.976	29.880	.096	S.W.	10.1	7.7	10	0	48	Inapp.	.....	.....
22	65.85	70.8	54.0	16.8	29.9307	29.976	29.880	.096	S.W.	10.1	7.7	10	0	48	Inapp.	.....	.....
23	67.02	75.7	50.5	25.2	29.9307	29.976	29.880	.096	S.W.	5.4	4.8	10	0	69	.....	.....	.....
24	66.35	79.7	60.3	19.4	29.9307	29.976	29.880	.096	S.W.	7.3	3.8	10	0	94	.....	.....	.....
25	66.35	79.7	60.3	19.4	29.9307	29.976	29.880	.096	S.W.	7.3	3.8	10	0	94	.....	.....	.....
26	72.37	82.0	65.3	17.7	29.9307	29.976	29.880	.096	S.W.	15.2	8.3	10	0	18	0.02	.....	.....
SUNDAY..... 27	80.0	61.2	18.8	61.2	29.9307	29.976	29.880	.096	S.W.	14.9	0.7	10	2	00	0.28	.....	.....
28	74.45	84.1	66.1	18.0	29.9307	29.976	29.880	.096	S.W.	14.7	1.3	10	0	100	.....	.....	.....
29	74.45	84.1	66.1	18.0	29.9307	29.976	29.880	.096	S.W.	14.7	1.3	10	0	100	.....	.....	.....
30	75.43	86.8	66.7	19.1	29.9307	29.976	29.880	.096	S.W.	11.2	2.5	9	0	89	.....	.....	.....
31	72.87	80.9	67.9	13.0	29.9307	29.976	29.880	.096	S.W.	19.0	7.0	10	1	40	0.58	.....	.....
Means	68.57	77.67	60.15	17.52	29.9553	30.047	29.880	.143	.....	12.6	5.94	10	0	58.4	2.78	.....	.....
16 yrs. means for & including this mo.	68.99	77.36	60.96	16.40	29.8841	.....	.....	.5005	.....	69.9	5.45	.....	.....	59.1	4.16	.....	.....

ANALYSIS OF WIND RECORD.

Direction.....	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
Miles.....	376	87	.....	985	1748	4490	1145	575	.....
Duration in hrs..	30	17	.....	86	151	393	92	60	.....
Mean velocity...	12.5	5.1	.....	11.5	11.6	14.8	12.4	9.6	.....

Greatest mileage in one hour was 82 on the 31st.
 Resultant direction, S. 39° W.
 Total mileage, 9,406.

Average mileage, 12.64.

*Barometer readings reduced to sea-level and 0.758 inches. Maximum relative humidity was 97 on the 3rd. Minimum relative humidity was 37 on the 1st.
 † Pressure of vapour in inches of mercury.
 ‡ Humidity relative, saturation being 100.
 § Nine years only.
 The greatest heat was 88.6 on the 8th; the greatest cold was 49.4 on the 10th, giving a range of temperature of 39.2 degrees. Warmest day was the 1st. Coldest day was the 19th. Highest barometer reading was 30.259 on the 11th; lowest barometer was 29.501 on the 8th, giving a range of

Rain fell on 17 days.
 An Aurora was observed on 1 night.
 Lunar halo on 1 night.
 Thunderstorms on 5 days, and lightning without thunder on 2 days.

CIRCULAR PROSPECTUS.

POLYTECHNIC HALL ASSOCIATION.

Many attempts have heretofore been made in Ottawa to erect a Hall, of a size and form and with accommodation suitable for public purposes, all of which have proved failures, chiefly because of the discordant elements which constituted our Society. At length however, urged on by the dissatisfaction, loudly and openly expressed, at the present unsuitableness of our public rooms, and stimulated by a knowledge of the existence and beneficial results of adequate Assembly Halls in many of our sister cities, a scheme for successfully relieving our wants in this direction, has suggested itself to a few individuals of this community.

It is proposed to organize a company called the "POLYTECHNIC HALL ASSOCIATION OF OTTAWA." The object of this incorporated Joint Stock Company, (Limited), to be the erection and maintenance of a Building devoted to public purposes and containing a large Hall, capable of seating at least twelve hundred persons.

The Shares of Stock in the Association to consist of 20,000 shares of \$1.00 (one dollar) each, and at all meetings and elections, votes to be given one for each share of stock held:—except that no single member shall cast, exclusive of proxies, more than one third of the entire member of votes registered in the books of the Company.

As a measure of prudence in this undertaking, it is intended to secure the cooperation of three existent Societies, viz:—The Literary and Scientific Society, the Art Association and the Choral Society; each now occupying a separate and distinct building, and each requiring for its public lectures, exhibitions or performances a specially constructed Hall of larger dimensions than any now procurable.

It is proposed to purchase the building known as the Orange Hall, and the adjoining vacant lot, and by further building and alteration to produce an edifice to contain two large rooms for each of the three above named or other societies, (one on the ground floor, and the other in the basement,) and a Principal or Main Hall extending over the full lot of 66 ft. x 99 ft. to be used for the Meetings of these Societies, and Public Meetings in general with certain restrictions and at certain fixed rent charges.

It is deemed advisable to secure these societies as tenants of the Company, and on their agreeing to become such the Building will be erected in such a manner as best to suit the requirements of each and all of them.

This new undertaking promises advantages of such a character and degree to the community as to entitle it to the countenance and warm support of every enlightened citizen of Ottawa.

OTTAWA, March, 1882.

Wichitka
City 79

RÉDUCTIONS SUR PRIX DE TRANSPORT

Consenties aux Souscripteurs du **CONGRÈS INTERNATIONAL DES AMÉRICANISTES**

Session de Paris (14 octobre 1890)

Monsieur et honoré collègue,

J'ai l'honneur de porter à votre connaissance que nous avons pu obtenir pour les adhérents du Congrès international des Américanistes les avantages suivants :

COMPAGNIES DE BATEAUX A VAPEUR

(Sur les billets simples et ceux d'aller et retour déjà réduits)

Lignes du Brésil et de la Plata : les *Messageries maritimes* fixeront ultérieurement leurs réductions ; les *Chargeurs réunis* feront une différence de 25 0/0.

Lignes des Antilles et de l'Amérique centrale : la *Compagnie générale transatlantique* et le *Royal Mail S. P. C.* feront une différence de 10 0/0 au moins.

Lignes de Cuba, du Mexique et de New-York : la *Compagnie générale transatlantique* fera une différence de 10 0/0 au moins.

Les réductions seront faites à Paris seulement et sur le visa du trésorier du Congrès.

COMPAGNIES DE CHEMINS DE FER FRANÇAIS

La *Compagnie du Nord* accorde moitié prix du parcours sur ses lignes. Les souscripteurs du Congrès devront prévenir avant le 30 septembre le trésorier, M. C. Aubry, qui leur fera tenir en dû temps les billets nécessaires.

Les billets d'aller et retour délivrés de gare à gare, réduits de 25 0/0, sur le réseau de la *Compagnie de l'Est*, pris du samedi 11 au mardi 14 octobre inclusivement, seront valables jusqu'au 25 octobre inclusivement, et les coupons de retour devront être visés par le trésorier du Congrès avant le 23 octobre.

En vous priant de vouloir bien communiquer cet avis à nos honorables collaborateurs, ainsi qu'à toutes personnes intéressées aux études américaines, je vous prie, Monsieur et honoré collègue, d'agréer l'assurance de ma considération la plus distinguée.

LE SECRÉTAIRE GÉNÉRAL DU COMITÉ D'ORGANISATION,

DÉSIRÉ PECTOR.

184, boulevard Saint-Germain.

RÉDUCTIONS SUR PRIX DE TRANSPORT

Consenties aux Souscripteurs du CONGRÈS INTERNATIONAL DES AMÉRICANISTES

Séance de Paris (14 octobre 1890)

Monsieur et honoré collègue,

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LE SECRÉTAIRE GÉNÉRAL DU COMITÉ D'ORGANISATION

DÉSIRÉ PECTOR.

184, boulevard Saint-Germain.

*Copy
Ch. H. H. H.*

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RULES OF NOMENCLATURE

AS AUTHORIZED TO BE PUBLISHED BY

THE ENTOMOLOGICAL CLUB

OF THE

AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE.

Great diversity of practise by American Entomologists led the Entomological Club of the A. A. A. S. to appoint a Committee to confer with the leading entomologists of the country upon the principles that should guide entomological nomenclature, and see if some general agreement were possible. Although some of the Committee thought it undesirable that entomologists should take any action apart from the entire body of naturalists, this objection was practically overruled by the Club, and at its last meeting, in Buffalo, the Committee reported a set of rules, marking certain of them "divided opinion" where it seemed improbable that further consultation would result in closer accord. The Club accepted the Report and ordered the rules to be printed as reported and amended at the time, with such annotations as the Committee might adopt. As the members of the Committee have had no opportunity for personal consultation, it has been impracticable sooner to issue the report, herewith submitted to the Club.

For the Committee:—

SAMUEL H. SCUDDER,

Chairman.

Cambridge, July 3, 1877.

I. The binominal system as originated by Linnæus is the only one to be recognized. The use of a third word, however, connected with the second by a hyphen, as is common and desirable in the case of gall-insects, e. g. *Cynips quercus-palustris*, is not to be considered as an infraction of this rule. [Adopted.]

[In some cases, as in the names of gall-insects, it has become the custom to indicate the plant upon which the gall occurs by combining the name of the plant with the specific name of the insect. An attempt has been made to discard such names as trinominal, but in these cases the combined specific name should be looked upon as one word.]

II. Where a specific name has been generally adopted during a period of twenty years, such name shall not be changed for one of prior date. [Divided opinion.]

[All agree that too much prominence cannot be given to the rule adopted by the British Association in 1865, to the effect "that the permanency of names, and the convenience of their practical application are the two chief requisites in any code of rules for scientific nomenclature"; and that the law of priority was originally established only for the purpose of giving stability to nomenclature. With regard to the direct application of the law of priority, different views are held.

I. On the one side it is urged that, when it was proposed, the resuscitation of long forgotten, or of doubtfully valid names had hardly then commenced, and the framers of the law did not foresee the inconvenience that has lately arisen from its too rigid application; and since, instead of giving stability, it has further unsettled, and in some orders almost completely changed the nomenclature, there seems to be no escape from the difficulty we now labor under, except by the adoption of the above rule. Some such limitation has been proposed by such authorities as Westwood and Guenée, The former was on the committee which prepared the Revised Rules of the British Association, and with Stainton and Wallace, the other entomologists on that committee, now sees the necessity of some modification of the priority rule. A rigorous application of the law to those authors who did not act in accordance with it, must needs lead to confusion. It has in fact led to a great waste of time in endeavoring to ascertain the dates of publication of different works, and in some instances of different parts of the same work. There is no advantage in constantly changing names long accepted by universal agreement for those obscurely used in the infancy of the science. In every realm of progressive knowledge, names and words have become obsolete.

It is also claimed by the same parties that authors anterior to the 12th edition of Linnæus's *Systema Naturæ*, should be ruled out, and they reason that on the same grounds, all names which attract so little attention, or are founded on such poor definitions, that they remain unknown or unaccepted during twenty years, should be ruled out of accepted nomenclature.

They further remark that there is a large body of entomologists who believe that names of erroneous position should be suppressed in favor of later names given to the insect by correctly defining it in its proper place, as when the Byrrhid genus *Amphicyrta* was described by Mannerheim as a Tenebrionid under the name *Eucyphus*, and the genus *Amphizoa* also as a Tenebrionid (*Dysmathes*); or when *Phylloxera vastatrix* was described under the genus *Pemphigus* by Fitch. This last they cite in illustration of the difficulty and inconvenience of always applying the strict rule of priority. The insect that has been universally referred to in all parts of the world and in thousands of publications as *Phylloxera vastatrix* Planchon, is polymorphic. Fitch in 1856 described one of the apterous forms as *Pemphigus vitifoliae*. On the same apterous form Dr. Shimer in 1867 erected a new genus, *Daktulosphæra*; in the spring of the following year Westwood called it *Peritymbia vitisana*: a few months later Prof. Planchon named it *Rhizophis vastatrix*, and finally in September, 1868, the last-named author, by obtaining the winged form, was able to refer it to the already well defined genus *Phylloxera*. *Phylloxera vastatrix* is, consequently, though the latest name given, the one accepted by common consent; yet under the rigid application of the priority rule, Fitch's name would have to replace it. The adoption of the twenty-year rule

would fix Planchon's name in our nomenclature, if, as it doubtless will, the name prevails up to the twentieth year, and thus preclude future systematists from repudiating the judgment of the generation during which the species was first defined. Finally, in addition to the above rule, they recommend all entomologists, in the language of our president, to *resist innovation*, since it is by no means true that the latest is always the best; and where, as between a well-known and long employed, and a resuscitated name, the student has not time to make the necessary critical and bibliographical studies to properly judge of the claims of the recent proposition, it is safest and will tend most to stability to adhere to the well known name.

II. On the other side it is urged that the proposal of this rule some years ago met with very little acceptance, and that it would be very unwise to adopt a rule which is certain not to be accepted at present by a large body of naturalists. They also call attention to the vagueness of the term "general adoption," and the confusion which would follow from its use. It is claimed that zoologists of the present day should have regard to the future as well as the present, and that the only stability for nomenclature lies in the rigid application of the law of priority, so far as the steps are sure. Every change now made on sufficient ground is a step toward the desired permanence. They further claim that since binomial nomenclature was first consistently applied in the 10th edition of the *Systema Naturæ* of Linnæus, this is the only epoch from which it is reasonable to date the commencement of the current form of nomenclature. This view, they believe, now prevails throughout the world. It is not thought by them that names of erroneous position should be suppressed, for although such a rule would be desirable in extreme cases, it would be superfluous and obnoxious in others, and where differences of opinion concerning the systematic position of an animal is held by different experts, unnecessary confusion would result. Finally, they recommend entomologists to accept no innovation or variation hastily, but to be ready, in a scientific spirit, to adopt any and every newly proposed rule or modification of present rules, which they believe most in consonance with the progress of science and its present and prospective needs.]

III. The name placed after a genus should be that of the author who established the genus in the sense in which it is actually used, but the name of the author who first proposed the term should be cited in brackets. [Adopted.]

[Many of the generic terms in our nomenclature are used to express divisions larger or smaller than when originally proposed; and if an author, in defining a genus, adopts an old name, but gives it a modified meaning, he should be considered *pro tanto* authority for the name.]

IV. No generic or specific names should be acknowledged which have not been printed in a published work. [Adopted.]

[It is not the intention of this rule to forbid the adoption of manuscript names, but to date their claim to acknowledgment from such adoption.]

A natural history work should be considered as published only when it has been printed in manifold, and has either been placed on sale or distributed in considerable numbers (not less than one hundred copies) to scientific societies publishing transactions, or to naturalists specially interested in the department under treatment in the work. It should therefore be procurable on timely application, either by purchase, gift or exchange.

(This definition will exclude lists of objects intended for sale, which are to be viewed simply as advertisements; and also preliminary schemes of arrangement, issued for obtaining scientific criticism and advice; these must be regarded as manifold copies of letters and not as true publications. [Concerning the desirability of including this paragraph the Committee is of **divided opinion**].)

Printing in an ephemeral sheet which does not declare the promulgation of pure or applied science to be its principal aim, has no value. From the difficulty of publication in former years, however, certain marked exceptions (such as the papers of Dr. Harris in the "New England Farmer") may be allowed; but in the nature of the case similar exceptions can never again occur.]

Rules Nomenclature
1847

V. A generic name when once established should never be canceled in any subsequent subdivision of the group, but retained in a restricted sense for one of the constituent portions of the original genus. [**Adopted.**]

[This is but a reiteration of one of the British Association Rules.]

VI. In constructing family names they should terminate in *idæ* [**adopted**], [subfamily names in *inæ*, and tribal names in *es*. — **Divided opinion**].

[The great advantage, in facilitating study, of uniform terminology in these higher divisions, has already led to the very general adoption of the family termination above indicated. The departure from the custom brings no advantage, but only disadvantage, to the science.]

VII. The tribe should occupy an intermediate place between the subfamily and genus. [**Adopted.**]

VIII. The authority for the species and not for the generic combination should follow the name of an insect. [**Divided opinion.**]

[In general, when an authority is appended to a full name (generic and specific) it should be accompanied with such bibliographical references as will indicate clearly the object intended.]

IX. The authority, when applying to both the generic and specific names, should follow without a comma; when not applying to the generic name also, it should follow in parenthesis, except where the whole name is already in parenthesis, when a comma may be used for the same purpose. [**Action deferred.**]

X. The proposition of a genus, by simple designation of a type, is to be greatly deprecated. [**Adopted.**]

[All new names should be accompanied by ample definitions that will permit no doubt as to the species intended, or as to the characters of the genus proposed.]

XI. No description should be made from a figure. [**Adopted.**]

XII. The number of individuals upon which either a specific or generic diagnosis is based should always be stated. [**Adopted.**]

(CIRCULAR NO. 1.)

To the State Archaeological Association of Indiana.

(Sign Name Here.).....

(Post Office.).....

(Township.).....

(County.).....

Would respectfully report as his observation in.....Township
.....County, the accompanying information for the use
of your Association.

(Date).....187.....

Circular of Information.

To the Students and Friends of Archaeology in Indiana:

The accompanying inquiries in reference to Archaeology we send you, with the request that you fill up the blank spaces following each question with any information you may possess, in order to preserve in print for future use all the facts in possession of the great mass of people throughout the State. These Circulars when filled up should be returned to the President, who will present them to this Association at its first annual meeting for publication, to the end that the material for a complete **Archæological History of Indiana** may be accumulated for the future Historian. It is also hoped you will take an interest with us in this important work, and however small your observation may have been in this particular field of inquiry, you will note it on this blank and forward to the President of this Association, particularly as your information may not be known to any one else, and may lead to other and more valuable discoveries. It is also requested that you make diagrams and illustrations of any earthworks and mounds in your vicinity, as well as a sketch and description of any relic you may think of special interest to Archaeology.


Your correspondence is solicited, and you will oblige the officers of the Association by replying to this Circular, giving also the address of others who may take an interest in Archaeology, that they may be invited to attend its next annual meeting.


DANIEL HOUGH, President,
INDIANAPOLIS, IND.

L. B. CASE, Secretary,
RICHMOND, IND.

1. *Are there any artificial mounds or pre-historic ruins or tumuli in your vicinity? (Please state their number, size, shape and situation in County, Township and Section, if simply mounds.)*
2. *Are they temple mounds, pyramids or mounds of observation, or sacrificial mounds with altars, or are they emblematical of some living object?*
3. *Are they isolated or surrounded by other works?*
4. *Are there any artificial elevations or ridges, if so were they apparently designed for fortifications, village enclosures, sacred enclosures, or were they probably for hunting purposes, and your reason for your decision?*
5. *What evidences of system in the situation can be found?*
6. *Are there any stone circles, walls, columns, wells or other structures in your vicinity?*
7. *Are there any natural elevations or hills that have been found to have been used for habitation, burial places or fortifications, &c.?*
8. *What evidence have you of a dense or sparse population?*
9. *Do you know of any remains or antiquities that have not been described, if so where?*
10. *Have you any evidence of successive epochs of occupancy of Indiana by the Mound Builders?*

1. *What pre-historic human remains have been found in your vicinity, and what evidence have you as to the date of their burial?*
2. *Were the remains found buried in an artificial or a natural elevation?*
3. *Did the remains indicate a burial in a prostrate or sitting position, or being thrown in confused heaps?*
4. *Does there appear to have been more than one time of burial in the mound?*
5. *What relics were found with the skeletons?*
6. *In what position were the relics relative to the body?*
7. *Were any fragments of the skeletons of domesticated animals found, if so what species?*
8. *What surrounded these remains; clay, sand, gravel, loam or ashes?*
9. *Was there anything found resembling cloth?*
10. *What remains of wood were left in the vault?*
11. *Is there any evidence of sculpture or inscription, or other work of art?*
12. *What shape do the burial vaults assume?*

1. What relics are found in your vicinity of stone, flint or slate, adapted for husbandry and domestic use? (Such relics are usually knives, hatchets, axes, adzes, fleshers, chisels, gouges, hoes, spades, mortars, pestles, pipes, needles, rolling pins, tubes, &c.)  Please state the kind of stone used.

2. What relics are found in your vicinity adapted for hunting or war? (Such relics are usually made from flint, silix, obsidian, into arrow points, spear heads, javelins, tomahawks, sling-shot, &c.)  Please state the kind of material used.

3. What relics are found in your vicinity adapted for manufacturing? (Such articles are usually made from native iron, copper, stone, slate, cement or clay, and are the plummet, pendants or weights, hammers, weavers' shuttles and gauges, spinners and stone implements, with reed or cane imbedded as though broken in drilling?)

4. What relics adapted for playing games are found? (Such articles are wheel-shaped stone, discs, sometimes perforated?)

5. What relics are found supposed to have been used as ornaments? (Such articles are usually supposed to be head-pieces, breast plates, totems, rings, bracelets, beads, ornaments of uncertain use, often grooved and perforated, sometimes rudely representing birds, quadrupeds or animals?)

6. Are there any specimens of copper, silver, sea shells, cloth, carved wood, bone or ivory, and the form of same?

7. Are there any articles of pottery, such as vases, jugs or funeral urns, and are they plain or ornamented, if ornamented in what way?

8. Are there any idols or images of animals or the human form?

9. What other relics of uncertain use are found, and the material made from?

10. Is there any place within your knowledge where fragments of pottery, stone or flint would indicate a manufactory?

*Cheltenham
Plymouth*

STATE ARCHÆOLOGICAL ASSOCIATION OF INDIANA.

(CIRCULAR NO. 2.)

Richmond, Indiana, July 10th, 1876.

SIR:

It has been decided that the first annual meeting of the State Archæological Association of Indiana shall be held at the rooms of the State Geologist, in the State House at Indianapolis, on the 17th and 18th of October, 1876, at 10 o'clock A. M., and as this is the last week of the State Fair and Exposition, all who wish to attend may avail themselves of the half-fare rates of the Railroads.

In addition to the regular meetings held at Indianapolis each year, the Constitution provides for an adjourned meeting at some locality of special interest to the Association which will be of great value to the students of Archæology, as there will be collected together those whose observations and investigations have done so much to advance our knowledge of this interesting study.

It is desirable that all who can will attend the meetings of the Association and contribute by carefully prepared papers, with diagrams and illustrations, the result of their observations and investigations. In addition to the regular papers presented much can be learned by a comparison of field notes, for often some of the disputed problems of Archæology are easily explained by the observations of others from different localities. All papers and notes should be left with the Secretary for publication in the Annual Volume of Reports.

One of the features of the meeting will be the display of Relics from different localities, and it is particularly requested that all will bring for exhibition and examination during the meeting such relics of special value as they may have or can procure for the occasion, or plaster casts, photographs, or accurately prepared sketches, in case the specimens cannot be obtained. Arrangements will be made to provide a place of safety for all relics during the term of the meeting.

Article 15 of our Constitution provides for a Museum of Archæology to be located at Indianapolis, where articles may be left on deposit and withdrawn at will of depositor. This it is hoped will induce many of our friends who have rare relics to place them within reach of the student of Archæology for study and comparison. It is also hoped that it will be the means of retaining near the localities where they were originally found a large proportion of the relics of the pre-historic people, for it is known that a very large portion of the relics found in Indiana are sent to Museums as well as private collections in other States and Countries, and nothing of their original locality preserved to identify the ancient people of this State with people of other localities. We hope our friends after a careful consideration will decide to place in our proposed Museum such rare relics as they may have, or a plaster cast of the same.

Indiana is found to be extremely rich in the remains of the Mound Builders, and it is desirable to secure as soon as possible all the facts concerning their origin and ethnical relations, usages and customs, arts, inventions and religious or superstitious rites and belief, before the steady march of improvement and civilization obliterates the remaining traces of their existence.

All persons with papers prepared for the meeting should notify the Secretary of their intention, with the subject named, before the time of the meeting, as all papers will be placed on the programme in the order their announcement is received.

In conclusion we would say, it is only by the united efforts of citizens from all parts of the State that we can expect to accomplish anything, and hope to see a general interest manifested in the efforts of the officers of the Association.

L. B. CASE, Secretary,
RICHMOND, INDIANA.

STATE ARCHAEOLOGICAL ASSOCIATION OF INDIANA

CIRCULAR NO. 21

Richmond, Indiana, July 10th, 1876.

SIR:

It has been decided that the first annual meeting of the State Archaeological Association of Indiana shall be held at the rooms of the State Geologist in the State House at Indianapolis, on the 17th and 18th of October, 1876, at 10 o'clock a. m., and as this is the last week of the State Fair and Exposition, all who wish to attend may avail themselves of the half-price rates of the Fairgrounds.

In addition to the regular meetings held at Indianapolis each year, the Association provides for an adjourned meeting at some locality of special interest to the Association which will be of great value to the students of Archaeology, as there will be collected together those whose observations and investigations have done so much to advance our knowledge of this interesting study.

It is desirable that all who can will attend the meetings of the Association and contribute by carefully prepared papers, with diagrams and illustrations, the results of their observations and investigations. In addition to the regular papers presented much can be learned by a comparison of field notes for often some of the disputed problems of Archaeology are easily explained by the observations of others from different localities. All papers and notes should be left with the Secretary for publication in the Annual Volume of Reports.

One of the features of the meeting will be the display of bottles from different localities, and it is particularly requested that all who bring for exhibition and examination during the meeting such bottles or specimens as they may have or can procure for the occasion or plaster casts of specimens or accurately prepared sketches, in case the specimens cannot be obtained. Arrangements will be made to provide a place of display for all during the term of the meeting.

Article 13 of our Constitution provides for a Museum of Archaeology to be located at Indianapolis where articles may be left on deposit and withdrawn at will or forever. This it is hoped will induce many of our friends who have rare bottles to place them within reach of the student of Archaeology for study and comparison. It is also hoped that it will be the means of retaining near the localities where they were originally found a very large portion of the bottles found in Indiana and sent to other states as well as within the borders of other states and countries, and copies of their original localities preserved to identify the ancient people of this state with those of other localities. We hope our friends who are already considered will desire to place in our proposed Museum such rare relics as they may have or a plaster cast of the same.

Indiana is found to be extremely rich in the remains of the Mound Builders, and it is desirable to secure as soon as possible all the facts concerning their origin and relations, names and customs, etc. in various and religious or superstitious rites and beliefs, before the rapid march of improvement and civilization obscures the remaining traces of their existence.

All persons with papers prepared for the meeting should notify the Secretary of their intention with the subject named before the time of the meeting, as all papers will be placed on the programme in the order their announcement is received.

In conclusion we would say it is only by the united efforts of citizens from all parts of the state that we can expect to accomplish anything and hope to see a general interest manifested in the efforts of the officers of the Association.

L. B. CASE, Secretary.

RICHMOND, INDIANA.