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CONTENTS.

(B)

VOL. 192.

List of Illustrations .......................................................... page v
Advertisement ................................................................. vii
List of Institutions entitled to receive the Philosophical Transactions or Proceedings of the Royal Society ...................................................... ix
Adjudication of Medals for the year 1899 .................................... xvii


II. Studies in the Morphology of Spore-producing Members.—No. IV. The Leptosporangiate Ferns. By F. O. Bower, Sc.D., F.R.S., Regius Professor of Botany in the University of Glasgow ........................................ 29


IV. On Intestinal Absorption, especially on the Absorption of Serum, Peptone, and Glucose. By E. Waymouth Reid, F.R.S., Professor of Physiology in University College, Dundee, St. Andrew's University, N.B. ........... 211
V. The External Features in the Development of Lepidosiren paradoxa, Fitz. By J. Graham Kerr. Communicated by Adam Sedgwick, F.R.S. 299


Index to Volume 353
LIST OF ILLUSTRATIONS.

Plate 1.—Miss M. Dawson on "Nitragin" and the Nodules of Leguminous Plants.

Plates 2 to 7.—Professor F. O. Bower on Studies in the Morphology of Spore-producing Members.—No. IV. The Leptosporangiate Ferns.

Plates 8 to 12.—Mr. J. Graham Kerr on the External Features in the Development of Lepidosiren paradoxa, Fitz.

Plate 13.—Mr. R. C. Punnett on the Formation of the Pelvic Plexus, with especial Reference to the Nervus Collector in the Genus Mustelus.
ADVERTISEMENT.

The Committee appointed by the Royal Society to direct the publication of the Philosophical Transactions take this opportunity to acquaint the public that it fully appears, as well from the Council-books and Journals of the Society as from repeated declarations which have been made in several former Transactions, that the printing of them was always, from time to time, the single act of the respective Secretaries till the Forty-seventh Volume; the Society, as a Body, never interesting themselves any further in their publication than by occasionally recommending the revival of them to some of their Secretaries, when, from the particular circumstances of their affairs, the Transactions had happened for any length of time to be intermitted. And this seems principally to have been done with a view to satisfy the public that their usual meetings were then continued, for the improvement of knowledge and benefit of mankind: the great ends of their first institution by the Royal Charters, and which they have ever since steadily pursued.

But the Society being of late years greatly enlarged, and their communications more numerous, it was thought advisable that a Committee of their members should be appointed to reconsider the papers read before them, and select out of them such as they should judge most proper for publication in the future Transactions; which was accordingly done upon the 26th of March, 1752. And the grounds of their choice are, and will continue to be, the importance and singularity of the subjects, or the advantageous manner of treating them; without pretending to answer for the certainty of the facts, or propriety of the reasonings contained in the several papers so published, which must still rest on the credit or judgment of their respective authors.

It is likewise necessary on this occasion to remark, that it is an established rule of the Society, to which they will always adhere, never to give their opinion, as a Body,
upon any subject, either of Nature or Art, that comes before them. And therefore the thanks, which are frequently proposed from the Chair, to be given to the authors of such papers as are read at their accustomed meetings, or to the persons through whose hands they received them, are to be considered in no other light than as a matter of civility, in return for the respect shown to the Society by those communications. The like also is to be said with regard to the several projects, inventions, and curiosities of various kinds, which are often exhibited to the Society; the authors whereof, or those who exhibit them, frequently take the liberty to report, and even to certify in the public newspapers, that they have met with the highest applause and approbation. And therefore it is hoped that no regard will hereafter be paid to such reports and public notices; which in some instances have been too lightly credited, to the dishonour of the Society.
1900.

List of Institutions entitled to receive the Philosophical Transactions or Proceedings of the Royal Society.

Institutions marked a are entitled to receive Philosophical Transactions, Series A, and Proceedings.

" " b " " " " " " Series B, and Proceedings.

" " AB " " " " " Series A and B, and Proceedings.

" " P " " " Proceedings only.

America (Central).
Mexico.
   p. Sociedad Científica "Antonio Alzate."

America (North). (See United States and Canada.)

America (South).
Buenos Ayres.
   AB. Museo Nacional.
   B. University Library
Cordova.
   AB. Academia Nacional de Ciencias.
Demerara.
   P. Royal Agricultural and Commercial Society, British Guiana.
La Plata.
   B. Museo de la Plata.
Rio de Janeiro.
   P. Observatorio.

Australia.
Adelaide.
   P. Royal Society of South Australia.
Brisbane.
   P. Royal Society of Queensland.
Melbourne.
   P. Observatory.
   P. Royal Society of Victoria.
   AB. University Library.
Sydney.
   P. Australian Museum.
   P. Geological Survey.
   P. Linnean Society of New South Wales.
   AB. Royal Society of New South Wales.
   AB. University Library.

Austria.
Agram.
   P. Jugoslawenska Akademija Znanosti i Umjetnosti.
   P. Societas Historico-Naturalis Croatica.

Austria (continued).
Brünn.
   AB. Naturforschender Verein.
Gratz.
   AB. Naturwissenschaftlicher Verein für Steiermark.
Innsbruck.
   AB. Das Ferdinandum.
   P. Naturwissenschaftlich - Medizinischer Verein.
Prague.
   AB. Königliche Böhmische Gesellschaft der Wissenschaften.
Trieste.
   B. Museo di Storia Naturale.
   P. Società Adriatica di Scienze Naturali.
Vienna.
   P. Anthropologische Gesellschaft.
   AB. Kaiserliche Akademie der Wissenschaften.
   P. K.K. Geographische Gesellschaft.
   AB. K.K. Geologische Reichsanstalt.
   B. K.K. Zoologisch-Botanische Gesellschaft.
   P. Oesterreichische Gesellschaft für Meteorologie.
   A. Von Kuffner'sche Sternwarte.

Belgium.
Brussels.
   B. Académie Royale de Médecine
   AB. Académie Royale des Sciences.
   B. Musée Royal d'Histoire Naturelle de Belgique.
   P. Observatoire Royal.
   P. Société Belge de Géologie, de Paléontologie, et d'Hydrologie.
   P. Société Malacologique de Belgique.
Ghent.
   AB. Université.
Belgium (continued).
Liège.
AB. Société des Sciences.
P. Société Géologique de Belgique.
Louvain.
B. Laboratoire de Microscopie et de Biologie Cellulaire.
AB. Université.

Canada.
Fredericton, N.B.
P. University of New Brunswick.
Halifax, N.S.
P. Nova Scotian Institute of Science.
Hamilton.
P. Hamilton Association.
Montreal.
AB. McGill University.
P. Natural History Society.
Ottawa.
AB. Geological Survey of Canada.
AB. Royal Society of Canada.
St. John, N.B.
P. Natural History Society.
Toronto.
P. Astronomical and Physical Society.
P. Canadian Institute.
AB. University.
Windsor, N.S.
P. King's College Library.

Cape of Good Hope.
A. Observatory.
AB. South African Library.

Ceylon.
Colombo.
B. Museum.

China.
Shanghai.
P. China Branch of the Royal Asiatic Society.

Denmark.
Copenhagen.
AB. Kongelige Danske Videnskabernes Selskab.

Egypt.
Alexandria.
AB. Bibliothèque Municipale.

England and Wales (continued).
Bolton.
P. Public Library.
Bristol.
P. Merchant Venturers' School.
AB. University College.
Cambridge.
AB. Philosophical Society.
P. Union Society.
Cardiff.
AB. University College.
Cooper's Hill.
AB. Royal Indian Engineering College.
Dudley.
P. Dudley and Midland Geological and Scientific Society.
Essex.
P. Essex Field Club.
Falmouth.
P. Royal Cornwall Polytechnic Society.
Greenwich.
A. Royal Observatory.
Kew.
B. Royal Gardens.
Leeds.
P. Philosophical Society.
AB. Yorkshire College.
Liverpool.
AB. Free Public Library.
P. Literary and Philosophical Society.
A. Observatory.
AB. University College.
London.
AB. Admiralty.
P. Anthropological Institute.
AB. Board of Trade (Electrical Standards Laboratory).
AB. British Museum (Nat. Hist.).
AB. Chemical Society.
A. City and Guilds of London Institute.
P. "Electrician," Editor of the.
B. Entomological Society.
AB. Geological Society.
AB. Geological Survey of Great Britain.
P. Geologists' Association.
AB. Guildhall Library.
A. Institution of Civil Engineers.
P. Institution of Electrical Engineers.
A. Institution of Mechanical Engineers.
A. Institution of Naval Architects.
P. Iron and Steel Institute.
AB. King's College.
B. Linnean Society.
AB. London Institution.
England and Wales (continued).

London (continued).

A. Mathematical Society.
p. Meteorological Office.
p. Odontological Society.
p. Physical Society.
p. Quekett Microscopical Club.
B. Royal College of Physicians.
B. Royal College of Surgeons.
p. Royal Engineers (for Libraries abroad, six copies).
A.B. Royal Engineers. Head Quarters Library.
p. Royal Horticultural Society.
p. Royal Institute of British Architects.
A.B. Royal Institution of Great Britain.
B. Royal Medical and Chirurgical Society.
p. Royal Meteorological Society.
p. Royal Microscopical Society.
A.B. Royal United Service Institution.
A.B. Society of Arts.
p. Society of Biblical Archaeology.
p. Standard Weights and Measures Department.
A.B. The Queen’s Library.
A.B. The War Office.
A.B. University College.
b. Zoological Society.
Manchester.
A.B. Free Library.
A.B. Literary and Philosophical Society.
A.B. Owens College.
Netley.
p. Royal Victoria Hospital.
Newcastle.
A.B. Free Library.
p. Society of Chemical Industry (Newcastle Section).
Norwich.
p. Norfolk and Norwich Literary Institution.
Nottingham.
A.B. Free Public Library.

England and Wales (continued).

Oxford.
A.B. Radcliffe Library.
A. Radcliffe Observatory.
Penzance.
Plymouth.
p. Plymouth Institution.
Richmond.
A. “Kew” Observatory.
Salford.
p. Royal Museum and Library.
Stonyhurst.
p. The College.
Swansea.
A.B. Royal Institution.
Woolwich.
A.B. Royal Artillery Library.

Finland.

Helsingfors.
p. Societas pro Fauna et Flora Fennica.
A.B. Société des Sciences.

France.

Bordeaux.
p. Faculté des Sciences.
p. Société de Médecine et de Chirurgie.
Caen.
p. Société Linnéenne de Normandie.
Cherbourg.
Dijon.
Lille.
p. Faculté des Sciences.
Lyons.
A.B. Académie des Sciences, Belles-Lettres et Arts.
A.B. Université.
Marseille.
A.B. Faculté des Sciences.
Montpellier.
A.B. Académie des Sciences et Lettres.
b. Faculté de Médecine.
Nantes.
Paris.
A.B. Académie des Sciences de l'Institut.
France (continued).
Paris (continued).

A. Bureau International des Poids et Mesures.
B. Commission des Annales des Ponts et Chaussées.
C. Conservatoire des Arts et Métiers.
D. Cosmos (M. L'Anné Valette).
E. Dépôt de la Marine.
F. École des Mines.
G. École Normale Supérieure.
H. École Polytechnique.
I. Faculté des Sciences de la Sorbonne.
J. Institut Pasteur.
K. Jardin des Plantes.
L. L'Électricien.
M. L'Observatoire.
N. Revue Scientifique (Mons. H. de Varigny).
O. Société de Biologie.
P. Société d'Encouragement pour l'Industrie Nationale.
Q. Société de Géographie.
R. Société de Physique.
S. Société Entomologique.
T. Société Géologique.
U. Société Mathématique.
V. Société Météorologique de France.

Toulouse.

A. Académie des Sciences.
B. Faculté des Sciences.

Germany (continued).

Emden.

P. Naturforschende Gesellschaft.

Erlangen.

A. Physikalisch-Medicinische Societät.

Frankfurt-am-Main.

A. Senckenbergische Naturforschende Gesellschaft.

P. Zoologische Gesellschaft.

Frankfurt-am-Oder.

P. Naturwissenschaftlicher Verein.

Freiburg-im-Breisgau.

A. Universität.

Giessen.

A. Grossherzogliche Universität.

Görlitz.

P. Naturforschende Gesellschaft.

Göttingen.

A. Königliche Gesellschaft der Wissenschaften.

Halle.

A. Kaiserliche Leopoldino - Carolinische Deutsche Akademie der Naturforscher.

P. Naturwissenschaftlicher Verein für Sachsen und Thüringen.

Hamburg.

P. Naturhistorisches Museum.

A. Naturwissenschaftlicher Verein.

Heidelberg.

P. Naturhistorisch-Medizinischer Verein.

A. Universität.

Jena.

A. Medicinisch-Naturwissenschaftliche Gesellschaft.

Karlsruhe.

A. Grossherzogliche Sternwarte.

P. Technische Hochschule.

Kiel.

P. Naturwissenschaftlicher Verein für Schleswig-Holstein.

A. Astronomische Nachrichten.

A. Universität.

Königsberg.

A. Königliche Physikalisch - Ökonomische Gesellschaft.

Leipzig.

A. Annalen der Physik und Chemie.

A. Königliche Sächsische Gesellschaft der Wissenschaften.

Magdeburg.

P. Naturwissenschaftlicher Verein.

Marburg.

A. Universität.
Germany (continued).
Munich.
AB. Königliche Bayerische Akademie der Wissenschaften.
P. Zeitschrift für Biologie.
Münster.
AB. Königliche Theologische und Philosophische Akademie.
Potsdam.
A. Astrophysikalisches Observatorium.
Rostock.
AB. Universität.
Strasburg.
AB. Universität.
Tübingen.
AB. Universität.
Würzburg.
AB. Physikalisch-Medicinische Gesellschaft.

Greece.
Athens.
A. National Observatory.

Holland. (See Netherlands.)

Hungary.
Budapest.
AB. A Magyar Tudós Társaság. Die Ungarische Akademie der Wissenschaften.
Hermannstadt.
P. Siebenbürgischer Verein für die Naturwissenschaften.
Klausenburg.
AB. Az Erdőlyi Muzeum. Das Siebenbürgische Museum.
Schemnitz.
P. K. Ungarische Berg- und Forst-Akademie.

India.
Bombay.
AB. Elphinstone College.
P. Royal Asiatic Society (Bombay Branch).
Calcutta.
AB. Asiatic Society of Bengal.
AB. Geological Museum.
P. Great Trigonometrical Survey of India.
AB. Indian Museum.
P. The Meteorological Reporter to the Government of India.
Madras.
B. Central Museum.
A. Observatory.
Roorkee.
P. Roorkee College.

Ireland.
Armagh.
A. Observatory.
Belfast.
AB. Queen’s College.
Cork.
P. Philosophical Society.
AB. Queen’s College.
Dublin.
A. Observatory.
AB. National Library of Ireland.
B. Royal College of Surgeons in Ireland.
AB. Royal Dublin Society.
AB. Royal Irish Academy.
Galway.
AB. Queen’s College.

Italy.
Acireale.
P. Accademia di Scienze, Lettere ed Arti.
Bologna.
AB. Accademia delle Scienze dell’ Istituto.
Catania.
AB. Accademia Gioenia di Scienze Naturali.
Florence.
P. Biblioteca Nazionale Centrale.
AB. Museo Botanico.
P. Reale Istituto di Studi Superiori.
Genoa.
P. Società Ligustica di Scienze Naturali e Geografiche.
Milan.
AB. Società Italiana di Scienze Naturali.
Modena.
P. Le Stazioni Sperimentali Agrarie Italiane.
Naples.
P. Società di Naturalisti.
AB. Società Reale, Accademia delle Scienze.
B. Stazione Zoologica (Dr. Dohn).
Padua.
P. University.
Palermo.
A. Circolo Matematico.
AB. Consiglio di Perfezionamento (Società di Scienze Naturali ed Economiche).
A. Reale Osservatorio.
Pisa.
P. Società Toscana di Scienze Naturali.
Rome.
P. Accademia Pontificia de’ Nuovi Lincei.
V. Rassegna delle Scienze Geologiche in Italia.
Italy (continued).
Rome (continued).
A. Reale Ufficio Centrale di Meteorologia e di Geodinamica, Collegio Romano.
AB. Reale Accademia dei Lincei.
P. R. Comitato Geologico d’Italia.
A. Specola Vaticana.
AB. Società Italiana delle Scienze.
Siena.
P. Reale Accademia dei Fisiocritici.

Turin.
P. Laboratorio di Fisiologia.
AB. Reale Accademia delle Scienze.
Venice.
P. Ateneo Veneto.

Japan.
Tokio.
AB. Imperial University.
P. Asiatic Society of Japan.

Java.
Buitenzorg.
P. Jardin Botanique.

Luxembourg.
Luxembourg.
P. Société des Sciences Naturelles.

Malta.
P. Public Library.

Mauritius.
P. Royal Society of Arts and Sciences.

Netherlands.
Amsterdam.
AB. Koninklijke Akademie van Wetenschappen.
P. K. Zoologisch Genootschap ‘Natura Artis Magistra.’
Delft.
P. École Polytechnique.
Haarlem.
AB. Hollandsche Maatschappij der Wetenschappen.
P. Musée Teyler.
Leyden.
AB. University.
Rotterdam.
AB. Bataafsch Genootschap der Proefonder-
AB. Utrecht.
AB. Provinciaal Genootschap van Kunsten en Wetenschappen.

New Zealand.
Wellington.
AB. New Zealand Institute.

Norway.
Bergen.
AB. Bergenske Museum.
Christiania.
AB. Kongelige Norske Frederiks Universitet.
Tromsø.
P. Museum.
Trondhjem.
AB. Kongelige Norske Videnskabers Selskab.

Portugal.
Coimbra.
AB. Universidade.
Lisbon.
AB. Academia Real das Sciencias.
P. Sociedade dos Trabalhos Geologicos de Portugal.
Oporto.
P. Annaes de Sciencias Naturaes.

Russia.
Dorpat.
AB. Université.
Irkutsk.
P. Société Impériale Russe de Géographie
AB. Imperatorsky Kazansky Universitet.
P. Société Physico-Mathématique.
Kharkoff.
P. Section Médicale de la Société des Sciences
AB. Kharkoff.
AB. Lever Public.
B. Société Impériale des Naturalistes.
Odessa.
P. Société des Naturalistes de la Nouvelle-
AB. Pulkowa.
A. Nikolai Haupt-Sternwarte.
St. Petersburg.
AB. Académie Impériale des Sciences.
B. Archives des Sciences Biologiques.
AB. Comité Géologique.
AB. Ministère de la Marine.
A. Observatoire Physique Central.

Scotland.
Aberdeen.
AB. University.
Edinburgh.
P. Geological Society.
P. Royal College of Physicians (Research
Laboratory).
Scotland (continued).
Edinburgh (continued).
  p. Royal Medical Society.
  a. Royal Observatory.
  p. Royal Physical Society.
  a. Royal Society.
Glasgow.
  p. Natural History Society.
  p. Philosophical Society.

Servia.
Belgrade.
  p. Académie Royale de Serbie.

Sicily. (See Italy.)

Spain.
Cadiz.
  a. Instituto y Observatorio de Marina de San Fernando.
Madrid.
  a. Real Academia de Ciencias.

Sweden.
Gottenburg.
Lund.
  a. Universitet.
Stockholm.
  a. Sveriges Geologiska Undersökning.
Upsala.
  a. Universitet.

Switzerland.
Basel.
Bern.
Geneva.
  a. Société de Physique et d'Histoire Naturelle.
  a. Institut National Genevois.
Lausanne.
Neuchâtel.
Zürich.
  a. Das Schweizerische Polytechnikum.
  p. Sternwarte.

Tasmania.
Hobart.
  p. Royal Society of Tasmania.

United States.
Albany.
  a. New York State Library.
Annapolis.
  a. Naval Academy.
Austin.
  p. Texas Academy of Sciences.
Baltimore.
  a. Johns Hopkins University.
Berkeley.
  p. University of California.
Boston.
  b. Boston Society of Natural History.
  a. Technological Institute.
Brooklyn.
  a. Brooklyn Library.
Cambridge.
  a. Harvard University.
  b. Museum of Comparative Zoology.
Chapel Hill (N.C.).
Charleston.
  p. Elliott Society of Science and Art of South Carolina.
Chicago.
  a. Academy of Sciences.
  p. Journal of Comparative Neurology.
Davenport (Iowa).
  p. Academy of Natural Sciences.
Ithaca (N.Y.).
Lawrence.
  p. Kansas University.
Madison.
Mount Hamilton (California).
  a. Lick Observatory.
New Haven (Conn).
  a. Connecticut Academy of Arts and Sciences.
New York.
  a. Columbia College Library.
United States (continued).

Philadelphia.
  AB. Academy of Natural Sciences.
  AB. American Philosophical Society.
  p. Franklin Institute.
  p. Wagner Free Institute of Science.
Rochester (N.Y.).
  p. Academy of Science.
St. Louis.
  p. Academy of Science.
Salem (Mass.).
  p. American Association for the Advance-
  ment of Science.
  AB. Essex Institute.
San Francisco.
  AB. California Academy of Sciences.

United States (continued).

Washington.
  AB. Patent Office.
  AB. Smithsonian Institution.
  AB. United States Coast Survey.
  B. United States Commission of Fish and
  Fisheries.
  AB. United States Geological Survey.
  AB. United States Naval Observatory.
  p. United States Department of Agriculture.
  A. United States Department of Agriculture
  (Weather Bureau).
West Point (N.Y.)
  AB. United States Military Academy.
ADJUDICATION OF THE MEDALS OF THE ROYAL SOCIETY FOR THE YEAR 1899, 
BY THE PRESIDENT AND COUNCIL.

____________

The Copley Medal to the Right Hon. Lord Rayleigh, F.R.S., in recognition of 
his contributions to Physical Science.

A Royal Medal to Professor G. F. FitzGerald, F.R.S., for his contributions to 
Physical Science, especially in the domains of Optics and Electricity.

A Royal Medal to Professor W. C. McIntosh, F.R.S., for his important monographs 
on British Marine Zoology and on the Fishery Industries.

The Davy Medal to Dr. Edward Schunck, F.R.S., for his researches on Madder, 
Indigo, and Chlorophyll.

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The Bakerian Lecture for 1899, "The Crystalline Structure of Metals," was 
delivered by Professor J. A. Ewing, F.R.S., and Mr. W. Rosenhain, on May 18, 
1899.

The Croonian Lecture for 1899, "On the Relation of Motion in Animals and 
Plants to the Electrical Phenomena which are associated with it," was delivered by 
Professor Burdon Sanderson, F.R.S., on March 16, 1899.
INDEX SLIP.


Infection of Roots by Tubercle Organism in "Nitragin"—Conditions and Histological features of.


Nodules in Leguminose by direct Infection of Roots with "Nitragin."

Tubercle Organism in "Nitragin".—Conditions and Mode of Action.
INDEX SLIP.

BOWER, F. O.—Studies on the Morphology of Spore-producing Mem-
bers.—IV. The Leptosporangiate Ferns,

Enumeration of Spores.

Ferns, classification of; proposed division into Simplices, Gradate, and Mixta.

Sorus, Biology of.
INDEX SLIP.


Grass-land (permanent), Chemical Composition of constituents of Herbage —relation to character and stage of growth, manuring, &c.


Plant Ashes, importance of Carbonic Acid in.

INDEX SLIP.

REID, E. Waymouth. — On Intestinal Absorption, especially on the Absorption of Serum, Peptone, and Glucose.

Absorption by Intestine of Serum, Peptone, Glucose.

Epithelium of Intestine and Absorption.

Intestine, Action of Epithelium in Absorption.
INDEX SLIP.


Gills, external, in Lepidosiren.

Lepidosiren, External Features in Development—Notes on Habits.

Pigment Cells in Lepidosiren—Effects of Light and Darkness on.
INDEX SLIP.

Funnell, B. C.—On the Formation of the Pelvic Plexus, with especial Reference to the Nervus Collector in the Genus Mustelus.

Nervus Collector—Formation of.
Funnell, B. C.

Pelvic Plexus, variability in.
Funnell, B. C.

Vertebrae, intercalation of.
Funnell, B. C.