

rearing as a means of conserving the lobster industry.

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KINGSTON, CANADA

### THE ROYAL SOCIETY OF CANADA

THE thirty-fifth meeting of the Royal Society of Canada was held, this year, in the Chateau Laurier at Ottawa, Province of Ontario, under the presidency of Professor Alfred Baker, M.A., LL.D., of Toronto University. There was a large attendance of fellows from all the provinces of the Dominion. As is well known to readers of SCIENCE, this society is essentially national in character; and in the four sections into which the society is divided, the archeological, literary, historical as well as scientific leaders in thought, of English as well as of French Canada, are represented. The society meets but once a year in conclave, but sections can be called at the bidding of its officers to carry out programs of lectures, reading of papers or similar functions with a view of furthering the aims of the society.

Seventeen affiliated societies of Canada reported through their official representatives or delegates. The war now raging in Europe has affected the society to a marked degree, not only in the attendance at the annual meeting owing to the number of fellows serving at the front, but also in the distribution of the publications. There was no distribution to enemy countries.

Death has removed several fellows, including Sir Sandford Fleming; Dr. W. F. King, astronomer; Dr. Samuel E. Dawson, litterateur, historian and geographer, and Monsieur Ernest Gagnon, historian.

The third and fourth sections of the Royal Society of Canada are those specially devoted to the sciences, and papers were presented and read which cover the wide field of research common to all nationalities and special interest to readers of SCIENCE.

#### *List of Papers presented in Section III, Chemical and Physical Sciences*

Presidential address. By Dr. F. T. Shutt, M.A., F.I.C.—“Agricultural Research in Canada.”

“The Turn of Tidal Streams in relation to the Time of the Tide,” by W. Bell Dawson, M.A., D.Sc., M.Inst., C.E., F.R.S.C.

“The Smelting of Titaniferous Iron Ores,” by Alfred Stansfield, F.R.S.C., D.Sc., A.R.S.M., professor of metallurgy, McGill University, and William Arthur Wissler, M.Sc., of McGill University.

“Factors connecting the Concentration and the Optical Rotatory Power of Aqueous Solutions of Nicotine,” by Alfred Tingle and Allan A. Ferguson. Presented by Professor W. R. Lang, F.R.S.C.

“A New Method for the Determination of Nicotine in Tobacco,” by Alfred Tingle and Allan A. Ferguson. Presented by Professor W. R. Lang, F.R.S.C.

“The Influence of Fertilizers on the Flow of Water through Soils,” by C. J. Lynde, Ph.D., professor of physics, and R. Dougall, B.S.A., research assistant under the Dominion Grant for Agriculture, Macdonald College, P. Q. Presented by Dr. H. T. Barnes, F.R.S.

“On the Initial Charged Condition of the Active Deposits of Radium, Thorium and Actinium,” by G. H. Henderson, B.A., B.Sc., instructor in physics, Dalhousie University. Presented by H. L. Bronson, F.R.S.C.

“The Structure of Hailstones of Exceptional Form and Size,” by Francis E. Lloyd. Presented by Professor C. H. McLeod, F.R.S.C.

“Human Adipocere,” by R. F. Ruttan, M.D., F.R.S.C.

“Formation of Ring Ice or Hoar Frost in Pipes,” by Professor H. T. Barnes, F.R.S.C.

“Contact Resistance in Oil,” by H. E. Rielley, M.Sc., and Violet Henry, M.Sc. Presented by Professor H. T. Barnes, F.R.S.C.

“The Contact Resistance between Conductors in Relative Motion,” by Violet Henry, M.Sc. Presented by Professor H. T. Barnes, F.R.S.C.

“The Solubility of Aluminium Hydroxide in Solutions of Ammonia,” by E. H. Archibald and T. Habasian. Presented by Professor Ruttan.

“The Occlusion of Iron by the Ammonium Phosphomolybdate Precipitate,” by E. H. Archibald and H. B. Keegan. Presented by Professor Ruttan.

“A Comparison of Radium Standard Solutions,” by J. Moran. Presented by Professor A. S. Eve, F.R.S.C.

“The Release of Radium Emanation from Water at Different Temperatures by Bubbling Air through the Solution at a Uniform Rate,” by J. Moran. Presented by Professor A. S. Eve, F.R.S.C.

“The Double Salts Formed by Sodium and Potassium Carbonates,” by J. W. Bain, F.R.S.C., and C. E. Oliver.

“On the Effect of Stationary Sound Waves on Viscous Flow in Pipes and Channels,” by Louis Vessot King, M.A. (Cantab.), D.Sc. (McGill), F.R.S.C., associate professor of physics, McGill University, Montreal.

"Concerning a Certain Non-involuntary System of Partial Differential Equations," by C. T. Sullivan, lecturer in mathematics, McGill University, Montreal. Presented by Jas. Harkness, F.R.S.C.

"The Algebraic Basis for Two Formulæ in the Theory of Expansions according to Bessel Functions," by James Harkness, M.A., F.R.S.C.

"Alternate Number Indices in Triangular Coordinates," by J. C. Glashan, LL.D., F.R.S.C.

"On the Scattering and Attenuation of Radiation in the Solar Atmosphere," by Louis Vessot King, M.A. (Cantab.), D.Sc. (McGill), F.R.S.C., associate professor of physics, McGill University, Montreal.

"On Boundary Conditions in the Dynamical Theory of Gases," by Louis Vessot King, M.A. (Cantab.), D.Sc. (McGill), F.R.S.C.

"Progress on 72-inch Reflecting Telescope," by Dr. J. S. Plaskett, F.R.S.C., Dominion Observatory, Ottawa.

"Hygrometry," by A. Norman Shaw, B.A. (Cantab.), D.Sc., Macdonald College, McGill University. Presented by Professor H. T. Barnes, F.R.S., F.R.S.C.

The important question of industrial research introduced by the president, was very thoroughly discussed at two sessions of the Section and various opinions as to the best methods of procedure were advanced. The following resolution which was adopted represents the final conclusion arrived at by the members of Section III.:

"WHEREAS, it is important that the scientific forces of Canada should be organized to aid in the vigorous and efficient prosecution of the war and in the development of Canadian industries to meet the present conditions as well as those which may prevail after the war,

"Resolved that the Royal Society of Canada respectfully suggests to the government the appointment of a committee or commission of scientific men whose duty it shall be to advise the government how best to utilize the men and laboratories available for such purposes."

The commemoration of the 50th Anniversary of Confederation was decided to be marked, at the meeting of 1917, by historical papers dealing with the progress of the various divisions of mathematical and physical sciences. The officers of the Section were asked to select the members who would prepare such papers.

The election of officers for Section III. resulted in the choice of the following:

*President*—R. F. Ruttan, M.D., C.M., D.Sc.

*Vice-president*—A. S. Eve, D.Sc.

*Secretary*—F. T. Shutt, M.A., D.Sc.

Progress was reported on the 72-inch reflecting telescope now approaching the final stages of erection and adjusting at the Dominion Observatory at Ottawa, Canada.

#### SECTION IV. (GEOLOGICAL AND BIOLOGICAL SCIENCES)

This section reports five sessions under the chairmanship of Mr. J. B. Tyrrell, M.A., F.G.S.

Twenty-nine fellows were in attendance as follows: Messrs. Adams, Bailey, Bethune, Brodie, Buller, Coleman, Dowling, Dresser, Faribault, Faull, Grant, Harrison, Hewitt, Huard, Lambe, Macallum, Mackay, McConnell, McInnes, McMurrich, Matthew, Moore, Parks, Prince, Tyrrell, White, Harris, Hunter and Lloyd. Four absent Fellows are on active service: Dr. Adami, Dr. Harrison, Dr. MacKenzie and Dr. Nicholls.

To the membership were added the names of Professors Harris, Hunter, Lloyd and Fraser.

The following officers were chosen for the year 1916-17:

*President*—J. P. McMurrich, F.R.S.C.

*Vice-president*—R. G. McConnell, F.G.S.

*Secretary*—J. J. Mackenzie, F.R.S.C.

*Acting-Secretary*—J. H. Faull, F.R.S.C.

*Publication Committee*—Dr. Hewitt, Mr. Dowling and Dr. Harrison.

#### *List of Papers Presented in Section IV*

Twenty-one papers, a list of which is appended, including a presidential address of much interest on "Notes on the Geology of the Nelson and Hayes River, Manitoba," were presented to the Section, contributions in the gross that represented a large amount of important and stimulating work.

Presidential Address—"Notes on the Geology of the Nelson and Hayes River, Manitoba," by J. B. Tyrrell, F.R.S.C.

"Notes on the Plankton of the British Columbia Coast," by J. Playfair McMurrich, F.R.S.C.

"On a New Anthomedusan from the Coast of British Columbia," by H. B. Bigelow. Presented by Professor McMurrich, F.R.S.C.

"The Quantitative Study of Climatic Factors in Relation to Plant Life," by J. Adams, M.A. Presented by C. Gordon Hewitt, D.Sc., F.R.S.C.

"Geologic Range of the Phyla, Classes, Subclasses and Orders of the Plant and Animal Kingdoms," by Lancaster D. Burling. Geological Survey, Canada. Presented by Lawrence M. Lambe, F.R.S.C.

"Ganoid Fishes from near Banff," by Lawrence M. Lambe, F.R.S.C., F.G.S.A., vertebrate paleontologist to the Geological Survey, Canada.

"Achondroplasia, a Problem in Development," by Albert G. Nicholls, M.A., M.D., Sc.D.

"Studies on a Timber Destroying Fungus—*Fomes officinalis*," by J. H. Faull, Ph.D., F.R.S.C.

"Notes on Cambrian Faunas," by G. F. Matthew, LL.D., D.Sc.

"Studies on the Protozoan Parasites of the Fishes of the Georgian Bay," by J. W. Mavor, B.A., Ph.D., University of Wisconsin, Madison, U. S. A. Presented by E. E. Prince, LL.D., F.R.S.C.

"Statistical Studies on the Growth of the Pollock, Haddock and Hake," by J. W. Mavor, Douglas Macallum and Dorothy Duff; with twenty figures. Presented by E. E. Prince, LL.D., F.R.S.C.

"The Abscission of Flower-buds and Fruits in its Relation to Environmental Changes," by Professor Francis E. Lloyd, F.R.S.C.

"On the Development of *Æquorea forskalea*," by C. McLean Fraser, Ph.D., F.R.S.C.

"Bibliography of Canadian Botany for the Year 1915," by A. H. MacKay, LL.D., F.R.S.C.

"Bibliography of Canadian Entomology for the Year 1915," by C. J. S. Bethune, D.C.L., F.R.S.C.

"Bibliography of Canadian Zoology for 1915 (exclusive of Entomology)," by E. M. Walker, B.A., M.B., F.R.S.C.

"Bibliography of Canadian Geology for the Year 1915," by Wyatt Malcolm. Presented by R. G. McConnell, B.A., F.R.S.C.

"Some Further Observations on the Discharge of Spores in the *Uredineæ*," by Professor A. H. Reginald Buller, F.R.S.C.

"Upon the Germination of the Spores of *Coprinus Sterquilinus*," by Professor A. H. Reginald Buller and S. G. Churchward.

"Structure of the Basin of Lake St. John," by J. A. Dresser, F.R.S.C.

"Dysentery, and the Dysentery Bacillus. A Report of some Cases with Isolation of Organisms of the Shiga Group," by R. F. Kelso, M.D., and W. Sadler, B.S.A.

#### GENERAL NOTES

The council of the society recommended to the various sections the advisability of suitably commemorating the 50th anniversary of confederation of the various provinces of British North America by preparing papers dealing with the progress of literature and science in Canada during this period. Action on the part of the sections followed.

The presidential address by Professor Baker, of Toronto University, was entitled "Canada's Intellectual Status and Intellectual Needs."

In this address the retiring president, Dr. Baker, discussed the educational problems of the various provinces of all Canada, of native born and also those of European birth. The writer argued for an increased study of the French language, and then turned his attention to the press, the public libraries and to technical education as well as education in agriculture for the Dominion.

Museums, as factors in modern civilization, were also discussed, including art museums. Canadian literature, agricultural research, the work of the Biological Board of Canada, and general scientific research, on the lines of the Carnegie Institute, followed together with the work of the Rockefeller Institute and similar institutions in the United States that make for the benefit of humanity as a whole. Professor Baker paid a glowing tribute to the benefactors in the United States who by endowments and munificent donations, had done so much to increase our knowledge in so many directions, thus raising the status of research work to such a pitch that the summit or center of gravity of scientific discovery in this world may soon be found in the Republic of our neighbors.

The officers for 1916-17 are as follows:

*Hon. President*—His Grace the Duke of Devonshire, Governor-General of Canada, etc.

*President*—Professor A. B. Macallum (Toronto, Ont.).

*Vice-president*—His Honor Mr. Justice J. W. Longley.

*Hon. Secretary*—Mr. Duncan C. Scott (Ottawa, Ont.).

*Hon. Treasurer*—Dr. C. Gordon Hewitt.

*Hon. Librarian*—Mr. D. B. Dowling.

Amongst the other papers read before Section II., not included in the foregoing, of special interest in geography, archeology, ethnology, etc., may be mentioned the following:

1. "Place Names in the Southern Rockies," by James White, F.R.G.S., Canadian Commission of Conservation (Ottawa).

2. "Signposts of Pre-historic Time," by W. D. Lighthall, M.A. (Montreal).

3. "An Organization of the Scientific Investigation of the Indian Place-Nomenclature of the Maritime provinces of Canada" (sixth paper), by Professor W. F. Ganong, M.A., Ph.D.

4. "The Refugee Loyalists of Connecticut," by Professor W. H. Siebert, of the Ohio State University.

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