

PROCEEDINGS
OF THE
Nova Scotian Institute of Science.

SESSION OF 1904-1905.

ANNUAL BUSINESS MEETING.

Legislative Council Chamber, Halifax, 17th October, 1904.

THE PRESIDENT, DR. HENRY S. POOLE, in the chair.

PRESIDENTIAL ADDRESS: (1) PROGRESS OF THE INSTITUTE, (2) BORINGS IN SEARCH OF COAL. BY HENRY S. POOLE, D. SC., ASSOC. ROY. SC. MINES, F. G. S., F. R. S. C., HON. M. I. M. E., &c.

The honor, I have had of being your chairman for a second term, gives me again the privilege of reporting the work of the past session, and an opportunity to lightly touch on the papers submitted.

Progress of the Institute.

Besides the regular monthly gatherings, a special meeting to hear papers by Mr. E. Stuart and Mr. R. H. Campbell, of Ottawa, on Forestry, illustrated by drawings enlarged on a screen, appealed to popular taste.

The subject matter of the papers at the ordinary meetings covered a wide range, as might be expected from a maritime people with diversified interests and familiarized by easy travel with the littoral of many lands. The consideration of time and its effects during periods that extended back into thousands of centuries, created no surprise; and geological questions, chiefly of local bearing, furnished subjects for one-third of the papers presented to the Institute.

Zoology found an exponent in Mr. Frank H. Reid who had many interesting things to say on the nidification of some of our birds.

Chemistry was not neglected. Mr. F. H. Mason gave notes on provincial hydraulic lime and cement, and Mr. W. H. Ross contributed the results of a study of solutions of hydroxylamine and its salts.

Botanical studies were shewn not yet to have been carried to exhaustion, for Capt. J. H. Barbour, A. M. C., on the local varieties of blue-eyed grass, suggested a new line of comparison. The value of combined observation conducted under experienced supervision by public school children was noted in the further additions to phenological records laboriously compiled by Dr. A. H. MacKay.

The veteran, Dr. H. Y. Hind, dwelt on the importance to miners of a knowledge of rock foldings; and the new science courses at Dalhousie College bore fruit in papers by two students, Mr. T. T. Fulton writing on the Faults of Battery Point, Sydney, and Mr. L. A. DeWolfe on the cliff sections at North Sydney; papers indicating careful record of close observation. Dr. Woodman gave the bibliography and an exhaustive review of the gold-bearing rocks of Nova Scotia which he proposed should be designated "Meguma." The same gentleman recorded the earthquake shocks which were observed in parts of the Maritime Provinces in March of the present year. A criticism of the long received view that Louisbourg supplied evidence of very recent subsidence came from the pen of Mr. Kenneth McIntosh and met with general acceptance. To the writer was given an opportunity to ask for a review of the age of the conglomerate here and there capping the Cambrian rocks of the Atlantic coast. It was also given to him to speak of the "Sunken Land of Bus," where the cabled depths of mid-ocean recalled the ancients' story of the fabled Atlantis.

Mr. T. Vardy Hill referred to the creation and development of the foundation of the earth, and in this country was also heard an echo of the revived discussion of the relation of scientific studies to religious beliefs and something of the progress made among the foothills of knowledge by such seekers after truth as have met the outposts so long and strongly held by theological teachers. While by the bulk of our people the views of forty years ago are still

unchanged, by students of both classes mutual forbearance is practised and they are content to work side by side, although it is evident both could not agree were they to continue to an issue the deductions to which several of their teachings lead. We as a society cannot well engage in controversies of this character, for it is not to be expected that where individual convictions are involved that members as a body could maintain a judicial position and a tolerant spirit.

Note also was taken of the interest in scientific research by the Branch of the Institute established in King's County and the additional five papers that were discussed at Wolfville.

Borings in search of Coal.

In my address of a year ago I referred to certain theoretical deductions respecting the possible extension of workable coal seams lying concealed under newer measures on the north side of the Cobequid hills from the Bay of Fundy eastward to Merigomish.

The interest that had there been aroused took practical shape, and search in three localities was prosecuted. One borehole was put down at Spicers' Cove on the Bay of Fundy to a depth of 944 feet, but as it turned out, it was placed too close to the hill range, for after passing through a thick bed of conglomerate, largely composed of the debris of the old rocks it entered, at 893½ feet, igneous rocks in place. A site for another hole in this locality has been selected further from the hills, at Apple river.

The second locality is near Newville at Halfway River lake on the Springhill and Parrsborough railway, and a borehole there also met with conglomerate at the expected depths. Here it is found to be composed chiefly of clastic rocks of Lower Carboniferous age, and it has not yet been passed through by the borehole which has now reached a depth of over 2200 feet.*

The third persistent effort to get at the underlying strata was made at the mouth of Rear brook, below New Glasgow, on the East river. After the loss of the first hole at a depth of some 900 feet a second borehole was made alongside the first, and at 1900 feet it had failed to reach the bottom of the conglomerate bed when

* Subsequently, at 2350 feet from the surface coal was struck which is reported to be 9 feet in thickness, and the boring was stopped at a depth of 2359 feet.—*Ed.*

misfortune again met the borers and the hole was hopelessly lost. Another 100 feet would have got down to the underlying beds according to calculations based on surface outcrops.

The Treasurer's report was presented by MR. MCKERRON, and having been audited and found correct, was received and adopted.

The Librarian's report was presented by MR. PIERS. During the year 1904, 2330 books and pamphlets had been received and catalogued. The total accessions of the Science Library, with which that of the Institute is incorporated, were 3,115 for the year. The report was received and adopted, and a vote of thanks was presented to Mr. Piers for his services.

A report was read from the KING'S COUNTY BRANCH OF THE INSTITUTE, Wolfville, N. S., on the work done by the Branch during its fourth session (1903-04). The officers of the branch were as follows :

President,—PROFESSOR ERNEST HAYCOCK, M. A.

Vice-President,—PROFESSOR F. R. HALEY, M. A.

Secretary-Treasurer,—PROFESSOR E. W. SAWYER, B. A.

The following papers, etc., were communicated to the branch :

1. Constitution of Matter. (General discussion.)
2. The Atomic Theory of Dalton.—By PROFESSOR E. HAYCOCK, M. A.
3. The Divisibility of the Atom.—By PROFESSOR F. R. HALEY, M. A.
4. Influence of Climate on Fruits.—By R. W. STARR.
5. The Black Knot of the Plum.—By PROFESSOR F. C. SEARS.

The report was received and adopted.

It was resolved that the thanks of the Institute be conveyed to the HON. M. H. GOUDGE, President of the Legislative Council, for his courtesy in granting the society the use of the Legislative Council Chamber as a place of meeting during the past session ; and to the SECRETARY OF THE SMITHSONIAN INSTITUTION for continuing to admit the Institute to the privileges of the Bureau of International Exchanges.

The following were elected officers for the ensuing year (1904-05) :

President,—HENRY SKEFFINGTON POOLE, D. Sc., A. R. S. M., F. G. S.,
F. R. S. C., *ex officio*, F. R. M. S

Vice-Presidents,—F. W. W. DOANE, C. E., and PROFESSOR EBENEZER
MACKAY, PH. D.

Treasurer,—WILLIAM MCKERRON.

Corresponding Secretary,—A. H. MACKAY, LL. D., F. R. S. C.

Recording Secretary,—HARRY PIERS.

Librarian,—HARRY PIERS

Councillors without Office,—MAYNARD BOWMAN, B. A.; WATSON L BISHOP;
PROFESSOR STEPHEN M. DIXON, B. A., B. A. I.; EDWIN GILPIN, JR.,
LL. D., F. R. S. C., I. S. O.; ALEXANDER MCKAY; PROFESSOR J.
EDMUND WOODMAN, D. Sc.; J. B. MCCARTHY, M. A., B. Sc.

Auditors,—RODERICK MCCOLL, C. E.; and PROFESSOR F. H. SEXTON.

DR. MACKAY took the chair while the President, DR. H. S. POOLE, read a paper on "Pre-Cambrian Volcanic Bombs from near Lake Ainslie, Inverness Co., N. S." (See Transactions, p. 339).

DR. WOODMAN gave the result of a microscopic examination of some of these bombs.

FIRST ORDINARY MEETING.

Legislative Council Chamber, Halifax, 21st November, 1904.

THE PRESIDENT, DR. H. S. POOLE, in the chair.

PROFESSOR STEPHEN M. DIXON, M. A., B. A. I., read a paper entitled, "A Determination of the Elements of Terrestrial Magnetism at Halifax, N. S., August, 1904." (See Transactions, p. 245). The subject was discussed by the PRESIDENT, and DR. A. H. MACKAY and DR. WOODMAN, and a vote of thanks was presented to the lecturer.

SECOND ORDINARY MEETING.

Legislative Council Chamber, Halifax, 23rd January, 1905.

THE PRESIDENT, DR. H. S. POOLE, in the chair.

THE RECORDING SECRETARY announced that the REV. BROTHER JUNIAN PETER of Fall River, Mass., U. S. A., a corresponding member, had presented to the Institute a collection of dried plants collected in his district. The Secretary was directed to convey to Brother Peter the thanks of the society.

PROFESSOR J. EDMUND WOODMAN, D. Sc., gave a lecture on "The Volcanoes of the Hawaiian Islands," illustrated by coloured lantern-slides. A vote of thanks was presented to the lecturer.

THIRD ORDINARY MEETING.

Provincial Science Library, Halifax, 13th March, 1905.

The PRESIDENT, DR. POOLE, in the chair.

It was announced that CAPTAIN E. B. TINLING, R. N., of the Marine and Fisheries Department, Halifax, had been elected an ordinary member.

The RECORDING SECRETARY reported that there had been received from the Royal Society of London, forty volumes of its earliest Proceedings (from vol. 1, 1800) so far as they were in print. It was directed that the thanks of the Institute be conveyed to the Royal Society for this valuable gift.

In the absence of the author, DR. A. H. MACKAY read a paper by WALTER H. PREST of North Brookfield, N. S., on "Edible Wild Plants of Nova Scotia." (See Transactions, p. 387). The subject was discussed by DRs. A. H. MACKAY, POOLE, BARBOUR, A. P. REID, and MESSRS. PIERS, BISHOP, HARRIS, and others. A vote of thanks was presented to MR. PREST for his paper.

DR. J. E. WOODMAN read by title a paper entitled "Distribution of Bedded Leads in relation to Mining Policy." (See Transactions, p. 163).

FOURTH ORDINARY MEETING.

Assembly Room, Province Building, Halifax, 17th April, 1905.

The PRESIDENT, DR. POOLE, in the chair.

It was announced that L. C. HARLOW, B. Sc., Provincial Normal School, Truro, N. S., had been elected an associate member.

The RECORDING SECRETARY announced that the Proceedings and Transactions of the Institute, vol. xi, part 1, had been published and part 2 was now in press.

In the absence of the author, DR. WOODMAN read a paper by M. V. GRANDIN of Cheticamp, entitled, "Notes on the Ore Deposits of South Cheticamp, Cape Breton Island, N. S." (See Transactions, p. 347). The paper was discussed by the PRESIDENT, DR. WOODMAN, and others; and a vote of thanks was presented to the author.

F. H. MCLEARN read a paper, entitled, "A Structural Analysis of the Goldenville Anticline, Guys. Co., N. S." The subject was discussed by J. REGAN, H. PIERS, DR. WOODMAN, and PROFESSOR HAYCOCK; and a vote of thanks was presented to MR. MCLEARN.

FIFTH ORDINARY MEETING.

Assembly Room, Province Building, Halifax, 16th May, 1905.

DR. A. H. MACKAY, in the chair.

The RECORDING SECRETARY reported that the Council had appointed the Treasurer, WM. MCKERRON, to represent the Institute at the forthcoming meeting of the Royal Society of Canada.

PROFESSOR J. E. WOODMAN, D. Sc, presented two papers: (1) "Note on Crystallized Gold"; (2) "Detection of Vanished Coastal Plains."

The following papers were read by title:—

- "Phenological Observations in Nova Scotia and Canada, 1904,"
by A. H. MACKAY, LL. D., F. R. S. C. (See Transactions,
p. 373).
- "Meteorological Notes," by F. W. W. DOANE, C. E. (See
Transactions, p. 361).
- "Weathering of Building Stone in Halifax," by PROFESSOR J. E.
WOODMAN, D. Sc.

HARRY PIERS,
Recording Secretary.