

1875.
NEW ZEALAND.

SEVENTH ANNUAL REPORT OF THE NEW ZEALAND INSTITUTE,
1874-75.

Presented to both Houses of the General Assembly by Command of His Excellency.

MEETINGS of the Board of Governors were held on the following dates, viz. 8th August, 21st December, 1874, and 11th March, 31st March, and 4th August, 1875.

Of the members who retire from the Board—W. T. L. Travers, Esq., F.L.S., and the Hon. E. W. Stafford, F.R.G.S., were reappointed, and the Hon. W. B. D. Mantell was appointed in the room of Sir David Monro, who withdrew. The Governors elected by the affiliated Societies are—His Honor William Rolleston, B.A.; Charles Knight, Esq., F.R.C.S.; and Thomas Kirk, Esq., F.L.S.

In conformity with Statute IV. of the Rules of the Institute, the following gentlemen were elected honorary members:—Alfred Newton, Esq., F.R.S.; Professor Wyville Thomson, F.R.S.; Robert McLachlan, Esq., F.L.S.

The number of members on the roll of the Institute is as follows:—

Honorary members	...	...	...	...	...	...	...	19
	<i>Ordinary Members.</i>							
Auckland Institute	...	...	...	...	...	...	...	215
Wellington Philosophical Society	...	...	...	...	...	...	...	158
Otago Institute	...	...	...	...	...	...	...	166
Philosophical Institute of Canterbury	...	...	...	...	...	...	...	91
Nelson Association	...	...	...	...	...	...	...	57
	Total							
	...	...	...	...	...	...	...	707

Two honorary members are lost to the Institute since last report, by the death of Sir Charles Lyell and Dr. J. E. Gray; several valuable contributions in the zoology of New Zealand have appeared from time to time in the Transactions from the latter gentleman.

Each of the above members receives a copy of Vol. VII.; the free list, herewith appended, are also supplied with copies, and the remainder reserved for sale at £1 ls. each. Local libraries and institutes can obtain copies at half-price.

PUBLICATION OF THE TRANSACTIONS.

The publication of the volume for 1874 (Vol. VII.), which took place in July last, was considerably delayed, owing to the difficulty experienced by the printer in obtaining the necessary number of hands to insure its completion at an earlier date. Its greatly increased bulk was also a cause of its not being produced sooner.

The volume contains 638 pages and thirty plates. Ninety papers are printed either in the Transactions or Proceedings, which are by forty-six different authors. The space taken by each section of the volume is as follows:—

	Pages.
Miscellaneous	195
Zoology	137
Botany	46
Chemistry	30
Geology	57
Proceedings	101
Appendix	45
Table of Contents, Preface, &c.	27

A paper by the Rev. Mr. Stack, received too late for publication in its proper place in the volume, will be found in the Appendix among other papers. The papers by Mr. W. T. L. Travers, and Dr. Knight, had the advantage of being corrected for the press by the authors.

It has been found necessary to increase the edition from 850 to 1,000 copies. It will be at once apparent that the large increase in the number of members made this necessary. It is possible that the accession to the Institute of the two new Societies of Westland and Hawke Bay may necessitate a still further increase in the next volume.

During the Parliamentary recess a second edition of Vol. I. was printed at the Government Printing Office, with the consent of the Government. The expense of printing this edition is to be defrayed out of the sale of the volumes. The arrangement of the second edition, Vol. I., has been slightly altered from that of the first, and errors have been corrected. No material alteration has, however, taken place in the papers.

It is advisable again to call the attention of Secretaries of incorporated Societies and of authors to the necessity of sending manuscript in an easily readable form. The observance of this rule is of advantage both to the editor and authors, as the former is saved much unnecessary trouble, and the latter insure their remarks being correctly printed. It should be remembered that a volume written in fifty or sixty different hands, and in most cases not revised in print by the authors, is more liable to error than a work by one person, who is presumably able to decipher his own writing and set the printers right. Bad writing is also a source of expense, as papers, if at all illegible, have to be copied, and again they are liable to further error in being so copied.

The number of volumes now on hand is as follows:—Vol. I., first edition, 5 copies; Vol. I., second edition, 600 copies; Vol. II., 26 copies; Vol. III., 19 copies; Vol. IV., 43 copies; Vol. V., 80 copies; Vol. VI., 88 copies; Vol. VII., 260 copies.

The statement of the accounts of the Institute by the Honorary Treasurer is herewith appended, and shows a balance in hand of £48 19s. 11d.

Progress reports of the various departments under the Manager are also appended.

W. B. D. MANTELL.

11th October, 1875.

No. FREE LIST FOR ISSUE OF THE TRANSACTIONS.

Copies.

- 1 His Excellency the Governor, President of the Society.
- 12 Governors of the Institute. (See printed list in Transactions.)
- 19 Honorary members. (See printed list in Transactions.)
- 1 The Prime Minister.
- 1 The Colonial Treasurer.
- 1 The Native Minister.
- 1 The Under Colonial Secretary.
- 2 For Parliament.

Foreign Societies, Libraries, &c.

- 1 The Colonial Office, London.
- 1 The Agent-General, London.
- 1 Trübner and Co. (Agents), London.
- 1 The British Museum, London.
- 1 The Royal Society, London. (Ex.)
- 1 The Royal Geographical Society, London. (Ex.)
- 1 Ethnological Society, London. (Ex.)
- 1 Geological Society, London. (Ex.)
- 1 Zoological Society, London. (Ex.)
- 1 Geological Survey of the United Kingdom, London. (Ex.)
- 1 Geological Magazine. (For Review.)
- 1 Literary Institute, Norwich, England. (Ex.)
- 1 The University Library, Edinburgh. (Ex.)
- 1 The Royal Society, Dublin. (Ex.)
- 1 The Philosophical Society of Leeds, England. (Ex.)
- 1 Smithsonian Institute, Washington. (Ex.)
- 1 Geological Survey of India. (Ex.)
- 1 Royal Society of Tasmania Library. (Ex.)
- 1 The Public Library of Melbourne.
- 1 South Australian Institute Library. (Ex.)
- 1 Royal Society of Victoria, Melbourne. (Ex.)
- 1 University Library, Sydney.
- 1 Public Library of Tasmania.
- 1 Legislative Library, Adelaide.
- 1 Public Library, Sydney.
- 1 Royal Society, New South Wales. (Ex.)
- 1 Academy of Natural Science Library, Philadelphia, U.S. (Ex.)
- 1 Academy of Natural Science, San Francisco. (Ex.)
- 1 Oxford University Library, England.
- 1 Imperial German Academy of Naturalists, Dresden. (Ex.)
- 1 Cambridge University Library, England.
- 1 Linnean Society. (Ex.)

Contributions and Exchanges.

- 1 His Excellency Governor Weld, Tasmania.
- 1 Professor Balfour, Edinburgh.
- 1 Professor McCoy, Melbourne.
- 1 Chairman of School Library Committee, Eton, Bucks, England.
- 1 Chairman of School Library Committee, Harrow, England.
- 1 Chairman of School Library Committee, Rugby, Warwickshire, England.

- 1 President of Natural History Society, Marlborough College, Marlborough, Wilts.
- 1 Colonel Jewett, New York.
- 1 Dr. Wojeikof, of St. Petersburg.
- 1 Hon. Mr. Casey, Victorian Government.
- 1 Dr. Hann, for the Royal-Imperial Institute for Meteorology and Earth Magnetism, Hohe-Warte, near Vienna.
- 1 Dr. Berggren, University of Lund, Sweden.

Libraries and Societies in New Zealand.

- 1 Secretary, Auckland Institute.
- 1 Secretary, Wellington Philosophical Society.
- 1 Secretary, Philosophical Institute of Canterbury.
- 1 Secretary, Nelson Association.
- 1 Secretary, Otago Institute.
- 1 General Assembly Library.
- 9 Provincial Council Libraries.

Publishing Branch.

- 1 Editor.
- 1 Assistant Editor.
- 2 Draftsman.
- 1 Lithographer.
- 1 Government Printer.

Total, 104 copies.

MUSEUM.

The alteration and extension of the buildings of the department, which have, since last report, been undertaken by the Government, will, it is believed, when completed, leave little to be desired in that direction for a considerable time.

These works, which were commenced in November last, and are still in progress, but rapidly approaching completion, affecting as they have done almost every portion of the building, have necessitated the exclusion of the public for a long period, but this loss will be amply compensated for when the collections, together with the large and valuable additions expected from Europe on the return of the Director of the Geological Survey, shall have been arranged in the Museum, while the erection of office accommodation will remove many obstacles to the progress of departmental work.

There have been 4,813 specimens added to the Museum during 1874-75, over 4,000 of which have been collected in the field by the officers of the department. Owing to the extensive alterations which have been going on in the Museum building, the number of presentations for the past year falls short of what it has been in former years.

A large and valuable collection has been taken to England by Dr. Hector with a view to identification and exchange, so that next year considerable additions will be looked for in the objects of interest in the Museum.

Mammalia.—A specimen of the humpback whale, *Megaptera australis*, has been received from Mr. G. Gooch, from the Kaikoura Beach. Two specimens of the black fish, *Globiocephalus macrorhynchus*, and one skeleton of *Eubalæna marginata*, from Mr. Charles Traill, of Stewart Island. Captain Fairchild also procured for the Museum a specimen of a new species of cow-fish.

Birds.—Fifty-seven specimens have been added to this department since last report, the chief of which are twenty-seven foreign birds sent by Dr. Otto Finsch, of Bremen. A fine specimen of peacock (*Pavo cristatus*), by Mr. J. Monteith; and a large specimen of the Patagonian penguin, presented by Mr. C. Traill, and mounted by Mr. Morton.

Reptilia.—The only entries under this head are a collection of lizards from the Brothers Islands, and from Stewart Island, by Mr. C. Traill.

Fishes.—No additions of any importance have been received under this head.

Invertebrata.—Little has been received beyond a collection of Tasmanian insects from Mrs. Battersbee.

Palæontology.—During the present year large collections have been made from parts of the Canterbury, Marlborough, and Nelson provinces, with a view to determining the relations which exist between the bituminous coal of the West Coast and the Saurian beds of the Waipara, but the evidence obtained is not sufficient at present to settle this satisfactorily. Much interesting information has, however, been obtained, together with good collections from the Waipara, Weka Pass, Culverden, Bakaia, and Trelissic beds; and the lower beds of the Trelissic outlier have been shown to be of the same age as those of the Waipara, the Inoceramus, Belemnites, &c., of which, in addition to the Saurian remains, distinctly pronounce them as secondary.

A survey of the coast line between Cape Kidnappers and Castle Point has also been accomplished, and a collection comprising over 750 fossils been made from the tertiary, cretaceo-tertiary, and secondary rocks of the district, of which the latter prove to be of Jurassic age.

A further collection has been obtained from the Taipos, on the east coast of Wellington and Napier, comprising several new species; and from the Tairua Valley a collection has been made, showing the rocks of that district to be of the same age as those of the Ahuriri formation, which appear at Napier and Castle Point.

A survey of the country between Raglan and the Miranda Redoubt, in the Province of Auckland, has been completed, and careful collections made from the various localities where fossils were found. About 1,300 specimens were collected on this trip, and it is interesting to note that, for the first time in the North Island, fossils [*Monotis salinaria*] were discovered in the older rocks forming the Hakarimata

Range, thus fixing their horizon as much younger than was originally supposed, probably as Triassic. With the exception of this instance, no fossils were obtained in rocks of greater age than the brown coal of the Waikato basin; but collections were made from all the younger beds which show a direct sequence until reaching the Kawhia limestone, an equivalent of the Napier limestone of the East Coast.

At Wangaroa North the secondary rocks of the East Cape District and East Coast of Wellington again appear, and there is now in the Museum a collection from these rocks comprising *Inoceramus* and many other forms, and a collection has also been made from the greensands which lie unconformably upon them, and which, from the presence of *Pecten hochstetteri*, &c., appear to be the equivalents of certain sandstones in the Raglan Harbour. No other beds of the coal series appear in the district here examined.

Large collections from the various localities at present represented in the Museum have been sent home for identification by competent authorities, with a view to establishing a distinct basis for the classification of the formations appearing in this country; and the collections in the Museum at present have been worked out, and are exhibited as nearly as possible in their geological sequence, but provisionally only, under the title of their geographical distribution.

LABORATORY.

The number of analyses made during the year is 315, viz. of coals, 33; minerals, 75; metals and ores, 48; gold, 14; examinations for adulterants, 128; and 178 miscellaneous.

The particulars of these analyses will be found in the Annual Report by the Analyst.

W. B. D. MANTELL.

ACCOUNTS OF THE NEW ZEALAND INSTITUTE FOR 1874-75.

RECEIPTS.				EXPENDITURE.			
		£	s. d.			£	s. d.
Balance in hand August, 1874	...	209	9 5	Expense of Printing Volume VII.	...	623	18 0
Vote for 1874-75	...	500	0 0	Extra expense on Volume VI.	...	15	12 6
Contribution from Wellington Philosophical Society for 1874	...	28	3 6	Expense of Editing Volume I., 2nd edition	...	25	0 0
Sale of Transactions	...	4	8 6	Miscellaneous items	...	28	11 0
		£742	1 5	Balance	...	48	19 11
						£742	1 5

Wellington, 11th October, 1875.

A. LUDLAM, Treasurer.