PROCEEDINGS

AT THE

ANNUAL MEETING

OF THE

NATURAL HISTORY SOCIETY

OF MONTREAL,

FOR THE YEAR ENDING MAY 18TH, 1877.

WITH A

LIST OF THE OFFICERS, RESIDENT MEMBERS, AND ASSOCIATES OF THE SOCIETY.

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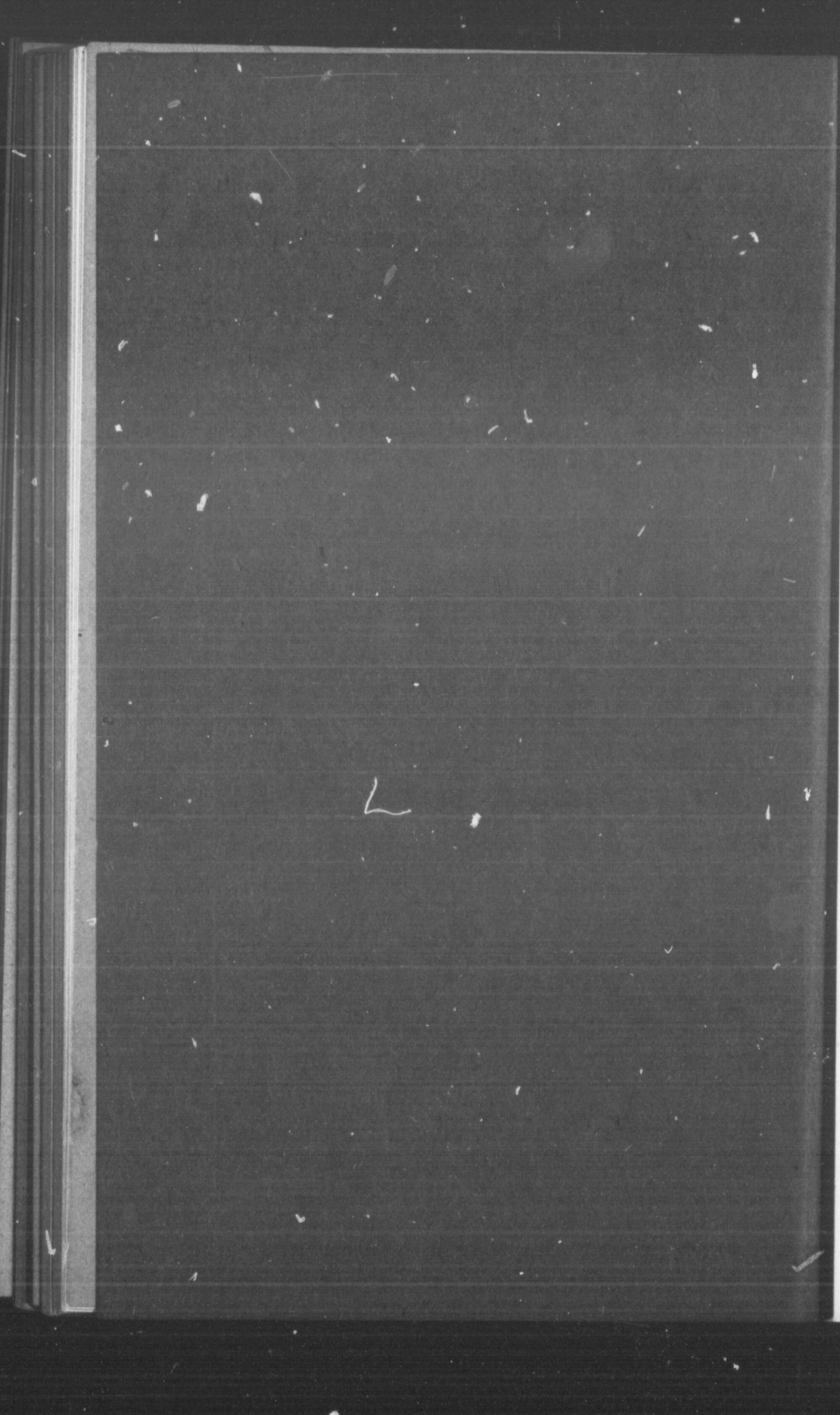

NATURAL HISTORY SOCIETY.

PROCEEDINGS AT THE ANNUAL MEETING.

The annual meeting was held on the 18th of May, 1877.

The minutes of the last annual meeting having been read, the annual address was delivered by the President, Principal Dawson, as follows:

ANNUAL ADDRESS.

In closing another Session of this Society, we naturally turn to the work of the past year, and in this address it is more especially our scientific labours that claim attention. What have we done in the past year for the advancement of science, and for the credit of our country as one of the civilized nations of the world? I would not underrate what we have accomplished for the popular diffusion of knowledge, by means of our museum, our excursions and our popular lectures, but the original investigations which we have given to the world constitute our best title to regard as a scientific association.

In the course of the winter nine original communications have been laid before thie Society; and of these the greater number have appeared or will appear in our Journal. Of these communications two; namely, that on Inscriptions from Easter Island presented by Mr. D. Robertson, and Notes on Animals of India, did not refer to the natural history of this country. With respect to the former, however, I may say that it has a connection with America in the circumstance that so many indications point to a migration of civilized or semi-civilized men into America by way of the Pacific, and to the probability that Easter Island was one of the stations in this migration. Mr. Hyde Clarke and Dr. Wilson have both directed attention to this subject, and have shown that in languages and physical features there are links of connection between the Polynesian and the Peruvian races, and that the ruins of large stone buildings found in so many of the Polynesian Islands, as well as the arts practised in those islands, point to similar conclusions. The possession of a sort of picture writing for the keeping of family and tribal

records in Easter Island, and the not very remote resemblance of this to some familiar American contrivances of the same kind, furnishes an additional link of connection. On the often disputed question of the source or sources of the aboriginal American population, it now seems to be the settled conclusion of archaeology that we have good evidence of prehistoric migrations of man into America by Behring's Straits from Northern Asia; by the Pacific Islands from Southern Asia; and by the Equatorial Atlantic, by way of the Canaries and West India Islands. To these we have to add the probability of Chinese and Japanese ships having at various times been drifted upon the Pacific coast, and the discovery of Greenland and part of the mainland of America by the Norsemen in the tenth century. Thus there seems to be not one way merely but several in which America may have received its early population, and by which we may account for the native races of America with their languages and customs merely as derivatives from the old world, and without supposing these tribes to be true Autochthones.

Two very interesting communications of a geological character were those of Prof. Hind on the Geology of Labrador, and of Mr. G. M. Dawson on Recent Elevations and Subsidences of the Land in British Columbia. Remote though these regions are from each other, they present some remarkable points of similarity, especially in relation to their more recent geological history. In both we have the evidence of the great glacial age. In both the surface glaciation and transport of boulders seem to have been caused by the joint or successive action of water-borne ice, and glaciers. In both there are the most remarkable evidences of submergence to a great depth in the Post-pliocene age. It is a remarkable illustration of the vastness of the geological changes which have occurred in comparatively modern times, that we should find on the mountains of the Pacific Coast and those of the North Atlantic seaboard the indications of a common submergence, and this of very great amount. Such vicissitudes are not to be accounted for by merely local causes, but by grand agencies effecting at once a whole hemisphere or the whole earth.

In British Columbia there seems to be good evidence of the submergence of the land to such an extent that sea margins occur 5270 feet above the level of the sea, and at various elevations between this and the present sea level. In the Rocky Moun-

tains Mr. Dawson had previously measured the height of similar terraces 4400 feet above the sea. While those great depressions occurred in the Post-pliocene period, there is evidence to show that in the preceding Pliocene age the land in British Columbia may have been 900 feet higher than at present. On the other hand, in modern times the coast would seem to have been going down at a rate in some cases of as much as ten to fifteen feet in a century; while there are Indian traditions of sudden waves overflowing the land, and perhaps occasioned by earthquake movements. With reference to these modern changes, it should be observed that British Columbia forms a part of that great band of volcanic and seismic activity which extends along the west coast of America, and which presents in our own time and in the more recent geological periods, evidences of agencies which have long slumbered on the eastern margin of the continent.

On our own side of America, the nnmerous terraces so well developed on the Lower St. Lawrence, mark the stages of recession of the Post-pliocene ocean. Mr. Richardson informs me that he has found one of these terraces on the west coast of Newfoundland, at a height of 1225 feet above the sea. On Belœil Mountain, in our own neighbourhood, we find travelled Laurentian stones which must have been water-borne, at a height of nearly 1200 feet, and if the travelled stones found by Prof. Hitchcock on Mount Washington have been deposited by floating ice, then the highest summits of our mountains must have been under water at the time of the greatest Post-pliocene submergence. Mr. Milne Home has recently directed attention to many facts of similar import which are being accumulated in Great Britain and in Norway. Geologists are thus beginning to realize the evidence of a prevalence of the sea over the Northern hemisphere in the most recent of the geological periods; which at one time they would have regarded with the utmost scepticism.

While noticing these papers, I would also direct attention to the evidence which they afford as to the action of sea-borne ice as distinguished from that of glaciers; and in connection with this it is important to note the influence attributed to floating pack ice and "pan ice" by the officers of the late Arctic expedition, as well as by Prof. Hind and by Prof. Milne in recent papers in the Geological Magazine. On the other hand the observations of Hellond on the glaciers of Greenland, published in the Geological Magazine, state the interesting fact that one of the great

glaciers of that country flows seaward at the surprising rate of 20 metres in a day, and gives off a vast abundance of bergs, more or less laden with earthy matter and boulders. A fact like this helps us to understand the gigantic furrows ploughed by some of the old local glaciers of the Laurentian hills, and of which the sluggish glaciers of the modern Alps afford no adequate explanation.

All these new facts tend to strengthen the conclusion that general submergence and the action of floating ice and of local glaciers afford the causes at work in the so-called glacial age.

In the department of Zoology we have reason to congratulate ourselves on the communication of Dr. Osler on the Fresh-water Polyzoa of Canada. These remarkable and interesting animals, though abundant in our canals and ponds and slower streams, have as yet received little attention. The contribution of Dr. Osler brought under our notice several species; some of them forming communities of considerable size, and all of them of very great interest and beauty.

Our attention was called by Dr. Carpenter to the subject of Zoological nomenclature, in connection with a circular issued by Mr. Dalle on behalf of the American Association for the Advancement of Science. With the replies prepared by Dr. Carpenter most of us I think in the main agree; and while we regard as very reprehensible many of the eccentricities of genus-makers and species-makers, more concerned to gain credit to themselves than to advance the interests of science, we equally reprobate the over-scrupulous antiquarianism which would revive uncertain and forgotten names to the exclusion of those sanctioned by long use. There is perhaps little hope that these evils can be wholly remedied in the present state of science, when there is in this respect no king in Israel, and every man does what is right in his own eyes. We believe however that the old rules sanctioned by the British Association, with a moderate amount of self-abnegation and common sense, will be sufficient to secure all that is really necessary.

The lamented death of Mr. Billings is a heavy blow to this Society, as well as to the cause of science in Canada; and one of our meetings was appropriately occupied with an obituary notice by his successor, Mr. Whiteaves. It is not necessary for me to refer to the details contained in that notice. I may remark however that Mr. Billings may be considered as the creator

of Canadian Palæontology, in so far as the Invertebrate fossils of the Palæozoic rocks are concerned. This department he built up from its foundations, and built so extensively and so well, that it will be long before his work can be hidden from view by any additions to be made by his successors. As a worker he was painstaking and cautious rather than rapid, and his results were always regarded with respect and confidence by those engaged in similar pursuits elsewhere. He was not a mere describer of species, but a geologist of sound and broad views, and his earlier works show a power of lucid and popular presentation of his subject which it is perhaps to be regretted he did not follow up in his later years. One of his greatest failings was a certain shrinking from publicity, which rendered him indisposed to take a prominent position even in the work of our own Society, and still more tended to prevent him from entering into any presentation of his favourite studies to the general public in any other form than that of official reports and scientific papers. Such men as Mr. Billings are produced in small numbers in any country, and it may be long before Canada possesses as one of her own sons a second Billings. It is however a remarkable coincidence that such a man should have been preparing himself to second the work of Sir William Logan just at the time when Palæontological work had become a prime necessity for the Canadian Survey.

I have reserved to the last some remarks connected with the subject of my own paper on the Geology of the Intercolonial Railway, and which subject I desire here to refer to in a somewhat broad and discursive manner, demanded I think by the present condition of science and the industrial arts in this country. I would in this connection desire to direct your attention to the immense importance of that great public work, and to the effects which would flow from a further extension of similar enterprise in the west. I can remember a time when the isolation of the Maritime provinces from Canada proper was almost absolute. There was a nearly impassable wilderness between, and no steamers on the waters, and the few whom business or adventure caused to travel from Halifax or St. John to Quebec or Montreal, had to undertake a costly and circuitous journey through the United States, or to submit to almost interminable staging through a wilderness, or to the delays of some sailing craft on the St. Lawrence. In later times steamboats have

supplied a less tedious mode of communication, and now we see placards informing us that the Intercolonial carries passengers from Quebec to Halifax in twenty-six hours. But it has done more than this. The traveller may now see the coal of Nova Scotia travelling upward to Quebec, and the fresh fish of the Atlantic coast abundantly supplied in our markets, while the agricultural products of the interior travel seawards in return. This is however but the beginning of a great change. A delegation of coal owners was in Ottawa last month endeavouring to attract the attention of members of the Legislature to the fact that Ontario might be cheaply supplied with coal from Nova Scotia in return for her farm products. The representation led to no immediate practical results, but it foreshadows a great future change. Living as we do on the borders of that great nation without any name, except that of America, which does not belong to it, and which builds an almost impassable wall of commercial restriction along its frontier, we cannot long endure the one-sided exchange of commodities which takes place at present so much to our disadvantage. The Nova Scotian cannot buy flour and manufactured goods from a people who refuse to take his coal and iron in exchange; and the Ontarian or Quebecker cannot afford to have the commercial connection with the mother country severed in favour of a nation which will not take the products of our fields, our forests, our mines or our granaries in exchange. We shall have in self-defence to cultivate our own internal trade, and even if we must bring the products of the Pacific and Atlantic Coasts across a whole continent to meet each other, this will be cheaper in the end than to sacrifice our own interests and those of the empire to the Chinese policy of our neighbours in the South.

The diversities of products in countries depends much on differences in latitude, but there are also diversities depending on longitude, and, fortunately our country possesses these in no small degree. On our Atlantic coast we have rich fisheries and minerals not possessed by the interior regions. In these last, through all the great regions extending from Quebec to the Rocky Mountains, we have vast breadths of fertile soil besides many of the elements of mineral wealth, and varied kinds of manufactures are growing up both on the coast and inland. What is to hinder a direct exchange of commodities within ourselves instead of an indirect exchange under the most serious

disadvantages with the United States. Further, such direct exchange would increase our trade with Great Britain and the West Indies, and bind together the somewhat divergent sections of our own population. The opening up of railway communication across the great western plain might do for us what a similar process has done for New York. But from a railway terminus on the Pacific shore we could stretch our commercial relations over that great ocean, and bring all the treasures of the Orient to enrich our markets. Further, in establishing communication with British Columbia, we are not merely establishing a landing place on the Pacific, though this would be an inestimable advantage. British Columbia is in the mining point of view, one of the richest portions of the earth's surface. It is of more value acre for acre than any portion of the Eastern States or of Canada proper. In an appendix attached to a recent report on the Pacific railway, Mr. G. M. Dawson has collected some details as to the mineral wealth of this region. He mentions gold-fields yielding now more than a million and a half of dollars annually. In eighteen years British Columbia with only 10,000 inhabitants has exported gold to the amount of 40,000,000 of dollars; and it is no exaggeration to say that with a larger population and better means of conveyance this yield might be increased twenty fold.

Coal exists on Vancouver's Island and the neighbouring mainland in inexhaustible abundance, and of excellent quality, and represents the sole supplies of that mineral on the Pacific coast of North America. British Columbia might supply the whole Pacific coast and a vast interior region, and might produce many millions of tons annually.

Iron, silver and copper are known to exist in productive quantities, and there is reason to believe that mercury, lead, and platinum might be added.

In short, British Columbia posssesses all that mineral wealth which has enriched California and the States adjoining it; and the opening up of communication between it and other parts of the Dominion would be the beginning of a series of events that would build up great and wealthy cities and populous seats of industry in a region now scarcely inhabited, and cut off from direct intercourse with the other provinces politically connected with it.

What the Intercolonial has begun to do for our relations with

the Atlantic provinces, the Canada Pacific must do for our relations with the Pacific province; and if I could present before you in a prophetic picture all that would follow from the establishment of such a connection, and the trade of the great sea and lands beyond, which might flow through our country, you as citizens of a commercial city, as well as in the capacity of votaries of science and scientific art, would at once say that at almost any sacrifice this great work should be executed. The difficulties in the way are undoubtedly great—so great that this generation of Canadians should scarcely be called upon to overcome them unaided, but they are probably not insurmountable, and the mode of meeting them is certainly at present the greatest public problem that our statesmen have to solve. It is further undoubtedly the duty of those whose scientific studies show them the grandeur of this great question and the nature of the practical results of its solution, to aid in every way that they can the progress towards an unobstructed highway through our territory from the Atlantic to the Pacific.

If it is in our power thus to bring together the resources of the whole breadth of the Continent, we may hope to consolidate our connection with the Mother Country by making ourselves indispensable to her interests, to relieve ourselves from the galling commercial yoke laid upon us by our neighbors, to provide homes and work for the surplus population of our older provinces, to build up the wealth of great trading centres, and to render vast and naturally wealthy regions productive of subsistence for millions of men.

When I look forward to the future of this country and base my anticipations, not on the merely human elements of to-day, but on the geologic treasures laid up in past ages, I see the Dominion of Canada with a population as great as that of the United States, and with some of the greatest and wealthiest cities of this continent in Nova Scotia and British Columbia. Geologists are not merely prophets of the past, they know something of the future as well. It might perhaps be well if we could inoculate our statesmen with a healthy belief in the geological future of Canada, or even with some faint idea of the billions of dollars of accessible treasures that lie beneath the soil of British Columbia and Nova Scotia. We might then see them put forth some effort to realize this El Dorado within the time of those now living, rather than contentedly allow it to wait the action of men wiser and more energetic than ourselves.

Of the future of our own Society I shall say little. Much must depend on a judicious selection of officers, much on the liberality which the public may extend to us, much on the earnest efforts which our working members may put forth, and this not merely in the pursuit of new truths, but in cultivating in others a desire for that knowledge which we know from our own experience to be in itself one of the richest treasures which the world affords.

It is a matter of deep regret to us on this occasion that a recent Act of the Dominion Parliament renders it possible that the Geological Survey of Canada, which has since its commencement had its domicile in this city as the centre of commerce and practical science in the Dominion, may within one or two years be removed to Ottawa. That this, should it be carried into effect, would be a serious loss to this Society, the large number of papers and lectures contributed by members of the Survey, and the active part they have taken in the management of its affairs as officers and members testify. The removal of the Survey would also have its effect on the University, and on the interests of the numerous students who resort to this city for education, as well as on those of gentlemen connected with the numerous mining and similar enterprises which have their centre here. Nor would such removal be without injurious influence on the Survey itself. This Society was the first public body to urge on the Government the undertaking of a scientific survey. The Natural History Society, the University and the citizens generally, have always supported the interests and aided the work of the Survey, and have in many ways promoted its efficiency. Nor can an institution possessing a Museum and Labratories which are the growth of so many years, be hastily removed without serious loss, only to be repaired by renewed effort and the lapse of time.

But to my mind these local considerations are overborne by the change in the constitution of the Survey which has been made, rather, I fear, in the spirit of a narrow bureaucracy than of an enlightened regard for science. Hitherto the Survey, while nominally under the control of an Ottawa Department, has been in reality an independent institution, recognized as such abroad. Its directors and principal officers have been men whose reputation has far transcended that of the gentlemen who temporarily occupy departmental offices at the seat of government. It is now to be a branch of the Civil Service, a mere appendage

to the Department of the Interior. The effect of this may not be felt for a time, but it must eventually tend to deprive the Survey of its independent scientific action, to diminish its importance and consideration abroad, and perhaps in the end to reduce it to a mere industrial bureau, or to place it in the uneasy position of that American Survey of the Territories, which is in like manner attached to the Department of the Interior: but which is there supplemented by the military surveys, and by the surveys of the several states, some of which in their scientific results have far surpassed it. There can be no doubt that considerations of this kind weighed with the eminent and sagacious Canadian who founded the Survey and raised it to its present position of importance, in inducing him so strenuously to oppose its removal to Ottawa. It is to be wished that his fears may not be realised; but I cannot refrain from expressing my own strong conviction that these fears were well founded. The clause providing for the removal of the Survey is, however, not mandatory but only permissive. The carrying it into effect would involve a large expenditure and most serious loss, and would certainly contribute something to the cry beginning to arise, not only in this Province but in those of the Atlantic and Pacific Coasts, that this country is governed, not in the interests of the Empire or of the Dominion in its whole extent, but in those of a section of the people of Ontario. Let us hope that wiser counsels may prevail, or that some turn of the political wheel may suggest other measures or bring in other men.

The report of the Chairman of Council was next read by Mr. G. L. Marler.

REPORT OF THE CHAIRMAN OF COUNCIL.

At the close of another session, your Council beg to submit the following short summary of its proceedings during the year, with an occasional note on other matters connected with the business working of the Society.

A field-day was held at Belœil Mountain on Saturday, June 10th, 1876, which was attended by about eighty persons, and a very enjoyable day was spent. It is to be regretted, however, that the receipts on this occasion were not sufficient to meet the necessary expenditure, a circumstance probably owing to the unfavourable aspect of the weather at starting

On the seventh of September last our Scientific Curator and Rec. Secretary, Mr. J. F. Whiteaves, who has held these offices for fourteen consecutive years, tendered his resignation of both, at a special meeting called for that purpose. Resolutions of thanks for his past services, coupled with congratulations on his new appointment and good wishes for his future scientific career, were passed at this meeting.

In consequence of Mr. Whiteaves' resignation, new arrangements were entered into with Mr. Passmore, who agreed to give his whole time to the work of the Society, and to issue circulars for meetings, &c., for which additional services his salary was raised from $200 to $400 per annum.

A Museum Committee was also appointed, consisting of seven gentlemen, whose duties were understood to be to superintend the classification and labelling of specimens in the departments of mineralogy, botany, conchology, entomology, ornithology, and archæology, and to report at stated intervals to the Council on the condition of these collections. The Committee has reported twice since its election, but your Council would suggest the desirability of the appointment of a competent scientific curator who could devote a definite portion of his time to work urgently needed both in the museum and library.

Your Council have to report that ten new ordinary members, two lady associates, and two new corresponding members have been elected during the year. They have, however, to regret the loss of Mr. E. Billings, one of the Vice-Presidents of the Society, and one of its oldest and most zealous members.

The papers read at the regular monthly meetings having been already referred to in the President's address, call for no special notice here.

The free course of Sommerville lectures has been delivered in due course, and the titles of these lectures, the dates at which they were delivered, and the names of the authors, will be found in their proper place in the Society's proceedings. On the nights when these lectures were delivered, the museum was lit up and thrown open free to the public, a privilege of which many availed themselves.

About 1200 persons have visited the museum during the past year, and a large number of these have been admitted free of charge.

In accordance with a recommendation of the Council for the

previous year, the walls of the premises have been tinted, and the ceilings whitewashed; the contents of the cases in the museum have been taken out, and both the specimens and the interior of the cases have been dusted and cleaned.

In October last the use of the rooms was granted free of charge to the Protestant Teachers' Association of the Province of Quebec.

No further action has been taken in the matter of the Fraser Institute.

Finally your Council have to report that the name of Mr. J. Fraser Torrance has been associated with that of Dr. Harrington in the editorship of the *Canadian Naturalist.*

The report of the Scientific Curater and Rec. Secretary was then read by Mr. Whiteaves, as under:

REPORT OF THE SCIENTIFIC CURATOR AND REC. SECRETARY.

The report of the work done in the museum since the last annual meeting embraces only a period of three months, and during this time two days a week were spent at the Geological Survey, by special permission of the Society.

The critical examination of the Marine Polyzoa of the River and Gulf of the St. Lawrence has been almost completed; the Cyclostomata are quite finished, and the Cheilostomata and Ctenostomata nearly so. In the naming of difficult species much assistance has been rendered by the Rev. A. M. Norman, one of the best authorities in Europe on this group, to whom a number of specimens have been sent for comparison, which have been subsequently returned. Mr. Norman has also presented to the Society a large number of named British types.

The fine and interesting collections of marine invertebrates made by Mr. Richardson in 1875 on the west coast of America, have also been carefully studied, and critical forms of molluscs, hydroids, and crustaceans have been sent respectively to Messrs. Dall, Verrill and Smith, which have also been returned. The whole series has now been named, with the exception of the Polyzoa, and a report on the whole is in process of preparation.

Some progress has also been made in the naming and mounting of the shells from the Andamans, presented by Col. Bulger.

A committee of the Entomological Society having requested the loan of rare Canadian insects for exhibition at the Centennial, a series has been selected and forwarded for that purpose. As soon as Mr. Pettit has completed the naming of the Coleoptera, the whole will be returned. In the late Mr. Ritchie's catalogue of the Island of Montreal, the Curculionidæ are omitted, probably because at the time no specialists had worked at this particular group. For some years Mr. Caulfield, Mr. Passmore, and myself have endeavoured to collect as many local species of this order as we could, and last summer, knowing that Drs. Horn and Leconte were engaged in a monograph of the group, all our material was sent to the latter gentleman, who has kindly named and returned all the species.

The rather extensive series of beetles collected in British Columbia by Mr. Selwyn and Prof. Macoun in 1875, has also been packed and forwarded to Dr. Leconte, and a list of them has been published in the Report of Progress just issued. This catalogue is an important addition to our knowledge of the distribution of insect life in the Dominion.

In consequence of the cleaning of the museum and the tinting of the walls mentioned in the report of the Chairman of Council, it has been necessary to take down all the ethnological specimens which were hanging in the gallery. These have been re hung in their places, but the labels for them have to be re-written. The mammals, birds, reptiles and fishes have also all been taken out of the cases, and after the inside of the latter had been dusted and cleansed, their previous contents were re-placed.

Appended to this short report is a general summary of the condition of the collections, at the date of my resignation of the office of Curator of the Museum.

MINERALS.

These are arranged in four series as follows:

1. *The Holmes Collection.* This originally consisted of about 4000 specimens, principally from the United States and Europe. A written catalogue accompanies it, but many of the original specimens were missing before the erection of this building. Cardboard labels corresponding to those in the catalogue are affixed on or near to each specimen.

2. *Canadian Rocks and Minerals.* A poor collection, of which a catalogue exists. It has been supplemented by some subsequent donations, but no special effort has been made to perfect it, in consequence of the presence in our midst of the fine and almost complete collection of the Survey. All the specimens are labelled like those last named, but both require going over, as some of the tickets may have become detached or misplaced.

3. *A fine series of the Volcanic Rocks and Minerals of Vesuvius and its neighbourhood.* All in good order and labelled, doubtful specimens having been kindly examined and determined by Dr. T. Sterry Hunt.

4. *Miscellaneous Rocks and Minerals.* All labelled, with the name of the species and the locality from which it was collected, when known.

FOSSILS.

The fossils in the museum are mostly from the United States and Europe, the intention being to supplement the Survey Collection as far as possible, and to illustrate such manuals as those of Lyell, Phillips, Jukes and Dana. All are named and labelled, but only a portion of the late Sir Duncan Gibb's donation has been incorporated into its place in the general series.

PLANTS.

A collection filling 21 portfolios of North American plants, arranged according to the Natural System. Although corrosive sublimate was mixed with the paste with which the plants are fastened to the papers, it has been recently noticed that a small beetle has been and is still making burrows through some of the fasciculi, and the matter requires immediate attention.

INSECTS.

Some additional species, mostly scarce Coleoptera, have been added during the year, which were collected by Mr. Passmore and myself. My reports for the past two years give a detailed account of the work done in this department. It was found during the summer that the larvæ of *Dermestes lardarius* had done some damage to a few Lepidoptera in one of the drawers, and the specimens affected were destroyed, and measures were taken to prevent further injuries from this source, but the cabinet will always require periodic inspection.

MOLLUSCA AND MARINE INVERTEBRATA.

This part of the collection is in tolerable order, but the nomenclature of the species requires some revision.

FISHES AND REPTILES.

The stuffed specimens are in fair condition, though some improvement can be made in the labelling of the Canadian fishes, which were identified only in a provisional kind of way several years ago. A commencement has been made of a new collection of alcoholic preparations, which are temporarily placed in the vestibule, but this part of the work was stopped for want of a supply of good glass stoppered bottles and of alcohol.

BIRDS AND MAMMALS.

The series, especially of native species, badly wants replenishing with new and fresh specimens; but those we have, though though mostly old and often in very poor condition, are all carefully named. The Society's collection of the eggs of North American birds, is very good, and could be made of much value to students at a very trifling expense.

MISCELLANEOUS.

A number of objects of interest, such as Indian antiquities and modern ethnological objects, have been temporarily arranged in the best manner the cases at my disposal would admit. Quite a large number are contained in drawers, &c., there being no cases available for their proper exhibition.

THE GULF DREDGINGS.

The history of these investigations may be briefly summed up as follows: In 1867 and 1869 dredgings in the Gaspe district were carried on at my sole expense in the summer months, and these require no further comment. In 1871 the Government gave me, as the Society's representative, a passage and some opportunities for dredging on government vessels. The cost of the necessary outfit and travelling expenses, amounting to about $120 or $130 were shared by the Society and myself, the Society paying about $90, and myself between $30 and $40. In 1872 and 1873 the Government defrayed all the expenses, but the Society paid my salary during the time of my absence.

All the alcoholic and many of the dry specimens obtained in these dredgings, with the exceptions which will shortly be noticed, are placed provisionally in a large cupboard in the vestibule, with five compartments, which was constructed for the purpose. A few of the mollusca and celenterates are incorporated into the general series in the gallery.

The whole of the collection of marine worms has been sent to Dr. McIntosh of Murthley, by Dunkeld, in Fifeshire, who is engaged in their examination, and who has published a report on part of them in the Annals of Natural History.

A few critical Polyzoa are also in the possession of the Rev. A. M. Norman.

The Ostracoda, which have been studied and reported on by Messrs. Robertson and Brady, have not yet been returned, but are still in the hands of the former gentleman.

Duplicates have been sent to Professors Verrill and Smith, of Yale College, and to Mr. Alfred Brown of Glasgow. From the former gentleman the Society has received a named series of marine invertebrates from their dredgings on the New England coast; and from Mr. Brown a number of species of exotic shells.

As soon as I can find time to put my notes into shape, I propose to publish a final report on the results of the whole of these dredgings.

COLLECTIONS DEPOSITED BY THE GEOLOGICAL SURVEY.

These consist of marine invertebrates from the Gulf of Georgia and other parts of the west coast of British North America, for the most part dredged or collected by Mr. James Richardson, also of a collection of dried plants from the Pacific coast made by the same veteran explorer. These require to be labelled with tickets stating clearly to whom they belong, in case they should be claimed by the Government or by the Directors at any future time.

Finally, while resigning the offices of Scientific Curator and Recording Secretary, permit me to express the hope that the members generally will overlook or excuse any shortcomings or remissness on my part during the past fourteen years, and that they will believe that my sole object during this long period has been to endeavour to promote the advancement of knowledge and to popularize the study of Natural History in this city.

Mr. E. E. Shelton, as Treasurer, submitted the annexed financial statement:

Dr. THE NATURAL HISTORY SOCIETY OF MONTREAL, *in account with* E. E. SHELTON, *Treasurer.* *Cr.*

1876-77.

Dr. THE NATURAL HISTORY SOCIETY OF MONTREAL, *in account with* E. E. SHELTON, *Treasurer.* *Cr.*

1876-77.			1876-77.		
To Cash paid Mr. Whiteaves, salary		$200.00	By Balance in Treasurer's hands, May 17, 1876		$603.92
" Mr. Passmore, "		325.00	" Cash received, Government Grant		750.00
" " attend. meetings last year.		28.00	" " Member's Yearly Subs.—Ladies	$8.00	
" Mr. Foote, commission on collections		24.30	" " " " " Gentlemen	500.00	
" for Coal		131.45			508.00
" Gas Bills		77.15	" " Museum Entrance fees		34.75
" Water		43.95	" " Rent of rooms		432.00
" City Taxes, (overcharge $49.10 returned)		128.20	" Interest on Deposit in Bank		9.67
" Corporation for New Drain		84.75			
" Interest, Royal Institution		80.00			
" Insurance		36.05			
" Dawson Bros. for Naturalist		177.50			
" Whitewashing and Petty Expenses		162.48			
" Printing and Advertising		90.17			
" Loss on Excursion		40.93			
'77. May 16—To balance in Treasurer's hands		708.41			
		$2338.34			$2,338.34

LIABILITIES:

Mortgage on Society's Buildings in favor of Royal Institution $1000.00

MONTREAL, 17th May, 1877 } Audited and found correct, after comparing Vouchers, &c.

J. H. JOSEPH,
G. L. MARLER.

It was moved by A. R. C. Selwyn, seconded by Dr. J. Baker Edwards, and resolved:

"That the reports just read be adopted and printed separately for distribution to the members."

On motion of Mr. A. R. C. Selwyn, seconded by Mr. G. L. Marler, it was resolved unanimously:

"That Dr. P. P. Carpenter and Mr. J. F. Whiteaves be elected Honorary Life Members of the Society."

It was moved by Mr. Marler, seconded by Dr. J. Baker Edwards, and carried by acclamation:

"That the bye-law relating to officers be suspended, and that Principal Dawson be re-elected President."

Mr. Selwyn moved, seconded by Mr. Marler:

"That Mr. E. E. Shelton, be re-elected Treasurer."

The motion was carried unanimously.

On motion of Mr. Marler, seconded by Dr. J. Baker Edwards, Mr. F. W. Hicks, M.A., was elected Corresponding Secretary; and on motion of Mr. Selwyn, seconded by Mr. Shelton, Dr. J. Baker Edwards was elected Recording Secretary.

Messrs. M. H. Brissette and A. H. Foord having been elected scrutineers, the following gentlemen were elected officers, by ballot.

Vice-Presidents—Rev. A. DeSola, LL.D.; His Lordship the Metropolitan; Prof. P. J. Darey, M.A., B.C.L.; Dr. P. P. Carpenter; G. L. Marler, C. Robb, A. R. C. Selwyn, F.R.S., F.G.S.; Jas. Ferrier, Jr.

Council—Dr. W. Osler, R. W. McLachlan, J. F. Whiteaves, Prof. R. Bell, M. H. Brissette, J. H. Joseph, Dr. B. J. Harrington, J. B. Goode and W. Muir.

It was moved by Mr. Shelton, seconded by Dr. J. Baker Edwards, and resolved:

"That the members of the Library and Membership Committee be re-elected and that the names of Dr. Wolfred Nelson and J. Fraser Torrance be added to their number."

On motion of Dr. Wolfred Nelson, seconded by Mr. F. W. Hicks, a vote of thanks was passed to the officers of the past year, and a special vote to the same effect was also passed to the Scientific Curator for fourteen years services in that capacity, the mover being Mr. W. Muir and the seconder Dr. J. Baker Edwards.

LIST OF RESIDENT MEMBERS

OF THE

NATURAL HISTORY SOCIETY OF MONTREAL.

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CHAMPION BROWN, Esq.
HENRY CHAPMAN, Esq.
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A. H. DAVID, Esq.
J. W. DAWSON, LL.D.,F.R.S.
REV. A. DE SOLA, LL.D.
G. A. DRUMMOND, Esq.
HON. JUDGE DUNKIN.
W. EWAN, Esq.
HON. JAMES FERRIER, M.L.C.
JAMES FERRIER, JUN., Esq.
W. H. HINGSTON, Esq., M.D.
WM. HOBBS, JUN., Esq.
HON. L. H. HOLTON, M.P.
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W. F. KAY, Esq.
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WILLIAM LUNN, Esq.
HENRY LYMAN, Esq.
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WILLIAM NIVIN, Esq.
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PETER REDPATH, Esq.
DUNCAN ROBERTSON, Esq.
ALFRED SAVAGE, Esq.
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J. F. WHITEAVES, Esq.
J. H. WINN, Esq.
THOS. WORKMAN, Esq., M.P.
WILLIAM WORKMAN, Esq.

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Alloway, Dr.
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Barlow, Scott
Barnston, W.
Baynes, Dr. Donald
Bell, Dr. John
Bell, Prof. R.
Bethune, Strachan
Bowles, G. J.
Brissette, M. H.
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Bulmer, Henry
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Campbell, Dr. G. W.
Campbell, Kenneth
Campbell, Robert
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Cheney, Gilman
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Cowie, W.
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Craik, Dr. R.
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Date, John
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Dawson, S. E.
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Empson, Rev. John
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Fenwick Arnold V.
Foord, A. H.
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Gibb, C.
Godfrey, Dr. R. T.
Goode, John B.
Grafton, F. E.
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Greene, E. K.
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Gunn, W.
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Harrington, Dr. B. J.
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Hill, Benjamin
Henderson, John
Hicks, Rev. F. W.
Hoffmann, Christian
Hodgson, J.
Holland, Philip.
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Kennedy, W.
Kerry, Jno.
Kershaw, Thos.
King, Warden
Lindsay, R. A.
Mackay, Jos.
Mackenzie, Fred.
Macpherson, J. L.
Major, E. J.
Marler, G. L.
Mathewson, Jas. A.
May, S. H.
McCallum, Dr. D. C.
McCord, D. R.
McDonald, W. C.
McEachran, D.
McKay, Henry
McKeand, Anthony
McLachlan, Robt. W.
McLaren, H
McLea, Kenneth
McLennan, Hugh
Mercer, Nathan
Metropolitan, Most Rev. the
Mott, Henry
Mudge, N. R
Murphy, Edward
Mussen, Thos.
Nelson, Dr. Wolfred
Norman, Rev. R. W.
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Ostell, John
Paton, Laird
Plimsoll, John
Popham, John
Reed, G. W.
Reekie, R. J.

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Robb, Chas.
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Robertson, John
Robertson, W.
Rose, Daniel
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Rowell, S. P.
Roy, James
Rutherford, W.
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Selwyn, A. R. C.
Shackell, H.
Shaw, H. J.
Shearer, Jno. S.
Shearer, Jas.
Shelton, E. E.
Simpson, G. W.
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Smith, Hon. Donald
Spong, J. J. Rowan
Sumner, G.
Taylor, John
Thomas, F. Wolferstan
Torrance, Hon. Judge
Walker, Jas.
Wanless, Dr.
White, Thos.
Whitney, H. H.
Williamson, James
Wilson, G. S.
Vennor, H. G.

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Mrs. Lewis.
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Mrs. Molson.
Mrs. Peter Redpath.
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