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ADDRESS

OF THE

PRESIDENT

OF THE

Belfast Natural History Society,

ON THE OPENING OF THE

BELFAST MUSEUM,

1ST NOVEMBER, 1831;

ALSO, THE

REPORT OF THE CURATORS

ON THE SAME OCCASION:

TO WHICH ARE ANNEXED,

DIRECTIONS

FOR PRESERVING OBJECTS OF NATURAL HISTORY.

BELFAST:

JOHN HODGSON.


1831.

Mairs, Printer Belfast.

P R E F A C E .

THE Address or Lecture following the Report of the Curators, is published at the request of the Natural History Society. In the delivery it was illustrated by magnified drawings, and some experiments, which, of course, must have made it more plainly understood than it can be by a simply printed statement.

JAMES L. DRUMMOND, M. D.
PRESIDENT, B. N. H. S.

 The directions for preserving objects of Natural History have been furnished by the Council of the Natural History Society, and published at their request.

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HODGSON

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REPORT

Of the Council of the Belfast Natural History Society, read before a Meeting of Members and Visitors, at the opening of the Museum, College-square, 1st Nov. 1831.

THE Council of the Natural History Society have been directed, by their fellow-Members, to bring forward, on the present occasion, a concise report of their past progress, their present state, and their future prospects, for the information of those friends by whose aid the present building has been erected. The Natural History Society was first formed at a meeting held in the house of Doctor Drummond, on the 5th of June, 1821. At this time, it consisted of only eight Members, who met, at stated periods, at the house of Doctor Drummond, under whose care and zeal, as President, it has continued gradually to advance, while the number of Members has regularly increased, and now amounts to 91, exclusive of those residing in other parts of the kingdom, and in foreign countries. The objects for which they were established, were the cultivation of Zoology, Botany, and Mineralogy, in all their branches, and more especially the investigation of the Natural History and Antiquities of Ireland. At first, as might be expected, the papers read, consisted of little else than compilations from authors of established character, and of discussions and inquiries arising out of the matter thus brought forward. It was not until a more advanced state of existence, that original information was introduced, except that communicated by their President, Dr. Drummond. The Council dwell, with pleasure on the unassuming commencement thus made, in hopes, that the friends of science in other parts, may be encouraged to begin a similar career, although their numbers may be small, and their knowledge circumscribed. On the 16th October, 1822, as Dr. Drummond was then removing from the house he had been occupying, application was made to the Managers and Visitors of the College, for permission to hold the future meetings of

the Society in one of the class rooms. This was granted in the kindest manner ; and for twelve months, the meetings were accordingly held in that place. During that time, however, many donations of specimens had been received, suitable to a Museum, and the number of Members belonging to the Society had considerably increased. Accordingly, on the 12th Nov. 1823, they removed once more, and rented, as a Museum and a Meeting-room, two small apartments in the Commercial Buildings. Here their progress was in every respect most gratifying ; but, at length, they began to experience inconvenience, both from the smallness of their Meeting-room and the over-crowded state of their Museum. The inconvenience increased as the collection of their specimens was augmented, until they were obliged to look around them for larger and more commodious apartments. They were unable to meet such as in every respect they wished to have, and at length they came to the resolution of erecting a building, on a moderate scale, for themselves. It was at this period that the idea of extending their plan was suggested, and that they were recommended, by some of their Members and scientific friends, to attempt the erection of such a building, as would be creditable to the taste of the town, and useful as a public institution to this part of the country. A circular, stating the objects of the Society, was published ; in which the importance of public Museums was pointed out, and a plan for raising a sufficient fund for the purpose of erecting this building developed. In this the Members of the Society disclaimed any individual right of property in their collections. They were anxious to diffuse, as widely as circumstances would permit, the benefits it was calculated to confer ; and they undertook to maintain the Museum at their expence. Subscription lists were now opened, a spirit which had until then lain dormant was roused, and above £1,000 was in a short time subscribed. A Committee to carry the plan into effect was appointed ; a design of the building was agreed on ; and the edifice in which we now assemble was commenced ; the foundation stone having been laid on the 5th of May, 1830, by the Marquis of Donegall, who, by this act, by a liberal subscription to the

undertaking, and by enrolling his name among the Honorary Members of the Society, evinced his desire to promote the literary advancement of the town. Since that time, additional subscriptions have been received; and the list now amounts to £1,445 10s. 6d.; of this sum, £1,404 12s. 6d. has actually been collected and paid into the hands of the Treasurer, which still leaves a sum of £40 uncollected. As circumstances have occurred which may prevent the payment of part of this sum, it is probable, that not much above £1,400 of the present subscription can, with certainty, be calculated upon. Such parts of the building as are immediately required, are now completed; the total sum expended, including all the incidental expenses, inseparable from a new undertaking, amounts to £1,900, or nearly £2,000, so that a debt of between £500 and £600 has, on the whole, been incurred. Such is the slight sketch prepared by the Council, of the origin, progress, and present state of the Natural History Society. The future prospect is one on which they feel pleasure in dilating, in confidence, that the liberal and enlightened spirit which has carried them thus far, will bear them onward in a prosperous, useful, and honourable career. It is most desirable, that their efforts should be unfettered by debt, and that the most scrupulous economy should be employed in the expenditure. The latter has been uniformly observed, and will, if possible, be even more rigorously attended to for the future; with respect to the former, they have good ground for sanguine expectations. Many liberal and wealthy persons have not yet been applied to for subscriptions—some have signified their intention of increasing the sum originally bestowed, and all seem willing to aid in a greater or less degree. Several persons also, anxious to avoid burthening the Society with the payment of interest on the debt, have proposed that the amount should be lent on debentures, in small sums, free of interest, until legitimate funds for annulling it can be procured. Until this be done, it is intended by the Members to hold out the same inducements to Subscribers which they did at first. The Subscribers of five guineas will have the privilege of visiting the collection, and of intro-

ducing an unlimited number of their friends. The Subscribers of ten guineas, will, in addition to this privilege, have the power of attending the various meetings of the Society, of bringing a friend with them, and of making use of the Library, now containing a considerable number of books, and which continues gradually to increase, both by donations from Members and friends, and by purchases. To a Subscriber of twenty guineas, or upwards, a vote in all proceedings, and every privilege enjoyed by Members is allowed in the fullest extent. In addition to the Ordinary Members of this Society, by whom the business is conducted, and who are bound by rule to read in rotation at the meetings, a class of Members has for some time existed, called Visiting Members, who are exempt from any of the labours to which the others are subject. These formerly paid a higher subscription, but they are now admitted at the same rate as the Ordinary Members, £1 1s. per annum, becoming a very numerous class. Since the commencement of this Society, a considerable Museum has been collected; some progress in the formation of a Library has been made, and 222 papers have been read at its various meetings. It is intended that the regular meetings of the Society should be held, as they have always been, once each fortnight, on Wednesday evening, at eight o'clock. To these no person will be admitted, except Members, Subscribers of not less than ten guineas, and gentlemen introduced by them, for a large audience is unsuited, by its very nature, to the calm and deliberate investigation essential to natural science. But the Members, in order to extend a taste for those pursuits, in which they are themselves engaged, have agreed to give occasional popular lectures on various subjects, and to give increased powers of introduction on those occasions, both to Members, and ten guinea Subscribers, according to the number which their rooms can conveniently accommodate; and they expect, at these meetings, to be honoured with the presence of ladies as well as of gentlemen. The first of these Lectures will be delivered on Wednesday evening, the 30th November, 1831, by Professor Stevely, on the Winds. The collections of objects of Na-

tural History now belonging to this Society, consists of about 2,000 specimens of minerals ; a nearly complete collection of native and a considerable number of foreign shells ; 200 native and foreign birds ; about 3,000 insects ; an extensive Hortus Siccus of indigenous, American and other exotic plants ; about 200 snakes and lizards ; with some skins, coins, antiquities, and miscellaneous articles. Unexpected delays in finishing the building, have prevented the collection from being now exposed to view, and the dampness of the newly finished walls, forbids any of the most perishable from being removed here for some time to come. They are now, however, in progress for being scientifically arranged, properly labelled, and exhibited in suitable cases, so that in a very few months, the Council expect to have the entire collection displayed in the large room in which we are now assembled. To effect this object, to liquidate the debt incurred, and to render the establishment of the Museum co-eval with the diffusion of a taste for Natural Science in this part of the country, are the purposes to which all their energies are now directed. Before concluding their Report, the Council wish to call the attention of Members and friends to the necessity of exertion in procuring additional subscriptions to the building fund, so as to leave the Society unimpeded, in their efforts to render the Museum of the greatest possible advantage ; and also to the propriety of endeavouring to obtain additional specimens for the collection. To aid persons going abroad, or living at a distance, full directions for preserving and preparing specimens have been published ; many copies of these have been circulated with good effect ; and the Secretary is always willing to supply others to any person wishing for such information. In calling to this subject the attention of all persons having friends residing abroad, the Council wish, particularly, to address those who have friends in the Royal Navy, on any of the foreign stations ; merchants having ships going to foreign countries ; and masters of vessels belonging to this port. All these have great opportunities of contributing largely to such an undertaking ; and the Council have no doubt that this appeal will be sufficient to ensure their

co-operation and assistance. As regards the Society, they can promise, that every necessary attention will be paid to selecting, arranging, and preserving all donations sent in for this Museum. It is not merely to persons residing abroad that this appeal is directed—even those living at home, have frequent opportunities of aiding such an Institution as this. Specimens of a kind suited to a Museum, are always occurring, which, though of little value to the possessors in their detached state, may be of great use in a Museum, by enabling the Directors to complete their series, or by comparison with specimens already there. Antiquities, also, connected with the history of our own country, are always presenting themselves. These, from not being collected into one place, lose a great part of their value; they are neither useful to elucidate the general history of the arts, nor the particular antiquities of Ireland. The circumstances, also, under which they are found, and the locality, are soon forgotten; and thus a great part of the interest connected with them is lost. The Council having now concluded their Report, beg leave, in the name of the Society, to return their thanks to those noblemen and gentlemen who have contributed to the erection of the present building, and to the collection of specimens; and to assure them, that it will always be the great object of the members to fulfil, as far as in their power, the plan of the original prospectus, by endeavouring to render the Museum worthy of the liberal spirit by which it has been so far supported.

ADDRESS

ON OPENING THE

BELFAST MUSEUM OF NATURAL HISTORY.

GENTLEMEN OF THE NATURAL HISTORY SOCIETY,

FOR a number of years past, I have been honoured by your appointing me to the place of President of your Body; and in virtue of that office, it is my duty to address you on the present occasion. I rejoice that it falls to my lot to congratulate you on an æra so auspicious to our success, and on the bright prospects which now lie before the Society, compared with the obscure and doubtful horizon which encompassed the early years of its existence. The report of the Curators, however, has saved me the necessity of entering into any detail of the origin, progress, and present state of the Society, and therefore I will only occupy the time of the meeting with such general observations as I may conceive to possess some interest in your minds; and that without any attempt at arrangement, but just as the ideas have occurred.

That there is more pleasure in observing the objects of creation themselves, in their native places, than in studying their history in books; and that there is more satisfaction in seeing birds and other animals in all the activity of life and sensation, than to contemplate them dead and immoveable in the cases of a Museum, you will, I presume, at once admit. But there is a fashion now getting up by various writers, of decrying the study of Natural History from books or Museums, and which advances the doctrine, that no man can be a naturalist, who is not an actual observer of out-

door nature; that no dependance is to be put in the accounts given in books; and that the only valuable knowledge of nature which a man can possess, is that which he acquires by his own observation. "In books," says one of these writers, "we can only obtain knowledge at second-hand; and this, like a story, circulated among village gossips, is more apt to gain in falsehood than in truth, as it passes from one to another; but in field-study, we go at once to the fountain-head, and obtain our facts pure, and unalloyed by the theories and opinions of previous observers."*

Now, if we want to gain a knowledge of the history and manners of some celebrated character, will any one be absurd enough to say, "O, you must go and observe for yourself, because in printed accounts you have only what is known at second-hand;—they contain errors, and cannot be trusted." I consider the case parallel with the reasonings of the writers I have alluded to. To know the history of the Ostrich, is it necessary that we should travel individually to Africa? or of the Condur, that we should visit Patagonia? or of the Crocodile, that we should navigate the Nile? Will any man of ordinary candour say that we can derive no accurate knowledge of these animals from books? I think not; on the contrary, every unprejudiced person will acknowledge, that a large fund of information concerning them can be thus acquired; and it is no argument against book-study, that errors exist, or that every thing is not to be gained from them that we could wish.—How are we to get a knowledge of the History of Ireland?—By books, unquestionably; and it would be ridiculous to con-

* Rennie in Montagu's Ornithological Dictionary, IX.

tend, that because such knowledge is obtained at second-hand, or that there may be errors, and these even copied by one historian from another, we are therefore not to study the history of our country. The same may be said of every branch of knowledge whatever; and I would strongly recommend, especially to the younger members of the Society, that their love of reading should every day increase, and that they should entirely discard the injurious notion, that reading is of little value in giving us a knowledge of nature.

In the study of books, we are employed in storing our minds with the reasonings, the observations, the modes of thinking, and the discoveries of those master-spirits, who have led the way in science, and conferred the blessings of mental culture and civilization on our race. And are we not thus to "hold high converse with the mighty dead?" Are we to give up the accumulated wisdom of ages, and have the arrogance to imagine, that a few little observations of nature, made by *ourselves*, are of more value than the contents of thousands of volumes written, and of facts recorded by men, illustrious in the annals of science, whether living or dead?

Were it not for authors, what, let me ask, would be our present knowledge of nature? Had we existed from our birth in a world without books, what would be the sum of knowledge we could possibly possess? Would we not be as the inhabitants of every part of the globe where such sources of knowledge are unknown—a savage, uncivilized generation?

The writer to whom I have already alluded says, that "one fact learned from personal observation, is, to the student, worth a thousand mere book facts." Now, it far surpasses my comprehension to know how one fact in natural history,

under any circumstances, can be worth one thousand other facts. The assertion, indeed, has a very Hibernian aspect, but the author belongs to that land which gave birth to the immortal Robert Burns.

In the remarks I have made, let it not be understood, that I do not set the greatest value on personal observation. I admit it to be of the utmost consequence; and, indeed, it is the *only* way in which new facts can be acquired, and existing errors rectified; but then, that is no reason for our neglecting books, or undervaluing them. When new facts and increased knowledge are acquired, how can they be preserved, and how communicated to others, but by books? The fact, however, is, that the authors to whom I have been alluding, do not believe in the doctrine which they preach. Within the last twelve months, Mr. Rennie, whom I lately quoted, has himself published several volumes, and is the author of various works besides, which are of the highest value to the student and the general reader. These volumes I recommend to you, to read again and again: they contain more knowledge of the subjects on which they treat, than our whole Society, were every member's life doubled, could, by its own observation, probably attain to. When I mention the "Insect Architecture, Insect Transformations, Insect Miscellanies," and the "Architecture of Birds," you will, I believe, assent to the truth of what I assert.

There is another point of view, in which we may perceive the great advantage of books to a naturalist. It is only under particularly favourable circumstances that a person can himself have much opportunity of observing and of adding to the general stock of knowledge. How is a person confined to business almost the whole year round, to make observations on what is going on in the field and the forest, the glen and the mountain? How many of yourselves,

Gentlemen, are debarred, excepting a few days occasionally, from leaving home; but are you, on that account, to give up the study of Natural History? No; but, on the contrary, it should induce you to set the higher value on books, for in them you find that knowledge which circumstances prevent you from obtaining by personal observation, and an immense mass besides, which otherwise you could not possibly acquire.

Dr. Arnot, in the Introduction to his admirable "Elements of Physics," observes, that, "in England, a man of small fortune may cast his looks around him, and say, with truth and exultation, 'I am lodged in a house that affords me conveniences and comforts which even a king could not command some centuries ago. Ships are crossing the seas in every direction, to bring me what is useful to me from all parts of the earth. In China, men are gathering the tea-leaf for me; in America, they are planting cotton for me; in the West India islands, they are preparing my sugar and my coffee; in Italy, they are feeding silkworms for me; in Saxony, they are shearing the sheep to make me clothing; at home, powerful steam-engines are spinning and weaving for me, and making cutlery for me, and pumping the mines, that minerals useful to me may be procured. Although my patrimony was small, I have post-coaches running day and night, on all the roads, to carry my correspondence; I have roads, and canals, and bridges, to bear the coal for my winter fire: nay, I have protecting fleets and armies around my happy country to secure my enjoyments and repose. Then, I have editors and printers, who duly send me an account of what is going on throughout the world, among all these people who serve me. And, in a corner of my house, I have books! the miracle of all my possessions, more wonderful than the wishing-cap of

the Arabian tales ; for they transport me instantly, not only to all places, but to all times. By my books I can conjure up before me, to vivid existence, all the great and good men of antiquity ; and, for my individual satisfaction, I can make them act over again the most renowned of their exploits : the orators declaim for me : the historians recite : the poets sing : and from the equator to the pole, or from the beginning of time until now, by my books I can be where I please.” This picture is not overcharged, and might be much extended ; such being God’s goodness and providence, that each individual of the civilized millions that cover the earth, may have nearly the same enjoyments as if he were the single lord of all.

Now books and museums are to the naturalist, what commerce, and manufactures, and steam, and navigation, are to all. In the pages of Sparrman, Vaillant, and Burchell, he may wander through the wilds of Africa, and study the histories of the hippopotamus, the giraffe, and the rhinoceros, without the fatigues and dangers which those travelers had to undergo. With Humboldt, he may climb the Andes, and contemplate the eternal forests that clothe their gigantic sides. With Hasselquist he may examine the plants and animals of the Levant, with Linnæus visit the wilds of Lapland, and with Wilson and Audobon penetrate the glooms, the brakes, and swamps of the American woods, startling the feathered creation from the retreats which had never before been disturbed by human intrusion. By reading the works of men of science, he becomes acquainted with the natural history, so far as it is known, of the most remote countries of the earth ; and of that of countries nearer home, he acquires the fullest information. The animals and plants, indeed, of almost every civilized

nation have been described and illustrated in books, by figures, equalling almost, in fidelity of colouring and outline, the realities themselves.

The Natural History of Great Britain and Ireland has, in an especial manner, been illustrated by coloured figures. The English Botany of the late Sir James Edward Smith and Mr. Sowerby, is, perhaps, the most complete flora that has ever been engraven of any country. Mr. Sowerby also illustrated the British Fungi, in three quarto volumes; to which add Mr. Turner's Fuci, Dr. Hooker's *Jungermaniæ*, Dillwyn's *Confervæ*, Curtis's great work, the *Flora Londinensis*, with many others which it might now be tedious to mention. By these the Botany of the British Isles has been illustrated in, perhaps, an unparalleled degree of perfection.

In Zoology, I may mention Ray, Willoughby, Ellis, Pennant, Soverby, Montagu, Bingley, Bewick, Curtis, Stephens, and Selby. The ornithological work of the latter is a splendid production; while the birds, the fishes, the insects, and shells of Donovan, have never been surpassed. Our Society is, as yet, too young to possess these magnificent works, but I hope we shall have them before a very distant day. Every exertion should be made to obtain a copy of all books on British Natural History, that are of intrinsic value; and every member will, I hope, when they are acquired, be fully sensible of their value, and read and study them over and over.

With respect to museums, I may now remark, that they are considered, on the Continent, of such importance, that scarcely any town of considerable size is without one. The apathy on this head, which so long existed in the British islands, is every day wearing off, and I trust this museum, when it comes into effective operation, will be cherished

and valued by a discerning public. I hope it will give a new, and a powerful impulse to the study of nature and physical science, that it will create and foster a taste for knowledge among all classes in our community, and that it will materially serve to raise the character of our town still higher, as a place favourable to the culture of literature and scientific pursuits.

In books, as I have said, we have the descriptions of animals, plants, and minerals, but the museum supplies us with the things themselves, and is a depot for the productions of the four quarters of the globe. Every land and every element contributes to its riches ; the lion has left his recess in the forest, the eagle has descended from the rock and the cloud, the shark has deserted the ocean-stream, and the mole his habitation in the earth, to join the assemblage. Here we can, in one view, behold the productions of the most distant and various countries. Even in our present early state, and when only a very small number of our specimens has been brought to the building, I might point to the productions of more countries and places than a man could visit in a long life.*

But, I presume, that there is no necessity for adverting farther to the utility and advantages of museums. The very circumstance of so many being now assembled within these walls, speaks more than the longest words I could use ; and, I trust that the time is not far off when the study of Natural History, and of Nature's God in his works, will be considered worthy of that general attention they deserve.

While, however, Gentlemen, we may be fully sensible of the value of this department of knowledge, let us not

* A number of specimens were here pointed out.

be insensible to the value of others. Every branch of science is useful to every other branch; and if a man be acquainted with various sciences, he will be able to bring a greater mental power to bear on any one, than if he wanted the others; and hence, I would recommend every member of the Society to add to Natural History, a knowledge, also, as far as is in his power, of Natural Philosophy, Chemistry, Physiology, and such other subjects as lie within his reach. A knowledge of Physiology and Chemistry is particularly valuable to the Naturalist:—it gives him a much wider range of thought in his lucubrations on the works of the creation, and expands his mind to a fuller comprehension of the ultimate ends intended by the Creator in many instances, than without this accessory knowledge he could have. When, for example, upon a fine spring day we walk into the country and see the process of committing the seed, which is to form the future harvest, to the bosom of the earth, we can seldom enjoy a more interesting prospect of nature and of human industry. The wild flowers are then beginning to appear, the birds carol from the yet leafless trees, and the lark, high in the heaven, quivering on rapid wing, pours out his exulting song—the sower stalks over the prepared ground, showers the seed-grain on the surface, and then, to use the words of Thomson—

“The harrow follows harsh, and shuts the scene.”

But the scene does *not* so shut up to the scientific naturalist. He traces the steps which the seed passes through in its development to the green and growing plant; and he may even make it a point, from which, as from a centre, he may expand his thoughts far and wide through the fields of creation. Without pretending to illustrate the germination of a seed in all its aspects and bearings, I will, as

exemplifying the principle which I have laid down, that any one branch of science is better understood by having a knowledge of other branches, occupy your time a little with some observations and reflections on the growth of plants from their earliest or seed state. We have all, I doubt not, in our early days, taken delight in sowing flower-seeds; and have marked, with feelings of transport, the first appearance of their green shoots protruding above the mould. What our young eyes beheld with exultation, cannot be uninteresting for our matured minds now more fully to understand.

On examining a fresh bean, or one that has been softened for some time in water, we observe, first, that its external part is a coat, skin, or husk, enveloping the rest of the seed. This coat is really double, but the outer layer or cuticle is extremely thin, and not easy to detect. We next perceive, on removing this husk, that the seed is not single, but formed of two parts, halves, or lobes, placed in juxtaposition, and only united at one small space near the larger end or base, where the *scar*, or *eye*, or *hilum*, as it is technically called, is placed.

The two lobes, or halves of the bean are called *cotyledons*, but large as they are, they do not constitute the most essential part of the seed. The small portion, where the two lobes are joined is that part, and is, in fact, the entire plant, with all its leaves and flowers complete, but compressed into the smallest bounds; and hence, if we removed this little portion, and then planted the rest, we might look in vain for the young bean to make its appearance—the seed would die and rot in the ground, but no green leaf would ever spring from it. This little part was named the *corculum* (which means little heart,) by Linnæus, and is with equal, or, indeed, greater propriety,

called the *embryo*, it being in truth the plant in its earliest state.

Let us now observe what takes place in a bean when planted in the earth. The first change is, that the lobes swell from the absorption of moisture, and at length the coat or husk bursts. The radicle or young root is next seen to push out and strike down into the soil, and when it has acquired a certain length, then the part which is to form the stem, leaves, and flowers, begins to expand or grow also, and at length emerges into the light and air. This part is named the *plumule* or plume.

In this process of germination or growth of a seed, you will remark, that the radicle is always formed, or to speak more correctly, is developed before the plume, and you will easily recognize the wisdom of this arrangement; for, as the root is the organ by which the plant is to be nourished, the importance, or, indeed, the necessity of *its* being *first* called into action, must be apparent; and this being requisite, you cannot fail to appreciate the consequence of which it is, that the constitution of the seed is such as to accomplish the object required. But the physiologist asks,—if the root be necessary to the growth of the plant, what is necessary to the growth of the *root* until *it* is able to provide for itself, and extract nutriment from the ground?

The kid, or the lamb, or the calf, is nourished until it can live by cropping herbage, from a fountain of nutriment supplied by the mother, in other words the milk. Has the young bean any such provision? Yes; and without that, it could not be developed into the growing plant. The lobes of the seed perform to it the same office that is performed to the young animal by the udder.*

* See Dr. Hunter, in his edition of Evelyn's *Sylva*, p. 33.

I have now to observe, that however homogeneous and unorganized the seed-lobe may appear, it is nevertheless full of vessels, and these communicate with that part of the embryo plant which expands into the rootlet. When, therefore the seed-lobes become swelled and succulent by the absorption of moisture, the farinaceous particles are, by some process which we cannot explain, (but which has often been considered as a kind of fermentation,) combined with the absorbed fluids, so as to form a vegetable milk, and this being collected by innumerable vascular branchlets, is at length carried by one large trunk from each lobe into the rootlet, to the nourishment and growth of which, its presence is necessary:

From this source then the rootlet is supplied with food, but the part which is to rise and form the green stem, still continues of its original small dimensions, until the rootlet has attained sufficient strength and volume to extract and elaborate the moisture and nutritive particles from the soil. At length it does acquire sufficient maturity; it elaborates nourishing fluids which now go to the plumule or plantlet, and it in its turn next expands, and is developed into the green stalk and leaves, which raise themselves as they grow into the air and light. The seed-lobes having then done their duty, and acted the part of a bountiful nurse, die, and disappear. The plant is fully established in its own strength; it grows on, from day to day, to its destined form and dimensions; it flowers; it produces a numerous progeny of seeds, which continue the species; and thus, in this fugitive annual, we have a picture of the process by which man, in a more extended portion of time, though by a different organization and economy, grows, flourishes, withers, dies, but still his race continues as before to people and inhabit the earth.

The figure I now exhibit is an enlarged copy from Grew, and it will more clearly explain the remarks I have just made; and you here remark the beautiful arrangement by which the young plumule is protected in this tender state from the rough contact of the mould; you see that it is safely lodged between the seed-lobes, and is by them completely defended.

This next figure (also magnified from Grew) is a dissection to show the ramification of the vessels in the seed-lobes, which convey the nutritive fluid, concocted in them, to the rootlet. It is rather, however, to be considered as a plan formed from various dissections, than as what could be shown at one time; but it is not the less true, as to the real structure. This ramification of vessels through the seed-lobes, Grew named the *seminal root*.

The process I have now described, may, perhaps, to some of you, seem all that is necessary to be known respecting the germination of a seed; but let me impress upon your minds the conviction, that there is always something of importance in the phænomena presented by natural objects beyond what lies at the surface; and the process of germination, however admirable and perfect it may appear, so far as I have described it, will afford still farther, to the physiological student, matter for the deepest reflection. What is this principle of life which lies dormant in the seed till put into action by being placed in the earth? No man can tell; we know nothing of the real nature of life, either in animals or plants. It is one of the many mysterious things ever before us, but which we only know so far as their phænomena are unfolded, but of whose ultimate or essential nature we have no conception. One thing relating to it, however, must, I believe, be admitted, namely, that life can only proceed from life; and whatever the prin-

ciple, or rather whatever the unknown cause of life may be, we know that it may long exist in an organized body without betraying itself, while in others, while equally unperceived, it soon dies, and cannot, by any art, be restored. A bulb, found in the hand of an Egyptian mummy, grew freely when brought to Europe, though it must have been several thousand years previously inclosed in the mummy-case. Some seeds will preserve their germinating, that is, their living power, for many years, as the bean; wheat, which is often found in mummy-cases, also grows freely, while others, as those of the coffee-tree, will not germinate unless they are planted soon after they have ripened. Why this is so we cannot tell. Some, again, germinate in a day or two, as occurs in those of garden cress, while others, as of the rose and hazel, require to be buried two years.

These and many other phænomena connected with life, show that it is characterized by the greatest variety; but they also show that the seed must possess its latent vitality, or it never will produce a new plant. The coffee-seed, if set when a year old, would produce nothing; it would not germinate, because it has lost its living essence, and life never can originate from a body that is dead. A dead seed can never give birth to a growing, that is, a living plant.

When a seed or grain of any kind, therefore, is planted or sown, do not imagine that it dies—it loses its appearance as a seed, indeed, but there is no death; it is converted into the future vegetable; and thus the life or vital principle, infused by the Almighty into the first of the race which he created, is continued down from plant to plant, from animal to animal, and from age to age.

Perhaps the bean is not sufficiently demonstrative of these truths, and, therefore, I must give you farther evidence. Let us attend to a lupin. The seed-lobes of the bean,

after they have sent the nutritive streams concocted in their vessels to the rootlet, remain in the ground, and as the plant increases, they disappear. But the lupin is very different, since the seed-lobes in it, instead of thus remaining in the soil, rise above it, and are changed into *green leaves*. There is no death of the seed here, then, but there is a change; and though there is as little death in the bean, *that* is not altogether so evident as it is here.

In a large proportion of seeds, the seed-lobes are evolved into leaves, which rise above the surface of the ground, and are, as I have already stated, called *seminal leaves*. I believe we owe their discovery to the illustrious Grew. They are always of a shape different from that of the other leaves of the plant; and until the latter has gained strength enough to be nourished by the root, and to breathe air by its proper leaves, they are just as necessary to its existence and development, as the seed-lobes are to the bean and other species which do not assume the change into green leaves. The farmer often experiences an important and serious proof of this, in the loss of his turnip crop, from this seminal or first pair of leaves being devoured by insects.

In a small work which I lately published, I have dwelt, in a number of instances, on the perfection with which the designs of the Deity are accomplished; and with the same view let me ask, whether, so far as we have now gone with the germination of a seed, every thing is provided for that the case requires? The seed-lobes prepare the proper nutriment; the rootlet expands, and the plumule is next developed into the growing plant; but still something more is necessary to the perfection of the process, and that is, that the rootlet should have an uncontrollable propensity to penetrate into the earth, and the plumule an equally strong

disposition to leave it ; for, were there not this disposition in the constitution of the seed, it would, whenever it was planted, or had fallen in a wrong direction, send the rootlet above ground, while the plumule would shoot under it, and the whole would, in consequence, perish. But constituted as it is by its all-wise Creator, it matters not in what position it may be placed, the rootlet and plumule always take their proper respective directions.

Paley, in the XXth Chapter of his Natural Theology, has the following excellent passage:—"When a grain of corn is cast into the ground, this is the change which takes place. From one end of the grain issues a green sprout ; from the other, a number of white fibrous threads. How can this be explained ? Why not sprouts from both ends ? Why not fibrous threads from both ends ? To what is the difference to be referred, but to design ; to the different uses which the parts are thereafter to serve ; uses which discover themselves in the sequel of the process ? The sprout, or plumule, struggles into the air, and becomes the plant, of which, from the first, it contained the rudiments : the fibres shoot into the earth ; and, thereby, both fix the plant to the ground, and collect nourishment from the soil for its support. Now, what is not a little remarkable, the parts issuing from the seed take their respective directions, into whatever position the seed itself happens to be cast. If the seed be thrown into the wrongest possible position ; that is, if the ends point in the ground the reverse of what they ought to do, every thing, nevertheless, goes on right. The sprout, after being pushed down a little way, makes a bend, and turns upwards ; the fibres, on the contrary, after shooting at first upwards, turn down. Of this extraordinary vegetable fact, an account has lately been attempted to be given. 'The plumule (it is said) is stimulated by the *air*

into action, and elongates itself when it is thus most excited ; the radicle is stimulated by *moisture*, and elongates itself when *it* is thus most excited. Whence one of these grows upward in quest of its adopted object, and the other downward.* Were this account better verified by experiment than it is, it only shifts the contrivance. It does not disprove the contrivance ; it only removes it a little farther back. Who, to use our author's own language, '*adapted the objects ?*' Who gave such a quality to these connate parts, as to be susceptible of *different* 'stimulation ;' as to be 'excited' each only by its own element, and precisely by that which the success of the vegetation requires ? I say, 'which the success of the vegetation requires :' for the toil of the husbandman would have been in vain ; his laborious and expensive preparation of the ground in vain, if the event must, after all, depend upon the position in which the scattered seed was sown. Not one seed out of a hundred would fall in a right direction."

In this passage, there is one little mistake, though it does not affect the argument. The green sprout does *not* issue from one end, and the fibrous root from the other, but both grow, as in the bean, from the same point. When, however, we superficially examine a germinating grain, there is the *appearance* of a double origin of the plume and rootlet, and this perhaps is connected with a useful part of the economy of the process. We saw, that in the growing bean, the plumule lies for a certain time inclosed between the seed-lobes, and is there safe until it has strength enough to bear the contact of the rough mould. Now the *husk* of the grain seems to me to answer, in this respect, the pur-

pose of a second seed-lobe ; the plume and radicle protrude from one end, but the former passes between the seed-lobe and the husk, till it reaches the other end, and then it protrudes itself into the soil. Hence, though the appearance of a germinating grain is that of the green leaf springing from one end, and the root from the other, yet when we strip the husk off, it is found that both have sprung from the same end, but the leaf had passed under the husk, protected from the soil till it reached the opposite point.

Now, is not this common process, this growth of a seed, a most admirable proof, first of divine wisdom, and next of divine power? Suppose for a moment, that seeds had *not* the useful propensity here adverted to, we would then readily appreciate the vast advantage which would result, *could* the grain be but invested with it; but no human power could give the propensity; no being but the Almighty could endue the seed with this uncontrollable disposition to erect the one part into air, and sink the other into earth; and, therefore, even in this so common process, we perceive the wisdom, the power, and the goodness of God;—his wisdom to contrive, his power to complete the contrivance, and his benevolence in so doing.

Why the seed-lobes of some plants should remain concealed in the ground, and those of others rise in the form of seed-leaves, we do not know. Neither, I believe, can it be explained why some seeds have only one cotyledon, some two, and others more than two, as in the pine tribe.

When moisture is admitted to barley and various other kinds of grain, and germination has, in consequence, commenced, a chemical change takes place, by which a quantity of sugar is produced, which seems to be the proper nourishment of the embryo plant; and it is this formation

of saccharine matter which forms the basis of the process of malting.

In taking a spring walk, you will find considerable pleasure in marking the various appearance which the first, or seminal leaves of plants present. They are always, as I have said, different from the others, on which account Grew called them *dissimilar leaves*, and we may here observe the direction and ramification of the seminal root; for the branching fibres, seen by holding these leaves up to the light, are those of the seminal root as they existed in the seed-lobe, but are now apparent by their greater development.*

Among other reflections which may occur to the student in these examinations, I would have him to think of the mutual connexion which exists between the different parts of nature, and the dependance which all living beings, whether animal or vegetable, have upon circumstances external to themselves. Without water, neither animal nor plant could exist; light is almost as necessary; heat also; and, perhaps, electricity; and it may be several unknown influences or elements, as yet too subtle for our researches to detect, while air is more immediately necessary for both animal and vegetable life than food itself.

And here we see, how to destroy the seminal leaves is equivalent to destroying the whole plant—they are its organs of breathing, its lungs, and, when their function is cut off, the plant dies, as much from want of air as an animal does when it is drowned, or otherwise dies by suffocation.

And why is this air so necessary to animal and vegetable life? No one can tell; we merely know the fact, that it is so, and

* See Grew's *Anatomy of Plants*, page 10, last paragraph.

we know no more upon the subject, so far as the ultimate object is concerned. It is ascertained, indeed, that the part of the atmosphere called oxygen, is the ingredient, in its composition, on which life is dependent; but it is ascertained also, that pure oxygen gas, breathed alone, is too stimulant, and that animals soon die in it; and this knowledge gives us another insight into the wisdom of the Deity; for, had not the oxygen of the air we breathe been mixed or diluted with another kind of air of a passive nature, life could not have been sustained by it.

Oil of vitriol is, you know, a strong corrosive poison, and a small quantity of it swallowed, in its concentrated or pure state, would prove fatal; but you know, also, that when diluted, and consequently weakened by the addition of a large quantity of water, it can not only be swallowed, but is a pleasant drink, and an efficacious strengthener of the stomach. Now the atmosphere forms a parallel case; the oxygen is too strong by itself, but every twenty parts of it being diluted with eighty parts of nitrogen or azotic gas, the mixture forms the mild and grateful air on which our life depends from the first breath that is drawn, till the last, when life and respiration cease together. There are many gases which, like nitrogen, are unfit for respiration, when not mixed with oxygen; but none could so well have answered the purpose of combining with it to form an atmosphere; and, though its utility depends on its negative properties, yet it may be considered almost equally necessary to animal life, as the more active oxygen with which it is combined.

It appears to be every day more and more evident, that the deeper we get into scientific discovery, the stronger and stronger proofs do we find of the divine wisdom and power; and in the composition of the atmosphere, (which is a dis-

covery of modern times,) we perceive these to be very strongly marked. There is every reason to believe, that had the oxygen and nitrogen been mixed together in any other proportions than they are, the atmosphere would not have been proper for the support of animal life, and compounds, of the most deadly nature, are, we know, formed, by chemically combining these airs together, in different quantities; as for example, the air called nitrous acid gas, which consists of four proportionals of oxygen, and one of nitrogen, so far from being of a salutary nature, is instantly fatal to any animal that inhales it, and the nitric acid, or aqua-fortis of commerce, is formed by chemically combining other proportions of oxygen and nitrogen. These, however are chemical compounds, but the gases of the atmosphere are simply mixed together, and not in chemical union.

Another important result of the oxygen of the atmosphere being diluted with nitrogen is, that the activity of combustion is kept down by it. Any burning substance put into nitrogen is instantly extinguished; but the same ignited substance plunged into oxygen, burns with a fury and brilliancy, of which those who have not seen the experiment could have no conception. Were the atmosphere composed of oxygen alone, the spark from a flint would risk setting fire to the globe itself.

The air contains, also, a little water, and a very small quantity of carbonic acid, but the mixture of oxygen and azote we are to consider as *the* atmosphere;—and of what moment, what importance is it in the great economy of nature! We set the highest value on gold, on silver, on pearls, on precious stones, but what are these but the merest baubles, compared with that beneficent aerial fountain of life, which is breathed by every organized being; by every man, quadruped, bird, reptile, fish, insect, animal-

cule, tree, shrub, herb, and vegetable form, however large or minute, on the whole extent of this earthly orb.

And what would the earth have been, had it been formed in every respect as it is, but *without* an atmosphere? It might have continued to roll on in its orbit, and perform its diurnal revolutions as at present, but what a blank would its surface be, compared with that which it now exhibits? It would be one wide scene of desolation, or at least of destitution, and an imperturbable death-like silence would reign over all its ample bounds;—all would be a dead, sterile, naked wilderness. No eye would see the alternate change of light and darkness; no voice of congratulation would hail the dawning morn, or view with delight the varied hues of the declining day.—No forests would wave to the breeze; no pine would crown the mountain rock, nor shrub nor herb adorn the valley or the river's bank.—No sounds would fill the empty void;—the ocean flood would sweep on in silence; for without air, there can be no sound:—neither animal nor plant could inhabit the dreary domain; for, without air, no animal nor plant can live.—The dead region would possess no trace of the forming hand of Deity, in those mighty examples of his power, wisdom, and beneficence, the organized kingdoms of nature.

Thus lifeless, barren, destitute, would have been this earthly ball which we inhabit, and which, as it is, forms so glorious a contrast to what we may conceive to be the state of a world ungifted with an atmosphere. Instead of a picture of inanity and desolation, how different are its present circumstances! How numerous the species of vegetables; how various their forms and colours; how important their uses; how ample the green envelope with which they at once clothe and beautify the globe; how infinite the examples they offer to us of divine workmanship and inscrutable wisdom!

And with respect to animals, of which *we* are at the head, how vast is the instruction to be found in their history and organization! It may be said, indeed, that God could, if he pleased, have made animals and plants to live *without* an atmosphere; but we have nothing to do with that:—it is sufficiently obvious, that man, animals, and plants could not, constructed as they are, have existed in *this* world without oxygen. Respiration is a necessary and unavoidable function attached to our being. We cannot live unless we breathe; and whatever may be the constitution of the inhabitants of other worlds, and whatever may be the laws to which they are subjected, the breathing of air in this is absolutely necessary to our existence.

With respect, Gentlemen, to the growth of seeds, I must farther observe, that the presence of air is of the earliest necessity; for though they are covered by the earth, still the air reaches them, unless the ground be composed of stiff clay, in which the seed might be shut up from the air, and consequently would not germinate. From this you will be aware, that the process of ploughing and harrowing serves a farther purpose than merely loosening the ground, that the roots may the more easily penetrate. It serves also to give the air a free entrance, and there is a provision in the structure of the seed itself which is useful to this end;—there is an aperture or foramen which passes through the husk or coating of the seed, and leads in to the radicle, and through this the air of the atmosphere finds an entrance. I believe that it exists in all seeds, though in many it is too small to be detected, without using a high magnifier. Whether there is any peculiar provision in the seeds of aquatic plants, to enable them to separate the air from water, I know not.

Plants, with the exception of some cryptogamic tribes, especially among the fungi, require light almost as much as air; that is, *after* they have germinated, for light in that stage of their growth is unfavourable.

I might now, in connexion with the growth of plants, turn to the consideration of light, electricity, and temperature, as connected with them, but that would occupy too much time; and I hope I have gone far enough to prove to you the advantages of not studying Natural History, as an insulated science, and that as far as lies in your power, you should gain a knowledge of various other branches of Philosophy. I would therefore recommend to the Society, that they should give every reasonable facility in their power to any person of respectability, good character, and proper qualifications, who would wish to deliver lectures within their walls. The more indeed which we can do for the diffusion of knowledge in general, the more will be our usefulness to the public and to ourselves; and with this opinion firmly impressed on my mind, I must say, that if one part of the Report of the Curators gave me more pleasure than another, it was that which related to the giving of public lectures, and to which ladies may obtain admittance.

I will now detain you no longer, Gentlemen, than by making one or two observations on a subject in which I feel a very deep interest.—I allude to the state of the fine arts in this town. Little, indeed, has been done to encourage their progress; and though we have painters of high talent, there never yet, I believe, has been an exhibition of their works. Your noble room up stairs, when completed, would answer admirably for such a purpose; and I doubt not, that on your guaranteeing the safety of the pictures,

there are many persons, both in the town and neighbourhood, who would not hesitate to lend, for a short period, such paintings in their possession, as might be thought to have merit sufficient to entitle them to public inspection. The artists of the place would lend their best assistance, and thus you might have, annually, for six weeks, or two months, an exhibition of ancient and modern paintings and drawings. I will not venture to recommend this as a means of increasing your funds, but the hint may be worth your consideration.

I have now only to thank the ladies present, and the gentlemen not members of the Natural History Society, for the patience with which they have listened to a discourse, which, I am afraid, they have found much more tedious than interesting.

DIRECTIONS

FOR PRESERVING SUBJECTS IN NATURAL HISTORY.

QUADRUPEDS

Should be carefully skinned, leaving united to the skin the lower *bones* of the *legs* with the *claws* attached, the *tail* freed as much as possible from the bone, and the *skull* and *ears*. The flesh and subcutaneous fat should be carefully removed from the skin, skull, &c. the tongue and eyes taken out, and the brain removed through the occipital hole, enlarged for that purpose. The skin should be preserved, brushing it over carefully with arsenical soap. The best preparation with which we are acquainted, is the arsenical soap, first prepared by Becœur of Metz. We extract from Boitard and Canivet's "Manuel du Naturaliste Préparateur," the receipt.

White Soap, 2lbs.

Salt of Tartar, 12~~lbs.~~ oz.

Powdered Chalk, 8oz.

Powdered Arsenic, 2lbs.

Camphor, 5oz.

Cut the soap into small pieces, and melt it over a slow fire in an earthen vessel, with a small quantity of water, stirring it with a wooden spatula.—When all the pieces are entirely melted, take it from the fire, add the salt of tartar, and stir it till the whole be well amalgamated, then mix in successively the chalk and the arsenic, incorporating the whole well together. The camphor is to be added when the mixture has cooled, and not till then, as the least heat causes it to volatilize rapidly; in doing this the camphor must be moistened with a few drops of spirits of wine, then well powdered in a mortar, (or it may be dissolved at once in spirits of wine,) and stirred into the mixture (as prepared above,) with the wooden spatula.

This preparation to be kept for use in a jar which can be tightly closed, so as to prevent its drying.

When used, a little of it is to be rubbed down with a brush into a small quantity of water, and then applied to the skin, which should be well stretched out; (but so as not to injure its shape.) Persons using this mixture, will perceive, from the ingredients employed, that caution must be observed. If the skin to be preserved, be of a very large size, the proportion of chalk may be increased. In case the preceding preparation cannot be procured, the skin may be brushed over with corrosive sublimate dissolved in spirits. The mouth, claws, &c. should be well anointed with spirits of turpentine, or oil of petroleum; the skin then well dried, and rolled up for packing.

BIRDS

Should be carefully skinned, without soiling the plumage—Open them by a longitudinal incision from the breast bone to the vent, detach the skin as far back as the first joint of the wings, cut that joint and through the neck at its insertion into the thorax, draw forward the body, separating the skin, and continue the dissection, till nearly as much of the bone of the leg is removed as is surrounded with flesh, cut the bone through with a pair of scissors, and proceed in a similar manner with the wings, rolling the projecting extremities in some cotton and replacing them; remove the neck; and the brain, and eyes through the occipital hole, and preserve the skin as directed already for quadrupeds. In skinning birds, some persons with good effect employ fine ground plaster of Paris, which they dust over any parts that are moist, and thus prevent the soiling of the plumage. This is afterwards shaken out; when dry, they may be folded up with safety, and packed, so as to be easily carried. When the nests are any way remarkable, it is desirable to have them, and when the eggs can be procured, and the species to which they belong correctly ascertained, they become highly interesting; their contents should be blown out by a perforation made at each end. Small birds may also be preserved by putting them into spirits.

TORTOISES, &c.

Separate the shell of the back from the breast-work with a strong, short knife ; and if the force of the hand be not sufficient, strike the knife with a mallet. When the animal is open, take away all the flesh from the skin, head, feet, and tail, leaving them attached to the upper shell. Preserve them with the solution of corrosive sublimate, and then stuff them with cotton, well soaked in the same liquor.

LIZARDS AND SERPENTS

Answer the purposes of a museum best if they have been skinned, and the skull preserved, since without the latter they are of little value to the naturalist. The solution of corrosive sublimate will answer best for preserving them ; and the skins, when dry, may be rolled up, and will then carry safely.

Small animals of this description are most readily and effectually preserved in spirits : but if lizards are a foot or more in length, they require to be injected with spirits by the anus. Serpents should, if necessary, be opened at the side of the body, as the opening on the belly will destroy the scales on that part, and it is desirable to have them preserved entire, the animals being classed by Linnæus according to the number of those scales.

FISH.

May be skinned, and preserved by the solution of corrosive sublimate, or put into spirits when the size will admit of it.

SHELLS .

Are found not only in the sea, but also on land, and in fresh water ; in the last named situations they are frequently very interesting.

They should be taken in a fresh state, before they have been bleached by the sun, or broken by the waves on the shore. The animal should be removed as far as possible, after having been killed, by pouring boiling water on it, and allowed to cool gradually. The shells need no further preparation, than to be steeped a short time in fresh water, dried, and packed careful-

ly in cotton or saw-dust, so that they may not rub each other. No attempt should be made to clean or polish them by acids, which destroy them for the purposes of the naturalist. When the shells are bivalve, such as oysters, cockles, &c. they are of little comparative value unless both the sides are procured. Many of the univalves are furnished with opercula or lids, which close the mouths of the shells, and in all cases these should be carefully preserved.

CORALS, SEA FANS, &c.

Require only to be steeped in fresh water for an hour or two, then dried, and packed carefully.

CRABS, LOBSTERS, &c.

Large sized ones require to have the flesh removed, which is effected by separating the shell of the back, leaving the claws and legs attached to the lower shell, then taking away as much of the flesh as possible: the large claws can only be cleared of their contents by breaking a hole in the under side of each joint, and taking out the flesh with a crooked instrument, or it may perhaps be effected by removing the small joint of the nippers, and making incisions in the membrane at the joints. If one of these animals be placed in or near an ant's nest, those little insects will devour the flesh in a few hours, and leave the shell entire. Where ants are plentiful, this is by far the best and easiest method.

After the flesh is removed, the shells should be well soaked with solution of corrosive sublimate, stuffed with cotton, and dried.

Smaller specimens may be set up, and preserved in the same manner as insects, only that they should be previously soaked for a short time in fresh water, and afterwards wet with the solution of corrosive sublimate. They may be also preserved in spirits.

These animals all require great care in the packing

ASTERIAS, OR STAR-FISH,

Require only to be steeped in fresh water for a short time, then spread on a piece of board, and fastened with pins; after

which they are to be well soaked with the solution of corrosive sublimate, and allowed to dry perfectly before being packed.

INSECTS.

These animals are to be met with in great abundance in every habitable region of the globe, and form very pleasing objects for display in a museum, from the variety of their form, and the splendour of their colouring.

Those which belong to the order lepidoptera, such as butterflies and moths, as well as some other insects, can only be preserved by sticking them with pins proportioned to their size, in a box lined with cork, or some soft wood, or with wax. Their wings require to be kept extended with small card braces, until they become stiff. Needles should never be used instead of pins, as their points are soon destroyed by rust, and the insects lost. With butterflies it is desirable to have two specimens of each, that when placed in a cabinet, the upper and under sides may both be exhibited.

The usual method of killing them, is by pinching them on the breast with the finger and thumb; but as this is not always found effectual, it is recommended to make trial of the introduction of a small quantity of solution of arsenic into the under side of the body, alongside the pin with which the insect is stuck, making a puncture with another coarser pin, and putting in the liquid with a camel's hair pencil. The solution is made by simply pouring a small quantity of boiling water on the arsenic.

The insects belonging to almost all the other orders, such as beetles, cockroaches, bees, flies, spiders, scorpions, &c. &c. are at once killed by plunging them into boiling water, and withdrawing them as quickly as possible after death, when they may be stuck with pins as above, or they may be killed, and preserved without further trouble, by putting them into bottles containing any kind of strong spirits.

When the bodies of insects intended to be preserved in the dry state, are very large and fleshy, it will add to their security

from decay to have them opened, the contents extracted, and bodies stuffed with cotton, wet with the solution of corrosive sublimate.

Some camphor, or strong perfume of any kind, should be placed in the boxes along with the insects, secured in paper or cotton, so as not to roll against them, which will assist in keeping away destructive insects and preventing mouldiness.

BOTANICAL SPECIMENS.

Persons residing abroad, but particularly in tropical climate, possess the means of furnishing innumerable interesting specimens in this department, since not only the plants themselves, but their flowers, leaves, fruits, seeds, seed-vessels, and woods, all supply useful materials for a museum.

To form Specimens for a Herbal.

The plants should be gathered on a dry day, some selected which are in flower, and some also in seed, if possible. When the plant is small, it may be taken entire, even with the root; when it is large, the branches should be cut about sixteen inches long. Many which are longer, if very slender, such as grasses, ferns, &c. may be doubled once, or oftener, without injury. When the specimens in flower, from their size or mode of growth, cannot be preserved with the leaves attached, a portion of the plant with leaves should be preserved separately.

The plants are to be preserved by means of pressure under a board, with a weight on it, extended between leaves of any ordinary kind of paper, the quantity proportioned to the nature of the plants; those which are succulent, or have woody or knobby stems, requiring more than those of a dry nature or thin substance. The natural aspect is best preserved by allowing the specimen to retain the same direction of its leaves, branches, &c. as when growing. The paper requires to be changed every three or four days, till the plants are perfectly dry, which soon happens, when they may be laid aside with a single leaf of paper between each plant, to be packed at convenience. Sea weeds

are easily preserved by floating them in a large basin of fresh water, und introducing under them a leaf of paper, on which they are to be extended, and lifted gradually out. After allowing them to drain for a short time, they may be pressed.

When opportunities occur for sending, with convenience, entire leaves of different kinds, of palms, ferns, &c. they are very desirable specimens, also all sorts of seed-vessels, with their seeds, particularly those of all such plants as are useful as articles of food or commerce. Seed-vessels likely to open in drying should be tied up with thread.

Entire plants, or any portion, as the flower, fruit, &c. may be kept for an indefinite period, with their colours completely unchanged, by putting them into a bottle containing a saturated solution of common salt in water, and corking it tightly up. Specimens of useful or ornamental woods are also desirable; these should be cut about eight or ten inches long, and, if possible, the width of the tree; larger pieces might be chargeable with custom-house duty.

SEEDS

Should be gathered when very ripe, and then put into separate papers, each with a note, indicating, if the plant be a tree or an herb, the locality, nature of the soil where it grew, the elevation of this soil above the sea, the native name of the plant, whether it be used as food, in medicine, or in the arts, and any further information that may be considered interesting.

As there is now an extensive Botanic Garden at Belfast, donations of seeds and plants for it are particularly desirable. The *Seeds of Plants*, when gathered fully ripe, require little trouble to preserve them in a state for vegetation; if they are kept dry and cool, and wrapped close up, so as to keep them as much from the air as possible, it is all that is necessary for the greatest number; some however of the larger kinds which are oily, or liable to vegetate, are best preserved in jars or boxes of sand.

MINERALS AND FOSSILS.

It is to be observed, that specimens of minerals are of little or no value in a museum, unless they have been recently de-

tached from the strata, rocks, or mines, where they lay, and free from hammer marks, and decomposition or alteration by exposure to the weather. They should be carefully rolled up in separate papers, with notes of their localities. Organic Fossils, such as horns or bones of animals, petrifications of wood, shells, corals, &c. are extremely interesting, particularly when they can be procured with a portion of the earth or stone in which they were imbedded. They require no further care than wrapping in separate papers, with notes of the places where they were found, and any other particulars that can be given of the strata in which they occur, or those which are contiguous.

Should any person discover in this country the horns of a Fossil Elk, they are requested to examine if any of the other bones are to be found in the vicinity, and if so, they should be collected with the greatest care, as it would be a most desirable thing to obtain a perfect skeleton of this animal. The remains of the Irish Elk are usually found in Bogs, Marl pits, beds of gravel, or similar situations.

GENERAL DIRECTIONS.

THE value of every specimen is greatly enhanced, by being accompanied with a note of the name by which it is known, the place where procured, the uses to which it is applied, and any other information respecting it that can be communicated.

All specimens intended to be forwarded, should be well packed in boxes, or otherwise, with directions for keeping them dry. As there is now no vexatious delay or trouble experienced by Custom-house regulations, specimens illustrative of Natural History being admitted free of duty, it is recommended, that all packages may be entered in the Ship's papers; and if a list of the contents of each package could, with convenience, be attached inside the lid of the box or cover, the risk of injury to the specimens, by examination at the Custom-house, would in a great measure be avoided. When any packages are forwarded to the Society, it is requested that the Secretary may be advised

by letter, stating the conveyance by which they have been sent, as without this precaution it has been found by experience, that they often go astray, or are pillaged

It is not to be expected, that any one individual will have it in his power to send specimens in all, or even many of the above branches; but there are few who may not occasionally meet with objects that would prove acquisitions to a Museum, and opportunities for sending them with little trouble or expense; and a few well selected specimens will always prove more acceptable than more numerous parcels collected without attention to the foregoing directions.

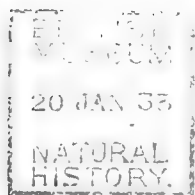
Should it even happen that the specimens may be already possessed by the Society, still duplicates are desirable, since such as are not required for the Museum can be readily exchanged for others that may be wanted.

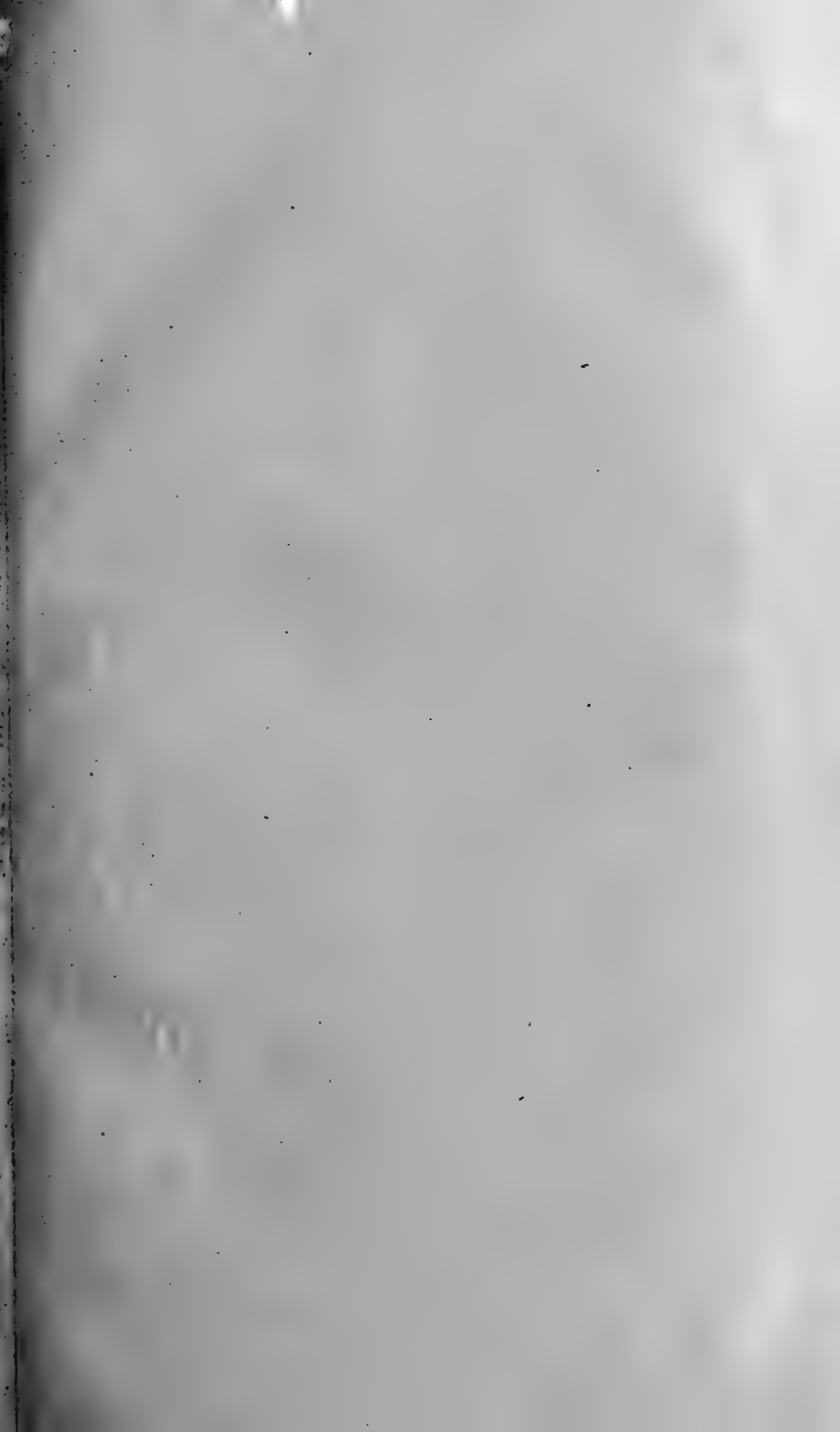
Annexed are the names of the Officers of the Natural History Society, to whom it is requested, specimens for the Museum may be sent :—

JAMES L. DRUMMOND, M. D. PRESIDENT.
 EDMUND GETTY,
 ROBERT PATTERSON, } VICEP-RESIDENTS.
 JAMES M'ADAM, CORRESPONDING SECRETARY.
 ROBERT S. M'ADAM, RECORDING SECRETARY.
 WILLIAM WEBB, TREASURER.

The above, with the following Members, form a council for the dispatch of private business :—

GEO. C. HYNDMAN, WILLIAM PATTERSON,
 WILLIAM SINCLAIRE, JAMES D. MARSHALL,
 WILLIAM THOMPSON, JAMES BRYCE, JUN. A. B.





BRITISH
MUSEUM

20 JAN 33

NATURAL
HISTORY.

Report of the Council

OF

THE BELFAST NATURAL HISTORY SOCIETY,

FOR THE SESSION ENDING MAY, 1888.

IN laying before their fellow-members a Report of the proceedings of another Session, the Council feel pleasure in being able to congratulate the Society on the steady progress which it has maintained. The list of its Members has been increased; many valuable and interesting Donations have been presented to the Museum; and the importance attached by the public to the Meetings of the Society, has been evinced by an increased attendance of Visitors. The entire number of Papers read at the regular meetings of the Society, has been *eighteen*. Of these, five have been on Geology, three on Physiology, four on Zoology, one on Electricity, two on Meteorology, one on Statistics, and two on Science applied to Architecture. Many of these elicited discussions of a highly interesting nature, at the meetings at which they were delivered. In the Session of 1885-6, for the first time, papers on Statistics and Natural Philosophy, were admitted, in accordance with the wishes expressed by many members, and with the view of rendering the labours of the Society more useful to the public generally. Since that time, these subjects have occasionally been introduced, and have given rise to various papers during the present Session. The increasing importance of Statistics as a separate branch of study, and the great attention recently paid to it in England, and on the Continent of Europe, strongly impressed the NATURAL HISTORY SOCIETY with the necessity of making some distinct provision for its cultivation. It was accordingly proposed during the present Session, to form a separate *Section*, specially for the study of Statistics; the members of which should hold meetings distinct from those of the Society, and carry on inquiries independent of it. A further consideration of the subject, and a subsequent communication with the Statistical Society of London, have since led to the formation of a New Association; and the Council have the pleasure of stating that a large and influential body has lately been organized in Belfast, under the name of the "STATISTICAL SOCIETY OF ULSTER," which promises to become one of the most important in the country.

As in preceding Sessions, besides the regular meetings of the Society, one night in each month has been set apart for Lectures of a more popular character. During the present Winter, seven of these public meetings have been held, when the following subjects were introduced:—

1st Lecture—On *Life*; by Dr. Drummond: illustrated by numerous drawings.

2d Lecture—On *Some Optical Instruments*, by Dr. Henry Purdon: illustrated by experiments, &c.

3d Lecture—On *The Oxy-hydrogen Blow-pipe*, with observations on *flame in general*; by Dr. Thomas Andrews: with experiments.

4th Lecture—On *The Oxy-hydrogen Microscope*: illustrated by an exhibition of that instrument: by Mr. Grattan.

5th Lecture—On *The Structure of Vegetables*: by Mr. Bryce: with a second exhibition of the Oxy-hydrogen Microscope.

6th Lecture—On *The Order "Raptors" of Birds*; by Dr. James D. Marshall.

7th Lecture—Closing Address, by Mr. Bryce.

The aggregate number of Members and Visitors present at the Public Meetings of the Session, amounted to 834; and at the Private Meetings, to 458.

For several years past, it was thought extremely desirable that an Oxy-hydrogen Microscope should be procured for the use of the Society; both for the better illustration of Lectures, and as a means of facilitating original research. The Council have the satisfaction of stating that this object has been accomplished through the exertions of one of their fellow-members; and that during the present Session, the Microscope was exhibited at several of the public meetings, before large assemblies.

At an early part of the Session, the charge for admission to the Museum, was reduced one-half. It was also directed that instead of four days in the week, it should henceforward be open every day. The Council have no doubt that these changes will have a most beneficial effect in fostering a taste for Natu-

ral Science in this neighbourhood; and they remark ably, with particular satisfaction, that a much greater number of the working classes has begun to frequent the Museum.

THE BELFAST ASSOCIATION OF ARTISTS having applied, again, this Session, for permission to hold another Exhibition of Paintings in the Museum, the Council agreed to their request, and a large collection of Paintings and Statuary was accordingly exhibited for six weeks, as during the former year. The success of these two exhibitions has since led to a proposal for erecting, in Belfast, a building devoted entirely to the Fine Arts.

DONATIONS RECEIVED DURING THE SESSION

1837—1838.

Specimens of Natural History.

MR. ADAMS, gamekeeper, Shanck's Castle—Eggs of the Heron and Silver Pheasant. Mr. S. Alexander, Larne—some fossil Echini. Dr. Adams—two specimens of the Crossbill, shot at Portlone. Mrs. Barr, Portlarn—specimen of the Golden Pheasant. Mr. Narcissus Barr, jun.—the Skeleton and Skin of a Snake, skins of three quadrupeds and of three birds, from Van Diemen's Land. Dr. Barwick, H. E. I. C. S.—two skins of Leopards, one of the Zibet and of the Felis Chaus from India, and specimens of various minute marine animals, two tusks of the Tiger. James Black, Esq.—specimen of the Palmetto Tree from South Carolina. J. E. Downan, Esq. F. L. S. Manchester a plant of *Bupleurum tenuissimum* from the eastern part of the Dec. George Brindle, Esq. R. V.—a Seal two *Echidnas* species.
J. A. C. B. and J. B. C.—a *Crocidium* and box of shells from Florida.
Cassidy—a preserved specimen of the Guinea Parrot. Alexander Charrier, Esq.—a skin of the Sable. William Cairns, Esq.—a pied Jackal. Mr. William Darragh—a nest of the Tree Wasp, and specimens of Somp Duck, and Cotius Scorpins. Hon. John L. Cole, Florence Court—specimen of the Char from Lough Melvin. Marriot Dalway, Esq. Behallil—a native specimen of the Red-breasted Merganser. Mr. R. Davis, jun. Cloimel—skins of *Erythrocephalus Morrisii* and *Nemertes Borlasi* (Cm.). Mr. John Gould, F. L. S. London—skins of 25 foreign birds. Lieut. Graves, R. N.—a bottle of Insects from the Archipelago. Mr. James Grimshaw, jun.—specimens of fresh water fish. Mr. John Inghis, Park keeper, Glenamry castle—a pair of Hen Hatties. George Matthews, Esq. Springsvale—a specimen of *E. L. S. London*—a fine collection of dried flowering plants from Switzerland. Francis Montgomery, Esq.—a Cape Petrel. Mr. Broughshane. Mr. R. S. M. Adam—a collection of Greenstone from American Pens, Arcopodia, &c. Thomas M'Lenoh, Esq. Killymore House—a beautiful specimen of the Snow Owl, shot in his neighbourhood. James M'Tier, Esq.—a tropical Gullie. Middlemas, James M'Adam, jun.—a specimen of the Gout. Mr. Cranfield well. Mr. M'Arthur—a fossil *Amulius*. Mr. John M'Arthur, Portumna—specimen of Cormorant. Mr. John Martin, Downpatrick—Horns of animals dug up in that neighbourhood. Rev. C. Mayne, Vicar General of Cashel—specimens of fishes from the river Shannon. Mr. Pags, Castle Place—Hamster. Mr. John Rees—some North American Snakes. Mr. Robert Patterson—specimens of *Anomalocera Pattersoni*, a new species of Crustacea, discovered by him in Lanne Lough.

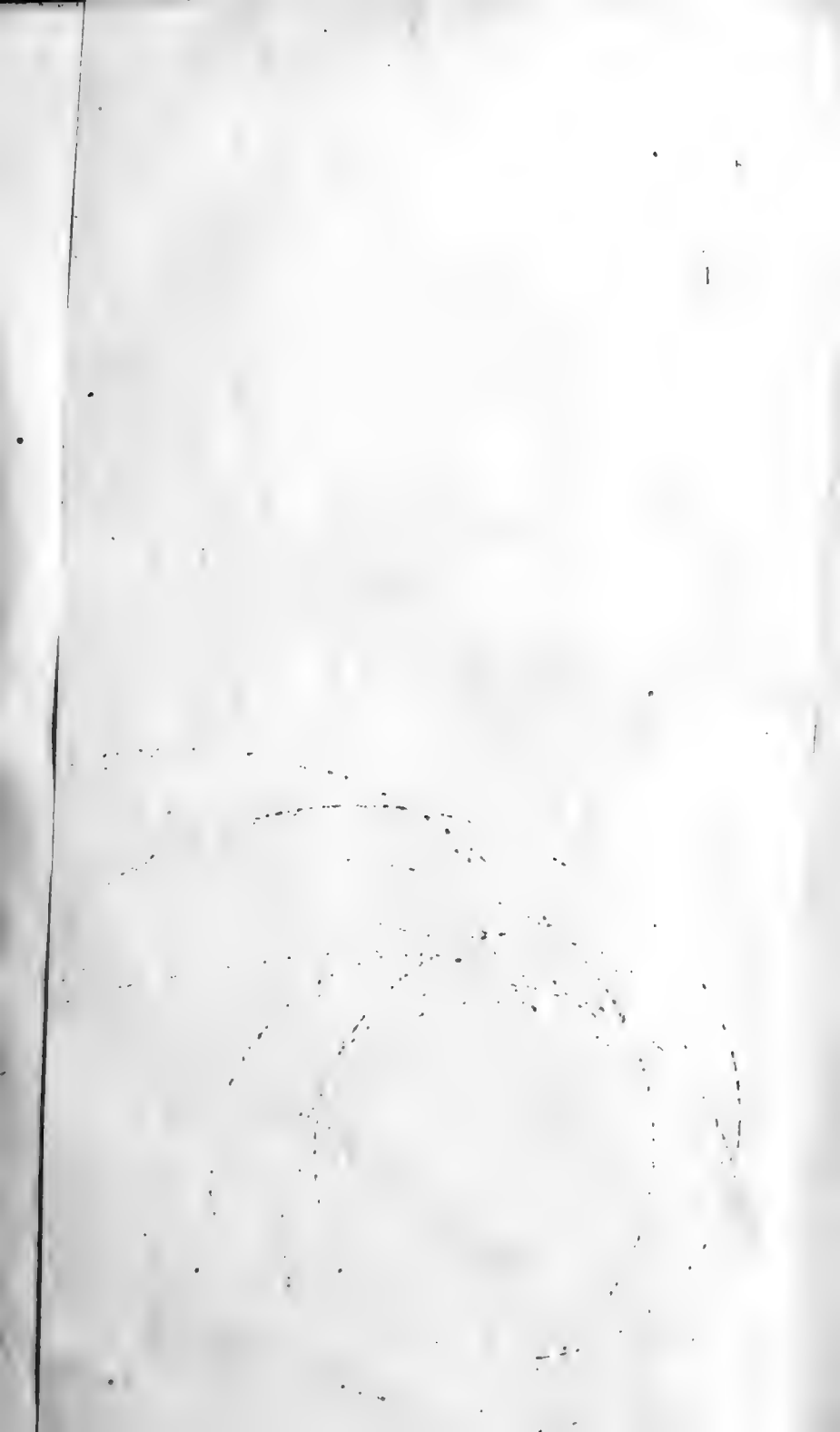
J. H. Smith, Esq. Aghnacloy—a Horn dug up there, and some fossil shells from Island Magee. Richard K. Sinclair, Esq.—native specimens of the great black backed Gull and little Tern. A. M. Skinner, Esq.—Bottle of Water dissolved from the iron board H. M. ship Terror, in Lat 65o 32' N. and Long. 89o 16' W. Gordon Thompson, Esq.—a young Bear. William Thompson, Esq.—specimens of the Shell Drake, and *Parus caudatus*, the *sterium*, *trichter*, &c. of the *Gygis Barwickii*, a native specimen of the long-tailed Duck (*Haroldia Glarialis*) and skins of the Toncan, and some other birds from Demerara. Mrs. Templeton—a Parrot. Francis Thompson, Esq. H. E. I. C. S.—a valuable collection of Organic remains from the Strathal range of the Himalaya mountains, made by Dr. Falconer and Captain Cantley. Dr. Allan Thompson, Woburn Abbey—specimens of Char from Scotland. Dr. Wylie, Ballinatre, Ayrshire—a very large Riband fish, (*Cephalo rubescens*) taken there, and an Iceland Gull. Mr. Marcus Ward, specimen of Snake from Demerara. Francis Walker, Esq. London—some hundreds specimens of Insects from Lathom, systematically arranged. Thomas Walker, jun. Esq. Leblon, Westord, a young Woodcock, bred in that county. J. T. Wade, Esq.—some fossil Shells from the Iias near Carrickfergus. Zoological Society of London—a stuffed Antelope, skin of a Kangaroo, &c. Belfast Botanic Garden—a Shell Drake. Mr. S. Hawksett—a native Hare. Richard Langtry, Esq.—a spotted Dog-fish.

Miscellaneous Specimens.

WILLIAM ARTHUR, Esq.—a silver Coin of Henry II., dug up in Shankhill burying ground. Mr. S. Alexander, Larne—a stone Axe and several Coins. John Adair, Esq. Dublin—two ancient brzen instruments. Dr. Barwick, a Hindoo Idol, from a temple at Burdwan, an Amulet worn by the natives of India against Rheumatism, and a pack of Chinese playing cards. Mrs. D. Bhopla—a Coin found in the lower of Rudstheim. W. E. Conrath, jun. Esq. Spring Hill—a harness-shard for jungle fowls.
J. A. C. B. and J. B. C.—some silver and copper Coins.
J. A. C. B. and J. B. C.—a musical Instrument and Carved Iron Instrument, permission to travel with past horses in that country, and several *Suryna* Newspapers. Lieut. Ferrar, R. N.—five silver and copper Coins. Thomas Gregg, Esq. Ballymoreoth—two small bronze Figures of the Penates, dug up near Bate. Mr. G. C. Hyndman—a Scarf worn by the natives of Bonny, Africa, and several Indian instruments. Mr. J. Gunnery—three silver Coins. Mr. Robert Heming—a Coin of A. D. 1691, dug up near Killead. Mr. Arthur Hill, Ballyhanwood—a small Urn filled with bones, dug up in his neighbourhood. Johnston Hamilton, Esq.—thirty-five specimens of American Woods. D. Lindsay, Esq. Ashfield—an ancient Irish Spear. Mr. John J. Marshall, Portumna, an antique Irish silver Bracelet and several Coins dug up in the County Galway, and County Tipperary. John Montgomery, Esq.—a rare Coin. Sir R. M'Clervy. Dundalk—an Esquimaux Bridal Dress. Mr. A. M'Gonrick. Dundalk—two brzen Hatchets found in the old bridge of Dundalk. Mr. M'Arthur—several old Farming Implements, &c., and a Quern found in a bog near Randalstown. C. H. May, Esq.—Olahethian fishing apparatus. James M'Tear, Esq.—a Chinese Note of invitation. Mr. J. M'Veagh—the Head of a Pike used in the Rebellion of 1798. Alexander Mitchell, Esq.—a Malay Cloak. Earl O'Neill—an ancient Boat found in a bog near Randalstown. Robert James Tennent, Esq.—an old silver Coin dug up at Dundonald. James Watson, Esq. Brookhill—an antique Tin containing bones. A. M. Skinner, Esq.—School Books of Plant Leaves from Madras.

Donations to the Library.

TRACTS of New York, a late part of their Annals. Major Calder, Madras Army—two valuable Burmese Books. James Bryce, Esq.—his Geological Memoir on N. E. portion of the Co. Antrim. Edinburgh Botanical Society—their Report for 1836—37. Capt. Fayer, R. N.—a copy of his plan for extinguishing fire on board Steam Vessels. His Excellency the Lord Lieutenant—the first volume of the Ordnance Survey of Ire-



land. T. Martin, Esq. Liverpool—his Pamphlet on Lord Brougham's Natural Theology. Mr. A. McCormick, Dundalk—a Book printed at Antwerp in 1567. Mr. R. Patterson—a passport from Belfast to Liverpool in 1799, and two books on Great Britain and Ireland, printed 1711 and 1739. Professor Silliman, New-Haven, U. S.—fourteen numbers of the American Journal of Science, and Professor Hitchcock's Memoir of the footsteps of Birds on the sandstone of Connecticut. William Thompson, Esq.—his papers on Native Irish Birds of various orders, and on Irish Cretilabri, on the cepola rubescens, and on some rare animals from the S. W. of Scotland: also, a description of some species of Vertebrate animals, new to science. W. C. Wallace, Esq. New York—his Essay on the Eye. Isaac Weld, Esq. Dublin—his Survey of the County Roscommon. Royal Irish Academy—last part of their Transactions. Zoological Society of London—their "Proceedings" for 1836.

The Council have to record more particularly, the Donations received during the past Session from their townsman, Gordon A. Thompson, Esq. viz: specimens of the Ornithorynchus, Kangaroo, Bat, and other Mammalia; a rare Gallinule, and several species of Lizards, Snakes, Fishes, Crustacea and Insects from New South Wales—teeth of the Elephant and Sea Cow—Head of an Albatross, and specimens of the Placuna Placenta—Minerals from St. Helena, with a portion of Napoleon's Willow, Axe from a Chinese Cotton Tree, and specimens of stone from the great Chinese Wall—specimens of petrified Wood from Van Dieman's Land, the Mauritius, and Port Phillip; also, a stone from the last place—Impressions of Coal Plants, N. S. Wales—Minerals from Cape of Good Hope and Van Dieman's Land—portions of the rock from the Temples of Eilora and Palytreina, and the cave of Elephanta.

OFFICERS AND COUNCIL OF THE SOCIETY, ELECTED
FOR THE SESSION 1838—39.

President.

JAMES L. DRUMMOND, M. D.

Vice-Presidents.

WILLIAM THOMPSON, JAMES BRYCE, F. G. S.

Treasurer.

WILLIAM WEBB.

Secretary.

ROBERT S. MEADAM.

Corresponding Secretary.

JAMES MEADAM.

Secretary.

JOHN GRATTAN.

Council.

ROBERT PATTERSON,
EDMUND GETTY,
GEO. C. HYNDMAN,
JAS. D. MARSHALL, M. D.

PROFESSOR STEVELLY,
THOS. ANDREWS, M. D.
REV. ISAAH STEEN,
EDWARD BENN.

14. 1)

B E L F A S T

N A T U R A L H I S T O R Y & P H I L O S O P H I C A L

S O C I E T Y . *k*

ON the evening of Thursday, the 24th instant, being the birthday of Linnæus, the annual meeting of this Society was held at the Museum—Robert Patterson, Esq., V.P., in the Chair.

The SECRETARY read the following report :—

“ In laying before you their annual report, for the twelve months ending 1st May, 1849, the Council have much pleasure in stating, that the past Session occupies a prominent place among those recorded in the proceedings of the Society; since it has been exceeded by none, of late years, either in the number of the meetings held, or in the variety and interest of the communications brought forward.

“ There were fourteen meetings during the Session, seven of which were public and seven ordinary meetings.

“ The Session was opened by Mr. Getty, with an address ‘ On the Progress of Scientific Knowledge.’

“ At the other public meetings, the following lectures were delivered:—The first, by Dr. Stevelly, ‘ on the Processes of Copper-smelting at Swansea;’ the second, by Mr. Thompson, ‘ on Irish Ornithology;’ the third, by Mr. Hyndman, ‘ on the Sea Serpent;’ the fourth, by the Rev. Dr. Robinson, ‘ on the physical appearances of the Moon’s surface;’ the fifth, by the Rev. W. Reeves, ‘ on the Topography of Ireland;’ the sixth, by Mr. Getty, ‘ on the Tides.’

“ The Society is much indebted to two of its honorary members, Dr. Robinson and Mr. Reeves, for the public lectures they delivered; and to the eminent astronomer, especially, for having imparted, in so pleasing and popular a manner, so much valuable instruction.

“ Of the private papers, three had for their subject departments of natural history: one was astronomical, one

conchological, one on antiquities, one geological, one on phrenology, one physiological, and one on the early history of physical science.

“ Besides the usual meetings, a *conversazione* was given, at the Museum, which was attended by about 100 persons, comprising members and shareholders, and other gentlemen of the town and its vicinity, who were invited, as guests. Some interesting information was brought forward, relative to the opening of coal and iron workings in the County of Antrim, and the discovery of certain chemical products of peat, illustrated by specimens. This occasion was made use of to bring forward a proposition, that the British Association should be invited to hold an early meeting in Belfast, and arrangements were made to solicit the co-operation of the different public bodies connected with the town. A ready and willing concurrence, on their part, having been given, and invitations forwarded by them, a deputation from this town will be prepared to appear in support of the invitation, at the Birmingham meeting of the British Association, this year. The Council trust, that this may lead to a result which must prove highly advantageous, in many ways, and, more especially, in stimulating the people of Belfast to increased zeal in the pursuit of knowledge.

“ The success which continues to attend the throwing open of the Museum, on Easter Mondays, to the working classes, at a nominal charge, is most gratifying; and the following table is given to shew the rapidly progressive increase of the numbers who have availed themselves of this privilege :—

“ On Easter Monday, 1845, which was the first occasion when the Museum was opened, in this manner, the number who visited it was nearly 1,000; in 1846, it was upwards of 1,500; in 1847, upwards of 2,000; in 1848, 3,200; and in the present year, nearly 5,000.

“ Notwithstanding this large influx of visitors, of various classes—including a large proportion of children, from whose carelessness or ignorance a certain extent of injury to the collection might have been, if not almost expected, at least, naturally allowed for—the Council have again the pleasing fact to record, that no specimen suffered, in the

least, from the causes alluded to. The innocent recreation afforded, by inspecting the numerous and interesting objects which our Museum contains, is a cheap addition to the holiday pleasures of the working classes of the town, while, by tending to popularise a taste for information, it cannot fail to produce most salutary effects. It should be a source of much satisfaction to the Society, that Belfast was one of the first towns in the United Kingdom to encourage the mental improvement of the artisan, by placing within his reach those institutions which have been enriched by the contributions of our citizens, from all parts of the world.

“Some valuable additions to the collection have been received since the Council’s last report, including a series contributed by Sir Emerson Tennent, and R. Templeton, Esq., R.A., illustrative of the natural history of the island of Ceylon, which have been forwarded as part of a still more extensive collection, of which it is intended by these gentlemen to make our Museum the repository. Several donations of books, transactions of scientific bodies, &c., have been added to the library. To his Excellency the Lord Lieutenant the Society is indebted for the ordnance survey maps of Fermanagh, Monaghan, and Cavan, which complete the series for the Province of Ulster, portions of which had been contributed by previous Viceroy.

“The present building accommodation in the Museum has, for some time past, been found quite inadequate for the arrangement and display of the greatly-increased collection, and the Council have frequently, of late, been embarrassed in accepting valuable donations, which they were unable to exhibit in such a manner as their importance, and the kindness of the contributors, would require. In resumption, therefore, of the efforts formerly made to extend the buildings of the Museum, and to fit up with cases all the available spaces at present existing, circulars were addressed to the shareholders and members of the Society, and to such other persons as might be expected to contribute to this object, setting forth the causes which urged the application and soliciting their aid. A commencement has already been made towards the collection of subscriptions and the sale of shares in the Museum,

and the Council have now considered it most advisable to devote the funds that may thus be raised to the immediate fitting up of the upper lecture room with cases, for the exhibition of the Cingalese and South Sea collections; leaving the question of adding to the buildings open for further consideration.

“The Council have only further to report, that, among minor arrangements to facilitate the despatch of business, Mr. A. O’D. Taylor was elected to assist Mr. MacAdam, in discharging the duties of Honorary Secretary.

“Belfast, 24th May, 1849.”

The Treasurer’s statement of accounts having then been read, the following gentlemen were elected, by ballot, as the Council of the Society for the ensuing year;—William Thompson, John Stevelly, LL.D., Thomas Andrews, M.D., M.R.I.A., Edmund Getty, M.R.I.A., George C. Hyndman, James D. Marshall, M.D., James M’Adam, sen., F.G.S., Robert Patterson, Rev. Isaiah Steen, Robert M’Adam, John Grattan, James MacAdam, jun., Hugh Harrison, John Grainger.

On the motion of Mr. HARRISON, it was resolved, that the Council be requested to adopt immediate measures for the collection of money towards the fitting up, with cases, of the upper lecture room.

The Council then elected the following office-bearers:—*President*—William Thompson. *Vice-Presidents*—John Stevelly, LL.D., Thomas Andrews, M.D., M.R.I.A., Edmund Getty, M.R.I.A., G. C. Hyndman. *Secretaries*—James MacAdam, jun., A. O’D. Taylor. *Corresponding Secretary*—James M’Adam, sen., F.G.S. *Treasurer*—John Grattan. *Librarian*—Rev. I. Steen. *Auditors*—Thomas Chermiside, Stephen Archer.

Finlay, Printer, Belfast.

1849

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NATURAL

HISTORY

1552-53

BELFAST

Natural History & Philosophical Society.

THE annual meeting of the shareholders was held at the Museum, on the evening of Wednesday, 29th June, 1853—Mr. PATTERSON, President, in the chair. The following report was submitted:—

“ Since the last annual report was laid before the shareholders of the Museum, the council have had much to claim their attention; and it is now their duty to report on the society’s career for the last twelve months, and which has been one of the most interesting in its annals. The meeting at Belfast of the British Association for the Advancement of Science took place in the first week of September. As its proceedings were fully reported in the public prints, it is unnecessary to allude to them more than that several communications were brought forward by members of this society, to different sections, during the meeting. It had been the general wish of the local bodies in this town to render the meeting as attractive and as agreeable as possible to the visitors from other places; and, in co-operation with this general desire, the council had determined that the collections in the Museum should be displayed to the greatest possible advantage. Accordingly, for some time before the meeting, very considerable exertions were made for this purpose, and the entire building, with its contents, was put into such a condition of improvement as to be quite satisfactory to the council, and who, indeed, were much gratified with the result, as it could bear comparison with most other provincial museums. The council had intrusted the duty of these arrangements to several members of the society, whose names they should consider it unjust not to record, and also to return them their warmest thanks

for the great pains and trouble taken in carrying out the views of their fellow-members. The arrangement of the various portions of the zoological collection was carried out by Messrs. Hyndman, Dickie, Garrett, and Grainger; that of comparative anatomy by Dr. Gordon; and Mr. M'Adam made a complete new arrangement of the society's minerals. Messrs. R. M'Adam, Grattan, Getty, and Murphy undertook to arrange the antiquities and objects of art; but it occurred to those gentlemen that a most interesting exhibition might be afforded to the members of the association by inducing a number of collectors of Irish antiquities to lend them for the occasion; accordingly an application was made, and, to their high gratification, it was universally responded to. The result was, that one of the most complete collections of the antiquities of this country that has ever been exhibited was brought together in the Belfast Museum. The new room, called the 'Thompson Room,' in commemoration of our late lamented president, was devoted by the council to the reception of these antiquities; and they have more particularly to record their obligations to Mr. Robert M'Adam, on whom devolved a very great part of the labour of receiving the borrowed specimens, and afterwards of returning them to the owners. A descriptive catalogue of these antiquities was published at the time, containing full particulars of the whole series.

"During the meeting of the Association, the Museum was visited by his Excellency the Lord Lieutenant and the Countess of Eglinton. These distinguished visitors and their suite expressed themselves much gratified by the view of the collections, which were explained to them by different members of the council.

"The council would now direct more particular attention to the progress of the society itself. Its 32d session has now terminated, during which the minute book has recorded *one conversazione*, *five* public, and *eight* private meetings, as having been held from November, 1852, till May, 1853. At the opening *conversazione* more than 100 gentlemen were present; and there was also a large audience assembled at the introductory address, delivered some time after by the president, Robert Patterson, Esq., on the first public night of the society's regular meetings. The details of these two occasions need not be recapitulated here, as

they were at the time copiously reported in the local papers, and as the President's address has been since printed for the society's members, in the form of a pamphlet. Both meetings afforded much gratification to those present, and your council anticipate the pleasure of somewhat similar evenings during the future session. At the remaining meetings, various subjects were brought forward, illustrative of zoology, comparative anatomy, botany, geology, meteorology, ethnology, and applied physical science.

"The council think it well to observe, that at the commencement of the session, which they have briefly sketched, they requested James M^r Adam, Esq.; G. C. Hyndman, Esq.; E. Getty, Esq.; J. R. Garrett, Esq.; Dr. Dickie, and one or two other members, to inspect carefully the different collections within the Museum, and to furnish reports on each, for the council's guidance. These reports were duly received; and, taking them as the basis for their remarks, the council now enter into the following details, which will acquaint the shareholders with the exact state of the several collections.

"First, as regards the zoological and botanical departments, it is evident that, in a provincial museum, there are many reasons why a general and complete collection of such objects cannot be acquired, and, accordingly, the aim of those managing such institutions should be to procure a good series of specimens illustrative of the Fauna and Flora of the surrounding district. Owing, however, to the long-continued exertions of the late Wm. Thompson, Esq., our former president, and to his liberality in presenting his own collections afterwards, the Museum now embraces nearly a complete collection, in some departments, of Irish natural history.

"The collection of British birds and their eggs comprises specimens of the greater number of those which are of common occurrence, and some of great rarity. The foreign ornithological collection is still more extensive, including donations from many countries. Amongst those deserving especial notice, are the valuable specimens of Antarctic and Australian birds presented by Captain Crozier, R.N., and the large donation of Cingalose birds received from Robert Templeton, Esq., R.A.

"The collections of mammals, fishes, and reptiles,

are less complete, but contain many objects of great interest. The entomological collection comprises a variety of insects belonging to this country; and, in addition to the home series, the Museum is enriched with an extensive and most attractive collection of specimens from Ceylon, presented by Sir James Emerson Tennent; and by Robert Templeton, Esq., R.A., all of which, however, have not yet been received.

“There is a good series of British shells, but not yet complete. The foreign conchological collection is also extensive.

“Of the several other orders of invertebrate animals, it will be sufficient to state, that the Museum contains as large a proportion as is usual in provincial collections. It may also be observed here, that the council intend to devote exclusively the ‘Thompson Room’ to the display of specimens illustrative of the natural history of Ireland, and that suitable cases are at present in progress for the collection. This plan, by giving more space, will then enable them to form, in the middle room, a typical collection of the animal kingdom—that is, a series representing the classes, orders, families, and principal genera.

“The mineral collection comprises a series of earthy minerals, which is nearly a complete one; and several of the specimens are of great value and rarity. The series of metallic minerals is not so perfect, less attention having been paid to procuring such. There are also a number of large specimens, of too great a size for the cases, and these are placed throughout the various rooms. The Museum also possesses a collection of palaeozoic and other fossils, which, however, from want of space, cannot be at present exhibited.

“The department of antiquities and works of art is much confined for want of space; it is very large, including a magnificent donation of Mr. Gordon A. Thompson, the fruit of his travels in countries even now but little visited. The collection of Irish antiquities is also very extensive.

“One remark may be made which will be generally applicable to all the collections enumerated—namely, that a large number of specimens, easy to be obtained, but which are not in the Museum, might be added at once from the private collections existing in Belfast and its neighbourhood. Any gentleman, therefore, observing such deficiencies, would probably be

able, at but little inconvenience, to supply the blanks from his own series.

“The council, having now given a condensed view of the collections, have to mention one other point—that is, the recent additions to the Museum building. The ‘Thompson Room’ is now completed, and suitable cases for it are in progress of construction. They have further to observe that a new residence for the curator has been erected in the rear of the Museum, and also two rooms adjoining this new house, one intended as a store-room, and the other as a workshop in connexion with the curator’s business.

“The council now pass on to another feature of interest appertaining to the society. The established usage of throwing open the Museum to the working-classes at a small charge, every Easter Monday, met with great success. The same propriety of conduct and anxiety to avoid doing any injury to the objects displayed—agreeable characteristics, which in former reports your council have had the pleasure to note—was apparent throughout; and a much larger number of persons inspected the collections than on any previous occasion. The following tabular statement may prove of interest, as shewing the fluctuations since 1845 in the number of the visitors on Easter Monday. The figures are only approximate; but, as they are calculated from the respective cash receipts on each day, they may be considered tolerably correct:—

					Persons.
1845	On Easter Monday, April 1,	the Museum			
	was visited by about				1,200
1846	...	...	... 6,	...	1,700
1847	...	...	... 7,	...	2,000
1848	...	...	... 25,	...	2,600
1849	...	...	... 10,	...	3,500
1850	...	...	... 4,	...	4,400
1851	...	...	... 23,	...	4,350
1852	...	...	... 13,	...	4,200
1853	...	...	... 4,	...	5,950

“From the foregoing it appears that the average attendance on Easter Monday, for the last four years, has been 4,725 persons, and of these fully one-half consisted of young people under twenty years of age.

“In connexion with this subject, the council wish to mention, that they have in contemplation the possibility of opening the Museum during the ensuing Winter, at

a small charge, to the working-classes, for specified evenings, when short conversational lectures may be delivered by some of the society's members.

“When laying their last report before the shareholders, it was the council's painful task to refer officially to the decease of their esteemed president, William Thompson, Esq.; and it is with deep regret they find themselves again placed in a similar position by the recent death of the founder of their society, Dr. J. L. Drummond. Dr. Drummond was elected the first president in 1821, and discharged the duties of that post with the utmost ability for many years, by his unceasing exertions contributing more than any other member to its ultimate success. He continued to the last to take a lively interest in the welfare of the society, though personally unable to attend its meetings. On being made acquainted with his death, your council issued a notice to all the members, and, along with many of them, paid the last tribute of respect to their founder.

“His removal occasions a vacancy in the number of trustees; and it is accordingly necessary for another to be elected at this meeting in his stead.

“The council wish to direct the shareholders' especial attention to the treasurer's annual balance sheet, from which it will be seen that a considerable outlay has been incurred on account of the new buildings and the other improvements in connexion with the Museum. In accordance with the laws by which your council are guided, they now seek your sanction to the expenditure consequent on these additions.

“The council have to acknowledge the receipt of a number of valuable donations to the Museum during the last twelve months, a list of which has been prepared by the secretaries.”

The report having been received and adopted by the meeting, an account was submitted by the treasurer, by which it appeared that the total amount of liabilities was £643, a great part of which arose from the expense incurred in making the recent improvements. The meeting approved of the expenditure undertaken for this purpose by the council, who were empowered to borrow to the amount of £700, for the purpose of having these liabilities cleared off.

A resolution expressive of the society's regret at the announcement of the death of Dr. James L. Drum-

mond was then passed, and the vacancy in the trusteeship of the Museum that arose in consequence was filled up by the appointment of Samuel G. Fenton, Esq.

After some conversation relating to the best mode of increasing the usefulness of the Museum, a ballot for a new council was taken. The following gentlemen were elected:—Thomas Andrews, M.D., F.R.S.; J. R. Garrett, Esq.; Edmund Getty, Esq., M.R.I.A.; G. C. Hyndman, Esq.; J. J. Murphy, Esq.; John Grattan, Esq.; James M'Adam, Esq., F.G.S.; Robert M'Adam, Esq.; James MacAdam, jun., Esq.; Robert Patterson, Esq.; John Stevelly, LL.D.; Rev. Isaiah Steen; A. O'D. Taylor, Esq., James Thomson, Esq., C.E.

The following office-bearers for the ensuing twelve months were chosen by the council out of their body:—President, Robert Patterson, Esq.; Vice-Presidents, Dr. Andrews, Dr. Dickie, Robert M'Adam, Esq., Dr. Stevelly; Treasurer, John Grattan, Esq.; Librarian, Rev. I. Steen; Secretaries, James M'Adam, Esq., F.G.S., A. O'D. Taylor, Esq.; Corresponding Secretary, James MacAdam, jun., Esq.

DONATIONS OF BOOKS.—Smithsonian Institution of Washington—several volumes of books. New York Lyceum of Natural History—several parts of its proceedings. Academy of Natural Sciences, Philadelphia—parts of its proceedings. New York State Library—several volumes of books. Geological Society of London—parts of its journal. Royal Irish Academy—several volumes of its transactions and proceedings. Geological Society of Dublin—parts of its journal. Natural History and Philosophical Society of Armagh—its report. Right Hon. Lord Londesborough—catalogue of ancient ornaments. Dr. Edward Hincks—his Papers on Assyria—Babylonian Characters. Mr. James Bryce—Geological Notes on the Neighbourhood of Belfast. Mr. MacAdam—Ditto. Mr. G. C. Hyndman—several volumes of books. Mr. C. W. Dilke—Reports of Great Exhibition of 1851. Mr. Joseph Mayer, Liverpool—Sprott's Chronicle and Anastatic fac-simile of MS. Prince of Canino—Conspectus Generum Avium. Mr. J. Lindsay, Cork—his work on Parthian Coinage. Mr. Hopkins—his address as President to the Geological Society of London. Historical Society of Lancashire and Cheshire—vol. 4 of their pro-

ceedings. Geographical Society of London—parts of its proceedings.

SPECIMENS OF NATURAL HISTORY.—Mr. T. Rankin—a great black back gull, and a razor bill. Mr. V. Whitla—the nest of a long tail tit. Mr. J. R. Garrett—a stuffed quail, two black guillemots, a rock dove, and a hooded crow. Dr. Dickie—a squirrel and a monkey. Mr. C. Hancock—a water rail. Dr. Templeton—a collection of insects from Ceylon. Mr. J. Davison—a collection of shells, corals, &c., from Egypt. Dr. Ball—casts of four skulls of bears. Miss Grimshaw—a bone of sawfish. Mr. R. M'Calmont—a drawing of a nondescript fish. Mr. G. Johnston—a bone of a cetaceous animal. Mr. G. Ensor—two American grouse, and one blue jay. Mr. M'Adam—several specimens of minerals. Captain Howell—specimens of minerals, insects, and lizards. Hon. East India Company—a collection of the raw products of India. Mr. H. Bell—specimens of *Leptocephalus Morrissii*. Major Macpherson—two specimens of fish from Lough Neagh. Dr. Pirrie—specimens of lizards, Mr. P. Doran—specimens of minerals. Mr. J. Bailie, Ringdufferin—cream-coloured variety of common heron.

ANTIQUITIES AND WORKS OF ART.—Mr. John M'Clean—a silver coin of Queen Elizabeth. Dr. M'Gee—a boot of Cromwell's troopers. Mr. J. Bell, Dungannon—a cast of a bronze spear and two ancient Irish hatchets. Mr. John Porter—a number of coins. Mr. Thomas Alderdice, Armagh—an ancient Irish shoe and a Chinese shoe. Mr. Colin Hunter—a copper coin of William III. Rev. Dr. Hincks—casts of several coins. Mr. James Thompson, Maghera—specimens of Irish antiquities. Mr. William Sawers, Derry—a cinerary urn.



BELFAST

Natural History and Philosophical Society.

THE annual meeting of shareholders was held at the Museum, on the 21st June, Robert M'Adam, Esq., vice-president, in the chair. The following report for the session of 1853-54 was read by Mr. A. O'D. Taylor, one of the secretaries:—

“This time last year the council submitted to the shareholders a report, in which they had the pleasure of referring to the meeting, in this town, of the British Association for the Advancement of Science—to the collection of Irish antiquities temporarily formed for that body, within your Museum, and to other interesting topics, which are now passed away. The session which has just concluded has no such particular facts to mark its career, the arrangements of the Museum and of the society having since fallen into their ordinary course. As regards the Museum itself, various additions have been made to its collections, as detailed in the donation list accompanying the present report. The Thompson Room is now fitted up with a number of suitable cases, in which specimens illustrative of Irish Natural History are about being deposited.

“Other arrangements, with the view of rendering part of the specimens more practically useful, are in contemplation by the council, and, they expect, will at any rate be partly matured during the Summer months, by the formation in the large middle room of a

typical collection of the animal kingdom. As usual, for the past few years, the working classes enjoyed the benefit of visiting the Museum on Easter Monday, at a trifling admission charge. About 5,000 persons, including a large number of children, were present, and the same propriety of conduct was manifested, and the same interest in the collections evinced, as had been observed on previous occasions.

"The library has been lately enriched with some valuable donations; and a large amount of space being now rendered available by recent improvements, all the books are in course of re-arrangement, to secure more easy and ready reference than has hitherto been practicable.

"The 33d session of the society has now terminated; and, during its continuance from October, 1853, till May, 1854, fourteen meetings have been held, nine of them ordinary or private, and five of them public. The following list will show the varied nature of the subjects discussed:—

"PAPERS READ IN THE SESSION 1853-54.

- Dr. Dickie.—Subject—The relations of form and colour in plants and animals.
- Mr. R. Young.—Subject—Drainage: its relation to its economic and sanitary aspects.
- Rev. J. S. Porter.—Subject—State of society, arts, and manners among the primeval inhabitants of Ireland.
- Professor M'Coy.—Subject—Experiments to determine the effect of pressure in modifying the temperature of fusion, with their application to geology.
- Mr. A. O'D. Taylor.—Subject—The gigantic birds formerly found in the Mauritius and adjacent islands.
- Dr. Stevelly.—Subject—The electric telegraph.
- Mr. Patterson.—Subject—On the instincts of animals.
- Mr. Steen.—Subject—The recent discoveries in astronomy.
- Mr. Patterson.—Subject—Notes on Chinese mirrors.
- Mr. MacAdam.—Subject—Notes on physical geography.
- Dr. Andrews.—Subject—Composition and properties of Ozone.
- Mr. Murphy.—Subject—The mountain chains of Europe and Asia, in their physical and political relations.
- Mr. Patterson.—Subject—Uses of animals to man.
- Mr. Millar.—Subject—On the more remarkable plants in the neighbourhood of Belfast.

Mr. Montgomery.—Subject—On the American ship canal.

“The treasurer’s report will show the present state of your funds, and your council trust that you will approve of the manner in which they have expended the amount authorised at the last annual meeting, to be raised for the purposes then specified. In concluding this report, the council have merely to express, in general terms, that the Museum and Society are progressing steadily, and are continuing to foster that spirit of scientific inquiry which it has always been the aim of your council to develope and encourage.”

After the report was read, the following gentlemen were elected members of the council for the ensuing twelve months:—Thos. Andrews, M.D., F.R.S., George Dickie, M.D., J. R. Garrett, Edmund Getty, M.R.I.A., John Grainger, John Grattan, Geo. C. Hyndman, Jas. MacAdam, F.G.S., Robt. M’Adam, J. J. Murphy, Robt. Patterson, John Stevelly, LL.D., Rev. Isaiah Steen. A. O’D. Taylor, James Thomson, C.E.

The council selected the following office-bearers out of their number:—President—Thomas Andrews, M.D., F.R.S.; Vice-Presidents—John Stevelly, LL.D., George Dickie, M.D., Geo. C. Hyndman, Robert M’Adam; Treasurer—John Grattan; Librarian—Rev. I. Steen; Secretaries—James MacAdam, F.G.S., and A. O’D. Taylor; Corresponding Secretary—John Grainger.

The thanks of the meeting were voted to Robert Patterson, Esq., on his retiring from the office of President, which he had held for the last two years; and to James MacAdam, jun., Esq., on his retirement from the office of corresponding secretary.

The following is a list of donations received during the session 1853–54:—

Mrs. Blair, Clearstream Cottage—specimen of foreign fish. John Porter, Esq.—specimens of Sicilian antiquities, a number of coins and specimens of the Papyrus. Sir J. Emerson Tennent—a large and beautiful collection of shells from Ceylon. T. H. Jones, Esq., Money-glass—a pied blackbird. Captain Turney—the jaws and part of the backbone of a shark. Wm. Young, Esq.—a razor-bill in Winter plumage, shot in the Lagau. V. Coates, Esq.—two goosanders, shot in Scotland. Captain May—a rifle-gun from Lapland. Wm. Verner, Esq.—specimens of ornithorhyncus. Mr. Wm. Darragh—specimens of the gadwal, shoveller, and long-tailed

duck. Mrs. Freckleton—a lizard. Dr. Dickie—eggs of foreign and native birds. Rev. Alex. Mackay, Antrim—an old medal. Major Macpherson—a large bream from Lough Neagh. R. Garrett, Esq.—specimens of Portland Oolite. Jas. MacAdam, Esq.—specimens of minerals. John Charters, jun., Esq.—skins of four animals from America. A. O.'D. Taylor, Esq.—specimen of Sandwich tern. Sir J. E. Tennent—a paraffine candle. Jas. Gibson, Esq.—a horn implement found near Antrim. Mrs. Richard Thompson—brass medal found near Woodburn. Mr. William Darragh—a silver coin of Henry VI. Smithsonian Institute of Washington—Maury's Sailing Directions, Adams's Contributions to Conchology, Characteristics of American Reptiles, Girard's Revision of Astaci, Dr. Hare on Tornados, Maps of California. Catalogue of Indian Portraits, Contributions to Knowledge. Dr. R. Ball—Address to Dublin Geological Society. The Editors—the Natural History Review. Historic Society of Lancashire and Cheshire—their Proceedings, vol. 5. University of New York—Report of Regents, January, 1854. London Geological Society—their Proceedings. Irish Census Commission—Report on Disease in 1851. Professor E. Forbes—On the Educational Uses of Museums. Geo. C. Hyndman, Esq.—six scarce pamphlets. Dublin Geological Society—their Proceedings. R. W. Jackson, Esq., Armagh—manuscript in the Tamul language, on palm leaf. Prince of Canino—Classification Ornithologique. Armagh Natural History Society—their Report. R. Davison, Esq., M.P.—Lyell's Report on the New York Exhibition. Dr. S. Bryson—two volumes of Irish manuscripts. John Cunningham, Esq., Macedon—Selby's Ornithological Illustrations.



1854-55

BELFAST

Natural History and Philosophical Society.

THE annual meeting was held on the 13th June, 1855—
Dr. Andrews, President, in the Chair—when the following report of the Council was read :—

“ In presenting, on this occasion, the annual report, the Council have but little to communicate to their fellow-members and to the shareholders of the Museum.

“ During the Session just ended the Society have regularly held their meetings, which have been well attended, and at which various communications have been brought forward, that have been as interesting and attractive as those of former Sessions, and equally creditable to their authors. The following is a list of the papers that have been read :—

“ Private Meeting, 1st Nov., 1854, Dr. Dickie, on the Axolotl.

“ Public Meeting, 15th Nov., 1854, Dr. Andrews, on Photography.

“ Private Meeting, 6th Dec., 1854, Mr. S. Archer, on the Geography of the Ancient Greeks.

“ Public Meeting, 20th Dec., 1854, Dr. Dickie, on relations of position, number, form, and colour in the flower.

“ Private Meeting, 17th Jan., 1855, Mr. J. J. Murphy, on the Fiords of Norway and other Coasts.

“ Public Meeting, 31st Jan., 1855, Professor W. Thomson, on Native Zoophytes.

“ Private Meeting, 14th Feb., 1855, Rev. I. Steen, on the Decimal Coinage.

“Public Meeting, 7th March, 1855, Professor W. Thomson, a Continuation of his Paper on Zoophytes.

“Private Meeting, 14th March, 1855, Mr. Duffy, on some Phenomena of Heat.

“Private Meeting, 4th April, 1855, Mr. J. W. Forrester, on Coins.

“Public Meeting, 18th April, 1855, Mr. A. O'D. Taylor, on the Rivers and Lakes of North America.

“The Council have the painful duty of recording the decease of one of their number, Mr. J. R. Garrett, a gentleman whose acquirements in zoology were of a very high order, who had been for a time the fellow-labourer of our former lamented President, Mr. Wm. Thompson, and the loss of whose services in superintending the collection of our native Irish Fauna, will be severely felt.

“As has been the custom, for several years past, the Museum was thrown open to the working classes on Easter Monday, when there was an attendance of about 5,000 persons. The Council have to report most favourably of the behaviour of so large a number of visitors, any injury that was sustained by the collections having been purely accidental, and comparatively trifling.

“The Council are anxious to draw the attention of the shareholders and members to the present financial state of the Museum. At the annual meeting, in 1853, authority was given to borrow a sum of money, in order to cover the expenditure that was necessary for carrying out a number of improvements, and this having been done, an annual payment of interest is required, to meet which some means of extra income must be devised, as the current expenditure is barely met by the receipts.”

The Treasurer's accounts were then submitted and passed.

The following members were elected to form the Council for the ensuing twelve months :—Thomas Andrews, M.D., F.R.S., President ; George Dickie, M.D., Robert M'Adam, George C. Hyndman, Robert Patterson, Vice-Presidents ; John Grattan, Treasurer ; Rev. Isaiah Steen, Librarian ; Jas. M'Adam, F.G.S., A. O'D. Taylor, Secretaries ; John Grainger, Corresponding Secretary ; Edmund Getty, Joseph J. Murphy, John Stevelly, LL.D., James Thomson, C.E., Wm. Bottomley, Councillors, not officers.

LIST OF DONATIONS FOR THE SESSION 1854-55.

TO THE MUSEUM—Dr. Andrews, Queen's College, a number of Australian birdskins ; Captain Skinner, several beetles and two centipedes from Jamaica ; Dr. Dickie, Queen's College, specimen of the axolotl, from the Lake of Mexico ; Francis Rankin, Esq., Kircubbin, a turtle dove ; Lord Clermont, Ravensdale-park, a stuffed specimen of the grey lag goose, and a mountain finch ; Mr. Edward Wilson, a tufted duck ; Mr. Henry Bell, Ballymacarrett, a light-coloured variety of the widgeon and a wild swan, shot in Belfast Lough ; Alexander Johns, Esq., Carrickfergus, a specimen of the *Anglesea maurice* ; Robert Grimshaw, Esq., Longfield, a number of Indian birds, and 17 reptiles from India ; Mr. Taylor, Gamekeeper at Langford-lodge, a grey lag goose ; Robert Warren, jun., Esq., Mayview, County Mayo, an Iceland gull, shot near Mayview ; A. O'D. Taylor, Esq., shells, &c., from Goat Island, near the Falls of Niagara ; Mr. M'Adam, specimens of minerals ; Mrs. Richard Thompson, a medal, found near Woodburn ; Mr. George Patterson, Holywood, an old medal, commemorating the taking of Portobello ; Mr. James Tolerton, Donaghadee, an ancient bronze axe ; Captain Edward Smyth Mercer, 94th Regt., a valuable series of specimens, illustrations of the domestic and religious life of the Burmese, comprising cooking apparatus, and va-

rious implements, idols procured by the British soldiery in the expedition of 1853; also, specimens of the gulf weed, fish, &c.

TO THE LIBRARY.—Dr. Bryson—eight vols. Irish manuscripts. Imperial Geological Institute of Vienna—their proceedings for 1850. Historic Society of Lancashire and Cheshire—proceedings for 1853—54. Zoological Society of London—proceedings for 1850, 1851, and 1852. Armagh Natural History Society—Report for 1854. Geological Society of London—Journal for 1854. Rev. Samuel Hayman—Notes on Ancient Religious Houses at Youghal. Boston Natural History Society—Warren on Fossil Impressions. Geological Society of Dublin—Journal for 1854. John Lindsay, Esq.—his paper on a Chaldean Talisman. Rev. E. Hincks D.D.—his paper on Assyrian Mythology; also, his paper on the Personal Pronouns of some languages. Smithsonian Institution of Washington, U.S.—a number of volumes published by them. Right Hon. Lord Clermont—Pennant's British Zoology, Wilson's American Ornithology, Voyage of the Adventure and Beagle.



ANNUAL MEETING

OF THE

BELFAST

Natural History and Philosophical Society.

THE annual meeting of the shareholders of the Belfast Museum was held on the 17th of June, 1857—Robert Patterson, Esq., V.P., in the chair, when the following report was read:—

The Council of the Belfast Natural History and Philosophical Society, in offering their present annual report to the shareholders of the Belfast Museum, have much pleasure in announcing the satisfactory state of all its departments, which are in excellent order, and are very creditable to the taste and care of the curator. The rooms of the building are now so well filled, that it would be difficult to increase the display of specimens in some of these departments; and a want of cases is already felt, especially for the exhibition of minerals and fossils. A number of donations have been presented during the past session, a list of which is appended to this report. Among these donations is a number of valuable and interesting books—most acceptable additions to our library, which now contains nearly twelve hundred volumes.

During the past session, the meetings of the Natural History and Philosophical Society have been well attended; and there is an evidently increasing interest taken in its proceedings. The subjects discussed were frequently of a popular character, so as to be easily understood by a mixed audience; one of the objects of the society being to foster and diffuse a taste for science in this manufacturing and commercial community, and to encourage in the path of study, and in the acquisition of useful information, those young persons who, in their course of instruction in the various branches of enterprise and industry practised here, are preparing themselves for the future discharge of the important duties of active life.

There have been seven public and six private meetings during the past session; and, as a variation on the custom of former years, there have been, at several of these meetings, two or more communications brought forward; whereas, generally, in former sessions, the evening was occupied by the delivery and discussion of a single memoir.

The following papers have been read during the past session, 1856:—

October 29—The President, Dr Stevelly, delivered an address opening the session.

Nov. 5—Professor Wyville Thomson read a paper "On some Modern Geological Changes."

Nov. 19—Dr Dickie, "On the Homologies of Insects."

Dec. 3—Mr Joseph John Murphy, "On Longitude and Clock Time." Dr Stevelly, "On the Dispute about the Moon's Rotation."

January 7, 1857—W. J. Ffennell, Esq, Irish Fishery Commissioner, "On Edible Fishes, and the Development of the Fisheries of Ireland."

Jan. 21—Mr Wm Simms, jun, "On Forest Trees and Artificial Planting."

Feb. 4—Dr Dickie, "On the Colouring Matter of a Lake near Derry." Mr Joseph John Murphy, "On Tornadoes and Waterspouts."

Feb. 18—Alex. Graham, Esq, Capilly, Renfrewshire, "On the Agriculture of the Ancients."

March 4—Mr Thomas Malcomson, "On some rare Irish Birds." Mr Alex. Montgomery, "On the last Eruption of Mauna Loa, in the Sandwich Islands."

March 18—Dr Andrews read "On Aluminium."

April 1st—Mr James Thomson, "On Capillary motions in Liquors." Mr Hyndman, "On the Herring."

April 22—Dr Dickie, "On the Whale."

May 6—Mr Hyndman read a notice of the "Antlion;" also, "Notes on a Bee's Nest found in Mahogany." Dr Stevelly delivered the closing address.

It is to be noticed that, in the previous list of papers, there were two delivered by gentlemen who are not members of the society, Messrs Ffennell and Graham; and to these gentlemen the thanks of the society were duly rendered for their great kindness in acceding to the wishes of the Council, when solicited to bring forward their valuable communications.

Before the commencement of the present session, our fellow member, Sir J Emerson Tennent, was staying for a short time in Belfast, and during his stay, he kindly offered to deliver a lecture on the habits of wild elephants, and the mode of capturing them, a subject to the elucidation of which he was eminently qualified to render full justice, from his long residence in Ceylon, where he had observed these animals with great interest and accuracy, and whence he sent to our museum a valuable collection of their skeletons. The Council gratefully accepted the offer, and by making a small charge for admission to this lecture, it was turned to some advantage for the society's funds, from the largeness of the audience present.

The success of Mr Patterson's course of lectures on zoology, during the previous session, induced the Council

to try a similar experiment in the past one, in consequence of Mr Davison, M.P., and Mr Hyndman, volunteering a short course on "conchology." This course was delivered in December last, and was listened to with much interest, so that the Council are impressed with the importance of these courses in developing and encouraging a taste for natural science; and when another fitting opportunity occurs, they will provide a third course on some other department of science, for the benefit of our members and others who attend our meetings.

It is with much gratification that the Council have to report the interest manifested by the working classes in the museum, as shown by the numbers who visited it on last Easter Monday. The concourse of visitors was exceedingly great, between 6 000 and 7,000 persons having availed themselves of the opportunity of seeing the collections on that day.

On every week day, the museum is open from 12 o'clock till 4 o'clock, for the inspection of members and visitors. Strangers from a distance have thus an opportunity of examining a local collection of the natural history of Ulster, and of comparing its specimens with those from other parts of the world. They have also an opportunity of examining a number of objects of antiquity and of modern art, illustrative of different stages in the progress of mankind.

The Council also wish to point out to the members the improved state of the library, which, solely through donations, has much increased of late years.

It is with much regret that the Council have to record, in their present report, the deaths of three highly-esteemed members of this society. One of these, the Rev Dr Thos. D. Hincks, was a man who, for more than half a century, had taken the liveliest interest, and had made the most active exertions in fostering in Ireland a taste for intellectual improvement. For the last 36 years he had resided in Belfast; and so long as his physical strength permitted him, he contributed his full share of co operation in every institution intended for intellectual and social advancement. Of our society he was an active member in the early stages of its progress; for some time he filled the president's chair; and on his retiring from it he was elected honorary vice-president for life. Dr. Stevelly, our present president, in his concluding address, last session, gave a number of details of Dr Hincks's life, which were highly interesting and instructive.

Dr Robert Ball, one of the most eminent naturalists in Ireland, and the intimate friend of our late distinguished president, Mr Wm. Thompson, is another of our fellow-members, although non-resident, who has been consigned to the tomb during the past session. His death, in the prime of life, has been very deeply

regretted, very few at the present time being able to supply his place among the scientific men of Ireland.

The Council have also to record the death of James Grimshaw, jun, Esq, of Whitehouse. It is a melancholy duty to be obliged to notice the decease of any one of our fellow-labourers, but in this case it is more particularly so, as Mr Grimshaw was one of the eight founders of the Belfast Natural History Society in the year 1821, and he had witnessed its progress from its very humble commencement to its present satisfactory and gratifying position. Two of the other founders, Dr Drummond and Mr Simms, have been deceased for several years; it is a matter of congratulation that five are still surviving, and still able to sustain an active part in their various duties of life.

The Council are happy to state that the last year's income of the society, arising from annual subscriptions from the sale of shares, and from the proceeds of lectures and admissions at the door, has not only sufficed to meet the expenditure, but has left a balance of nearly £100 to be applied in liquidation of the existing debt. They would urge on their fellow members the necessity of combined and continuous exertion, until the entire of the debt due by the society for the improvement of the museum become extinguished.

After the report had been read and agreed to, the treasurer presented his annual account.

The following officers and council were elected for the ensuing twelve months:—

President—John Stevelly, LL.D.

Vice-Presidents — Thomas Andrews, M.D., F.R.S., George Dickie, M.D., George C. Hyndman, R. Patterson, M.R.I.A.

Treasurer—John Grattan.

Librarian—Rev I. Steen.

Secretaries—Jas. MacAdam, F.G.S., A. O'D. Taylor.

Corresponding Secretary—Robert MacAdam.

Councillors, not Officers — James Thomson, C.E., J. J. Murphy, Wyville Thompson, LL.D., Wm. Simms, jun., Thomas Malcomson.

DONATIONS TO THE MUSEUM.

Sir J. E. Tennent—Specimens of the Ant Lion, from Ceylon.

Mr J. Cinnamond—Specimens of coal with shells, from Ince-hall Colliery.

Mr S. R. Murphy—A kitten with two faces.

Rev George King—Specimens of reptiles from Swan River.

James C. Price, Esq—A poisoned dagger from Java.

Robert Garrett, Esq—Specimen of spar perforated by teredo, and specimens of rocks, from the Crimea.

George C. Hyndman, Esq—A Chinese shaving basin.

Rev James M'Kee—Specimens of grain, sea-weed, and pumpkins, skulls of antelopes, and fossil bones, from India.

Dr Dickie—A heron from Africa.

Hugh Hyndman, Esq—Portion of tree struck by lightning.

Mrs Gregg—A bottle with barnacles attached, from Portrush.

Dr H. C. Barnett—Opium pipe and picture representing opium smoking; bank-note, coins, seal, sun-dial, compass, scissors, razor, comb, lock and key, flint and steel, all from China.

William Young, Esq—A green cormorant.

W. C. Heron, Esq—Specimens of copper ore.

Mrs M'Cammon—A cap from Africa.

DONATIONS TO THE LIBRARY.

Society of Antiquaries, London—Their Proceedings, vols. 1, 2, 3.

Spalding Club—Their volume, entitled "The Sculptured Stones of Scotland."

Dublin Natural History Society—Proceedings for 1855 and '56.

Geological Society of the West Riding of Yorkshire—Proceedings for 1855.

Leeds Literary and Philosophical Society—Report for 1855 and '56.

Imperial Geological Institute of Vienna—Their Journal for 1856.

Geological Society of London—Their Journal.

Geological Society of Dublin—Their Journal.

Zoological Society of London—Their Proceedings.

Literary and Philosophical Society of Liverpool—Their proceedings.

Smithsonian Institution of Washington—Their Contributions to Knowledge, vol. 8; and Report of New York University.

Academy of Natural Sciences, Philadelphia—Their Proceedings.

Mr. Ffennell, Fishery Commissioner—Hore on Irish Fisheries.

Professor Rankine—Introductory Lecture on Engineering.

Professor B. Powell—Paper on Meteors.

Sir W. Snow Harris—Papers on Electricity.

Lord Clermont—Ten Volumes of Books.

BRITISH
MUSEUM
20 JAN 33
NATURAL
HISTORY.

BELFAST MUSEUM.

THE annual meeting of the shareholders of the Belfast Museum was held on the 2d June, 1858—Dr. Stevelly, president, in the chair—when the following report was read:—

“The council of the Belfast Natural History and Philosophical Society, in their present report to the shareholders of the Belfast Museum, have but little to lay before them, as the past twelve months have presented but little variation from the preceding year. The proceedings of the society have been of that satisfactory, but, at the same time, unvaried character, that nothing has occurred which calls for any special remark. The property in the Museum is in excellent order, owing to the unremitting attention of the curator, with the aid of several members of the society. The collection of specimens is well displayed, and is continually receiving additions; and the library is likewise increasing by donations, and at present contains 1,200 volumes, available to members and subscribers. A rearrangement of the specimens in the Museum has been commenced by a committee of the council, which, besides causing the different objects to be freshly and correctly labelled, will afford an opportunity of removing duplicates, and of procuring space for specimens not hitherto displayed for want of room. The council have it also in contemplation to carry out a plan suggested by the British Association, of placing together a series of typical specimens, for the benefit of cultivators of natural history. The Museum, as usual, was thrown open on Easter Monday to the working classes, at the customary charges, when the attendance was, perhaps, the largest which has yet taken place, being upwards of 7,000 persons, who conducted themselves with perfect propriety. In pursuance of the plan adopted for the last two years, the council arranged with Dr. Andrews to deliver a short course of lectures on chemical science, the proceeds to

be given to the funds of the Museum. In order to have more convenient access to the necessary apparatus, these lectures were delivered at Queen's College. They were well attended, and excited much interest from the details, which were explained in the most skilful manure by Dr. Andrews. The grateful thanks of the council are due to that distinguished chemist for his kindness and courtesy. The council have the painful duty of recording the decease of a highly-esteemed member of the society, Edmund Getty, Esq., who had always taken the liveliest interest in our progress. He gave active coöperation when our present building was in the course of erection, and when the collections in the Museum were first brought together, and for many years he contributed papers at our meetings. He possessed a great fund of information on almost every subject, but he had more particularly directed his attention to the study of statistics and antiquities, in which departments he had collected much local information, which he had partly made arrangements for publishing. His official situation, as secretary of the Belfast Harbour Commissioners, frequently enabled him to direct the attention of the society to scientific matters connected with this district; and, by his sudden death, we are deprived of a valuable fellow-member, whose advice and assistance were always ready, and always important. Mr. Getty was, also, one of the three trustees of the Museum; and, in consequence of his demise, it will be necessary, on the present occasion, to appoint a new trustee to supply his place. During the past session, there have been six public and eight private meetings of the society, at which the following papers have been communicated:—

“October 21, 1857—Mr. R. Patterson—‘On Specimens of Locust recently Captured in this Neighbourhood,’ and ‘On the Bottle-Nosed Whale, taken, last month, in Belfast Lough.’

“November 4, 1857—Dr. Andrews—‘On the Manufacture of Stearic Acid, and other analogous bodies employed for illuminating purposes.’

“November 18—Mr. T. Malcomson—‘On the Native Eagles.’

“November 18—Mr. J. J. Murphy—‘On the Climates of Northern Latitudes.’

“December 2—Mr. J. Thomson, C.E.—‘On the Effects of Pressure in Lowering the Freezing Point of Water; and On the Plasticity of Ice.’

“December 23—Professor Wyville Thomson—‘On the Reproduction of the Hydroid Zoophytes.’

“January 6, 1858—Mr. G. C. Hyndman—‘On some of the Results of Dredging, near Belfast.’

“January 6—Mr. J. Pim, jun.—‘On the Atlantic Telegraph.’

“January 20—Mr. Grattan—‘On some Ancient Irish

Skulls, and on an exact method of taking and recording Cranial Measurements.'

"February 10—Mr. J. J. Murphy—'On Recent Explorations in Eastern Asia.'

"February 24—Mr. T. Bryce—'On the Tides of the Atlantic and Pacific Oceans.'

"March 3—Dr. Dickie—'On the Teeth of Animals, their Development, Structure, Form, &c.'

"March 17—Dr. Dickie—'On the Classification of the Mammalia, with Special Reference to the Affinities of the Orders.'

"March 31—Dr. Carlile—'On the Structure and Functions of the Nervous System.'

"April 28—Dr. Browne—'On the Water Supply of Towns, viewed in its Domestic, Sanitary, and Commercial Relations.'

"May 5—Dr. Dickie—'On Infusoria in general, with a notice of a Fossil Earth, found at Bella Hill, near Carrickfergus,' and 'On a Recent Deposits of Shells, Wood, &c., discovered by Dr. Rea, at Newcastle, Co. Down.'"

After the adoption of the report, and reception of the treasurer's account, the meeting proceeded to the appointment of a new trustee of the Museum, in the room of the late Mr. Getty, when William Bottomley, Esq., was duly elected.

The following council was chosen for the ensuing twelve months:—President—Geo. C. Hyndman, Esq. Vice-Presidents—Thos. Andrews, M.D., F.R.S.; George Dickie, M.D.; Robert Patterson, Esq., M.R.I.A.; Professor James Thomson. Secretaries—James MacAdam, Esq., F.G.S.; A. O'D. Taylor, Esq.; Corresponding Secretary—Robert MacAdam, Esq. Treasurer—John Grattan, Esq. Librarian—Rev. Isaiah Steen. Councilors, not Officers—Professor Wyville Thompson, J. J. Murphy, Esq.; Dr. Stevelly, Thomas Malcolmson, Esq.; Wm. Simms, jun., Esq.

Donations to the Museum—Lord Clermont, an eagle owl, and a number of insects, from Australia and Madeira; Dr. Ritchie, a number of insects from India; — Bland, Esq., a small American owl, a pair of spotted grouse, and male specimens of the harlequin, buff-headed, and summer duck; Geo. C. Hyndman, Esq., a lizard; James MacAdam, Esq., a number of minerals; Victor Coates, Esq., a pair of ptarmigan; Miss M'Clure, a specimen of Napu deer; Mr. W. Darragh, a great plover; Mr. Meenan, a purple variety of the common lobster; S. G. Fenton, Esq., a valuable collection of minerals from the north of England, &c.; Botanic Garden, a specimen of alligator; Colonel G. Rochfort, skull of bear from India; Thomas Malcolmson, Esq., specimens of goshawk, black-throated diver, and female harlequin duck, and a number of eggs of native birds; Ma-

for Kean, specimens of water chestnut from China; Captain Inglefield, specimens of anthracite coal, from the Arctic Regions; Dr. Kinahan, specimens of *Galathea Andrewsii*, from Dublin bay; Dr. Browne, a peacock.

Donations to the Library—Smithsonian Institution, Washington, six volumes of their publications; Academy of Natural Sciences, Philadelphia, their proceedings; Royal Dublin Society, their journal; Dublin Natural History Society, their proceedings; Catholic University, the Atlantis; Liverpool Literary and Philosophical Society, their proceedings; Society of Antiquaries, London, their proceedings; Watt Club, memoirs of James Watt; Zoological Society, their proceedings; Cornwall Polytechnic Society, their report; Imperial Geological Institute of Vienna, their journal; Lord Dundonald, work on "The Pitch of Trinidad;" Society of Scottish Antiquaries, their proceedings; Geological Society of London, their journal; Sir J. E. Tennent, meteorological papers published by the Board of Trade; James MacAdam, Esq., memoir on "A Fossil Cirripede;" Geological Society of Dublin, their journal; Governor-General of India, first part of "The Report of the Indian Geological Survey."—*From The Northern Whig, of Wednesday, June 23, 1858.*

Report 1861-2

BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY.

THE first meeting of the Natural History and Philosophical Society for the present session was held yesterday evening, in the Museum. The chair was taken by Mr. Robert Patterson, F.R.S., who delivered the following address:—

GENTLEMEN,—Since we last met within these walls, our society has lost by death one of its original members, our esteemed and much valued President, Mr. James MacAdam. I had known him intimately from childhood, and throughout his entire life no shadow of estrangement had ever come between us. In him I have lost my very oldest friend. The council of your society has thought fit to call on me to fill, for the present session, the blank now left in our list of officers. I duly appreciate the honour, and I have at once assented to their wish, being willing to give my services in any capacity where they might seem most useful, and relying, at the present time, on the same kindness and support that were accorded to me on a former occasion. And now, on taking the chair for the first time, on the opening of another session, I feel my first duty is to do justice to the memory of him who is no longer among us. In speaking of him as a man of science, I shall sedulously abstain from anything that would have the appearance of panegyric, and use only the simple language that any one acquainted with the facts might be supposed to employ. James MacAdam was born at Belfast, in January, 1801. His family, like the greater part of our bustling community, belonged to the commercial class; and he himself was actively engaged in business throughout his entire life. Among his teachers were James Sheridan Knowles, the dramatist, and Dr. James Thomson, afterwards the distinguished professor of mathematics in the University of Glasgow; names that may awaken reminiscences of early days in the minds of some now present. Both of these gentlemen were at one time Masters in the Royal Academical Institution, where Mr. MacAdam received a part of his early education. He

attended some of the collegiate classes afterwards established there ; and subsequently, though deeply engaged in the turmoil of commercial life, went through the necessary studies, and became a graduate of Trinity College, Dublin. He was one of those who find time for much that lies outside of and beyond the usual routine of a life of business. From boyhood, he had a taste for classics, for continental literature, and for different departments of physical science. In 1821, he was one of the eight original members by whom this society was established. Of these, four only now remain alive : one is resident at Londonderry, one at Liverpool, and two in Belfast, who still continue to take part in the various duties of your society. In 1830, when this building was in course of erection, Mr. MacAdam took an active part in the efforts which such an undertaking required. He was a very regular attendant at our meetings, filled for many years the responsible post of honorary secretary, and held the office of president at the time of his lamented death, which took place on the 1st of June last. For forty years, it was his privilege and his pleasure to labour for the welfare of this society. He was one of the founders of the Botanic Garden, and took a warm interest in the educational and scientific institutions of his native town. His time was ever at the service of young men who were entering on scientific or literary pursuits, and who required the encouragement and assistance of their seniors. For more than thirty years, he steadily pursued his geological investigations over a large portion of the North of Ireland, more especially in the adjacent Counties of Down and Antrim, and he acquired such a thorough knowledge of their structure that for many years past he was regarded as the local authority on matters pertaining to geological inquiry. Our fellow-member, and for years our energetic and efficient honorary secretary, Dr. J. Bryce, now of Glasgow, was the companion of Mr. MacAdam in many of his investigations. The two friends proposed to unite their efforts, and prepare a volume on the geology of the County Antrim, more especially on the interesting district which extends from Belfast to the Giant's Causeway. But, although materials for this purpose were sedulously collected, the book itself was never published. There is reason to hope that Dr. James Bryce will yet endeavour to fulfil the intentions of himself and his departed friend. Mr. MacAdam took part in certain inquiries set on foot, at different periods, with reference to the probability of discovering coal in the

neighbourhood of Belfast. During the construction of the different lines of railway in this vicinity, he took advantage of the cuttings to examine the geological sections which they displayed; and he published papers on those of the Northern Counties Railway, the County Down Railway, and on the blasting at Down Hill, County Derry, &c. These and similar communications were most usually made to the Geological Society of Dublin. In their journal for 1837, he published the result of his investigations on the geology of Fannet, County Donegal; and an account of a land slip near Larne, County Antrim. Both these papers were translated into German, and appeared in the journal of geology and mineralogy published at Heidelberg. The service which Mr. MacAdam has rendered to geological science is not so much by the production of the papers he has published, nor by the local influence he exercised, as by the very large store of valuable materials he has amassed, and which yet remain but partially arranged. These were collected at much expense, and with much personal exertion, during a period of more than twenty years, and comprise, it is believed, many species of fossils which are as yet undescribed. They embrace an extensive series of specimens from the lias, the permian, and the cretaceous beds, and more especially from the green-sand formation of the County Antrim. As a private collection, it undoubtedly ranks as one of the best in Ireland; a portion of it has for some years been freely displayed in the upper room of the building in which we are now assembled. The papers read by Mr. MacAdam at our various meetings are too numerous to be mentioned in detail. They related chiefly to the minerals in our collection, to interesting phenomena connected with geology in other countries, and to the state of geological science, its progress, and changing aspects at successive periods. He also delivered some short courses of lectures. One of these in the winter of 1844 and 1845 was "On the connexion of Natural Science and Agriculture" The last was a very successful course on geology, delivered in this room, towards the close of the winter of 1858, undertaken with a view to aid the finances of our society. My promise is fulfilled. I have stated facts, and leave you to draw your own inferences. One word more and I have done. It is our custom to encourage observations on the papers read, and in this way very animated discussions occasionally arise. Now, I believe that every one of our members will bear me out in stating that

never was there heard on these occasions from our departed friend one unkind remark, one uncourteous expression. He stated what he believed to be the truth—he pointed out error, or what seemed to him to be such, but never was it done so as to cause pain to even the most uninformed.

The ordinary business of the session then commenced by

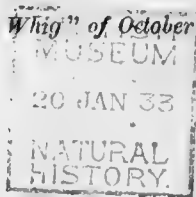
Mr. JOSEPH JOHN MURPHY reading a paper on "Glacier Scenery." He began by describing the snow-fields which cover the high Alps all the year round, and give origin to avalanches; these avalanches leave marks on the snow-fields which, at a distance, look like a delicate pencilling. They accumulate their snow in the high valleys, and thus form glaciers. The snow fields are pure white, but in the light of a clear sunset assume a most beautiful rosy colour. The transition from snow-field to glacier may be distinctly seen in some places from the opposite heights. The glacier is cut up by deep fissures caused by one part sliding away from another; in looking into these a most beautiful blue colour is seen. The surface of the glacier is generally very dirty, in consequence of the stones and earth which are brought down by the avalanches: this discolours the streams that take their rise in the glaciers. The lakes into which these streams fall, however, are mostly of a clear light-green colour, except the Lake of Geneva, which is blue. Mr. Murphy concluded by describing the Märjelen Lake, which is in contact with the vast Aletsch glacier, and is supplied with water by its melting. Pieces of ice break off the glacier, and float on the lake, forming miniature icebergs, like those of the Polar regions.

Mr. JOHN GRAINGER then gave a description of the "Tour of Mont Blanc"—that is, the excursion around the entire mountain. Regarding the lofty mountains called the St. Gothard group as the centre, he described the six great valleys and five mountain-chains radiating therefrom. He then gave a sketch of the three different routes by which Mont Blanc can be traversed round, in seven days, four days, and three days respectively. The lecture was illustrated by an interesting collection of Alpine plants and butterflies.

After a discussion on some points connected with both papers, the proceedings terminated.

30th October, 1861.

From the Daily "Northern Whig" of October 31, 1861.



REPORT OF THE COUNCIL

OF THE

BELFAST

Natural History & Philosophical Society

FOR THE YEAR 1862-63.

or, Mr. R

BELFAST :

PRINTED AT THE DAILY "NORTHERN WHIG" OFFICE.

1863.

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BELFAST

Natural History & Philosophical Society.

ANNUAL MEETING

ON WEDNESDAY EVENING, 26TH MAY, 1863.

MR. GEORGE C. HYNDMAN, VICE-PRESIDENT, IN THE CHAIR.

There were also present—Mr. PATTERSON, Professor JAMES THOMSON, Mr. THOMAS GREER, Mr. JOSEPH JOHN MURPHY, Mr. R. S. M'ADAM, Mr. JOHN HANCOCK, Rev. I. STEEN, Mr. A. O'D. TAYLOR, Mr. R. L. PATTERSON, &c.

The advertisement convening the Annual Meeting of the Museum Shareholders having been read,

Mr. TAYLOR read the following

REPORT OF THE COUNCIL

OF THE

BELFAST NATURAL HISTORY & PHILOSOPHICAL SOCIETY

FOR THE YEAR 1862-1863.

THE Council, in surrendering the charge confided to them for the last twelve months, have pleasure in reporting to the Shareholders of the Museum, that the collections in that Institution are in a satisfactory state of preservation, and have been of late so arranged as to become more easy of reference than they had hitherto been. They have, likewise, been increased by various donations, some of them of considerable importance. Constant contributions to the various departments of Ornithology, Mineralogy, and Conchology, can be announced; a fact

evincing a continued interest in the welfare of the Museum, and rendering the many series of specimens, which it contains, more complete year by year, and more useful to those who are studying various branches of Natural History. The literary aids to such studies, attainable from the Library in connexion with your Museum, are also being more extensively availed of, and are being annually augmented by donations of various books. A list is appended to present report showing the special additions made during last season to both Museum and Library. With respect to the general public—to whom it is only on particular and notable occasions that your Council have deemed it advisable to appeal for support—the most encouraging facts can be stated. Your Council refer pointedly to the artizan public, who have, for many years past, always shown by their presence, in large numbers, at the Museum, on Easter Monday—the North of Ireland annual holiday—how much they enjoyed the pleasure of inspecting the collections then displayed. The same feeling has been manifested on the last Easter Monday—namely, on the 5th April, 1863—when between 4,500 and 5,000 persons visited your Museum. Your Council had previously thrown open the Museum on the same cheap terms, on the occasion of the marriage of his Royal Highness the Prince of Wales, on the 10th March, 1863. On that occasion more than 1,000 individuals were present; but it was evident that the general mass deferred their visit till the recurrence of their regular holiday time at Easter. Your Council have much pleasure in reporting to you the inauguration of a new Association, composed of young persons, under the superintendence of Mr. Tate, Geological Lecturer in connexion with Government. It is termed the “Field Naturalists’ Club,” a society whose chief aim is the study of Natural History, &c., by the practical means of out-of-door excursions. This new Club, in whose welfare your Council feels much interest, expressed a desire to be affiliated in some way with the “Natural History and Philosophical Society.” Your Council at once met this wish, so far as they possibly could, with a due regard to the rights and privileges of Museum shareholders and of the Society’s members, by giving to the “Field Naturalists’ Club” the following privileges:—

1st.—Access by each member of the Field Naturalists’ Club to the Museum collections for the purposes of study.

2nd.—Use of the Museum lecture-room once each fortnight, on an evening not interfering with the Museum Society’s own lecture nights.

3rd.—Twelve tickets to be sent each evening of the Museum Society’s meetings, to the President of the Field Naturalists’ Club, for distribution amongst the members.

No money subscriptions whatever to be accepted from the Club, but, of course, all extra expenses connected with the lighting, heating, &c., of the lecture-room for their own meetings, to be defrayed by them. The Council hope you will ap-

prove of this arrangement, which is only binding until 1st Nov., 1864. They trust that the Club will have a prosperous career, and that the ranks of the Museum Society will, from year to year, be reinforced by accessions from the young men who are thus showing their interest in Natural History by grouping themselves into a society for its practical investigation. Your Council now beg to refer to the proceedings of the Society, through which your Museum makes itself known to the scientific world. The Society has had—as regards communications laid before it—a satisfactory session. Still, as many are now deeply immersed in business pursuits, an occasional difficulty in procuring contributions has been met with. Your Council deem it right to advert to this point, even while they can point with pleasure to the following list of papers read during past session:—

1. Private Meeting, 29th October, 1862; Mr. Joseph John Murphy, on "Revolving Storms."

2. Public Meeting, 12th November, 1862; Dr. Wyville Thomson, President of the Society, an opening address on "Some Points of Present Interest Connected with Natural Science."

3. Private Meeting, 26th November, 1862; Mr. G. C. Hyndman, on the "Stormy Petrel." Professor James Thomson, on "The Origin of the Jointed Columnar Structure of the Giant's Causeway."

4. Public Meeting, 10th December, 1862; Dr. Henry MacCormac, on "The Vital Efficacy of an Uncontaminated Night Atmosphere."

5. Private Meeting, 7th January, 1863; Mr. Joseph John Murphy, on "The Motive Power of Storms." Professor J. Thomson, on "The Disintegration of Stones Exposed in Buildings or Otherwise to Atmospheric Influence."

6. Public Meeting, 21st January, 1863; Dr. Wyville Thomson, on "The Moa; a Gigantic Extinct Bird of New Zealand."

7. Private Meeting, 11th February, 1863; Mr. Joseph John Murphy, on "Geological Climates."

8. Public Meeting, 18th February, 1863; Rev. Isaiah Steen, on "The Phenomena of the Tides, Atmospheric and Oceanic."

9. Private Meeting, 15th April, 1863; Mr. John Grainger, on "The Constellations." Mr. Hyndman, on "Some Mexican Antiquities in the Museum."

10. Public Meeting, 13th May, 1863; Dr. Redfern, on "The Brain and Nervous System."

It will be observed that these lectures comprised subjects connected with Meteorological Science, Geological Investigations, Sanitary Science, Ornithology, Astronomy, Archaeology, and Anatomical study, thus affording a very wide range of thought to those who regularly attended the lectures.

It may be noticed that an interval of unusual length occurred in the delivery of the Society's Lectures, between February and April. This interval was most advantageously filled up by the

delivery of a special course of lectures, which Dr. Wyville Thomson, the President of the Society, kindly volunteered on behalf of the Museum. The admission to this course was by payment, at rates the same as those charged for previous courses of a similar nature. The course consisted of six lectures on "*Extinct Animals and their Modern Representatives*," and were delivered during the month of March. They were largely attended, and afforded the utmost satisfaction. Your Council think it only due to Dr. Thomson to embody in this report their lively sense of the value and excellence of the lectures thus delivered. In a pecuniary point of view, the proceeds were of material assistance. Your Council have on previous occasions intimated that without such efforts to increase your annual income the expenses attendant on the Museum would overrun the receipts. By strict economy, and constant efforts of the nature now indicated, no such deficiency has hitherto occurred.

Following out these remarks, your Council have much pleasure in stating that their efforts during the past session to diminish still further the building debt of £410, specified in last report, have met with considerable success. Through the aid of special donations and new shares sold, this debt has been further reduced, so that it now stands at about £150—an amount which your Council confidently hope the next year will see completely extinguished.

In conclusion, your Council are glad to feel that both the Museum and its Society continue to present signs of a permanent vitality.

Signed by

A. O'D. TAYLOR, }
R. L. PATTERSON, } SECRETARIES.

Mr. JOHN HANCOCK moved, and Mr. THOMAS GREER seconded, that the foregoing report be adopted, printed, and circulated.

This proposition was unanimously agreed to.

Mr. MURPHY, the Treasurer, then submitted a detailed Statement of Accounts, which Messrs. T. GREER and Mr. J. M. DARBISHIRE were requested to audit.

Mr. PATTERSON, as one of the Trustees, was requested to retain custody of the Museum Deeds, which were duly exhibited and enumerated.

The proceedings terminated by the election of the following gentlemen to serve as the

COUNCIL FOR 1863-1864.

Mr. R. PATTERSON.

Dr. ANDREWS.

Mr. G. C. HYNDMAN.

Mr. R. S. M'ADAM.

Rev. I. STEEN.

Professor JAMES THOMSON.

Dr. WYVILLE THOMSON.

Mr. GRATTAN.

Mr. A. O'D. TAYLOR.

Mr. JOSEPH JOHN MURPHY.

Mr. WM. BOTTOMLEY.

Mr. JOHN GRAINGER.

Mr. R. L. PATTERSON.

Mr. JAMES W. VALENTINE.

Mr. R. MACKEY WILSON.

From these the Council elected the following to act as their Officers for 1863-1864.

President.

DR. WYVILLE THOMSON.

Vice-Presidents,

DR. ANDREWS, PROFESSOR JAMES THOMSON,

MR. PATTERSON, MR. GRATTAN.

Secretaries.

MR. A. O'D. TAYLOR AND MR. R. L. PATTERSON.

Treasurer.

MR. JOSEPH JOHN MURPHY.

Librarian.

REV. ISAAH STEEN.

DONATION LIST FOR ~~1863-64.~~ 1862-6.

Marquis of Downshire, Two Large Sponges from Malta.

George Murray, Esq., Fortwilliam, a Large Lizard from Thebes, and an Echinus from near the Pyramids.

Mr. William Darragh, a Banksian Cockatoo, Two Parrots, a Great Shearwater, and a Native Specimen of the Golden Eagle.

Mr. James Sheals, Frigate Bird and Foreign Gannet.

Robert Gage, Esq., Rathlin, a Grey Phalarope, shot on that Island.

Captain White, a Bottle Encrusted with Serpulae, Balani, &c., dredged up at Carrickfergus.

Mr. William Lightbody, Groomsport, a Muller's Top Knot, caught at Groomsport, Co. Down, April, 1863.

BELFAST FIELD NATURALIST'S CLUB:—

1. A Specimen of Carbonised Wood (Exogenous), Interstratified between Rubble and Columnar Basalt—Shane's Castle.

2. Bituminous Rock, Specimen above Lignite—Shane's Castle.

William Harte, Esq., County Surveyor of Donegal, A Collection of the Rocks and Minerals of Donegal.

Mr. Thomas Wilson, Several Antiquities from Orizaba, Mexico.

B O O K S .

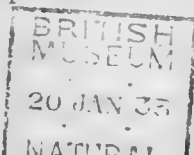
Governor General of India, Memoirs of the Geological Survey of India, part 1st.

Work on Geology, 2 parts.

Literary and Philosophical Society of Liverpool: Their Proceedings during Session 1861-62.

Geological Society of London: Their Quarterly Journal, part 4 of Volume 18.

Smithonian Institution, 2 Volumes of their Report for 1860; Results of Meteorological Observations, from 1854 to 1859; Miscellaneous Collections, 4 Volumes; Annual Report of Colonel Graham, on Lake and Harbour Improvements in North America, for 1860.



BELFAST MUSEUM.

ANNUAL REPORT

BY

THE COUNCIL

OF THE

Natural History & Philosophical Society.

SESSION, 1868-9.

BELFAST:

PRINTED AT THE DAILY "NORTHERN WHIG" OFFICE.

1869.

BELFAST MUSEUM.

IN pursuance of advertisement, the annual meeting of shareholders was held at one o'clock on Wednesday, the 16th instant, in the Museum, College Square North. There were present—Mr. Patterson, Mr. M'Adam, Rev. Mr. Steen, Mr. A. O'D. Taylor, Mr. R. L. Patterson, Professor James Thomson, Dr. Wyville Thomson, Mr. William Dobbin.

The President, Mr. Patterson, occupied the chair.

Mr. TAYLOR (the secretary) read the following

“REPORT TO THE SHAREHOLDERS OF THE BELFAST
MUSEUM FOR 1868—1869.

“The council who have presided over the interests of the shareholders for the past twelve months have now the honour of laying before you their annual report. The buildings and fittings-up are in good order, and have been preserved in that condition by the ordinary outlay. Your income, supplemented as it now is, by the interest accruing from the £500 presented last year in connexion with the Porter bequest, and now temporarily invested, has proved sufficient, by economical expenditure, to meet all requirements. The ventilation in the middle large room, used for lecturing in, has been improved by the conductors of the Ladies' Institute, to whom your

council feel indebted for having completed alterations from which future frequenters of the Museum will derive permanent benefit. Friends have, as in past years, presented fresh donations to your collections; and the usual number of scientific proceedings and reports have reached your library shelves from home and foreign correspondents.

“The number of visitors, chiefly strangers, calling at the Museum to inspect its contents, is never large except on Easter Monday, the yearly holiday of the working classes in the North of Ireland. On last Easter Monday the usual large attendance took place; more than five thousand persons, men, women, and children, having been present in the course of the day. This popularity, now definitely ascertained by the influx of similar large numbers for many years, indicates a marked relish amongst the artisan classes for objects connected with Natural History and Ethnology. It leads your council to believe, that as an adjunct to some general system, your Museum may hereafter prove important to any national scheme for the scientific education of the people.

“The meetings of the Natural History and Philosophical Society have taken place as usual during the months extending from November till May. The regular number for each session—namely, twelve—has been held on six public and six private evenings. A wide diversity of topics has appeared, as may be observed from the range included in the accompanying list of papers:—Nov. 4, 1868 (Public), The President, Mr. Patterson, “An opening address;” Nov. 4 (Public), Mr. J. J. Murphy, “Ancient Glaciers;” Nov. 25 (Public), G. V. Du Noyer, “Notes on the Geology of Island Magee;” Dec. 2 (Public), Wyville Thomson, “The results of the exploring cruise of H.M.S. Lightning during the autumn of 1868;” Dec. 16 (Private), A. O’D. Taylor, “Notes of some rare Irish birds;” Dec. 16 (Private), Dr. Cuming, “The Sphygmograph;” Dec. 16 (Private), Mr. R. Young, “Some notices of Maybole (Ayrshire) and its antiquities;” Jan. 12, 1869 (Private), James Thomson, “Capillary Phenomena, as influenced by temperature;” Jan. 26 (Private), Mr. Patterson, “Technical education;” Feb. 17 (Public), Dr. Andrews, “The mechanical analysis of rocks;” March 3 (Public), R. Lloyd Patterson, “Fishing reminiscences of Belfast Lough, with

notes on some of the birds found there ;" March 10 (Private), Joseph John Murphy, "Crystallisation and its analogies with life;" March 24 (Private), Robert Young, C. E., "Some contributions to the life of Goban Saer ;" April 21 (Private), Wm. Hancock, "Notes of a tour in Spain;" May 12 (Public), Professor Purser, "The vibrations which give rise to musical sounds.

"The similarity of object contemplated alike by your society and by the Field Naturalists' Club has, during the past session, led those interested in the permanent prosperity of both to suggest a combination of action between the two associations. The desirability of such a junction has been fully and cordially admitted by the managing bodies of both societies. It is not proposed to merge the individual existence of either, but to recognise practically a community of interests and aims, by meeting jointly for the reading of papers during the winter and spring months. The more intimate relations to be thus sustained between the two societies will, no doubt, benefit both, and impart additional interest to the proceedings contemplated for the evenings of next session. By this infusion of new energy, your Museum collections will at once receive much practical benefit, as several gentlemen, active members of the Field Naturalists' Club, have kindly tendered their services to re-arrange the geological, botanical, conchological, and other departments. They have also offered—and your council have accepted both offers with thanks—to supplement, by native specimens of their own, such of your collections as are imperfect. When this re-arrangement and re-naming have been completed, a printed catalogue of the contents of your Museum can be prepared. The want of such a printed record for reference has been long felt. As stated in the last annual report, the chief object which your council have had in view for years has been to perfect within your walls, collections of Irish fauna, flora, and antiquities having special regard to those identified with the North of Ireland and Belfast. They believe that the junction of action by the two societies, as now announced, will contribute materially towards this desirable object. They trust this introduction of new life will meet with your approval.

"The council now resign their trust in the belief that the session now closed has been productive of good,

and has sown some seeds of scientific development and progress.

(Signed by order of the Council),

“A. O'D. TAYLOR,
“H. BURDEN, M.D. } Secretaries.

“Belfast Museum, College Square North,
16th June, 1869.”

The treasurer, Mr. M'Adam, then submitted statement of accounts, by which it appeared that a balance of £67 0s 4d was in his hands to credit of next account. The accounts were audited and signed as correct by two shareholders—Mr. Wm. Simms, and Mr. John R. Neill.

It was proposed by Mr. Wm. DOBBIN, seconded by Rev. J. STEEN, and resolved—“That the report as now read be received and adopted, and that it be printed and circulated amongst the supporters of the Museum, along with the treasurer's statement of accounts. Further, that the meeting confirms, and regards with satisfaction, the proposed united action with the Naturalists' Field Club.”

The various deeds and documents of the Museum were then examined and compared with official record by Professor James Thomson and Mr. R. L. Patterson, who reported them all in order. Acknowledgments of the temporary investment of the £500 received last year in connexion with the Porter Bequest, were ordered to be deposited along with them. This £500 stood at call in three sums of £250, £150, and £100 each. Mr. Patterson was requested to remain the custodian of all these documents. The election of council then took place, and the following gentlemen were declared duly elected to serve for the ensuing twelve months—

COUNCIL FOR 1869-70.

Robert Patterson, F.R.S.; Robert S. M'Adam, Thos. Andrews, M.D., F.R.S.; Rev. Isaiah Steen, Alexander O'Driscoll Taylor, Joseph John Murphy, Professor Jas. Thomson, Wyville Thomson, LL.D., F.R.S.; Robert Lloyd Patterson, Robert Mackay Wilson, Professor John F. Hodges, M.D.; Henry Burden, M.D.; Prof. James Cuming, M.D.; Robert Young, C.E.; John Anderson, F.G.S.

It was proposed by Mr. R. L. PATTERSON, seconded by Professor JAS. THOMSON, and resolved—“That the council now elected are hereby authorised to exchange,

or otherwise dispose of, specimens in the possession of the shareholders, in such way as they may consider most conducive to the interests of the Museum."

Mr. TAYLOR then read a letter which he had just received from the Secretary of the Royal Irish Academy, dated Dublin, 14th June, 1869. It ran as follows:—

"Royal Irish Academy, 19, Dawson Street,
Dublin, June 14, 1869.

"SIR,—I am directed by the council of the Royal Irish Academy to request that you will bring the following statement under the notice of the Natural History Society. The Academy receives an annual Parliamentary grant of £200, to be expended in affording aid to gentlemen engaged in the prosecution of scientific researches which involve outlay on instruments, material, &c. It is not necessary that persons obtaining aid from this fund should be members of the Academy; and if any gentleman connected with your society, who is now pursuing, or is about to undertake, a scientific inquiry of the above nature, will forward an application to the Council of the Academy, stating the nature of the inquiry and the amount of aid desired, it will receive the most attentive consideration. It will be understood that the results of any researches thus aided are to be communicated to the Royal Irish Academy, and published in its transactions or proceedings. Applications should be sent in at as early a date as possible.—I am, sir, your obedient servant,

"JOHN K. INGRAM, Secretary of Council.

"The Secretary of the Natural History Society,
Belfast."

The Secretary was requested to give publicity to the foregoing letter by having it inserted in a report of today's proceedings in the daily newspapers.

The business of the shareholders then terminated, and the meeting closed by the Council of Management electing from their body the following gentlemen to serve as office-bearers for 1869-70:—President—Dr. Wyville Thomson; vice-presidents—Dr. Andrews, Professor James Thomson, Mr. Joseph John Murphy, Rev. Mr. Steen; treasurer—Mr. M'Adam; secretaries—Mr. Taylor and Dr. H. Burden.

The following is a list of donations to the Museum and to the library during the past session:—

DONATIONS TO MUSEUM—SESSION 1868-69.

J. W. Valentine, Esq., Fortwilliam Park—a king crab. Lieut.-Colonel E. S. Mercer—Indian snake; head of a garial. Rev. S. Mateer—Stem of tree fern, sago from nut of *cycas circinalis*, sheath of leaf of arca palm tree, nut of Palmyra palm, specimens of stone, sand, and cotton—all from India. Mr. Wm. Aicken—a rare nature bat. Lord Clermont, Ravensdale Park, Newry—a little bustard (*otus tetrax*) from County Cork; a night heron (young), Irish specimen; a night heron (mature male), continental specimen. Miss Pilkington—a collection of foreign shells. Robert Warren, Esq.—a Fulmar petrel.

WORKS OF ART.

Lieut.-Colonel E. S. Mercer—Turkish pipe and coin. Rev. S. Mateer—tool basket, door lock, weavers' reed, crutch used for climbing palm tree—all from India; staff from India (used in Devil's Dance). Dr. Hill, Belfast—Esquimaux costume. Mr. Thomas Thompson, Upper Ballinderry—four spears from Cape York, New Holland.

DONATIONS TO LIBRARY.

Spalding Club, Aberdeen—The Sculptured Stones of Scotland, vol. 2. Natural History Society of Bremen—Their Journal for 1868. Rev. Thos. Fothergill Cooke, Bath—Authorship of the Practical Electric Telegraph of Great Britain. Zoological Society of London—Their Proceedings, 1867, part 3, and 1868, parts 1, 2, and 3. Alexander Shyanoff, Kiew, Russia; Essay upon the Metaphysics of Forces. John Lindsay, Blackrock, Cork—Second Supplement to the Coinage of Scotland. Royal Dublin Society—Their Journal for 1868, No. 37. Geological Society of London—Their Quarterly Journal, vol. 23, part 5; vol. 24, parts 1, 2, and 3. Governor-General of India—Memoirs of Geological Survey in India, vol. 4, parts 1 and 2; Palaeontologia Indica, parts 1 to 4 of series v; Annual Report for 1866-67. War Department, Washington—Report on Epidemic Cholera and Yellow Fever in the United States Army, 1867. Smithsonian Institute, Washington—Contributions to Knowledge, vol. xv.; their Report for 1866. Academy of Natural Sciences, Philadelphia—Their Proceedings for 1867. Boston Society of Natural History—Their Annual for 1868-9; their Memoirs, vol. 1, part 3; their proceedings, vol xi.

ABSTRACT OF TREASURER'S ACCOUNT.

SESSION 1868-69.

	£	s.	d.
Paid Curator's Salary,	52	0	0
„ Rent,	25	0	0
„ Sundry Expenses,	38	13	6
„ Balance,	67	0	4
	<hr/>		
	£182	13	10

	£	s.	d.
Balance in Treasurer's hand, May, 1868, ...	37	7	6
„ Subscriptions received,	85	13	0
„ Admission of Visitors to Museum, ...	49	15	8
„ Interest,	9	17	8
	<hr/>		
	£182	13	10

Balance in Treasurer's hand, May, 1869, ... £67 0 4

R. S. M'ADAM, Treasurer.

Audited and found correct by

WILLIAM SIMMS, }
JOHN R. NEILL, } Shareholders.

SESSION. 1869-70:

President.

WYVILLE THOMSON, LL.D., F.R.S.

Vice-Presidents.

THOMAS ANDREWS, M.D., F.R.S.
PROFESSOR JAMES THOMSON, C.E.
JOSEPH JOHN MURPHY, F.G.S.
REV. MR. STEEN.

Treasurer.

ROBERT MACADAM.

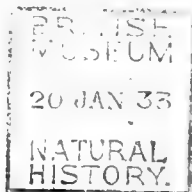
Secretaries.

A. O'D. TAYLOR AND HENRY BURDEN, M.D.

Other Members of Council.

ROBERT PATTERSON, F.R.S.
R. LLOYD PATTERSON.
ROBERT MACKEY WILSON.
JOHN F. HODGES, M.D.

JAMES CUMING, M.D.
ROBERT YOUNG, C.E.
JOHN ANDERSON, F.G.S.





BRITISH
MUSEUM
20 JAN 33
NATURAL
HISTORY.

BELFAST MUSEUM.

ANNUAL REPORT

BY

THE COUNCIL

OF THE

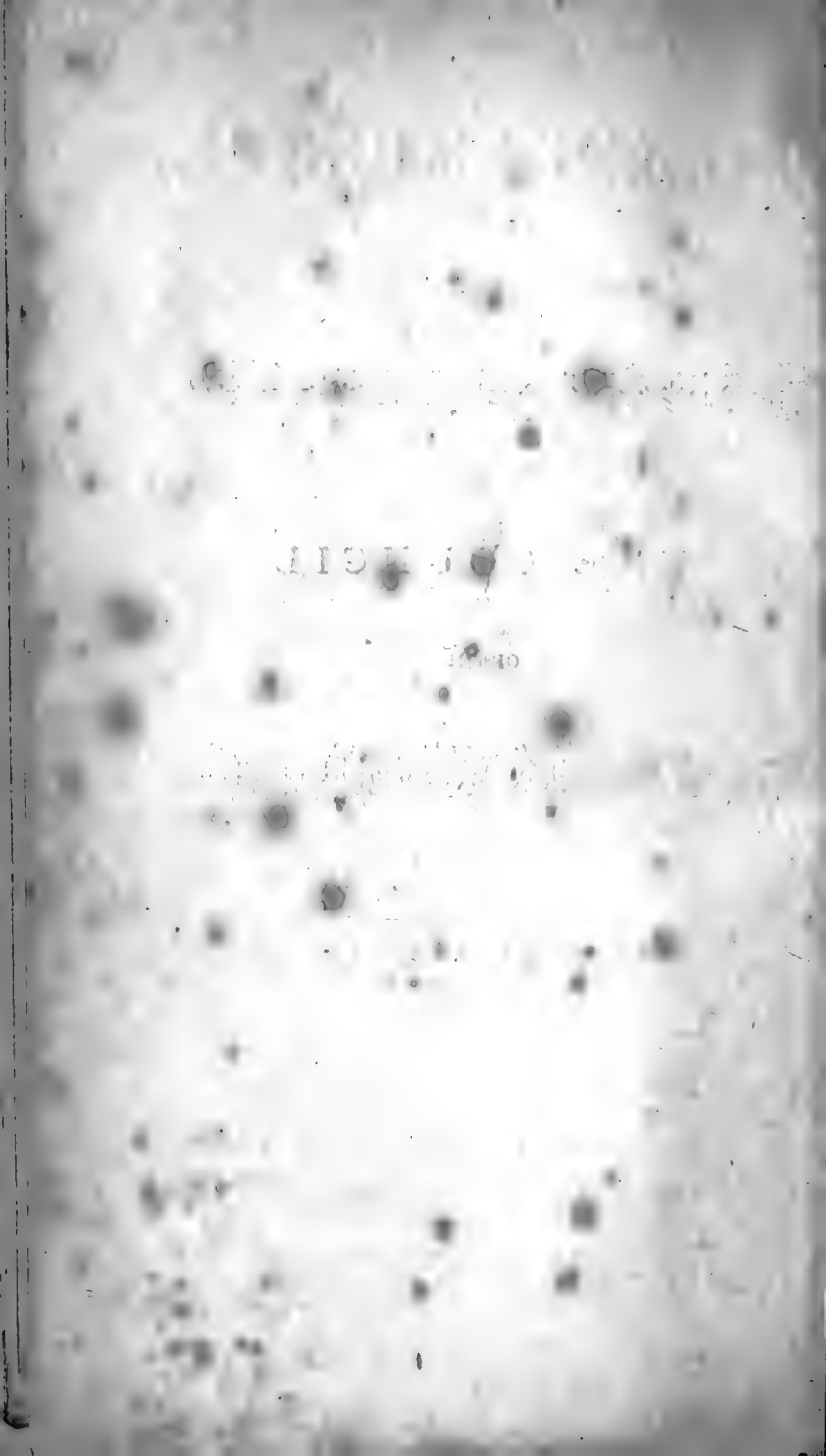
Natural History & Philosophical Society.

SESSION, 1869-70.

BELFAST:

PRINTED AT THE "NORTHERN WHIG" STEAM-PRINTING OFFICE.

1870.



BELFAST MUSEUM.

THE annual meeting of shareholders, in pursuance of advertisement in the public prints, took place at two o'clock on the afternoon of Wednesday, the 1st of June, 1870, at the Museum in College Square North.

The outgoing President of the Natural History and Philosophical Society, Dr. Wyville Thomson, occupied the chair.

The annual report by the Council was read by one of the honorary secretaries, Dr. Henry Burden, and is as follows :—

REPORT OF THE COUNCIL OF THE BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY FOR THE SESSION 1869-70, TO THE SHAREHOLDERS OF THE BELFAST MUSEUM.

A retrospect of the series of events which have marked the progress of your Society during the past year will, your council trust, prove as satisfactory and encouraging to you as it has already done to themselves. In the report of last year it was intimated that, in compliance with the widely expressed desire of both bodies, the winter meetings of the Naturalists' Field Club and of your own Society would be held conjointly during the session 1869-70. The plan then proposed was accordingly carried out, and has been successful beyond expectation. The joint meetings have been largely attended, and papers of a varied and highly interesting character read at them. Subjoined will be found a list showing the dates of meetings, the subjects of papers, and the names of their authors—

- 1.—10th Nov., 1869—Dr. W. Thomson, F.R.S.—“On the aims of Natural History Societies, and the uses of Local Museums.”
- 2.—17th Nov.—Professor J. Thomson, C.E.—“The jointed prismatic structure of the Giant's Causeway and other basaltic rocks.”

- 3.—1st Dec.—Mr. J. J. Murphy—"The origin of organs of flight."
- 4.—15th Dec.—Mr. W. J. Knowles—"Works of Art found in the Boulder clay at Cullybackey."
15th Dec.—Dr. H. S. Purdon—"The hair and colour of human skin as race characteristics."
- 5.—29th Dec.—Mr. W. A. Ross—"Glass-making, its history, and the causes of its decline in this country."
- 6.—12th Jan., 1870—Mr. W. H. Patterson—"A description of an ancient stone coffer found at Movilla, County Down."
Mr. Wm. Gray—"A notice of the comparative forms of Flint Implements in various countries."
- 7.—26th Jan.—Mr. Robert W. Armstrong—"Ceramic Art, and the Pottery at Belleek, County Fermanagh."
- 8.—9th Feb.—Rev. Edward M'Clure—"Smell and Smells."
- 9.—23d Feb.—Dr. Andrews, F.R.S.—"On the continuity of the liquid and gaseous states of matter."
- 10.—9th March—Dr. J. S. Holden and Mr. Ralph Tate, F.G.S.—"The Iron Ores associated with the Basalts of the North of Ireland."
- 11.—23d March—Mr. Thomas Workman—"A Month on the Prairies."
23d March—Mr. Wm. Gray—"On the middle Lias near Ballycastle."
- 12.—6th April—Professor J. Thomson, C.E.—"Illustrations of the diffusion of liquids."
6th April—Dr. H. Burden—"The Aquarium."
- 13.—27th April—Dr. W. Thomson, F.R.S.—"Animal Life at great depths in the Sea."

From the foregoing list it will be seen that there have been thirteen joint meetings, at seven of which papers were contributed by members of your own Society. Without wishing in the least degree to detract from the merit of other contributions, your council would direct your particular attention to two of those enumerated above—namely, one by Doctor Andrews "On the continuity of gaseous and liquid states of matter;" and the other, by your President—Dr. Wyville Thomson, on "Animal life at great depths in the sea." These communications, it is to be observed, embody the very latest results of the scientific labours of their authors, results which are, at the present moment, attracting the profound attention of all

those who are interested in the departments of science to which they refer.

It will not, it is hoped, be thought too much to say with reference to the above circumstance, that it constitutes a noteworthy epoch in the history of your Society, and augurs well for its future prosperity.

On Easter Monday, the Museum, according to custom, was thrown open to the public, at a nominal charge for admission; and a large attendance of visitors, chiefly of the working classes, was, as usual, the result.

Several important changes have lately been effected in the internal arrangements of the Museum, due, in a great measure, to the active and friendly co-operation of the Naturalists' Field Club with your Society. The offer made by some members of the former body, and referred to in our last report, is in course of being carried out, in a manner, which is not only highly creditable to those concerned in its execution, but which will also materially increase the value and interest of your collections by rendering them more accessible for inspection and reference than they have been heretofore.

The naming and arranging of the local shells is now completed. A few rare species in which the collection is as yet deficient will be supplied hereafter. The fossils are all named, but are not yet set out in the new cases recently ordered for them. A large collection of plants in your possession—a bequest of the late Mr. William Thompson—has been named.

The coins are also fully described, and have been arranged in the special case set apart for their exhibition. The classification and arrangement of the remaining objects in the Museum is progressing satisfactorily.

In order to render the improvements in progress as effective as the means at their disposal permit, your Council have expended £100 in the purchase of additional mahogany cases for shells, fossils, &c. Ten of the new cases, and also a case for the collection of plants, have been placed in the lower front room.

The Museum building continues in good repair; the only outlay of moment required to preserve it in that condition having been for the re-glazing of the domes. Your trustees, taking into account the increased value both of the building itself and of its contents, have ordered an increase in the amount for which the property is insured. During the past winter the use of rooms in the Museum has been granted to the Ladies' Institute

for their classes, and to Mr. W. H. Greer for some scientific lectures in connexion with his Athenæum.

The subject of extending the buildings of the Museum (by a special fund to be raised for the purpose), in order to afford still more space for the better exhibition of specimens, and at the same time to provide suitable accommodation for an aquarium, has been before your council, but nothing has as yet been settled. They leave this matter entirely to the consideration of their successors.

(Signed by order of the Council.)

A. O'D. TAYLOR, }
H. BURDEN, M.D., } Hon. Secs.

Belfast, 1st June, 1870.

DONATION LIST FOR SESSION 1869-70 TO MUSEUM.

Rev. J. Macnaughtan, a red-throated diver; Thomas Garrett, Esq., several British birds; Mr. Wm. Hunter, a locust, caught in Belfast; Dr. M'Gee, a number of geological specimens from Wales and the United States; Dr. Holden, specimens of iron ore from Glenarm.

DONATIONS TO LIBRARY.

Rev. Dr. Glasgow, New Testament and Gospel of Matthew in the Hindustani language; University of Christiania, a number of books and pamphlets; the Editor of "Scientific Opinion," London, "Scientific Opinion," from November, 1868, till April, 1870; Geological Society of London, their Quarterly Journal, volume 25, parts 3 and 4; Royal Dublin Society, their Journal, No. 38; Zoological Society of London, their Proceedings, part 3 of 1868, and part 1 of 1869; Geological Society of Vienna, their Proceedings for 1869, parts 10 and 14; Smithsonian Institute, Washington, Annual Report for 1867; Academy of Natural Sciences, Philadelphia, their Proceedings for 1868; Boston Society of Natural History, their Proceedings for 1868, 1st part, their Memoirs, vol. 1, part 4; Occasional Papers, vol. 1, being the Entomological Correspondence of Dr. Harris; War Department, Washington, Surgical Report in connexion with the late American War; Governor-General of India, Memoirs of the Geological Survey of India, vol. 5, parts 7 to 10, and vol. 6, part 3; Records of the Geological Survey of India, vol. 1, parts 1, 2, and 3, and vol. 2, part 1; Annual Report of Geological Survey of India for 1867; Royal University of Norway, several volumes of books.

Mr. ROBERT M'ADAM submitted the treasurer's report, from which it appeared that, including £100 withdrawn for use from the shareholders' reserve fund of £500, there had been a total of cash received as income of £309 18s 8d. Of this there had been expended £241 11s 8d, comprising a special item of £100 paid for new cases for the lower room. This left a balance to credit of £68 7s to commence the new financial year with.

It was proposed by the Rev. ISAIAH STEEN, seconded by WILLIAM EMERSON, Esq., and resolved—"That the foregoing reports by the Council and treasurer be adopted, printed, and circulated amongst the shareholders."

The deeds of tenure, trust-deeds, and other documents of the Museum were then exhibited, compared by Wm. Emerson, Esq., and Joseph J. Murphy, Esq., with official record, and found all in order.

Dr. Wyville Thomson having brought before the meeting the fact that an invitation from the town of Belfast to the British Association for the Advancement of Science was to be sent forward soon, requesting that learned body to meet in Belfast in the earliest year they could—1871, if possible—it was proposed by Dr. Henry Burden, and seconded by Robert M'Adam, Esq., and resolved—"That the Natural History and Philosophical Society join most cordially the other public bodies of Belfast in the proposed invitation to the British Association, and that the shareholders in the Museum pledge themselves to further in every way the necessary arrangements for the reception of the Association."

A Council of Management (consisting of 15 gentlemen) for the ensuing twelve months was then elected by ballot, and their names were announced to be:—Council for 1870-71, Robert Patterson, F.R.S., Robert S. M'Adam, Thomas Andrews, M.D., F.R.S.; Rev. Isaiah Steen, Alexander O'Driscoll Taylor, Joseph John Murphy, F.G.S.; James Thomson, LL.D.; Wyville Thomson, LL.D., F.R.S.; Robert Lloyd Patterson, Robert Mackey Wilson, John Frederick Hodges, M.D.; Henry Burden, M.D.; James Cuming, M.D.; Robert Young, C.E.; John Anderson, F.G.S.

This terminated the meeting of Shareholders.

The newly elected Council then met, and from their own number elected the following office-bearers:—

SESSION, 1870-71.

President.

ROBERT PATTERSON, F.R.S.

Vice-Presidents.

~~WVILLE THOMSON, LL.D., F.R.S.~~

JAMES THOMSON, LL.D.

✓ JOSEPH JOHN MURPHY, F.G.S.

JAMES CUMING, M.D.

Treasurer.

ROBERT MAC ADAM.

Librarian.

REV. ISAIAH STEEN.

Secretaries.

A. O'D. TAYLOR AND HENRY BURDEN, M.D.

Other Members of Committee.

THOS. ANDREWS, M.D., F.R.S.

R. LLOYD PATTERSON.

~~ROBERT MACKAY WILSON.~~

✓ JOHN F. HODGES, M.D.

ROBERT YOUNG, C.E.

✓ JOHN ANDERSON, F.G.S.

ABSTRACT OF TREASURER'S ACCOUNT.

SESSION 1869-70.

1870.		£	s.	d.
June 1.—	Paid Curator's salary,	52	0	0
„	Do. Poundage on subscriptions col- lected,	4	0	7
„	Printing and advertising,	13	0	0
„	Rent,	25	0	0
„	Fire Insurance,	2	2	3
„	Painting and Glazing,	13	18	1
„	New Mahogany Cases,	100	0	0
„	Sundry expenses, including gas, coals, &c.,	25	11	9
„	Expenses connected with Easter Monday,	5	19	0
	Balance in Treasurer's hands, 31st May, 1870,	68	7	0
		<hr/>		
		£309	18	8

1869.		£	s.	d.
June.—	Balance in hands, May, 1869,	67	0	4
Received	subscriptions,	80	14	0
„	At door,	10	6	9
„	On Easter Monday,	29	1	9
„	From Athenæum for use of Rooms, Donation from Engineer's Associa- tion,	1	5	0
		3	3	0
1870.				
June.—	Interest from Northern Counties Railway,	18	7	10
„	Cash withdrawn from do.,	100	0	0
		<hr/>		
		£309	18	8

The sum of £400 now remains at interest with the Northern Counties Railway.

Belfast Museum, 1st June, 1870.

ROBERT M'ADAM, Treasurer.

Audited and found correct by

SAMUEL ARCHER, Belfast.

BRITISH
MUSEUM

20 JAN 33

NATURAL
HISTORY.



BRITISH
MUSEUM
20 JAN 33
NATURAL
HISTORY.

BELFAST MUSEUM.

ANNUAL REPORT

BY

THE COUNCIL

OF THE

Natural History & Philosophical Society.

SESSION; 1870-71.

BELFAST:

PRINTED AT THE "NORTHERN WHIG" STEAM-PRINTING OFFICES.

1871.



BELFAST MUSEUM.

THE annual meeting of shareholders, as convened by advertisement, took place at three o'clock on Thursday, the 29th of June, 1871. Mr. William Bottomley, J.P., was called to the chair. There were also present—Dr. James Thomson, Mr. Patterson, Mr. Joseph John Murphy, Mr. R. L. Patterson, Mr. R. M'Adam, Mr. John Anderson, Dr. Henry Burden, &c.

Mr. A. O'D. TAYLOR, senior secretary, read the annual report as follows:—

ANNUAL REPORT TO THE SHAREHOLDERS OF THE BELFAST MUSEUM BY THE COUNCIL OF THE NATURAL HISTORY AND PHILOSOPHICAL SOCIETY FOR 1870-71.

“The present meeting brings to a conclusion the fiftieth session of the Belfast Natural History and Philosophical Society, and your council therefore cannot but feel a pardonable pride when they look back over the efforts of their predecessors during the past half century, and reflect that through their instrumentality a taste for natural history has been for so many years diffused from Belfast as a centre; that scientific papers have been, session after session, brought forward by the members of this society; and that a commodious museum has been erected to contain collections for reference. Of the eight original founders of the society in 1821, three are still alive; one of them, our retiring president this year, Mr. Patterson, whose exceptionally long, uninterrupted, and valuable connexion with the society your council wish to record herein as a special subject for congratulation.

“The reading of papers throughout the session now terminated has been conducted in the same way as during the preceding session, on a joint platform with the Naturalists' Field Club. In all, thirteen meetings have been held, and the following is a list of their dates, subjects, and readers:—

No. 1*. “2d November, 1870, ‘Introductory Remarks,’ by the president for the session—Robert Patterson, Esq., F.R.S.; ‘Cuttle Fishes’ by Henry Burden, M.D.

No. 2. "16th November, 1870, 'A visit to a pre-historic manufactory of flint implements at Spiennes, near Mons, Belgium,' by Mr. J. H. Staples.

No. 3*. "30th November, 1870, 'Revolving Storms' by Joseph John Murphy, F.G.S.; and 'Some Geological Notes on—first, The Boulder clay of the district; second, 'The Great fault in the Carrickfergus Commons,' by Robert Young, C.E.

No. 4*. "14th December, 1870, 'the final results of the Lightning and the Porcupine Expeditions,' by Dr. Wyville Thomson, F.R.S.

No. 5. "28th December, 1870, the 'Echinodermata,' by Mr. William Swanson.

No. 6. "11th January, 1871, 'Newtownbreda and Neighbourhood,' by Mr. M. Fitzpatrick.

No. 7*. "25th January, 1871, the 'Gulf Stream,' by Mr. J. J. Wilde.

No. 8. "8th February, 1871, 'A visit to the mines of the Black Country, South Belgium, and the Hartz Mountains,' by Dr. J. S. Holden.

No. 9*. "1st March, 1871, 'The circulating fluids in man and animals,' by Dr. Peter Redfern.

No. 10. "8th March, 1871, 'Some antiquarian notes about Donegal,' by Mr. W. H. Patterson; and 'The latest fluctuations of the sea-level on our own coasts,' by Mr. S. A. Stewart.

No. 11*. 22d March, 1871, 'Ocean currents and their effect on climate,' by J. J. Murphy, F.G.S.; and 'Shrinkage and warping of woods in drying,' by Dr. James Thomson.

No. 12. "5th April, 1871, 'The Ammonite—its ancient and modern relatives,' by Mr. Wm. Gray.

No. 13*. "19th April, 1871, 'The structure of the Palæozoic Crinoids,' by Dr. Wyville Thomson, F.R.S.

Those marked * were arranged by our own Society, the others by the Naturalists' Field Club.

"After mature deliberation and a thoroughly friendly conference with the Naturalists' Field Club, both societies have concluded, that for various reasons, these joint meetings, gratifying as they have been, should not be continued next session. It was found that the identity of each society was becoming imperilled, and that the income of the senior and more expensive association was endangered by the arrangement obtaining for the last two years. For these and other reasons, your council have proposed that the two societies next session meet separately at the museum, on Wednesday evenings, alternating with

each other, so that no meeting of one society can possibly clash with one of the other. The same friendly relations and desire for co-operation will continue, while each society will feel itself more free to pursue its own particular path.

"The council beg to mention in this report the great benefit which your geological and conchological local collections have received in the re-arrangement, and re-naming kindly given to them during the past twelve months, by five members of the Naturalists' Field Club. These gentlemen were Mr. William Gray, Mr. Hugh Robinson, Mr. S. A. Stewart, Mr. William Swanston, and Mr. Joseph Wright, whom your council have recently elected honorary associates of the society, the only suitable mark of courtesy they had it in their power to bestow, as a recognition of such services.

"As regards the museum buildings, they are sound and in good condition, your council having made it a rule never to allow any false economy in moderate repairs to permit depreciation in your property. Some of the local collections have been already referred to as having been re-arranged; a similar revision will probably be extended to other departments during the next twelve months. At least another year's work remains to be done, before all the collections can be reported in that thorough state for reference and inspection which your council would wish to see. Volunteers from both societies have generously undertaken the completion of this necessary labour. A considerable number of donations has been received since last announcement for the museum and the library.

"On account of space being required for new cases ordered last year, the shelves hitherto used for books had to be removed, and therefore, for some little time, the contents of the library cannot be referred to so readily as our librarian would desire. But this your council hope will be rectified ere long.

"As has been the custom for many years past, the museum was thrown open to the Belfast working classes at the charge of 2d for adults, and 1d for children, on the occasion of their chief annual holiday, Easter Monday. More than 5,000 persons visited it during the day. The same orderly conduct prevailed, and the same lively interest was manifested in inspecting the various objects of natural history and art, as it has been your council's pleasing duty to note for a long series of years.

"Your council again let the museum middle-room during the past winter and spring to the Ladies Institute for

the purpose of the delivery therein, thrice a week, of literary and scientific lectures to young ladies. At the request of the local Committee of Management your council had much pleasure also in placing your rooms for one evening in November last at the disposal of the Science and Art Department for distribution of prizes to the students.

“Desirous of aiding so far as lay in their power the objects contemplated by the recently and successfully re-established school of Art at the Royal Academical Institution, Belfast, your council had also much pleasure in arranging for a special lecture in the museum, on a subject bearing on the principles of artistic design. Mr. Shakspeare Wood, from Rome, kindly offered to give the lecture, which was accordingly delivered to a large audience, on the 21st November, 1870, and was entitled, “Ancient Sculpture and Modern Students of Art.”

“The treasurer’s account herewith submitted, duly audited by two shareholders, will show that after all the ordinary yearly expenses have been met, a balance of £73 5s 8d is carried forward to credit of new year’s account.

“Your council beg to report that having received intimation from the Northern Counties Railway Co. that they wished to repay to the museum the sum of £400, at call with the company, your council accepted repayment, and have now invested the same sum in 4½ preference shares of the same company—scrip and certificate herewith exhibited.

“During the past twelve months two vacancies have occurred in the council. These have been caused by the withdrawal from Belfast, to settle in England, of Robert Mackey Wilson, Esq., and by the departure to Edinburgh of Dr. Wyville Thomson. In consideration of the valuable communications made from Dr. W. Thomson to this society, and the active interest which, for the last fifteen years he had shown in its welfare as a member of council, and on more occasions than one as its president, your council, at the last meeting of the society, 19th April, 1871, thought it right to present him with a farewell address, expressing their appreciation of his services to our society, and their best wishes for his future welfare.

“The council now beg to surrender into your hands the trust which you confided to them twelve months since.

“Signed by order of the council,

“A. O’D. TAYLOR, }
“H. BURDEN, M.D. } Hon. Secs.

“Belfast, 29th June, 1871.”

Mr. R. M’ADAM submitted statement of account, from

which it appeared that, after defraying all annual expenses, a balance was carried forward to the credit of new financial year of £73 5s 8d.

In moving the adoption, printing, and circulation of the report, Mr. PATTERSON drew attention to the pleasant fact of the institution being not only free from all debt, but also being possessed of a moderate reserve fund, and being able each year to commence with a balance at the credit side of the account. Its prospects financially were, therefore, good, and, as regards the future proceedings of the society, arrangements for next session would, it was hoped, continue to secure such a diversified series of scientific papers and lectures as would maintain the interest of both the members and the public.

Mr. ANDERSON briefly seconded the adoption of the report.

The motion was accordingly carried, after some observations from the CHAIRMAN (Mr. Bottomley), expressive of the peculiar gratification which he and those present felt in seeing amongst them the retiring president, Mr. Patterson, after such a long and invaluable service to the interests of the museum, as that which was referred to in the report.

The list of deeds and securities was then called over, the various documents exhibited examined by Dr. James Thomson, and reported to be all in order.

In connexion with the expected visit to Belfast in 1874 of the British Association, it was ordered to be recorded that the Natural History and Philosophical Society are desirous of renewing, in conjunction with the other public bodies in Belfast, the invitation already forwarded to the association. Such members of the society as may be present at the approaching meeting in Edinburgh in August were empowered and requested to urge the invitation on the council of the association.

The formal business of the meeting terminated by the election of a Council of Management for the ensuing twelve months, (1871-1872.)

The gentlemen elected were announced to be—Robert Patterson, F.R.S.; Robert M'Adam; Thomas Andrews, M.D., F.R.S.; Rev. Isaiah Steen; Alexander O'Driscoll Taylor; Joseph John Murphy, F.G.S.; James Thomson, LL.D.; John F. Hodges, M.D.; Henry Burden, M.D.; James Cuming, M.D.; Robert Young, C.E.; John Anderson, F.G.S.; Professor Purser; William Bottomley, J.P.; William H. Patterson.

The newly elected Council then met, and from their own number elected the following office-bearers :—

SESSION, 1871-72.

President.

JOSEPH JOHN MURPHY, F.G.S.

Vice-Presidents.

THOMAS ANDREWS, M.D., F.R.S.

JAMES THOMSON, LL.D.

J. F. HODGES, M.D.

ROBERT M'ADAM.

Treasurer.

JOHN ANDERSON, F.G.S.

Librarian.

REV. ISAIAH STEEN.

Secretaries.

A. O'D. TAYLOR AND HENRY BURDEN, M.D.

Other Members of Council.

ROBERT PATTERSON, F.R.S.

JAMES CUMING, M.D.

ROBERT YOUNG, C.E.

PROFESSOR PURSER.

WM. BOTTOMLEY, J.P.

WM. H. PATTERSON.

ABSTRACT OF TREASURER'S ACCOUNT.

SESSION, 1870-71.

1870.	£	s	D
Paid Curator's salary,	52	0	0
„ Poundage on Subscriptions Collected, ...	3	19	0
„ Printing and advertising,	3	11	0
„ Rent,	25	0	0
„ Fire Insurance,	9	18	9
„ Sundry expenses, including gas, coals, &c.,	23	11	4
„ Expenses connected with Easter Monday,	6	11	0
„ Expenses connected with specimens, ...	9	11	4
„ Law expenses,	18	0	0
„ Balance paid to perfect investment, ...	2	10	1
Balance in Treasurer's hands, 21st June, 1871,	73	5	8
	<hr/>		
	£227	18	2

1870.	£	s	D
Balance in hands, May, 1870,	68	7	0
Received subscriptions,	79	19	0
„ Amount of one new share,	7	0	0
„ At door of Museum,	12	18	6
„ On Easter Monday,	32	16	4
„ Rent from Ladies' Institute,	8	0	0
„ Donation from Engineers' Association,	3	3	0
„ Interest from Northern Counties'			
Railway,	15	14	4
	<hr/>		
	£227	18	2

The sum of £400 is now invested in preference shares of the Northern Counties Railway.

ROBERT M'ADAM, Treasurer.

Belfast Museum, 21st June, 1871.

Audited and found correct,

SAMUEL ARCHER.

WM. BOTTOMLEY.

BELFAST

Natural History & Philosophical

SOCIETY.

SHAREHOLDERS.

- 1 Share in the Museum costs £7.
2 Shares ,, ,, cost £14.
3 Shares ,, ,, cost £21.

The proprietor of 1 share pays 10s per annum ; the proprietor of 2 shares pays 5s per annum ; and the proprietor of 3 or more shares stands exempt from further payment.

Shareholders only are eligible for election on the Council of Management.

MEMBERS.

There are two classes, Ordinary Members who are expected to read Papers; and Visiting Members who by joining under the latter title are understood to intimate that they do not wish to read Papers. The Session for Lectures extends from November in one year, till May in the succeeding one. Members, Ordinary or Visiting, pay £1 1s per annum, due first November in each year.

PRIVILEGES.

Each Shareholder and Member has the right of personal attendance at all meetings of the Society, and of admitting a friend thereto ; also of access to the Museum for himself and family, with the privilege of granting admission orders for inspecting the collections to any friends not resident in Belfast.

Any further information can be obtained by application to either of the Secretaries :—viz.

Mr. A. O'D. TAYLOR,
Ulster Buildings, Waring Street.

Dr. HENRY BURDEN,

16, Alfred Street ; or,

The Treasurer, Mr. JOHN ANDERSON

Of Messrs. Young & Anderson,

23, Donegall Street

to which address it is requested that all accounts due by the Museum be sent.

The Museum, College Square North, is open daily from 12 till 4 o'clock. Admission for Strangers, 6d each. The Curator is in constant attendance and will take charge of any Donation kindly left for the Museum or Library.

BRITISH
MUSEUM
20 JAN 33
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BELFAST MUSEUM.

ANNUAL REPORT

BY

THE COUNCIL

OF THE

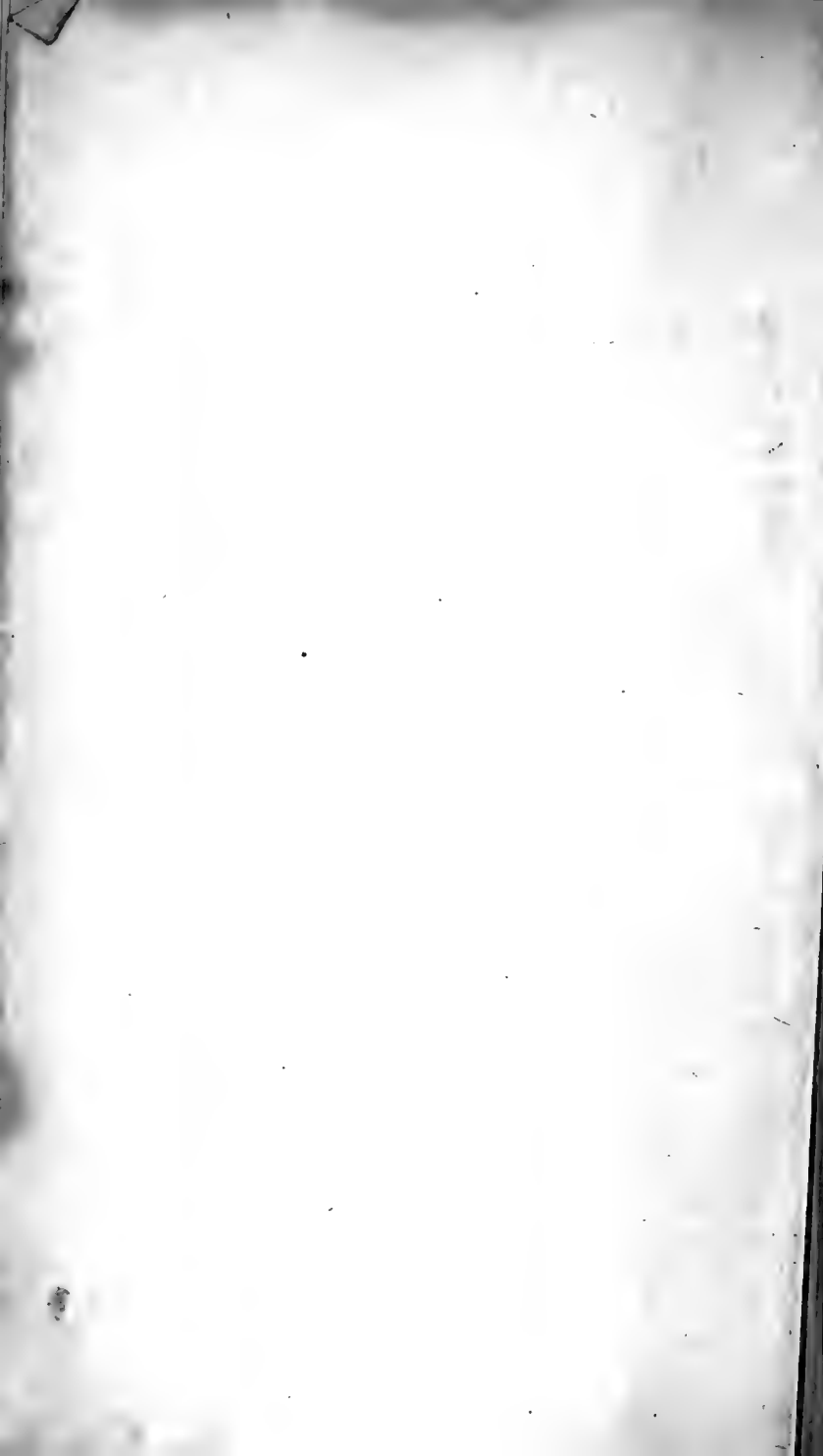
Natural History & Philosophical Society.

SESSION, 1871-72.

BELFAST:

PRINTED AT THE "NORTHERN WHIG" STEAM-PRINTING OFFICES.

1872.



Natural History & Philosophical Society

THE annual meeting of the shareholders in this Society was held at the Museum, on Thursday afternoon, the 30th May, 1872, at two o'clock. R. M'Adam, Esq., occupied the chair. There were also present—Joseph John Murphy, Esq.; A. O'D. Taylor, Esq.; William H. Patterson, Esq.; Henry Burden, Esq., M.D.; John Anderson, Esq. F.G.S.; R. L. Patterson, Esq.; Robert Gray, Esq.; J. F. Hodges, Esq., M.D.; &c.

The CHAIRMAN read the advertisement convening meeting, and then called upon Mr. Taylor, secretary, to read the report for the past year, which ran as follows:—

ANNUAL REPORT BY THE COUNCIL OF THE NATURAL HISTORY AND PHILOSOPHICAL SOCIETY, BELFAST, FOR THE SESSION 1871-72.

“At the commencement of the last report submitted by your council, they referred with special gratification to the fact that of the eight original founders of the society three were then alive, and that one of them (Robert Patterson, Esq., F.R.S.) had completed his 50th year of active service in connection with your museum. To mark the high appreciation of Mr. Patterson's unusually long and valuable services, an illuminated address was in September, 1871—a few months after the publication of your report—presented to him by the shareholders and members.

“It now becomes the melancholy duty of your council to chronicle the decease of Mr. Patterson, which took place on the 14th of February last. Your council conveyed to the family a special resolution of sympathy and respect, but they deem it only due to the memory of the deceased to repeat in this official record of the society's progress, the society's abiding sense of Mr. Patterson's life-long efforts on behalf of this institution.

“During the session now terminated—the fifty-first of your society's existence—meetings have been regularly held for the reading of papers which, by arrangement with the

Naturalists' Field Club, have been read on alternate Wednesday evenings with the Club's papers, so that the proceedings of one society could not possibly interfere with those of the other. Your society has held ten evening meetings—seven of them public, and three private. The following list furnishes the names of readers and the titles of the papers read :—

LIST.

“1st meeting, public: 1st November, 1871; the president, Joseph John Murphy, Esq., F.G.S., delivered an introductory address on ‘Motive Power.’

“2d meeting, public: 29th November, 1871; Professor James Thomson, LL.D., gave a lecture entitled, ‘Speculations on the Continuity of the Fluid State of Matter, and on transitions between the Gaseous, the Liquid, and the Solid States.’

“3d meeting, private: 6th December, 1871; Professor J. D. Everett read, ‘On the Reduction of Observations of Wet and Dry Thermometers;’ and on same evening Robt. Young, Esq., C.E., made a communication entitled, ‘Some Remarks on the Recent Changes of Coast-level at Ballyholme Bay, County Down.’

“4th meeting, public: 20th December, 1871, John Anderson, Esq., F.G.S., read on ‘The Geological Formations of the County Down.’

“5th meeting, public: 23d January, 1872; William Bottomley, Esq., J.P., read on ‘Recent Excavations in Rome.’

“6th meeting, public: 24th February, 1872; the Rev. George Macloskie, M.A., read ‘On the silicified wood of Lough Neagh, with notes on the structure of coniferous wood.’

“7th meeting, public: 21st February, 1872; Thomas M. Lindsay, Esq., Head Master of the School of Art, Belfast, gave a lecture on ‘Egyptian Art.’

“8th meeting, private: 13th March, 1872; Joseph John Murphy, Esq., F.G.S., read on ‘The Bernina Lakes;’ and on same evening, James Thomson, Esq., LL.D. explained and showed in operation, ‘The Calculating Machine of M. Thomas, of Colmar.’

“9th meeting, public: 20th March, 1872; Hiram Shaw Wilkinson, Esq., A.M., read on ‘Political and Social Revolutions in Japan.’

“10th meeting, public: 17th April, 1872; Robert Young, Esq., C.E., read on ‘The Duty of preserving National Monuments.’

"From the foregoing list it will be seen that the subjects discussed have been of a more diversified character than usual, it being the council's belief that so far as compatible with the scope of the society as a scientific organization, variety should be encouraged in the communications brought forward. Such being the case, it will be observed that the element of pure natural history which used to preponderate at the meetings has, during the past year, not occupied such a prominent position as heretofore.

"Some few members have joined since last year, but an accession is still most desirable of new adherents, whether as shareholders or members, so that the practical business of reading papers might be extended over a larger number of gentlemen than has been the case for some time past. Considering the increase in Belfast of the educated and affluent classes, your council venture to express the conviction that the advantages offered by the society for Winter evenings, and to be derived by families from occasional inspection of the collections, are not as well known or as thoroughly appreciated as they ought to be. The council hope that an organization entirely originated by Belfast men, and supported by voluntary subscriptions, is destined ere long to receive a fresh accession of subscribers, and that an increased attendance at its meetings will show that the interest in its welfare is somewhat in proportion to the increased population of Belfast. The rearrangement of the local collections continue under the judicious superintendence of the gentlemen who have for the last two years been engaged thereon. The following is their detailed report on the subject :—

REPORT ON REARRANGEMENT OF MUSEUM.

"Since the last report was made upon this subject, those engaged in the re-arrangement have continued to carry on that work.

"The early part of the year was occupied in the arrangement of the British shells—principally the more minute species—a work which had been retarded, to some extent, by a delay in obtaining the necessary materials from London. This collection has now been completed, so far as the material at present in the museum is concerned. It is to be regretted that owing to the absence of very many species, this collection is still far from being perfect. Lists of desiderata were made out and forwarded to Dr. Wyville Thomson, and Mr. Waller, who promised to supply shells to fill up some of the blanks. As yet,

however, nothing has been received from these gentlemen; and it may be desirable to apply to Mr. Jeffreys, or such other conchologists as would be likely to assist in completing the series.

“Many of your specimens of cephalopoda, fishes, &c., preserved in spirits, were found on examination to be in bad condition. In some instances the objects required to be taken out and cleansed; in others, the spirit had to a greater or less extent evaporated; and, in order to prevent their destruction, it was found necessary to wash the specimens, and place them in fresh spirit, taking proper care to have the jars hermetically closed. The work has been undertaken by Mr. Swanston, assisted by your curator, and will, when completed, it is hoped, permanently secure a most valuable collection, which contains, in some instances, type specimens on which the species has been founded.

“The botanical department has, however, received the greatest amount of attention during the past year.

“A small herbarium of plants, collected principally by the late Dr. Drummond, and the late Mr. Templeton, existed in your museum. These were examined some two or three years ago, and were then arranged in accordance with the natural system. On a further examination of the specimens contained in it, it was thought advisable to form an entirely new herbarium of the plants of Ulster, and also a distinct British one.

“Your council, approving of this suggestion, has already provided a suitable cabinet for the reception of these collections. A considerable portion of the past year has been occupied in the collection, preservation, and mounting of the specimens for the local herbarium. As a contribution to it, Mr. S. A. Stewart has presented specimens of 150 species, and Mr. Hugh Robinson of 325 species of the indigenous plants of Ulster. The majority of Mr. Stewart's plants, have yet to be labelled, but as they are mostly already mounted, a short time will suffice for that work. The specimens now in this collection include representatives of almost all the plants found in the immediate neighbourhood of Belfast, and many from the adjoining counties. It is intended to add to it, from time to time, as circumstances permit, either by personal collection or exchange, authenticated specimens of all the species native to the province.

“The formation of the British herbarium will next be proceeded with. A good number of specimens are already

in the museum waiting to be mounted, and a number more can be had from friends when required. In preparing these botanical collections, no specimen will be admitted except such as are characteristic examples, and carefully dried. Mutilated or imperfect plants will be rejected, save only in case of extremely rare species.

"It is hoped that not only a good series of the local plants, and of the plants of Great Britain, may be obtained, but also that, in point of appearance and of careful selection, your herbaria may compare favourably with those in any other provincial museum.

"This will complete, so far as the available material is concerned, the arrangement of the natural history collections in the Thompson room, and that formerly used as the library. Those engaged on that department respectfully suggest to your council, and to those having charge of the archaeological collections, the propriety of having them arranged in the central case of the latter room. By this means, all the collections illustrative of the natural history and archaeology of the district would be assembled in the rooms named, and so form in them a complete local museum.

"SAML. A. STEWART.

"HUGH ROBINSON.

"WILLIAM SWANSTON.

"May, 1872.

"From the foregoing report it will be noticed that steady progress is being made, and that in about two year's time the local collections will be well displayed and named. The council, having only just now received this report from the Arrangement Committee, leave to the new council about to be elected the duty of deciding on the suggestions made.

"The building of the museum is in a sound condition, with the exception of some repairs necessary for the Thompson room, and for the curator's house in the rear, which have been ordered. Some slight improvements in the gas-fittings have been made throughout the rooms.

"The middle room has, during the last twelve months, been again occupied thrice a week for a short time by classes connected with the Ladies' Institute.

"The Naturalists' Field Club have also occupied the rooms for their evening meetings, as already explained.

"Judging from the amount of money received at the door on last Easter Monday, the number of those who on that day visited the museum cannot have been less than 6,000. This is very gratifying, and indicates that the intelligent artisans who on that holiday seek amusement in Bel-

fast continue to include as persistently as ever your museum in their list of places worth seeing. The same orderly conduct, and care for the objects exhibited, which have prevailed in previous years, were again observable this year.

“ From the list of donations to the museum and library accompanying the present report, it will be seen that considerable additions have of late been made to your general collections.

“ Your council wish to direct special attention to a very valuable donation made by Mr. Greer, now of Liverpool, formerly of Belfast. It consists of three bronze Indian idols, representing Vishnu and his two wives. Your council have given instructions to have such stands made as may be necessary for those images, and intend affixing a special plate thereto, chronicling the name of donor.

“ After mature deliberation, your council have resolved that it would be advisable to publish regular Proceedings of this society, and with this view they have been procuring either full reports from the authors, or condensed abstracts of the papers read during the past session. Those will probably be published in Autumn, and a copy will be forwarded to each shareholder and member.

“ With respect to the probable visit of the British Association to Belfast in 1874, your council have continued as opportunity offered, most respectfully to urge compliance with the official invitation sent forward by Belfast.

“ The treasurer’s account is herewith submitted, and from it a balance appears to credit of new account, amounting to £100 2s 11d.

“ Your council beg to report, in addition to the ordinary matters on which they have touched, that only one of the three trustees of the museum elected 25th May, 1859, now survives, namely, William Bottomley, Esq., J.P. The other two have deceased, namely, Samuel G. Fenton, Esq., and Robert Patterson, Esq. It is, therefore, most advisable that no delay take place in filling up these two vacancies, and for this purpose your council have directed their solicitors to prepare deeds appointing two new trustees, whom you are now to select, spaces having been left in the deeds for the names of the two gentlemen whom you are called upon to appoint at this meeting, in terms of the advertisement which has appeared in the public papers.

“ In concluding this report, your council feel gratified

in surrendering, unimpaired, the property over which they have exercised supervision during the past twelve months.

“(Signed by order of the council)

“A. O'D. TAYLOR, } Secretaries.
“HENRY BURDEN, }

“Belfast Museum, College Square North,
30th May, 1872.”

DONATIONS TO LIBRARY—SESSION, 1871-2.

University of Christiania—A number of unbound books and pamphlets.

Geological Society of Vienna—Their Proceedings. 4 parts.

Smithsonian Society, Washington—Contributions to knowledge. Vol. 17. Report for 1869—Archives of Science. Vol. I., parts 1 and 2.

E. T. Cox, Esq., State Geologist—Geological Survey of Indiana, 1869.

Academy of National Sciences, Philadelphia—Proceedings for 1870.

Boston Society of Natural History—Historical Notes on the Earthquakes of New England, &c.

Connecticut Academy of Arts and Sciences—Transactions. Vol. I., part 2, and vol. II., part 1.

Department of Agriculture, Washington—Reports for 1869 and 1870.

War Department, Washington—Report of Surgical Cases. No. 3.

Geological Survey of India—Memoirs. 6 parts. Records. 9 parts. Geology and Zoology of Abyssinia.

Zoological Society of London—Proceedings for 1870. 3 parts. Ditto, 1871. 1st, 2d, and 3d parts.

Geological Society of London—Quarterly Journal. Vols. 26 and 27.

Astronomical Society of London—Monthly Notices. Vol. 31. Memoirs. Vol. 39, part 1.

Royal Dublin Society—Journal. No. 40.

Dr. Wm. M. Gee—Three old volumes of interest.

Zoological Society of London—Proceedings for 1869. Parts 2 and 3.

Royal Dublin Society—Journal for 1869. Parts 2 and 3.

Royal Astronomical Society of London—Memoirs. Vols. 37 and 38. Notices. Vols. 28, 29, and 30, and index.

Geological Society of Vienna—Their Proceedings. 5

parts.

War Department, United States of America—Report on Barracks and Hospitals.

Academy of Nat. Sciences, Philadelphia—Proceedings for 1869.

Boston Society of Natural History—Proceedings, 1869-70. Vol. 12. Gould's Invertebrata of Massachusetts, &c.

Smithsonian Institute, Washington—Contributions to Knowledge. Vol. 16. Miscellaneous Collections. Vols. 8 and 9. Annual report for 1868.

BEQUEST OF LATE A. H. HALLIDAY, ESQ.

Thompson's Nat. History of Ireland. 4 vols.

Kirby and Spence's Entomology.

Douglas and Scott's British Hemiptera. Vol. 1. Crustaceans of Strasbourg.

Journal of the Linnæan Society. 58 parts.

Transactions of the Linnæan Society. 15 parts.

Monographs of the Diptera of North America.

Transactions of the Zoological and Botanical Society of Vienna. 5 vols.

DONATIONS TO MUSEUM.

Dr. Wm. M'Gee, M.D., a number of foreign shells.

G. T. Glover, Esq., a specimen of Mica in apatite, from Ottawa, Canada.

Wm. Simpson, Esq., fossils from South Carolina.

Mrs. Crawford, some British and foreign shells.

Dr. H. S. Purdon, a specimen of "Ozokerit."

Dr. Ritchie, a Barbary partridge.

R. L. Patterson, Esq., a common scoter.

Major Crawford, Madras Staff Corps, fifteen Indian weapons.

J. Greer, Esq., Liverpool, three large bronze Indian idols.

From Robert Battersby, Esq., Glendalough, Killarney, 150 specimens of Cannes fossils and Mediterranean shells.

The following donations have been received and added to the local collections in their re-arrangement during the past year:

From Mr. S. A. Stewart, 65 species Estuarine clay fossils.

"	"	"	5 Miocene fossils.
"	"	"	1 chalk "
"	"	"	1 greensand "
"	"	"	5 liassic "
"	"	"	3 carboniferous ,,

„	„	„	9 silurian	„	—
					in all 89
„	Mr. Joseph Wright,	14	estuarine clay		
	fossils.				
„	„	„	59 carboniferous	„	—
					in all 73
„	Mr. Wm. Swanston,	2	chalk	„	
„	„	„	6 greensand	„	
„	„	„	1 liassic	„	
„	„	„	31 silurian	„	—
					in all 40
„	Mr. Wm. Gray,	7	chalk	„	
„	„	„	3 greensand	„	
„	„	„	15 liassic	„	—
					in all 25
„	Mr. H. Robinson,	1	greensand	„	
„	„	„	3 silurian	„	—
					in all 4
„	Naturalists' Club,	1	liassic (repti-		
	lian jaw.				—
					in all 1
					—
					Total, ... 232

Mr. JOHN ANDERSON, treasurer, then submitted the accounts for the past year, duly audited by Robert Gray, Esq., and Samuel Archer, Esq.; and from this statement it appeared that a balance of £100 2s 11d remained to be carried over to credit of new account. In addition to this floating balance a sum of £400 was invested in Northern Counties preference shares.

Dr. HODGES moved, and Mr. R. L. PATERSON seconded:—“That the council’s report as read, and the treasurer’s statement of accounts be adopted, printed, and circulated amongst the shareholders and members, along with a list of shareholders and members.”

The various deeds of tenure and other documents were then exhibited, checked over, and found all correct. The desirability of increasing the present amount of fire insurance, £4,600, to a larger sum was then discussed, and was referred for decision to the council about to be elected.

A ballot was then taken for a new council of management for 1872-73, and the following fifteen gentlemen were declared duly elected:—Robert M’Adam, Thomas Andrews, M.D., F.R.S.; A. O’D. Taylor, Joseph John Murphy, F.G.S.; James Thomson, LL.D.; John F. Hodges, M.D.; Henry Burden, M.D.;

James Cuming, M.D.; Robert Young, C.E.; John Anderson, F.G.S.; John Purser, M.A.; William H. Patterson, Robert Steen, Ph. D.; R. Lloyd Patterson, R. O. Cunningham, M.D., F.L.S.

The CHAIRMAN then announced that a special election would now take place, in accordance with notification to that effect, inserted in the public prints, viz., the election of two new trustees of the society's property, in lieu of Samuel G. Fenton, Esq., and Robert Patterson, Esq., both now deceased. Mr. A. O'D. Taylor moved, and Mr. John Anderson seconded, that Joseph John Murphy, Esq., and Robert Lloyd Patterson, Esq., be now elected to fill said vacancies. This was carried unanimously, and said election was ratified by the chairman's attaching his signature to the deed, after insertion of the names selected. This concluded the business of the annual meeting.

COUNCIL ELECTED FOR 1872-73.

Robert M'Adam, Esq.
 Thomas Andrews, Esq., M.D., F.R.S.
 Alexander O'Driscoll Taylor, Esq.
 Joseph John Murphy, Esq., F.G.S.
 James Thomson, Esq., LL.D.
 John Frederick Hodges, Esq., M.D.
 Henry Burden, Esq., M.D.
 James Cuming, Esq., M.D.
 Robert Young, Esq., C.E.
 John Anderson, Esq., F.G.S.
 John Purser, Esq., M.A.
 William Hugh Patterson, Esq.
 Robert Steen, Esq., Ph. D.
 Robert Lloyd, Patterson, Esq.
 Robert O. Cunningham, Esq., M.D., F.L.S.

The new Council then met, and from their number selected the following as their officers for the

YEAR 1872-73 :—

President.

MR. J. JOHN MURPHY.

Vice-Presidents.

DR. JAMES THOMSON.

DR. HODGES.

MR. R. M'ADAM.

PROFESSOR PURSER.

Treasurer.

MR. JOHN ANDERSON.

Librarian.

DR. STEEN.

Secretaries.

MR. A. O'D. TAYLOR AND DR. H. BURDEN.

THE BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY, MUSEUM, &c.

In Account with the Treasurer.

<p>1871.</p> <p>To Cash, Curator's Salary,</p> <p>" Commission on Subscriptions collected, ..</p> <p>" Herbarium,</p> <p>" Reading Stand,</p> <p>" Fire Insurance,</p> <p>" Sundry Expenses, including Gas, Coal, &c.,</p> <p>1872.</p> <p>To Cash, Easter Monday,</p> <p>" Rent till 1st May, 1872,</p> <p>" Printing and Advertising,</p> <p>To Balance in hand,</p>	<p>£52 0 0</p> <p>5 16 3</p> <p>7 10 1</p> <p>1 10 0</p> <p>6 12 6</p> <p>24 16 2</p> <p>7 0 4</p> <p>25 0 0</p> <p>15 14 5</p> <p>100 2 11</p> <hr/> <p>£246 2 8</p>	<p>1871.</p> <p>By Balance in hand 21st June, 1871,</p> <p>By Cash, Interest Northern Counties Railway, ..</p> <p>" Subscriptions, year ending 1st Nov., 1871, ..</p> <p>" Engineers' Association,</p> <p>" New Share,</p> <p>" Field Naturalist Club,</p> <p>" Ladies' Institute,</p> <p>" At Door,</p> <p>" Easter Monday,</p> <p>" Aircars,</p> <p>" Transfer Fees,</p> <p>£73 5 8</p> <p>17 13 9</p> <p>77 12 0</p> <p>3 3 0</p> <p>7 0 0</p> <p>5 0 0</p> <p>6 0 0</p> <p>16 9 6</p> <p>37 14 3</p> <p>2 0 0</p> <p>0 4 6</p> <hr/> <p>£216 2 8</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

1872.
1st May, by Balance, £100 2 11

Examined and compared with Vouchers, and found correct.

(Signed,)

ROBERT GRAY, }
SAMUEL ARCHER, } *Shareholders.*

JOHN ANDERSON,
Treasurer.

SHAREHOLDERS FOR 1871,

IN THE

Natural History & Philosophical Society

MUSEUM.

Allen, W. J. C., J.P., Faunoran, Green Island.
Andrews, James, Donegall Street.
Andrews, Michael (Representatives of,) Ardoyne.
Andrews, Thomas, M.D., F.R.S., &c., Queen's College.
Archer, Samuel, J.P., Wellington Place.
Anderson, John, J.P., F.G.S., Holywood.
Alexander, James, J.P., Holywood.

Bateson, Sir Robert, Bart., Belvoir Park.
Batt, Thomas G., Representatives of.
Bland, Rev. W., J.P., Whiteabbey.
Bottomley, Henry H., Ulster Street.
Bristow, James T., Northern Bank.
Barbour, James, Falls Foundry.
Boyd, John, Belfast Foundry.
Brown, John Shaw, Bedford Street.
Bottomley, William, J.P., Calender Street.
Burden, Henry, M.D., Prospect.

Campbell, James, Cultra.
Campbell, John, Copeland View, Green Island.
Campbell, William, Windsor.

Carlisle, James, J.P., Donegall Street.
 Carson, William, Corn Market.
 Charley, John, College Park.
 Charley, John (Representatives of,) Finaghy.
 Clermont, Lord, Ravensdale Park.
 Coates, William, J.P., Glentoran.
 Corbett, Mrs. Clarendon Place.
 Coey, Sir Edward, Knight, J.P., D.L., Merville.
 Charters, John, Craigavad.
 Crawford, William, Donegall Place.
 Cunningham, John (Representatives of,) Macdonom.
 Cuming, James, M.D., Wellington Place.
 Combe, James, J.P., Ormiston.
 Connor, James, Great George's Street.
 Calwell, Alexander, M'D., College Square North.
 Caughey, John, Albion Place.
 Cunningham, Robert O., M.D., F.L.S., Richmond
 Terrace.

Darbshire, James M., Cliftonville.
 Davidson, Richard, M.P. (Representatives of.)
 Dobbin, Clotworthy, Pakenham Place (Representatives
 of.)
 Dobbin, Clotworthy, jun., do. (Representatives
 of.)
 Donegal, Marquis of, K.P., &c., &c.
 Drennan, Dr., Chichester Street.
 Drummond, Dr. James, L. (Representatives of.)
 Duffin, Charles, J.P., Queen's Elms.
 Dunville, William, J.P., Calender Street.
 Downshire, Marquis of, Hillsborough Castle.

Emerson, William, Donegall Quay.
 Ewart, William, jun., J.P., Donegall Place.
 Everett, Joseph David, M.A., M.R.I.A., &c., Queen's
 College.

Fenton, Samuel G., J.P. (Representatives of.)
 Ferguson, Henry, M.D., Fisherwick Place.
 Forsythe, R. H., Holywood.
 Finlay, William Laird, Windsor.
 Finlay, Charles, J.P., University Square.
 Ferguson, John F., J.P., D.L., Donegall Place.

Garrett, Thomas, Chichester Street.
 Getty, Edmund (Representatives of.)

- Girdwood, James, J.P., High Street.
 Gordon, Alexander, M.D., Howard Street.
 Gordon, R. F., J.P., Castle Chambers.
 Grainger, Rev. John, D.D., Broughshane.
 Grattan, John (Representatives of,) Corn Market.
 Gray, Robert, College Square East.
 Grogan, William, White Linen Hall.
 Grimshaw, C. B., Strandtown (Representatives of.)
 Grimshaw, Robert, J.P., D.L., Longwood (Reps. of.)
 Gordon, Robert W., Falls Road.
 Greer, Thomas J.P., Sea Bank.
- Halliday, A. H. (Representatives of.)
 Hamilton, Hill, J.P., Mountvernon (Representatives of.)
 Hancock, John, J.P., Lurgan.
 Henderson, Robert, Queen's Square.
 Henry, Alexander, Manchester.
 Herdman, John (Representatives of,) Cliftonville.
 Hind, James, Durham Street.
 Hind, John, J.P., Durham Street.
 Heyn, Gustavus, Waring Street.
 Hincks, Miss, Murray's Terrace.
 Houston, J. B., J.P., D.L., Orangefield.
 Hughes, Bernard, J.P., Donegall Place.
 Herdman, Alexander F., J.P., Howard Street.
 Herdman, John, jun., Donegall Square South.
 Hamilton, James, J.P., Corporation Street.
 Harland, Edward J., Queen's Island.
 Hodges, John F., M.D., J.C.S., Queen's College.
 Hyndman, Hugh, LL.B., Waring Street.
 Holden, J. Sinclair, M.D., F.G.S., Larne.
 Henderson, W. D. Victoria Street.
- Jackson, Thomas, C.E., Corn Market.
 Johnson, Sir William, Knight, J.P., D.L., College Square
 North.
 Johnston, David W., Donegall Street.
- Kennedy, James, Falls Road.
 Keegan, James, J.P., High Street.
- Lanyon, Sir Charles, Knight, J.P., The Abbey.
 Lemon, James, jun., (Representatives of.)
 Lepper, F. R., Ulster Bank.
 Lowry, Martin, Whiteabbey.
 Lowry, W. B., do.

Lakin, Mrs. John, Tamworth.
 Macrory, Adam J., Duncairn.
 Magill, Joseph, J.P., Henry Street.
 Mitchell, George T. (Representatives of.)
 Montgomery, Captain H., Ballydrain.
 Moore, James, J.P., Donegall Square North.
 Mulholland, Andrew, J.P., D.L. (Reps. of).
 Mulholland, John, J.P., D.L., Ballywalter Park.
 Mullan, William, J.P., Victoria Street.
 Murney, Henry, M.D., J.P., Donegall Square East.
 Musgrave, James R., J.P., Ann Street.
 Murray, Robert, Arthur Street.
 Mulligan, Montague B. (Representatives of.)
 Murphy, Joseph John, F.G.S., &c., Oldforge.
 Murphy, Isaac James, Donegall Square West.

MacAdam, Robert, College Square East.
 M'Calmont, Robert, London.
 M'Cammon, Thomas, Dublin.
 M'Canee, J. W. S., Suffolk (Reps. of.)
 M'Clure, Thomas, J.P., D.L., M.P., Belmont
 M'Cracken, Francis, Corporation Street.
 M'Gee, William, M.D., J.P., College Square West.
 M'Laine, Alexander, Corporation Street.
 M'Gee, John G., High Street.
 M'Causland, Orr, North Street.

Neill, John R., High Street.

Patterson, Mrs. David, Richmond Terrace.
 Pim, Edward W., High Street.
 Pim, George, Donegall Quay.
 Pirrie, John M., M.D., Fisherwick Place.
 Purdon, Charles, M.D., Wellington Place.
 Purdon, Henry, M.D., do. do.
 Patterson, Robert, F.R.S. (Representatives of.)
 Patterson, Robert Lloyd, Corporation Street.
 Patterson, William H., High Street.
 Purser, John, M.A., Queen's College.
 Porter, Rev. John Scott, College Square East.

Riddel, William, Ann Street.
 Rowan, John, York Street.
 Ritchie, W. B., J.P., The Grove.
 Ross, William, jun., Falls Road.

Rea, Hugh P., M.D., Great Victoria Street.

Simms, William, Linen Hall.

Sinclair, Thomas, M.A., J.P., Tomb Street.

Suffern, John, Windsor.

Suffern, William, Windsor.

Stevelly, Professor (Reps. of.)

Steen, Dr. Robert, Ph. D., Academical Institution.

Tennent, Robert James, J.P., D.L., Rushpark.

Tennent, Robert (Representatives of.)

Thomson, Charles, Fountainville.

Thompson, James, J.P., Hazlebank.

Thompson, Nathaniel, Holywood.

Thomson, Professor, James, LL.D., University Square.

Thompson, William (Representatives of,) Belfast.

Turnley, John (Representatives of.)

Torrens, James, Wellington Place.

Taylor, A. O'D. Waring Street.

Valentine, J. W., Wellington Place.

Valentine, Thomas, J.P., The Moat.

Walkington, Thomas, Waring Street.

Wilson, George O., Belfast.

Workman, John (Representatives of.)

Workman, Robert, jun., Corporation Street.

Wilson, Robert, M., Thornhill.

Workman, Mrs. Jane, Bedford Street.

Wilde, John James, Strandtown.

Young, John, Brockley Park.

Young, Robert, C.E., Calender Street.

HONORARY MEMBERS.

William Gray, C.E., Mount Charles.

Samuel A. Stewart, North Street.

Hugh Robinson, Donegall Street.

Joseph Wright, F.G.S., Donegall Street.

William Swanston, College Square East.

ANNUAL GUINEA SUBSCRIBERS.

- Brett, Charles H., Chichester Street.
 Browne, Samuel, Surgeon, R.N., J.P., College Square
 East.
 Corry, J. P., J.P., Great George's Street.
 Corry, John, do. do.
 Coates, Victor, Lagan Foundry.
 Glover, G. T., Ballymacarrett.
 Graham, O. B., York Street.
 Hancock, William, Linen Hall Street.
 Hastings, William, Victoria Street.
 Hüpeden, J., Bedford Street.
 Johnson, Thomas B., Waring Street.
 Lindsay, Thomas, M., School of Art.
 Louch, Fitzgibbon, C.E., Donegall Place.
 Lynn, William, Howard Street.
 Mulholland, J. R. T., Falls Road.
 M'Ilwaine, Rev. William, D.D., Windsor.
 M'Tear, George, Donegall Quay.
 Nicol, James, Soho Foundry.
 Oulton, Rev., Richard, Holywood.
 Redfern, Peter, M.D., Queen's College.
 Richardson, Alexander, Aberdelgie, Lisburn.
 Ross, W. A., Bank Street.
 Shillington, J. T., Broadway.
 Taylor, David, J.P., Bridge Street.
 Taylor, John Arnott, Bridge Street.
 Tate, Alexander, C.E., Queen's Elms.
 Ward, Francis D., Donegall Place.
 Weinberg, J., Donegall Square North.
 Wolf, J. W., Queen's Island.
 Whittington, J. J., Donegall Place.

N.B.—It is earnestly requested that any error or omission in foregoing Lists may be kindly notified in writing to the Treasurer, Mr. John Anderson, Hillbrook, Holywood so as to secure perfect accuracy in the society's Books.

1st June, 1872.

BELFAST

Natural History & Philosophical

SOCIETY.

SHAREHOLDERS.

- 1 Share in the Museum costs £7.
 2 Shares ,, ,, cost £14.
 3 Shares ,, ,, cost £21.

The proprietor of 1 share pays 10s per annum ; the proprietor of 2 shares pays 5s per annum ; and the proprietor of 3 or more shares stands exempt from further payment.

Shareholders only are eligible for election on the Council of Management.

MEMBERS.

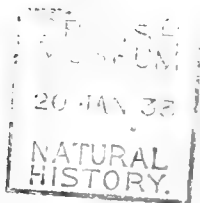
There are two classes, Ordinary Members who are expected to read Papers, and Visiting Members who by joining under the latter title are understood to intimate that they do not wish to read Papers. The Session for Lectures extends from November in one year, till May in the succeeding one. Members, Ordinary or Visiting, pay £1 1s per annum, due first November in each year.

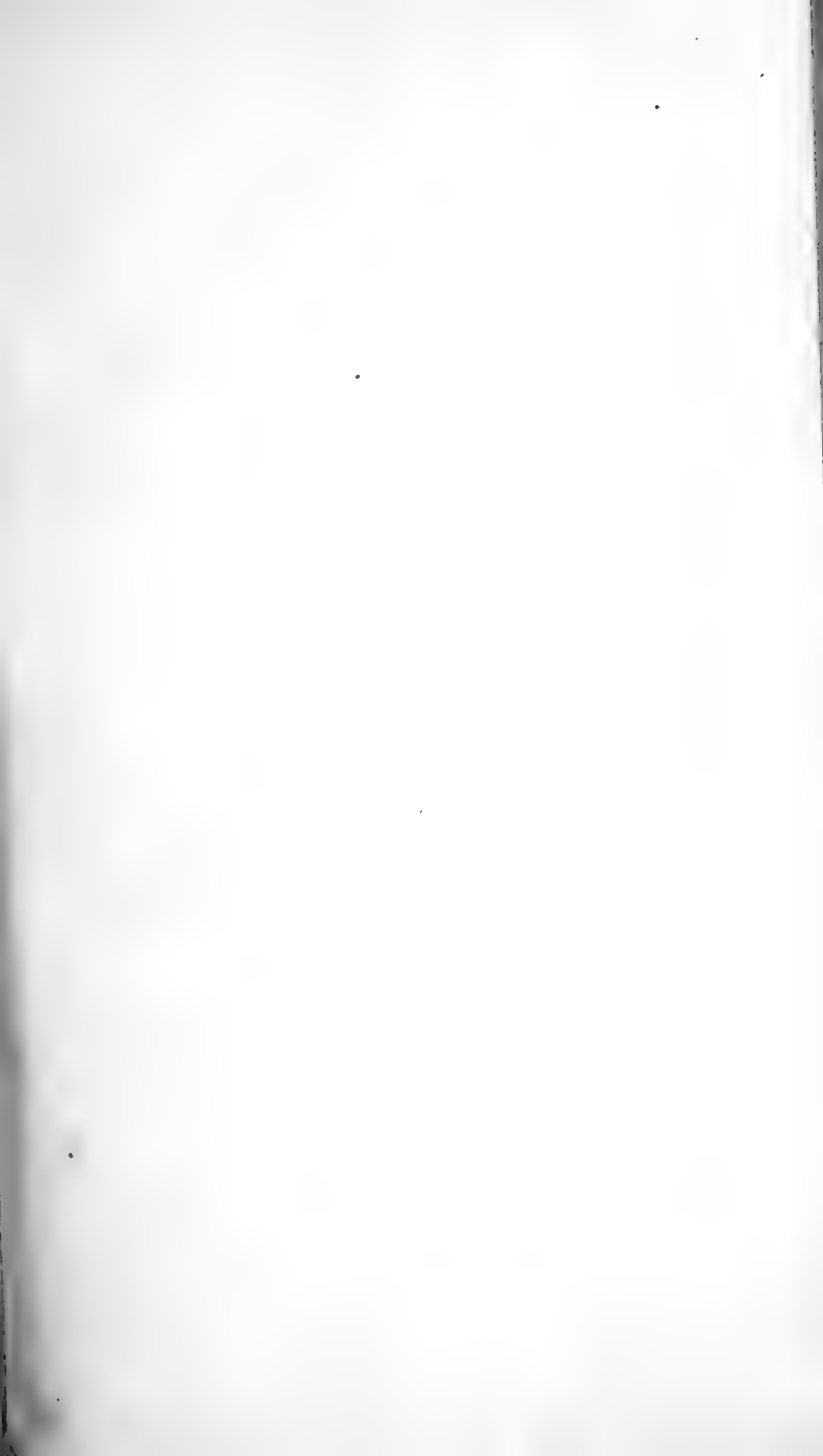
PRIVILEGES:

Each Shareholder and Member has the right of personal attendance at all meetings of the society, and of admitting a friend thereto ; also of access to the Museum for himself and family, with the privilege of granting admission orders for inspecting the collections to any friends not resident in Belfast.

Any further information can be obtained by application to either of the Secretaries. It is requested that all accounts due by the Society be sent to the Treasurer.

The Museum, College Square North, is open daily from 12 till 4 o'clock. Admission for Strangers, 6d each. The Curator is in constant attendance, and will take charge of any Donation kindly left for the Museum or Library.





BRITISH
MUSEUM
20 JAN 33
NATURAL
HISTORY.

BRITISH
MUSEUM

20 JAN 33

NATURAL
HISTORY.

BELFAST MUSEUM.

ANNUAL REPORT

BY

THE COUNCIL

OF THE

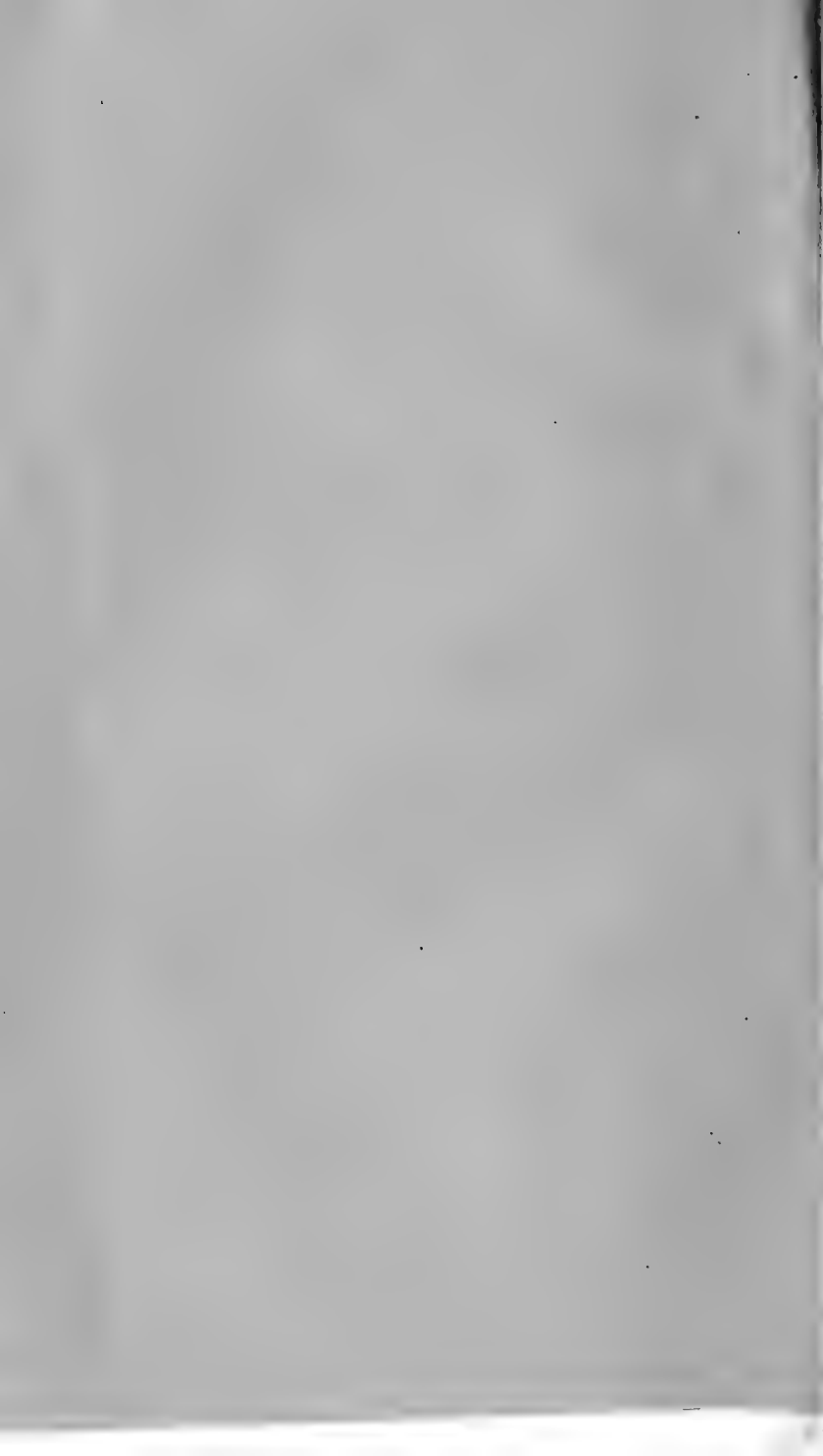
Natural History & Philosophical Society

SESSION, 1872-73.

BELFAST:

PRINTED AT THE "NORTHERN WHIG" OFFICES.

1873.



Natural History & Philosophical Society.

THE annual meeting of shareholders, convened by public advertisement in the Belfast newspapers, was held in the Museum, on the afternoon of Thursday, the 5th June, 1873, at 3 o'clock. Joseph John Murphy, Esq., F.G.S., occupied the chair. There were also present—Professor Hodges, Robert Lloyd Patterson, Esq.; Professor R. O. Cunningham, Professor Purser, W. J. Hancock, Esq.; A. O'D. Taylor, Esq.; Dr. Henry Burden, Robert M'Adam, Esq., &c.

Apologies for non-attendance were sent from W. H. Patterson, Esq., and John Anderson, Esq.

Mr. TAYLOR read the following report, to which is appended a list of donations to the Museum and the Library for the past year :—

“ REPORT BY THE COUNCIL OF THE NATURAL HISTORY AND PHILOSOPHICAL SOCIETY, BELFAST, FOR THE SESSION 1872-73.

“In reviewing the past twelve months, the Council have but few items of moment to lay before the shareholders. The fifty-second session of the society has now terminated, and during it a full average number of communications has been brought forward, several of them extremely interesting. But the council still perceive a want of new members willing to join the reading staff, and they wish to reiterate their desire that young men of scientific tastes should join the society, and, by the infusion of their fresh ideas, stimulate the interest taken in the proceedings.

“There have been eight evening meetings held during the past session, of which a record is appended. By the courtesy of the Belfast Naturalists' Field Club shareholders and members are also granted the privilege of personal attendance at the Club's evening meetings, of which six took place. Add to this the privilege of admission for one's self and family to the Museum in the day-time, and the advantages derived by either a shareholder or a guinea subscriber seem well worth the expenditure.

“The Council announced last year their intention of publishing regular ‘Proceedings’ of the society. Owing to the difficulty of procuring the requisite manuscripts from the respective authors, more delay occurred than was anticipated in the preparation of the first volume. Its editing was entrusted to your president, Mr. Murphy, and one of your secretaries, Dr. H. Burden. Under the superintendence of these two gentlemen the volume is now approaching completion.

“The re-arrangement of collections has been steadily attended to, and in the lower room, on the left-hand side of the entrance, a series of the local rocks and minerals is now well displayed in a manner easy of reference. The local collection of plants is also completed as far as possible, and the British herbarium is in progress. The local collection of shells has been already arranged. The desirability of a general catalogue of the entire collections is manifest, but until all are arranged it has been considered unwise to enter on this work.

“Various donations have been made during the year now past, a list of which follows the present report.

“A case in the middle of the room has been allocated for the display of the valuable collection of ancient skulls adverted to in a previous report, as having been presented by the late John Grattan, Esq. Amongst natural history donations may be noted the presentation by Robert Gage, Esq., Rathlin Island, of the skull of a dolphin (*delphinus tursi*), which had been washed ashore there in October, 1872. This specimen is a valuable one, and deserves special mention.

“In addition to the meetings of our own society and of the Naturalists’ Field Club, your council have granted the use of your rooms during the past twelve months to two other associations, one of them the Ladies’ Institute, and the other a new society called the Belfast Architectural Association. It is found the position of the Museum in the west end of the town, removed from the more bustling streets, renders it peculiarly suitable as a centre for scientific and literary meetings such as those of the various bodies assembling there.

“Last Easter Monday, as usual, the Museum was thrown open to the working classes at 2d for adults, and 1d for children. About 5,000 persons inspected the collections, and not the slightest damage occurred. This Annual chief holiday of the citizens of Belfast and neighbouring

towns seems now inseparably connected in the minds of the rising generation with a visit to the Belfast Museum ; a conjunction of ideas which your council cannot but dwell upon with satisfaction.

“With regard to the buildings, your council have appointed a special committee to execute certain repairs to both the inside and outside of the Museum. This expenditure they consider necessary for the proper preservation of your property. They have had it under consideration for some time, and have deferred it till this summer for various reasons. In accordance with instructions given them at last annual meeting, your council have increased the fire insurances on the buildings and contents by £1,000, making a total now insured thereon of £5,600. In addition to the value of the Museum itself, and the collections therein, the shareholders hold £400 of 4½ per cent. Northern Counties’ preference shares, in the names of their trustees. The treasurer’s account, appended hereto, shows a balance at credit, after paying current annual expenses, of £97 os. 5d.

“Your council cannot conclude their report without drawing attention to the approaching visit of the British Association to Belfast in the autumn of 1874. They trust that this society, and every other scientific and literary society in Belfast, will do all in their power to make that visit a pleasant one to the distinguished strangers who are then to honour us with their presence. Your council are sure that so far as this society can their efforts will not be wanting.”

“The following is a record of the various papers read before the society during its session of 1872-3. But before the session was regularly opened, it must be noticed that a special meeting was held on the 5th of November, 1872, for the purpose of hearing a lecture kindly delivered by John S. Phené, Esq., F.S.A., F.G.S., F.R.G.S., life member of the British Association ; member of the British Archæological Association, &c., on our Prehistoric Monuments” :—

“1st. The 52nd session was opened on the 13th November, 1872, by an introductory address from the president, Joseph John Murphy, Esq., touching on several points of cosmological science.

“2nd. Public meeting, 27th November, 1872. Prof. J. D. Everett, on ‘Mirage.’

“3rd. Public meeting, 11th December, 1872. Prof.

J. F. Hodges, on 'Some new methods of Chemical Analysis.'

"4th. Public meeting, 15th January, 1873. Professor Robert O. Cunningham, on 'Patagonia and Terra del Fuego.'

"5th. Private meeting, 29th January, 1873. First, Mr. Joseph John Murphy, on 'The Solar Spots;' second Mr. Robert Young, C.E., 'Some remarks on fossil teeth and bones lately discovered in phosphatic manure from America.'

"6th. Public meeting, 5th February, 1873. Dr. Robert Steen—'Notes of a Trip through Norway.'

7th. Public meeting, 5th March, 1873. Dr. Henry Burden, on 'Fossil Teeth.'

"8th. Public meeting, 9th April, 1873. Professor John Purser, M.A., on 'Halos.'

"Reports of these communications will appear in vol. II. of the Society's proceedings. In concluding their report, the council have pleasure in feeling that though the year has been uneventful, the society has maintained its position as heretofore, and has been the means of laying before the public some most valuable papers during the year now closed.

"(Signed by order)

"A. O'D. TAYLOR, } Hon. Secs,
"HENRY BURDEN, }

"Belfast, 5th June, 1873."

DONATIONS TO THE MUSEUM.

From Francis Ritchie, Esq., The Grove, Belfast—Two flamingoes and a large vulture, from Africa.

From Dr. H. MacCormac—Some birds from Africa.

From C. J. C. M'Alester, Esq., Holywood—A piece of Tapa cloth, from the South Pacific.

From Mr. Jason Kernahan, Ballinderry—An Irish flint arrowhead.

From Robert Gage, Esq., of Rathlin Island—Head of a dolphin.

From Mr. S. A. Stewart, Belfast—536 species plants for British Herbarium.

From Rev. S. A. Brenan, A.B., Pomeroy—A number of plants for local herbarium.

From Dr. R. Battersby, Glendalough, Killarney—20 species recent shells for British Collection.

Mr. Ralph Tate, F.G.S., Redcar, Darlington—A number of cretaceous and miocene fossils, from the neighbourhood of Belfast.

Mr. Thomas Galloway, Belfast—6 species cretaceous fossils, from neighbourhood of Belfast.

DONATIONS TO LIBRARY.

Transactions of the Royal Academy of Science of Sweden for 1868, 1869, 1870, and 1871—comprising six complete volumes.

Transactions of the Imperial Geological Society of Austria—two parts—for the year 1872.

Proceedings of the Academy of Natural Sciences of Philadelphia for 1871—Parts I., II., and III.

Government Report of the Commission of Agriculture of the United States for 1870.

Reports of the Department of Agriculture of the United States for 1871.

Report on the Diseases of Cattle in the United States for 1871.

Report of the Smithsonian Institution for 1871.

Report on Immigration into America, by Dr. Edward Young—1872. Presented by the Author.

Journal of the Royal Dublin Society—Vol. vi., No. 2—1872.

Proceedings of the Zoological Society of London—three large volumes—1872.

List of the Vertebrated Animals in the Gardens of the Zoological Society of London for 1872.

Catalogue of the Library of the Zoological Society of London—1872.

Memoirs of the Royal Astronomical Society of London—1872.

Quarterly Journal of the Geological Society—three parts—1872.

Sir W. Elliott's Opening Address to the Botanical Society of Edinburgh—1871.

Government Mining Reports of the Colony of Victoria—1872.

Transactions of the Orleans County Society of Natural Sciences—two parts—1872.

Twenty volumes of the *Phrenological Journal*. Presented by Miss Grattan, Belfast.

Dr. HODGES moved, Mr. R. L. PATTERSON seconded, and it was passed unanimously—"That the council's report, as read, and the treasurer's statement of accounts be received, adopted, printed, and circulated amongst

the shareholders and members, along with a list of the shareholders and members."

The various deeds of the Society were then exhibited, checked over by Professor Cunningham, with the official list, and reported all in order.

The deed appointing new trustees at last annual meeting, and the deed of assignment to said trustees, were ordered to be added to the other documents.

A ballot was then taken for a Council of Management for 1873-74, and the following fifteen gentlemen were declared duly elected:—Mr. Robert M'Adam, Dr. Andrews, Mr. A. C'D. Taylor, Mr. Joseph John Murphy, Dr. Hodges, Dr. Burden, Mr. Robert Young, Mr. John Anderson, Professor Purser, Mr. W. H. Patterson, Dr. Robert Steen, Mr. R. L. Patterson, Dr. R. O. Cunningham, Professor Everett, Mr. Wm. Quartus Ewart.

June, 1873.

COUNCIL ELECTED FOR 1873-74.



- > Robert M'Adam, Esq.
- † Thomas Andrews, Esq., M.D., F.R.S.
- ‖ Alexander O'Driscoll Taylor, Esq.
- + Joseph John Murphy, Esq., F.G.S.
- ✦ John Frederick Hodges, Esq., M.D.
- ✕ Henry Burden, Esq., M.D.
- Robert Young, Esq., C.E.
- John Anderson, Esq., F.G.S.
- ˘ John Purser, Esq., M.A.
- † William Hugh Patterson, Esq.
- ✕ Robert Steen, Esq., Ph.D.
- ✕ Robert Lloyd Patterson, Esq.
- Robert O. Cunningham, Esq., M.D., F.L.S.
- Professor Everett, Esq., M.A., D.C.L.
- ✕ William Quartus Ewart, Esq.

The Council then met, and from their number selected the following office-bearers for the

YEAR 1873-74:—

President.

MR. J. JOHN MURPHY.

Vice-Presidents.

MR. R. M'ADAM.

DR. ANDREWS.

DR. HODGES.

PROFESSOR PURSER.

Treasurer.

MR. JOHN ANDERSON.

Librarian.

DR. ROBERT STEEN,

Secretaries.

MR. A. O'D. TAYLOR AND DR. H. BURDEN.

THE BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY,

Dr.

In Account with Treasurer.

Cr.

EXPENDITURE.		RECEIPTS.	
1872.		1872.	
Sept. 10.	To Cash, paid McCammon, Repairs, ..	By Cash, Balance in hand at date, ...	£100 2 11
" 17.	" " Robert Patterson & Sons, ..	Arrears, C. B. Grimshaw, ..	1 0 0
Nov. "	" " Fire Insurance, ..	Subscriptions year ending 1st Nov., 1872, ..	77 8 0
" "	" " Wiley, Painting, &c., ..	Interest, Northern Counties Railway, ..	17 13 3
" "	" " Riddel, ..	New Shares, W. Quartus Ewart, ..	7 0 0
" "	" " Malcolm, ..	Engineers' Association, ..	3 3 0
" "	" " Printing, ..	Belfast Naturalists' Field Club, ..	5 0 0
" "	" " Rent till 1st May, 1873, ..	Architects' Association, ..	4 4 0
April 30.	" " Curator's Salary, ...	Ladies' Institute, ...	1 11 6
" "	" " Commission on Collected Sub- scriptions, ...	Visitors at Door, ...	17 8 6
" "	" " Stuffing Birds, ...	Easter Monday, ...	33 4 6
" "	" " Coals, ...	Transfer Fees, ...	0 3 0
" "	" " Gas Company, ...		
" "	" " Expenses, Easter, ..		
" "	" " Sundry Petty Expenses, ..		
" "	Balance, ...		
	£267 18 8		£267 18 8

Audited and found correct, 4th June, 1873.

(Signed),

SAMUEL ARCHER,
WILLIAM SIMMS.

JOHN ANDERSON,
Treasurer.

SHAREHOLDERS FOR 1872

IN THE

Natural History & Philosophical Society

MUSEUM.

Allen, W. J. C., J.P., Faunoran, Green Island.
 Andrews, James, Donegall Street.
 Andrews, Michael (Representatives of), Ardoyne.
 Andrews, Thomas, M.D., F.R.S., &c., Queen's College.
 Archer, Samuel, J.P., Wellington Place.
 Anderson, John, J.P., F.G.S., Holywood.
 Alexander, James, J.P., Holywood.

Bateson, Sir Robert, Bart., Belvoir Park, Belfast.
 Batt, Thomas G. (Representatives of).
 Bland, Rev. W., J.P., Whiteabbey.
 Bottomley, Henry H., Ulster Street.
 Bristow, James T., Northern Bank.
 Barbour, James, Falls Foundry.
 Boyd, John (Representatives of), Belfast Foundry.
 Brown, John Shaw, Bedford Street.
 Bottomley, William, J.P., Calender Street.
 Burden, Henry, M.D., Prospect, Ballynaseigh.

Campbell, James, Cultra.
 Campbell, John, Copeland View, Green Island.

- Campbell, William, Windsor.
 Carlisle, James, J.P., Donegall Street.
 Carson, William, Corn Market.
 Charley, John, College Park.
 Charley, John (Representatives of), Finaghy.
 Clermont, Lord, Ravensdale Park, Newry.
 Coates, William, J.P., Glentoran.
 Corbett, Mrs., Clarendon Place.
 Coey, Sir Edward, J.P., D.L., Merville, Whiteabbey.
 Charters, John, Craigavad.
 Crawford, William, Donegall Place.
 Cunningham, John (Representatives of), Macedon.
 Cuming, James, M.D., Wellington Place.
 Combe, James, J.P., Ormiston.
 Connor, James, Great George's Street.
 Calwell, Alexander, McD., College Square North.
 Caughey John, Albion Place.
 Cunningham, Robert O., M.D., F.L.S., Richmond
 Terrace.
- Darbishire, James M., Cliftonville.
 Davidson, Richard, M.P. (Representatives of).
 Dobbin, Clotworthy, I, Upper Crescent (Representatives of).
 Dobbin, Clotworthy, jun., do (Representatives of).
 Donegal, Marquis of, K.P., &c., &c., London.
 Drennan, Dr., Chichester Street.
 Drummond, Dr. James, L. (Representatives of).
 Duffin, Charles, J.P., Queen's Elms.
 Dunville, William, J.P., Calender Street.
 Downshire, Marquis of, Hillsborough Castle.
- Emerson, William, Donegall Quay.
 Ewart, William, jun., J.P., Donegall Place.
 Everett, Joseph David, M.A., D.C.L., &c., Queen's
 College.
 Ewart, W. Quartus, Donegall Place.
- Fenton, Samuel G., J.P. (Representatives of).
 Ferguson, Henry, M.D., Fisherwick Place.
 Forsythe, R. H., Holywood.
 Finlay, William Laird, Windsor.
 Finlay, Charles, University Square.
 Ferguson, John F., J.P., D.L., Donegall Place.
- Garrett, Thomas, Gamble Street.
 Getty, Edmund (Representatives of), Harbour Office.

Girdwood, James, J.P. (Reps. of), High Street.
 Gordon, Alexander, M.D., Howard Street.
 Gordon, R. F., J.P., Rosemary Street.
 Grainger, Rev. John, D.D., Broughshane.
 Grattan, John (Representatives of), Corn Market.
 Gray, Robert, College Square East.
 Grogan, William White Linen Hall (Representatives of.)
 Grimshaw, Robert, J.P., D.L., Longwood (Reps. of).
 Gordon, Robert W., Falls Road.
 Greer, Thomas, Sea Park, Carrickfergus.

Halliday, A. H. (Representatives of).
 Hamilton, Hill, J.P., Mountvernon (Representatives of).
 Hancock, John, J.P., Lurgan.
 Henderson, Robert, Queen's Square.
 Henry, Alexander, Manchester.
 Herdman, John (Representatives of), Belfast.
 Hind, James, Durham Street Mill.
 Hind, John, J.P., Durham Street Mill.
 Heyn, Gustavus, Waring Street.
 Hincks, Miss, Murray's Terrace.
 Houston, John B., J.P., D.L., Orangefield.
 Hughes, Bernard, J.P., Donegall Place.
 Herdman, Alexander F., J.P., College Square North.
 Herdman, John, Donegall Square South.
 Hamilton, James, Sir, J.P., Corporation Street.
 Harland, Edward, J., Queen's Island.
 Hodges, John F., M.D., J.C.S., Queen's College.
 Hyndman, Hugh, LL.B., Waring Street.
 Holden, J. Sinclair, M.D., F.G.S., Larne.
 Henderson, W. D., Victoria Street.

Jackson, Thomas, C.E., Corn Market.
 Johnson, Sir William, J.P., D.L., College Square
 North.
 Johnston, David W., Jennymount
 Kennedy, James, Falls Road.
 Keegan, James, J.P., High Street.

Lanyon, Sir Charles, J.P., The Abbey.
 Lemon, James, jun. (Representatives of)
 Lepper, F. R., Ulster Bank.
 Lowry, Martin, Whiteabbey.
 Lowry, W. B., do.

Lakin, Mrs. John, Tamworth.

Macrory, Adam J., Duncairn.
 Magill, Joseph, J.P., Henry Street.
 Mitchell, George, T. (Representatives of).
 Montgomery, Captain H., Ballydrain.
 Moore, James, J.P., Donegall Square North.
 Mulholland, Andrew, J.P., D.L. (Representatives of).
 Mulholland, John, J.P., D.L., Ballywalter Park.
 Mullan, William, J.P., Victoria Street.
 Murney, Henry, M.D., J.P., Donegall Square East.
 Musgrave, James R., J.P., Ann Street.
 Murray, Robert, Arthur Street.
 Mulligan, Montague B. (Representatives of).
 Murphy Joseph John, F.G.S., &c., Oldforge, Dunmurry.
 Murphy, Isaac James, Donegall Square West.

MacAdam, Robert, College Square East.
 M'Calmont, Robert, London.
 M'Cammon, Thomas, Dublin.
 M'Canee, J. W. S., Suffolk (Representatives of).
 M'Clure, Thomas, J.P., D.L., M.P., Belmont, Belfast.
 M'Cracken, Francis, (Representatives of), Donegall Street.
 M'Gee, William, M.D., J.P., College Square North.
 MacLaine, Alexander, Corporation Street.
 M'Gee, John G., High Street.
 M'Causland, Orr, North Street.

Neill, John R., High Street.

Patterson, Mrs. M. E., College Square North.
 Pim, Edward W., High Street.
 Pim, George, Donegall Quay.
 Pirrie, John M., M.D. (Reps. of), Fisherwick Place.
 Purdon, Charles, M.D., Wellington Place.
 Purdon, Henry, M.D., do. do.
 Patterson, William Robert, Lower Crescent.
 Patterson, Robert Lloyd, Corporation Street.
 Patterson, William H., High Street.
 Purser, John, M.A., Queen's College.
 Porter Rev. John Scott, College Square East.

Riddell, William, Ann Street.
 Rowan, John, York Street.

Ritchie, W. B., J.P., The Grove, Belfast.
 Ross, William, jun., Falls Road.
 Rea, Hugh P., M.D., (Reps. of), Great Victoria Street.

Simms, William, Linen Hall.
 Sinclair, Thomas, M.A., J.P., Tomb Street.
 Suffern, John, Windsor.
 Suffern, William, Windsor.
 Stevelly, Professor (Representatives of), Belfast.
 Steen, Dr. Robert, Ph. D., Academical Institution.
 Smyth, John J., Milltown, Banbridge.

Tennent, Robert James, J.P., D.L., Rushpark.
 Tennent, Robert (Representatives of).
 Thomson, Charles, Fountainville.
 Thompson, James, J.P., Hazlebank.
 Thompson, Nathaniel, Holywood.
 Thomson, Professor, James, LL.D., Edinburgh.
 Thompson, William (Representatives of), Belfast.
 Turnley, John (Representatives of).
 Torrens, James, Wellington Place.
 Taylor, A. O'D., Waring Street.

Valentine, J. W., Wellington Place.
 Valentine, Thomas, J. P., The Moat, Strandtown.

Walkington, Thomas, Waring Street.
 Wilson, George O., Dunardagh, Blackrock, Dublin.
 Workman, John (Representatives of), Windsor.
 Workman, Robert, jun., Corporation Street.
 Wilson, Robert, M., Thornhill.
 Workman, Mrs. Jane, Bedford Street.
 Wilde, John James, Strandtown.

Young, John, J.P., Brockley Park.
 Young, Robert, C.E., Clarence Place.

HONORARY MEMBERS.

William Gray, C.E., Mount Charles.
 Samuel A. Stewart, North Street.
 Hugh Robinson, Donegall Street.
 Joseph Wright, F.G.S., Donegall Street.
 William Swanston, College Square East.

ANNUAL GUINEA SUBSCRIBERS.

Brett, Charles H., Chichester Street.
 Browne, Samuel, Surgeon, R.N., J.P., College Square
 East.
 Corry, James P., J.P., Garmoyle Street.
 Coates, Victor, Lagan Foundry.
 Glover, G. T., Ballymacarett.
 Graham, O. B., J.P., York Street Mill.
 Hastings, William, Victoria Street.
 Hüpeden, J., Bedford Street.
 Johnson, Thomas B., Victoria Chambers.
 Lindsay, Thomas, M., School of Art.
 Louch, Fitzgibbon, C.E., Donegall Place.
 Lynn, William, Howard Street.
 Mulholland, J. R. T., Northern Spinning Company.
 M'Ilwaine, Rev. William, D.D., Ulsterville.
 Nicol, James, Soho Foundry.
 Oulton, Rev. Richard, Holywood.
 Oakman, Nicholas, Prospect Terrace.
 Redfern, Peter, M.D., Queen's College.
 Richardson, Alexander, Aberdelgie, Lisburn.
 Ross, W. A., Bank Street.
 Taylor, David, J.P., Bridge Street.
 Taylor, John Arnott, Bridge Street.
 Tate, Alexander, C.E., Queen's Elms.
 Ward, Francis D., Donegall Place.
 Weinberg, I. J., Donegall Square North.
 Wolff, J. W., Queen's Island.
 Whittington, J. J., Donegall Place.
 Wilson, James, jun., Skipper Street.

N.B.—It is earnestly requested that any error or omission in foregoing Lists may be kindly notified in writing to the Treasurer, Mr. John Anderson, Hillbrook, Holywood, so as to secure perfect accuracy in the Society's books.

June, 1873.

B E L F A S T

Natural History & Philosophical

1850

SOCIETY.

SHAREHOLDERS.

- 1 Share in the Museum costs £7.
 2 Shares ,, ,, costs £14.
 3 Shares ,, ,, costs £21.

The proprietor of 1 share pays 10s per annum ; the proprietor of 2 shares pays 5s per annum ; and the proprietor of 3 or more shares stands exempt from further payment.

Shareholders only are eligible for election on the Council of Management.

M E M B E R S .

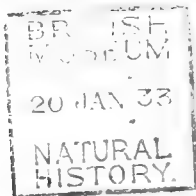
There are two classes, Ordinary Members who are expected to read Papers, and Visiting Members who by joining under the latter title are understood to intimate that they do not wish to read Papers. The session for Lectures extends from November in one year till May in the succeeding one. Members, Ordinary or Visiting, pay £1 1s per annum, due 1st November in each year.

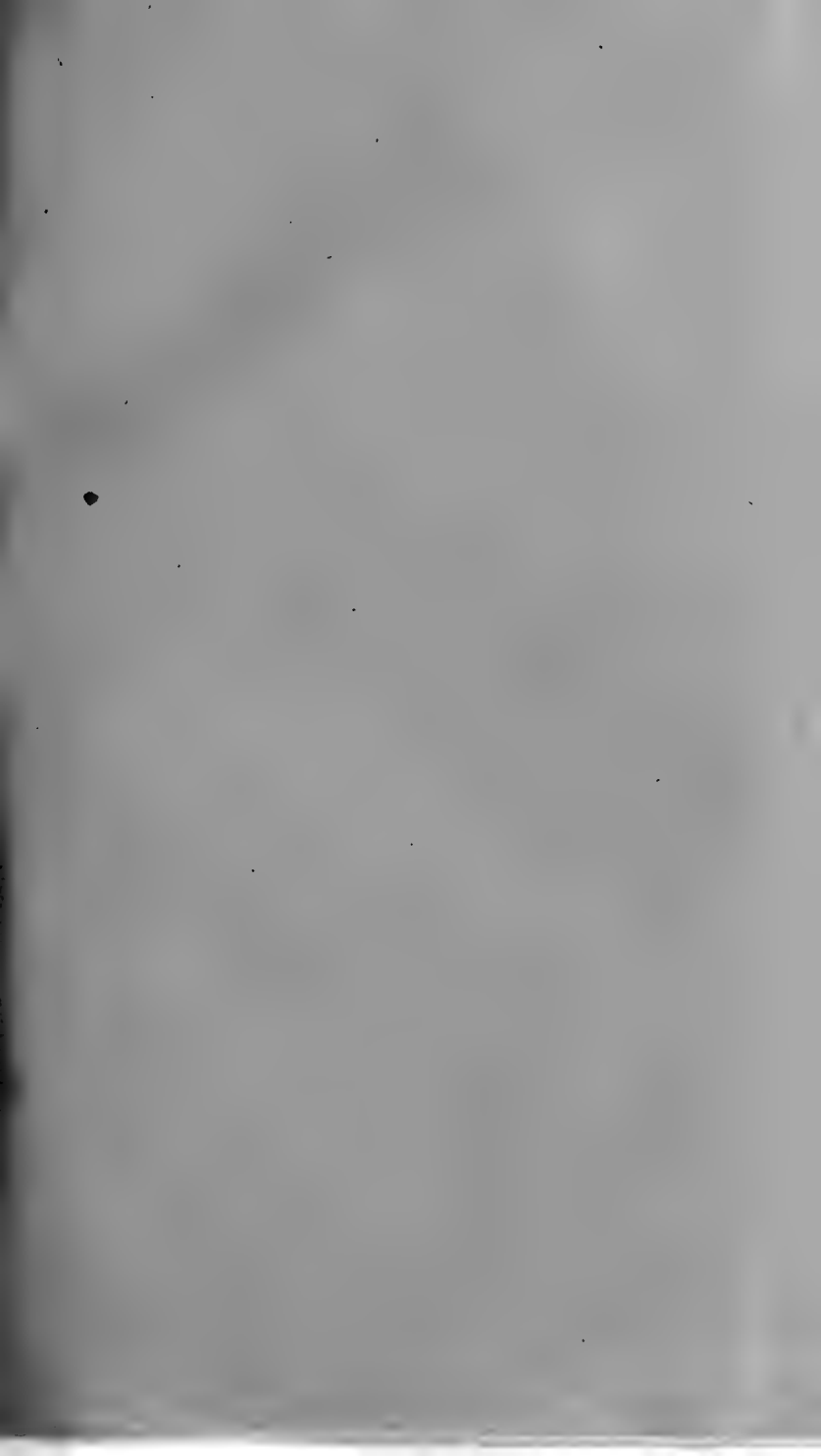
PRIVILEGES.

Each Shareholder and Member has the right of personal attendance at all meetings of the Society, and of admitting a friend thereto ; also of access to the Museum for himself and family, with the privilege of granting admission orders for inspecting collections to any friends not resident in Belfast.

Any further information can be obtained by application to either of the Secretaries. It is requested that all accounts due by the Society be sent to the Treasurer.

The Museum, College Square North, is open daily from 12 till 4 o'clock. Admission for Strangers, 6d each. The Curator is in constant attendance, and will take charge of any Donation kindly left for the Museum or Library.







BRITISH
MUSEUM

20 JAN 33

NATURAL
HISTORY.

BELFAST MUSEUM.

ANNUAL REPORT

BY

THE COUNCIL

OF THE

Natural History & Philosophical Society

SESSION 1873-74.

BELFAST:

PRINTED AT THE NORTHERN WHIG OFFICES.

1874



Natural History & Philosophical Society.

THE annual meeting, summoned by advertisement in the public papers, was held in the Museum, College Square North, on Thursday, the 18th June, 1874, at three o'clock. Present—Dr. Hodges, Mr. John Anderson, Dr. Steen, Dr. R. O. Cunningham, Dr. H. Burden, Mr. R. L. Patterson, Mr. A. O'D. Taylor.

Moved by Mr. ANDERSON, seconded by Mr. PATTERSON, that Dr. Hodges do take the chair.

The advertisement convening the meeting having been read, the CHAIRMAN called upon Mr. A. O'D. Taylor to read the annual report, which ran thus:—

REPORT BY THE COUNCIL OF THE BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY FOR THE YEAR 1873-4.

Since meeting the shareholders in June, 1873, there has not been much matter of moment to chronicle in the society's career. During the latter part of the summer, and the early part of the autumn last year, the interior and exterior of the museum were repaired and painted carefully, under the supervision of your fellow-members—John Anderson, Esq., F.G.S., William H. Patterson, Esq., M.R.I.A., and Robert Young, Esq., C.E. The improvements thus effected, your council believe, will render any similar expenditure unnecessary for several years, as both buildings and woodwork have now been put in thoroughly good order. The various collections have also been regularly attended to, and, under the skilled superintendence of S. A. Stewart, Esq., William Swanston, Esq., and Hugh Robinson, Esq., great progress has been made in the re-arrangement. The detailed report of the work done by these gentlemen is now submitted; and, in connection therewith, the council beg to express their best thanks for the kind services thus rendered, and also for the various donations referred to in the re-arrangement report:—

"Belfast, 27th May, 1874.

"GENTLEMEN,—Since we last reported upon the re-arrangement of the collections in the Museum, that work has been actively carried on.

"A considerable portion of the time has been occupied in the mounting, labelling, and arranging of the specimens for the herbarium of British flowering plants. This work is now almost completed—each species being mounted on a separate sheet of paper, the species arranged consecutively (in accordance with Babington's Manual of British Botany) in generic envelopes, with the name of the genus contained placed outside, and the genera arranged, according to their orders, in the drawers provided for that purpose. In the course of a few weeks we expect to have a label attached to each drawer, indicating the order or orders contained in it. The adoption of this system will enable us to place at once, in their proper positions, specimens of those species which are at present unrepresented in the collection, but which may be obtained at a future time. The British Herbarium of flowering plants now contains some 900 species, and a few of the commoner forms which have been omitted will probably be added during the present summer.

"We are about to commence the preparation of the herbarium of local mosses, *i.e.*, species occurring in the Province of Ulster : for this purpose Mr. S.A. Stewart has presented specimens of nearly 200 species. For the herbarium of British mosses, Mr. John H. Davis has placed at our disposal his entire collection, containing many rare species, and we hope to obtain additional specimens from other briologists. The mounting of these will be commenced as soon as the local specimens are gummed on and arranged, and we hope to have a fair representation of the British moss flora. The collection of British birds in the Thompson room has not been interfered with, as the present arrangement is quite satisfactory ; we would, however, suggest the advisability of procuring a new series of printed labels for this collection, which would considerably improve its appearance, and render it more in keeping with the other collections, which have been re-arranged.

"During the past year, we have received from Mrs. Waller and Dr. R. Battersby a large number of recent

British shells, of species which were either entirely absent from your collections, or were insufficiently represented. These have all been mounted, and placed in their proper positions in the British collection.

“Mr. William Gray has presented a large number of geological specimens, illustrative of the mineral resources of Ulster. These have been arranged in a temporary manner, in the room formerly occupied as the library.

“In the large room of the museum, we have been engaged for some time in the classification of the valuable collections of foreign shells. Several groups of these shells have been mounted on wood tablets, in a similar manner to the geological collections, and [after the selection of a sufficient number of specimens to represent each species, the duplicates have been laid aside, and made up in parcels—each parcel having a specimen attached outside to denote its contents. As the critical determination of the species would involve the spending of a considerable amount of time, which might be otherwise occupied, and would interfere with the progress of the re-arrangement, we have deferred that portion of the work for a time, and have confined our attention to the general classification and mounting of the specimens. Our doing so will enable us to have a much larger collection prepared prior to the meeting of the British Association than we could otherwise have.

“We consider it would not be advisable to dispose of any of the duplicate specimens until after the naming has been completed.

“The naming and labelling of the birds in the same room is also being carried on, and will shortly be completed. In the upper room the collections of mammals, birds, &c., have been as far as possible named and labelled—the names being, in the majority of cases, those given by Dr. Blyth, of the Calcutta Museum, when examining your collections some years ago. Many of the other specimens which have been received since his visit, or which he had omitted, we have named, but we have not done so in any case in which there was the slightest doubt as to accuracy. As this work requires a considerable amount of care, the progress in it is not very great. The collections of sponges, corals, &c., in the wall cases in the gallery, have been similarly treated, so far as the labelling is concerned; but as few of the speci-

mens are named, and from the amount of time required for that work, owing to the difficulty of determining species, we have adopted a similar course to that adopted in the case of the foreign shells. The collection of British fishes made by the late William Thompson, and which has recently been arranged by your curator, as much as possible in accordance with Yarrell's work on 'British Fishes,' has also been labelled and named. Throughout the re-arrangement we have adopted one plan in the labelling—giving first the scientific name, then the common name (in the case of the vertebrata), next the locality, and lastly the donor's name. In every case we have attached a label to the specimen, and in those where we were unable to name the specimens, we have left them prepared for naming, should opportunities occur of having that work done by those competent to undertake it. Though we have during the past year, in anticipation of the approaching meeting of the British Association, devoted a much greater amount of time to the work in hand than in any previous one, the work is so extensive we fear we may be unable to complete, before that event, all those portions of it to which we have referred. We will, however, have the local collections, in which strangers certainly take most interest, completed in proper time, and hope to have the remainder of the work in a forward state.

"The various donations to the Museum which have passed through our hands during the past year are noted in the list furnished by your curator.

"S. A. STEWART.

"WILLIAM SWANSTON.

"HUGH ROBINSON."

From this it will be seen that our local collections, those illustrating the fauna, flora, shells, and geology of Ulster, are now in such a classified condition as to be thoroughly available for scientific inspection. As customary for the last thirty years, the Museum was opened last Easter Monday to the working classes at a nominal charge. A very full attendance took place—about 5,000—men, women, and children having inspected the collections that day. The same scrupulous care to avoid injuring the specimens was exhibited as in past years.

During the last twelve months the Naturalists' Field Club have, as usual, held their evening meetings within your walls, arrangements having

been made that the meetings of this society, and of the club, should be all held on Wednesday evenings, on such dates that, throughout the winter, those persons who wished to hear a scientific paper every fortnight at least, had regular opportunities of so doing, by attending the announced meetings of both associations.

The Belfast Architectural Association has also met stately in the Museum, and the Ladies' Institute also had a course of lectures in your rooms during the past winter.

The first volume of the society's "Proceedings" was issued in August, 1873, being for the session 1871-2. Copies were sent to all the societies, both home and foreign, who have been our correspondents; also to the local libraries, &c. The second volume—namely, the "Proceedings" for 1872-3—is now printed, and will be circulated this month. The materials for the third volume—viz., for 1873-4—have been nearly all collected. The editing of all goes on, as arranged, under the superintendence of your present president, Mr. Joseph John Murphy, and of Dr. Henry Burdon, one of your secretaries.

Your council drew attention in their last report to the approaching visit of the British Association for the Advancement of Science; and they have now merely to report that on 6th August, 1873, they held a special council meeting, at which three of the society's members were appointed to get a requisition for a public meeting on the subject signed by representatives of the various bodies who had already invited the British Association to Belfast. This was duly done; and the result was the appointment, at a town meeting, on the 14th Aug., 1873, of a general committee, who, at a subsequent meeting, elected an Executive Committee of ten gentlemen, with three secretaries and a treasurer, to make all local arrangements. This committee is now in full work; and your council have no doubt that every exertion is being made to render the coming visit of the Association a complete success, and thoroughly creditable to this large town. Your council, of course, will communicate to the proper authorities that your museum will be open to all members and associates of the British Association, on production of their tickets.

The following is a list of the papers read before your society during the session of 1873-4:—

On the evening of Wednesday, the 5th November,

1873, Mr. Joseph John Murphy, F.G.S., president, delivered an opening address on "The present state of the Darwinian Controversy."

26th November, 1873, Dr. Henry Burden, on "Imperfections of the Normal Human Eye."

17th December, 1873, Professor J. D. Everett, on "Underground Temperature."

14th January, 1874, Mr. G. T. Glover, on "Water for Drinking Purposes."

4th Feb., 1874, Mr. Robert Young, C.E., on "Early Christian Art in Ravenna."

25th February, 1874, Mr. George J. L. Hodges, "Notes on Japan and Japanese Life."

25th March, 1874, Mr. J. J. Murphy, F.G.S., "The Origin and Metamorphoses of Insects."

22nd April, 1874, Mr. Robert Lloyd Patterson, "Notes on some of the Swimming Birds frequenting Belfast Lough."

The treasurer's statement of accounts will be submitted to you, and, on account of heavy expenditure on repairs and cost of publishing proceedings, it will be seen that it is not possible this year to carry forward a sum to the credit of the account, as has been customary for many years past. Your committee would respectfully urge, therefore, on their fellow-members the advisability of personal exertions to procure a larger number of shareholders and subscribers, so as to prevent the possibility of the society's running into debt.

(Signed by order of the council)

A. O'D. TAYLOR, } Honorary
HENRY BURDEN, } Secretaries,

Belfast Museum, 18th June, 1874.

Mr. JOHN ANDERSON, the treasurer, then submitted the statement of accounts. From these it appeared that the total receipts, including a balance of £97 0s 5d brought forward to credit from preceding year, had been £264 6s 5d; the expenditure had been £272 10s 10d, thus showing a balance of £8 4s 5d due to the treasurer. Mr. Anderson compared this statement with the past year's and with preceding ones. He urged a canvass of the town to procure new guinea subscribers. The addition of about thirty more subscribers would keep matters all right.

Dr. ROBERT STERN, the librarian, submitted a list of new books and serials received during the year.

BOOKS PRESENTED TO LIBRARY OF BELFAST MUSEUM.

Reports of Mining Surveyors and Registrars—Victoria,
1873.

Mineral Statistics of Victoria for 1872.

Geological Survey of India—Vol. V., Parts 1, 2, 3, 4.

_____ Vol. VI., Parts 1, 2, 3, 4.

_____ Vol. VIII., Parts 1, 2.

_____ Vol. IX., Parts 1, 2.

_____ Vol. X., Part 1.

Palæontologia Indica—Vol. I., 1.

_____ Vol. IV., 1, 2, 3, 4.

Smithsonian Contributions to Knowledge—Vol. XVIII.

Smithsonian Report, for year 1871.

Smithsonian Collections—Vol. X.

Report of Commissioner of Agriculture for 1871. Wash-
ington.

_____ 1872. Wash-
ington.

Report of Chief Signal Officer to the Secretary of War
for 1872—Washington.

Sixth Annual Report of the United States Geological
Survey—Washington, 1873.

Report on a Topographical Survey of the Aridondach.

Wilderness of New York—Albany, 1873.

Proceedings of the Academy of Natural Sciences of
Philadelphia—Parts I, II., III. 1872.

Transactions of Connecticut Academy—Vol. II., Part 2.
1873.

Proceedings of the Austrian Geological Society—Nos. 1,
7, 11—1873.

_____ No. 1—1874.

Proceedings of the Zoological Society of London—Part
III. 1872.

_____ Parts I. and II.
1873.

List of the Geological Society of London—1872.

Quarterly Journal of the Geological Society—Vol.
XXVIII., Part 4.

_____ Vol. XXIX.,
Parts 1, 2.

Proceedings of the Literary and Philosophical Society of
Liverpool—1872-73.

Report and Transactions of Cardiff Naturalists' Society—
Vol. III., Parts 1 and 2.

Proceedings of the Warwickshire Field Club—1873.
Transactions of the Manchester Geological Society—Parts
1, 2, 3, and 4. 1874.

Brief Sketches of the Parishes of Booterstown and Donny-
brook, by the Rev. B. H. Blacker, A.M.—Parts 1,
2, 3, 4.

Dr. R. O. CUNNINGHAM moved, Mr. R. L. PATTERSON
seconded, and it was resolved—"That the Council's report
as read, and the treasurer's statement of accounts, be
received, adopted, printed, and circulated amongst the
shareholders and members, along with a list of the share-
holders and members."

The various documents, trust-deeds, and policies of the
society were then exhibited, checked over by Dr. Hodges
and Mr. Patterson, and reported to be all in order.

The proceedings concluded by the election of a council
and officers for 1874-5, thus :—

COUNCIL ELECTED FOR 1874-75.

Robert M'Adam, Esq.
Thomas Andrews, Esq., M.D., F.R.S.
Alexander O'Driscoll Taylor, Esq.
Joseph John Murphy, Esq., F.G.S.
John Frederick Hodges, Esq., M.D.
Henry Burden, Esq., M.D.
Robert Young, Esq., C.E.
John Anderson, Esq., F.G.S.
John Purser, Esq., M.A.
William Hugh Patterson, Esq.
Robert Steen, Esq., Ph.D.
Robert Lloyd Patterson, Esq.
Robert O. Cunningham, Esq., M.D., F.L.S.
Professor Everett, M.A., D.C.L.
William Quartus Ewart, Esq.

The Council then met, and from their number selected the following office-bearers for the

YEAR 1874-75:—

President.

MR. JOSEPH JOHN MURPHY.

Vice-Presidents.

MR. R. M'ADAM.

DR. ANDREWS.

DR. HODGES.

PROFESSOR PURSER.

Treasurer.

MR. JOHN ANDERSON.

Librarian.

DR. ROBERT STEEN.

Secretaries.

MR. A. O'D. TAYLOR AND DR. H. BURDEN.

THE BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY,

Dr. *In Account with Treasurer, for the Year ending 30th April, 1874.* **Cr.**

	EXPENDITURE.		RECEIPTS.	
1873.				
Oct. 10.	To Cash paid Fire Insurance,	£7 15 0	May 1. By Cash, Balance in hand, ..	£97 0 5
"	" " " Painting and Repairs,	80 4 0	1874.	
1874.			April 30.	
April 20.	" " " Coals and Coke. ..	14 14 6	Subscriptions till Nov., 1873, ..	72 9 0
"	" " " Gas, ..	3 13 0	Interest, Northern Counties, ..	17 15 2
"	" " " Curator's Salary, ..	75 0 0	Engineers' Association, ..	4 3 0
"	" " " Commission Collecting Sub- scriptions, ..	5 8 8	Architects' ..	8 8 0
"	" " " Rent till 1st May, 1874, ..	25 0 0	Naturalists' Field Club, ..	5 0 0
"	" " " Printing, ..	24 0 0	Sale of Cabinet, ..	8 0 0
"	" " " Illustrations, ..	9 0 0	Receipts Easter Monday, ..	41 12 10
"	" " " Law Expenses, ..	12 0 0	Visitors till 1st May, 1874, ..	9 16 0
"	" " " Expenses Easter Monday, ..	7 19 6	Transfer Fees and Stamps ..	0 2 0
"	" " " Incidental Expenses, ..	7 16 2	Balance, ..	8 4 5
		£272 10 10		£272 10 10
May 1.	To balance due Treasurer, ..	£8 4 5		

Audited and found correct, June 16th, 1874.

JOHN S. DRENNAN, M.D.
WILLIAM SIMMS.

JOHN ANDERSON,
Treasurer.

SHAREHOLDERS FOR 1874

IN THE

Natural History & Philosophical Society

- Allen, W. J. C., J.P., Faunoran, Greenisland,
 Andrews, James, Donegall Street.
 Andrews, Michael (Representatives of), Ardoyne.
 Andrews, Thomas, M.D., F.R.S., Queen's College.
 Archer, Samuel, J.P., Wellington Place.
 Anderson, John, J.P., F.G.S., Holywood.
 Alexander, James, J.P., Holywood.
- Bateson, Sir Robert, Bart., J.P., D.L., Belvoir Park,
 Belfast.
- Batt, Thomas G. (Representatives of).
 Bland, Rev. W., J.P., Whiteabbey.
 Bottomley, Henry H., Ulster Street.
 Bristow, James T., Northern Bank.
 Barbour, James, Falls Foundry.
 Boyd, John (Representatives of), Belfast Foundry.
 Brown, John Shaw, Bedford Street.
 Bottomley, William, J.P., Calender Street.
 Burden, Henry, M.D., Alfred Street, Belfast.
- Campbell, James (Representatives of), Cultra.
 Campbell, John, Copeland View, Green Island.
 Campbell, William, Windsor Avenue, Belfast.

Carlisle, James, J.P., Donegall Street.
 Carson, William, Corn Market.
 Charley, John, College Park.
 Charley, John (Representatives of), Finaghy.
 Clermont, Lord, Ravensdale Park, Newry.
 Coates, William, J.P., Glentoran.
 Corbett, Mrs., Clarendon Place.
 Coey, Sir Edward, J.P., D.L., Whiteabbey.
 Charters, John, Craigowen, Craigavad.
 Crawford, William, Donegall Place.
 Cunningham, John (Representatives of), Macedon.
 Cuning, James, M.D., Wellington Place.
 Combe, James, J.P., Ormiston.
 Connor, James, Great George's Street.
 Calwell, Alexander McD., College Square North.
 Caughey, John, Albion Place.
 Cunningham, Robert O., M.D., F.L.S., Richmond
 Terrace.

Darbshire, James M., Cliftonville.
 Davidson, Richard, M.P. (Representatives of).
 Dobbin, Clotworthy, I, Upper Crescent (Representatives of).
 Dobbin, Clotworthy, jun., do. (Representatives of).
 Donegall, Marquis of, K.P., &c., &c., London.
 Drennan, Dr., Chichester Street.
 Drummond, Dr. James L. (Representatives of).
 Duffin, Charles, J.P., Queens Elms.
 Dunville, William, J.P. (Representatives of) Calender St.
 Downshire, Marquis of, Hillsborough Castle.

Emerson, William, Donegall Quay.
 Ewart, William, J.P., Donegall Place.
 Everett, Joseph David, M.A., D.C.L., Queen's College.
 Ewart, W. Quartus, Donegall Place.

Fenton, Samuel G., J.P. (Representatives of).
 Ferguson, Henry, M.D., Fisherwick Place.
 Forsythe, R. H., Holywood.
 Finlay, William Laird, Windsor.
 Finlay, Charles, J.P., University Square.
 Ferguson, John F., J.P., D.L., &c., Donegall place.

Garrett, Thomas, Gamble Street.
 Getty, Edmund (Representatives of), Harbour Office.

Girdwood, James, J.P. (Reps. of), High Street.
 Gordon, Alexander, M.D., Howard Street.
 Gordon, R. F., J.P., Rosemary Street.
 Grainger, Rev. John, D.D., Broughshane.
 Grattan, John (Representatives of), Corn Market.
 Gray, Robert, College Square East.
 Grogan, William, White Linen Hall (Representatives of).
 Grimshaw, Robert, J.P., D.L., Longwood (Reps. of).
 Gordon, Robert W., Falls Road.
 Greer, Thomas, Sea Park, Belfast.

Halliday, A. H. (Representatives of).
 Hamilton, Hill, J.P., Mountvernon (Representatives of).
 Hancock, John, J.P., Lurgan.
 Henderson, Robert, Queen's Square.
 Henry, Alexander, Manchester.
 Herdman, John (Representatives of), Belfast.
 Hind, James, Durham Street Mill.
 Hind, John, J.P., Durham Street Mills.
 Heyn, Gustavus, Waring Street.
 Hincks, Miss, Murray's Terrace.
 Houston, John B., J.P., D.L., Orangefield.
 Hughes, Bernard, J.P., Donegall Place.
 Herdman, Alexander F., J.P., College Square North.
 Herdman, John, Donegall Square South.
 Hamilton, Sir James, J.P., Corporation Street.
 Harland, Edward J., Queen's Island.
 Hodges, John F., M.D., J.C.S., Queen's College.
 Hyndman, Hugh, LL.B., Waring Street.
 Holden, J. Sinclair, M.D., F.G.S., Sudbury, Suffolk.
 Henderson, W. D., Victoria Street.

Jackson, Thomas, C.E., Corn Market.
 Johnson, Sir William, J.P., D.L., College Square North.
 Johnston, David W., Jennymount.

Kennedy, James, Falls Road.
 Keegan, James, J.P., High Street.
 Kinghan, Rev. John, Deaf and Dumb Institute.

Lanyon, Sir Charles, J.P., The Abbey.
 Lemon, James, jun. (Representatives of).
 Lepper, F. R., Ulster Bank.
 Lowry, Martin, Whiteabbey.
 Lowry, W. B., * do,

Lakin, Mrs. John, Tamworth.

Macrory, Adam J., Duncairn.

Magill, Joseph, J.P., Henry Street.

Mitchell, George T. (Representatives of).

Montgomery, Captain H., Ballydrain.

Moore, James, J.P., Dalcoolin, Craigavad.

Mulholland, Andrew, J.P., D.L. (Representatives of).

Mulholland, John, M.P., J.P., D.L., Ballywalter Park.

Mullan, William, J.P., Victoria Street.

Murney, Henry, M.D., J.P., Donegall Square East.

Musgrave, James R., J.P., Ann Street.

Murray, Robert, Arthur Street.

Mulligan, Montague B. (Representatives of).

Murphy, Joseph John, F.G.S., Oldforge, Dunmurry.

Murphy, Isaac James, Donegall Square West.

MacAdam, Robert, College Square East.

M'Calmont, Robert, London.

M'Cammon, Thomas, Dublin.

M'Cance, J. W. S., Suffolk (Representatives of).

M'Clure, Sir Thomas, Bart, J.P., D.L., Belmont, Belfast.

M'Cracken, Francis (Representatives of), Donegall Street.

M'Gee, William, M.D., J.P. (Reps. of), College Square North.

MacLaine, Alexander, Corporation Street.

M'Gee, John G., High Street.

M'Causland, Orr, North Street.

Neill, John R., High Street.

Patterson, Mrs. M. E., College Square North.

Pim, Edward W., High Street.

Pim, George, Donegall Quay.

Pirrie, John M., M.D. (Reps. of), Fisherwick Place.

Purdon, Charles, M.D., Wellington Place.

Purdon, Henry, M.D., do. do.

Patterson, William Robert, Lower Crescent.

Patterson, Robert Lloyd, Corporation Street.

Patterson, William H., High Street.

Purser, John, M.A., Queen's College.

Porter, Rev. John Scott, College Square East.

Riddel, William, Ann Street.

Rowan, John, York Street.

Ritchie, W. B., M.D., J.P., The Grove, Belfast.
 Ross, William, J.P., Falls Road.
 Rea, Hugh P., M.D. (Reps. of), Great Victoria Street.

Simms, William, Linen Hall.
 Sinclair, Thomas, M.A., J.P., Tomb Street.
 Suffern, John, Windsor.
 Suffern, William, Windsor.
 Stevelly, Professor (Representatives of), Belfast.
 Steen, Dr. Robert, Ph.D., Academical Institution.
 Smyth, John, Jnr., Milltown, Banbridge.

Tennent, Robert James, J.P., D.L., Rushpark.
 Tennent, Robert (Representatives of).
 Thomson, Charles, Fountainville.
 Thompson, James, J.P., Hazlebank.
 Thompson, Nathaniel, Holywood.
 Thomson, Professor, James, LL.D., Edinburgh.
 Thompson, William (Representatives of), Belfast.
 Turnley, John (Representatives of).
 Torrens, James, Wellington Place.
 Taylor, A. O'D., Waring Street.

Valentine, J. W., Wellington Place.
 Valentine, Thomas, J.P., The Moat, Strandtown.

Walkington, Thomas, Waring Street.
 Wilson, George O., Dunardagh, Blackrock, Co. Dublin.
 Workman, John (Representatives of), Windsor.
 Workman, Robert, jun., Corporation Street.
 Wilson, Robert M., Thornhill.
 Workman, Mrs. Jane, Bedford Street.
 Wilde, John James, Strandtown.

Young, Robert, C.E., Clarence Place.

HONORARY MEMBERS.

William Gray, C.E., Mount Charles.
 Samuel A. Stewart, North Street.
 Hugh Robinson, Donegall Street.
 Joseph Wright, F.G.S., Donegall Street.
 William Swanston, College Square East.
 Ralph Tate, F.G.S., Red Car, Yorkshire.

ANNUAL GUINEA SUBSCRIBERS.

- Brett, Charles H., Chichester Street.
 Browne, Samuel, Surgeon, R.N., J.P., College Square
 East.
 Corry, James P., J.P., M.P., Garmoyle Street.
 Coates, Victor, Lagan Foundry.
 Glover, G. T., Ballymacarrett.
 Graham, O. B., J.P., York Street Mill.
 Hastings, William, Victoria Street.
 Hüpeden, J., Bedford Street.
 Johnson, Thomas B, Victoria Chambers.
 Louch, Fitzgibbon, C.E., Donegall Place.
 Lowson, W. B., Victoria Street, Belfast.
 Lynn, William, Howard Street.
 Mulholland, J. R. T., Northern Spinning Company.
 M'Ilwaine, Rev. William, D.D., Ulsterville.
 Oulton, Rev. Richard, Hollywood.
 Oakman, Nicholas, Prospect Terrace.
 Redfern, Peter, M.D., Queen's College.
 Richardson, Alexander, Aberdelgie, Lisburn.
 Ross, W. A., Bank Street.
 Taylor, David, J.P., Bridge Street.
 Taylor, John Arnott, Bridge Street.
 Tate, Alexander, C.E., Queen's Elms.
 Thomson, John, C.E., 107, St. Helen's, Mountpottinger,
 Belfast.
 Ward, Francis D., Donegall Place.
 Weinberg, I. J., Linenhall Street.
 Wolff, J. W., Queen's Island.
 Whittington, J. J., Donegall Place.
 Wilson, James, jun., Skipper Street.

N.B.—It is earnestly requested that any error or omission in foregoing Lists may be kindly notified in writing to the Treasurer, Mr. John Anderson, Hillbrook, Hollywood, so as to secure perfect accuracy in the Society's books.

June, 1874.

B E L F A S T

Natural History & Philosophical

SOCIETY.

SHAREHOLDERS.

- 1 Share in the Museum costs £7.
 2 Shares „ „ cost £14.
 3 Shares „ „ cost £21.

The proprietor of 1 share pays 10s per annum ; the proprietor of 2 shares pays 5s per annum ; and the proprietor of 3 or more shares stands exempt from further payment.

Shareholders only are eligible for election on the Council of Management.

M E M B E R S

(Classed under Annual Guinea Subscribers.)

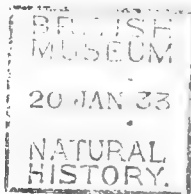
There are two classes, Ordinary Members who are expected to read Papers, and Visiting Members who by joining under the latter title are understood to intimate that they do not wish to read Papers. The session for Lectures extends from November in one year till May in the succeeding one. Members, Ordinary or Visiting, pay £1 1s per annum, due 1st November in each year.

PRIVILEGES.

Each Shareholder and Member has the right of personal attendance at all meetings of the Society, and of admitting a friend thereto; also of access to the Museum for himself and family; with the privilege of granting admission orders for inspecting collections to any friends not resident in Belfast.

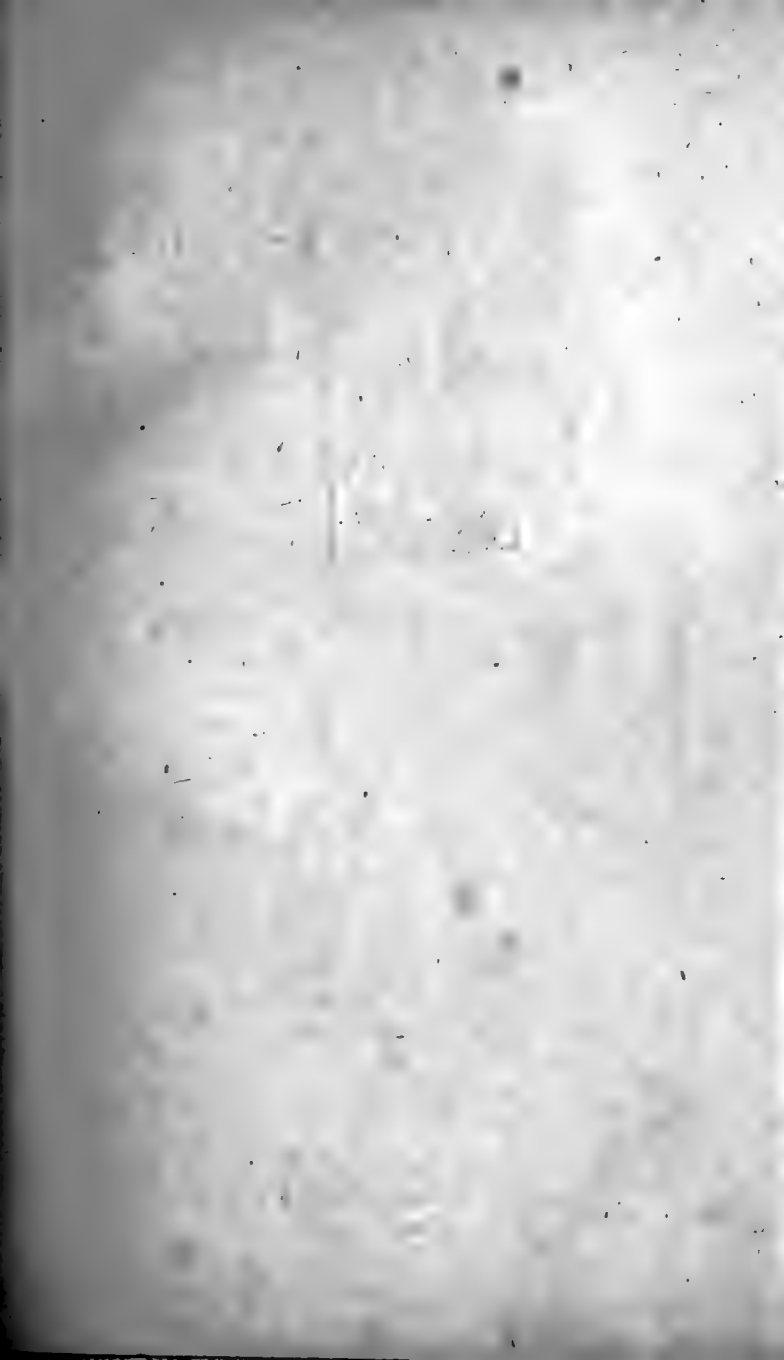
Any further information can be obtained by application to either of the Secretaries. It is requested that all accounts due by the Society be sent to the Treasurer.

The Museum, College Square North, is open daily from 12 till 4 o'clock. Admission for Strangers, 6d each. The Curator is in constant attendance, and will take charge of any Donation kindly left for the Museum or Library.





BRITISH
MUSEUM
20 JAN 33
NATURAL
HISTORY.



BRITISH
MUSEUM
20 JAN 33
NATURAL
HISTORY.

BRITISH
MUSEUM

20 JAN 33

NATURAL
HISTORY.

BELFAST MUSEUM.

ANNUAL REPORT

BY

THE COUNCIL

OF THE

Natural History & Philosophical Society

SESSION 1874-75.

BELFAST:

PRINTED AT THE NORTHERN WHIG OFFICES.

1875.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 309

LECTURE NOTES

BY

ROBERT A. FAY

1962-1963

NATURAL HISTORY

AND

PHILOSOPHICAL SOCIETY.



THE annual meeting of the above society was held in the Museum, on Thursday, June 3, 1875, at two o'clock. Mr. Joseph John Murphy, occupied the chair. There were also present:—Mr. John Smyth jun., Mr. John Anderson, Mr. R. L. Patterson, Professor Purser, Rev. John Kinghan, Professor Everett, Dr. Henry Burden, Mr. W. H. Patterson, Mr. A. O'D. Taylor, Dr. Cunningham, &c.

Mr. TAYLOR read the annual report, which was as follows:—The council have pleasure in again meeting the shareholders of the society, and in reporting that the twelve months now terminated have been marked by a considerable accession of new shareholders and members. The evening meetings have been rather better attended than of late years, both on the public and private evenings; and the list of papers read will show that the inclusive character of the society has been fully availed of, the subjects brought forward ranging over a wide field of investigation. There has been no difficulty felt in obtaining readers; but your committee are specially desirous that new members would not hesitate to give the society the advantage of their researches, it being an essential to the growth and development of every society that new men and new thoughts should come forward year by year.

The following is the list of communications read during the session of 1874-5:—

4th November, 1874—Public Meeting—Introductory address on "Atoms and Automata" by the President, Joseph John Murphy, Esq., F.G.S.

9th December, 1874—Public Meeting—Reader, Peter Redfern, Esq., M.D. Subject, “The Relations of the Blood with the Tissues and Organs.”

6th January, 1875—Public Meeting—Reader, the Rev. Dr. John Grainger, of Broughshane. Subject, “Some Irish Palæozoic Fossils.”

27th January, 1875—Public Meeting—Robert Young, Esq., C.E., described and illustrated with diagrams “The Water-bearing Strata between Moira and Lurgan;” and W. H. Patterson, Esq., read copy of an old MS. entitled, “A Tour made in the North of Ireland by Dr. Thos. Molyneux in August, 1708.”

17th February, 1875—Private Meeting—Reader, Joseph John Murphy, Esq., F.G.S. Subject, “The Relations of Language to Logic.”

24th February, 1875—Public Meeting—Reader, Dr. Robert O. Cunningham, Queen’s College, Belfast. Subject, “The Geographical Distribution of Mammals.”

3rd March, 1875 — Private Meeting — Dr. Andrews, F.R.S., Vice-President of Queen’s College, Belfast, read “On the Analysis of the Ballynahinch Water;” and Mr. Joseph John Murphy read “A Suggestion on Chemical Notation.”

17th March, 1875—Public Meeting—Reader, Dr. Andrews, F.R.S. Subject, “Electro-Magnetic Machines and the Recent Improvements on them by M. Gramme.”

14th April, 1875—Private Meeting — Reader, James Torbitt, Esq. Subject, “Potato Cultivation.”

21st April, 1875 — Public Meeting — Reader, Robert Lloyd Patterson, Esq. Subject, “Further Notes on some of the Swimming Birds frequenting Belfast Lough, with special reference to the Great Northern Diver.”

There have thus been ten meetings held, seven public and three private, and twelve distinct communications have been submitted. Your committee have merely to remind the shareholders in this report, so as to place the fact on record, that the British Association for the Advancement of

Science met in Belfast in August, 1874, under the presidency of Professor Tyndall, and that the meeting was in every way a most brilliant and successful one. Your committee, as intimated in last year's report, of course threw open the Museum to all the members and visitors, a large number of whom visited your institution. The following gentlemen were nominated by your committee as representative delegates from the society to the General Council of the British Association for the Belfast meeting, viz.—your two secretaries, Mr. A. O'D. Taylor and Dr. Henry Burden, and Mr. W. H. Patterson. Your president, Mr. Murphy, had, in virtue of his office as president, the privilege of a seat at that General Council. Out of a surplus arising from the local fund raised for the Belfast meeting of the British Association, a sum of £48 8s 4d has been received by the treasurer for the Museum, having been kindly allocated by the subscribers for that purpose through the Local Executive Committee, and your society beg to return their best thanks for the gift.

In accordance with our long-established custom, your Museum was once more opened to the working classes last Easter Monday, the 29th March, 1875. The result was as usual. More than six thousand of our artisans and their families inspected the various collections, and not the slightest injury was done to any specimen or to any part of the buildings.

A list is appended to the present report, detailing the various donations to the Museum and the Library during the past session. The presentations to the Museum have been unusually few, but amongst them your committee wish to draw special attention to a fine specimen of the Emu kindly sent us by our valued and esteemed member, Gordon A. Thomson, Esq., from Melbourne. Unfortunately, the skin arrived in such bad condition, from imperfect preservation and from having been packed with wet shavings, that it cannot be set up; but your council do not the less feel the attention of the donor; and they consider it peculiarly gratifying to see that a gentleman who has in past

years enriched the Belfast Museum by so many valuable gifts continues, when he has left Ireland, to cherish the same interest in the Museum of his native town.

Your librarian cannot yet report satisfactorily as to the state of the department under his superintendence. Until a reading-room for members can be supplied, in conjunction with suitable book-cases, all that can be done is to preserve carefully in the limited space available the various scientific publications annually received, and to catalogue them. This is being attended to. If funds were forthcoming, the addition of such a reading-room, and of a lecture hall in the rear of the room where your collection of Irish antiquities is now arranged would be very advisable.

During six months of the year, or part of them, arrangements have been continued by which the meetings of the Naturalists' Field Club have been held within your walls. The Belfast Architectural Association also held their meetings in your middle room, and the Ladies' Institute have had a course of lectures on Art, delivered by Mr. J. Mitchiner Lindsay, as well as a course of lectures on Botany, at present being delivered in your Museum by one of your council, Professor Cunningham. The publication of the society's "Proceedings" continues to be attended to by Mr. Joseph John Murphy and Dr. Henry Burden, who jointly edit same. Under their superintendence three volumes have now appeared—viz., for 1871-2, 1872-3, and 1873-4. The last-named was specially pushed forward and published in time for distribution at the meeting of the British Association here in August last. The materials for the fourth volume for 1874-5 are now being put in order, and Mr. Murphy and Dr. Burden hope to have the volume soon published. Some progress has been made in the re-arrangement and naming of the various collections, under the continued supervision of Messrs. S. A. Stewart, William Swanston, and Hugh Robinson. The foreign shells have been nearly all mounted and labelled; the herbarium of local mosses has been completed, and that of the British mosses is now

in progress. These gentlemen are kindly continuing their attention to the various departments which they undertook to arrange. The treasurer's statement, now submitted, shows a sum to the credit of the account of £33 1s 6d, which is an improvement on last year. The present report concludes the survey of the fifty-fourth session of your society. Your council have the satisfaction of feeling that they leave to their successors in office the material property unimpaired, the finances somewhat improved since last year, and the corps of workers for the society considerably increased. The council look forward hopefully to renewed activity and interest in the practical working of the oldest scientific society in the North of Ireland.

Signed by order of the Council,

A. O'D. TAYLOR, }
HENRY BURDEN, } Secretaries.

LIST OF DONATIONS TO LIBRARY AND MUSEUM.

Memoirs of Boston Society of Natural History, 8 parts, 1872-4. Proceedings of Boston Society of Natural History, 8 parts, 1872-4. Proceedings of the Academy of Natural Sciences of Philadelphia, 3 parts, 1873. Synopsis of the Flora of Colorado, by Thomas C. Coulter and John M. Coulter, 1874. Bulletin of the United States Geological Survey of the Territories, part I., 1874. Smithsonian Report for Year 1872. Proceedings of the Zoological Society of London for the year 1873 and 1874, 4 vols. Transactions of the Manchester Geological Society, 3 parts, 1874-5. Memoirs of the Royal Astronomical Society, vol. XL., 1874. Proceedings of the Literary and Philosophical Society of Liverpool, No. 28, 1874. Proceedings of the Warwickshire Naturalists' Field Club, 1874. Geological Survey of India, 7 parts, 1874. Proceedings of the Imperial Geological Society of Vienna, 3 parts, 1874. Works on Various Subjects, published by the University of Christiana, 11 vols., 1874. G. A. Thompson, Esq., an Emu and two eggs. Mr. William Taylor, a Texian tapyaxen (*Phryosoma Cornutum*). D. W. Johnston, Esq., a specimen of calespar from Gauchalland Colliery

Troon, Scotland. Ancient maps, from Walter Berwick, Esq.

Mr. ANDERSON then submitted the annual statement of accounts, from which it appeared that a sum of £33 1s 6d now stood at the credit of the society. In connection with the account, Mr. Anderson suggested that for the future the proceeds of shares sold should be kept apart from ordinary revenue, and treated as a special fund for any additions or improvements that might be needed.

REV. JOHN KINGHAN proposed, and Mr. JOHN SMYTH, jun., seconded, and it was resolved:—
“That the report and statement of accounts now read and submitted be adopted, printed, and circulated amongst the shareholders and members, along with a list of said shareholders and members.”

The REV. JOHN KINGHAN also moved, Mr. W. H. PATTERSON seconded, and it was resolved:—
“That the Council now to be appointed be requested to consider the propriety of altering the weekly night of meeting to some other evening than that of Wednesday, which was understood to be inconvenient to a considerable number of the members, and that the Council are hereby empowered to alter to some other evening if they consider the change advisable.”

The various trust deeds, documents, policies, &c., of the Museum were then checked over (in number 17), and found by Messrs. R. L. Patterson and John Smyth, jun., to be all in order. Their continued custody was entrusted to Mr. R. L. Patterson, as one of the trustees.

The CHAIRMAN drew attention to the summer arrangement for excursion parties to the Museum, as just advertised in the newspapers, announcing that parties of not less than ten persons would be admitted at 3d, instead of 6d, as heretofore. The chairman hoped that a large accession of visitors would arise from this new regulation.

A ballot was then taken for a Committee of Management for the ensuing twelve months, and the following gentlemen were declared to be duly elected:—

COUNCIL ELECTED FOR 1874-75.

Robert M'Adam, Esq.
 Thomas Andrews, Esq., M.D., F.R.S.
 Alexander O'Driscoll Taylor, Esq.
 Joseph John Murphy, Esq., F.G.S.
 John Frederick Hodges, Esq., M.D.
 Henry Burden, Esq., M.D.
 Robert Young, Esq., C.E.
 John Anderson, Esq., F.G.S.
 John Purser, Esq., M.A.
 William Hugh Patterson, Esq.
 Robert Steen, Esq., Ph.D.
 Robert Lloyd Patterson, Esq.
 Robert O. Cunningham, Esq., M.D., F.L.S.
 Professor J. D. Everett, Esq., M.A., D.C.L.
 James Cuming, Esq., M.D.



The Council then met, and from their number selected the following office-bearers for the

Y E A R 1 8 7 4 - 7 5 :—

President.

DR. J. F. HODGES.

Vice-Presidents.

DR. ANDREWS.

MR. ROBERT YOUNG.

PROFESSOR EVERETT.

MR. R. L. PATTERSON.

Treasurer.

MR. JOHN ANDERSON.

Librarian.

DR. ROBERT STEEN.

Secretaries.

MR. A. O'D. TAYLOR AND DR. H. BURDEN.

THE BELFAST NATURAL HISTORY & PHILOSO

Dr.

For the year ending

1874.		EXPENDITURE.	£	s	d
May 1—	To	Balance due Treasurer ...	8	4	5
Nov. 8—	To	Cash paid Insurance ...	7	15	0
Dec. 30—	To	do. Printing ...	81	11	3
1875.					
Jan. 4—	To	do. Illustrations ..	2	0	0
Feb. 20—	To	do. Rent till 1st May, '75	25	0	0
Mar. 15—	To	do. Charges on Box from Australia ...	0	15	11
Apl. 30—	To	do. Curator's Salary ...	75	0	0
„	To	do. Collecting Subscriptions	6	11	4
„	To	do. Expenses Easter Monday	7	13	2
„	To	do. Coals and Coke ..	13	10	0
„	To	do. Gas	3	13	6
„	To	do. Postage	3	16	6
„	To	do. Repairs	3	17	10
„	To	do. Carriage	0	7	4
„	To	do. Water Rates	0	14	8
„	To	do. Stationery	0	13	0
„	To	do. Materials Mounting Specimens ...	2	19	9
„	To	do. Incidental Expenses	3	11	6
„	To	do. Balance	33	1	6
			£280 16 8		

Examined and compared with Vouchers and found correct,

W. H. PATTERSON, }
W. D. HENDERSON, } Auditors.

3rd June, 1875.

PHICAL SOCIETY IN A/C. WITH TREASURER.

30th April, 1875.

Cr.

1874.	RECEIPTS.	£	s	d
Sept. 28—	By Cash Div. Northern Counties	17	16	7
Oct. ,, —	By ,, Society's Transactions...	0	2	0
1875.				
Apl. 30—	By ,, Subscriptions	87	9	0
,,	By ,, Arrears	3	10	0
,,	By ,, New Shares	35	0	0
,,	By ,, Transfer Fees & Stamps	0	11	0
,,	By ,, Brit. Association Surplus	48	8	4
,,	By ,, Engineers' Association...	4	3	0
,,	By ,, Architects' ,, ...	8	8	0
,,	By ,, Naturalists' Field Club	8	8	0
,,	By ,, Ladies' Institute ...	10	0	0
,,	By ,, Easter Monday...	39	3	6
,,	By ,, Daily Visitors	17	17	3

£280 16 8

1875.

May 1—By Balance in Treasurer's hand £33 1 6

JOHN ANDERSON, Treasurer.

SHAREHOLDERS FOR 1875

IN THE

Natural History & Philosophical Society

MUSEUM.

- Allen, W. J. C., J.P., Faunoran, Greenisland.
 Andrews, James, Donegall Street, Belfast.
 Andrews, Michael (Representatives of), Ardoyne, Belfast.
 Andrews, Thomas, M.D., F.R.S., Queen's College, do.
 Archer, Samuel, J.P., Wellington Place, do.
 Anderson, John, J.P., F.G.S., Hillbrook, Holywood.
 Alexander, James, J.P., St. Clair, Holywood.
- Bateson, Sir Thomas, Bart., M.P., J.P., D.L., Belvoir
 Park, Belfast.
 Batt, Thomas G. (Representatives of) Belfast.
 Bland, Rev. W., J.P., Whiteabbey.
 Bottomley, Henry H., Ulster Street, Belfast.
 Bristow, James T., J.P., Northern Bank, Belfast.
 Barbour, James, Falls Foundry, do.
 Boyd, John (Representatives of), Belfast Foundry, Belfast.
 Brown, John Shaw, Bedford Street, do.
 Bottomley, William, J.P., Calender Street, do.
 Burden, Henry, M.D., College Square North, Belfast.
- Campbell, James (Representatives of), Cultra, Co. Down.
 Campbell, John, Copeland View, Greenisland.
 Campbell, William, Windsor Avenue, Belfast.
 Carlisle, James, J.P., Donegall Street, Belfast.
 Carson, William, Corn Market, do.
 Charley, John, College Park, do.
 Charley, John (Representatives of), Finaghy, Belfast.

- Clermont, Lord, Ravensdale Park, Newry.
 Coates, William, J.P., Glentoran, Belfast.
 Corbett, Mrs., Clarendon Place, do.
 Coey, Sir Edward, J.P., D.L., Whiteabbey.
 Charters, John (Representatives of), Craigowen, Craigavad.
 Crawford, William, Donegall Place, Belfast.
 Cuming, James, M.D., J.P., Wellington Place, Belfast.
 Combe, James, J.P., Ormiston, Sydenham, do.
 Connor, James, Great George's Street, do.
 Calwell, Alexander, McD., College Square North, Belfast.
 Caughey, John, Albion Place, do.
 Cunningham, Robert O., M.D., F.L.S., Richmond
 Terrace, Belfast.
 Clarke, Edward H., Belfast Bank, Belfast.
- Darbishire, James M., Cliftonville, Belfast.
 Davidson, Richard, M.P. (Representatives of).
 Dobbin, Clotworthy, I, Upper Crescent (Reps. of) Belfast.
 Dobbin, Clotworthy, jun., do. (Reps. of) do.
 Donegall, Marquis of, K.P., &c., &c., London.
 Drennan, Dr., Chichester Street, Belfast.
 Drummond, Dr. James L. (Representatives of.)
 Duffin, Charles, J.P., Queen's Elms, Belfast.
 Dunville, William, J.P., (Representatives of) Calendar
 Street, Belfast.
 Downshire, Marquis of, Hillsborough Castle, Hillsborough.
 Dickson, James, *Northern Whig* Office.
- Emerson, William, Donegall Quay, Belfast.
 Ewart, William, J.P., Donegall Place.
 Everett, Joseph David, M.A., D.C.L., Queen's College,
 Belfast.
 Ewart, W. Quartus, Donegall Place, Belfast.
- Fenton, Samuel G., J.P. (Representatives of), Belfast.
 Ferguson, Henry, M.D., Fisherwick Place, do.
 Forsythe, R.H., Holywood.
 Finlay, William, Laird, Windsor, do.
 Finlay, Charles, J.P., University Square, do.
 Ferguson, John F., J.P., D.L., Donegall Place, do.
 Fuller, Professor George, Queen's College, do.
 Fagan, John, F.R.C.S.I., College Square North, do.
- Garret, Thomas, Gamble Street, do.
 Getty, Edmund (Representatives of), Harbour Office, do.

Girdwood, James, J.P. (Reps. of), High Street, Belfast.
 Gordon, Alexander, M.D., Howard Street, do.
 Gordon, R. F., J.P., Rosenary Street, do.
 Grainger, Rev. John, D.D., Broughshane, Ballymena.
 Grattan, John (Representatives of), Corn Market, Belfast.
 Gray, Robt. (Representatives of) College Sq. East, Belfast.
 Grogan, William, White Linen Hall (Reps. of).
 Grimshaw, Robert, J.P., D.L., Longwood, (Reps. of.)
 Gordon, Robert W., Falls Road, Belfast.
 Greer, Thomas, J.P., Sea Park, Belfast.

Halliday, A. H. (Representatives of).
 Hamilton, Hill, J.P., Mountvernon (Reps. of), Belfast.
 Hancock, John, J.P., Lurgan.
 Henderson, Robert, Queen's Square, do.
 Henry, Alexander. Manchester.
 Herdman, John (Reps. of), College Square North, Belfast.
 Hind, James, Durham Street Mill, do.
 Hind, John, J.P., Durham Street Mill, do.
 Heyn, Gustavus, Waring Street, do.
 Hincks, Miss, Murray's Terrace, do.
 Houston, John B., J.P., D.L., Orangefield, do.
 Herdman, Alex. F., J.P. (Reps. of), College Sq. North.
 Herdman, John, Carricklee House, Strabane.
 Hamilton, Sir James, J.P., Corporation Street, Belfast.
 Harland, Edward J, J.P., Queen's Island, do.
 Hodges, John F., M.D., J.C.S., Queen's College, do.
 Hyndman, Hugh, LL.B., Waring Street, do.
 Henderson, W. D., Victoria Street, do.

Jackson, Thomas, C.E., Corn Market, do.
 Johnson, Sir Wm.G., J.P., D.L., College Square North do.
 Johnston, David W., Jennymount. do.

Kennedy, James, Falls Road, do.
 Keegan, James, J.P., High Street, do.
 Kinghan, Rev. John, Deaf and Dumb Institute, do.

Lanyon, Sir Charles, J.P., The Abbey, Whiteabbey.
 Lemon, James, jun. (Representatives of), Belfast.
 Lepper, F. R., Ulster Bank, do.
 Lakin, Mrs. John, Tamworth.
 Lamb, William Watson, Devis View, Belfast.

Macrory, Adam J., Duncairn, do.

- Magill, Joseph, J.P., Henry Street, Belfast.
 Mitchell, George T. (Representatives of).
 Montgomery, Captain H., Ballydrain, Dunmurry,
 Moore, James, J.P., Dalcoolin, Cultra, Co. Down.
 Mulholland, Andrew, J.P., D.L. (Representatives of).
 Mulholland, John, M.P., J.P., D.L., Ballywalter Park.
 Mullan, William, J.P., Victoria Street, Belfast.
 Murney, Henry, M.D., J.P., Donegall Sq, East, do.
 Musgrave, John R., J.P., Ann Street, do.
 Murray Robert, Arthur Street, do.
 Mulligan, Montague B. (Representatives of), do.
 Murphy, Joseph John, F.G.S., Oldforge, Dunmurry.
 Murphy, Isaac James, Donegall Square West, Belfast.
 Musgrave, Henry, Ann Street, do.
 Musgrave Edgar, Ann Street, do.
 Moore, James, Donegall Place, do.

 MacAdam, Robert, College Square East, do.
 M'Calmont Robert, London.
 M'Cammon, Thomas, Dublin.
 M'Canee, J W. S., Suffolk, Dunmurry, (Reps. of.)
 M'Clure, Sir Thomas, Bart, J.P., D.L., Belmont, Belfast.
 M'Cracken, Francis (Reps. of), Donegall Street, do.
 M'Gee, William, M.D., J.P., (Reps. of), College Square
 North, Belfast.
 MacLaine, Alexander, Corporation Street, Belfast.
 M'Gee, John G., High Street, do.
 MacGeagh, Robert, Queen's Elms, do.

 Neill, John R. High Street, do.

 Patterson, Mrs. M.E., College Square North, do.
 Pim, Edward W., High Street, do.
 Pim, George, Donegall Quay, do.
 Pirrie, John M., M.D., (Reps. of), Fisherwick Place, Belfast.
 Purdon, Charles, M.D., Wellington Place, do.
 Purdon, Henry, M.D., do. do. do.
 Patterson, William Robert, Lower Crescent, do.
 Patterson, Robert Lloyd, Corporation Street, do.
 Patterson, William H., M.R.I.A., High Street, do.
 Purser, John, M.A., Queen's College, do.
 Porter, Rev. John Scott, College Square East, do.

 Riddel, William, Ann Street, do.
 Rowan, John, York Street, do.

- Ritchie, W. B., M.D., J.P., The Grove, do.
 Ross, William, J.P., Falls Road, Belfast.
 Rea, Hugh P., M.D. (Reps. of), Gt. Victoria St., Belfast.
- Simms, William, Linen Hall, do.
 Sinclair, Thomas, M.A., J.P., Tomb Street, do.
 Suffern, John, Windsor, do.
 Suffern, William, Windsor, do.
 Stevelly, Professor (Representatives of), do.
 Steen, Dr. Robert, Ph.D., Academical Institution, do.
 Smyth, John, Jr., M.A., Milltown, Banbridge.
 Sinclair, John M., Tomb Street, do.
- Tennent, Robert, James, J.P., D.L., Rushpark, do.
 Tennent, Robert (Representatives of), do.
 Thompson, Charles, Fountainville, do.
 Thompson, James, J.P., Macedon, Whiteabbey.
 Thompson, Nathaniel (Representatives of), Holywood.
 Thomson, Professor James, L.L.D., Glasgow.
 Thompson, William (Representatives of), Belfast.
 Turnley, John (Representatives of).
 Torrens, James, J.P., Wellington Place, Belfast.
 Taylor, A. O'D., Waring Street, do.
- Valentine, J. W., Whiteabbey.
 Valentine, Thomas, J.P., The Moat, Strandtown, Belfast.
- Walkington, Thomas, Waring Street, Belfast.
 Wilson, George, O., Dunardagh, Blackrock, Co. Dublin.
 Workman, John (Reps. of), Windsor, Belfast,
 Workman, Robert, jun., Corporation St., do.
 Wilson, Robert M., Thornhill, do.
 Workman, Mrs. Jane, Bedford Street, do.
 Wilde, John James, Strandtown, do.
 Wallace, James, Ulster Bank, do.
- Young, Robert, C.E., Clarence Place, do.

HONORARY MEMBERS.

William Gray, C.E., M.R.I.A., Mount Charles, Belfast.	
Samuel A. Stewart, North Street,	do.
Hugh Robinson, Donegall Street,	do.
Joseph Wright, F.G.S., Donegall Street,	do.
William Swanston, College Square East,	do.
Ralph Tate, F.G.S., Red Car, Yorkshire.	

 ANNUAL GUINEA SUBSCRIBERS.

Brett, Charles H., Chichester Street, Belfast.	
Bruce James, Callender Street,	do.
Corry, James P., J.P., M.P., Garmoyle Street, Belfast.	
Coates, Victor, Lagan Foundry,	do.
Crawford, James W., Mill Street,	do.
Craig, James, Callender Street,	do.
Carr, James, Ulster Bank,	do.
Dunville, Robert G., Callender Street,	do.
Dobbin, William, North Street,	do.
Glover, G. T., Ballymacarret,	do.
Graham, O. B., J.P., York Street Mill,	do.
Gamble, James, Royal Terrace,	do.
Gregg, William, High Street,	do.
Gaffikin, Thomas, jun., Wilmont Terrace,	do.
Hüpeden, J., Bedford Street,	do.
Haslett, James, North Street,	do.
Jaffie, John, Donegall Square South,	do.
Lowson, W. B., Victoria Street,	do.
Lynn, William, R.H.A., Waring Street,	do.
Mulholland, J. R. T., Northern Spinning Co.,	do.
Matier, Henry, Clarence Place,	do.
Macaulay, Adam T., Belfast Bank,	do.
M'Ilwaine, Rev. William, D.D., Ulsterville,	do.
Oulton, Rev. Richard, Holywood.	
Oakman, Nicholas, Prospect Terrace,	do.
Patterson, John, Bedford Street,	do.
Pring, Richard W., Corn Market,	do.
Preston, John, jun., Arthur Street,	do.
Redfern, Peter, M.D., Queen's College,	do.
Richardson, Alexander, Aberdelgie, Lisburn.	
Ross, William A., Police Square,	do.

Runge, William Henry, Bedford Street, Belfast.	
Seeds, Henry, Arthur Street,	do.
Shaw, William, Victoria Street,	do.
Taylor, David, J.P., Bridge Street,	do.
Tate, Alexander, M.I.C.E.I., Queen's Elms,	do.
Thomson, John, C.E., 107, St. Helen's, Mountpottinger, Belfast.	
Thompson, Robert, Royal Terrace, Belfast.	
Thompson, Elias H., Donegall Street, Street, Belfast.	
Torbitt, James, North Street,	do.
Ward, Francis D., Bankmore Works,	do.
Wolff, J. W., Queen's Island,	do.
Wilson, James, jun., Skipper Street,	do.
Weir, Arthur C., Oakhill, Dunmurry.	do.
Ward, John, Bankmore Works,	do.

N.B—It is earnestly requested that any error or omission in foregoing Lists may be kindly notified in writing to the Treasurer, Mr. John Anderson, Hillbrook, Holywood, so as to secure perfect accuracy in the Society's books.

June, 1875.

BELFAST

Natural History and Philosophical

SOCIETY.

 SHAREHOLDERS.

1 Share in the Museum	costs	£7.
2 Shares „ „	cost	£14.
3 Shares „ „	cost	£21.

The Proprietor of 1 share pays 10s per annum ; the proprietor of 2 shares pays 5s per annum ; and the proprietor of 3 or more shares stands exempt from further payment.

Shareholders only are eligible for election on the Council of Management.

MEMBERS

(Classed under Annual Guinea Subscribers.)

There are two classes, Ordinary Members who are expected to read Papers, and Visiting Members who by joining under the latter title are understood to intimate that they do not wish to read Papers. The session for Lectures extends from November in one year till May in the succeeding one. Members, Ordinary or Visiting, pay £1 1s per annum, due 1st November in each year.

PRIVILEGES.

Each Shareholder and Member has the right of personal attendance at all meetings of the Society, and of admitting a friend thereto ; also of access to the Museum for himself and family, with the privilege of granting admission orders for inspecting collections to any friends not resident in Belfast.

Any further information can be obtained by application to either of the Secretaries. It is requested that all accounts due by the Society be sent to the Treasurer.

The Museum, College Square North, is open daily from 12 till 4 o'clock. Admission for Strangers, 6d each, and for Excursion Parties from the country, in number not less than ten persons, 3d each. The Curator is in constant attendance, and will take charge of any Donation kindly left for the Museum or Library.



14.D.



Ref. 1877-78

Natural History & Philosophical Society

ON Wednesday, the 19th of June, 1878, the Annual Meeting of Shareholders was held in the Belfast Museum, College Square North. There were present—Robert Young, Esq., in the chair; Robert M'Adam, Esq., John Anderson, Esq., Joseph John Murphy, Esq., Robert Lloyd Patterson, Esq., Wm. H. Patterson, Esq., Dr. Steen, A. O'D. Taylor, Esq.

After the advertisement convening the meeting had been read by the Chairman, he called upon the Secretary, Mr. Taylor, to read the Report, which ran thus:—

REPORT BY THE COUNCIL FOR THE 57TH SESSION, 1877-78.

In the last report which the council submitted to the shareholders, they advised that the evening of meeting should be changed from Wednesday to Tuesday. That change was approved of at the last annual meeting, and during the session now closed the society has met on Tuesday evenings. This alteration has given general satisfaction, and the council recommend that Tuesday be adhered to for another year, so that the change may have a fair trial. The audiences have

certainly been more numerous, but that fact may be partially accounted for by the diversified list of subjects and readings, of which the following is a record:—

BELFAST NATURAL HISTORY AND PHILOSOPHICAL
SOCIETY—57TH SESSION.

First meeting, 6th November, 1877—Robert Young, Esq., C.E., delivered the introductory address “On some questions in which recent researches in Science are tending to modify the opinions of Geologists.”

Second meeting, 4th December, 1877—Robert Young, Esq., in the chair. Joseph Wright, Esq., reader. Subject: “Foraminifera, Recent and Fossil.”

Third meeting, 18th December, 1877—Robert Young, Esq., in the chair. John H. Greenhill, Esq., reader. Subject: “Professor Graham Bell’s Telephone.”

Fourth meeting, 8th January, 1878—Robert Young, Esq., in the chair. Thomas Workman, Esq., reader. Subject: “Spiders.”

Fifth meeting, 22nd January, 1878—Robert Young, Esq., in the chair. Professor Everett, reader. Subject: “Atmospheric Electricity.”

Sixth meeting, 5th February, 1878—Robert Young, Esq., in the chair. Wm. Gray, Esq., reader. Subject, “The Antiquity of Man, Geologically Considered.”

Seventh meeting, 12th February, 1878—Robert Young, Esq., in the chair. (1.) The secretary read a communication from Mr. Robert Warren, of Ballina. Subject, “Notes on the Occurrence of some Rare Birds in Counties of Mayo and Sligo.” (2.) Mr. W. H. Patterson read extracts from Mr. William Hancock’s letters on “Notes of a Trip in the neighbourhood of Ningpo, China.”

Eighth meeting, 12th March, 1878—Robert Young, Esq., in the chair. Joseph J. Murphy, Esq., reader. Subject, "Colour and Mimicry in Animals and Plants" (read by the secretary.)

Ninth meeting, 26th March, 1878—R. L. Patterson, Esq., in the chair. Surgeon-Major Walter Fry, reader. Subject, "Notes on the Birds of the Travancore Jungles."

Tenth Meeting, 2nd April, 1878—Robert Young, Esq., chairman. J. Harris Stone, Esq., reader. Subject, "Interdependence of Animals and Plants."

Eleventh meeting, 18th April, 1878—Robert Young, Esq., in the chair. Dr. Gilbert Kirker, reader. Subject, "Notes on Adrianople and Constantinople."

In addition to the president's introductory address, there have been ten meetings. Of the papers read six were purely natural history papers, two were connected with subjects of natural philosophy, two were descriptive of foreign countries, and two were geological. The council hope that their staff of active reading members will receive some accessions ere long. They are particularly desirous that young men should join, so as to fill up the vacancies which lapse of time inevitably causes in an old society. The collections have continued to receive valuable supervision both from your own members and from those members of the Naturalists' Field Club who have for some years past assisted in re-arrangement. They are now nearly as fully arranged as the space at the society's disposal will admit.

Some interesting additions have been made to the general collections, and your library continues to receive steady accessions to its shelves from various scientific societies both at home and abroad. The

want of accommodation for your library, and the increasing want of space for the due exhibition of collections, lead your council to think that next year some effort might be made to enlarge your premises. The Museum was, as is usual, opened last Easter Monday to the working classes at 2d each to grown up persons, and 1d each for children. Fully 4,000 persons attended, showing that though counter attractions are every year increasing, the old rule of visiting the Belfast Museum on Easter Monday still exercises its traditional influence on the Belfast public. The same scrupulous regard and care for the objects exhibited continues as in former years. The same arrangement which has hitherto subsisted between your society and the Naturalists' Field Club continues. The club meets within your walls, and allows the members of your society admission to its ordinary meetings. The proceedings for 1876-77 have been already circulated, their preparation as heretofore being under the editorship of Mr. Joseph John Murphy and Dr. Henry Burden.

The treasurer's account herewith submitted shows a balance of £53 9s 6d at credit.

(Signed by order of the council)

A. O'D. TAYLOR, *Sec.*

DONATIONS TO THE LIBRARY.

Geological Survey of America, seven large bound volumes ; Journal of American Geographical Society, six volumes ; Smithsonian Report, 1876 ; Bulletin of the American Geographical Society, 1878, five parts ; Proceedings of Boston Society of Natural History, vol. XVIII. ; American Journal of Conchology, 1871-72 ; Proceedings of the Austrian Geological Society, two parts ; Geological Survey of India, four parts ;

Palæontologia Indica, vol. I.; Transactions of the Royal Scientific Society of Sweden, four volumes, 1874, 1875, 1876; Transactions of the Manchester Geological Society, five parts, 1877; Report of the Brighton and Sussex Natural History Society, 1876; Memoirs of the Royal Astronomical Society, vol. xliii., 1877; Edinburgh Astronomical Observations, vol. xiv., one large bound volume; Proceedings of the Zoological Society of London for 1877, four volumes; Transactions of the Watford Natural History Society, three parts, 1877; Proceedings of the Literary and Philosophical Society of Liverpool, vol. xxxi., 1877.

DONATIONS TO THE MUSEUM,

Fragments of ornamented tiles found at Mellifort Abbey, County Louth; presented by C. H. Brett, Esq. Two wooden vessels found at a depth of between six and seven feet in a bog, near Donaghmore, County Tyrone; presented by C. H. Brett, Esq. Four rare British birds, presented by Greer Malcomson, Esq. Portion of flag carried by soldiers of King George the Third at the battle of Ballynahinch, presented by John Wilson, Esq., of Frederick Terrace, Belfast. Four Indian birds, presented by Mr. William Darragh. Cinerary urn, found near Donaghmore, County Tyrone, presented by James Brown, Esq. A number of characteristic examples of the palæolithic impliments, lately obtained from the earth mounds of Ohio, United States of America. Among these are 22 arrowheads of various types, sizes, and materials; four flint knives, five scrapers, four stone polished axes of a rare type, with a deep groove; three flint drills, two whetstones and one small grindstone, one large polished stone bead, one crescent-shaped polished stone, probably an ornament; presented by Robert Young, Esq., C.E.

Mr. Anderson, the Treasurer, then submitted the Annual Statement of Accounts up to the 30th April, 1878. (See page 8.)

ROBERT McADAM, Esq., proposed, and JOSEPH JOHN MURPHY, Esq., seconded—"That the Reports and Accounts, as now read, be received, printed, and circulated, amongst the shareholders and members of the Society." This was unanimously agreed to.

A conversation ensued as to the desirability of selling out the £400 of 4½ per cent. Northern Counties Railway shares, at present held by the Trustees, on account of the shares being at present at a very high premium. It was, however, decided not to disturb the security unless the Trustees saw good reason so to do.

Messrs. MURPHY and W. H. PATTERSON were deputed by the meeting to call over and check the various Trust Deeds and other documents belonging to the Society, as exhibited by one of the Trustees, Mr. R. L. Patterson. This was done, and they were reported to be all correct. Mr. R. L. Patterson was requested to remain custodian of same.

A ballot was then taken for the election of a Council of Management for the ensuing twelve months. On a scrutiny of the votes the Chairman announced that the following gentlemen had been duly elected:—

COUNCIL ELECTED FOR 1878-79.

Robert M'Adam, Esq.	W. H. Patterson, Esq.
Thos. Andrews, Esq., M.D.	John Anderson, Esq.
A. O'D. Taylor, Esq.	John Purser, Esq.
Joseph J. Murphy, Esq.	Robert Steen, Esq.
John F. Hodges, Esq., M.D.	R. L. Patterson, Esq.
Henry Burden, Esq., M.D.	R. O. Cunningham, Esq., M.D.
Robert Young, Esq., C.E.	Professor Everett.
Thomas Workman, Esq.	

The Council then met, and from their number selected the following office-bearers for 1878-79 :—

PRESIDENT.

ROBERT YOUNG, C.E.

VICE-PRESIDENTS.

THOMAS ANDREWS, M.D., F.R.S., &c.

JOSEPH J. MURPHY, F.G.S.

W. H. PATTERSON, M.R.I.A.

PROFESSOR EVERETT, M.A., D.C.L.

SECRETARY.

A. O'D. TAYLOR.

TREASURER.

JOHN ANDERSON, F.G.S.

LIBRARIAN.

DR. ROBERT STEEN.

THE BELFAST NATURAL HISTORY AND PHILOSOPHICAL SOCIETY,

Dr. *In Account with the Treasurer, for the Year ending 30th April, 1878.* Cr.

1878. EXPENDITURE.		1878. RECEIPTS.	
April 30.—Fire Insurance	£7 15 0	April 30.—Balance brought forward	£22 3 10
Supply of Transfer stamps	1 0 0	Dividends on Northern Counties' Preference Stock	17 15 6
A. Mayne's Printing act. for Proceedings Year's Rent	10 15 0	Subscriptions paid by Shareholders	£48 1 0
Receipt Books	25 0 0	Subscribers	34 13 0
Printing circulars and advt. in <i>Whig</i>	0 8 6	Arrears of Subscriptions and Transfer Fees	5 14 6
Advertising in <i>Morning News</i>	10 19 0	New Shares	28 0 0
Do. <i>Telegraph</i>	0 10 0	New Subscriptions (Annual)	10 10 0
Lamp for Hall	0 8 6	Engineer's Association	4 3 0
Curator's Yearly Salary	3 2 6	Naturalists' Field Club	5 5 0
Commission paid Collector for Collecting Subscriptions	75 0 0	Received from visitors	17 10 9
Water tax	6 8 4	Monday, 1878	28 1 10
Coals, Coke, and Gas	0 5 4		
Easter Monday Expenses	13 5 11		
Repairs and Materials	7 19 6		
Postage per Curator	2 1 6		
Carriage of Parcels	1 13 4		
Stationery	0 10 2		
Patterson's account	0 16 4		
Balance in Treasurer's hands	0 15 0		
	53 9 6		
	<u>£221 18 5</u>		<u>£221 18 5</u>

Examined and compared with Vouchers, and found correct
 W. H. PATTERSON, } Shareholders.
 ROBT. MACGEEGH, }

(Signed) JOHN ANDERSON, Treasurer.
 1st May, 1878.

14th June, 1878.

SHAREHOLDERS FOR 1878

IN THE

Natural History and Philosophical Society.

[*Denotes holders of three or more Shares.]

- Allen, W. J. C., J.P., Faunoran, Greenisland.
 Andrews, James (Representatives of), Donegall St., Belfast.
 Andrews, Michael (Representatives of), Ardoyne, do.
 Andrews, Thomas, M.D., F.R.S., &c., Queen's College, do.
 Archer, Samuel, J.P., Wellington Place, do.
 Anderson, John, J.P., F.G.S., Hillbrook, Holywood.
 *Alexander, James, J.P., Holywood.
- *Bateson, Sir Thomas, Bart., M.P., J.P., D.L., Belvoir Park, Belfast.
- *Batt, Thomas G., (Representatives of), Belfast.
 Bland, Rev. W., J.P., Whiteabbey.
 Bottomley, Henry H., Ulster Street, Belfast.
 Bristow, James R., Northern Bank, do.
 Barbour, James, Falls Foundry, do.
 Boyd, William, Blackstaff Mill, do.
 Brown, John Shaw, Bedford Street, do.
 *Bottomley, Wm., J.P., Calender St., do.
 Burden, Henry, M.D., College Square North, Belfast.
- *Campbell, James, (Representatives of), Cultra, Co. Down.
 Campbell, John, Copeland View, Greenisland.
 Campbell, William, Windsor Avenue, Belfast.
 Connor, Charles, C., White Linen Hall, do.
 Carlisle, James, J.P., Donegall Street, do.
 Carson, John, Corn Market, do.
 Charley, John, College Park, do.
 *Charley, John, (Representatives of), Finaghy, do.
 *Claremont, Lord, Ravensdale Park, Newry
 Coates, William, J.P., (Representatives of), Glentoran, Belfast.
 Corbett, Mrs., Clarendon Place, do.

- *Charters, John, (Representatives of), Craigowen, Craigavad.
 Crawford, William, Donegall Place, Belfast.
 Cuming, James, M. D., Wellington Place, do.
 Combe, James, J.P., (Representatives of), Ormiston, Sydenham.
 Connor, James, Great George's St., Belfast.
 Calwell, Alexander, McD., College Square North, Belfast.
 Cunningham Robert O., M.D., F.L.S., Queen's College, do.
 Clarke, Edward H., Belfast Bank. do.
- Darbishire, James M., Lombard St. do.
 *Donegall, Marquis of, K. P., &c., &c., London.
 Drennan, Dr., Chichester St. Belfast.
 *Drummond, Dr. James L., (Representatives of), do.
 Duffin, Charles, J.P., Waring Street, do.
 Dunville, William, J.P., (Representatives of), Calendar St. do.
 *Downshire, Marquis of, Hillsborough Castle, Hillsborough.
 Dickson, James, *Northern Whig* Office, Belfast.
- Emerson, William, Donegall Quay, do.
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 Ewart, W. Quartus, Bedford Street, do.
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 Forsythe, R. H., Holywood.
 Finlay, William Laird, Windsor, Belfast.
 Finlay, Charles, J.P., (Representatives of), University Sq., do.
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- Garrett, Thomas, Gamble Street, do.
 *Getty, Edmund, (Representatives of), Harbour Office, do.
 Girdwood, H., Mercer, Bath Place Mill, do.
 Gordon, Alexander, M.D., Howard Street, do.
 Gordon, R. F., J.P., D.L., Florida Manor, Killinchy.
 *Grainger, Rev. John, D.D., Broughshane, Ballymena.
 Gray, Robert, (Representatives of), College Sq. East, Belfast.
 Gordon, Robert W. Falls Road, do.
 Greer, Thomas, J.P., Sea Park, do.
- Hind, John, jun., College St. South, do.
 *Hamilton, Hill, J.P., (Representatives of), Mountvernon, Belfast.

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Henderson, Robert, (Representatives of), Queen's Square, Belfast.	
*Henry, Alexander, Manchester.	
*Herdman, John, (Representatives of), College Sq. North, Belfast.	
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Hind, John, J.P.	do.
Heyn, James, A.M., Ulster Chambers, Waring Street,	do.
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Herdman, John, Carricklee House, Strabane.	
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Harland, Edward J., J.P., Queen's Island,	do.
Hodges John F., M.D., F.C.S., Queen's College,	do.
Hyndman, Hugh, LL.B., Waring Street,	do.
Henderson, W. D., Victoria Street,	do.
Henderson, James Alexander, J.P., Donegall Street,	do.
Jackson, Thomas, C.E., Corn Market,	do.
*Johnson, Sir William G., J.P., D.L., College Square North,	do.
Johnston, David W., Jennymount Mill,	do.
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Keegan, James, J.P., High Street,	do.
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Musgrave, Edgar, Ann Street,	Belfast.
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Neill, John R, High Street,	do.
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Suffern, William, Windsor,	do.
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Natural History & Philosophical

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