ROYAL SOCIETY.

APRIL, 1887.

The opening meeting of the Royal Society for the Session 1887 took place on April 19th, when His Excellency Sir Robert G. Crookshank Hamilton, K.C.B., took the chair, as President, at 7·30. There was a large attendance, over 60 Fellows being present, and several visitors. Among the Fellows present were the Bishop of Tasmania, Sir Lambert Dobson, the Hons. P. O. Fysh, A. I. Clark, and Alfred Dobson. His Excellency, who was accompanied by Lady Hamilton, and Mr. H. W. B. Robinson, the private secretary, was met at the outer door by the council, and Lady Hamilton was conducted to her seat by the Hon. J. W. Agnew, the hon. secretary.

His Excellency said: Gentlemen, it has given me great pleasure to be present to-night at the opening of the Session of the Royal Society of Tasmania. Among the many surprises I have experienced since I came here, I do not know of any more striking or pleasant to me than to find a society of this sort in such full operation and vigour—a society devoted to the progress of science, and investigations of a physical character throughout the island. I have been looking at the volumes of your papers and proceedings which show how extremely wide has been the area of operations and investigations of the Society, including such diverse subjects as the occultation of Jupiter and the drainge of Hobart. It often seems to me that the public generally do not quite know how much they owe to societies of this kind. The investigation of science not only adds to the stock of general knowledge, and in that way adds to the stock of human happiness; but both directly and indirectly it leads to opening up new industries, to the advancement and development of existing ones, and also tends to add very much to the comfort of existence and to the extension of the duration of that existence. It is not given to all of us to take part in this investigation, but we all benefit by them, and I think it is very important that every one should show their sympathy, and by their material aid, if necessary, sympathise with such societies as this. Both from an educational and a practical point of view, it is very desirable that the operations of this Society should be encouraged and extended. There is one thing more I should like to say. I had heard, and was pleased to hear it, that ladies sometimes attended your meetings, but I find that this evening there is no other lady present except Lady Hamilton. (Cheers.) There are some subjects upon which, I think, it is very important that the interest of women should be aroused. Everything that tends to the health of the community and subjects connected with sanitation are matters of the greatest importance, in which it is desirable that women should be interested. I will not now detain you any longer, but will ask you to proceed with the first business, which is the election of new members. (Applause.)

The following gentlemen were declared elected as Fellows of the Society:—Revs. Canon Geo. Fred. Archer, A. Martin, P. E. Raynor, Warden of Christ's College; Colonel Cruickshank, R.E., Messrs. W. Sleeman, C.E., Edward David Dobbie, Solicitor-General, George Wilson Waterhouse, B.A., barrister at-law, C. J. Parkinson, M.D., House-Surgeon Hobart Hospital, and Wm. Benson.

List of additions to the library during the months of January, February, and March :—

American Agriculturist. (Cur. Nos.)

Annals and Magazines of Natural History. (Cur. Nos.)

Anuario del Observatorio Astronómico Nacional de Tacubaya Mexico. —From the Department.

Anzeizer der Kaiserlichen Akademie der Wissenschaften. Nos. 24 to 28, 1885; Nos. 1 to 21, 1886.—From the Society.

Bollettino della Societá Geografica Italiana, Anno XX., Fasc. 11, 12; Anno XXI., Fasc. 1.—From the Society.

Bolletino dei Musef di Zoologia ed Anatomia comparata, della Royal Universita di Torino. Vol. 1, 1886. Nos. 1—18.—From the Society.

Bulletin du Musée Royal D'Historie Naturelle de Belgique, tome IV., No 4.—From the Society.

Bulletin of the Museum of Comparative Zoology at Harvard College, Vol. XIII., No. 1. Reports on the results of dredging under the supervision of Alexander Agassiz in the Gulf of Mexico, 1877-8, XXX. Report on the Holothuridæ, by H. Jalmar Thiel.—From Agassiz.

Bulletin of the Brookville Society of Natural History, No. 2.—From the Society.

Catalogue of the remains of Siwalik vertebrata contained in the Geological Department of the Indian Museum, Calcutta, parts 1 and 2. Mammalia catalogue of the remains of pleistocene and prehistoric vertebrata contained in the Geological Department of the Indian Museum, Calcutta, by R. Lydekker, B.A.—From the Department.

Description of some new species of South Australian marine and fresh water mollusca, also a revision of the recent Lamellibranch and Palliobranch Mollusca of South Australia. Diagnosis of a new species of Caladenia, by Professor Tate.—From the Author.

Descriptive list of Australian aboriginal weapons, implements, etc., from the Darling and Lachlan Rivers in the Australian Museum.—From the Trustees.

Den Norske Nordhavs—Expedition, 1876-8. "Zoologi." Mollusca II.—From the Department.

Geological Magazine, (Cur. Nos).

Hourly Readings, Meteorological office, London. — From the Department.

Journal of the Royal Microscopical Society, Part 1, February 1887.—From the Society.

Journal of the Society of Arts. (Cur. Nos.)

Lamellibranchs of the older Tertiary of Australia, Part II, by Professor Tate.—From the Author.

Memoires de la Societe Royale des Sciences de Liege, Tome XIII, Brussels.—From the Society.

Memoirs of the Literature College, Imperial University of Japan, No. 1. The language, mythology, and geographical nomenclature of Japan viewed in the light of Aino studies, by B. H. Chamberlain, including an Ainu Grammar, by John Batchelor, and a catalogue of books relating to Gizo and the Ainos.—From the Imperial University.

Memoirs of the Geological Survey of India. Palœontologia Indica, Ser. XII. The fossil flora of the Gondwana system, Vol. IV., pt. 2. The fossil flora of some of the coalfields in Western Bengal, by C. Feistmantel, M.D., Ser. XIII. Saltwater Range Fossils, by W. Wangen, Ph. D. I. Productus Limestone Fossils, 6 Cœlenterata, Plates XCVI., VII.—From the Survey Office, Calcutta, Medical Press and Circular, December 8, 1886.—From the Editor.

Morpholopia Floridearum, Till Algernes Systematik, VII. Florideæ, Ceramieæ, I. Callithamnion, by J. G. Agardh.—From Mrs. L. Meredith.

Monthly Notices of the Royal Astronomical Society, Vol. XLVII., No. 3.—From the Society.

Naturhistorisches Museum for Hamburg, 1886.—From the Department.

Records of the Geological Survey of India, Vol. XX., 1887.—From the Department.

Report of the Sydney Free Public Library for 1885-6.—From the Department.

Report of the Mining Registrar for the quarter ending 31st December, 1886. The Goldfields of Victoria.—From the Mines Department.

Results of a Census of the Colony of New Zealand, taken for the night of 28th March, 1886. Pt.—Population and Dwellings. Pt. II.—Ages of the People.—From the Government.

Report of the Superintendent of the U.S. Coast and Geodetic Survey, showing the progress of the work done during the year ending with June, 1885. Pt.—Text. Pt. II.—Sketches.—From the Department.

Sixth annual report of the State Mineralogist, p.p. 1 and 2, for the year ending June, 1886.—From W. Lulan.

Transactions of the Asiatic Society of Japan, Vol. XIV., pt. 1, Nov., 1886.—From the Society.

Transactions and Proceedings of the Royal Society of Victoria, Vol. XXII.—From the Society.

Transactions of the Royal Astronomical Society. New series, vol. III., pt. III. and IX.—From the Society.

Victorian Year Book for 1885-6, by H. H. Hayter, C.M.G.—From the Author.

Verdhandlungen der Gesellschaft. Für Erdkunde zu Berlin. Band XIV., No. 1, 1887.—From the Society.

Victorian Naturalist. (Cur. Nos.)—From the Society.

PAPERS.

A paper entitled "How far can the general death-rate for all ages be relied upon as a comparative index of the health or sanitary condition of any community," by Mr. R. M. Johnston, F.L.S.

Mr. Johnston in opening stated that the question as to the state of health or sanitary condition of a community is of the utmost importance to all, and especially so to those who are responsible for local sanitary provision, and hence it is often asked, how far is the general death-rate of any year to be relied upon as a test of either the health or sanitary condition of any place or country. Mr. Johnston stated that it was his intention to demonstrate that nevertheless the general death-rate of any one place, though in itself due to a combination of many complex causes, may be used as a fairly reliable local index to health and sanitary condition, although a most faulty index as regards the comparative health or the condition of different localities. The dominant influences which determine the total death-rate he placed as follows:—1st. The proportions living at various age groups; climate, migration, birth-rate, cosmical or obscure influences, etc.; density of population, sanitary condition, health, etc. Now, of these important influences, which together combine to make up the total death-rate, the first three, though chiefly affecting it, are not in the slightest degree connected with either health or sanitary conditions. It is also obvious, he went on to say, that, so far as any one locality is concerned, many of the conditions enumerated are more or less constant; while as regards different localities, and especially countries widely apart, nearly all the conditions came into play as disturbers, and hence it is that the general death-rate of any one locality may be a fairly reliable comparative index of its health and sanitary condition from year to year; while as regards longer periods, or widely separated localities, comparisons by the indication of a general death-rate are often fallacious or misleading. Much prejudice, he stated, existed in

some minds against the use of figures. "Figures can prove anything" is a current popular phrase. Mr. Johnston pointed out that even words and phrases are more easily twisted to wrong uses than figures, yet, we do not despair of arriving at correct conclusions by the aid of facts and figures where due care, thorough investigation, and logical methods are employed. As a rule, the writer said, it is not so much that the results of computed figures are false, as that careless and false interpretations are put upon them. Lord Derby while presiding over the statistical section in 1865 happily illustrated some of the mistakes of this kind by the statement that erroneous interpretations of death-rate totals where abnormal causes are not taken into account; for example a year of pestilence, not only by its effect on the mortality of the year of its occurrence, but by its clearing away feeble lives and so lightening the death-rate in years immediately consequent. But, as observed by the President of section F. of the British Association at Birmingham, in September 1886, "there is less to be feared from errors arising out of this source if we lay to heart the warning uttered by Mr. Goschen on a recent occasion. 'Beware of totals,' and if we recognise more fully than we are usually apt to do, that if a table of figures, even if it be absolutely correct as a statement of facts, is merely raw material, not a finished product. The misfortune is, that it is only too frequently treated as the latter." Mr. Johnston continuing, pointed out that tables indicating the death-rates per year of different countries are too commonly treated as finished products, whereas he stated he should endeavour to demonstrate that they are raw materials so far as deductions relating to comparative health and sanitary condition are concerned. Mr. Johnston then, in a most able manner, with the aid of some very excellent diagrams, dealt with the subject under the several headings, which were admirably set forth by a few figures on a black board. Dividing the age groups into three—under 5 years, between 5 and 60, and over 60—he showed that the normal proportions living at these ages would be nearly as 3, 16, 1 in a division of 20, giving a mean death-rate in the three divisions of 50, 7, and 70 respectively. This gives a total death-rate of 16·6. Then supposing an alteration of the division of the persons living in each of these three classes to 3, 14, and 3, with even an improved state of the general health, the total death-rate would be increased to 19·20. Mr. Hayter had tried to get rid of this difficulty by creating an absolute death-rate by assigning an arbitrary value to each class, and establishing 15 classes, but this only increased the difficulty, the real solution of which was to eliminate the deaths over 60. Tasmania's advantage in the large proportion of deaths of persons over 60 was placed to her disadvantage by increasing her total death-rate, whereas it was the strongest proof of her healthy position. In concluding this very exhaustive paper, the author said he trusted that the subject had been made tolerably clear by the observations he had introduced, and that while the total death-rate for all ages might be used locally as a fairly reliable index of the healthy sanitary condition of the same place from year to year, to the meeting it had been proved a most fallacious index as regards the comparative health and sanitary condition of different localities, owing mainly to the extreme variability in the proportions living in different places under the principal age groups. The elimination of old ages, as in the health standard, has been shown to be a more reliable index between different countries. As regards variations from year to year, it is to be hoped, he said, that the observations made may be helpful to others in making proper deductions therefrom. (Hear, hear.)

Dr. E. O. Giblin, Health Officer of Hobart, who was called upon, desired to congratulate Mr. Johnston upon the paper he had just read, and to congratulate the Society upon having for one of its members a

gentleman like Mr. Johnston, who took such an active and energetic interest in its proceedings. He was very glad this subject had been brought so prominently before them. For several years he had taken up some work relating to the general health of the town, following in the steps of Dr. Hall, a gentleman who was well known as the officer of health in Hobart, and he had been considerably alarmed the first year he made up his returns to find the death-rate of Hobart was no less than 23 or 24 per thousand of the population. He had sought to find out if there was any fallacy to swell this large death-rate, as Hobart, and Tasmania, had always been looked upon as a very healthy place. Afterwards he discovered that a large proportion of the paupers and invalids were aggregated at Hobart, and that the steamers calling at Hobart registered these, the deaths occurring on the voyage. Added to this there were the lunatic hospital and general hospital in which were collected numbers of cases from the country districts, which tended to increase the death-rate considerably. Still, after eliminating all these, the death-rate of Hobart was only reduced to about 18 per 1,000, a very high rate, because the death-rate of the country districts of the whole island was only 15 per 1,000. He thought Mr. Johnston had pointed out the cause, when a few years ago he drew attention to the large proportion of deaths over the age of 60, and had shown how fallacious it was to attempt any comparison of the total death-rate of Tasmania with the other colonies. He did not intend to allude to the great question of the cosmical influences which Mr. Johnston had referred to, which was a matter out of his depth, though probably there were others who would deal with this portion of the paper.

The Hon. Dr. AGNEW said they had been listening to a very important paper, and one of those papers which required a considerable amount of thought before it was discussed, so it appeared to him that the better way by far would be to postpone its discussion till next meeting. (Hear, hear.) They would be much more likely to get a ripe expression of opinion upon the various points in the paper if it were quietly read and considered previous to discussion. There was a great deal in what Mr. Johnston had said about the origin of typhoid fever, which he at the first blush accorded with. It was common to consider it a filth fever, or dirt fever, but he believed it was due to something not yet fathomed. It was certainly a curious matter for consideration that at certain seasons of the year, and over large areas of country, and in different colonies, these simultaneous waves should take place. Whether they were due to the suns spots was a point that could only be ascertained by observations carried out over a long period of time. The Fellows were to be congratulated upon living in a colony where there was the greatest possibility of living to reach the age of 100 years. (Laughter.) It would also be a matter of considerable satisfaction to His Excellency and his friends that his first Governorship should be in such a colony, and if he only remained here long enough he might hope to arrive at the good old age of 100 years.

The suggestion was adopted, and the further discussion of the paper adjourned.

In the absence of the authors, a paper entitled "Description of new species of Tasmanian Hepaticæ," by B. Carrington, M.D., and W. H. Pearson, of England, corresponding members of the society, was read by the secretary, Mr. A. Morton. The paper, which was accompanied by eight plates, described eight new species of the Hepaticæ, collected by Mr. R. A. Bastow, F.L.S., and forwarded to England for examination by the above gentlemen.

A third paper entitled "Description of two new species of Tasmanian fresh water shells," by Mr. W. F. Petterd. One of the species *Ancylus Irvinæ*, n.sp., the author states was found at the Great Lake, and is a

wonderfully fine, and interesting addition to our molluscan fauna. It was found attached to the rocks in the shallow margin of the lake, and although apparently numerous at this particular locality, only a limited number of examples were collected. Mr. Petterd in his paper said that this species is not only the finest form of the genus discovered in this island, but is also by far the finest in the world. The second form was a new shell belonging to the genus Gundlachia, which the author had named in honour of its discoverer, *G. Beddomei*, having been found by Lieut. Beddome in a fresh water pool off the Brown's River-road. Mr. Petterd states that this species differs in shape, colour, and is of a much larger size than the only other form known here, *G. Petterdi*, Johnston. The papers were accompanied with drawings of both the shells.

Some notes on the Tasmanian "Butter Fish" (*Chilodactylus Mulhalli*, Macleay) was read by Mr. SavilleKent, Inspector of Fisheries. The paper was accompanied with a stuffed specimen and a plaster cast of the fish. Mr. Kent, in his notes, stated that, in communicating this note upon the butter fish (*C. Mulhalli*), he would take the opportunity of recording his opinion that the fish figured and described by Macleay in the proceedings of the Linnæan Society of New South Wales, p. 440., Pt. XXII., under the title of *Psilocranium Coxii*, must be regarded as identical with this species. With the form given in the illustration quoted, and in all more important details of its diagnosis it essentially agrees. The only feature upon which he had, as far as he could perceive its claims to a separate generic, and specific titles have been found in the somewhat smoother surface of the head as compared with the ordinary members of *Chilodactylus*. Mr. Kent went on to say that the more cylindrical contour of the body, which is quoted by Macleay as substantially its claim to separate generic distinction, could scarcely be invested with so important a significance, more especially as admitted by Macleay in his original description of this type. Mr. Kent said that he might add that Mr. Morton, who is personally familiar with the typical examples of *C. Mulhalli* and *Psilocranium Coxii* preserved in the Sydney Museum, had experienced equal difficulty with himself in detecting any essential points of distinction between these respective types.

Mr. R. M. Johnston quite agreed with Mr. Kent as to the Butter Fish being the same as that described by Macleay. He had since had the pleasure of capturing several, and it was not so rare as was supposed, for the fishermen frequently caught it though they did not bring it to market, regarding it as what they called "mullock." The fish being very sensitive to light changed its colour in different localities, the colours being deeper in deep water. This was the case with the trumpeter, from the colour of which it was possible to affirm what part of the coast it had come from. In the boat's well the fish frequently change their colour in a trip from Maria Island to Hobart. He desired to compliment Mr. Kent upon the accurate and perfect manner in which he had produced his cast.

Mr. A. Morton said he felt convinced after a personal examination of the Sydney specimens, that Macleay's *Psilocranium Coxii and Chilodactylus Mulhalli* were the same and thought that both would prove to be synonyms of Richardson's *C. nigricans*.

The Curator of the Museum, Mr. A. Morton, contributed a few notes on three specimens of fish hitherto unrecorded as being found in Tasmanian waters, belonging to the family *Kurtidæ Genus Pempheris*. The specimens before the meeting had been sent to the Museum from George's Bay, by Mr. W. L. Boyes, and proved to be *Pempheris macrolepis*, Macleay.

AUSTRALIAN ANTARCTIC EXPLORATION COMMITTEE.

The Secretary read the following letter received from the Royal Society of Victoria, also the recommendations from the Antarctic Committee appointed by the Royal Society of Victoria, and the Royal Geographical Society of Australia (Victoria Branch), to the Hon. the Premier :—

Royal Society of Victoria, Victoria-street, Melbourne, 8th April, 1887. Australian Antarctic Exploration Committee. To the President of the Royal Society of Tasmania, Hobart.—Sir,—I have the honour to enclose herewith a copy of the progress report of this committee, and of its recommendations to the Government on the subject of Antarctic research, and to inform you that our Premier, Mr. Gillies, has replied to our application for a grant-in-aid to the effect that he is prepared to provide funds in the next estimates, provided that the Colonies contribute, and that he has just written to their Governments to ask their co-operation From the cordial manner in which the first proposal to renew Antarctic research was met in Tasmania, we feel sanguine of an affirmative response from its Government; but as it is desirable to lose no time in obtaining an early assurance to that effect, I am instructed to ask for your powerful influence to secure it as promptly as possible. It will be seen by the progress report that this committee formed a deputation in August last to wait upon our Premier, and was fortunate enough to receive his approval and active assistance. May I suggest that probably a similar movement on the part of your society would largely tend to affect the decision of your Government, and moreover to expedite it, and a notification of it also. Feeling confident that you will concur that there could be no more worthy and appropriate method of signalising the centenary of the foundation of Australian settlement than that proposed, and that you will endeavour to assist it in the manner suggested. I have the honour to be sir, your most obedient servant,

H. K. RUSDEN,

Hon. Sec. Royal Society of Victoria, and of Australian Antarctic Exploration Committee.

Recommendations from the Antarctic Committee, appointed by the Royal Society of Victoria and the Royal Geographical Society of Australia (Victorian Branch), to the Hon. the Premier :—

1. The Antarctic Committee begs respectfully to recommend to the Hon. the Premier the propriety of stimulating antarctic research by the offer of bonuses.
2. That a sum of £10,000 be placed upon the estimates, to provide for the amount of the bonuses, and for the expenses of the equipment and of the staff.
3. The amount of the bonuses to be paid to the shipowners for the hereinafter mentioned services is to be decided by tender, and the same, together with the cost of equipment and the staff, not to exceed the sum of £10,000.
4. That the Government invite tenders from shipowners willing to perform the services required.
5. That the tenders be sent to the Treasury direct, or through the Agent-General, not later than the 1st June.
6. That tenderers must provide two fortified steam ships, each of not less than 175 tons register, 60 horse power nominal, and A1 at Lloyds, or of an equivalent class.
7. That tenderers must supply full descriptions of the ships and their equipments.
8. That the master and chief mate of both ships shall have held similar positions in Arctic steamships.

9. That the tenderer shall provide, free of charge, cabin accommodation in each ship for two gentlemen, who will sail as the scientific staff; also a separate cabin, of a size to be specified, as instrument room and office.

10. The scientific staff will have the status of cabin passengers, and be subordinate to the master, but the master must afford them every facility that does not interfere with the work or safety of the ship, for noting natural phenomena.

11. The chartered ships will earn a special bonus (to come out of the £10,000 appropriated) upon their entering at the Custom House a cargo of 100 tons of oil, being the produce of fish caught south of 60deg., S. The special bonus to be paid as follows, viz.:—To ships owned and registered in Australia, £1,000; to ships owned and registered elsewhere, £800.

12. The services desired are as follows, viz.:—A flying survey of any coast-lines lying within the Antarctic circle, and not now laid down upon the Admiralty charts. The discovery of new waterways leading towards the South Pole, and of harbours suitable for wintering in. Opportunities to be afforded to the scientific staff to add to our knowledge of the meteorology, oceanography, terrestrial magnetism, natural history, and geology of the region. The discovery of commercial products.

13. The tenderer must specify the bonus he demands for passing 70deg. S. with either one or two ships; also the bonus he demands for each degree attained beyond 70deg. S. by one ship; also the bonus he demands for every occasion upon which he succeeds in establishing on the shore a temporary observing camp.

14. That the Government should pay for only one such station for each 120 miles of latitude or longitude, unless the master shall have established more at the written request of both members of the staff.

15. The staff to have the right to refuse to accept the site of any camp selected by the master, and such refusal shall be logged by the master, and read over to the staff in the presence of the mate and the surgeon; and the staff shall hand to the master their objections thereto in writing, and the same must be signed by both of them.

16. The tenderer will not receive any more bonus for two ships than for one after passing the 70th parallel. The committee would prefer that one of the ships should remain fishing in the neighbourhood of North Cape, Victoria Land, whilst the other pushed into higher latitudes. In case of accident to the latter, the former would serve as a depôt and relief for the shipwrecked crew to fall back upon.

17. Should the master of either ship despatch an exploring party from his vessel, the contractor will be entitled to a bonus for each 60 miles of latitude or longitude traversed by such party, but the tenderer must specify what sum he will require for each 60 miles so traversed.

18. That the ships should proceed direct to the bight situated on the meridian of 180deg., with a view of one of them getting beyond Ross' furthest, and especially of observing the conditions of the volcanoes at the head of the bight.

19. The contractor will be liable to no penalty should he fail to reach to any latitude tendered for.

20. The contractor will have the right to employ his ships in whaling or sealing, and in loading guano or other cargo.

21. Should the masters be unable to get right (black) or sperm whales to enable them to compete for the bonus offered under the 12th proviso, they will nevertheless be entitled to the bonus should they return with a cargo of any merchantable commodity obtained within the Antarctic circle, and having a value equivalent to that of 100 tons of whale oil.

22. Both ships must be in Port Philip Bay and ready to start on the 15th of October.

23. That in case of any difficulty arising in England between the Agent-General and contractor, it shall be referred to the British Antarctic Committee for decision.

Mr. SPRENT said the Royal Society of Victoria and the Royal Geographical Society of Australia had written about this matter, and he had read a paper on the subject in September, when the Fellows passed a resolution to urge upon the Government the desirableness of Tasmania co-operating with the other Colonies in the proposed Antarctic expedition. He suggested that the papers be laid upon the table and discussed at the next meeting of the Society.

The Hon. Dr. AGNEW said this was a very important matter, and one the Colonies were bound to take up. The expense would not be very great, for should all the colonies combine, and if the contributions were put on the ratio of population, the sum required from Tasmania would not be a very large one for the Premier to put on the estimates. Certainly this Colony should take an active part in the matter, and he hoped that by next October they would see the ships of the expedition in their harbour. (Hear, hear.)

The Hon. P. O. FYSH expressed his entire sympathy with the objects of the proposed expedition. The monument they had erected in their public square to the memory of Sir John Franklin should indicate the spirit in which the colony would deal with this question. That which was most noble in his life, and formed the great object for which his life was given, the people here should sympathise with and support. (Hear, hear.) The scientific aspect of this question would undoubtedly commend itself largely to the gentlemen present, but to those who were utilitarian in their views they would have to speak of the commercial value of enterprises of this kind. They should hope that if this colony undertook to pay a portion of the expense, a specific commercial benefit would result, so far as Hobart was concerned. The probability was that the last starting point of the expedition would be from their own bay. In that case the people of Tasmania would take a very lively interest in it. The small amount of expenditure they would undertake in the matter would result in an advantage to Tasmania as much as to the other colonies, while it would also help to cultivate that federal spirit which they were so anxious to see developing. (Applause.) The expense to Tasmania would only be about £500, and without committing himself in any way as to what the Government might be disposed to do, he did not think it was necessary on an occasion of that kind to hide his own opinion under a bushel. (Applause).

The BISHOP OF TASMANIA deprecated the matter being put off as suggested by Mr. Sprent. The subject was not one that needed a great deal of thrashing out, but it did need prompt action, or they might be left in the lurch. He hoped the Society would entrust to the council the authority to represent it in approaching the Government, and in keeping this question very closely pressed home on their attention. (Applause.) He would move,—"That the council be authorised to approach the Government on behalf of the Royal Society in connection with the Antarctic Exploration Fund."

Mr. SPRENT seconded, and pointed out that unless they were prompt in their action they were liable to be forestalled. He said that Baron Nordenskjold was organising an expedition to the Antarctic circle, under the patronage of the King of Sweden. It would be rather hurtful to their Imperial notions to have a small power like Sweden preceding them in the exploration of their seas. After the encouraging

remarks of the Premier it was very desirable to strike while the iron was hot.

The motion was then put and carried.

Mr. J. Barnard said: I rise, Your Excellency, to express my sincere gratification (which I am sure is shared in by the Council and all the Fellows present) at seeing Your Excellency in the exercise of your functions as President of the Royal Society; and on their behalf, as well as on my own, I tender to you a cordial welcome and hearty congratulations on the auspicious occasion of your assuming the position of our President, which indeed by our constitution is inherent in your Excellency's exalted office as Governor of the Colony. Speaking for myself as one of the vice-presidents, I feel peculiar satisfaction, as I am led to believe that my office in the Society will henceforth become a "sinecure;" and that the interest which your Excellency has shown in the Society by your presence this evening will continue unabated, and will rather increase than diminish with your Excellency's more full acquaintance with the work doing by the Royal Society. We have all listened with deep interest to the highly interesting address with which you have favoured us this evening on the opening of the Session; and I trust that its weighty and eloquent words will be duly recorded in our volume of Papers and Proceedings. Some of your Excellency's distinguished predecessors—notably Sir William Denison, Sir Frederick Weld, and Sir Henry Lefroy—did not content themselves with simply occupying the President's chair, but have also enriched our Transactions by their various contributions to science; and I presume to express the hope that, in due time, your Excellency may also be disposed to aid the Royal Society by reading papers at its meetings not less valuable and instructive. (Applause.) I beg to move,—"That the Council and Fellows of the Royal Society desire to congratulate His Excellency Sir Robert G. C. Hamilton, K.C.B., upon his assuming the office of President, and have much pleasure in tendering him a cordial welcome upon the occasion."

Dr. Agnew seconded the motion, which was put to the meeting by the Chief Justice, Sir Lambert Dobson, and carried with enthusiasm.

His Excellency: I thank you very much. I can only regret it if my attendance at these meetings should have the effect of putting Mr. Barnard out of the seat he has occupied so worthily. I do mean to attend all the meetings I can. (Applause). I think it almost too much to hope that every meeting will be as interesting as this one. I desire before sitting down, to move a vote of thanks to the authors of the papers, and I cannot pass over this occasion without saying how very deeply I was struck with Mr. Johnston's paper. I think it showed marked ability and was extremely suggestive, and it was wise to defer its consideration to a future day. There were one or two points in connection with it that occurred to me, and which might be discussed at next meeting. One was as to the making of an analysis of those curious waves of disease which occasionally rise and fall, and seem to come across large portions of country. It would be very interesting, if material existed, to have an analysis of that sort. Then there is another point that struck me. Of course with the Colonies, where there has been so large an immigration in recent years, that point which Mr. Johnston made about the number of people of different ages is very striking. I fancy that in an old and more settled country Mr. Johnston would hardly say the point was of such great importance. You might there, with tolerable certainty, assume that the proportions of people of different ages would approach to much about the same, especially in the case of a large population. There is one other point, and that is the difference between urban and rural conditions. I

should be sorry if anything Mr. Johnston said—and I don't think it will—should have the effect of in any way lessening the exertions made in the way of looking carefully after our sanitation. Mr. Johnston pointed out that there are other causes which may make an apparently high death-rate beyond those that man has power to deal with. But I think the very fact that there is such a large difference between the urban and rural death-rate, enforces on us this: that the efforts of science ought to be to make life in towns as healthy as life in the country. (Applause.) I shall ask you to join me in a vote of thanks to the authors of these interesting papers. (Loud applause.)

Mr. G. S. Perrin, Conservator of Forests, drew attention to the following specimens of Tasmanian trees, which he had laid on the table : — Arthrotaxis cupressoides, do. selaginoides, Dacrydium Franklini, and Microcachrys. Flowering branchlets of these were affixed to a card, and along with them were shown specimens of the wood of the different varieties. They all belonged to the class of Tasmanian conifers, and were collected from various parts of the island. One specimen, the Arthrotaxis cupressoides, had been obtained from the back of the La Perouse range, one of the most difficult places of access in Tasmania, where probably no one but Mr. Perrin has penetrated. One of the pieces of wood shown—a bit of celery-top pine—had been 11 years under water, and formed a portion of the first water-wheel erected at Mount Bischoff. It was in perfect preservation, as was also a piece of Huon pine, which had for 40 years been part of a plank in a jetty at Macquarie Harbour that was originally cut for that purpose by order of Sir William Denison. Mr. Perrin's specimens will remain for a short period in the Museum, where they may be inspected.

The meeting, after Mr. Perrin had given his account of his specimens, closed.

MAY, 1887.

The monthly evening meeting of the Royal Society took place on Tuesday evening, the 10th May, the President, His Excellency Sir Robt. G. C. Hamilton, K.C.B., in the chair. There was a large attendance of Fellows and several ladies present.

The following gentlemen were declared elected as Fellows of the society:—The Hon. the Minister of Lands (E. N. C. Braddon, M.H.A.), Messrs. F. J. Young, B.A., Cambridge, H. H. Gill, M.H.A., W. J. Jones, David Barclay, C. A. Payne, M.R.C.S., A. J. Taylor, J. W. Toplis.

List of additions to the Library:—

Bibliothique Gèologique de la Russie redigeè par S. Nikitin.

Bolletino della Societá Geografica Italiàna, Serie II., Vol. XII., Feb., 1887. Anno XXI., Fasc 2.

Bulletins du Comité Geologique. Nos. 1 to 11. St. Petersburg, 1886. —From the Society.

Bulletin de la Société Royale de Botanique de Belgique, Tome-Vingt-cinqueieme, 1886.—From the Society.

Imperial Federation, March 1, 1887.—From the Editor.

Memoires du Comité Geologique. Vol. 2, No. 2. Les Ammonites de la zone à Les Ammonites de la Zone â Aspidoceras Acanthicum, de lest de la Russie par A. Pavlow. Vol. 3, No. 2. Carté Gèôlogique Générale de la Russie D'Europe, Feuille 139. Description Orographique par A Karpinsky et Th. Tehermycheff.—From the Society.