Mr. ABBOTT, in reply to the theory that it was the action of the fire upon the plant that caused the poison to distil, pointed out that the man who suffered most had not been near the fire, nor did the diet question come in, for two of the men who suffered were men employed in the gardens who were not on low diet.

Dr. PERKINS pointed out the common error of supposing that the upas tree had a deadly exhalation. The deadly nature of the valley in Jarra commonly thought to be caused by the upas tree resulted from carbonic acid gas, which rose from the earth, and nothing lived in that valley, not even the upas tree itself.

Mr. J. R. MCCLYMONT read a paper entitled "History of Australian Geography, II. Tasmania and New Zealand, on the Dauphin and other MS. maps." Mr. McClymont prefaced his paper by a brief account of the first Portuguese voyages to India—those of Vasco de Gama and Cabral—drawn from Mr. Major's "Prince Henry the Navigator." He adduced arguments tending to indicate that the discovery of some part of Australia might have been made by some of Cabral's ships, scattered as they were by a hurricane off the Cape of Good Hope, and quoted a passage from Mercator in support of this possibility.

MICROSCOPE.

Mr. C. J. ATKINS exhibited, by the aid of the miscroscope, some very interesting living specimens of Cyclops, a genus of minute Entomostracous Crustaceans of the order Branchiopoda, having a soft and rather gelatinous body divided into two portions, one consisting of the head and thorax, and the other forming the tail. Under the microscopes the animal was of a very bright colour, sparkling like a gem. They appeared, under an inch objective, very active, and dart about with great rapidity. The species Cyclops are very numerous, inhabiting both the sea and fresh waters. Great interest was taken in the specimens by the members present.

On the motion of Mr. Justin McC. BROWNE, a vote of thanks was unanimously accorded the writers of the papers.

NOVEMBER, 1886.

The monthly meeting of this society (the last of the session of 1886) was held on Monday evening, November 22, when a number of interesting papers were read, and the vice-president delivered his closing address. The vice-president, Mr. James Barnard, presided, and there was a large attendance of Fellows, including the hon. the Premier (Hon. J. W. Agnew, M.D., M.E.C.), Hon. P. O. Fysh, and several ladies.

Messrs. C. P. McCarthy and S. Glassbrook, of England, were introduced as visitors.

Dr. Gray, of New Norfolk, was elected a Fellow of the Society.

The assistant secretary (Mr. A. Morton) laid on the table the usual returns.

List of additions to the library during the month of October :—

Annals and magazines of Natural History, No. CV., Vol. 18.

Annual Report of the Department of Mines, New South Wales.—From the Government.

Bollettino della Societa Geografica Italiana. Series II., Vol. XI., Fax. 8, 9.—From the Society.

Boletim da Sociedade de Geographia de Lisbon. 6A serie, No. 1—2. —From the Society.

Bulletin of the American Museum of Natural History. Vol. I., No. 7. July, 1886.—From the Department.

Description and Illustration of Myoporinous Plants of Australia. By Baron F. Von Mueller, K.C.M.G.—From the Government.

Geological Magazine, September, 1886.

Imperial Federation, October 1.—From the Editor.

List of Foreign Correspondents of the Smithsonian Institution, July 1, 1885, by George H. Boehmer.

List of Institutions in the United States receiving Publications of the Smithsonian Institution.—From the Department.

Proceedings of the Royal Society of England. Vols. 38 to 40. Nos. 238 to 244.—From the Society.

Proceedings of the Linnean Society of New South Wales, second series, vol. 1, pt. the third.—From the Society.

Prodromus of the Zoology of Victoria, or figures and descriptions of the living species of all classes of the Victorian Indigenous Animals, Decade XIII, by F. McCoy, F.R.S.—From the Government.

Report of the Meteorology of India in 1884. By. H. Blandford, F.R.C.—From the Department.

Report of the Board of Governors of the Public Library, Museum, and Art Gallery of South Australia, with the reports of the Standing Committee for 1885-6.—From the Department.

Statistics of the Colony of New Zealand for 1885, part III. Trade and Interchange, part IV. Finance, Accumulation, and Production, part V. Law, Crime, and Education.—From the Department.

Transactions of the Seismological Society of Japan. Vol. IX., pts. 1, 2, 1886.—From the Society.

Victorian Naturalist. Vol. 3. Nos. 6. 7.—From the Society.

PAPERS.

MOUNT LYELL AND THE LINDA GOLDFIELDS.

Mr. R. M. JOHNSTON read a very interesting and exhaustive paper on the recent discoveries at Mount Lyell and Mount Owen. The paper dealt with the subject from a geological point of view, and was accompanied by a detailed analysis prepared by Mr. Ward, Government analyst. It also dealt with the theories of gold veins, and their mode of occurrence.

Mr. C. P. SPRENT said that he had not visited the district, but hoped to do so some day. From reading the accounts in the newspapers, Mr. Thureau's report, and also from information from Mr. David Jones, the district surveyor there, he had come to the conclusion that the deposits at Mount Lyell were very similar to the deposits at Mount Bischoff, although the associated minerals varied. He had not the slightest doubt that the description of Mr. Johnston of the formation and origin of the Mount Lyell deposits was correct. Many prospectors had been writing to him from the West Coast about the different iron blows there, and he knew that about half a dozen parties had gone to see some that were not generally known, so that probably more would soon be heard of them. The Government had decided to cut a track from Mount Lyell by Mount Ramsay, which would open up a most interesting country which hitherto he believed had not been traversed by over half a dozen men.

Mr. T. STEPHENS read the following extract from a letter received by him from Professor Liversidge on the gold deposits of Mount Lyell :—"The gold seems to be associated with a micaceous schist (but it is in such a fine powder that it is difficult to determine this), a little quartz, and much oxide of iron, some of which is certainly present as micaceous red hæmatite. Most of the mineral passes through a No. 80 sieve without any crushing being required. On crushing it in an agate mortar, all

portions of the sample readily yielded spangles of gold, easily visible after washing off the powder. It must be very rich; and on boiling it with hydrochloric acid, gold is at once seen in the whitish-coloured residue. If there be the quantity of ore stated, the deposit will certainly rival the Mount Morgan claims in value, provided the sample received be a fair average one." He thought that they yet wanted some more detailed geographical examination of the country before they could form conclusions as to the formations, and the modes in which the deposits had occurred. He hoped that during next summer there would be much added to their present stock of knowledge, and that it would form a subject of discussion on future occasions.

Dr. AGNEW asked how far the iron blow extended.

Mr. JOHNSTON said that it had been traced about one mile and a-half, but that its downward direction had only been superficially tested.

A NEW EUCALYPT.

A paper was read by the assistant secretary, in the absence of the author, Mr. T. B. Moore, entitled, "Notes on the Discovery of a New Eucalypt," which he found during a recent exploration for the Government in the country situated between the townships of New Norfolk and Victoria, at an altitude of 2,000ft. above the sea level. Mr. Moore stated in his paper that he found a splendid forest of this gum tree extending in a narrow strip of three miles along the southern side of the range. Many of the trees were over 200ft. in height, and some were branchless for over 100ft. He pointed out the quality of the wood as being of a light red colour, extremely hard and surprisingly heavy, and he was of opinion that it would be found to equal the far-famed wood known as the blue gum. He strongly recommended that the trees should be brought under conservation by the Government without delay.

The paper was accompanied by a few concluding notes by Baron von Mueller.

MOLLUSCA.

A very comprehensive paper entitled "The Trochidæ and other Genera of Mollusca from Tasmania, with synonyms," being the first of a series of papers promised by Mr. J. Brazier, F.L.S., was read by Mr. A. Morton, assistant-secretary.

TASMANIAN BIRDS.

Colonel LEGGE laid on the table the second part of his forthcoming catalogue of Tasmanian Birds, Psittaci (Parrots), and the Picariadiæ, and a systematic list of the birds of the country, also notes on the genus Ephthianura. He said that he had divided the birds into twelve orders, or families, giving the scientific and English names.

Mr. A. MORTON thought that this catalogue would be extremely valuable to the society, and the public generally. He trusted that the society would not only publish the catalogue, but also the Government, so that it could be sent to the different schools. It was surprising the number of young people who visited the museum, and were working up this subject, labouring under the disadvantage of not having books to assist them. He hoped the society would ask the Government to publish this work at the public expense.

Mr. A. MAULT trusted that the Government wouldtake into consideration the suggestion of the Curator, and have this interesting catalogue printed for distribution among the schools. Nothing would tend to give children a greater knowledge and love of nature around them, and its study would form a most valuable part of education that would add a great deal to their pleasure both in and out of school.

Nothing would tend so much to induce people in the town to go more in the country than a study of natural history.

Dr. AGNEW said it was rather dangerous to make promises, but he thought it would be well to make application to the Government, and he thought that a very strong plea could be urged in favour of the application, inasmuch as its distribution among the schools would be very valuable.

A NEW FOSSIL.

Mr. T. STEPHENS submitted a photograph of a new fossil from the excavations for the dock at Biloela, near Sydney. Identified by Professor Stephens, of the Sydney University, as one of the throat plates of a large Saurian, a representative of a fossil order widely dispersed through the Northern Hemisphere, but not hitherto recorded in the Australian colonies, except as to a specimen of the genus Bothriceps described by Huxley, from a skull found somewhere in Australia. The photograph showed the natural size of the fossil, which was not quite perfect, but Professor Stephens had no hesitation in describing it as belonging to an individual of the genus Mastodonsaurus, of the order Labyrinthodona, associated in the Triassic series with the Ceratodus, found living in Australia. The discovery was too important to allow of the specimen being kept at home, and it had been sent to England for examination by Professors Owen and Huxley.

ADDRESS.

Mr. JAMES BARNARD, Vice-President, then delivered the closing address as follows:—"It has become my privilege to again review the proceedings of another year of active work performed by the Royal Society of Tasmania; and it is cheering to know that there has been an increasing interest taken by its fellows in the discussion of the various papers submitted at the evening meetings. Perhaps during no previous session has there been such a number and variety of subjects brought forward; and although some of them may probably be considered as scarcely within the strict domain of science, yet it will be at once allowed that they possess no inconsiderable value of their own, as well as being calculated to exercise an important bearing upon the well-being of society. Geology, as usual, has come well to the front in the various excellent papers that have been presented. The first to be noticed is the comprehensive paper by Professor Hutton, of New Zealand, on the geology of the New Zealand Alps, and full of interest from showing the relation of its rocks to those of Tasmania. Mr. R. M. Johnston, F.L.S., follows with an account of the geology of Bruny Island, and embodies an interesting discovery of the position the Adventure Bay coal occupies in the coal measures as shown by its characteristic plants. Mr. Johnston, in another paper, dilates upon the Tertiary marine beds at Table Cape, as exemplified by their plant remains, and submits a new catalogue of these tertiary fossils, including some 380 species. In addition to a paper referring to the coal discovery at Longford, illustrated by diagrams, the same geologist, later on, relates some fresh discoveries of fossil plants of the Mesozoic age in Tasmania as disclosed in the coal seams at New Town. Mr. Johnston, also has given a timely and interesting sketch of the geology of King River in the Mount Lyell district, with explanatory diagrams; and in conjunction with this subject has discussed the various theories of the production of gold. Mr. Johnston, on behalf of Mr. S. H. Wintle, F.L.S., of Victoria, read some notes on certain fossil crabs taken from the deep dredgings of the Yarra River and excavation of the Coode canal, Victoria. We are indebted to Baron A. V. Groddeck, our recently elected corresponding member, for the continuation of his valuable paper on the tin deposits of Mount

Bischoff. Some interesting remarks by Mr. T. Stephens, F.G.S., on the genuineness of the specimens sent to, and described by, the Baron, will be found in the proceedings. Mr. Stephens also exhibited and described a photograph, the natural size, of a bone of the Labyrinthodon order, Mastodonsaurus robustus, which he had received from Professor W. Stephens, of the Sydney University.

In Ichthyology Mr. Saville-Kent, F.L.S., F.Z.S., has contributed two papers, one describing a suspected hybrid trumpeter and other rare fish found in Tasmanian waters ; the other, a note upon the occurrence of the Sydney crawfish on the coast of Tasmania. Mr. Kent has also communicated some interesting notes on oyster culture, which he exemplified by specimens grown on split palings covered with cement, showing the progress made towards the success of this grand experiment.

In Conchology, Professor Tate, F.G.S., F.L.S., contributes a critical paper in which he discriminates certain Australian Pectens, hitherto confounded with those from New Zealand. To our corresponding member, Mr. J. Brazier, F.L.S., of the Australian Museum, Sydney, we are indebted for a very comprehensive paper on the Trochidæ and other genera of Mollusca from Tasmania, with their synonyms, being the first of a series of papers on the Molluscs of this colony.

In Ornithology, Colonel Legge has read two papers towards his contemplated Catalogue of the Birds of Tasmania, together with a systematic index ; dividing the list into twelve orders or families, giving both their classical and English names. This work, when completed, cannot but be greatly appreciated.

In Botany, Mr. R. A. Bastow has dealt exhaustively with the attractive subject of the "Mosses of Tasmania," dwelling upon their collection, observation, and identification ; and the paper is profusely illustrated with lithographs. Mr. Abbott, of the Botanical Gardens, has described a remarkable case of poisoning by exhalations from the plant *Rhus radicans*, which elicited an interesting discussion. Mr. T. B. Moore has given an account of the discovery of a new species of Eucalyptus, discovered at an altitude of 2,000 feet above the sea level, to which has been added some notes by our highly distinguished honorary member, Baron Von Müeller.

Astronomy has been represented by communications from Mr. A. Biggs, on certain phenomena of Jupiter ; and his hypothesis on the question, "Is Jupiter self-luminous?" Mr. McCance, F.R.A.S., read some notes on sun spots, accompanied by photographs.

Natural geometry, illustrated by diagrams, was the title of an admirable paper by Mr. A. Mault, C.E., having for its object the true method of teaching mathematics by the use of visible concrete demonstrations instead of abstract ones. So clear and convincing did this mode appear that it received the unqualified approval of the Fellows present, who at once recognised its value in education, and the soundness of the principle in teaching the concrete first and the abstract afterwards ; and a general desire was expressed that steps would be taken by the Director of Education to have this method of instruction introduced into the State schools.

Historical Geography.—A valuable presentation of photo-lithographs of four early charts of Australia of the 16th century having been made to the Royal Society by the trustees of the Melbourne Public Library. Mr. J. R. McClymont, M.A., has read two very able papers towards their elucidation. These maps tend to show the probability of the discovery of some portions of Australia by the Portuguese ; and the subject is invested with a considerable amount of historical interest.

Antarctic Exploration.—As the result of a communication from the Premier of Victoria to the Government, intimating the existence of an intention to despatch an expedition to the Antarctic regions in the interests of science and commerce, and inviting the co-operation of Tasmania towards the accomplishment of that grand project, the Hon. the Premier expressed the desire that the correspondence should be brought under the consideration of the Fellows of the Royal Society; and, accordingly, a most interesting paper was read by Mr. C. P. Sprent, pointing out, after an exhaustive review of what had been done in the past, the benefits to be expected from the expedition, and giving good reasons why Tasmania should take her share in promoting this honourable enterprise by contributing towards its cost, and, it may be, participating in the future glory of its success. After discussion the following resolution was unanimously adopted, viz.:—"That, in the opinion of this Society, it is desirable in the interests of science and commerce that the exploration of the Antarctic regions should be continued, and that Tasmania should co-operate with the other Australian colonies in the despatch of an expedition for that purpose; and that the council communicate this resolution to the Premier." It is to be hoped that all the Australasian colonies will combine with the Home Government in the prosecution of this truly national undertaking.

Drainage and Sewerage of Hobart.—Perhaps one of the most important subjects of social interest brought before the Royal Society during the session has been that now referred to, which led to a prolonged discussion that was extended to a second evening specially assigned for that purpose. The author of the paper was Mr. A. Mault, C.E., and embodied a long and carefully prepared report to the Central Board of Health, supported by diagrams with elaborate calculations and statistics. Mr. Mault advocated his scheme of water drainage with conspicuous ability, and which received the support of many of the Fellows. The dry earth system, on the other hand, had its able champions, likewise armed with columns of statistics in its favour. Of course there is no practical result to place on record, as it would have been out of harmony with the usual procedure of the Royal Society to have taken a vote upon the rival schemes, its sole object being to draw further attention to the matter by diffusing information.

Among the miscellaneous items of communication may be mentioned a letter from Rev. H. R. Atkinson on snakes; and a paper on the *Peronospera infestans*, or potato disease, by Mr. Bastow.

As usual, there have been exhibits with the microscope through the courtesy of Mr. C. J. Atkins and Mr. Bastow.

It only remains now to mention that 12 Fellows have been elected, and three have resigned, with a loss of two by death; seven have been added to the roll of Corresponding Members.

Again we have a debt of gratitude to acknowledge to *The Mercury* for its copious and prompt, as well as accurate, reports of the proceedings of the society at its evening meetings.

In conclusion, I take leave to congratulate the Royal Society upon the return to Tasmania of its learned Vice-President, Sir Lambert Dobson; and to express the hope that now in his exalted position as Administrator of the Government His Excellency will avail himself of his position as president of the Royal Society to preside at its evening meetings during the ensuing Session. (Cheers).

The Hon. P. O. Fysh said it might be frequently asked of what use was the Royal Society of Tasmania, and he was glad that that question could be so well answered by the closing address which the vice-president had now read. It was well that year by year institutions like this, which

pursued its unobtrusive action from month to month, should place on record some account of its proceedings. In the paper now read they would have a record published of what the society had been doing during the past year, which let those outside know what they had done. Sitting round this table the language of the rocks, sea, and air was made familiar to them. He congratulated the Society on the good work done, and was sure that the public would not look with a grudge upon the small contribution made towards the Society. He proposed a vote of thanks to the chairman for his address.

The motion was carried by acclamation.

The CHAIRMAN briefly replied, and moved a vote of thanks to those who had read papers that evening.

Mr. JUSTIN BROWNE seconded, and the motion was cordially passed.

This concluded the business.

DECEMBER, 1886.

List of additions to the Library of the Royal Society during the month of December 1886 :—

Annals and Magazine of Natural History, October and November 1886.

Annales de la Société Royale Malacologique de Belgique, Tome XVIII, Troisême Seri, Tome III, Annèe 1883. From the Society.

Annual report of the Secretary of Mines and Water Supply, Victoria, to the Hon. J. L. Dow, M.P. On the Working of the Regulation and Inspection of Mines and Mining Machinery Act during the year 1885. From the Department.

Australian Statistics for the year 1885, with a report by the Government Statist of Victoria. From the Department.

Boletim da Sociedade de Geographia de Lisboa, 6A. Serie, Nos. 3, 4. From the Society.

Bollettino della Sociéta Geographica Italiana, Ser. IV, Vol. XI, October 1886. From the Society.

Bulletin du Musée Royal D'Histoire Naturelle de Belgique, Tome IV, No. 3. From the Society.

Descriptive Catalogue of a Collection of the Economic Minerals of Canada, by the Geological Corps, by A. R. C. Selwyn, C.M.G. From the Department.

Den Norske Nordhavs—Expedition 1876-8, XV., Zoologi, Crustacea, by G. O. Sars. From the Society.

Edinburgh Astronomical Observations, vol. XV., 1877-86. Star Cat. 4th, 24th, R.A. From the Department.

Geological Magazine, October and November.

Journal of the Society of Arts, current Nos.

Manual of the New Zealand Coleoptera, by Captain Thomas Broun, parts 3 and 4. From James Hector, M.D., etc.

Observations of the International Polar Expedition, 1882-3, Fort Rae. From the Department.

Proceedings of the Philosophical Society of Glasgow, vol. 17, 1885-6. From the Society.

Procès—Verbaux des Séances de la Société Royale Malacologique de Belgique, Tome XIII., Annèe 1884. From the Society.

Quarterly weather report of the Meteorological Office (new series). Pt. IV. October, December, 1877. From the Department.