JUNE, 1884.

The monthly evening meeting of the Royal Society was held on Monday, June 9, His Honor Mr. Justice Dobson in the chair.

Rev. J. B. W. Woollnough, Mr. A. Park, V.S., and Mr. George Hinsby, Hobart, who had previously been nominated by the council, were balloted for, and declared duly elected as fellows of the society.

Mr. Fiddian, C.S., India, and Mr. Charpentier, England, were introduced as visitors.

The Hon. Secretary (Dr. Agnew) brought forward the usual returns, viz.:—

1. Number of visitors to the Museum.—April—Sundays, 620; week days, 1,206; total, 1,826. May—Sundays, 1,125; week days, 1,310; total, 2,435.

2. Number of visitors to Gardens.—April, 6,497; May, 5,596.

3. Plants, etc., received, and sent from Gardens.—April — From Mr. W. A. Thompson, Dunedin, one case of ferns; Baron Von Mueller, two bulbous plants, two packets of seeds. Sent to Messrs. Shepherd and Co., Sydney, one bag sphagnum moss.

Plants and seeds received at, and sent from, the Royal Society's Gardens during the month of May, 1884:—

From Mr. G. Brunning, nurseryman, St. Kilda, Victoria, three cases plants.

From Mons. A. Van Geert, Ghent, Belgium, five packets seeds, coniferæ.

From Baron Ferd. Von Mueller, Government Botanist, Victoria, 290 packets seeds, including several Japan coniferæ.

From Chamber of Agriculture, Washington, United States, 75 packets seeds.

From Messrs. Shepherd and Co., nurserymen, etc., Sydney, 14 packets eucalypti.

To Dr. R. Schomburgk, Botanic Gardens, Adelaide, two bags sphagnum moss.

To Messrs. Shepherd and Co., Sydney, two bags sphagnum moss.

To Acclimatisation Society, Brisbane, Queensland, two bags sphagnum moss.

To Mr. John Smith, nurseryman, etc., Riddell's Creek, Victoria, two bags sphagnum moss.

To the Botanic Gardens, Brisbane, Queensland, two bags sphagnum moss.

To Messrs. Brunning and Sons, St. Kilda, Victoria, two bags sphagnum moss.

To Messrs. Law and Somner, nurserymen, etc., Melbourne, two bags sphagnum moss.

To Mr. C. F. Cresswell, St. Kilda, Victoria, box lily bulbs.

Time of leafing, flowering, and fruiting of a few standard plants in the Royal Society's Gardens during April, 1884: — April 10, common elm leaves commence falling; 12, Coe's fine late red plum ripe; 15, Pyrus ancuparia leaves falling; 16, Chinese chrysanthemum commence to flower; 16, leaves of black mulberry commence to fall; 20, seeds of hornbeam ripe. May 20, first medlar ripe (Nottingham); 25, Photinia serrulata commencing to flower; 27, Ailanthus glandulosa leaves all fallen; 30, Calycanthus præcox commencing to flower; 31, Jasminum nudiflorum in full flower; 31, Cantua dependens in full flower.

4. The usual monthly and other periodicals for April and May.

5. Meteorological returns from the Government Meteorologist, Hobart; abstract of meteorological observations, Tasmania, for the quarter ending March, 1884; observations for April and May.

List of Additions to the Library for the month of April, 1884:—

Fauna and Flora of New Zealand, Capt. F. W. Hutton.

The Victorian Naturalist, from the Committee V.N.S.

Entomologist Tidstcrift, vols. 1, 2, 3, from the Society.

Canadian Plants Catalogue, pt. 1.

Report of Progress for 1880, 81-82, from the Geology and Natural History Survey Department of Canada.

Maps to accompany ditto.

On the development of certain worm larvæ, by A. Agassiz, F.R.S.

List of Exchanges and Presentations made by the Royal Society of N.S.W., 1883.

Proceedings of the Yorkshire Geological and Polytechnic Society, from the Society.

Journal of Science, New Zealand.

Journal of the Royal Microscopical Society, from the Society.

Annals de la Societé Royale Malacologique, from the Society.

Seventeen parts Progress Verbal, from the Society.

Societé Royale Malacologique de Belgique, from the Societé.

The Twentieth Annual Report of the Canterbury Acclimatisation Society.

Monthly Notices of the Royal Astronomical Society, from the Society, London.

Materialism Vindicated by Veni, from the author.

1. Improved facilities for the capture, economic transmission and distribution of Sea Fishes, and how these matters affect Irish Fisheries. 2. The Fisheries of Ireland. From the Tasmanian Fisheries Commissioners.

MAY.

Report of the Free Public Library, Sydney, for 1883-84, from the Trustees.

Descriptive Catalogue of Australian Fishes, vol. 1 and 2, with supplement, by the Hon. W. Macleay, from the Author.

Descriptive Atlas of the Eucalyptus of Australia and the adjoining islands, by Baron F. Von Mueller, from the Author.

Proceedings of the Academy of Natural Science of Philadelphia, part 3, November and December, 1883, from the Society.

The Midland Medical Miscellany, from the Society.

The Victorian Naturalist, from the Society.

Periodic Law, by J. A. R. Newlands, from the Author.

Two Meteorological Maps, from Meteorological Dapartment, India.

Geological Survey of India Memoirs, vol. xx., parts 1 and 2, from the Geological Survey Department of India.

Zoological and Acclimatisation Society of Victoria (20th annual report), 1883, from the Society.

Journal of Science, New Zealand, May, 1884, from the Society.

Catalogue of Birds, vol. IX., from the Trustees British Museum.

Monthly Notices of the Royal Astronomical Society, vol. XLIV., No. 5, March, 1884, from the Society.

Proceedings of the Linnean Society, Sydney, from the Society.

Phanlogamia of the Mitta Mitta Source Basin (article 2), from J. Sterling, Esq.

In reference to these presentations to the Library, the HON. SECRETARY called special attention to No. 2, as being a most valuable work of reference and calculated to supply a want which has long been experienced.

Presentation No. 2 was the ninth decade of this most valuable and elaborately illustrated work. It could have no higher recommendation than the fact that its author was Baron Von Mueller.

No. 3 was a valuable work, and the ninth volume of a series presented by the Trustees of the British Museum.

The attention of the meeting was also called to the fact that the Proceedings of the Society for 1883 were now published and ready for distribution.

List of presentations to the Museum for the month of April, 1884 :—

BIRDS.

A cockatoo parrot—Calopsitta novœ-Hollandiæ—Mr. J. Cotton, Riversdale.

Freckled duck—Anas nœvosa—Mr. J. G. Richards, Ross.

FISHES.

A velvet fish—Holoxenus cutaneus—Mrs. Bradley, Swan Island.

A fish—Macrurus Australis—Mr. Self, Hobart.

REPTILES.

Three frogs—Lymnodynastes Tasmaniensis—Miss L. Ranclauld.

FOSSILS.

A fossil bivale, Miss Hall, Huon-road.

MINERALS.

Specimen of malachite and jasper, Mrs. W. Reilly, Port Cygnet.

Pumice stone, picked up at sea, off the Straits of Sunda, September, 1883, about a month after the eruption, Mr. R. R. Rex, Hobart.

Specimens of pottery (native vessel), pumice stone, and piece of pavement, obtained from the excavations going on at Pompei, on March 12, 1884, Mr. D. Macpherson, New Zealand.

COINS.

Three Chinese coins, one Melbourne token, Mr. W. Reilly, Port Cygnet.

ANIMALS.

A skull of rabbit with a curious malformation of the teeth, Mr. J. G. Richards.

MAY.

BIRDS.

Two Ceylon hawks—Spilornis spilogaster—from Col. W. V. Legge.

Two chesnut-eared finches—Amadina castanotis—Miss M. A. Dove.

A plover—Lobivanellus lobatus — Mr. J. Whitehead.

Chesnut-faced owl—Strix castanops—Mr. J. G. Richards.

FISHES.

Two silver bream—Chrysophrys Australis—Mr. W. Reilly.

Three flatheads —Platycephalus bassensis—Mr. W. Reilly.

A rock cod—Pseudophycis barbatus—Mr. W. Reilly.

Young of the lamprey—Geotria Allportii—Mr. Read.

MOLLUSCA.

A sea hare—Aplysia sp.—Mr. S. P. Baynton.

A star fish, Mr. F. Self.

FOSSILS.

Cypris Alburyana, Mr. R. M. Johnston, F.L.S., from Geilston.

MINERALS.

A collection of minerals, chiefly tin ore, from Mount Bischoff, Mr. C. E. Davies.

A model of a penny, Mr. Wara.

The following papers by Professor R. Tate, F.G.S., F.L.S., etc., Adelaide, were read by the hon. secretary :—

1. "Notes of a critical examination of the mollusca of the older tertiary of Tasmania, allied to have living representatives."

2. "Descriptions of some new fossil mollusca from Table Cape."

3. "On the community of species of aquatic pulmonate snails between Australia and Tasmania."

Mr. R. M. Johnston, F.L.S., read the following papers :—

1. "Additions to the list of Table Cape fossils, together with further remarks upon certain fossil shells supposed to be identical with living species."

2. "Notes on a fossil (Cypris Alburyana), from Geilston.

3. "Description of a new Vitrina, from the Travertin Beds, Geilston."

A paper by Mr. T. Stephens, F.G.S., was read by the hon. secretary :— "Notes on boring operations in search of coal in Tasmania."

In the discussion which followed the reading of Mr. Stephens' paper, Mr. R. M. JOHNSTON stated that little value could be placed in conclusions formed from the partial evidence of marine organisms only as regards the position of the Southern and Eastern coal deposits of Tasmania, because he had found a considerable percentage of the species of the marine organisms common to the mudstone series immediately overlying the Mersey coal measures, also common to the mudstone series which is now being tested by the boring drill at the Cascade Brewery, and also common to the Tasmanite beds on the Mersey. Among the fossils common to these deposits are the well-known forms : — *Spirifera Tasmaniensis, Spirifera Darwinii, Productus brachythyærus, Pterinea lata, Sanguinolites Etheridgei, Pecten Fittoni, Pecten squamuliferus, Pecten Illawarra, Pecten nov. sp., Pleurotomaria Morrisiana, Protoretepora ampla, Stenopora Tasmaniensis,* and several others, and the list no doubt could be greatly increased. If, therefore, it be allowed that the Mersey and Southern and Eastern coal deposits represent different horizons, the evidences from marine organisms, taken by themselves with our present knowledge, are absolutely valueless, at any rate neutral. It is from an examination of the plant remains, associated with the respective coal measures, that we have any grounds for separating them into different groups, as representing different periods. Thus the prevailing plant remains of the coal measures of the Mersey, which are the equivalents of the Stony Creek, Anvil Creek, and other coal seams in New South Wales, are *Glossopteris Browniana* ; equisetaceous stalks, broadly and flatly ribbed, allied to the Indian genus *Schizoneura* ; a curious orbicular form allied to *Actinopteris* ; and numerous impressions of a form closely allied to *Noeggerathiopsis media.* On the other hand, the Midland, Southern, and Eastern coal measures of Tasmania have generally as prevailing forms *Pecopteris Australis, P. odontopteroides, Phyllotheca Hookeri, Phyllotheca ramosa, Sphenopteris alata, Zeugophyllites elongatus,* and *Glossopteris linearis,* and, therefore, the beds may, without doubt, as already shown by Feistmantel, Rev. W. B. Clarke, R. Etheridge, junr., and others, be regarded as the equivalents of the upper coal measures of New South Wales. Regarded from an evolutionist's point of view, Mr. Johnston stated that, with the late Rev. W. B. Clarke, he found it very difficult to recognise any break, stratagraphic, or organic, between the upper and lower mudstone series of Australia, so far as the marine organisms of undoubted palæozoic facies gave any evidence. If these subdivisions were to be classed as upper palæozoic, and the upper coal measures, according to various authorities, as permian, oolitic, dias, or mesozoic, the separation must be doubtful and purely one of local convenience. Mr. Johnston observed that while, on the whole, he fully agreed with Mr. Stephens' conclusions, he was not prepared to concur with him in regarding the sandy and calcareous fossiliferous rocks occurring in the neighbourhood of Hobart, and in other localities in the South and East, *wholly* as the equivalents of the lower marine beds of New South Wales, for it was not only conceivable but, unfortunately, probable that the Southern marine beds of Tasmania were formed in situations more remotely removed from the oscillation of the land which produced the conditions favourable to the deposits of the lower coal measures in such places as the Don, Mersey, Stony Creek, and Anvil Creek basins; that while these carbonaceous deposits intercalcating and interrupting the series of marine beds were being formed in situations adjacent to the shores of the old palæozoic main land, the marine areas, more remote from the land, still continued to deposit their marine sediments with an uninterrupted chain of marine organic life; and it is quite conceivable, and, indeed, in harmony with existing evidence, that the

Southern and Eastern marine beds of Tasmania cover in one unbroken series the whole period represented in Australia and in Northern Tasmania by the lower marine beds, lower coal measures, and upper marine beds; and that the final oscillation of land, producing conditions favourable to the deposits of the upper coal measures of Australia and Tasmania, was the only one which extended as far as the South and East of Tasmania. However, Mr. Johnston was greatly pleased that this matter was being tested, as far as possible in the, North and South, in a practical way by means of the diamond drill, and he hoped to see this most useful practical test still further employed in our important coal basins, not only to measure the value of our coal seams vertically, but also sufficiently extended to ascertain their extent horizontally.

NOTES AND EXHIBITS.

The hon. secretary exhibited a skull of a rabbit with the incisor teeth of both jaws unusually long, the lower incisors being $1\frac{1}{2}$ inch, upper ones $\frac{3}{4}$ inch in length. Similar overgrowths have been frequently reported as occuring in all of the rodent family when one or more of the incisors had been lost, but in this case, the abnormal divarication of the lower pair had led to the growth of all four teeth since they could not meet so as to wear each other down.

Colonel Legge exhibited two specimens of the Ceylonese Serpent Eagle, *Spilornis Spilogaster*, Blyth, an adult, and immature bird, and made some remarks on the genus *Spilornis*. The Serpent Eagles formed an interesting section of small, weakfooted, eagles, with an Indo-Malayan distribution, extending from the Himalayas eastwards through Burmah to Formosa, and south-eastwards through Southern India, Ceylon, the Andamans, Sumatra, Java, Borneo, to Celebes, and the Philippines. The section comprised the one genus only, which might be said to be a typical Indo-Malayan form, for it appeared only, in one case, that of the Celebes Serpent Eagle, *S. Rufipectus*, to cross the remarkable dividing line discovered by Wallace, and which passes upwards through the strait between Bali and Lombock, and thence between Borneo and Celebes to the eastward of the Philippines. The fauna and flora to the eastward of this line was Australian in character, and to the westward of it Indian. Apparently, the genus had not yet been found in Papua, but, some day, when that island was perhaps annexed to Australia, our naturalists might discover examples of it. The largest number of the genus *S. Cheela* ranged from the Himalayas to Burmah, and had been found in Formosa. Its smaller representative was *S. Melanotis* of Southern India. In Java, a very similar species to the Ceylonese existed, the *S. Bacha* of Daudin, which is also found in Sumatra. It is darker than the Ceylonese bird, and the edge surrounding the paleoculli of the lower features is scarcely darker than the surrounding colour. Another species is described from the Andamans, by Hume, as smaller than *S. Bacha*. The species ranging further to the eastward are *S. Pallidus* from Borneo, *S. Rufipectus* from Celebes, *S. Sulaensis* from the Sula Islands, and *S. Holospilus* from the Philippines. The habits of the Ceylonese Serpent Eagle were interesting. It was a denizen of gloomy forests, and one or two pairs were always to be found in the magnificent trees surrounding the grand old tanks made by the ancient kings of Ceylon. It sat on a limb overhanging the water, its crest now and then erected, and its brilliant yellow orbs glaring on the water beneath, where it watched for the appearance of some hapless frog or water snake. On the beautiful rivers of the forest regions of Ceylon, which dried up in the hot season, leaving a broad sandy bed with a limpid stream trickling down it, these eagles were also to be found, silently seated on the look-out for their prey. Now and then, in the heat of the day, these birds soared aloft, circling round and round, uttering a loud scream of three long drawn syllables, but, as a rule, they were very silent.

Mr. Morton exhibited some very beautiful photographic views of Lord

Howe Island ; also a freckled duck (*Anas. nævosa*), shot at Ross, on April 12. This species of duck is found in Victoria, South Australia, and Western Australia, but has never been reported as found in Tasmania before.

Colonel LEGGE strongly advocated the formation of a complete collection of Tasmanian bird skins carefully labelled, locality, etc. He stated he was of an opinion that there were yet one or two new species of birds in the back country, which had hitherto been over-looked by collectors and others. He trusted the Council of the Royal Society would endeavour to have air-tight cabinets made for such a collection, similar ones being used in the British Museum, and other leading museums.

The CURATOR OF THE MUSEUM said he was glad that Colonel Legge had brought the matter before the fellows, and referred to the excellent skin collection the Australian Museum, Sydney, had in their possession. He said a great deal might be done by our country friends in forwarding to the Museum specimens of animals or birds, which, if not actually wanted for the Museum collection, would be valuable for exchanges with other museums.

The CHAIRMAN (His Honor Judge Dobson) stated that he wished to bring under the notice of the meeting a subject which he was sure would be of interest to them all. He alluded to the wanton and mischievous destruction of the tree ferns at Mount Wellington. Many glens and other localities on the mountain had been utterly robbed of all their beauty and attraction by the stupid destruction of these trees, some of which he had no doubt represented a growth of fifty to a hundred years. He was sorry to say, too, that this desecration was permitted by many of whom better things might have been expected, and, in very many cases for the mere decoration of a ballroom, trees were cut down which we could never hope to see replaced in a lifetime. He thought something might be done to stop this senseless waste of beauty, as far at least as the Mount Wellington Reserve was concerned, by constituting it a people's park, and making it penal to remove ferns or other trees. If Government took the initiative in the preservation of the ferns it was probable that many private individuals, who may act rather in a spirit of thoughtlessness than otherwise, might be induced to follow the good example.

After discussion, in which almost all present joined, it was resolved that a committee be appointed in order to bring the views of the meeting under the notice of the Government.

Mr. Justice Dobson, the Mayor (Mr. Belbin), Colonel Legge, Mr. C. H. Grant, and the hon. secretary (Dr. Agnew) were appointed as the committee.

A vote of thanks to the authors of papers and donors of presentations closed the proceedings.

JULY, 1844.

The monthly evening meeting of the Royal Society was held on Monday, July 7, Mr. James Barnard, V.P., in the chair.

Mr. Wentworth Hardy, who had previously been nominated by the council, was balloted for, and declared duly elected as a Fellow of the society.

The CHAIRMAN apologised for unavoidable absence of the hon. secretary (Dr. Agnew), being away on official duties.

The following usual returns were brought forward, viz. :—

1. Number of visitors to the Museum.—June — Sundays, 930 ; week-days, 1,258. Total, 2,188.