

but it differed externally in its larger size and in being of a smooth dark chocolate-colour on all its upper parts, and, as regards the skull, in having a longer facial portion in comparison to the cranium. — P. L. Selater, Secretary.

3. Linnean Society of New South Wales.

April 29th, 1896. — (1) Theoretical Explanations of the Distribution of Southern Faunas. By Captain F. W. Hutton, F.R.S., Hon. Member. After reviewing the various theories which have been offered to explain the difficult and intricate problem of the distribution of southern faunas, the author points out that the supposition that the ancestors of certain groups migrated from the northern into the southern hemisphere by the present continents, and have since then become extinct in the north, explains a good deal, but fails to give a full and satisfactory explanation of the whole of the facts. Moreover the members of the fauna unaccounted for are old forms and consequently the means of communication which served them must long ago have been destroyed. To the author a fatal objection to the theory of migration by way of an Antarctic Continent is offered by the following consideration. Aplacental Mammals — both Multituberculata and Polyprotodontia — existed in Europe and N. America in the Triassic and Jurassic periods, and these Polyprotodontia were, no doubt, the ancestors of the living Polyprotodontia of Australia. In the Eocene strata of Patagonia remains of a large number of Polyprotodontia have been found which are far more closely related to the Polyprotodontia of Australia than to the Mesozoic forms of Europe and N. America; consequently a direct land communication must have existed between these two southern countries. Now there is strong geological and palaeontological evidence that no land ridge existed between N. and S. America during the Mesozoic and early Cainozoic eras; consequently we must assume that the southern forms migrated through the Malay Archipelago; and, if they went to Patagonia by means of an Antarctic continent, they must have passed through Australia. But mingled with the Eocene Marsupials of Patagonia there are a number of Eutheria of typically South American character — *Edentata*, *Toxodontia*, *Typotheria*, *Perisodactyla*, *Rodentia*, and even *Platyrrhine* monkeys — without any northern forms of *Artiodactyla*, *Carnivora*, or *Insectivora*; and it is hardly possible that these should have passed through Australia without leaving any record behind. The theory of the former existence of a South Pacific Mesozoic Continent, first suggested by Huxley, seems to be the only theory left. It not only explains the origin of the Australian and S. American marsupials, but also the almost simultaneous appearance of different Eutherian mammals in North and South America. We must suppose that this continent threw off first New Zealand, then Australia, then Chili, and finally disappeared under the waves. At a later date, New Zealand must have formed part of a large island joined to New Caledonia, but not to Australia. The objections to this theory are geological rather than biological, involving the doctrine of the persistence of continental and oceanic areas upon which geologists are not agreed; and such objections are equally applicable to the theory of an Antarctic Continent. — 2) Report on a Bone Breccia Deposit near the Wombeyan Caves, New South Wales: with Descriptions of some new Species of Marsupials. By R. Broom, M.D., B.Sc. A detailed examination of this de-

posit from which *Burramys parvus* and *Palacopetaurus elegans* have already been described by the writer, adds considerably to our knowledge of the smaller Marsupial fauna of the later Tertiary period. Of existing forms there have been found *Petaurus breviceps*, *Dromicia nana*, *Phascologale flavipes*, *P. penicillata* and some detached teeth referred to *Thylacinus cynocephalus*. Besides these are found a presumably new species of *Macropus* for which the name of *M. wombeyensis* is proposed, a new species of *Pseudochirus* (*P. antiquus*), a new species of *Perameles* (*P. wombeyensis*) and an extinct variety of the existing *Potorous tridactylus*. A few bones of a large *Echidna* are referred to *E. Oweni*. There are also innumerable remains of bush rats (*Mus* sp.), together with a few bones of small birds and lizards. — 3) The Entomology of Australian Grass Trees (*Xanthorrhoea*). By W. W. Froggatt. The life-histories or habits of a number of insects which either breed in the stems of the grass tree or feed upon its foliage are treated of. Among them are *Coleoptera* (10 species), *Diptera* (4), *Coccidae* (2), *Lepidoptera* (1). — 4) On the *Galaxias* from Mount Kosciusko. By J. D. Ogilby (Communicated by C. Hedley, F.L.S.) After reviewing its history and describing the species (*G. Findlayi*, Mcl.) from a fine series, obtained from streams on both watersheds of the Australian Alps, the author gives an account of the curious distribution of this fresh-water family of fishes with special reference to its Antarctic origin, and concludes with a list of the known forms, holding that far too many species had been made by scientists who relied too much on contour and coloration, both of which characters are most inconstant. — Mr. North exhibited the types of the new genus and species of birds obtained by the members of the "Horn Expedition" in Central Australia, and described by him in the July number of "The Ibis" for 1895, also more fully in the "Report of the Horn Scientific Expedition," Part II. Zoology, just published. The genus *Spathopterus* formed for the reception of the Princess of Wales' Parrakeet is a most extraordinary one. The fully adult male, of which a beautiful specimen was exhibited, has the end of the third primary prolonged half an inch beyond the second and terminating in a spatulate tip. It is entirely different from the wing of any other bird found in Australia, but the peculiar terminations of the third primaries resemble somewhat the tail-like appendages to the lower wings of the Queensland butterfly *Papilio ulysses*. The new species comprised the following: — *Rhipidura albicauda*, *Xerophila nigricincta*, *Ptilotis Kearlandi*, *Climacteris superciliosa*, *Turnix leucogaster*, and *Calamanthus isabellinus*, a subspecies of *C. campestris*, Gould. — Mr. Hedley exhibited on behalf of Mr. J. Jennings some living *Strombus luhuanus* from Vacluse. As none had been observed alive for several years it had been feared that this interesting colony, the most southern recorded of this species, had become extinct, a fear happily now shown to be unfounded. — Mr. Rainbow showed a Sydney spider (*Celaeria excavata*, Koch) which mimicks the excreta of a bird. Also examples of the eggbags of the same species, which in appearance resemble the kernels of the Quandong (*Fusanus*). — Mr. Froggatt exhibited specimens of the insects frequenting the four species of *Xanthorrhoea* to be found in the County of Cumberland, together with drawings illustrative of the life-history of some of them. Also a living specimen of the "Thorny Lizard" (*Moloch horridus*, Gray), received by post from Kalgoolie, W.A. Mr. Froggatt likewise communicated some observations on the habits of this

specimen. — Mr. Pedley also exhibited a living specimen of *Moloch horridus* from West Australia.

4. The Academy of Natural Sciences of Philadelphia.

Anthropological Section. April 10. Chas. Morris, Recorder. Prof. Witmer made a communication on the relations of modern Psychology to Anthropology. Numerous examples were adduced to illustrate the connection between psychic and physical action, modern psychology beginning with a study of sensation rather than movement. The law of Fechner and Weber that if stimuli increase in arithmetical proportion sensation will increase in geometrical proportion was, although repudiated by physiologists generally, held by the speaker as furnishing an index of discrimination and indicating methods by which we can distinguish and measure individual responsiveness to various stimuli. Various devices for registering and measuring psychical responsiveness were described. — The subjects of psychoneural tests, temperaments and the effects of stimuli on unconscious movement were discussed by Messrs. Kavanaugh, Mills, Allen, Witmer and Reisman.

April 21, 1896. — Mr. A. E. Brown stated that he had recently had an opportunity of examining in the British Museum a cast of the fragment of skull of *Pithecanthropus erectus* discovered by Mr. Dubois. An examination of the cast supports the opinions advanced by Cope and Allen before the Academy that the remains as described and figured by Dubois present no characters separating the species from *Homo Neanderthalensis*. The Java skull is possibly a little flatter than the Neanderthal specimen but this is purely individual and is compensated for by a bump over the coronal suture. It is also a little more inflated postero-laterally, the supraorbital ridges being perhaps not quite so thick although they project as much if not more. The Java skull is about five-sixths or seven-eighths the length of the other, the cubical capacity being somewhat less. — The phylogeny of man and the apes was considered by Messrs. Rothermel, Brown and Chapman.

5. Deutsche Zoologische Gesellschaft.

Vom 28.—30. Mai hat im Zoologischen und vergleichend-anatomischen Institut zu Bonn unter dem Vorsitz des Herrn Prof. Bütschli (Heidelberg) und unter Beteiligung von 41 ordentlichen Mitgliedern und 13 Gästen die sechste Jahresversammlung stattgefunden. Am 27. Abends 6 Uhr war der Vorstand in der »Kaiserhalle« zu einer kurzen Sitzung zusammengetreten, und später fanden sich daselbst die zahlreichen Anwesenden zu gegenseitiger Begrüßung und zwanglosem Verkehr ein. Die erste Sitzung, am 28., wurde durch eine Ansprache des Vorsitzenden eingeleitet, in welcher derselbe »Betrachtungen über Hypothesen und Beobachtung« anstellte. Der Curator der Universität Bonn, Se. Exc. der wirkliche Gebeime Rath Dr. v. Rottenburg, begrüßte in seinem und des gleichfalls erschienenen Rectors, Herrn Prof. Ritter, Namen die Gesellschaft, und auch Herr Prof. Ludwig (Bonn) hieß dieselbe herzlich willkommen.

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Zoologischer Anzeiger](#)

Jahr/Year: 1896

Band/Volume: [19](#)

Autor(en)/Author(s): Anonymous

Artikel/Article: [3. Linnean Society of New South Wales 277-279](#)