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1930-31.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.



# AUSTRALIAN MUSEUM.

(ANNUAL REPORT OF THE TRUSTEES FOR THE YEAR ENDED 30TH JUNE, 1930.)

Printed under No. 3 Report from Printing Committee, 22 January, 1931.

To HIS EXCELLENCY THE GOVERNOR,

The Trustees of the Australian Museum have the honor to submit to your Excellency their seventy-sixth Annual Report, being that for the year ended 30th June, 1930.

In presenting this report the Trustees desire to emphasize the usefulness of the Museum and its work. As a bureau of information the Museum performs a notable service to the community. Investigators and students frequently consult the collections and the library, which contains a number of works not obtainable elsewhere, and members of the staff are always ready to assist those who are doing research or are seeking information.

The Museum co-operates with State Departments, such as the Departments of Mines and of Agriculture, and the Fisheries Branch in supplying and disseminating information on matters of economic importance.

Mineral prospectors have been assisted, and a comprehensive report on silk culture has been prepared.

By its lectures and by gifts and loans of specimens to colleges and schools for teaching purposes, the Museum performs an important function as an educational institution. Art students make considerable use of the collections, and the Art Classes of the East Sydney Technical College attend regularly for part of the year.

### 1. Trustees.

In December, 1929, Sir Charles Rosenthal was re-elected president for the year 1930. He resigned office as an Elective Trustee and President on 27th May, 1930. Sir Charles, who had been a member of the Board since 5th October, 1923, and had occupied the Presidential Chair since 5th November, 1926, took a very active part in the deliberations of the Board, and his expert knowledge as an architect had frequently been of the greatest service to the Museum. He presided over the meetings of the Board with tact and discretion, and his vigorous personality and genial presence contributed greatly to the successful conduct of the Board's business. His resignation will be severely felt by his colleagues. A list of the Trustees will be found in Appendix A.

#### 2. Staff.

Gazetted awards for the Museum staff having expired on 31st December, consideration has been given to the question of fresh awards. New claims prepared and served by the Public Service Association were reviewed, and the Trustees decided to file counter claims. The claims and counter claims are now under consideration.

Mr. E. Le G. Troughton, Assistant in charge of Mammals and Osteology, was granted twelve months' leave of absence on long service leave. He will visit the leading museums in Europe and America for purposes of study and research.

Mr. W. W. Thorpe, Ethnologist, at the request of the authorities of the Auckland Institute and Museum, spent some time in New Zealand assisting in the installation of the ethnological collection. In return for this service the Australian Museum received a collection of ethnological specimens.

Mr. H. O. Fletcher, Assistant in Palaeontology, was invited by Sir Douglas Mawson to accompany the British-Australia-New Zealand Antarctic Expedition as assistant biologist and taxidermist, and was absent with the expedition from September, 1929, till April, 1930.

Miss S. L. Stark, Assistant in Ornithology and Herpetology, resigned on 6th February, 1930.

Mr. J. W. Woodhead, Printer, resigned December, 1929, after thirty years' service.

A list of the staff and of Honorary Officers will be found in Appendices B and C.

## 3. Honorary Correspondents.

With deep regret the Trustees record the deaths of Mr. A. E. Phillips and Mr. W. H. Wooster.

In recognition of her valuable donation of shells Mrs. M. J. Waterhouse was elected an Honorary Correspondent in December, 1929.

A list of Honorary Correspondents appears as Appendix D.

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## 4. Buildings and Equipment.

During the year the Department of Public Works has continued to attend to repairs and maintenance of buildings. The condition of the galvanised-iron storage sheds has become worse, and it is earnestly hoped that in the near future it will be found possible to replace these inadequate and unsightly structures by more suitable and commodious buildings.

Special equipment acquired during the year included two entomological cabinets and five concrete tanks for spirit specimens.

#### 5. Public Attendance.

The number of visitors reached a total of 278,431, a decrease of 5,964 on last year's figures. Statistics of attendance for the years 1920-1930 are appended.

					Week-days.	Sundays.	Total.
1920-1921					 159,576	63,016	222,592
1921-1922					 151,544	62,889	214,433
1922-1923			***	***	 145,271	56,600	202,871
1923-1924		•••			 180,474	69,037	249,511
1924-1925					 168,880	70,478	239,358
1925-1926					 207,128	69,745	276,873
1926-1927					 208,617	79,316	287,933
1927-1928	•••				 204,437	75,895	280,332
1928-1929					 207,899	76,496	284,395
1929-1930		•••			 209,685	68,746	278,431

#### 6. LIBRARY.

During the year the library acquired 414 volumes by exchange and purchase, besides numerous loose parts and reprints. The library continues to expand and successive years accentuate the congestion. Additional casing has been placed in various rooms and the basement, which for a limited period will ease the situation.

Notable accessions were the presentation by Mrs. M. J. Waterhouse of many volumes on Conchology; the gift of books from the library of the late W. H. Wooster by members of his family; numerous cuttings and Official publications referring to British New Guinea, now Papua, by Mr. A. Musgrave; and the presentation of Hoffmeister's "Die bis jetzt bekannten Arten aus der Familie der Regenwürmer, 1845," by Mr. Tom Iredale.

A number of new exchanges have been entered into and existing ones are now in process of revision. Progress has been made with binding and Mr. F. D. McCarthy has catalogued an immense number of author's reprints, though many yet remain to be done, and prepared supplementary entries for the catalogue of Scientific and Periodical Literature in Australian Libraries, recently issued by the Council for Scientific and Industrial Research. This is additional to other cataloguing work. Much assistance has been rendered to students and investigators and to the press.

The Librarian, Mr. W. A. Rainbow, has continued to devote a considerable portion of his time to editorial work and the supervision of the printing of publications.

#### 7. FIELD WORK.

A considerable amount of field work has been accomplished during the year. From the beginning of July until October Mr. A. A. Livingstone was working with Dr. H. Lyman Clark on the north-west coast of Australia, the result being an important accession of specimens and invaluable experience. Mr. H. O. Fletcher, along with Mr. W. S. Dun, Honorary Palaeontologist, paid a short visit to Derrengullen and Yass districts in July, and collected a number of fossil corals. In the end of September and the beginning of October Messrs. H. S. Grant and J. H. Wright were at Montague Island, South Coast, collecting seals, part of the expenses of the trip being generously defrayed by Mr. A. S. Le Souef. In October and November Messrs. J. H. Wright and W. Barnes were at Yarramalong, Gosford district, obtaining specimens for the Lyre Bird group and doing general collecting. Messrs. W. Boardman and Melbourne Ward, Honorary Zoologists, spent part of December and January collecting on the Capricorn Group, Great Barrier Reef, and dredging on the coast of Queensland. In February Mr. J. R. Kinghorn accompanied Mr. J. S. Slevin, Curator of Reptiles, California Academy of Sciences, on a collecting trip in the Oberon district, Mr. Melbourne Ward kindly placing his car at their disposal.

#### 8. Lectures.

Lectures in the Museum comprise a regular series of popular evening discourses, open free to the public; a course of lectures to school children; occasional lectures to students of sundry institutions. In addition outside (extension) lectures are delivered at the request of various societies and institutions. In order to increase the value and attractiveness of the lectures, a fine series of cinema films was purchased.

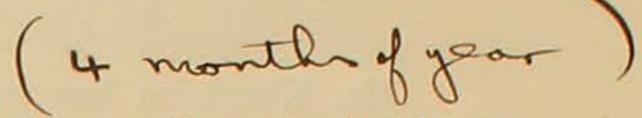
The total attendance at Museum lectures of all kinds during 1929-30 was as follows:-

15 Evening lectures	•••								4,294
10 School lectures								/***	1,996
1 Extension lecture				•••		***		•••	150
2 Other lectures in the	e Museu	ım					(***		.230
24 Unofficial, lectures	•••					***			1,417
			F - 30				4-9 6	Service	
	T	otal	200		201202	***			8.087

Details of lectures and attendances will be found in Appendix E.

#### 9. Publicity.

Copies of the Australian Museum Magazine were sent to 250 of the Great Public and High Schools of the State, with a covering letter from the President appealing for support to the Museum and its activities. A number of short addresses by various members of the staff were broadcast.



Mammals (E. Le G. Troughton in charge).—During Mr. Troughton's absence on long service leave this department was in charge of the Senior Taxidermist, Mr. H. S. Grant, under the superintendence of Mr. J. R. Kinghorn.

The acquisitions continue to advance, this year's registrations totalling 448, an increase of 198 over last year.

An interesting series of specimens was obtained through the personal exertions and expenditure of Mr. A. S. Le Souef, who obtained and presented marsupials and rodents from the following localities:—Rawlinna and Ooldea, Trans-Australian Railway Line; various islands in Bass Strait; Normalup and Boonya, Western Australia; Lake Cowell and Mt. Kosciusko, New South Wales. From Mr. Le Souef we also obtained three kinds of wallabies, acclimatized on Kaway Island, near Auckland, New Zealand; these show considerable variation in colour from the normal. Mr. F. R. Bradshaw presented a number of specimens of the marsupial mouse Sminthopsis crassicaudata from Tambellup, Western Australia; and from Mr. C. T. McNamara, of Mt. Lamington district, N.E. Papua, we obtained a series of striped opossums and rodents from that locality. Dr. Raymond Firth forwarded a valuable series of a new sub-species of Bat (Pteropus tonganus heffernani) from Tikopia, Santa Cruz Group. Additional specimens of bats and rodents were presented by Mr. F. M. Campbell, San Christoval, British Solomons, and Mr. A. C. English, Rigo, Papua. Several Australian and foreign mammals were presented by the Taronga Park Trust.

Five seals were obtained at Montague Island by Messrs. H. S. Grant, Senior Taxidermist, and J. H. Wright, Assistant Taxidermist, and a number of mammals were collected at Yarramalong Mountain, near Gosford, by Messrs. J. H. Wright and W. Barnes, Assistant Taxidermists.

An exchange of marsupials and rodents was made with the South Australian Museum, Adelaide, and a series of the rare flat-headed marsupial mouse (*Planigale ingrami ingrami*) was purchased from Mr. Albert de Lestang, Burketown, Queensland. A number of marsupials and bats from Argalong, near Tumut, New South Wales, were purchased from Mr. T. V. Sherrin.

New specimens skinned or preserved numbered 295; 190 skins were filled out and incorporated in the collection, and 214 were cleaned and restored.

The general skin and skull collection, transferred last year to the new mammal room, has been classified and arranged, and the card catalogues revised and brought up to date. This collection is now in excellent systematic order and conveniently arranged for ready reference.

The gallery exhibits have received due attention during the year and are in good condition. A platypus dissected to show the poison gland, and a series of samples of ambergris have been placed on exhibition. New labels have been prepared for a number of the exhibits.

Every facility and assistance has been given to the many students of mammalogy who have visited the department during the year.

Skeletons (E. Le G. Troughton in charge).—During his absence the department was looked after by the taxidermists and articulators under the supervision of Mr. J. R. Kinghorn.

During the year 50 specimens were added to the collection. The most noteworthy donations were two series of shark's jaws by Captain K. Moller, of the Red Funnel Trawlers, and the Manager, Marine Industries Ltd.; a number of skulls of the red kangaroo (*Macropus rufus*) from the Broken Hill district, by Mr. A. Nutter. A varied collection of mammalian skulls was presented by Mr. C. T. McNamara, Mt. Lamington, Papua. A valuable acquisition was a fine skull of the Chimpanzee (*Simia satyrus*) from Sarawak, British Borneo, presented by Dr. J. R. M. Robertson, Trustee.

Several species of sea-birds washed up on the beaches after storms and collected by various members of the staff were converted into skeletons and added to the collection. An aboriginal skull from Granada Station, Leichhardt River, North Australia, was acquired by purchase.

The skeleton of the Green Turtle (Chelonia midas) was taken to pieces, cleaned, remounted and replaced in the gallery. A number of skeletons, including that of the Water Monitor (Varanus salvator) were repaired and cleaned.

The gallery and stored specimens were cleaned and disinfected and are in excellent order.

The valuable collection of human crania, transferred to the steel cabinets in the new mammal room, has been rearranged and cleaned, and the card catalogue revised.

Birds (J. R. Kinghorn in charge; Miss S. L. Stark, Assistant for part of the year).—During the year 280 specimens were added to the collection, including 154 birds and 136 clutches of eggs, 264 being donations. Mr. A. H. Austin and Mr. N. Etheridge presented collections of eggs, and a series of rock-hopper Penguins (Eudyptes cristatus) was presented by Mr. H. O. Fletcher, who obtained them at Royal Sound, Kerguelen Islands.

The reference collections are in good order, but cataloguing and sorting has not progressed owing to lack of assistance. The gallery exhibits have been overhauled and 51 old groups renovated, while 113 were cleaned and re-labelled. Seventy-seven old skins were restored. The installation of the Lyre Bird group was completed and the exhibit is now attracting much attention from the public.

A collection of birds was prepared and forwarded to the Teachers' College, Armidale, a case of land birds was presented to the Teachers' College, Sydney, and a number of specimens were sent to country museums. A selection of mounted specimens was lent to John Sands Ltd., who used them to advertise the Museum Magazine and postcards. Several hundreds of birds have been examined by students of ornithology and many have been issued on loan to Mr. N. W. Cayley, Mr. G. Gostelow, and Mr. K. A. Hindwood. Collections were examined for the Department of Customs, and assistance and advice were given to the Chief Secretary's and the Agriculture Departments, to members of the Royal Australasian Ornithologists' Union, the State Advisory Committee, various Natural History Societies, and schools.

Work on the migration and economic value of the starling is now in progress in conjunction with the Department of Agriculture.

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Mr. Kinghorn has been appointed examiner for Bird Badges and Kindness-to-Animal Badges in connection with the Boy Scouts' and Girl Guides' Associations, and has drawn up a list of examination questions and conducted examinations for these badges.

Reptiles and Batrachians (J. R. Kinghorn in charge; Miss S. L. Stark, Assistant for part of the year).— Acquisitions during the year numbered 296, of which 272 were presented, 14 collected, 9 purchased and 1 exchanged. The most important donations were received from the following:—Dr. H. Lyman Clark and A. A. Livingstone, from North Australia; Mr. L. Wood, Forrest River, Kimberley, West Australia; Mr. C. T. McNamara, Mt. Lamington, Papua, Mr. D. G. Stead, various localities in New South Wales and other States.

The reptile gallery has been completely overhauled, a number of casts being renewed. The entire spirit collection of reptile and batrachians has been transferred to the upper storey of the spirit house, and the work of reorganization is now in progress.

During November Mr. Kinghorn spent about two weeks working in the National Museum, and at the Walter and Eliza Hall Institute, Melbourne. Mr. J. R. Slevin, Curator of Reptiles, California Academy of Sciences, while on a collecting trip in Australia, stored his collections and equipment at the Museum and, as far as possible, assistance was given to him in his work.

During the year assistance has been given to public schools, members of various societies, and to students. A special exhibit of snakes and venom apparatus was prepared for the Medical Congress.

Fishes (G. P. Whitley in charge).—During the year large collections of fishes have been presented by Mr. Melbourne Ward, who collected them in Port Curtis and the Capricorn Group, Queensland. Mr. D. G. Stead has presented further series of fishes from Australia, Hawaii, and Malaya. Other notable donations came from Port Jackson (Captain L. Comtesse); the continental shelf of eastern Australia (Mr. A. Ward and Captain Knud Moller); Lord Howe Island (Taronga Park Aquarium); and Port Darwin (Mr. L. Wilson). A Mako Shark was presented by the South African Museum, Cape Town. Mr. A. A. Livingstone collected a very valuable series of fishes in north and north-west Australia. A small exchange of deep sea material was arranged with the British Museum, and a Queensland Lung-fish has been sent to the California Academy of Science as part of an exchange.

Some casts of Angler Fishes have been purchased from London, and a set of films concerning fishes were obtained locally at a small cost.

The policy of adding faithfully coloured casts to the gallery has been continued, many fine exhibits having been prepared by the articulators during the year. Casts of Parasitic Angler Fishes, a Lamprey, and a fossil fish (*Pterichthys*) have been received from overseas, and the Technological Museum has presented casts of local food-fishes. An arrangement has been made with the Fisheries Branch of the Chief Secretary's Department for duplicate casts to be made for the Branch in return for picked specimens sent to the Museum from the fish markets.

No official field work has been performed this year, but a collection of fishes was made at Trial Bay during a holiday. Local excursions were made to inspect a sunfish at Yarra Bay, and to study the electrocution of sharks at Gunnamatta.

All acquisitions received during the year have been registered and classified. The gallery and reference collections are in good condition and all the named collections are card-catalogued.

A collection of Soles was sent to M. Paul Chabanaud, Paris, for study and further batches of freshwater eels were forwarded to the Carlsberg Laboratory, Copenhagen. The large collection of fishes made at Low Isles has been registered and a report upon it is approaching completion. A display of poisonous and venomous fishes was staged before the Medical Congress in 1929.

Numerous inquiries of a varied nature, from correspondents, public and press, have been attended to. Fishes have been named for the Queensland Museum and the Taronga Park Aquarium, and technical information has been supplied to the Japanese Consulate-General, the Technological Museum, and the Fisheries Branch of the Chief Secretary's Department.

The completion and publication of the late A. R. McCulloch's Check-List has taken considerable time this year, but has now been accomplished. Research has been performed mainly on the marine fishes of Queensland, and acknowledgments are due to the Director of the Queensland Museum, Brisbane, and the Curator of the Macleay Museum, University of Sydney, for specimens loaned to Mr. Whitley for use in this work.

Insects and Arachnids (A. Musgrave in charge; K. McKeown and Miss N. Adams, Assistants).—
Total acquisitions numbered 6,919, including 3,325 presented, 2,262 collected, 1,332 purchased. The chief
donations were received from Mr. C. T. McNamara (Mt. Lamington district, Papua); Rev. A. J. Barrett
(Bombala, New South Wales); Mr. H. R. Rabone (Samoa and Lord Howe Island); Messrs. A. Musgrave
and G. P. Whitley (South West Rocks, North Coast, New South Wales); Miss K. English (Yass, New South
Wales); Mr. W. D. Campbell (Almaden, Queensland); Mr. H. J. Carter (National Park, Queensland);
Mr. A. N. Burns (Queensland Cane Beetles). Purchases were made from Mr. W. Heron (E. Dorrigo, New
South Wales), and Mr. C. Harslett (New Britain).

The spirit collection of spiders has been revised and the catalogues brought up to date. The collection of Australian Cantharidae, Apidae, and Hemiptera have been overhauled and re-labelled, and the gallery collections generally revised, many new specimens and labels being added. A large model of a termite nest and enlarged models of termites have been placed on view in the gallery.

Several people having been bitten by spiders during the year, interest in and fear of these arachnids followed, with the result that many hundreds of spiders were brought to the Museum for identification. A special exhibit of spiders was placed on view during the Medical Congress, and was afterwards displayed in the windows of Farmer & Company, Limited, where it was viewed by many people.

The principal work of the department during the year has been the identification, registration, setting and incorporation into the collections of the specimens acquired.

Conchology.—(T. Iredale in charge; Miss J. Allen, Assistant).—Accessions registered numbered 2,566, of which 2,561 were presented and five collected. Large collections made at Low Isles, Queensland, by Mr. Iredale and in North-west Australia by Mr. A. A. Livingstone have not yet been registered. Mr. W. Boardman and Mr. Melbourne Ward, Honorary Zoologist, collected extensively at Port Curtis, Queensland, and on the Capricorn Group, Great Barrier Reef.

Captain L. Comtesse, of the harbour dredge "Triton," has continued his collection activities, aided by Messrs. Nash and Donnelly, who have made important discoveries. The Rev. Percy Hubbard and Messrs. H. S. Mort and E. H. Bardwell have, as usual, submitted some interesting molluscan finds.

The outstanding gift of this and also of recent years was the presentation by Mrs. M. J. Waterhouse of the famous Waterhouse Collection of shells. This collection has been long famed for the series of excellent specimens of the largest size and beauty of the groups of Cowries, Harps, Cones, Papersailors and others. In these groups most of the species are represented by examples perfect in size, colouring, and condition, and would be very difficult to duplicate at the present day. A beautiful series of Cowries collected alive in Sydney Harbour by Messrs. G. A. and E. G. Waterhouse many years ago provides the only record of some of the species. It is hoped that in the near future space and cabinets will be made available to show to the public this excellent collection.

Many groups have been reviewed, and the spirit collection has been transferred to new quarters. The preparation of the lists mentioned in last year's report has been continued and brought up to date. Investigation of the pests which attack wharf pile and other harbour structures has been carried out through the year in collaboration with Mr. F. A. McNeill, Zoologist in charge of Lower Invertebrates, and Mr. R. A. Johnson, Sydney Harbour Trust, and a report on the results, to be published by the Harbour Trust, is nearing completion. In collaboration with Mr. T. C. Roughley, Economic Zoologist, Technological Museum, the oysters of Eastern Australia have been carefully studied, and a comprehensive account of the species is in course of preparation. Assistance has been given to the Veterinary Branch of the Department of Agriculture in connection with the identification of fresh-water snails suspected of causing liver-fluke in sheep.

As in previous years, Miss J. Allen has assisted in the determination of species and the care of the collection, besides preparing notes and various drawings and coloured figures.

Marine Invertebrates (F. A. McNeill in charge; A. A. Livingstone and W. Boardman, Assistants).—
The largest acquisition received during the year was the collection made by Mr. A. A. Livingstone in north and north-west Australia during his trip with Dr. H. Lyman Clark, Museum of Comparative Zoology, Harvard University, U. S. America. Work on this material and the transfer of the collection of crustacea to the new upper storey of the spirit house, with the consequent reorganisation of the card catalogue, has taken up a considerable portion of the year. A valuable donation of corals was received from Mr. J. Carter, Assistant Lighthouse Keeper, Low Isles, North Queensland, many of the species represented being new to the collection. Another large series of decapod crustacea was obtained by Mr. Melbourne Ward, Honorary Zoologist, and Mr. W. Boardman, the result of an unofficial trip to the Capricorn Group, Great Barrier Reef, Queensland, in December, 1929.

Exhibited collections have been reconditioned where necessary and minor additions made to the gallery exhibits. Both the exhibited specimens and the contents of the dry store have been regularly fumigated and kept in order.

Description of the Decapoda and Stomatopoda collected on and near Low Isles, North Queensland, by members of the British Great Barrier Reef Expedition and of the Australian Museum staff, are being described by Mr. McNeill, and Mr. Livingstone is working on the Asteroidea collected at the same time. A considerable amount of research has already been done on these collections.

Ethnology (W. W. Thorpe in charge).—Donations during the year include a series of aboriginal stone axes, Springsure, Queensland (Dr. W. G. Holt); several sheets of bark cloth, Fiji (Miss Edith Hall); stone adze blades, New Britain (Miss M. L. Sievers); a fine collection of native handiwork, Solomon Islands (Mr. F. D. Muller); ornaments from the Mandated Territory (Mr. G. A. V. Stanley); implements and weapons from Papua and the Solomon Group (Dr. G. A. Waterhouse, Trustee); a large series of aboriginal stone tools, Emu Plains and South Coast, New South Wales (Mr. W. W. Thorpe); some typical Tasmanian flaked implements (Mr. J. S. Falkinder); an assortment of native handiwork from Espiritu Santo and Malekula, New Hebrides (Mr. F. P. Newton); another contribution of flakework from the Newcastle district, New South Wales (Mr. W. J. Cooksey).

While in New Zealand, Mr. Thorpe collected a number of flaked implements at Muriwai, Auckland Province, and during his recreation leave he secured a number of stone tools at Murramurang, near Bateman's Bay, New South Wales.

A large series of Maori handiwork and a collection of South Sea material were obtained by exchange with the Auckland War Memorial Museum. With Mr. F. V. Knapp we exchanged minerals for a collection of Maori handiwork.

Purchases include Australian and South Sea weapons, Patagonian flakework, and handiwork from Western Australia.

Additions to the exhibited collection include a series of Patagonian flaked implements, a stone goddess ("Mosi"), lent by Mr. J. H. L. Waterhouse, four massive adze blades from the Fly River (the gift of Miss E. Hinds), and Tasmanian flakework, lent by Mr. J. S. Falkinder. A beginning has been made with the work of cleaning the gallery exhibits and shelving.

Numismatics (W. W. Thorpe in charge).—The principal donations were a series of seventy-four miscellaneous coins (Mr. C. Page) and a number of British coins (Mr. W. K. Hastings). Many coins were identified for, and information regarding them given to the public during the year; in addition, collections were determined for The Scots College and for several private collectors.

The coins on exhibition have been regularly changed throughout the year.

Palaeontology (Dr. C. Anderson in charge; H. O. Fletcher, Assistant).—During the year several important collections of fossils were purchased. The most outstanding is the collection of over 5,000 specimens made by the late John Mitchell, many of which are types and figured specimens. This collection contains a fine series of trilobites from the Upper Silurian of Bowning, New South Wales, some of them very complete and well preserved. Another important collection was purchased from Mr. C. F. Laseron, and includes a number of type and figured specimens, mainly of Permo-Carboniferous Pelecypods and Silurian Corals. Other collections purchased were a small series of corals and Brachiopods from the estate of the late D. A. Porter, and a number of crustacea from the Forrest River, Western Australia, collected by Mr. L. Wood. Donations for the year numbered thirty-four specimens.

The sorting and cataloguing of the stored collection of fossils is proceeding as opportunity permits. A beginning has been made with a revision of the species of fossil Macropodidae contained in the collection, and work is proceeding on the genera Sthenurus and Procoptodon, much assistance being obtained through the gift from the British Museum of finely executed casts of the types of the species.

Mineralogy (T. Hodge-Smith in charge; R. O. Chalmers, Assistant).—Additions to the collection numbered 1,134, including four species not previously represented. A very fine collection of phosphates from Nauru Island was presented by Messrs. S. P. Hill and S. Mitchell. Mr. W. K. Hastings presented some excellent specimens of the tungsten minerals, including powellite from Queensland. A number of specimens of mangano- and stibio- tantalite from Western Australia were presented by Mr. H. P. White.

Some specimens of tantalite from North Australia were collected by Mr. A. A. Livingstone.

As in past years, a number of very interesting Broken Hill minerals were acquired by exchange with Mr. M. Mawby. Among these are a number of specimens of a new species, sturtite, which has been named after the famous explorer, Captain Charles Sturt. A full description of the mineral appears in the "Records" of the Australian Museum. A few specimens, including the four species not previously represented, were obtained by exchange with Ward's Natural Science Establishment.

A collection of 575 minerals was purchased from the estate of the late D. A. Porter. The majority of these specimens were collected by Mr. Porter in various parts of New South Wales and form a valuable addition to our collection. A small collection of Madagascar minerals and gems, as well as an extremely rare type of chiastolite showing an inner and an outer cross, was acquired by purchase. A very fine series of New England minerals was also purchased. No field work has been carried out during the year. An investigation of the wolframite series in New South Wales has occupied a considerable amount of time, and it is hoped to complete the work during the coming year.

Many specimens in the gallery have been replaced by better material during the year and the exhibit of gold nuggets entirely rearranged.

A collection of minerals was presented to the Sydney Technical College and a number of gallery demonstrations were given to students of that institution. Inquiries by the general public continue to form an important part of the work.

Petrology (T. Hodge-Smith in charge; R. O. Chalmers, Assistant).—Additions to the collection numbered 2,921, including portions of 34 meteorites not previously represented in the collection. The main mass of the "Boogaldi" and of the "Moonbi" siderites were obtained by exchange with the Technological Museum, Sydney. Specimens of foreign meteorites representing thirty-one different falls not previously represented in the collection were acquired by exchange. A portion weighing 199'8 grams, of a new Australian aerolite, which fell at Narellan, New South Wales, at 7.15 p.m. on the 8th April, 1928, was presented by G. J. Richardson, Esq. The total weight of the stone was 367.5 grams. Another important meteorite addition is an etched slice of the "Gladstone" siderite from Gladstone, Queensland, weighing 29¼ lb. obtained by exchange.

A very fine collection of rocks, mainly from New South Wales, was presented by Mrs. B. G. Englehart. A large series of rocks collected from various parts of New South Wales by the late Mr. R. H. Cambage has been presented by the executors of his estate. As in the past, Mr. W. S. Dun has presented a number of rocks from New South Wales collected by himself. A large number of australites have been presented by Mr. S. F. C. Cook, of Kalgoorlie. The majority of additions to the collection consist of rocks collected by the late D. A. Porter and acquired by purchase.

Much time has been spent in the determination of the rocks. Investigations are at present being carried out on a few Australian meteorites which have not yet been described. Owing to the lack of space only a few rocks are exhibited in the gallery.

The Common Seal of the Museum was hereunto affixed by order of the Board, this twentieth day of November, 1930.

G. A WATERHOUSE,

President.

W. T. WELLS,

Secretary.

#### APPENDIX A.

TRUSTEES OF THE AUSTRALIAN MUSEUM AT 30TH JUNE, 1930.

Crown Trustee-

Mr. James McKern.

Statutory—

His Honor the Chief Justice. The Hon. the Colonial Secretary. The Hon. the Attorney-General.

The Auditor-General (Mr. J. Spence).

The President of the Medical Board (Dr. T. Storie Dixson).

Appointed—

The Hon. the President of the Legislative Council.

The Crown Solicitor.

The Surveyor-General and Chief Surveyor (Mr. H. B. Mathews, B.A.).

The Hon. the Secretary for Public Works and Minister for Railways.

The Hon. the Minister for Education,

Elective Trustees—

Dr. J. R. M. Robertson, F.R.G.S., F.G.S.

Dr. G. H. Abbott, M.B., Mast. Surg. - Mr. E. C. Andrews, B.A., F.G.S.

Mr. O. C. Beale, F.R.S.L., F.R.H.S.

Mr. G. M. Blair.

Dr. C. Gordon MacLeod, M.B., Ch.M.

- Dr. G. A. Waterhouse, B.E., F.E.S.

Mr. F. S. Mance.

The Hon. F. E. Wall, M.D., M.L.C.

- Professor A. N. Burkitt, M.B., B.Sc.

Mr. H. M. Hawkins.

	APPENDIX B.
STAFF OF	THE AUSTRALIAN MUSEUM AT 30TH JUNE, 1930.
Director	C. Anderson, M.A., D.Sc.
Administrative Staff-	
Secretary	W. T. Wells, A.I.A.V.
Clerks	J. A. Trimble. J. S. Rolfe.
Stenographer	Miss G. E. Johnstone.
Scientific Staff—	
	W. W. Thorpe, Ethnologist, Numismatist.
	*J. R. Kinghorn, Ornithologist, Herpetologist. E. Le G. Troughton, Mammalogist.
	A. Musgrave, Entomologist.
-	K. C. McKeown, Assistant.
	Miss N. B. Adams, Assistant. F. A. McNeill, Lower Invertebrates.
	A. A. Livingstone, Assistant.
	W. Boardman, Assistant.
	T. Iredale, Conchologist. Miss C. M. J. Allan, Assistant.
	G. P. Whitley, Ichthyologist.
	T. Hodge-Smith, Mineralogist, Petrologist. R. O. Chalmers, Cadet.
The state of the s	*H. O. Fletcher, Assistant Palacontologist.
Library Staff—	
Librarian	W. A. Rainbow.
Assistant Librarian	F. D. McCarthy.
Propagatorial Staff	

Preparatorial Staff—

Articulator ...... G. C. Clutton, Assistant Articulator ...... J. Kingsley. Taxidermist..... H. S. Grant. Assistant Taxidermist ...... J. H. Wright. \*W. Barnes.

Mechanical Staff-

Chief Mechanic ...... T. A. Henson. Assistant Mechanic ...... H. Jackson,

Attendants and General Staff ---Chief Attendant ..... T. A. Murphy. Senior Attendant ...... J. Watson. Attendants ...... A. Mackay. E. T. Hill. D. Massey. A. B. Welsh. E. G. Morris. W. A. Medway. H. W. Stein. J. McIver.

Miss G. Barnes. Night Attendants ...... F. L. Haylings. T. Glazebrook.

Yardman Labourer ...... C. Jackson.

### APPENDIX C.

## HONORARY STAFF OF THE AUSTRALIAN MUSEUM AT 30TH JUNE, 1930.

Professor T. Harvey Johnston, M.A., D.Sc., Hon. Zoologist. Edw. F. Hallmann, B.Sc., Hon. Zoologist.
A. F. Basset Hull, Hon. Ornithologist.
G. A. Waterhouse, D.Sc., B.E., Hon. Entomologist.
H. J. Carter, B.A., Hon. Entomologist.
E. A. Briggs, D.Sc., Hon. Zoologist.
W. S. Dun, Hon. Palaeontologist.
H. Leighton Kesteven, D.Sc., M.D., Hon. Zoologist.
Melbourne Ward, Hon. Zoologist.
Geo. A. Thomas, Hon. Archæologist.

#### APPENDIX Da

#### HONORARY CORRESPONDENTS OF THE AUSTRALIAN MUSEUM AT 30TH JUNE, 1930.

Mr. R. E. Baxter.	Dr. C. Phillips.
Mr. H. Burrell.	Dr. R. H. Pulleine.
Sir Hugh Denison.	Sir Arthur Rickard.
Mr. Robert Dixson.	Mr. E. H. Rainford.
Mr. William Dixson.	Mr. George Robertson.
Mr. C. E. Hart.	Mr. T. E. Rofe.
Mr. Anthony Hordern.	Mr. Melbourne Ward.
Sir Samuel Hordern.	Dr. G. A. Waterhouse.

Hon, Sir Alfred Meeks.
Miss Eadith Walker.
Mr. R. R. Dangar.
Mr. R. H. Dangar,
Mr. James Burns.
Mrs. M. J. Waterhouse.

## APPENDIX E.

#### LECTURES DELIVERED DURING THE YEAR ENDED 30TH JUNE, 1930.

#### Popular Science Lectures.

Date.	Subject.	Lecturer.	ttendance.
1929.	A Noturnalist with the A T D	T D Wingham	951
	A Naturalist with the A.I.F.	J. R. Kinghorn	
The state of the s	The Senses of the Lower Animals		
8 Aug	Wanderings in Northern Australia	Melbourne Ward	
	The Coral Reef Problem	T. Iredale	250
The state of the s	The Story of the Hawaiian Islands	E. C. Andrews	343
	Primitive Musical Instruments	K. Kennedy	
	Kosciusko in Summer and Winter	A. Musgrave	
24 ,,	The Antiquity of Man		
7 Nov 1930.	,, ,, (Repeated)	,, ,, ,,	206
24 April	Through New Guinea Wilds	Dr. E. A. Briggs	314
8 May			
	,, (Repeated)		160
22 May	The Story of the Zulus	K. Kennedy	348
12 June	The Maori of New Zealand	W. W. Thorpe	355
	Whaling, Past and Present		
	15 Lectures.	Total	4,294
	School Lectures.		
1929.		O TO TOTAL 1/13	100
	Fishes		
16 ,,		+	273
	Reptiles		the contract
20 ,,	,,		
3 Sept	Mammals	E. L. Troughton	66 95
17 ,,	The Great Barrier Reef		95
17 Oct 1930.	The Great Barrier Reef	T. Iredale	250
	Birds	J. R. Kinghorn	288
10 June			
24 ,,	.,	,,	276
22 ,,	,,		
	10 Lectures.	Total	1,996
	Extension Lectures.		
7,000	Extension Lectures.		
1929. 16 Sept	The Great Barrier Reef	T. Iredale	150
	Other Lectures in the Museum	<i>1.</i>	
		rm m m m	200
	Great Barrier Reef (William-street Girls' High School.)	T. Iredale	200
1930.	Amtomotico	TT O Ellataban	20
14 June	Antarctica	H. O. Fletcher	30
STREET, STREET			
		Total	230

#### APPENDIX E .- continued.

D 4		Unofficial Lectures.		
Date 1929		Subject.	Lecturer.	Attendance.
15 Aug.	•••••		T. Iredale	. 100
16 Aug.		(Manly and Warringah Historical Society.) The Flight of Fishes  (Ornithological Section, Royal Zoological Society	G. P. Whitley	. 30
22 Aug.		The Australian Aborigines	W. W. Thorpe	. 250
26 Aug.		(University College, Auckland, New Zealand.) The Great Barrier Reef	T. Iredale	. 30
2 Sept.	•••••	(Girls' Progressive Club, Elizabeth-street.)  Some Plant-like Animals  (Marine Section, Royal Zoological Society of N.S.W.)	W. Boardman	. 17
30 Oct.		The Great Barrier Reef	T. Iredale	. 50
31 Oct.		The Great Barrier Reef	,,	. 120
5 Nov.	•••••	Deep-Sea Fishes	G. P. Whitley	. 20
2 202		The Great Barrier Reef	T. Iredale	. 70
1930 13 Jan.	100	A Naturalist in North and North-West Australia	A. A. Livingstone	. 19
7 Feb.		Life and Customs of the Aborigines	W. W. Thorpe	. 39
Feb.		Sea Snakes		. 20
3 Mar.		Coral Fishes	G. P. Whitley	. 20
6 Mar.		Sea-shore Life	W. Boardman	. 40
15 Mar.		Aboriginal Stone Implements	W. W. Thorpe	. 70
28 April		Coral Fishes	G. P. Whitley	. 20
5 May		Recent investigations on Wharf-pile Pests	F. A. McNeill	. 20
19 May		Wild Life in the Antarctic	H. O. Fletcher	150
19 May		Sydney Shore Life	T. Iredale	30
27 May		The Great Barrier Reef	W. Boardman	150
May		Faunal Problems	J. R. Kinghorn	60
12 June		Australian Finches  (Avicultural Section, Royal Zoological Society of N.S.W.)		50
27 June		Sub-Antarctic and Antarctic Ornithology	H. O. Fletcher	30
1		of N.S.W.)  The Early French Explorers	A. Musgrave	12
		24 lectures.	Total	1,417

# APPENDIX F.

Scientific Papers and Articles published or prepared during the Year.

- "Notes on Striped Opossums of the Genus Dactylopsila." E. Le G. Troughton, Austr. Zoologist, VI, 2, 1930.
- "A New Species and Sub-species of Fruit-bats (Pteropus) from the Santa Cruz Group." E. Le G. Troughton, for Rec. Austr. Mus.
- "Herpetological Notes, No. 11." J. R. Kinghorn, for Rec. Austr. Mus.
- "The Lyre Bird at Home." J. R. Kinghorn, Austr. Mus. Mag., IV, 1, 1930.
  "What is the Life Span of a Bird"? J. R. Kinghorn, Austr. Mus. Mag., IV, 2, 1930.
- "The Many-coloured Cassowary." J. R. Kinghorn, The Emu, XXX, 1, 1930.
- "Additions to the Check-list of the Fishes of New South Wales, No. 3." G. P. Whitley, Austr. Zool., VI, 2, 1930.
- "Ichthyological Miscellanea." G. P. Whitley, Mem. Queensland Mus., X, 1, 1930.
- "A Check-list of the Fishes recorded from Australia." (The late) A. R. McCulloch (revised by G. P. Whitley), Austr. Mus. Mem., IV, 1929-1930.
- "Notes on the Identity of Some Little Known Fishes." G. P. Whitley, Abstr. Proc. Linn. Soc. N.S.W., Sept., 1929.
- "Leatherjacket Genera." G. P. Whitley, Aust. Zool., VI, 2, 1930.
- "Deep-Sea Fishes." G. P. Whitley, Austr. Nat., VIII, 1, 1930.
  "Studies in Ichthyology, No. IV." G. P. Whitley, for Rec. Austr. Mus.
- "Hints for Collectors of Fishes." G. P. Whitley, Austr. Nat., VIII, 2, 1930.
- "Deep-Sea Exploration on the 'Dana'." T. C. Roughley and G. P. Whitley, Austr. Mus. Mag., III, 12, 1929.
- "Inhabitants of the Deep." T. C. Roughley and G. P. Whitley, Austr. Mus. Mag., IV, 1, 1930.
- "The Investigation of Ocean Depths." T. C. Roughley and G. P. Whitley, Austr. Mus. Mag., IV, 2, 1930.
- "The Teeth of Fishes." G. P. Whitley, Austr. Mus. Mag., IV, 3, 1930.

  "Contributions to the Knowledge of Australian Hemiptera, No. 11. A Revision of the sub-family Graphosomatinae (Family Pentatomidae)." A. Musgrave, Rec. Austr. Mus., XVII, 7, 1930.
  - \*48743—B

#### APPENDIX F .- continued.

Scientific Papers and Articles published or prepared during the Year-continued.

"A Termite Nest Exhibit." A. Musgrave, Austr. Mus. Mag., IV, 3, 1930.

"Mt. Kosciusko in Summer and Winter." A. Musgrave, Austr. Mus. Mag., IV, 3, 1930.
"A Naturalist on the South-West Plains." K. C. McKeown, Austr. Mus. Mag., III, 12, 1929.

"The Fight Against Insect Pests." K. C. McKeown, Austr. Mus. Mag., IV, 1, 1930.
"Centipedes and Centipede Bites." K. C. McKeown, Austr. Mus. Mag., IV, 2, 1930.

- "Insects and Diseases." K. C. McKeown, Austr. Mus. Mag., IV, 2, 1930.
- "Termite Cities of the Plain." K. C. McKeown, Austr. Mus. Mag., IV, 3, 1930.
- "More Notes on the Marine Mollusca of New South Wales." T. Iredale. Austr. Mus. Rec., XVII, 9, 1930.
  "The Loricates of the Neo-Zelanic Region." A. F. Basset Hull and T. Iredale, Austr. Zool., VI, 2, 1930.

"Avian Sea-toll." T. Iredale, Austr. Zool., VI, 2, 1930.

- "Some Notable Name Changes." T. Iredale, Austr. Zool., VI, 2, 1930.
  "The Passing of Campbell and Leach." T. Iredale, Austr. Zool., VI, 2, 1930.
- "Captain Cook's Leatherjacket." T. Iredale and G. P. Whitley, Austr. Mus. Mag., III, 12, 1929.
- Queensland Molluscan Notes, No. 2." T. Iredale, Mem. Queensland Mus., X, 1, 1930.

"Shell Ornamentation." Miss J. Allan, Austr. Mus. Mag., IV, 2, 1930.

- "Carcinological Notes, No. 1." F. A. McNeill and M. Ward, Rec. Austr. Mus., XVIII, 9, 1930.
- "Some New and Little-known Asteroids." A. A. Livingstone, for Rec. Austr. Mus.
  "Microscopic Mites of the Sea." A. A. Livingstone, Austr. Mus. Mag., III, 11, 1929.
  "Along Australia's Northern Strand." A. A. Livingstone, Austr. Mus. Mag., IV, 1, 1930.
  "Along Australia's North-west Boundary." A. A. Livingstone, Austr. Mus. Mag., IV, 2, 1930.

"The Reef Builder." W. Boardman, Austr. Mus. Mag., III, 12, 1929.

"Ethnological Notes, No. 11." W. W. Thorpe, Rec. Austr. Mus., XVII, 8, 1930.

"Ethnological Notes, No. 111." W. W. Thorpe, for Rec. Austr. Mus.

- "Note on the Extinct Marsupial Genus Procoptodon." C. Anderson (Brisbane Meeting of the Austr. Ass. Adv. Sci.)-
- "Obituary of Sir Baldwin Spencer." C. Anderson, Austr. Mus. Mag., III, 12, 1929.
  "The Auckland War Memorial Museum." C. Anderson, Austr. Mus. Mag., IV, 2, 1930.

"Mineralogical Notes, No. IV." T. Hodge Smith, Rec. Austr. Mus., XVII, 9, 1930. "Perry's Arcana." W. A. Rainbow, Austr. Mus. Mag., III, 11, 1929.

"Charles Sturt, Explorer and Naturalist." W. A. Rainbow, Austr. Mus. Mag., IV, 3, 1930.

## APPENDIX G.

# Schedule of Specimens acquired during the year ending 30th June, 1930:-

Department.	Donation.	Exchange.	Purchase.	Prepared.	Collection.	Total.
ertebrata—	2.2030					
Mammalia	235	10	64	***	138	447
Aves	447			****	26	473
Reptilia	233	į	10	•••	29	273
Pisces	512	5		***	678	1,195
Skeletons	38	•••	2	•••	9	49
	1,465	16	76		880	2,437
vertebrata			1 1 2			
Mollusca		173	1			2,996
Insects and Arachnida	100/1	***	1,332	***	2,262	6,919
Crustacea	434	***	***	***	107	54]
Echinodermata		•••	***	***	218	377
Polyzoa		***	•••	***	4	13
Vermes	80	•••	•••	•••	81	16
Sponges and Foraminifera	22	***	*.**	***	1 1	23
Other Invertebrata	61	•••	•••	•••	15	70
eological—	6,912	173	1,333	•••	2,688	11,10
Fossils	34		1,532			1,56
Minerals	105	49	975	•••	5	1,13
Rocks		7	102	•••	. 8	29
	314	56	2,609		13	2,99
thnological—						
Ethnological	818	96	183		34	1,13
Numismatical	209	105	***	•••	***	31
	1,027	201	183		34	1,44
Iiscellaneous—						
Micro Sections				23	•••	2
Casts	***	.2	***	55	•••	5 2
Moulds		***		25	***	The second second
Photo Negatives		***		186	***	18
Lantern Slides				202	***	22
Photographs	51	•••	10	124	***	18
Carmonagas	73	2	10	615	•••	70
Summary. Tertebrata	1,465	16	76		- 880	2,43
nvertebrata		The second second	1,333		2,688	11,10
ossils, Minerals, and Rocks	314	56	2,609		13	2,99
thnological		201	183	10000000	34	1,44
Iiscellaneous		2	10	615	•••	70
	9,791	448	4,211	615	3,615	18,68

## APPENDIX H.

#### THE AUSTRALIAN MUSEUM.

Summarised Statement of Net Receipts and Payments for the Year ended 30th June, 1930.

RECEIPTS.	PAYMENTS.
To Balance brought forward 1st July, 1929	By Salaries
	Stores, Stationery and Sundry Services 619 9 8 Publicity and Advertising Magazines, Lectures, etc 139 8 1
	Publications— Magazine (publication and distribution) 466 2 0  3,519 17 6
	Balance at 30th June, 1930 23,544 2 4 2 4 9
£23,788 17 1	£23,788 17 1

I certify that the books and accounts of the Australian Museum have been examined for the year ended 30th June, 1930, as required by Section 11 of the Australian Museum Act, 1902, and that, in my opinion, the above summarised statement of Receipts and Payments correctly sets out the financial transactions for that transactions for that year.

JOHN SPENCE, Auditor-General.

#### APPENDIX I.

## THE AUSTRALIAN MUSEUM.

Period 1st July, 1929, s. d. £ s. d.

Dr.

[10d.]

	ACCOUNT. 929, to 30th June, 1930.		Cr.
£ s. d.	By Interest— Funds Invested— Sydney City Council Deposit	£ s. d. 8 8 2 22 0 0 11 5 0	£ s. d
11,049 17 4	Museum Magazine	297 6 9 102 2 9 20 15 5	420 4 11
	Balance		461 18 1 22,030 9 5
2,776 2 7			
1,256 11 4			
5,745 18 0			
290 0 6			
166 4 8			
183 16 0			
346 5 0			
64 13 3			
612 18 10			

26 🚁

To Scientific Administration— " Scientific Staff, Salaries, Overtime, Stores and ... 8,576 6 4 Services do. do. 854 16 10 Articulators— do. do. 1,334 0 3 do. Taxidermists— do. 39 17 Collecting Specimens ... \*\*\* Preservation of Specimens ... Freights and Charges, Specimens, &c. Photography and Slides 11,049 17 4 Office Administration— ... 1,924 10 3 Office Staff, Salaries ... ... 43 17 6 Publicity \*\*\* ... 154 3 4 109 15 7 120 1 1 423 14 10 General Expenses Stationery Postages and Telegrams Insurances 2,776 2 7 Library Administration-Salaries, Bookbinding and Sundries ... ... 1,256 11 4 1,256 11 4 General Administration-5 7 5 10 Artificers—Salaries, Stores, &c. ... Printing Office—Salaries, Stores, &c. 517 223 Attendants-Salaries, Overtime and Assis-4,500 2 4 292 5 2 154 8 **1**0 4,500 tance ... Working Expenses—Stores and Supplies Building Repairs and Maintenance ... Electric Fittings, Repairs and Maintenance... 58 10 3 5,745 18 0 Family Endowment Tax 185 3 7 Compassionate Allowance 52 16 11 ... 0 0 52 Pensions ... 290 0 6 Lectures, Fees and Expenses 166 4 8 166 4 8 Depreciation, Furniture, Equipment, and 183 16 0 Plant 183 16 0 Publications, Magazine-Cost of Publishing, and Distributing 652 19 0 Less Stocks on hand 306 14 0 346 5 0 Postcards, cost of Distributing Less Stocks on hand 64 13 3 "Records" and Memoirs, cost of publishing and distributing ... 612 18 10 612 18 10 £22,492 7 6 £22,492 7 6