

1929-30.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

AUSTRALIAN MUSEUM.

(ANNUAL REPORT OF THE TRUSTEES FOR THE YEAR ENDED 30TH JUNE, 1929.)

Printed under No. 21 Report from Printing Committee, 8 May, 1930.

TO HIS EXCELLENCY THE GOVERNOR,

The Trustees of the Australian Museum have the honour to submit to your Excellency their seventy-fifth Annual Report, being that for the year ended 30th June, 1929.

In presenting this report the Trustees desire briefly to draw attention to the many and varied activities of the Museum during the period under review, and the important part it plays in the public life of the community; full details are set forth under suitable headings.

A large amount of important field work was undertaken during the year, and the acquisitions from all sources totalled almost 22,000 specimens, which will be used for exhibition, for reference, and for teaching purposes. Collections were prepared and handed over to the Teachers' Training College, the Technological Museum, and to country schools.

An important feature of the year's activities was the delivery of a series of lectures, attended by over 9,000 people.

The Museum acts as a bureau of information regarding minerals and their uses, and the identity and economic value, or destructive habits of birds, fishes, insects, and other animals. The library, which contains a large number of works and articles on natural history, has been made use of by students, the press, and others during the year.

That the public appreciate the efforts of the Trustees and the staff is shown by the fact that the number of visitors has steadily increased, and, during the year, 290,000 people passed through the turnstiles, an increase of 47 per cent. in ten years.

More could be accomplished in the public interest if much needed extension of the buildings could be carried out, including a Lecture Hall more commodious than the one now in use, which is often found inadequate for the accommodation of the audience.

It is regretted that the Australian Museum has not been the recipient of any monetary bequests, such as are so freely made to similar institutions in other parts of the world. It has to rely on Parliament for practically all the funds necessary for the carrying out of its functions.

1. TRUSTEES.

The Trustees regret to report that Mr. R. H. Cambage, C.B.E., who had been an Elective Trustee since June, 1925, died suddenly on 28th November, 1928. The Board placed on record their high appreciation of his valuable services as a Trustee, and their sincere regret at his death. Mr. H. M. Hawkins was elected on 1st February, 1929, to fill the vacancy caused by the death of Mr. Cambage.

Mr. F. A. Coghlan, who became an official trustee by virtue of his appointment as Auditor General on 3rd September, 1915, retired from that position on 30th November, 1928, and was succeeded by Mr. John Spence, B.A., LL.B. During his period of office Mr. Coghlan had taken a very active part in the affairs of the Museum, and his advice and counsel were highly appreciated by his colleagues.

Sir Charles Rosenthal was re-elected President for the year 1929.

2. STAFF.

Mr. T. G. Campbell, Assistant Entomologist, resigned on 24th December, 1928, having received an appointment to the Division of Economic Entomology, Canberra. During his eight years of service Mr. Campbell had shown himself to be a very zealous and capable assistant. Mr. S. G. Gray, cadet assistant to the Ethnologist resigned on 21st March, 1929.

Mr. K. C. McKeown was appointed Assistant Entomologist, on loan from the Water Conservation and Irrigation Commission, and took up duty on 4th June, 1929. The following temporary assistants were appointed: Mr. R. O. Chalmers, cadet assistant in Mineralogy and Petrology; Miss S. Stark, assistant in Herpetology and Ornithology; Miss N. B. Adams, assistant in Entomology. Mr. G. A. Thomas was appointed Honorary Archæologist in September, 1928, and Mr. Melbourne Ward, Honorary Zoologist in June, 1929.

In accordance with Award No. 346 of 1927 a Salary Committee reviewed the salaries of first-class scientific assistants and librarian, and made adjustments in the salaries of these officers.

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

3. HONORARY CORRESPONDENTS.

Under By-Law VII those who have rendered any service to the Museum or to the cause of science may be elected Honorary Correspondents. Mr. George McAndrew of Shellharbour, a zealous and successful collector for the Museum, died on 2nd November, 1928. No new names have been added to the list of Honorary Correspondents, which appears as Appendix C.

4. BUILDINGS AND EQUIPMENT.

No further progress has been made in the direction of an extension of the Museum buildings, but the urgent necessity for additional accommodation is again stressed and hopes are entertained that some tangible progress may be made in the near future. The activities of the Museum are greatly hampered at present by lack of space for display and storage.

During the year the Department of Public Works has carried out all necessary repairs to the buildings in a satisfactory manner. The additions to the spirit house were completed and steel cabinets and wooden shelving have been fitted, affording greatly improved accommodation for the study collection of mammal skins and skulls, and additional space for the storage of spirit material. Additional storage racks have been installed in the ethnological sheds, allowing for expansion and more convenient classification of the specimens.

5. PUBLIC ATTENDANCE.

The number of visitors during the year reached a total of 289,994, an increase on last year and the highest yet recorded. Statistics of attendance for the years 1919-1929 are appended:—

	Week-days.	Sundays.	Total.
1919-1920	145,058	52,490	197,548
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	213,298	76,696	289,994

6. LIBRARY.

The accessions totalled 372 volumes, besides parts, reprints and maps. A valuable addition was a complete copy of Perry's *Arcana*, an extremely rare work, of which only five copies are known to exist. It is of peculiar interest because it contains important reference to, and illustrations of, Australian fauna.

Good progress has been made with binding, nearly 500 volumes having been bound during the year. Congestion is still acute, and the fact that the library is housed in various parts of the building does not make for convenience and efficiency.

As in previous years the librarian has given valuable assistance in editorial work, and supervision of publications, and continues to represent the Trustees on the Committee of Standard Typography.

During the year considerable assistance has been rendered to students, the press, and scientific workers in other States.

7. FIELD WORK.

A considerable amount of field work has been accomplished during the year, some important and fruitful collecting trips being undertaken.

Towards the end of July, 1928, Mr. T. G. Campbell accompanied Dr. F. Antill Pockley on a motor trip from Sydney northwards to Queensland and the Gulf country, thence across to North Australia, returning via Port Augusta and Broken Hill. On this lengthy journey, which Mr. Campbell undertook at his own expense and mainly during his annual leave, he collected a number of reptiles, insects, and ethnological specimens.

While the members of the British Barrier Reef Expedition, under the leadership of Dr. C. M. Yonge, were employed in research work on the Great Barrier Reef, five of our officers, Messrs. F. A. McNeill, T. Iredale, G. P. Whitley, A. A. Livingstone, and W. Boardman, each spent some weeks assisting in the work of collecting and observing, and obtained many specimens during their stay.

In December, Messrs. H. O. Fletcher, T. G. Campbell, and W. Boardman made a short trip to Ulladulla, mainly to collect fossils from the Upper Marine Series of the Permo-Carboniferous in that locality. In April, 1929, a second visit was made to the same district by Messrs. Fletcher, A. A. Livingstone, and T. Hodge Smith. On each occasion the party was accompanied by Mr. W. S. Dun, Honorary Palaeontologist.

In December, Mr. W. W. Thorpe visited the Port Stephens district in search of stone implements, and in March, 1929, he travelled to Dark Point, Myall River district, in quest of possible evidence of Polynesian handiwork at that locality.

In January, 1929, Messrs. Musgrave (on annual leave), Fletcher and Boardman proceeded to the Kosciusko Plateau to collect insects, spiders and earthworms, subsequently visiting Quidong in order to examine and collect specimens from the fossiliferous rocks there.

On the occasion of the visit to Sydney of the Danish exploring vessel "Dana" Dr. Johannes Schmidt, leader of the expedition, invited Mr. G. P. Whitley to accompany the vessel on the voyage from Sydney to Brisbane. This offer was gladly accepted by the Trustees, and our officer was afforded the opportunity of gaining some experience in modern methods of marine exploration.

In April, 1929, Mr. A. Musgrave, accompanied by Messrs. G. C. Clutton and J. Kingsley, proceeded to Matcham, near Gosford, in order to obtain material for the construction of a white ant group exhibit.

Dr. H. Lyman Clark, of the Museum of Comparative Zoology, Harvard, U.S., America, asked the Trustees to permit Mr. A. A. Livingstone to accompany him on a collecting trip along the north-west coast of Australia from Darwin to Perth. Mr. Livingstone, whose travelling expenses were partly defrayed from a grant made to Dr. Clark by the Australian National Research Council, left Sydney on 6th June, 1929, to join Dr. Clark at Darwin.

On June 26th, 1929, Mr. W. Boardman and Mr. Melbourne Ward proceeded to Port Curtis and the Capricorn Group on dredging and collecting trip.

At the request of the Curator of the Auckland Museum, Mr. W. W. Thorpe left Sydney for New Zealand on June 28th in order to assist with the work of installing the ethnological collection in the new War Memorial Museum at Auckland. In return for this service the Museum will receive a number of ethnological specimens.

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 organisations.

The total attendance at Museum lectures of all kinds during 1928-29 was as follows:—

13 Evening lectures	...	...	...	...	...	...	...	...	3,589
11 School lectures...	...	...	...	...	...	...	...	...	1,726
4 Special lectures in the Museum	...	...	...	...	...	...	...	...	456
9 Extension lectures	...	...	...	...	...	...	...	...	864
14 Unofficial lectures	...	...	...	...	...	...	...	...	2,552

Details of lectures and attendances will be found in Appendix D. 9,187

9. PUBLICITY.

During the year consideration was given to the question of improvement and extension of the Magazine. Additional series of postcards were issued, namely, six studies of Australian mammals in colour, from drawings by Miss E. A. King, and twelve postcards of New Guinea natives, from negatives by Captain Frank Hurley, in the possession of the Trustees. Postcards continued to be in demand, and satisfactory sales have been made.

A further supply of showcards for display in trams was provided.

10. DONATIONS.

During the year donations in cash were received as follows:—

	£	s.	d.
The Directors, Sydney Morning Herald	...	...	...
J. R. Kinghorn	...	...	...
St. John's Ambulance Brigade	...	...	...
	£107	12	0

11. THE COLLECTIONS.

Mammals (E. Le G. Troughton in charge).—Since the mammals were constituted a separate department in 1919 there has been a marked increase in the number of yearly accessions and in the variety of localities from which these have been obtained. Owing to increased field work on the part of the scientific and preparatorial staff, the encouragement of public interest, and the activities of honorary collectors, the registrations for the past ten years more than double those of the previous decade.

Donations received during the past year include several collections which we owe to the zeal, personal activities and monetary assistance of Mr. A. S. Le Souef. From this source we obtained a number of bandicoots and indigenous rats from Hinchinbrook Island, Queensland, mammals from the islands of Bass Strait, from Rawlinna, on the trans-Australian Railway, and from Cape York, Queensland. Additional specimens were received from Mr. C. T. McNamara, Northern Division, Papua, enhancing the splendid series already contributed by him. Mr. Melbourne Ward, Honorary Correspondent, collected and presented a series of bats from Possession Island, Torres Strait, and from an island in Whitsunday Passage. The Rev. H. E. Warren, Groote Eylandt, North Australia, presented a series of bats and rats, and Mr. H. K. Langford-Smith, an achidna and bats from the Roper River district. Mr. T. G. Campbell collected a number of small mammals in Central Australia, and an interesting series of bats and marsupial mice was presented by Mr. F. R. Bradshaw, Tambellup, West Australia. Mr. David Morgan, Bornholm, Western Australia, presented additional specimens of the rare Honey Mouse (*Tarsipes*), and Mr. J. H. L. Waterhouse, F.R.A.I., a number of interesting bats from New Georgia, Solomon Islands, one of which has been described as a new genus and species. Mr. H. I. Hogbin, B.Sc., while engaged in anthropological research in Ongtong Java, was good enough to collect some mammals which he presented to the Museum. By exchange we received specimens of the local sub-species of wallaroo from the South Australian Museum, and an interesting series of European mammals from the University of Moscow.

Purchases included a series of bandicoots from Rawlinna, on the trans-Australian Railway, and a collection of bats and marsupials from the Tumut district, New South Wales.

Due attention has been paid to the work of keeping exhibited and stored skins in good condition, and many old collection specimens have been identified and their nomenclature brought up to date. Study skins and skulls have now been brought together and adequately stored in a new room.

Mr. A. S. Le Souef and various visiting mammalogists have been assisted in their researches.

Skeletons (E. Le G. Troughton in charge).—The crania added to the collection during the year numbered 89, including three aboriginal skulls received from Mr. D. Raymond, Mr. W. W. Thorpe and the Police Department. Important additions to the cetacean collection were provided by the capture of the rare "Risso's Grampus" and the Pygmy Sperm whale, skulls of which were obtained by the courtesy and assistance of the Dee Why Surf and Life-Saving Club. A series of skulls of the Port Jackson shark were received from the Taronga Park Trust for exchange abroad, and a number of interesting marsupial crania from various localities were presented by Mr. A. S. Le Souef.

The osteological gallery was completely overhauled by the preparators, and the exhibits were restored, cleaned and fumigated. A large turtle skeleton was renovated, and two casts of a dugong were prepared, one of which has been placed on exhibition, with a suitable beach setting to conform with the background painted by Miss E. A. King, the other being forwarded to the Queensland Museum as an exchange.

The large collection of human crania has now been transferred to the new mammal room and housed in shallow metal cupboards, admirably adapted for the general collection of mammalian crania, which are now closely associated with their skins.

Birds (J. R. Kinghorn in charge, Miss S. Stark, Assistant).—During the year 101 birds were added to the collection, of which 99 were presented. The entire collection has been systematically examined and attended to by the taxidermists, and more than half of the 3,000 birds of the Robert Grant collection were incorporated in the reference series. Many gallery exhibits were renovated and some replaced by fresh specimens. To save handling of gallery exhibits a number of specimens were mounted for educational purposes, for loans, and for the use of the art classes who work at the Museum. A collection was prepared and handed over to the Teachers' Training College, University of Sydney, for teaching purposes. On the occasion of Mr. Kinghorn's visit to Broken Hill to deliver a series of lectures to the Naturalists' Club, about 200 selected skins were sent to Broken Hill and exhibited for one week at the Technological Museum, where they attracted much attention.

Mr. Kinghorn has examined many shipments of birds (inwards and outwards) for the State Advisory Committee and the Customs, and has compiled lists of birds, the importation or exportation of which should be prohibited.

At the request of the Under Secretary, Department of Agriculture, Mr. Kinghorn made recommendations regarding the collection of data on the distribution of the starling and methods for its control.

Reptiles and Batrachians (J. R. Kinghorn in charge, Miss S. Stark, Assistant).—The acquisitions number 735, of which 435 were presented, 157 exchanged, and 60 collected.

Among the more important donations were the following:—From Mr. T. C. McNamara, Northern Division, Papua; Rev. H. E. Warren, Groote Eylandt, North Australia; Mr. Melbourne Ward, from Queensland and the islands of Torres Strait; Mr. H. K. Langford-Smith, Roper River, North Australia; Mr. Gordon White, Solomon Islands; Mr. T. G. Campbell, from Central Australia.

Since the completion of the extensions to the spirit house, bottles and shelves have been cleaned by the attendant staff and a thorough overhaul of the reptile section is under way. The reptile gallery has been completely overhauled and partially re-arranged by assistant taxidermist W. Barnes.

Fishes (G. F. Whitley in charge).—Noteworthy donations during the year include collections from Ongtong, Java (Mr. H. I. Hogbin); Lord Howe Island (Mr. R. E. Baxter); Great Barrier Reef (Mr. Melbourne Ward); and Darwin (Mr. L. B. Wilson). The State Fisheries Department presented trawled fishes and several rarities and desiderata for casting and exhibition, and members of the New South Wales Rodfishers' Association provided a number of interesting Salmonidæ. Mr. Frank Walford presented a large collection of elvers from Parramatta, and Mr. Hugh James sent interesting freshwater collections from the Richmond River.

No fishes were purchased, but a number of specimens, including a juvenile *Neoceratodus* were received by exchange with the Queensland Museum, and Port Jackson shark skulls were sent to America for exchange purposes. Collections made by members of the staff include deep-sea fishes from the *Dana* expedition, trawled fishes from Victoria (H. O. Fletcher), and fishes from North Queensland (G. P. Whitley and W. Boardman).

Several interesting additions to the fish gallery have been made, and numerous casts are being prepared to replace inferior specimens. A fine Queensland groper, of record size, has been mounted and exhibited in an island case. The bottles and shelves in the spirit house have been cleaned, the collections kept in good order, and practically all the acquisitions have been identified and catalogued.

General information has been supplied to the press and the public as in previous years, and also to zoologists in other institutions. Information of economic importance has been forwarded from time to time to the State Fisheries Department and to firms specialising in marine industries. Salmonidæ have been identified for sportsmen, and information on the family given to interested persons in Tasmania.

Mr. Whitley, accompanied by Mr. W. Boardman, spent August 14th to October 29th, 1928, on a collecting trip to Queensland, most of the time being the guests of the British Great Barrier Reef Expedition on Low Isles. A collection of fishes was made and a report on them is in preparation. Several short trips have been made to secure young freshwater eels (elvers) for Dr. Johannes Schmidt, Carlsberg Laboratory, Copenhagen, and two visits were made to Gundamain, Port Hacking, in connection with the ecological survey initiated by the Royal Zoological Society of New South Wales.

Insects and Arachnids.—(A. Musgrave in charge, T. G. Campbell (till 31st December, 1928), K. C. McKeown, and Miss N. B. Adams, Assistants). The most important collections received as donations were the following:—From Mr. W. D. Campbell, Almaden, North Queensland; Mr. C. E. Hart, Guadalcanal, Solomon Islands; Mr. A. M. Lea; Mr. G. M. Goldfinch; Rev. A. J. Barrett; Mr. Gordon White, Malaita, Solomon Islands; Professor T. D. A. Cockerell, insects from New Caledonia; Mr. C. T. McNamara, large collections from the Mt. Lamington district, Northern Division, Papua.

The principal work of the department during the year has been the care and revision of the collections, and the work of setting, labelling and registration of the specimens acquired. The Australian Orthoptera have been revised and brought into line with the latest classification of the various families. The Australian Cixiidae and several families of the Diptera have also been revised.

Owing to the large number of accessions and the lack of an assistant during part of the year, little time was available for research work, but several plates of Australian bugs have been prepared to illustrate a paper by Mr. Musgrave now in course of preparation.

Much time has been spent in supplying information to the public and in the routine work of registering accumulated material, and intercalating acquisitions in the cabinet collection.

Conchology.—(T. Iredale in charge, Miss J. Allan, assistant.)—The acquisitions registered during the year amounted to 6,409, of which 797 were presented, 1,811 collected, and 3,801 acquired by purchase. Many interesting shells collected on three trips to North Queensland were presented by Mr. Melbourne Ward; a number of North Queensland mollusca were also presented by the Rev. P. Hubbard, Innisfail. Captain K. Moller and Mr. H. Howell have made valuable contributions of specimens trawled from deep water off the New South Wales coast, and Captain L. Comtesse, of the dredge "Triton," has presented a very fine selection of molluscs dredged in the harbour, including species with tropical affinities.

Mr. Iredale spent November and December working at Low Isles with the British Great Barrier Reef Expedition, and made a large collection of molluscs, at the same time studying their ecological relations. Later, by invitation, Mr. Iredale accompanied the members of the expedition to Three Isles and made a comparative survey of the molluscan life of that reef; a collection was also made on the coast opposite. These collections become the property of the Trustees and will be the subject of a systematic report, now in preparation, for publication by the Great Barrier Reef Committee.

The economic side of molluscan study has not been overlooked, and assistance was given to the members of the Great Barrier Reef Expedition in their researches in this direction. Investigation of the pests attacking wooden structures in Port Jackson has been continued, and a subsidiary station has been established in Brisbane in co-operation with the Queensland Forest Service. A complete report of three years' work on the ravages of wood-boring animals in Port Jackson is now in course of preparation.

Through lack of space no improvement has been made in storage, and the referenced collection is still separated by the height of the building, so that the work of correlation is difficult. The preparation of lists is being continued, including the marine mollusca of southern Australia and of Queensland, and of the mollusca of New Caledonia. Miss J. Allan, as previously, has made many fine drawings of shells and other specimens, and has attended to the routine work of identification and registration, besides inspecting and naming specimens for collectors.

Marine Invertebrates.—(F. A. McNeill in charge, A. A. Livingstone and W. Boardman, assistants.)—The largest donation received during the year was a valuable collection of marine invertebrates from north-west Australia and the islands of Torres Strait, contributed by Mr. Melbourne Ward. Extensive collections were made by officers of the department at Low Isles, off Port Douglas, North Queensland, where each was the guest of the British Great Barrier Reef Expedition for a period of about two months in the earlier half of the year. These collections have since been sorted and determination of species is now proceeding. Specimens collected during the making of an ecological survey have been classified and named for Dr. T. A. Stephenson, a member of the Expedition, who proposes to publish the results of the survey in the near future.

Local field collecting has been continued, with special attention to dredging in Port Jackson and Botany Bay, our thanks being due to Mr. Melbourne Ward for having placed his launch at our disposal. We are also indebted to Mr. Ward for his generosity in bearing the expenses of boat hire and for his aid in connection with dredging operations in Port Curtis, Queensland, and a visit to the reefs of the Capricorn Group in company with Mr. W. Boardman.

A large collection of Decapoda has been assembled and forwarded as an exchange to the United States National Museum.

The dry store and exhibited collections have been regularly fumigated, while an additional cabinet has helped to overcome congestion in the stored collection of echinoderms. The work of transferring portion of the invertebrate spirit collection to the new upper storey of the spirit house has commenced, and very shortly the whole of the spirit collection of crustacea will be accommodated in these new quarters.

Palaeontology.—(C. Anderson in charge, H. O. Fletcher, assistant.)—Accessions during the year numbered 3,912. The principal donation was a collection of Upper Miocene fossils from Papua, presented by the Department of External Affairs, being a representative set of duplicates from the collection made by the late J. E. Carne. Mrs. A. Rubie presented a fine palate and some teeth of *Nototherium mitchelli*, from Borenore, New South Wales; from Mrs. B. G. Engelhardt we received a number of Permo-Carboniferous fossils from the South Coast districts of New South Wales. Other donations include a number of Permo-Carboniferous invertebrates from Berarra, South Coast, presented by Mr. E. L. June, and a sub-fossil macruran, *Thalassina anomala*, from Darwin, presented by Mr. N. C. Bell.

By exchange with the Natural History Museum, Vienna, we received a collection of European fossils, including an exceptionally fine series of Palaeozoic and Triassic forms, from Czecho-Slovakia and Dalmatia.

Comprehensive series of Silurian fossils were collected by Mr. Fletcher and others at Quidong, near Bombala, and of Upper Marine forms at Ulladulla and Berara, South Coast, New South Wales. The Varney Parkes collection of fossils, purchased by the Trustees in 1926, has now been completely registered and added to the reference collection. The work of cataloguing and sorting the paleontological collections is still proceeding, but the work is greatly hampered by lack of suitable storage facilities.

Mineralogy and Petrology. (T. Hodge-Smith in charge, R. O. Chalmers, assistant).—Additions to the collection numbered 628, including sixty-three species not previously represented. A useful collection of 250 specimens was presented by Mrs. B. G. Engelhardt, and a number of fine Broken Hill specimens were presented by Mr. Voss F. Smith. Other Broken Hill specimens were acquired by exchange with Mr. M. Mawby.

The most important acquisition was a collection of 102 specimens received by exchange with Ward's Natural History Establishment, Rochester, New York, including most of the new species and a fine series of large showy specimens. The exhibited series has been re-arranged in order to display the newly acquired specimens to the best advantage, and by this means the mineral gallery has been greatly improved and made more attractive, although the best results cannot be obtained owing to poor lighting.

A short visit was paid to Pye's Quarry at Northmead, for the purpose of obtaining crystals of barite occurring in the Hawkesbury sandstone at that locality.

Two school collections were prepared and delivered and a number of gallery demonstrations were given to students of the Sydney Technical College. Information regarding minerals and ores has been given to students, mining men and others.

Ethnology.—(W. W. Thorpe in charge).—Donations received during the year include a fine series of specimens from Netherlands New Guinea (Mr. J. W. Earnshaw); weapons and other articles from the Solomons (Messrs. P. and W. Sherman); a large series of aboriginal flakework from the Illawarra district, New South Wales (Mr. W. W. Thorpe); Bushman arrows (Dr. A. K. MacLachlan); eighteenth dynasty beadwork, &c., Egypt (Miss M. B. Mullens); flaked stone implements from the Newcastle district, New South Wales (Mr. W. J. Cooksey); Fijian spears (George King & Co. Ltd.); two Inca carved staves, Peru (Mrs. J. H. Edwards); flakework from Bombala, New South Wales (Rev. A. J. Barrett).

By purchase we obtained a number of weapons and masks from the Sepik River, Mandated Territory, New Guinea; a collection of arrows from Rajputana, India; a large series of aboriginal stone axes from the Illawarra district, New South Wales; weapons and ornaments, Fly River, Papua. By exchange with Mr. A. S. Kenyon we received a series of Tasmanian flaked stone implements. During a visit to the coast north of Port Stephens Mr. Thorpe collected a number of stone implements representative of that district.

The gallery and reserve collections have been maintained in good order. Additions to the exhibited series include the Captain J. H. Robins collection of Polynesian articles presented by Sir Alfred Meeks, and a representative series of Newcastle and Port Stephens flaked stone implements. A case containing a number of specimens from Santa Cruz has also been installed.

During the year Mr. Thorpe identified and labelled the large Australian collection of the late E. O. Milne, which is destined for the projected Commonwealth Museum at Canberra. He also selected and arranged for the East Sydney Technical College a series of specimens illustrative of native art.

A carved tree and tracings of aboriginal rock carvings were forwarded on loan to the National Museum, Melbourne, to be shown during the holding of an exhibition of aboriginal art. Specimens were also lent to the Kindergarten Training College, Sydney.

Numismatics.—(W. W. Thorpe in charge).—Among donations received were a number of British tokens presented by Mr. D. Raymond and a collection of British coins by Mr. T. Paull. By exchange we acquired a large series of the coins of various countries from Mr. Raymond.

The collection on view near the entrance has been regularly changed during the year, and many identifications of coins, tokens, and medals have been made for the general public.

The Common Seal of the Museum was hereunto affixed by order of the Board, this thirteenth day of December, 1929.

CHARLES ROSENTHAL,
President.

W. T. WELLS,
Secretary.

APPENDIX A.

STAFF OF THE AUSTRALIAN MUSEUM AT 30TH JUNE, 1929.

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—	
Anthropology	W. W. Thorpe, Ethnologist, Numismatist.
Zoology	*J. R. Kinghorn, Ornithologist, Herpetologist, Miss S. L. Stark, Assistant. 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.
Mineralogy	T. H. Smith, Mineralogist, Petrologist. R. O. Chalmers, Cadet.
Palaeontology	*H. O. Fletcher, Assistant Palaeontologist.
Library Staff—	
Librarian	W. A. Rainbow.
Assistant Librarian	F. D. McCarthy.
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.
Printer	J. Woodhead.
Attendants and General Staff—	
Chief Attendant	T. A. Murphy.
Senior Attendant	J. Watson.
Attendants	A. Mackay, E. T. Hill. D. Massey. A. B. Weish. 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 B.

HONORARY STAFF OF THE AUSTRALIAN MUSEUM AT 30TH JUNE, 1929.

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. Archaeologist.

APPENDIX C.

HONORARY CORRESPONDENTS OF THE AUSTRALIAN MUSEUM AT 30TH JUNE, 1929.

• Mr. R. E. Baxter.	• Sir Samuel Hordern.	Mr. Melbourne Ward.
• Mr. H. Burrell.	Mr. A. E. Phillips.	Dr. G. A. Waterhouse.
• Sir Hugh Denison.	Dr. C. Phillips.	Mr. W. H. Wooster.
• Mr. Robert Dixon.	Dr. R. H. Pulletine.	Hon. Sir Alfred Meeks.
• Mr. William Dixon.	Sir Arthur Rickard.	• Miss Eadith Walker.
Mr. C. E. Hart.	Mr. E. H. Rainford.	• Mr. R. R. Dangar.
Mr. N. S. Heffernan.	Mr. George Roberston.	• Mr. R. H. Dangar.
• Mr. Anthony Hordern.	Mr. T. E. Rofe.	• Mr. James Burns.

* Service not continuous.

APPENDIX D.

LECTURES DELIVERED DURING THE YEAR ENDED 30TH JUNE, 1929.

Popular Science Lectures.

Date.	Subject.	Lecturer.	Attendance
1928.			
12 July	Barrallier's Blue Mountain Exploration	R. H. Cambage	257
16 "	From Cape to Cairo	E. J. Bryce	360
9 Aug.	True Fish Stories	G. P. Whitley	298
23 "	The Life of a Butterfly	Dr. G. A. Waterhouse	128
6 Sept.	Our Aborigines	W. W. Thorpe	235
20 "	Romance of Japan	E. C. Andrews	320
4 Oct.	The Scenery of New South Wales	Professor Griffith Taylor	296
18 "	The Science of Man	Professor A. R. Radcliffe Brown	305
1929.			
18 April	The Living Past in Tasmania	Professor T. T. Flynn	208
9 May	On the Great Barrier Reef	W. Boardman	341
20 "	Our Marine Resources	T. C. Roughley	272
13 June	With Net and Trawl in our Ocean Depths	G. P. Whitley	360
27 "	Horns and Hoofs	E. L. Troughton	209
13 Lectures.		Total	3,589

School Lectures.

1928.			
12 June	Mammals	E. L. Troughton	36
19 "	"	"	151
10 July	Shore Life	W. Boardman	117
24 "	"	"	30
7 Aug.	Shells	"	115
21 "	"	T. Iredale	137
18 Sept.	Insects of the Sydney Bush	A. Musgrave	206
1929.			
7 May	Insects	"	193
21 "	"	"	396
4 June	Shore Life	W. Boardman	105
18 "	"	"	240
11 Lectures.		Total	1,726

Extension Lectures.

1928.			
18 Aug.	The Value of Wild Life (Barrier Field Nat. Club, Broken Hill.)	J. R. Kinghorn	215
21 "	Australian Reptiles (Barrier Field Nat. Club, Broken Hill.)	"	107
23 "	Our Feathered Friends (Barrier Field Nat. Club, Broken Hill.)	"	135
7 Nov.	Our Feathered Friends (Wentworthville Agricultural Bureau.)	"	90
7 "	Lord Howe Island (St. Andrew's Cathedral Communicants' Guild.)	A. Musgrave	45
1929.			
25 "	Snakes and Snake Venom (St. John's Ambulance Brigade, Rockdale.)	J. R. Kinghorn	70
18 April	Ancient Egypt (Maccabean Literary Institute.)	W. W. Thorpe	50
14 May	Our Feathered Friends (N.S.W. Horticultural Society.)	J. R. Kinghorn	100
14 June	Ancient Egypt (Sydney Bush Walkers' Club.)	W. W. Thorpe	52
9 Lectures.		Total	864

Unofficial Lectures.

1928.			
16 July	Birds and Reptiles (Y.M.C.A. Boys' Section.)	J. R. Kinghorn	20
19 "	Seashore Life (Y.M.C.A. Boys' Section.)	W. Boardman	30
19 "	Explorer Naturalists of Australia (Manly Historical Society.)	T. Iredale	50
23 "	A Trip to Santa Cruz (N.S.W. Rod Fishers' Society.)	E. L. Troughton	50
2 Nov.	The Australian Aborigines (Sydney Bush Walkers' Club.)	W. W. Thorpe	54
20 "	The Australian Fauna (Royal Colonial Institute.)	Dr. C. Anderson	60
19 Dec.	Marine Life (Marine Section Zoological Society.)	W. Boardman	20
1929.			
3 "	Marine Life (Y.M.C.A. Boys' Section.)	"	60
5 "	Marine Life (Lyceum Sunday Afternoon Meeting.)	"	1,100
28 "	Marine Life (Y.M.C.A. Manly Section.)	"	250
30 "	Marine Life (Domestic Science School, Randwick.)	"	350
11 June	Ancient Egypt (Feminist Club.)	W. W. Thorpe	43
19 "	Venomous Snakes (Public Medical Officers' Association.)	J. R. Kinghorn	15
23 "	A Ramble with Nature (Burnside Orphans' Home.)	"	450
14 Lectures.		Total	2,552

APPENDIX D.—continued.

Additional unofficial lectures, for which particulars are not available, were delivered by members of the Scientific Staff as follows:—

Date, 1928.	Subject.	Lecturer.	
16 July	Nature's Realm by the Shore (Aquarium Society of New South Wales.)	W. Boardman.	
31 "	Natural History of Lord Howe Island (Australian Wattle League.)	E. Le G. Troughton.	
31 "	Nature's Realm by the Shore (Suspension Bridge Parents' & Citizens' Association.)	W. Boardman.	
19 Feb.	Rock Carvings (Anthropological Society of New South Wales.)	W. W. Thorpe.	
28 "	Ancient Egypt (Kindergarten College Students.)	"	
5 "	Nature's Realm by the Shore (Lyceum Hall.)	W. Boardman.	
30 May	On the Great Barrier Reef (Randwick Super-Primary Girls' School.)	"	
	Some Remarkable Fishes. (New South Wales Rodfishers' Association.)	G. P. Whitley.	
	Snakes and Snake Venom (New South Wales Rodfishers' Association.)	J. R. Kinghorn.	
	Sea Snakes and Others. (Royal Zoological Society of New South Wales.)	"	
	Economic Value of Birds (Longueville Boys' Club.)	"	
	The Value of Wild Life (Scouters' Club.)	"	
Other Lectures in the Museum.			
Date, 1928.	Subject.	Lecturer.	Attendance.
8 Sept.	The Animals of Australia (To Foreign Migrants.)	J. R. Kinghorn	85
25 Oct.	Cook—the Man	Dr. T. Storie Dixon	219
1929.			
6 Feb.	The Migration of Eels	Dr. Johannes Schmidt	129
21 "	Ancient Egypt (Sydney Kindergarten Training College Pupils.)	W. W. Thorpe	...
Four Lectures.			Total 456

APPENDIX E.

SCIENTIFIC PAPERS AND ARTICLES PUBLISHED OR PREPARED DURING THE YEAR.

- "A New Genus and Species of Bat (*Kerivoulinae*) from the Solomons, with a Review of the genera of the Sub-family." E. Le G. Troughton, *Rec. Austr. Mus.*, XVII, 2, 1929.
- "Note on the Occurrence of a Second Species of Fruit-bat (*Pteropus scapulatus*) in New South Wales." E. Le G. Troughton, *Austr. Zoologist*, VI, 1, 1929.
- "New Forms of Mosaic-tailed Rats (*Melomys* and *Uromys*) from Hinchinbrook Island, Queensland." E. Le G. Troughton and A. S. Le Souef, *Austr. Zoologist*, VI, 1, 1929.
- "A New Fruit-bat (*Pteropus rayneri* group) from the Solomons." E. Le G. Troughton, *Rec. Austr. Mus.*, 4, 1929.
- "A New Species of Ring-tailed Phalanger (*Pseudo-chirus laniginosus* group) from the Bunya Mountains, S. E. Queensland." E. Le G. Troughton and A. S. Le Souef, *Rec. Austr. Mus.* (in the press).
- "The Occurrence of *Grampus griseus* at Sydney, constituting the second record for Australasia." E. Le G. Troughton (for publication in the *Annals and Magazine of Natural History*, London).
- "Faunal Problems." J. R. Kinghorn, *Austr. Zoologist*, V, 3, 1928.
- "A New Species of *Lygosoma* from New South Wales." J. R. Kinghorn, *Proc. Linn. Soc., New South Wales*, LIV, 2, 1929.
- "Bird Protection in Australia." J. R. Kinghorn, *The Emu*, XXVIII, 1929.
- "Herpetological Notes, No. 1." J. R. Kinghorn, *Rec. Austr. Mus.*, XVII, 2, 1929.
- "Two New Snakes from Australia." J. R. Kinghorn, *ibid.*, XVII, 4, 1929.
- "*Barnardius occidentalis* North and its Allies." J. R. Kinghorn, *The Emu*, XXIX, 1929.
- "Alligator or Crocodile?" J. R. Kinghorn, *Austr. Mus. Mag.*, III, 9, 1929.
- "The Snakes of Australia." J. R. Kinghorn (Messrs. Angus & Robertson—in the press).
- "Jenny Hanivers." G. P. Whitley, *Austr. Mus. Mag.*, III, 8, 1928.
- "With the Great Barrier Reef Expedition." G. P. Whitley and W. Boardman, *ibid.*, III, 9, 1928.
- "Marine Animals from Low Isles, Queensland." G. P. Whitley and W. Boardman, *ibid.*, III, 10, 1929.
- "Quaint Creatures of a Coral Isle." G. P. Whitley and W. Boardman, *ibid.*, III, 11, 1929.
- "An Eel-fare at Parramatta." G. P. Whitley, *ibid.*, III, 10, 1929.
- "Pages from our Past." G. P. Whitley, *ibid.*, III, 10, 1929.
- "The Discovery of the Queensland Lung-fish." G. P. Whitley, *ibid.*, III, 11, 1929.
- "Fishes from Ongtong Java, Melanesia." G. P. Whitley, *Proc. Linn. Soc., New South Wales*, LIV, 2, 1929.
- "Studies in Ichthyology, No. 3." G. P. Whitley, *Rec. Austr. Mus.*, XVII, 3, 1929.
- "Some Fishes of the Order Amphiprioniformes." G. P. Whitley, *Mem. Queensland Mus.*, LX, 3, 1929.
- "Notes on two Overlooked Pamphlets concerning Australian Fishes." G. P. Whitley, *Rec. Austr. Mus.* (in the press).
- "Studies in Ichthyology, No. 3." G. P. Whitley, *ibid.*, XVII, 3, 1929.
- "Fish Names in Meuschen's Index to the Zoophylacum Gronovianum." G. P. Whitley, *Rec. Austr. Mus.* (in the press).
- "Contributions to the Cranial Osteology of the Fishes, No. VI." H. L. Kesteven, *Rec. Austr. Mus.*, XVI, 7, 1928.
- "A Checklist of the Fishes recorded from Australia, Part 2." The late A. R. McCulloch, revised by G. P. Whitley, *Mem. Austr. Mus.*, V, 2, 1929.
- "The late B. Bertram." A. Musgrave, *Austr. Mus. Mag.*, III, 8, 1928.
- "The lure of a Mangrove Swamp." A. Musgrave, *ibid.*, 9, 1929.
- "Life in a Mangrove Swamp." A. Musgrave, *ibid.*, III, 10, 1929.
- "A Naturalist in the Gulf Country." T. G. Campbell, *ibid.*, III, 9, 1929.
- "Bees in the Australian Museum." T. D. A. Cockerell, *Rec. Austr. Mus.*, XVII, 5, 1929.
- "Mantidae in the Australian Museum." N. B. Tindall, *Rec. Austr. Mus.* (in the press).
- "The Loricates of the Neozelanic Region." T. Iredale and A. F. Basset Hull, *Austr. Zoologist*, V.
- "Strange Molluscs from Sydney Harbour." T. Iredale, *ibid.*, V.
- "Queensland Molluscan Notes, No. 1." T. Iredale, *Mem. Queensland Mus.*, IX.
- "Naturalists in Australia—the Frenchmen." T. Iredale, *Austr. Mus. Mag.*, III, 10, 1929.

APPENDIX E—continued.

SCIENTIFIC PAPERS AND ARTICLES PUBLISHED OR PREPARED DURING THE YEAR—continued.

- "The Bird Man." T. Iredale, *ibid.*, III, 11, 1929.
 "The Bird of Providence." T. Iredale, *Austr. Zoologist*, V.
 "The Vicissitudes of a Noddy." T. Iredale, *The Emu*, XXVIII.
 "Mollusca from the Continental Shelf of Eastern Australia, No. 2." T. Iredale, *Rec. Austr. Mus.* (in the press).
 "Bryozoa from South Australia." A. A. Livingstone, *Rec. S. Austr. Mus.*, IV, 1, 1928.
 "Studies in Australian Cacinology, No. 3." E. A. McNeill, *Rec. Austr. Mus.*, XVII, 3, 1929.
 "The Bryozoa of New Zealand." A. A. Livingstone. *Saertryk af Vidensk. Medd. fra Dansk. Naturh. Foren. Kjobenhavn.*
 "Some Records and Comments on Australian Decapoda." F. A. McNeill and Melbourne Ward, *Rec. Austr. Mus.* (in the press).
 "Thomas Whitelegge—Obituary and Bibliography." F. A. McNeill and G. P. Whitley, *Rec. Austr. Mus.* (in the press).
 "Asteroidea from Low Isles, North Queensland." A. A. Livingstone (for publication by the Great Barrier Reef Committee).
 "Bryozoa from Low Isles." A. A. Livingstone (for publication by the Great Barrier Reef Committee).
 "Studies in Australian Atheate Hydroids, No. 2. Development of the Gonophores and Formation of the Egg in *Myriothelia australis* Briggs." E. A. Briggs, *Rec. Austr. Mus.*, XVII, 5, 1929.
 "Notes on Freshwater Sponges from Australia and New Zealand." N. Gist Gee, *Rec. Austr. Mus.* (in the press).
 "Evidence of Polynesian Culture in Australia and Norfolk Island." W. W. Thorpe, *Jour. Polynesian Soc.*, XXXVIII, 2, 1929.
 "Aboriginal Adaptability." W. W. Thorpe, *Austr. Mus. Mag.*, III, 10, 1929.
 "Contributions to the Permo-Carboniferous Aviculopectinidae of New South Wales." H. O. Fletcher, *Rec. Austr. Mus.*, XVII, 1, 1929.
 "A Revision of the Genus *Astartila*." H. O. Fletcher, *Rec. Austr. Mus.*, XVII, 2, 1929.
 "Fossil Hunting at Quidong." H. O. Fletcher, *Austr. Mus. Mag.*, III, 10, 1929.
 "Palaeontological Notes, No. 2." C. Anderson, *Rec. Austr. Mus.* (in the press).
 "Bicentenary of the Birth of Captain Cook." C. Anderson, *Austr. Mus. Mag.*, III, 8, 1929.
 "Obituary R. H. Cambage." C. Anderson, *ibid.*, III, 9, 1929.
 "Exploration of the Seas." C. Anderson, *ibid.*, III, 10, 1929.
 "The Teeth of Mammals." C. Anderson, *ibid.*, III, 11, 1929.
 "Report on the Establishment of a Commonwealth Museum at Canberra." C. Anderson, J. A. Kershaw and A. C. D. Rivett, *Jour. Council Sci. and Indust. Research*, II, 1, 1929.
 "The Elsinora Meteorite: A New Chondrite from New South Wales." T. Hodge-Smith, *Rec. Austr. Mus.*, XVII, 1, 1929.
 "Note on the Occurrence of Zeolites at Kyogle, New South Wales." T. Hodge-Smith, *Rec. Austr. Mus.* (in the press).

APPENDIX F.

Schedule of Specimens acquired during the year ending 30th June, 1929:—

Department.	Donation.	Exchange.	Purchase.	Prepared.	Collection.	Total.
Vertebrata—						
Mammalia	253	7	7	...	...	267
Aves	99	2	...	...	...	101
Reptilia	460	157	3	58	...	678
Pisces	530	30	...	392	...	952
Skeletons	21	1	...	...	...	22
	1,363	197	10	450	...	2,020
Invertebrata—						
Mollusca	813	...	3,801	1,799	...	6,413
Insects and Arachnida	4,752	116	98	130	...	5,096
Crustacea	358	3	...	468	...	829
Echinodermata	108	16	...	190	...	314
Polyzoa	29	...	...	...	...	29
Vermes	148	...	...	278	...	426
Hydroids	3	...	...	1	...	4
Sponges and Foraminifera	1	...	...	62	...	63
Other Invertebrata	101	...	...	...	...	101
	6,313	135	3,899	2,928	...	13,275
Fossils	242	275	2,552	877	...	3,946
Minerals	391	143	96	1	...	631
Rocks	117	29	1	1	...	148
	750	447	2,649	879	...	4,725
Ethnological, &c.—						
Ethnological	804	96	152	187	...	1,239
Historical	1	...	5	...	...	6
Numismatical	92	...	105	...	...	197
	897	96	262	187	...	1,442
Miscellaneous—						
Micro Sections .....	...	...	...	...	25	25
Casts	6	4	...	...	11	21
Moulds .....	...	...	...	...	7	7
Photo Negatives .....	...	...	...	...	208	208
Lantern Slides	11	...	...	...	224	235
Photographs	10	...	4	...	...	14
	27	4	4	...	475	510
Summary.						
Vertebrata	1,363	197	10	450	...	2,020
Invertebrata	6,313	135	3,899	2,928	...	13,275
Fossils, Minerals, and Rocks	750	447	2,649	879	...	4,725
Ethnological	897	96	262	187	...	1,442
Miscellaneous	27	4	4	...	475	510
	9,350	879	6,824	4,444	475	21,972

Summarised Statement of Net Receipts and Payments for the Year ended 30th June, 1929.

I certify that the books and accounts of the Australian Museum have been examined for the year ended 30th June, 1929, and that, in my opinion, the above summarised statement of Receipts and Payments correctly sets out the financial transactions for that year.

J. SPENCE,
Auditor-General.

APPENDIX H.
THE AUSTRALIAN MUSEUM.
REVENUE ACCOUNT.

Sydney: Alfred James Kent I.S.O., Government Printer—1939.