

1956

(SECOND SESSION)

PARLIAMENT OF NEW SOUTH WALES

REPORT OF THE TRUSTEES
OF THE
AUSTRALIAN MUSEUM

FOR THE

Year ended 30th June, 1956

BY COMMAND

Ordered to be printed, 31 October, 1956

Wholly set up and printed in Australia by

A. H. PETTIFER, GOVERNMENT PRINTER, SYDNEY, NEW SOUTH WALES.

1957

[9d.]

ANNUAL REPORT

OF THE TRUSTEES OF THE AUSTRALIAN MUSEUM

FOR THE YEAR ENDED 30TH JUNE, 1956

TO HIS EXCELLENCY THE GOVERNOR—

The Trustees of the Australian Museum have the honour to submit to Your Excellency their 102nd Annual Report, for the year ending 30th June, 1956.

TRUSTEES.

In December, 1955, Mr. H. B. Mathews was unanimously elected President for the year 1956. No changes in membership of the Board of Trustees have occurred during the year. The list of Trustees as at 30th June, 1956, is shown in Appendix "A".

STAFF.

The Director was the delegate of the Museum at the meeting of A.N.Z.A.A.S. held in Melbourne in August. Miss J. Allan and Miss E. Pope also attended as official representatives and Mr. E. Troughton as Secretary of the Fauna and Flora Conservation Committee.

The Director attended a symposium on Continental Drift, which was held in Hobart during March.

Mr. F. D. McCarthy was elected President of the Royal Society of New South Wales.

Mr. J. R. Kinghorn, Assistant to the Director, represented the Museum on the State Fauna Protection Panel. Mr. Troughton is also a member of the Panel and of the Fauna Reserves Sub-committee.

Dr. J. A. Keast and Dr. D. F. McMichael returned in September after two-year periods spent in overseas study.

On the retirement in June of Miss J. Allan, formerly Curator of Shells, Dr. D. McMichael was appointed Officer-in-Charge of the Department. During the year he visited Brisbane in connection with his research work on freshwater mussels and studied collections at the Queensland Museum. In February Dr. McMichael was awarded a research fellowship in Pacific Science by Yale University and the Bernice P. Bishop Museum. This will enable him to undertake field work in the near future in New Guinea.

A new Department of Design and Art has been created and Mr. J. Beeman appointed Officer-in-Charge.

Miss Fraser, who formerly has been Museum Librarian and Editorial Assistant, has been appointed to the new position of Editorial Assistant and Public Relations Officer and the Library is now in the charge of Mrs. J. Goodwin, who is seconded from the Public Library.

Mr. J. Kingsley retired from the position of Chief Preparator in August and has been replaced by Mr. H. Hughes.

Two new Cadet Preparators (R. Witchard and K. Gregg) have been appointed and also a new Cadet Artist (B. Bertram), a new Technical Assistant (Miss E. Da Silveira) and a new Ticketwriter (Miss L. Chambers).

Mr. P. Rawlings has been appointed a Science Trainee in the Department of Entomology.

Dr. J. Lovering, formerly Assistant Curator of Minerals, who returned from a period of overseas study in September, resigned during the following month.

Mr. W. Medway, who had been in the service of the Museum for thirty-three years and Chief Attendant since 1941, retired in November.

Miss V. Beattie, part-time Ticketwriter, resigned in January. Miss N. Gillett, Chief Clerical Officer, who had been at the Museum for fourteen years, retired in June on account of ill health.

FIELD WORK.

During September a Museum expedition, comprising Mr. R. O. Chalmers, Mr. H. Fletcher, Mr. F. D. McCarthy and Mr. R. Mackay, spent two weeks in the far-west of New South Wales collecting minerals, fossils, anthropological material and other specimens. The expedition was financed by the firm of Morley Johnson Ltd.

The Director and Mr. Kinghorn visited Jenolan Caves to survey the position in regard to Nature Trails, and the Director and Mr. Fletcher, accompanied by Mr. O. Le M. Knight, who has presented much valuable material to the Museum, spent two days in the Newcastle district seeking Permian fossil insects. Steps are being taken in an endeavour to have part of the outcrop of the fossil beds set aside as a permanent reserve.

A visit was also paid by the Director and Mr. Fletcher to the Triassic fossil beds at Brookvale, where many well-preserved fish, insects and other animal remains have been discovered in the past.

In January Mr. Fletcher visited Canowindra to investigate a report of a fossil exposure. As a result he secured for the Museum a collection of the finest specimens of Devonian armoured and ganoid fishes so far recorded in Australia.

During March Dr. Keast visited Melbourne and Adelaide to examine the bird collections in the National Museum of Victoria and the South Australian Museum. He travelled overland by car and, en route, studied certain aspects of natural geographic barriers which play a part in determining bird speciation. Particular attention was paid to the extent of the arid Coorong barrier and to the relationship of the Mallee faunas to those surrounding it.

A preliminary survey of the fauna of the Dee Why Lagoon has been made by Miss Pope, Mr. Whitley and Dr. McMichael.

GALLERY EXHIBITS.

The Mountain Parrot group and the Bluebottle exhibit mentioned in last year's Report have been completed; also the Beginnings of Civilisation display.

A third large wall painting has been installed in the Australian Aboriginal Gallery.

During Education Week a temporary exhibit entitled "Age and Animals" was arranged in the front hall and inspected by the Minister for Education (the Hon. R. J. Heffron) and the Director-General of Education (Dr. H. S. Wyndham). This exhibit attracted much interest and favourable comment.

As usual, an exhibit was prepared for the Royal Agricultural Show. It featured various aspects of the work of the Museum, in particular those concerned with children and with Museum activities in relation to agriculture.

Further temporary exhibits have been of a Sailfish, Bird Migration, one entitled "Crabs and Their Relatives from Local Harbour Waters", relics from the S.S. "Dunbar", lost off the entrance to Sydney Harbour in 1857, and another of the eggs of the Ribbon-tailed Bird of Paradise, which were presented by Sir Edward Hallstrom.

Although no major changes have been made in the galleries during the year, much preliminary planning has taken place. Plans are now in an advanced stage in relation to the redesign of the Australian Bird Gallery, the Australian Mammal Gallery, the new Fish Gallery and the Invertebrate Gallery; many exhibits have been prepared for installation in projected new cases in the Australian Aboriginal Gallery. This planning has been undertaken as a co-operative effort between Curators and Assistant Curators and those in charge of the Departments of Preparation and Design and Art and the Artificers' Department.

TRANSFER OF COOK RELICS TO THE PUBLIC LIBRARY.

The Museum has had in its possession for a long time many objects of a varied nature having some association with Captain Cook. All of these, which are of an historical, as apart from a natural history nature, have, with the permission of the Trustees of the Museum, been transferred to the care of the Trustees of the Public Library as it was considered that they would be more appropriately housed in the Mitchell Library. Among the few objects retained are two large Wedgwood plaques, one of Sir Joseph Banks and the other of Dr. Solander. These have been hung in the Board Room of the Museum.

LIBRARY.

During the year 291 volumes (235 presented or exchanged) were added to the Library; 152 of these were books and 139 bound volumes of periodicals. The Museum currently receives over 700 different periodicals. About fifty of these are purchased and the rest received by presentation or exchange. A thorough stocktaking of the 31,600 volumes in the Library has been completed.

The Museum Library continues to lend regularly to universities, museums, C.S.I.R.O. Divisions and other institutions throughout Australia.

In April, 1956, the Library and Editorial sections were separated, and it is hoped that in the coming year staff will be seconded from the Public Library to undertake the major task of recataloguing the Museum one.

PUBLICATIONS.

During the year Volume XXIII, No. 5, and Volume XXIV, No. 1, of the Museum "Records" have been published. The latter part is the first under the new arrangement whereby each paper is published separately and not issued bound together with several others. The front cover of the "Records" has been re-designed. The indices of Vol. XXII and XXIII are still in the press.

Volume XI, Nos. 11 and 12, and Volume XII, Nos. 1 and 2, of the Australian Museum Magazine have been issued. A committee has been set up to plan future issues of the Magazine. In addition to seeking to ensure more balanced contents than formerly and to obtain more contributions from outside authors, it is planned to issue each year a special number devoted to a topic of major interest.

The fourth edition of "Australian Aboriginal Decorative Art", by Mr. F. D. McCarthy, has been published and twelve leaflets intended for educational and advisory purposes have been prepared for printing.

LECTURES.

Twelve Popular Science Lectures were delivered during the year. As is customary, half of these were given by visiting lecturers and the remainder by members of the Museum staff. The attendance was 1,623 (average 153) as compared with 1,412 (average 118) for 1954-55.

During May a meeting of the Society of Experimental Biology of N.S.W. was held in the Museum and papers were given by members of the scientific staff.

BUILDINGS AND STORAGE ACCOMMODATION.

A mezzanine floor has been constructed in one of the two fossil stores. This will relieve congestion for the time being, though over-crowding remains as serious as before in almost every other department of the Museum.

As a first step towards the provision of an urgently needed new wing, some 7,000 square feet of storage space has been acquired in a warehouse on the outskirts of the city. Since this became available, collections and display cases stored in the cellars, the air-raid shelters and the iron sheds at the back of the Museum, have been re-arranged and a large quantity of material transferred to the storage warehouse. As a result, the air-raid shelters have been completely emptied and the iron sheds also, excepting for the extensive ethnological collections. These will shortly be temporarily stored in a gallery. When this has been done the sheds will be ready for demolition so that the site can be made available for preparations for building purposes. The air-raid shelters have already been demolished and a new road is in the process of construction which will give access to the Museum when the present one becomes blocked by the new wing.

Work by the Public Works Department has continued on major repairs to the roof of the Museum and in the replacement of worn stone work.

EQUIPMENT.

Six new binocular microscopes and accessories for use in the various scientific departments have been ordered and some already received.

A printing machine for use in the preparation of labels and for other purposes have been acquired, also a compressing unit, disc sander and a Di Vilbris spray gun for use in the Artificers' Department, and an electric hand drill for the Department of Preparation.

FINANCE.

Expenditure from Consolidated Revenue for the year (excluding Statutory Endowment of £1,000) was £55,472 11s., compared with £53,521 6s. 5d. last year. Net expenditure from Trustees' Account Funds (including Statutory Endowment) was £2,200 4s. 6d., compared with £1,249 13s. 9d. for 1954-55.

The cash balance in the Trustees' Account at 30th June, 1956, was £1,590 5s. 6d. Trustees' invested funds at 30th June, 1956, were Commonwealth Inscribed Stock, £5,850; Sydney County Council, £1,000; Metropolitan Water, Sewerage and Drainage Board Inscribed Stock, £2,500; Commonwealth Savings Bank, £331 16s. 4d.

Statement of Receipts and Expenditure for the year is contained in Appendix "B".

PUBLIC ATTENDANCES.

Statistics of attendances for the years 1951-52 to 1955-56 are as follows:—

| Year. | Week-days. | Sundays. | Total |
|---------|------------|----------|---------|
| 1951-52 | 169,787 | 77,317 | 247,104 |
| 1952-53 | 211,544 | 78,148 | 289,692 |
| 1953-54 | 188,354 | 71,419 | 259,773 |
| 1954-55 | 185,345 | 75,959 | 261,304 |
| 1955-56 | 212,609 | 83,206 | 295,815 |

PUBLICITY.

The former practice of lending specimens to commercial firms for window displays or exhibitions has been discontinued as it involved much time on the part of various members of the Museum staff.

A special effort has been made to arouse interest in the Museum and its activities by means of publicity in the daily press and in illustrated weekly and quarterly periodicals. The effort has been particularly successful and, as well as almost monthly mention of the Museum having been made in the daily papers, several illustrated articles have been published in the weekly ones. Numerous wireless talks have been given by various members of the staff on subjects covering different aspects of the work of the Museum.

FILMS.

The screening of educational films for school classes and the showing of interesting natural history ones for children and adults during the school holidays has continued.

COLLECTIONS.

The collections are in good order and condition. A careful check has been maintained on gallery displays and weekly inspections have been made for insect infestation and development of damp conditions.

The condition of specimens stored in the spirit house has been given particular attention and new regulations relating to the spirit house have been prepared.

The rearrangement of many collections, following on the acquisition of outside storage, has brought about better conditions for some than was formerly possible.

RESEARCH.

Research work actively pursued during the year has included studies of Palaeozoic and Mesozoic insects by the Director; studies relating to speciation in certain groups of Australian birds by Dr. Keast; studies of the Decapoda of the Great Barrier Reef Expedition by Mr. McNeill; of the New Guinea freshwater molluscan fauna by Dr. McMichael; of Permian gastropods by Mr. Fletcher and on the relationship to each other of certain groups of Diptera, Acalyptata by Mr. McAlpine.

CURATORS' REPORTS.

Birds, Reptiles and Amphibians. (J. R. Kinghorn, Curator; J. A. Keast, M.A., Ph.D., Assistant Curator).

Reptiles and Amphibians.—During the year nearly 500 specimens were added to the collections. Included in this number were the following:—107 presented by Mr. L. J. Jones, Laloki River, New Guinea; 65 from Mootwingie, New South Wales, collected by Mr. R. Mackay and party; 200 from the Mount Hagen and Ganz River area, Papua, collected by Messrs. E. L. Troughton and N. Camps; 60 from Yaramandi, Papua, presented by Mr. R. N. H. Bulmer.

A paper entitled "Herpetological Notes No. 5", by the Curator, has been published in *Records of the Australian Museum* XXIII, No. 5.

Birds.—Twenty-four specimens have been registered during the year.

Assistance has been provided to many overseas scientists and institutions, including the following:—Dr. Ernst Mayr, Harvard University (skeletal and other material); Dr. J. Mees, University of Leiden (Zosteropidae); Dr. D. Ride, University of Oxford (details of the collections and expeditions of Dr. George Bennett, who was associated with the Australian Museum in its early days); Dr. J. Baumel, University of Florida (in connection with his studies of Australian crows).

Much help has been given to amateur ornithologists, many of whom provide helpful material and information to the Museum.

The Assistant Curator visited Melbourne and Adelaide in connection with his research studies.

The following papers have been published by the Assistant Curator:—"Variation in the Australian Oriolidae" and "Variation in the Genus *Megalurus*", in the Proceedings of the Zoological Society of New South Wales. Two articles have been published in the Australian Museum Magazine.

An outstanding gift of birds has been made by Mr. G. Bulmer, of the School of Pacific Studies of the Australian National University at Canberra. This comprised some 400 skins and numerous spirit specimens and is the finest made to the Department during the past quarter of a century.

Mammals and Skeletons. (E. Le G. Troughton, Curator.)

Important acquisitions have included a collection of forty mammals presented by Mr. R. N. H. Bulmer. These were obtained in the Baiyer Valley district of New Guinea. A number of interesting specimens has been received from the Taronga Zoological Park Trust. Other donations have included a native cat and a small bat, from Miss D. Levitt, of the Groote Eylandt Mission, and a giant tree-rat from Mr. S. B. Barker, of New Guinea.

Facilities for research have been afforded to Dr. F. A. Benedict and Dr. E. L. Lundelius, both Fulbright scholars, and also to Dr. B. J. Marlow, of the C.S.I.R.O. Wild Life Survey.

Inquiries dealt with have included ones relating to—Damage done by bandicoots and brush-tail possums; the danger of the introduction of foreign mammals such as the hamster, chinchilla, aguti, hedgehog and mink; the prevention of damage by rats to cable covers (Postmaster-General's Department); the destruction of young plantation pines by rodents and/or marsupials (Forestry Department); the distribution of bats and the incidence of dengue fever (School of Public Health); mouse plagues (Department of Agriculture); the identification of rats, and mammal remains in food (Health Department); the fauna of Lord Howe Island (Government Tourist Bureau).

Specimens of native rats have been identified for the Queensland Department of Agriculture and bats identified as mite hosts (for the South Australian Museum).

Visitors of interest have included Miss E. Cheeseman, who provided information about the mammals of Malekula Island, New Hebrides.

One article has been published in the Museum Magazine.

Skeletons.—Acquisitions have included skulls of wombats killed by traffic; the skull of a Squirrel-Glider from the hitherto unrecorded locality of Stockinbingal, and skulls of a New Guinea phalanger and other marsupials presented by the Taronga Zoological Park Trust.

The rearrangement of material in storage has called for much attention, in particular relating to the skeletons of whales which have been transferred to the new store.

A series of human and anthropoid crania was supplied for a Health Week display at the request of the Dental Branch of the Department of Public Health. The skulls of certain marsupials were presented to Victoria University College, New Zealand, for study purposes. A selection of crania of natives of the Pacific Islands has been studied at the Museum by Donald Marshall, of the Peabody Museum of Salem, Mass., U.S.A.

Fishes. (G. P. Whitley, Curator.)

More than 1,150 specimens have been preserved and registered. This is the highest number of acquisitions in a single year since 1947.

Noteworthy gifts have been collections of Australian fishes from Queensland and New South Wales presented by Mr. E. Worrell; coral fishes from Heron Island presented by the University of Queensland; freshwater fishes from remote areas in Western Australia (Dr. A. R. Main); and some New Guinea freshwater species (Mr. R. N. H. Bulmer).

Some 460 fishes from the Gilbert Islands, presented by Dr. R. Catala, have been identified by Dr. J. E. Randall (Hawaii) and placed in the reference collections.

The Curator has continued to act as Editor of publications for the Royal Zoological Society of New South Wales.

Nine hundred and twenty-two inquiries from the public and the press have been dealt with during the year. These have included ones from the C.S.I.R.O.; Commonwealth Fisheries Office; Department of Harbours and Marine, Brisbane; the Chief Secretary's Department; the Universities of Western Australia and Queensland; and from game fishermen. Information has been supplied for inquiries received from F.A.O.; the University of Hawaii; the Woods Hole Oceanographic Institute; the United States Fish and Wild Life Service; Dr. E. Siccardi (basking sharks, Argentine); Dr. G. Thines, Belgian Congo (blind fishes); Professor J. L. B. Smith, South Africa (snook); Dr. R. Catala, New Caledonia (re fishes);

Dr. B. Halstead, California (poisonous fishes); Col. J. K. Howard, Florida (marlins); Dr. T. Abe, Tokyo; Captain W. E. Young, New York (sharks).

In addition to three articles and some shorter notes in the Museum Magazine, eight papers have been printed in various scientific publications.

The Froggatt Memorial Lecture was delivered to the Naturalists' Society of New South Wales.

Insects and Arachnids. (A. Musgrave, Curator; D. K. McAlpine, B.Sc., Assistant Curator; Patricia Goodwin, Assistant; P. Rawlings, Science Trainee.)

Among the collections received during the year have been many specimens belonging to various Orders obtained at Mootwingee by the Museum Expedition to western New South Wales; type specimens of *Drosophila* presented by Mr. W. B. Mather; and beetles presented by Mr. F. Fricke.

Collections of Evaniidae, Chrysomelidae, Cyrtidae, Vespidae and Cereopidae, which had been submitted to experts for identification, have been returned to the Museum during the year.

The Curator has continued with the preparation of "An Index of Australian Arachnida, Myriapoda, and Onychophora" and with a new edition of his Bibliography of Australian Entomology. He has continued to act as abstractor for the Zoology and Entomology sections of the Australian Science Abstracts, which are published in the Australian Journal of Science.

During the year 1,246 telephone inquiries have been dealt with by the Curator; 643 letters written in answer to inquiries received by post and 830 members of the public have visited the department in person. Additional inquiries have also been dealt with by the Assistant Curator. The greater number of inquiries received by this department has related to spiders.

Visitors of note have included Dr. J. L. Gressitt from Honolulu; Miss L. E. Cheeseman (British Museum); Mr. M. F. Cohic from New Caledonia; Major General L. K. Lockhart from New Zealand, and Mr. J. H. Ardely of the Department of Agriculture, Papua and New Guinea. Others have been from the C.S.I.R.O. Division of Entomology and the various State Museums. Dr. J. Le G. Brereton, New England University, worked for a fortnight in the department.

A series of articles on the collection and preservation of insects and their allies, which were printed in the Museum Magazine, has been issued as a Museum leaflet. The Curator has also published an article in the Australian Zoologist.

The most important need of the department is the provision of new cabinets with standard and interchangeable drawers. Until these are made available the collections cannot be expanded. However, were cabinets to be provided in the immediate future there would be no space to house them.

Crustacea and other Invertebrate Groups. (F. A. McNeill, Curator; Elizabeth C. Pope, M.Sc., Assistant Curator.)

Many important acquisitions have been received by the department during the year. Of these the bulk has comprised crustacea, of which 257 entries have been made in the registers, representing a total of 656 specimens. Outstanding gifts have included a collection of type specimens of the prawn family Penaeidae (Mr. W. Dall) C.S.I.R.O. Division of Fisheries; a collection of named pelagic medusae (Dr. M. Blackburn) C.S.I.R.O. Division of Fisheries; an extensive series of micro-slide preparations of serial sections of Trematoda from the Zoology School, University of Sydney; six types of Sipunculoidea (Mr. S. Edmonds) University of Adelaide, and an extensive collection of separates relating to the Hydroidea, presented by Dr. T. Briggs, Hon. Zoologist.

New shelving which has been provided in the main spirit house has made possible the rearrangement of some of the reference study collections.

Loan material returned to the department and incorporated in the collections has included specimens of Tunicates (Mrs. P. Mather) and *Limnoria* spp. (Dr. R. J. Menzies) Scripps Institute of Oceanography. With the co-operation of Sir Douglas Mawson, part of the B.A.N.Z.A.R. Expedition collections, which have been held in trust by the department has been despatched to experts for study.

Revisions of the extensive reference collections of Penaeidae prawns, Portunid crabs and freshwater crayfish which have been undertaken by Mr. W. Dall, Professor W. Stephenson and Mr. E. F. Riek have done much to increase the usefulness of the collections.

Assistance provided during the year has included that given to Mr. A. M. Rapson (Department of Agriculture, New Guinea); The Department of Navy (fouling project) and the C.S.I.R.O. Division of Fisheries (fouling project).

Such time as has been available from other duties has been spent on the continuation of the work on the Decapods of the British Great Barrier Reef Expedition. The Assistant Curator has been studying the collection of Cirripedes on loan from the Western Australian Museum.

A total of 214 inquiries, both of a general and technical nature, have been dealt with.

During January the Assistant Curator accompanied a collecting party under the leadership of Professor Ennor of the Department of Biochemistry, National University, Canberra. This party spent three days collecting material in various localities on the coast adjacent to Sydney. The objective of the visits was to obtain bulk material of certain marine invertebrates needed for experimental research on the chemistry of muscles.

Visitors of particular interest have included Professor G. G. Wittenberg, Hebrew University; and Professor W. R. Macgregor, Auckland University College.

One article by the Curator has been published in the Museum Magazine and two by the Assistant Curator. In addition, the Assistant Curator, in collaboration with Miss P. McDonald (Education Officer) has written a series of articles for the Magazine entitled "Exploring Between Tide-marks." It is intended that these shall be published as a separate pamphlet.

Shells. (Joyce Allen, Curator; D. F. McMichael, M.A., B.Sc., Ph.D., Assistant Curator.)

Registrations for the year totalled 567 entries, comprising approximately 1,500 specimens. Acquisitions have included a large collection of shells presented by the Museum of Applied Arts and Sciences; a specimen of a particularly interesting pelagic nudibranch, presented by Miss J. Steinberg; land shells from New Guinea and the Solomon Islands, presented by Mr. A. W. B. Powell of the Auckland Museum. The Curator, before retiring at the end of the year, presented all her personal reprints, which numbered several hundreds, to the Department. Some type material has been presented by Mr. C. Laserson and Mrs. L. Woolcott.

General inquiries have averaged approximately four each day and many have been received from other Government Departments and research institutes.

Visitors to the department have included Mr. A. W. B. Powell (Auckland Museum); Dr. I. D. Hiscock (University of Queensland); Dr. C. Fleming (New Zealand Geological Survey); Miss Alison Kay (Hawaii) and Mr. Ostheimer (Philadelphia Academy of Science). The Baroness Ravensdale also visited the Museum seeking information about Australian and South Pacific shells.

Apart from Magazine articles the Curator published one scientific paper during the year in the proceedings of the Royal Zoological Society of New South Wales, and at the end of the year her book "Cowry Shells of World Seas" was published by Georgian House, Melbourne. This features every species at present known throughout the world. The Assistant Curator has published one article in the Museum Magazine and a scientific paper in "The Nautilus".

It is hoped that after the new wing has been built it will be possible for more space to be made available to the Shell Department on the floor where it is at present situated and to this end reorganisation of collections is being planned. New cabinets are fundamental to development.

Fossils. (H. O. Fletcher, Curator.)

Two hundred and eight specimens were registered during the year including a collection of Pliocene insect remains transferred from the Mining and Geological Museum and several holotypes and figure specimens of Palaeozoic corals and of Permian gastropods from the same Museum. Apart from a certain amount of new Permian insect and mollusc material, the most outstanding acquisition has been that of Upper Devonian armoured fishes from Canowindra. Other acquisitions have included five holotypes of Ordovician graptolites presented by Mrs. K. Sherrard.

Completion of the new mezzanine floor in fossil store No. 2 has made it possible for all the fossils to be stored and there remains room for expansion. Large specimens and unimportant material have been transferred to the new storage shed.

Information and assistance of a palaeontological nature have been given to the Australian Oil and Gas Corporation; the Joint Coal Board; the Water Conservation and Irrigation Commission; the Bureau of Mineral Resources and the C.S.I.R.O. Coal Research Station.

Photographs of type specimens have been forwarded to several research workers.

As time has permitted research has continued on the Permian gastropods of N.S.W.

A complete list of fossil insect types and specimens referred to in literature has been prepared. A total of 427 specimens has been listed. In addition, the type material of palaeozoic corals, involving some 1,000 specimens, has been listed.

Approximately 160 inquiries have been dealt with during the year and many specimens and collections of fossils identified.

Apart from accompanying the expedition to Mootwingee, the Curator spent short periods of field work at Harper's Hill in the Hunter Valley (examining the gastropod fauna in the Lower Marine Series); at Cessnock (examination of 800 feet of bore core); at Ravensfield Quarry (visiting a newly opened quarry to arrange for specimens to be put aside for the Museum); at Brookvale Quarry, Belmont and Canowindra.

Visitors of note have included Professor K. Castor (University of Cincinnati); Mr. R. L. Bowen (University of North Carolina); Mr. G. Lane (University of Kansas); Dr. D. Coombes (University of Otago); Dr. C. Fleming (Geological Survey of New Zealand); Professor W. N. Benson (University of Otago); Mr. G. Woodward (University of California) and Mr. E. D. Gill (National Museum of Victoria).

Four articles have been published in the Museum Magazine.

Mr. A. Billett, who had formerly acted as part-time Lapidary, resigned in January because of ill-health.

Minerals and Rocks. (R. O. Chalmers, A.S.T.C., Curator; J. F. Lovering, M.Sc., Ph.D., Assistant Curator (part of time); Miss E. Da Silveira, Technical Assistant, Miss Frida Sachs, Assistant).

Two hundred and eighty-seven mineral specimens have been added to the collection. These consist principally of ones collected by the Curator from Prospect Quarry and on the Morley Johnson field expedition. The Prospect specimens include new and striking varieties of prehnite and calcite. Those from western New South Wales comprised davidite, from the recently discovered uranium prospects, and rare assemblages of titanite, epidote, actinolite and albite.

Fifty-four rock specimens have been added to the collections. These consist of australites and cores from several diamond drilling projects of the Joint Coal Board.

Following demolition of the air-raid shelters, which had formerly been used as stores, the entire rock collection of 450 boxes has been moved to the lift-well racks and to the outside store. In addition, a considerable amount of rearrangement to the mineral collections generally has taken place.

Material has been made available for research purposes to the C.S.I.R.O. Mineragraphic Investigations Section, the University of Sydney, the Australian National University and the Malayan Geological Survey.

The fluorescent exhibit in the Mineral Gallery has been renovated.

Approximately 250 inquiries have been dealt with, most of them involving the identification of mineral and rock specimens and gem stones. Advice has been given on research projects to advanced students. Information has been supplied to the Geological Survey of N.S.W. on the "Gemstones" and "Building Stones" sections of the new edition of the "Mineral Industry of N.S.W." Information on gem stones has been furnished to the Commonwealth Bureau of Mineral Resources. Renewed interest in rutile has brought an increase in the number of inquiries on the occurrence of this mineral in the State.

Three visits were made to the Prospect Quarries during the year and the Curator organised and led the Morley Johnson field expedition to north-western New South Wales.

Visitors to the department have included Professor A. H. Voisey (New England University); Dr. O. A. Jones (University of Queensland); Mr. G. Shaw (Geologist, Dominion Museum, Wellington, New Zealand); Dr. J. McAndrew (C.S.I.R.O. Mineragraphic Investigations); Mr. B. Flinter (Geological Survey of Malaya); Mr. J. Grover (Chief Geologist, British Solomon Islands Protectorate).

The Clarke Memorial Lecture, which was given by the Curator during the preceding year, has been published and three articles printed in the Museum Magazine.

Forty-six thin sections of bore cores have been examined on behalf of the Joint Coal Board and reports submitted.

The Curator is performing all the petrological work, other than on coal itself, on cores from the Board's extensive diamond drilling programme in connection with the search for new coal seams and the extension and development of existing seams.

Anthropology and Numismatics. (F. D. McCarthy, Curator; G. C. Heyde, Hon. Numismatist).

A total of 6,973 specimens was received by gift during the year in fifty-seven acquisitions. This is the highest total for several years. Gifts of stone implements have included

the following: 676 from New South Wales and Victoria (E. Wright); 362 from Lake Illawarra and 18 from Barrenjoey (F. A. Davidson); 49 from Gregory Salt Sea, W.A. (Father E. A. Worms); 26 Burrundji, N.T. (E. Fordon-Bellgrove); 9 Bogan River, N.S.W. (J. W. T. Armstrong); 15 Sawtell, N.S.W. (G. E. England); 14 Empire Vale, N.S.W. (Richmond River Historical Society per G. Abbott); 27 stone axes, Australia, New Zealand and Fiji (Museum of Applied Arts and Sciences) including a rare pick implement from Bathurst, N.S.W.; edge-ground axes from Manildra (K. Fletcher), Gloucester (H. F. Radkin), Meryla (J. H. Dubi), Blayney (R. J. Pile), Macksville (H. J. Cann), Wolgan Gap (R. Jarman), Yass (M. G. Loomis) all New South Wales; millstones from Boorungee Station (H. Barraclough) and Baradine (G. McNaught), both N.S.W.; mortar, Mootwingee, N.S.W. (R. Hatch); chopper, Bulga, N.S.W. (Master P. Eather); percussion stones, Narrandera (C. R. Eastman); 2 axes Healesville, Victoria (S. Cox); 2 axes, bulroarer, Central Australia (J. Kitching); 2 cyclons, One-tree Waterhole, N.S.W. (H. Bonnett); Yodda-type chopper (a rare type of stone implement), Lake Nangram, Queensland (J. M. Clift); Tjuringa, Central Australia (N. Kemp); incised stones, Wingen, N.S.W. (H. E. Savage), and Nappamerri, South Australia (P. D. Riddell).

As a result of the Morley Johnson Expedition, 2,744 stone implements, 13 latex casts and 118 photographs of rock engravings and paintings have been added to the collection.

An outstanding acquisition is the collection of the late Mr. M. S. Stanley, presented by his wife, consisting of 1,005 specimens among which are many fine wooden objects from the Pacific Islands, a comprehensive series of adzes from Bougainville, Solomons, and also adzes from New Guinea, New Caledonia, New Zealand, Fiji and Pitcairn Island. The Australian series includes a large number of axes, fish-hook files (from Murramarang), and 980 small spear points (called the Bondi-point). The collection contains many rare and unusual types of adzes and axes not previously represented in the Museum's collection, and a fine series of unusually large examples.

Another valuable acquisition is the W. D. Campbell collection of 472 weapons, sacred boards, ornaments, stone implements, and other articles collected in Western Australia between 1900 and 1910. It includes five carved rain boards from 10 to 12 feet long.

Four interesting collections of Australian and Pacific Islands material comprise 107 specimens from Captain A. W. Ostenfeld, including a number of fine old strings of red shell disk currency and a splendid example of a rare flint cleaver from Malaita; 20 specimens from Dr. J. Greenwell, including a Samoan orator's staff (not previously represented in our collection), Sepik River face masks, and Australian weapons; 107 specimens from the Museum of Applied Arts and Sciences, which included two rare coiled baskets from the Richmond River, New South Wales; a large trade package of turmeric pigment from the Solomons and a series of shell ornaments, many of which are new to our collection; 113 feather ornaments, mostly Birds of Paradise, Central New Guinea, from Southern International Films, usually worn in headdresses.

Other donations include the following:—New Guinea and Solomon Islands shields, hafted adzes, bark cloth and comb (D. Pyne); 2 painted facia boards, New Guinea (J. Tyrell); wooden club, New Hebrides (dug up at Mascot, Sydney) (J. Evanoff); carved human figure, Dutch New Guinea (N. Sprague); stone axe, Solomons (T. Alcock); a beautiful bark-cloth frieze, from Bau, Fiji, made by a member of the high chief's family many years ago (Dr. E. V. Bradfield); 11 baskets, masks, etc., from New Guinea, Tonga and China (Mrs. M. Keast); set of 24 weapons from Ialabu Highlands, central New Guinea (P. C. A. Conroy); carved tree, Mungindi, New South Wales (J. W. T. Hill); Queensland weapons (5) (Mrs. E. Lipton); 2 Arnhem Land baskets (J. W. Morris); axe, Denmark (Mrs. E. Frederikson); Magdalenian stone knife, Spain (Altamira) (P. Slack); bow and arrows, Rabaul, New Britain (J. H. Vickery); mat and sheet of bark cloth, over 100 years old, Fiji (Miss P. J. Atkinson); bows and arrows from Professor A. N. St. G. Burkitt.

The whole of the archaeological collection of 40,000 specimens, in 54 cabinets, was transferred from the air-raid shelter to a cellar room in the main building and other anthropological collections to different storage centres.

Planning for the projected inter-pillar cases in the Australian Aboriginal Gallery has been completed and a great deal of initial preparation undertaken in anticipation of the building of the required cases.

Three articles have been published by the Curator in the Museum Magazine and leaflets written on the natives of New Guinea, Polynesia, Indonesia, on Eskimos and on the Beginnings of Civilisation exhibit. In addition, a paper on the Cave Paintings of Groote and Chasm Islands has been published in *Mankind*, Vol. V, Part 2, and five other papers embodying the results of research are in the press.

A total of 674 inquiries, comprising 230 on the Australian Aborigines, 111 on general anthropology and 333 on coins and medals was dealt with during the year.

In addition to taking part in the field trip to western New South Wales the Curator made two one-day visits to the Hawkesbury River with Professor N. W. G. Macintosh to excavate aboriginal skeletons in rock shelters at Bar Point and Long Island. Interesting data on burial methods and on the contents of these shell deposits were recorded. An interesting burial of a child was examined at Port Kembla. The information concerning this had been supplied by the Metropolitan Water, Sewerage and Drainage Board.

Visitors of particular interest have included Madame F. Girard, of the Musée de l'Homme, Paris; Mr. J. C. McComb, of the United States Embassy; D. O. A. Schmitz, from Cologne, Germany; Mrs. A. Schulz, of the Frobenius Institute; Mrs. Rishbeth, formerly of the Museum of Archaeology and Ethnology, University of Cambridge; and Dr. R. Duff, Director of the Canterbury Museum, Christchurch, New Zealand.

Many shipments of aboriginal and New Guinea material, which are subject to export restrictions, were examined on behalf of the Customs Department.

Numismatics.—The following donations were received:—A set of Pakistan coins, from K. M. Mangi; 3 late Roman coins, C. W. Smith; 23 European coins, M. Klucke, and 7 from M. Cameron; a Greek coin from L. Kahos; 24 coins from V. Green; 2 United States and 1 Canadian dollars from C. G. Clifford (United States of America); 2 Egyptian coins, G. Sakellis; 1818 florin, G. P. Whitley; 19 Polish and other coins from Mr. Czarkowski. Eighty-three coins were received in ten acquisitions.

Department of Preparation. (H. D. Hughes, A.R.P.S., Officer-in-Charge; R. D. Mackay, Preparator.)

The Department has regained its full strength with the appointment of two Cadet Preparators (K. Gregg and R. Witchard) and there is now a total complement of six.

Apart from the normal routine work of gallery maintenance, attention to the spirit house and giving assistance to Curators, a great deal of time has been spent moving materials from the air-raid shelters and the iron sheds.

The Department's work rooms have been rearranged.

Experimental work has been undertaken with plaster, latex, plastics and casting moulds and some new techniques developed.

Work completed during the year has included mammal skins prepared, 3, reconditioned, 3; bird skins prepared, 57, mounted, 5; skeleton exhibits reconditioned, 14; skulls prepared, 40; negatives prepared, 722; photographic prints, 1,614; lantern slides, 155; films projected, 234; plaster moulds, 28; casts, 62; casts coloured, 27; accessories prepared, 800; models, 29; background painted (bird exhibit), 1; plans and designs, 46; drawings, 10; posters, 14; labels, 149.

Thirteen exhibits have been completed in the department.

Department of Design and Art. (J. Beeman, Officer-in-Charge.)

This department only came into existence on 13th April. It comprises as well as the Officer-in-Charge, a Cadet Artist and a Ticketwriter (Mr. B. Bertram and Miss L. Chambers), both of whom were formerly attached to the Department of Preparation.

The principal work of the department is the preparation of designs for gallery exhibits and the Officer-in-Charge is consulted on all matters related to gallery displays.

Work completed during the two-and-a-half months the department has been in existence has included 57 black and white illustrations for scientific papers and other purposes; designs for part of the new bird gallery, the Education Week exhibit, the wallaby and kangaroo exhibits for the Mammal Gallery and for an evolutionary tree for the front hall. Numerous sketches of a preliminary nature have been submitted for various purposes and a very large number of labels written. The painting of the fourth aboriginal mural has commenced.

Editorial Assistant and Public Relations Officer. (Miss M. Fraser.)

Miss Fraser, who had previously been in charge of the Library as well as being Editorial Assistant, took up her new duties in April. The purposes of the new position are to help relieve Curators to some extent of the burden of inquiries, by means of interviewing members of the general public; to promote interest in the Museum by initiating new ventures, such as the provision of a Museum shop and other projects relating to the galleries; to endeavour to increase the circulation of the Museum Magazine and to be responsible for the manner of preparation and presentation of all publications issued from the Museum. The short period which has elapsed since the creation of the post has already served to show its very great usefulness.

Education Officer. (Miss P. McDonald, B.Sc., Dip.Ed.)

A total of 10,301 children visited the Museum in organised classes during 246 visits. This number represents an increase in attendance of 11 per cent. over the figures for the preceding year. There are now twenty-three classes coming regularly once a month throughout the year, each of which is following an individual course of Natural Science and Social Studies.

Two groups of students from the Zoology Department of the University of Sydney have visited the Museum as part of their class work. Groups of Indian and Indonesian students have toured the Museum, the visits being arranged through the Commonwealth Office of Education. The Education Officer has been concerned with the organisation and arrangements for all three groups of visits.

Films were screened during the September, January and May vacations, the total attendance for the three periods being 11,902.

Eighteen collections of specimens, ten collections of photographs, five film strips and four charts have been lent to schools during the year.

Arrangements have been made for several new school leaflets to be prepared. Three dealing with the Eskimos, the Flute-mouth and the Sea-horse have been printed, some are in the hands of the Government Printer and others in the course of active preparation.

Daily inquiries for information on birds, mammals and other animals are received from school children and dealt with by the Education Officer.

Six new questionnaires have been prepared for use by school children when in the galleries.

The Education Officer co-operated in the preparation of a special exhibit entitled "Age and Animals", which was displayed during Education Week, 1955. This exhibit attracted considerable interest from school children and members of the general public.

In January the Education Officer spent two weeks at the Great Barrier Reef Committee's research station on Heron Island. The purpose of her visit was to collect material for the school loan collection.

In co-operation with Miss Pope, of the Department of Lower Invertebrates, the Education Officer has written a series of articles entitled "Exploring Between Tide Marks". It is intended that these shall be used as a handbook.

ACCESSIONS.

Acquisitions for the year 1955-56 totalled—

| | |
|-------------------------|--------|
| Vertebrata | 1,950 |
| Invertebrata | 4,381 |
| Geological | 653 |
| Ethnological, etc. | 7,064 |
| Miscellaneous | 170 |
| | <hr/> |
| | 14,218 |

The Common Seal of the Trustees of the Australian Museum was hereunto affixed by Order of the Board this 28th day of September, 1956.

H. B. MATHEWS, President.

JOHN W. EVANS, Director.

APPENDIX "A".

TRUSTEES OF THE AUSTRALIAN MUSEUM AT 30th JUNE, 1956.

Crown Trustee:—

H. B. Mathews, B.A.

Statutory:—

The Hon. the Chief Justice.
The Hon. the Colonial Secretary.
The Hon. the Attorney-General.
The Hon. the Colonial Treasurer.
The Auditor-General.
The President of the Medical Board.

Appointed:—

The Hon. the President of the Legislative Council.
The Crown Solicitor.
The Surveyor-General and Chief Surveyor.
The Hon. the Minister for Works.
The Hon. the Minister for Education.

Elective:—

Professor A. N. St. G. Burkitt, M.B., B.Sc.
Frank B. Spencer.
O. G. Vickery, B.E., M.I.E. (Aust.).
Wallace C. Wurth, C.M.G., LL.B.
Professor A. P. Elkin, M.A., Ph.D.
F. McDowell.
R. J. Noble, M.Sc., B.Sc.Agr., Ph.D.
E. J. Kenny, M. Aust., I.M.M.
F. L. S. Bell, M.A., F.R.A.I.
Frank W. Hill.
G. A. Johnson.
Professor P. D. F. Murray, M.A., D.Sc.

APPENDIX "B".

THE AUSTRALIAN MUSEUM—SUMMARISED STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 30th JUNE, 1956.

RECEIPTS.

APPROPRIATION ACCOUNT—

| | £ | s. | d. | £ | s. | d. |
|-------------------------------|---|----|----|--------|----|----|
| To Treasury Appropriations .. | | | | 55,472 | 11 | 0 |

TRUSTEES' ACCOUNT.

| | | | | | | |
|---|-------|----|---|-------|----|---|
| To Statutory Endowment | 1,000 | 0 | 0 | | | |
| Subscriptions to Australian Museum Magazine | 431 | 17 | 8 | | | |
| Sales of Publications | 795 | 6 | 4 | | | |
| Donations | 352 | 17 | 2 | | | |
| Interest | 370 | 16 | 6 | | | |
| Advertising | 36 | 0 | 0 | | | |
| Postage Receipts | 48 | 16 | 1 | | | |
| Lighting Receipts | 2 | 15 | 0 | | | |
| Refunds of Insurance Premiums | 21 | 16 | 8 | | | |
| Proceeds, Sale of Table ... | 12 | 10 | 0 | | | |
| Proceeds, Sale of Guillotine .. | 140 | 0 | 0 | | | |
| Refunds of Deposits on Containers | 10 | 5 | 0 | | | |
| Refund of Overcharge on Film | 5 | 0 | 0 | | | |
| Reimbursement for loss of Specimens | 3 | 11 | 1 | | | |
| Miscellaneous receipts | 10 | 4 | 0 | | | |
| | | | | 3,241 | 15 | 6 |

Balances as at 1st July, 1955—

| | | | | | | |
|-----------------------------|-------|----|---|---------|----|----|
| Cash at Bank and in hand .. | 766 | 18 | 8 | | | |
| Investments | 9,673 | 12 | 2 | | | |
| | | | | 10,440 | 10 | 10 |
| | | | | <hr/> | | |
| | | | | £69,154 | 17 | 4 |

PAYMENTS.

| | £ | s. | d. | £ | s. | d. |
|---|--------|----|----|--------|----|----|
| By Salaries, etc. | 52,152 | 1 | 10 | | | |
| Workers' Compensation Insurance | 258 | 13 | 3 | | | |
| Insurance on Buildings | 57 | 3 | 2 | | | |
| Travelling & Subsistence Expenses | 200 | 9 | 2 | | | |
| Freight, Cartage and Packing | 48 | 13 | 6 | | | |
| Books, Periodicals and Papers | 793 | 19 | 8 | | | |
| Fees, Commissions, etc. | 50 | 5 | 0 | | | |
| Laundry Expenses | 53 | 3 | 5 | | | |
| Postal and Telegraphic | 134 | 3 | 6 | | | |
| Other Insurances | 467 | 0 | 0 | | | |
| Stores, Plant and Equipment | 1,249 | 14 | 6 | | | |
| Minor Expenses | 7 | 4 | 0 | 55,472 | 11 | 0 |

TRUSTEES' ACCOUNT.

| | | | | | | |
|---|-------|----|----|-------|---|---|
| By Printing and Publishing Magazines | 1,098 | 9 | 5 | | | |
| Printing and Publishing Other Publications ... | 106 | 8 | 4 | | | |
| Film, "North Western Australia Expedition" | 317 | 15 | 6 | | | |
| Repairs to Ford Utility Truck | 57 | 17 | 1 | | | |
| Travelling Expenses | 271 | 4 | 1 | | | |
| Petrol "Morley Johnson Ltd. Expedition" | 35 | 7 | 3 | | | |
| Stores and Services | 191 | 12 | 0 | | | |
| Freight and Cartage receipts paid to Treasury | 4 | 7 | 0 | | | |
| Publication Sales receipts paid to Treasury | 31 | 1 | 0 | | | |
| Postage receipts paid to Treasury | 49 | 8 | 10 | | | |
| Refund of Insurance Premium paid to Treasury .. | 21 | 16 | 8 | | | |
| Refund of Discount paid to Treasury | 6 | 3 | | | | |
| Lighting Receipts paid to Public Works Department | 2 | 15 | 0 | | | |
| Miscellaneous Expenditure | 11 | 16 | 1 | 2,200 | 4 | 6 |

Balances as at 30th June, 1956—

| | | | | | | |
|--------------------------|-------|----|---|---------|----|----|
| Cash at Bank and in hand | 1,800 | 5 | 6 | | | |
| Investments | 9,681 | 16 | 4 | 11,482 | 1 | 10 |
| | | | | <hr/> | | |
| | | | | £69,154 | 17 | 4 |

J. W. EVANS,
Director.