

1968-69

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PARLIAMENT OF NEW SOUTH WALES

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REPORT  
OF THE  
TRUSTEES OF THE AUSTRALIAN  
MUSEUM

FOR THE

Year ended 30 June, 1968

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*Ordered to be printed, 19 February, 1969*

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BY AUTHORITY

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# ANNUAL REPORT

## OF THE TRUSTEES OF THE AUSTRALIAN MUSEUM

For the Year ended 30th June, 1968

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To His Excellency The Governor:

The Trustees of the Australian Museum have the honour to submit their 114th Report for the year ended 30th June, 1968.

Emeritus Professor A. P. Elkin, C.M.G., M.A., Ph.D., was re-elected President of the Board of Trustees at the Annual Meeting. The Board of Trustees remained unchanged during the year.

The Trustees express their appreciation of the work of the Director and his staff. The efficient and smooth running of the Museum and its effectiveness in its fields of endeavour are due to good work at all levels.

The Museum has expanded its efforts, particularly its research activities, during the year and there has been a marked increase in competitive grant funds given to Museum scientists.

There has been close co-operation with Taronga Zoo and with the National Parks and Wildlife Service and a special relationship has been developed with Macquarie University.

Strong support by Government is vital to the success of the Museum and it has received this in good measure during the year. The Trustees especially thank the Premier and Treasurer, the Deputy Premier and Minister for Education, and the Minister for Public Works. The Public Service Board has greatly aided the Museum with staff matters.

### INTRODUCTION

#### Museum in Everyday Living

The name "museum" is perhaps one of the biggest handicaps that these organizations carry today. In everyday speech, terms such as "he should be in a museum", or "that's a proper museum piece", are used in the very opposite of a commendatory sense. Many museums, in contrast to their outmoded images, have evolved into modern research institutions of quality and into educational institutions vitally involved in the education of our children and also in the continuing education of our adults.

As research institutions studying evolutionary biology and taxonomy they are able to aid agriculturalists in identification of plant pests, vectors, and biological control organisms; they help the fishing industry with the identification of marine animals; they help members of the general public with thousands of inquiries such as whether a spider brought in by their children was dangerous or not, they help the doctor whose patient has been bitten by a snake and who needs precise identification to provide the right treatment. The Museum provides thus an important link between the public and natural science. Behind this there is the scholarly work that makes these things possible—research of broad scope in anthropology, geology, marine biology, entomology and many other disciplines. There are also studies in depth into our Australian environment and into the changes that the dominant mammal, man, is making on the original fauna and flora.

#### A New Department

The ecology of man, his effect on his living area and its resources and the resultant impact that, in turn, his environment has on him, affects each of us directly or indirectly. No one can remain outside this interaction and biologists, with their special knowledge, least of all. Man has overrun his earlier population control mechanisms. He is grappling with the problem of his own pollution of his environment, and he is already able to realize that on a global scale he may outstrip his resource needs in the not far future.



Biologists are deeply concerned that Australia's flora and fauna, both rare and common, must be retained for future use by man as plants and animals for potential food use, for purposes of biological control of pests, for medicine and for recreation for people from the ever expanding cities. Museum biologists in Australia have some special knowledge of our biological resources, of what we have in the way of biological units, of where they are to be found and how common or rare they are.

To collect this information, extend it and make it available for groups such as the National Parks and Wildlife Service and the Lands, Conservation and Agricultural Departments, the Australian Museum has this year set up the Department of Environmental Studies—which will have as its responsibility the organization of such information, and the survey of rare types of fauna and flora and complete ecosystems. The new Department of Environmental Studies will have two professional scientists, one an animal ecologist and the other a plant ecologist, and is starting on a survey of the north coast of New South Wales in conjunction with the CSIRO Division of Wildlife Research.

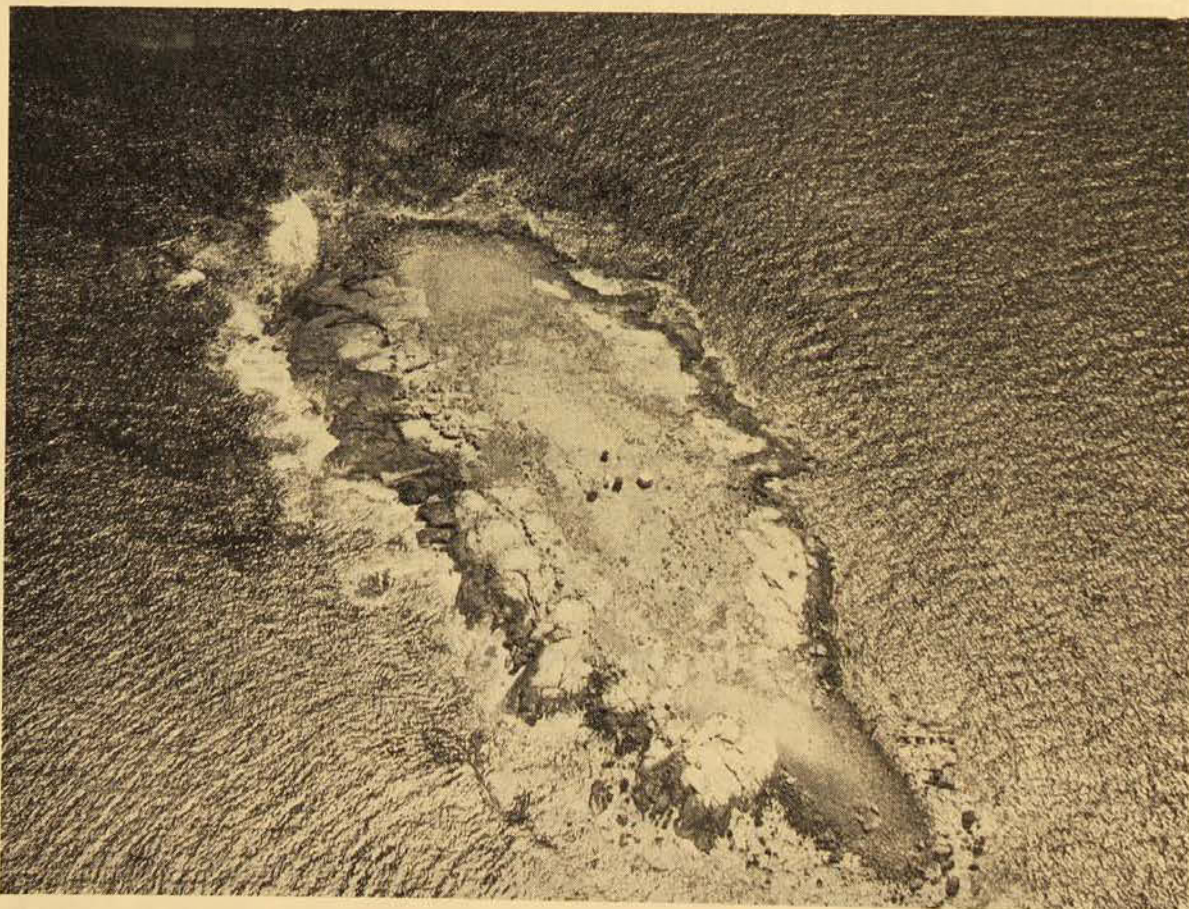
In addition it will provide information for the educational side of the Australian Museum. It will enable conservation and ecological displays to be installed and aid teaching programmes by the Museum education staff dealing with the basic principles of ecology and its importance to man.

### GALLERY DEVELOPMENTS

The Entrance Hall was completely remodelled and three new exhibitions in this area, on Antarctica, New Guinea and the Peoples of the Pacific, were opened by the Minister for Education, the Hon. Mr C. B. Cutler, M.L.A. on 14th September, 1967.

An Exhibition of Melanesian Art, covering the full floor of the New East Wing, is now completed and will be opened by His Excellency the Governor of New South Wales, Sir Roden Cutler, on 10th July, 1968. The hall in which this Exhibition is arranged had been planned as a Hall of Changing Exhibitions and has flexible systems of lighting and cases.

Two Photographic Exhibitions were displayed during the year. One of these was of exceptional photographs produced by Museum Associates and the Museum Photography Section and the other was a collection of outstanding wildlife photographs by Ederic Slater of the Commonwealth Scientific and Research Organization's Division of Wildlife Research which was prepared for the recent visit of the Duke of Edinburgh.



Dangerous Reef, a barren rocky island in Spencer Gulf, South Australia, is one of the breeding places of the Australian Sealion, *Neophoca cinerea*. A study of the biology and behaviour of *Neophoca* is under way, and Mr Basil Marlow, Curator of Mammals, and Mr Howard Hughes, photographer, spent three months on the island living in a small aluminium hut (seen to right of three-legged lighthouse tower)



### HONORARY STAFF

With the sad death of Professor A. J. Marshall early in the year the Museum lost an Honorary Associate and friend of many years standing. In his boyhood "Jock" Marshall was aided by the Australian Museum in his intense enthusiasm for Australian natural history and in the peak of his career he remained associated with it.

Dr D. F. McMichael, formerly Deputy Director and Curator of Molluscs and Mr W. McReaddie of Gilgandra, N.S.W., were made Honorary Associates of the Museum.

Dr J. W. Evans visited the Museum on several occasions in connection with his work on Cicadellidae and Mrs V. C. Gregg and Mr L. Courtney-Haines have continued to visit the Museum regularly to assist with work on the collections and carry out research on spiders and moths respectively.

Messrs T. A. Garrard and J. Voorwinde continued their regular work in the Department of Malacology and their assistance is greatly appreciated. Mr Garrard has concentrated on identifications and library research towards a checklist of Queensland Mollusca; Mr Voorwinde has continued with his work on small shells from dredged samples and his revision of the rissoid gastropods.

Mr G. P. Whitley continued to aid the Department of Fishes with hard work on its literature card indices. Mr E. Troughton worked regularly on mammals in the Museum.

Mr Justice Myers continued his gifts of colour transparencies for teaching purposes.

### STAFF

The Director was elected a Fellow of the Linnean Society of London during the year. He was elected to the Executive of the Great Barrier Reef Committee, served on the Australian Academy of Sciences Flora and Fauna Committee and chaired the Scientific Committee on Parks and Reserves set up to advise the Minister for Lands. He was elected Chairman of the Australian UNESCO Museums Committee and a member of the Australian National UNESCO Advisory Committee. He read a paper at the Congress of the Australian and New Zealand Association for the Advancement of Science in Christchurch, and visited New Zealand museums.

The Deputy Director and Curator of Molluscs, Dr D. F. McMichael, resigned from the Museum on 13th October, 1967, to take up the post of Director of the Australian Conservation Foundation. Dr McMichael served the Australian Museum with distinction for 19 years, and it is with regret that his resignation was received.

Mr C. N. Smithers, Curator of Insects, and an entomologist with an international reputation who has worked within the Australian Museum for 8 years, was appointed Deputy Director from 16th October, 1967.

Mr Smithers read a paper at the Congress of the Australian and New Zealand Association for the Advancement of Science in Christchurch, New Zealand and whilst in New Zealand visited Research Institutions and Museums in both the North and South Islands. He also attended and read a paper at the Second General Meeting of the Australian Entomological Society in Armidale. At the request of the Australian Conservation Foundation, he visited Norfolk Island as Zoologist in a team investigating the fauna and flora of the island with a view to making recommendations on its conservation. He was invited to join a Policy Committee set up by the Australian Academy of Science in connection with the proposed holding of the XIVth International Congress of Entomology in Australia and visited Canberra to attend a meeting of the Committee. He is a Vice President of the Royal Zoological Society of New South Wales and has represented that Society on the Councils of the Australian Entomological Society and the Australian and New Zealand Association for the Advancement of Science. He has left to attend the XIIIth International Congress of Entomology in Moscow and en route will visit Research Institutions and Museums in the United States of America, Canada, Britain, Holland, Austria, Germany and Sweden in connection with his research on insect migration and taxonomy of the Psocoptera.

Mr J. V. Peters was seconded to the Museum to work on the butterfly collections from 31st January, 1968.

The Assistant Curator, Mr D. K. McAlpine, left for 2 years study at the Imperial College of Science and Technology in London.

Mr Michael Gray took up appointment as Assistant Curator in the Department of Entomology on 11th June, 1968.

The Curator of Anthropology, Mr D. Moore, served on various committees of the Australian Institute of Aboriginal Studies and also attended the General Meeting of the Institute, at which he presented two papers. He was Honorary Secretary of the Advisory Committee on Aboriginal Relics (N.S.W.), Vice-Chairman of the Foundation for Aboriginal Affairs and Honorary Secretary of the Anthropological Society of New South Wales.

The Assistant Curator of Anthropology presented a paper at the ANZAAS Conference in Christchurch. He was elected to the Council of the Anthropological Society of New South Wales.



The Curator of Reptiles, Mr H. G. Cogger, was made a Research Associate of the California Academy of Sciences and Honorary Curator of Reptiles at Taronga Zoological Park.

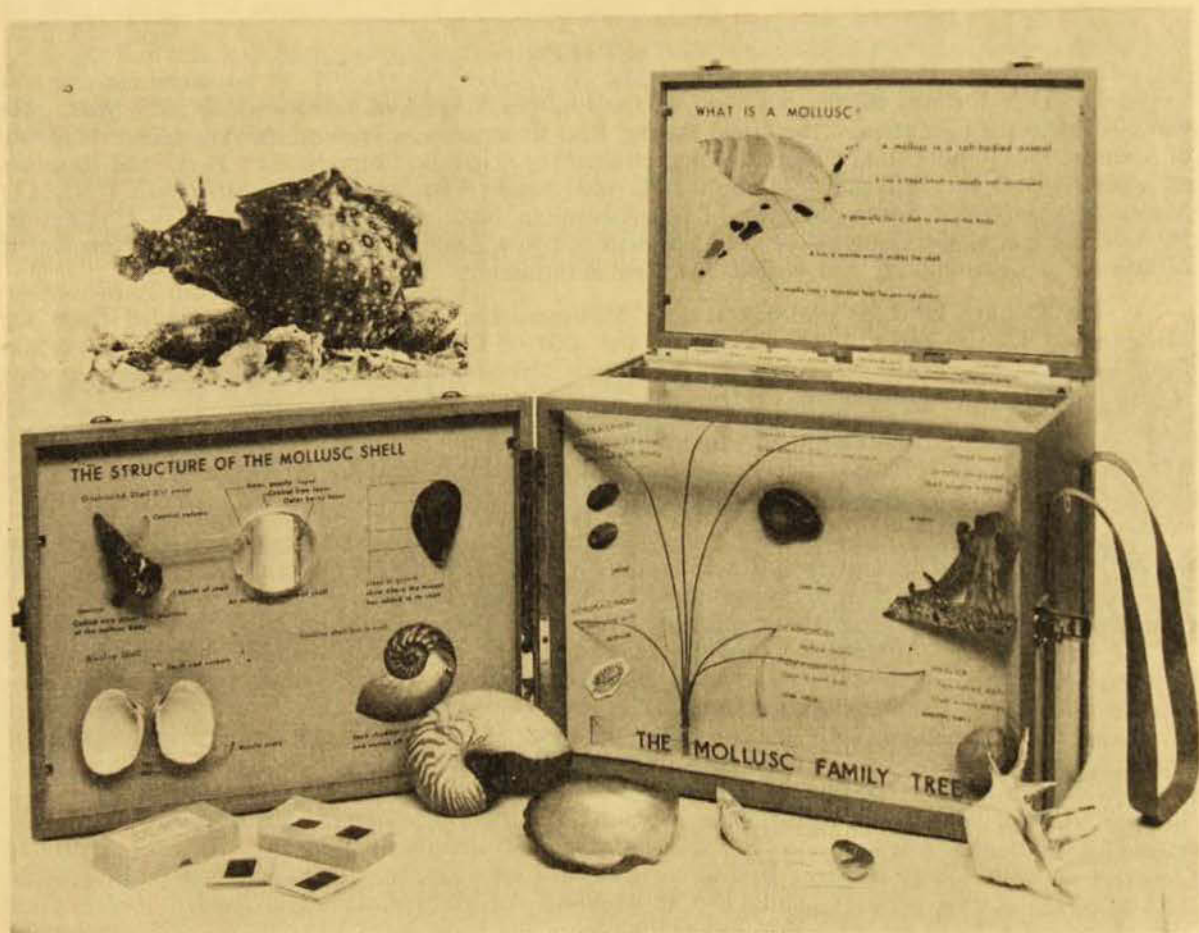
The Curator of Invertebrates, Miss E. Pope, served as Vice-President and a member of the Council of the Linnean Society of N.S.W. in 1968 and is to serve on two of its committees. She also served as editor of the quarterly newsletter of the Australian Marine Sciences Association and as a Councillor until April, 1968, completing more than 4 years service in these posts. Miss Pope was subpoenaed to the Coroner's Court to give evidence in connection with a death after a bite from a ringed-octopus. She attended the ANZAAS Conference, held in Christchurch, New Zealand and prior to that the Summer Conference of the New Zealand Marine Science Society.

The Curator of Molluscs, Dr D. F. McMichael, continued as honorary Secretary/Treasurer of the Malacological Society of Australia and Editor of the Society's Journal. He also acted as Editor for the Australian Marine Sciences Association's first handbook.

The Curator of Mammals, Mr B. J. Marlow, was elected President of the Royal Zoological Society of New South Wales.

The Curator of Birds, Mr H. J. de S. Disney, represented the Museum at a Conference on Controlling Bush Fires in Canberra organized by the Nature Conservation Council of New South Wales. He continued work as Assistant Editor of the "Bird Bander". He was also elected a Vice-President of the Royal Zoological Society of New South Wales.

The Education Officer, Miss P. McDonald, left Sydney in May for a study tour of Museums in the United States of America, Canada and Europe. She has been appointed to the Education Committee of the Australian Conservation Foundation.



One of the travelling loan cases sent to schools throughout New South Wales. The case is a complete teaching unit with teacher's notes, colour slides, a set of colour and black and white photographs, examples of different shells for handling and teacher's appraisal forms. By the use of many such cases children unable to visit the Museum will be able to see and handle natural history material

#### ACKNOWLEDGEMENT OF CO-OPERATION

Many organizations and individuals aided the work of the Museum in a variety of ways. The continuing aid given by our Honorary Associates is greatly appreciated. Acknowledgement must be made for the help of Mr Ian Dunlop, Commonwealth Film Unit, who made available transparencies and stills from his film "Peoples of the Australian Western Desert" for use in the loan cases, and Mr J. Snedaker, Managing Director of Time-Life International (Australia) Pty Ltd who donated 20 copies of the Life Nature Books for awards to the Museum Walkabout finalists. Taronga Zoological Park donated material, and the Director of State Fisheries aided the Museum with material and equipment.



## LECTURES

A successful series of public lectures on "The Races of Man" was held in November, with lecturers from the Universities of Harvard, Sydney, Queensland, and the Australian National University. The series was so popular that the Hallstrom Theatre was filled every night and many people were turned away. This suggests that such lecture series are needed, and more will be arranged for the future.

The Director and Dr McMichael gave a series of lectures at Macquarie University on the diversity of animals. Dr White gave a series of lectures in the Anthropology Department of the University of Sydney. Miss Pope assisted the staff at New England University in giving senior students their annual course in marine zoology at the Arrawarra Research Station.

## RESEARCH AND FIELDWORK

Research of broad scope continues, mainly in the fields of taxonomy and evolutionary biology, behaviour and ecology.

There was a strong accent on fieldwork during the year. Anthropological fieldwork included archaeological digging in the Hunter Valley, where a long-term survey is being developed, and a 2 month expedition to New Guinea, this area being considered an urgent one for research before changes destroy primitive living methods completely. Collecting was done in the Sir Edward Pellew Island in the Gulf of Carpentaria, N.S.W. mallee, the Great Barrier Reef, freshwater coastal streams of N.S.W., and the Birdsville Track and Lake Eyre, among other areas.

## MEETINGS

In accordance with its policy of stimulating scientific interest, the Museum has encouraged scientific societies to make use of its premises. The Royal Zoological Society of New South Wales has held twenty-four sectional meetings at the Museum. The Australian and New Zealand Meeting on Decapod Crustacea, jointly sponsored by the CSIRO Division of Fisheries and Oceanography, the Australian Marine Sciences Association and the Australian Society of Limnology, was held at the Australian Museum from 24th to 28th October, 1967. Forty-three scientists, interested in all aspects of pure and applied research on Australian prawns, crayfish and crabs, and representing all States of Australia as well as New Guinea and New Zealand, attended the meeting and took part in the discussions. Sixty-four papers and reports were presented to the meeting and made available for limited distribution.

A small gathering of workers on Australian Echinoderms was held during the visit of Dr D. L. Pawson, United States National Museum, Washington, and university staff and senior students were invited to attend a talk given by him on the latest developments in research on this group.

## COLLECTIONS

A major acquisition during the year was the large and systematically important collection of decapod Crustacea built up over a period of more than 40 years by the late Melbourne Ward, a long time Honorary Associate of the Museum and a prolific publisher on crab systematics. This collection, at one time estimated at over 35,000 items, is especially rich in material from various poorly known areas of northern Australia and other important areas in the Indo-Pacific and was mainly collected by Ward himself. It contains a large amount of type material and Ward's associated field notes, indexes, manuscript notes and illustrations make this addition to our collections one of major interest. Our thanks are due to Mrs Melbourne Ward for passing it on to the Museum and for the care with which she has checked and confirmed the documentation of this material. Mrs Ward helped in the collection of many of the specimens and painted almost all the field sketches herself.

The J. Voorwinde Collection of small and minute molluscs was purchased by the Trustees. This important research collection contains more than 20,000 lots and represents many hundreds of hours of patient and painstaking sorting.

## DEPARTMENTAL REPORTS

**Department of Anthropology:** (D. R. MOORE, M.A., Dip.Anthrop., Curator; J. P. WHITE, M.A., Ph.D., Assistant Curator; KATHLEEN POPE, Dip.Anthrop., Assistant; JANET L. SMITH, Museum Assistant).

On the appointment of Dr White as Assistant Curator at the beginning of the year the Department was divided into an Australian Section, under the care of the Curator, and a Melanesian and Pacific Islands Section under the Assistant Curator.



During the year the Curator's Hunter Valley Archaeological Survey was extended into the lower Hunter and Port Stephens areas and a number of trial excavations were carried out. Part 1 of a report covering the Upper Hunter and Goulburn Valleys was prepared for publication. The Assistant Curator spent 2 months in the field in the Western Highlands of New Guinea during which he continued his ethno-archaeological research project and collected material culture.

It is now possible to begin reorganizing the collections. In preparation for the installation of mobile shelving in the sub-basement of the New Wing all Melanesian and Pacific Islands material has been checked, re-registered when necessary and grouped regionally in the old New Guinea store. When finally stored in mobile units every item will be recatalogued according to a new system.

An elaborate and well-illustrated handbook to illustrate the new Exhibition of Melanesian Art was prepared with the assistance of the Photography Section. Four new display cases were added to the Australian Gallery.

Miss Kathleen Pope presented her thesis on the Roth Collection from North Queensland and was awarded the Diploma in Anthropology by the University of Sydney. She is now proceeding to courses in anthropology and archaeology towards a B.A. degree.

Voluntary assistance to the Department was given by Mr Greg Brown, Miss Julie Adams and Miss Glenyss Steedman. Thanks for donations during the year are due to Admiral Sir John Collins; Dr I. McBryde; Mr Harry Warner; Mrs M. Baldwin; Dr J. P. White and Dr C. White.

Purchases include an important collection of Pacific fishing gear and the Father Worms collection of Kimberley stone implements; Arnhem Land Mortuary material from Mr N. Peterson; and artefacts from Telefomin, New Guinea, from Mr B. Craig.

**Department of Entomology:** (C. N. SMITHERS, M.Sc., Curator; D. K. McALPINE, M.Sc., Assistant Curator; M. R. B. GRAY, B.Sc., Assistant Curator (from June 11th, 1968); J. V. PETERS, Lepidopterist (seconded from Education Department from 31st January, 1968); G. A. HOLLOWAY, Technical Assistant; KLARA C. KOTA, Museum Assistant; ROBYN L. JEFFREY, Museum Assistant).

The Curator has continued his research on the taxonomy of the Psocoptera of Australia and Africa and completed a revision of the Psocoptera of New Zealand. A manuscript based on this latter work has been submitted for publication in New Zealand. Long-term revisionary work on the Psocoptera has continued. Preliminary work on the biology of a Tachinid parasite of *Danaus plexippus* was carried out. Work on butterfly migration has continued and the study of the populations in the Camden area has yielded interesting results, which will be discussed in Canada with Professor Urquhart, the leading world authority on butterfly migration, prior to publication. The number of co-operators involved in the marking and releasing scheme increased during the year. Twenty-four visits to Camden to study *D. plexippus* populations and a visit to Round Hill Reserve for observations on migrating butterflies were made.

A visit to the Cobar area on field work was utilized as an opportunity to respond to an invitation to give advice on the establishment of a museum in Cobar.

Nearly three thousand specimens were added to the collections, mainly through the collecting efforts of staff members. Three hundred and ten type specimens were registered.

The following gave notable amounts of material to the Museum collections: Dr R. Blackith (*Asyntona* sp. (Diptera; Platystomatidae); Mrs V. Gregg (Diptera and Hymenoptera); Mr A. Healy (Lepidoptera); Mr D. Nobbs (Lepidoptera); Mr E. Edwards (Lepidoptera); Miss M. Long (Diptera); University of Sydney Biological Society (various insects); Mr L. Haines (Diptera); Mrs R. Vellenga (Diptera); Mr G. Trenouth (Lepidoptera); Mr A. Rose (British Lepidoptera).

The tasks of sorting, rearranging and rehousing the collections has continued to the limit of available time and storage space. The shortage of storage space for the rapidly expanding dry collections is now critical.

The secondment of Mr J. V. Peters to the Museum to undertake the rehousing of the butterfly collection has meant that excellent progress has been made in this important and long overdue task. About one half of the world famous Waterhouse collection is now rehousing and rearranged with additional material incorporated in it. The rate at which the rehousing of the rest of the insect collections can be carried out depends entirely on the rate at which new cabinets and space for them are provided. Some new cabinets were set aside for and have been filled with a further section of the Noctuid (moth) collection; much moth material remains, however, to be rearranged and rehousing.

The Diptera collection of the late G. H. Hardy has been rehousing in store boxes and all type material removed for separate storage. Much of this collection had been allowed to deteriorate prior to the death of the collector and its subsequent donation to the Museum; much of it consists of small delicate specimens requiring particularly careful handling.

The spirit collections have continued to be increased and, although now sorted at least to family level and readily accessible, can only be dealt with thoroughly when new space becomes available.



During the year about eight thousand public inquiries have been dealt with. This does not include inquiries of a specialized nature from research workers and research institutes. About 4,500 inquiries concerned insects and 3,500 concerned other groups, mainly spiders. This is the highest number yet recorded for a single year. It reflects a growing public awareness of the Museum as a source of information and at the same time throws a considerable burden on the Entomology Department staff.

Close liaison has been maintained with official State and Commonwealth bodies with kindred interests. Staff of the Division of Wood Technology, the Division of Science Services and several sections of the CSIRO Division of Entomology have made use of Museum facilities or discussed their work with the Curator; good relations exist between the Entomology Department and these bodies.



Mr Harold Cogger, Curator of Reptiles and Amphibians at his study area at Round Hill Fauna Reserve, near Euabalong, N.S.W. Populations of the agamid lizard *Amphibolurus fordii* live in the *Triodia* grass, and their life history, feeding and responses to the wide range of temperatures occurring in the area are being studied by Mr Cogger

**Department of Herpetology:** (H. G. COGGER, M.Sc., Curator; ROBYN D. SPALWIT, Museum Assistant).

Virtually all of the Curator's research has been carried out at Macquarie University. A month of the Curator's time, however, was spent working with a team from CSIRO Division of Wildlife Research on the Sir Edward Pellew Islands in the Gulf of Carpentaria. This work, in co-operation with and financed by CSIRO, concerns a faunal survey of the Sir Edward Pellew Islands prior to their possible use in a major mining venture.

Other field work included numerous visits to a mallee community at the Round Hill Faunal Reserve in central western New South Wales. This work is part of the lizard ecology project being undertaken for a Ph.D. project at Macquarie University.

As pointed out in previous annual reports the research collections are congested and virtually unworkable. Until additional space is made available upon the completion of the new storage building no effective curating, reorganization or cataloguing of the collections can be undertaken. Hence, although significant collections were obtained during the current year these have not been processed and the total number of acquisitions is unknown.

Important and valuable collections were received from the following: Mr W. McReddie (reptiles and amphibians from many parts of New South Wales); Mr D. Stammer (reptiles from Mt Isa, Queensland); Mr I. McArtney (reptiles and amphibians from the Bathurst district, N.S.W.); Mr T. Bentz (reptiles and amphibians from New South Wales and Queensland); Mr J. Wertz (reptiles



and amphibians from Queensland); Mr G. E. Doyle (reptiles and amphibians from Vietnam); Mr D. Lindner (reptiles and amphibians from Port Essington, Northern Territory); Mr A. Holmes (reptiles from various parts of New South Wales); Mr F. Parker (reptiles and amphibians from Cape York, Queensland); and Taronga Zoological Park.

Plans for a new reptile gallery have been prepared and preliminary work has been undertaken on the preparation of specimens and individual exhibits.

**Department of Ichthyology:** (JOHN R. PAXTON, M.S., Ph.D., Curator (from 15th February, 1968); SONDRA E. BERESFORD, Museum Assistant).

The Curator is continuing research on the systematics and osteology of midwater fishes, particularly on the family Myctophidae.

Fieldwork was limited to one week at Smiths Lake, N.S.W., with a Zoology class from the University of New South Wales. Assistance was given to one of the field camp projects and a collection of fishes made. The week was most beneficial. The Curator completed a 3-week scuba diving course given by the Water Police Diving Section of the New South Wales Police Department.

Acquisitions during the year included the registration of 188 species, many of which were brought in by members of the public. Considerable time was spent in answering public inquiries, particularly from spearfishing groups. Mr Gilbert Whitley, Honorary Associate, and Mr Barry Goldman, Research Assistant to the Director, aided greatly with the inquiries. Mr Whitley has continued to keep the bibliographic card system up to date and his work is greatly appreciated.

The spirit collection of fishes is in reasonably good condition, although shelf space is limited and the lack of tank space for large specimens is acute. Completion of the new spirit house should provide expansion room. An otolith collection has been started, an X-ray file will be established, and the skeletal collection will be reorganized and expanded. A reorganization of the registration system is planned.

Interesting specimens were donated by Mr A. D'Ombra of Maitland; Mr C. Lawler, Underwater Research Group of N.S.W., and Mr J. Lewis of Wollongong. The Underwater Spearfishing Association brought in a large number of specimens.

Mr T. O'Berg, of the West End Glass Company, Sydney, kindly donated a 35-gallon marine aquarium to the Department.

Thanks are due to the following for assistance: CSIRO Division of Fisheries and Oceanography, the N.S.W. Department of Fisheries and the Water Police Diving Section of the New South Wales Police Department.

**Department of Invertebrates (Crustaceans and Coelenterates):** (J. C. YALDWYN, M.Sc., Ph.D., Curator; D. J. G. GRIFFIN, M.Sc., Ph.D., Assistant Curator; JANET HOLLOWAY, Laboratory Assistant; ANITRA ADAMSON, Museum Assistant (from 28th June, 1968).

Apart from continuing research on the long-term revision of the Crustacea Decapoda Natantia (shrimps and prawns) of New Zealand and their relationship to the Australian fauna, the Curator undertook three faunal and systematic studies jointly with the Assistant Curator. They prepared a review of the constitution, distribution and relationships of the Australian Decapod Crustacea for the meeting held at the Australian Museum in October, 1967, and this review is now in press. They completed a revision of the portunid swimming crab genus *Nectocarcinus* (now in press) and they have completed an analysis of the crabs collected during the ecological survey of Port Phillip undertaken by the National Museum, Melbourne, in 1957-63. The Assistant Curator continued or completed a wide range of research studies including the following: a systematic account of the crabs taken on the continental shelf of southeastern and southern Australia by the *Galathea* and *Mortensen* Expedition (completed); a revision of the Indopacific frog crab genus *Lyreidus* (completed); systematic studies on spider crabs of Australia and of the Indian Ocean; a review of the Australian species of the fiddler crab genus *Uca*; a systematic account of the goneplacid and pinnotherid crabs of Moreton Bay, and studies on the general ecology and behaviour of shore crabs.

The Assistant Curator spent 4 weeks in September and October on One Tree Island in the Capricorn Group at the southern end of the Great Barrier Reef. As well as taking part in the general long-term ecological survey of the reef and lagoon he analysed the invertebrate fauna of coral samples and made a general collection of decapod Crustacea.

Two important donations during the year were further freshwater crayfish collections including type specimens from Mr E. F. Riek, CSIRO, Canberra, and an extensive collection of brachyuran crabs from the South China Sea sent by the Fisheries Research Station, Hong Kong.

The Curator spent 10 days in March in the southeastern New South Wales-Victorian Border area continuing with a general survey of the freshwater crayfish of southern coastal New South Wales. A short field trip was made with the Assistant Curator to the Southwest Rocks area, N.S.W., in February to collect and photograph estuarine and mangrove crabs.

Visits were made to several museums by the Assistant Curator in order to study their collections of spider, fiddler and other crabs. Two weeks were spent at the Western Australian Museum, Perth, in August, one week at the Queensland Museum, Brisbane, in June and two days at the Dominion Museum and the New Zealand Oceanographic Institute, Wellington, in January.



Reorganization of the collections of Crustacea, Bryozoa and Coelenterata continued during the year. The major problem is to fit more material into already crowded space, but with refined indexing, and a certain amount of rearrangement of cabinets and shelving, all additional material was housed somewhere within the area allocated to this Department. The dislocated nature and piecemeal placement of many of the collections, due to lack of adequate space, is now adding to the difficulty of using the material available in this Department for systematic research. The situation should be improved when the new storage building is completed.

**Department of Invertebrates (Worms and Echinoderms):** (ELIZABETH C. POPE, M.Sc., Curator; CHRISTINE DEACON, Museum Assistant).

A paper on intertidal zonation at Darwin, N.T. is nearing completion. Further necessary material was obtained from Darwin to be sent to Japan for naming. Meanwhile, patterns of zonation have been tabulated for other worked areas around the Australian coast in preparation for the writing of the zoogeographical section of the paper. A short review paper was prepared on intertidal biogeography of Australia for reading at the meeting of the New Zealand Science Society's meeting at Kaikoura, which preceded the ANZAAS meeting in Christchurch, New Zealand. In collaboration with Mrs Loiset March (a former Fiji resident) a paper is being prepared for publication on the starfishes of Fiji. To date 137 specimens concerned have been mapped and previous literature has been reviewed. A short note in collaboration with three other echinoderm workers was read at the June meeting of the Linnean Society of New South Wales. It was entitled "Replacement name for the preoccupied genus name *Odinia* Perrier, 1885 (Echinodermata: Asteroidea)". A checklist of barnacles from Australia, recorded in literature was prepared for Mr R. Read, of Cumberland, England, for inclusion in a world list of cirripeds.

A visit to various reefs in Fiji, near Suva and Levuka by the Curator while on vacation resulted in a large collection of starfishes and numerous intertidal barnacles. A number of day trips to areas near Sydney were made with members of the Underwater Research Group of Sydney before and during the period when Dr Patricia Bergquist was working in the department, to collect local sponges and get fresh material for her work. A trip was made to collect live ringed-octopuses for the Commonwealth Serum Laboratory and several trips were made to verify data about behaviour and diet of certain sea urchins wanted by Mr Trevor Dix of the Biological Research Station at Kaikoura in New Zealand.

During a trip to New Zealand the intertidal faunas were examined at two widely separated places: Little Papanui, near Portobello Research Station (near Dunedin) and at Kailoura. Collections of cirripeds were made. New Zealand museums were also visited.

Lack of storage space and containers of a suitable size has severely curtailed plans for the systematic acquisition of material for the research collections and work in this field has mainly been channelled towards identification and reorganization of existing collections. Several important batches of material, however, have been added to the research collections.

The most important addition has been a collection of about 50 local species of sponges taken alive, fixed and named by Dr Patricia Bergquist. These were not hitherto represented in the collections.

Valuable echinoderms have been acquired as follows: A small but representative collection from the British Solomon Islands Protectorate (presented by Dr W. Dawbin); two rare starfish species, not hitherto represented in our collections (from Dr R. Catala, Aquarium de Noumea); a small collection of apodous Holothurians (named by Dr D. L. Pawson, United States National Museum); a third large, well documented, collection of echinoderms from the Abrolhos Islands (collected by the third expedition from Aquinas College, Perth) contains one or two records of species new for the island. Two genera of barnacles not previously held in the collections were obtained in the Curator's Fiji collecting.

The reorganization and modernizing of the Polychaete collections is continuing. Mrs Hannelore Paxton is working on the collections one day per week. The large collection of departmental reprints is being catalogued.

The following people donated valuable material to the collections: Dr W. Dawbin, University of Sydney (echinoderms from Solomon Islands); The Underwater Research Group led by Mr C. J. Lawler (sponges, echinoderms and ascidians); Mr H. J. Cann of Murwillumbah (a large collection of a colourful native earthworm); Dr L. R. Richardson of Grafton (leeches); Mr A. J. Bearup of Sydney (helminths); Dr W. D. Williams of Monash University, Melbourne (aquatic earthworm); Brother N. N. Wilson, Aquinas College, Perth (echinoderms from the Abrolhos Islands); The Hon. Mr Justice F. G. Myers (a series of black and white photographs of sponges and seastars).

The Curator attended a special general meeting of the Great Barrier Reef Committee in Brisbane and whilst there the named coral collection in the Queensland Museum was studied and compared with the collection made in Darwin in 1965.

The publication *Exploring Between Tidemarks* was revised with co-author Patricia McDonald, and a short section on recent biochemical studies, relevant to shore zonation, was added.



**Department of Malacology:** (Dr D. F. McMICHAEL, M.A., Ph.D., Curator (to 13th October, 1967); JANICE E. RICHARDSON, Museum Assistant (to 11th April, 1968).

The Curator continued with research on the systematics, zoogeography and tissue chromatography of the family Volutidae and on the systematics of Australian and New Guinea land snails. Janice Richardson produced a bibliography and an account of the scientific work of an early conchologist, Dr J. C. Cox. Dr Cox was at one time President of the Board of Trustees of the Museum and his collection is in this Department.

The Curator and Janice Richardson attended and spoke at the first Australian Shell Collectors' Convention at Yeppoon, Queensland, and made general collecting trips in the same area for two weeks in August and September.

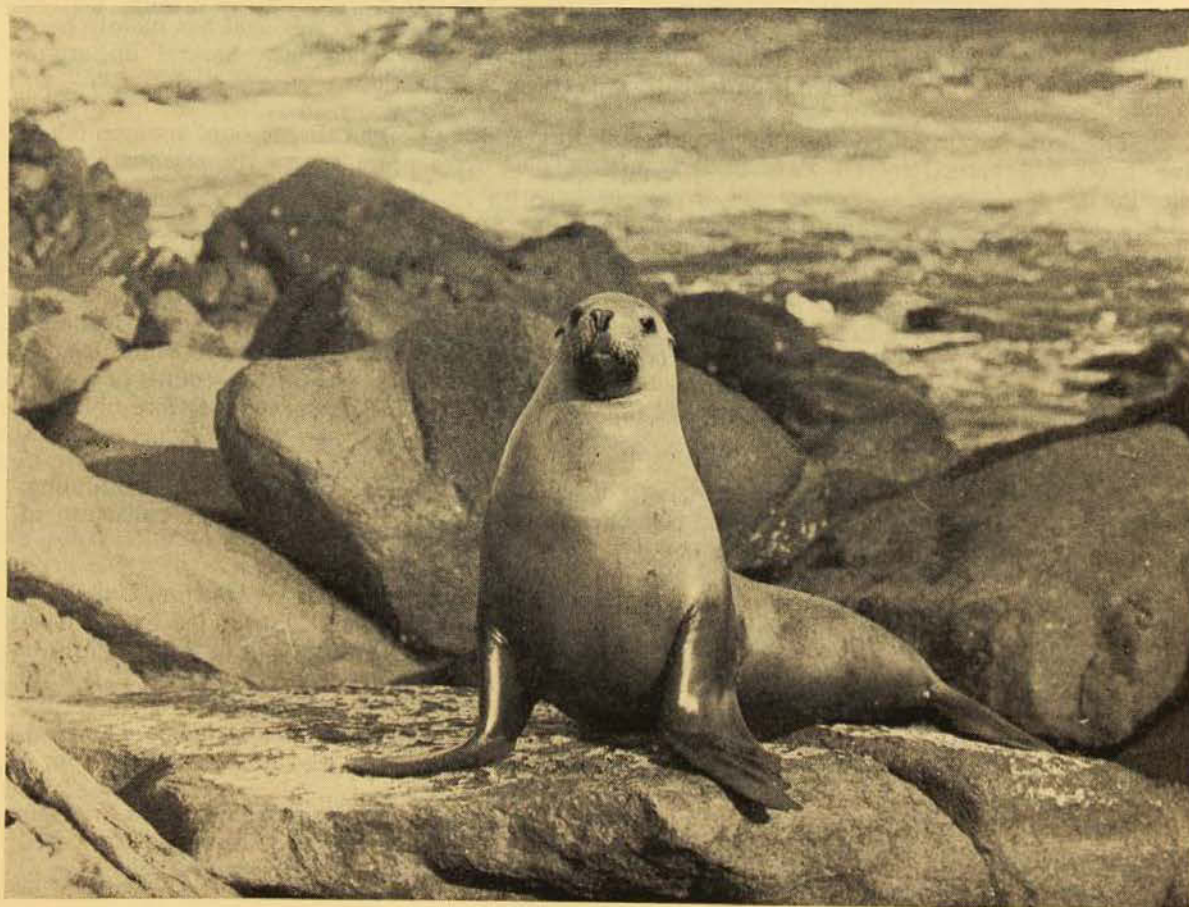
Steady progress was made in reboxing parts of the dry mollusc collections and in respiriting and revising the wet collections. The reorganization of the shellgrit and dredgings collection has been completed, all samples are now boxed and indexed. The large general collection of Mr T. A. Garrard, presented to the Museum in 1965-66, is still being transferred to the Department group by group, and is being registered and incorporated into the main collection by Mr Garrard as time permits. The Underwater Research Group of New South Wales continued to bring in living and fresh nudibranchs throughout the year, thus increasing the large and important collections of this group built up at the Museum in recent years.

**Department of Mammalogy:** (B. J. MARLOW, B.Sc., Curator; JANET L. SMITH, Museum Assistant).

Useful acquisitions to the Department included two complete skeletons of the Australian sea-lion *Neophoca cinerea*, obtained from Spencer Gulf, S.A.

A specimen of *Pseudomys novaehollandiae* which has been considered extinct in New South Wales was obtained from Kuringai Chase. Two specimens of juvenile elephant seals *Mirounga leonina* were sent to the Museum from Macquarie Island through A.N.A.R.E. A large series of New Guinea rodents and bandicoots, *Echimypera kalubu* were donated by Dr R. J. Morahan of Commonwealth Serum Laboratories, Wewak, New Guinea. An adult female *Dasyuroides byrnei* and two young were received from Western Queensland which are on temporary loan for exhibit at Taronga Zoological Park. A series of marsupials which have been used for Museum mounts in the Education section of the Museum was received from Taronga Zoological Park.

Rebottling and respiriting of the spirit collection of mammals continued. Initial plans devised for a skeleton gallery and Hall of Biology were prepared. Research continued on the behaviour of *Neophoca cinerea*.



An Australian sealion, *Neophoca cinerea*, coming ashore at Dangerous Reef. This sealion only occurs off the South and Western Australian coasts



From July to October a visit to Dangerous Reef was made to study the seal *Neophoca cinerea*. A hut was built at the Museum and shipped to Adelaide, thence by "Cape Pillar" to Dangerous Reef. \$500 was supplied by CSIRO Science and Industry Endowment Fund for this project.

About 600 inquiries were dealt with during the year.

Visitors to the Department were as follows: Miss Judith King of the British Museum (Natural History); Mr Jack Mahoney of Sydney University; Mr John McKean, CSIRO Wildlife; Miss Gaye Johnson of the University of Queensland; Mr Norman Wakefield of Monash University.

**Department of Mineralogy and Petrology:** (R. O. CHALMERS, A.S.T.C., Curator; JUDITH E. NAUGHTON, Laboratory Assistant).

Interchange of observations and data between the Curator and Drs B. H. Mason and E. P. Henderson on all the collections of the australites made either jointly or singly in the last 5 years is actively proceeding with a view to completion of a comprehensive joint paper on the field occurrence, physical properties and morphology of australites from new Australian localities. The Curator spent a fortnight in western and southern New South Wales. In Broken Hill specimens of minerals were obtained from private collectors on an exchange basis. Visits were also paid to the geological sections of the four Broken Hill mines. A specimen of a few ounces, that had been sawn from the main mass of the Corowa iron, was obtained. The geological collection of the late C. J. Ivin was obtained for the Museum.

The number of minerals at 30th June is 41,942 an increase of 147. Interesting twin crystals of gypsum from near Whyalla, South Australia, were presented by Mr Ben Flounders. Two outstanding large cut gemstones kunzite and euclase from Brazil were bought. Mr Don Bishop, a visiting American mineral collector, presented interesting specimens of agatized coral from Tampa Bay, Florida.

The number of rocks at 30th June was 8,951 an increase of 465. These were mainly tektites, the bulk of them being australites collected in the Peachawarinna area between the Birdsville Track and Lake Eyre by a Museum party and associates.

A small collection of australites from the Simpson Desert was presented by Robin Syme, and one from Charlotte Waters, Northern Territory, by J. H. Stephenson. Twenty-four precious opal specimens, all outstanding and mainly from Lightning Ridge, were bought to replace those stolen.

The transfer of the mineral collection from the basement passageway in the old wing to the mineral store in the South Wing is proceeding. A start has been made on the transfer of the rock collection in the goods lift well, South Wing, to the innermost cellar, in the basement of the old wing. In this, valued assistance was given by a member of the Museum Young Discoverers' Club working voluntarily during the summer vacation.

A considerable amount of time has been taken in various matters connected with two thefts from the mineral gallery. The police have on several occasions brought stolen opals for inspection. The entire collection of remaining opal, other gemstones, gold and platinum and several individual outstanding specimens of gem minerals from the gallery have been shifted to secure locations and a detailed appraisal of better security methods both for the Museum generally and for gallery cases in particular has been made.

At the request of Sir Maurice Mawby, Chairman of Directors of Conzinc Riotinto, about 40 Ektochrome coloured photographs of the best specimens of Broken Hill minerals in our collection were taken. It was intended that a generous selection of these would be used in Geoffrey Blainey's recently published book, *The Rise of Broken Hill*. Unfortunately, due to the book having to be published by a specific date to commemorate the 75th anniversary of the establishment of the Broken Hill branch of the Australian Institute of Mining and Metallurgy, only one plate could be used. All expenses were borne by Conzinc Riotinto and the Museum retains a duplicate set to be used in whatever way is desired.

**Department of Ornithology:** (H. J. DE S. DISNEY, M.A., Curator; SUSAN HEWITT, Museum Assistant (to 11th April, 1968); CAROLYN NELSON, B.A., Museum Assistant (from 27th May, 1968)).

Work on the analysis of the work previously done at the study area near Nowra has continued. Information of retrapped and recovered banded birds has been obtained from the CSIRO bird banding scheme. Records were started on the seasonal variation of birds in the Mallee at Round Hill Reserve, near Euabalong. Research on the sex and age difference of Australian birds has continued and specimens have been held in cages at the Curator's home. These have been mainly Honeyeaters. Two new 9 ft x 6 ft cages were built at the Sir Edward Hallstrom Nature Reserve, Cowan, and work started on the plumage changes in Silvereyes. Three short papers were published on this work.

In August the Curator and his assistant assisted the Albatross Banding Groups of the Australian Bird Banding Scheme in demonstrating to His Excellency the Governor General how banding was carried out.



Several surveys were made to give an opinion on areas of New South Wales requiring conservation. Coastal heath areas of the north coast were visited, with Mr Don McGillivray (National Herbarium, Sydney) to make recommendations on a suitable area of coastal heath or wallum for declaration as a reserve. Four trips were made to the Round Hill Reserve, near Euabalong, N.S.W. to study Mallee birds. A visit was made to Cabbage Tree Island, off Port Stephens, N.S.W. to study and band Gould or White-winged Petrel, *Pterodroma leucoptera*. This island is the only known breeding place of this petrel. Wedgetailed and sooty shearwaters were also banded. A visit was paid to a sheep property near Dunedoo to study this type of habitat.

Six hundred and twenty-two specimens were registered during the year. Two hundred and eighty-three were collected by museum staff. Two hundred and forty-eight were presented by various donors. Ninety-one New Britain specimens were received from Dr Dean Amadon of the American Museum of Natural History, New York, being the portion of the late E. T. Gilliard collection which we hold for the Port Moresby Museum under an agreement until such time as they have their own facilities for keeping the collection.

The Director of the National Museum, Victoria, kindly presented the Museum with a paratype of the Grey Grasswren, *Amytornis barbatus*. This grasswren was described first in 1967 and was obtained from the northwest of New South Wales.

**Department of Palaeontology:** (A. RITCHIE, Ph.D., (from 22nd February, 1968), Curator; Miss DOROTHY JONES, Assistant).

Dr A. Ritchie arrived from Britain on 22nd February, 1968 to take up duties as Curator of Fossils. Mr H. O. Fletcher, previous curator, continued to serve for two days a week until the new curator arrived and is completing a list of type and figured material.

The Curator continued research projects on Silurian and Devonian ostracoderms from Britain and Scandinavia and on U. Carboniferous sharks from an oil-shale mine in S. Spain. Work was also commenced on the study of an undescribed arthroline fauna collected by Mr Fletcher and Dr Rayner in the Devonian of the Cobar-Louth area.

The collections are in good order but have very little room for further expansion. This problem will be largely overcome when the vertebrate collection is transferred, as planned, to the Fossil Gallery store where adequate facilities for study can be provided. The space vacated will allow expansion of the invertebrate/plant collections and the gradual incorporation of the Krantz stratigraphic collection into the systematic collection.

Donations of interest included a selection of Ordovician graptolites from New South Wales including one type (Mrs K. Sherrard); a large collection of Middle Devonian fossils, mainly corals (from the estate of the late C. J. Ivin, Murrurundi); Pleistocene mammal, reptile and fish material from the neighbourhood of Bourke, N.S.W. (Mr D. Milner); well-preserved material of the extinct Kangaroo, *Sthenurus*, and other macropods from sinkholes near Mount Gambier, S.A. (recovered by Mr and Mrs R. Taylor and donated by Messrs Jackson Wain, Ltd); Silurian and Devonian vertebrates, Silurian eurypterids, Ordovician-Devonian trilobites, brachiopods and graptolites, Carboniferous corals and a wide range of casts of important vertebrates from the Northern Hemisphere (Dr A. Ritchie, Curator).

Following the discovery of several casts of the Talgai skull in the collections, two of which have been lent to the Mining Museum for a special display, a search through the Museum archives revealed much of the original correspondence concerning the casting arrangements. The correspondence files also revealed that the skull was actually examined in the Museum in 1896—eighteen years before its acquisition by the University of Sydney—with a view to purchase, but the vendor would not name a price! The documentary evidence has been passed to Professor N. W. G. Macintosh, University of Sydney, to aid his research into the history of the skull.

Mr H. O. Fletcher has virtually completed his list of type and figured material, aided by Mr J. Mahoney, University of Sydney, who has prepared the section on marsupials.

**Education Service:** (Miss P. M. McDONALD, B.Sc., M.Ed., Education Officer-in-Charge; STELLA B. H. MAGUIRE, B.A., SHEILA M. RING, B.Sc., ZELMA M. HARKNESS (to 12th October, 1967), L. A. WILLIAMS (from 13th November, 1967), Assistant Education Officers; R. C. INDER, Technical Assistant).

Mrs Z. M. Harkness was granted leave from the 12th October, 1967 after 5 years as Assistant Education Officer. The position was filled on 13th November, 1967 by Mr L. A. Williams, who was seconded for one year from the Teaching Division. Mrs M. Tyler, A.S.T.C., assisted in the Education Section on 2 days per week from 21st May, 1968.

The total number of children attending the museum classes organized by the Education staff was 27,130 comprising 552 visits. Owing to the increased demand for lessons, the number of classes making regular monthly visits was reduced to allow a wider distribution of our facilities through the schools. Even so, a great many classes had to be refused help and this situation must continue until more staff and space are available for teaching purposes. Senior secondary classes are visiting the Museum in increasing numbers, mainly to study the evolution exhibits. It was not possible to keep an accurate record of the number of schools visiting the Museum without appointment.



Due to lack of time, it was possible to take only two classes on field work in association with museum studies. Several classes of handicapped pupils were given special instruction.

Two groups of senior secondary pupils, under the auspices of the Department of Labour and National Service, were given lectures on museum work as a possible future career and inspected the laboratories, workshops and other areas of the Museum.

An increased number of teachers college students was given lectures on our Museum educational facilities and they watched demonstration lessons. This increase is considered due to the closer co-operation between the Museum and the colleges as a result of the UNESCO museum education seminar held earlier.

Trainees from the New South Wales Ambulance Transport Service Board continued their series of visits.

A total of 240 loans was made during the year comprising 178 collections of specimens and 62 travelling cases. Various specimens were added to the loan material from the curatorial departments and three new travelling cases on Aboriginal stone tools were completed. A further six cases on Aboriginal art and Aboriginal utensils are in preparation but have been delayed by lack of material. An attempt has been made to obtain specimens and bark paintings from Arnhem Land mission stations. Specimens have been prepared for a series of cases on echinoderms. Mr Inder has mounted possums and other small marsupials for use in future travelling cases and prepared birds for teaching purposes. A new workroom for the preparation of loan cases and teaching specimens was occupied in April, 1968.

Attendance at the school vacation film screenings was as follows:

September, 1967	..	..	..	..	2,699
January, 1968	..	..	..	..	3,335
May, 1968	..	..	..	..	1,436
Total	..	..	..	..	7,470

Many of the play centres organized by the New South Wales Department of Education attended the film screenings during the January vacation.

The Children's Room was visited by a total of approximately 11,814 people during the three vacations, an average daily attendance of 347. Different displays and activities were arranged in the room for each vacation, "Young Animals" in September, "Along the Seashore" in January and "Australian Aborigines" in May. The room was frequently crowded to capacity and more space is urgently needed if these activities are to be expanded to meet the needs of the children.

Museum Walkabout quizzes were completed by 1,025 children and 24 qualified for membership of the Discoverers' Club, bringing the total to 74. A new book plate and a club badge were designed for members. Meetings of the club were held in school vacations and members were taken on field trips to Bobbin Head and Prospect Quarry.

Five senior members of the Discoverers' Club assisted in the curatorial departments of the Museum for three weeks in the January school vacation. The Trustees provided an honorarium of ten dollars each to cover expenses. This first experiment in using club members in this fashion appears to have been successful, the Curators declaring themselves well satisfied and the members on the whole feeling they had benefited from the experience.

The Education Week Exhibition of children's books, models, charts and other materials was shown in the galleries and remained on display through the September school vacation. Prizes were provided by the Trustees for the best work in the various sections.

Sets of free Museum leaflets were sent to 132 school libraries, including those in other States and in Papua and New Guinea. A further 1,166 letters requesting information were answered and numerous telephone and personal inquiries were dealt with. In particular, our class question sheets were sent to many schools so that students could use them during their Museum visits when we were unable to offer further assistance.

Miss Gail Dempsey, newly appointed Education Officer at Taronga Zoological Park, spent several days investigating our methods with a view to adapting them for the Zoo Education programme. Two groups of African educationists studied our educational services and Dr McElroy and Mr Adamson from the New South Wales Geological Survey discussed with us the possibility of establishing a similar service confined to geological topics. Dr G. R. Meyer, Director of the Centre for Advancement of Teaching at Macquarie University, discussed the possibilities for future co-operation between his Centre and the Museum.

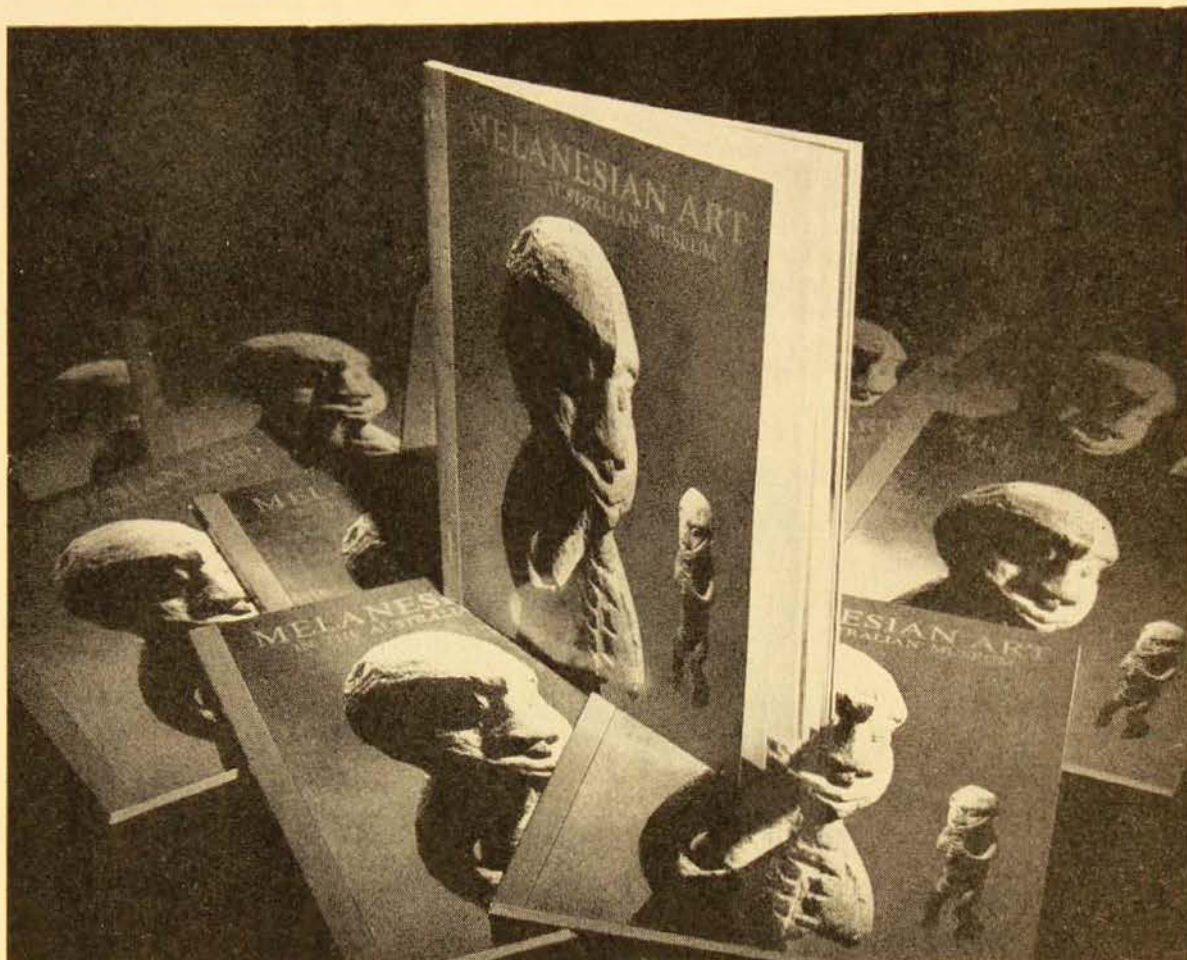


**Exhibitions Department:** (F. J. BEEMAN, Officer-in-Charge).

**Art and Design Section:** (D. RAE, B. BERTRAM, Exhibition Officers; ELVIE BROWN, Ticket Writer; HELEN ASHTON, BEVERLEY CREW, Production Assistants; ANNE WEGNER, Typist).

**Preparators' Section:** (R. WITCHARD, R. LOSSIN, K. GREGG, LORAIN ZIRKZEE, M. CAMERON, P. FLUKE).

Two galleries have been completed. The first of these contains exhibits on Antarctica, New Guinea and the Peoples of the Pacific. The second is the gallery containing an Exhibition of Melanesian Art.



A handbook on the exceptional display of Melanesian Art to be opened by His Excellency the Governor of New South Wales, Sir Roden Cutler early in the coming year. The handbook was prepared by Mr David Moore, Curator of Anthropology, and Mr Charles Turner, photographer

Plans were drawn up and a model made of the proposed new Reptile Gallery and work is now proceeding with the detailed drawings of the cases. Preliminary plans of the proposed new Skeleton Gallery and a tentative floor layout have been prepared. A small exhibit of African sculptures was placed on show for three months. One of the main functions of the Preparation Section has been the preparation of skeletons and skins for the collections. The useful fumigation and clean-up programme was carried out in the gallery exhibits and two large-scale moves were made at the Shea's Creek Store.

Following thefts from the Museum this department co-operated in measures to reduce this risk in future. These measures include the design of special cases for the west section of the Mineral Gallery and incorporate alarm systems, steel frames and armour glass. A complete set of scale plans was drawn to assist in the planning of security measures. A reorganization was made of all keys to display cases and many locks were rebuilt so that the key system could be simplified.

**Photography and Visual Aids Section:** (H. D. HUGHES, A.I.A.P., A.R.P.S., Photographer and Visual Aids Officer; C. V. TURNER, Assistant).

From July until October, 1967, Mr Hughes accompanied the Curator of Mammals to Dangerous Reef. Over 2,000 feet of 16 mm, colour cine film was exposed, some sound recordings were made and a large number of still monochrome and colour still photographs were taken.

During June, nine days were spent visiting locations near Inverell and Collarenebri with the object of obtaining film sequences of various common animals and to assess the areas for future filming of Wedge Tailed Eagles, Emus and Kangaroos. Some footage of Kangaroos, Parrots and Emus was obtained.



The pressure of photographic work makes it difficult to keep abreast with the registration and filing of new material. With the help of Museum assistants some 2,500 negatives and roll films have been registered and added to the collections but it has not been possible to attend to all accumulated material.

Mr T. Iredale is donating a collection of negatives of the Great Barrier Reef made around the year 1900. Mr F. A. McNeill is also donating his collection of Great Barrier Reef negatives. Messrs L. Howes, A. J. F. Gibson and A. Sinclair have donated sets of colour slides which have been utilized by the Museum's Education Officers.

A series of enlargements of various sizes of up to 6 feet by 4 feet, were prepared for exhibition in the Museum. The display, which was designed by the Museum Art Department, covered a wide range of Museum subjects. The exhibition created great public interest. Planning is in hand for the exhibition to be circulated in New Zealand under the control of the Dominion Museum.

Material is being selected for the preparation of enlargements for another exhibition of Museum photography to be shown throughout Australia. This is being undertaken in conjunction with the firm of Kodak (Aust.) Pty Ltd, which will exhibit it in its major stores and in photographic societies.

Enlarged transparencies of maps and labels were made to provide masters for silk screens used in the Gallery of Melanesian Art.

As subjects become available live specimens are being photographed, in colour, for use in a planned Gallery of Reptiles and Amphibia. It is intended to make extensive use of colour prints and illustrations.

Work for the year covered every aspect of the Museum's activities. Over 3,000 prints and negatives were made. These were made up as follows: 438 cut film negatives, 40 rolls of films, 1,349 prints, 112 cut film colour photographs, 156 monochrome slides and more than 100 colour slides. Many of the photographs were used in publications, the most recent being the handbook illustrating the new Melanesian Gallery. Many photographs were made for reference during the preparation of this gallery and the specimens on display were all photographed.

The acquisition of a processing machine has facilitated the processing of colour materials which have been used in the previously mentioned Melanesian Art handbook, school travel cases, and a series of colour illustrations of Broken Hill minerals to be published by Conzinc Riotinto of Australia Limited.

First results produced by means of a new portable X-ray unit machine have been very satisfactory. Because of its versatility indications are that most Museum departments will be able to make use of the facilities provided by this machine.

Two short 16 mm, colour, sound films dealing with Australian Aboriginal cave paintings and rock engravings have been completed. These films entitled "Carnarvon" and "Rock Engravings" were filmed in Queensland and western New South Wales during field work by Mr F. D. McCarthy (former Curator of Anthropology). Work on a film about the Museum was deferred because of field work on Dangerous Reef in South Australia. The editing of a cine footage from this latter venture is well advanced and a commentary is being prepared.

With the increase in the volume and variety of work the photographic premises are becoming very crowded; our present accommodation will handicap plans to photograph and film live animals in the studio, X-ray work, colour processing and other necessary developments.

**Library:** (MARY G. E. DAVIES, B.Sc., A.L.A.A., Librarian; LEONIE TAGGART, Library Assistant (to 2nd February, 1968); DAVID FITZSIMMONS, Library Assistant (from 11th March, 1968); JESSICA E. WATSON, Clerical Assistant).

During the year 339 volumes were added to the Library, of which 244 were books, the rest being periodicals and parts of series. Of these volumes 176 were received on exchange or given to us, including 20 children's books given to us by the Children's Book Council of New South Wales. Seventy-one volumes were bound during the year of which 55 volumes were new binding, the rest being repairs or rebinding.

Seven hundred and four loans were made to libraries all over Australia, both Government and private. Many photocopies and xerox copies are being supplied instead of loans. A xerox machine arrived on the 11th June, 1968, and already 300 sheets of copy have been supplied. This has enabled the Museum to accede to several requests which previously had to be refused because of the length of the article or the fragility and age of the volume concerned. The Museum borrowed 73 items from other libraries. Many visiting and local scientists and research workers have made use of the library, as have members of the general public.

Recataloguing and new cataloguing continued. Three hundred and seventy-four books and 167 periodicals were catalogued and classified during the year. Five hundred and thirteen cards have been made for the "Union Catalogue of Monographs in Australian Libraries" and sent to the National Library, Canberra. Fifty-eight cards have been made and sent to CSIRO Melbourne for insertion in "Scientific Serials in Australian Libraries". Four bookcases in what was the Palaeontologist's office have been cleared and the contents put either in the new Palaeontologist's office or the New Wing stacks. Bookshelves from the landing on the top floor of the Old Wing have also been cleared and their contents placed in the New Wing stacks. Several periodicals sets



have been taken from the Anthropology Library and moved to the New Wing plus a collection of books on botany. All the publications moved during this year have yet to be recatalogued and classified and integrated into the New Wing stacks. Museum archive material was moved from the strong room to the archives room.

The Public Library made available to the Museum the services of Mr John Daniels, a cadet Librarian, from the 15th to the 23rd February during the absence on leave of Mrs Watson.

**Assistant Editor:** P. F. COLLIS.

During the year the title of the Editorial Assistant and Public Relations Officer was changed to Assistant Editor.

Features of the year's publishing activities were the publication of the third edition of the booklet *Australian Aboriginal Rock Art*, the preparation of the fourth edition of the booklet *Exploring Between Tidemarks*, new front and back covers for the quarterly magazine *Australian Natural History*, and the biggest issue of *Australian Natural History* ever produced.

Advertising of the Museum and its exhibits, cafeteria, and film screenings was continued in Sydney newspapers, as also was advertising of *Australian Natural History* in Sydney and interstate newspapers. A year's advertising of the exhibits, publications and cafeteria in a Sydney tourist guide-booklet, *This Week in Sydney*, was begun, and there was also an advertisement in the Sydney *Daily Telegraph's* "Careers and Education" supplement.

Apart from advertising, the Museum and its activities received increased publicity in the newspapers and on television and radio. Matters which received particular publicity were: the expedition to study sea-lions on Dangerous Reef, South Australia; the publication by Ure Smith of *A Treasury of Australian Wildlife*; the appointment of new Curators; the opening of new exhibits; and articles of popular interest in *Australian Natural History*.

Specimen copies of *Australian Natural History* were sent to 50 bookshops in all States to publicize the magazine and increase its sales.

Many inquiries from the public and newspapers were answered.

#### ATTENDANCE

The counting devices removed from the main entrance have not yet been replaced so that details of public attendance at the Museum cannot be given. It is estimated, however, that the numbers are increasing appreciably. The number of school children attending in organized groups handled by Museum Education staff showed an increase of about 3,000 to 27,130. The numbers of children attending in classes with their own teachers cannot be calculated but are estimated to be at least 40,000. Attendances at vacation film screenings were over 7,000.

#### MUSEUM BUILDINGS

Construction of a new building to house spirit-preserved material has commenced and is now well advanced. It is anticipated that the building will be occupied early in 1969. The building will be provided with electrically operated mobile shelving in the four storage floors and will also provide space for the Exhibitions Department and garages.

#### PUBLICATIONS

Four parts of volume 27 of *The Records of the Australian Museum* were published during the year—Nos 6, 7, 9, and 10. Nos 11, 12, and 13 were in process of publication.

Nos 11 and 12 of Volume 15, and Nos 1 and 2 of Volume 16, of the quarterly magazine *Australian Natural History* were published, and manuscripts for No. 3 of Volume 16 were sent to the Government Printing Office. The Index to Volume 15 was published. No. 12 of Volume 15 was a special issue devoted to the islands around Australia and their natural history. It was the biggest issue of the magazine ever published, having 60 pages instead of the normal 32. Commencing with that issue, new and more modern front and back covers were adopted for the magazine.

The third edition of the booklet *Australian Aboriginal Rock Art*, by Frederick D. McCarthy, Principal of the Australian Institute of Aboriginal Studies, Canberra, and formerly Curator of Anthropology at the Australian Museum, was published. Seven thousand copies were printed, an increase of a thousand over the previous edition. The fourth edition of the booklet *Exploring Between Tidemarks* is in process of publication. Ten thousand copies will be printed—two thousand five hundred more than the third edition.

A new free natural history leaflet, *Early Man*, was printed. Twenty-three existing leaflets were reprinted, most of them with additional information incorporated, and one is in process of being reprinted.

Twenty thousand folders giving information about the Museum and containing subscription forms for *Australian Natural History* were printed. This was as many as in the three previous years.



Eight articles published in *Australian Natural History* were reprinted, or were in the process of reprint, for their authors.

A Ure Smith book, *A Treasury of Australian Wildlife*, was published in November, 1967. This consists almost entirely of articles from *Australian Natural History* selected and edited by Dr McMichael with the permission of the Trustees. This fine volume includes a large number of new photographs selected to replace out of date or unsuitable original illustrations.

The Curator of Insects, was joint author (with Professor J. Turner, Melbourne University and Dr R. Hoogland, Forest Research Institute, Canberra), of a detailed report on the Conservation of Norfolk Island. He also wrote an article on insect migration for *Wildlife in Australia*.

In addition to articles contributed to *Australian Natural History*, the following papers and books by members of the staff were published during the year:

- Cogger, H. G., 1967—  
*Australian Reptiles in Colour*. A. H. & A. W. Reed, Sydney. 112 pp.
- McAlpine, D. K., 1967—  
The Australian Species of *Diplogeomyza* and allied Genera (Diptera, Heleomyzidae).  
*Proc. Linn. Soc. N.S.W.* 92 (1): 74-106, 30 figs.
- McDonald, Patricia M., 1968—  
*Museums and Adult Education*. *Aust. J. Adult Education*. (April).  
Museum Education, in *Science for Secondary Schools*.
- McMichael, D. F., 1967—  
(Editor). *A Treasury of Australian Wildlife: Selected Studies from Australian Natural History*. Ure Smith, Sydney, 354 pp., 8 colour pls and numerous photos.
- McMichael, D. F., 1967—  
Australian Freshwater Mollusca and their Evolutionary Relationships; a Summary of Present Knowledge. In: Weatherley, A. H. *Australian Inland Waters and their Fauna*, Australian National University Press, Canberra. Pp. 123-149, 8 figs.
- NcNeill, F. A., 1968—  
Crustacea Decapoda and Stomatopoda of the Great Barrier Reef Expedition. *Sci. Rep. Gr. Barrier Reef Exped.* 7 (1): 1-98, 2 figs., 2 pls.
- Smithers, C. N., 1967—  
On the relationships of the Calopsocidae (Psocoptera). *J. Aust. ent. Soc.* 6 (1): 61-64, 7 figs.
- White, J. P., 1968—  
Archaeology in Australia. *Current Affairs Bulletin*. 41 (13), 194-207.
- Brookfield, H. C. and White, J.P., 1968—  
Revolution or Evolution in the Prehistory of the New Guinea Highlands: A Seminar Report. *Ethnology* VII (1), 43-52.
- Chalmers, R. O., 1967—  
*Australian Rocks, Minerals and Gemstones*, 1st Edition (2nd reprinting) pp. xvi + 398, pl. 8 (colour) 40 (half tone). Angus & Robertson, Sydney, 1967; and an American edition, Elsevier, New York.
- Disney, H. J. de S., 1967—  
Bird in the Hand—Quail, Australian Quail, *Aust. Bird Bander* 5 (3): 63.
- Disney, H. J. de S., 1967—  
Females of the Australian "True Quail" Phasianidae (Quail with hind toes) *Aust. Bird Bander* 5 (4): 86-87.
- Disney, H. J. de S., 1967—  
Forest Kingfisher. *Aust. Bird Bander* 6 (1): 17.

#### FINANCE

Expenditure from Consolidated Revenue for the year (excluding Statutory Endowment of \$2,000) was \$295,958.33 compared with \$284,771.06 last year.

Net income for Trustees' Funds (including Statutory Endowment) was \$36,748.35 compared with \$18,302.16 for 1966-67, while net expenditure amounted to \$39,994.92 compared with \$19,882.73 for 1966-67.

The cash balance in the Trustees' Accounts at 30th June, 1968, was \$12,874.99 including Grants of \$5,047.22 for special purposes. Trustees' Invested Funds at 30th June, 1968, were: Commonwealth Inscribed Stock, \$7,330, Metropolitan Water, Sewerage and Drainage Board Inscribed Stock, \$5,000.

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

A. P. ELKIN,  
President.

F. H. TALBOT,  
Director.



## Appendix

THE AUSTRALIAN MUSEUM—SUMMARIZED STATEMENT OF RECEIPTS AND  
PAYMENTS FOR THE YEAR ENDED 30th JUNE, 1968

	\$	\$
<b>RECEIPTS</b>		
Appropriation Account—		295,958.33
Treasury Appropriation .. .. .		
Trustees' Account—		
Statutory Endowment .. .. .	2,000.00	
Grant towards Museum Requirements .. .. .	4,000.00	
Museum Publications—Sales and Subscriptions .. .. .	7,437.58	
Museum Shop Sales .. .. .	406.74	
Donations .. .. .	328.27	
Donation by Readers Digest .. .. .	200.00	
Grant from Australian Institute of Aboriginal Studies .. .. .	300.00	
Subsidy from Sydney City Council .. .. .	2,000.00	
Grant from Myer Foundation .. .. .	500.00	
Grant from Bushell Trust .. .. .	4,000.00	
Grant from Australian Research Grants Committee .. .. .	5,500.00	
Grant from Belgian Expedition .. .. .	250.00	
Interest .. .. .	1,360.28	
Postage Receipts .. .. .	455.89	
Royalties and Copyrights .. .. .	1,145.24	
Rental for Cafeteria .. .. .	480.00	
Compensation for Lost and Stolen Specimens .. .. .	6,181.00	
Miscellaneous Receipts .. .. .	203.35	
	36,748.35	
Balance as at 1st July, 1967—		
Cash at Bank and in hand .. .. .	3,521.56	
Investments .. .. .	24,930.00	
	28,451.56	
		\$361,158.24
<b>PAYMENTS</b>		
Appropriation Account—		
Salaries, etc. .. .. .	259,399.30	
Tea Money .. .. .	156.30	
Rates .. .. .	252.60	
Insurance on Buildings .. .. .	100.00	
Travelling and Subsistence Expenses .. .. .	6,983.75	
Motor Vehicles, Running Costs .. .. .	939.35	
Freight and Cartage .. .. .	449.08	
Postal and Telegraphic .. .. .	1,420.31	
Books, Periodicals and Papers .. .. .	5,009.09	
Other Insurances .. .. .	1,870.00	
Stores and Equipment .. .. .	10,999.91	
Fees and Commissions .. .. .	98.64	
Laundry Expenses .. .. .	280.00	
Grant towards Museum requirements .. .. .	4,000.00	
Storage Equipment .. .. .	4,000.00	
	295,958.33	
Trustees' Account—		
Museum Publications—Cost .. .. .	6,794.82	
Stock for Museum Shop .. .. .	544.49	
Stores, Plant and Equipment .. .. .	8,927.46	
Postage Receipts paid to Treasury .. .. .	602.39	
Travelling Expenses .. .. .	6,642.35	
Museum Specimens .. .. .	10,917.38	
Entertainment .. .. .	434.76	
Miscellaneous Expenditure .. .. .	829.54	
Lecture Fees .. .. .	234.60	
Royalties .. .. .	244.44	
Research Grants .. .. .	600.00	
Refund Salaries to Education Department .. .. .	473.69	
National Photographic Index of Australian Birds Account .. .. .	2,749.00	
	39,994.92	
Balance as at 30th June, 1968—		
Cash at Bank and in hand—	\$	
General .. .. .	7,827.77	
Grants .. .. .	5,047.22	
	12,874.99	
	12,330.00	
		25,204.99
		\$361,158.24