

1969-70

PARLIAMENT OF NEW SOUTH WALES

REPORT
OF THE
TRUSTEES OF THE AUSTRALIAN
MUSEUM
FOR THE
Year ended 30 June, 1969

Ordered to be printed, 26 March, 1970

BY AUTHORITY

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FRONT COVER: Marking and release of Wanderer Butterflies is an important part of the Australian Museum's programme for the study of insect migration in Australia. About 300 naturalists, scientists, teachers and schoolchildren are helping the Museum by rearing (or capturing), marking and releasing butterflies in all States. The records of releases and recaptures and the resultant data are held at the Museum for analysis. The photograph shows marked Wanderers about to be released from a Museum vehicle at Camden, New South Wales, an area in which population studies of Wanderers are being carried out as an adjunct to the migration work.

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W. McReaddie; Vera Gregg; J. W. Pickett, M.Sc., D. Phil. Nat.; D. D. Francois, M.Sc., Ph.D.

* Deceased 29th March, 1969.

† Deceased 24th February, 1969.

ANNUAL REPORT

OF THE TRUSTEES OF THE AUSTRALIAN MUSEUM

For the Year ended 30th June, 1969

To His Excellency The Governor:

The Trustees of the Australian Museum have the honour to submit their 115th Report for the year ended 30th June, 1969.

Mr W. H. Maze, M.Sc., was elected President of the Board of Trustees at the Annual Meeting.

Professor J. R. A. McMillan, M.Sc., D.Sc.Agr., resigned from the Board of Trustees and Professor G. A. Satchell, Ph.D. was elected to fill the vacancy.

Close co-operation with Taronga Zoo, the National Parks and Wildlife Service, Macquarie University and the N.S.W. State Fisheries has continued.

The strong support by Government, which has enabled the Museum to become a sound research and educational institution of international standing has continued during the year and the Trustees thank the Premier and Treasurer, the Deputy Premier and Minister for Education and Science and the Minister for Public Works for their help. The Public Service Board has continued to support the Museum in staff matters.

INTRODUCTION

Whom do we serve?

The Australian Museum has been in existence for nearly a century and a half and during this period there have been major changes in the Museum's approach. At first it was merely a collection of objects housed in various Government buildings in the city and this continued from its beginnings in 1827 until the removal to the present site on the corner of William and College Streets in 1849.

Although collecting and display were the initial aims, research into the collected material was started very early in the Museum's history with the appointment of trained curators.

Charles Darwin is really responsible for the next major change in Museum approach, with his message that living things are the products of evolution. Displays were now able to relate animal forms to one another in time and evolutionary sequence. Still later another kind of relationship was stressed, the relationship between an animal and its surrounding environment, both living and inanimate. With this came the habitat or diorama displays which are still so popular in Museums.

A more recent change has been an educational one which actively involves the Museum in the development of young people through an education service, where children in tens of thousands visit the Museum in organized classes and are aided by teachers trained to utilize the Museum as a sophisticated educational tool.

The research side has also changed and research into the Australian environment done within museums has widened its scope to include ecology, physiology, comparative chemistry and animal behaviour. This wider research is now able to lead to wider kinds of display—not only display of animal form but also of animal function.

But there have been other changes—changes in the general public for whom the Museum has been catering. We do not know who visited the Australian Museum in 1850. Was it only the ladies and gentlemen, the business community and government servants of the time, or was it the labourer and the freed convict? It is rather more likely to have been the upper and middle classes; those able to read, for instance. Now of course, the pattern is fundamentally different. Visitors to the Museum comprise people from every stratum of society and because of the greatly increased educational standards they are all literate and relatively well educated. As population numbers have increased so have the number of visitors to the Museum. Whom do we stimulate and educate now? Surveys indicate that visitors comprise four major groupings: the scientists and scholars; the students and school classes; the adult visitors, including many from interstate and overseas; and family groups. We know that some of these make repeated visits to the Museum but the average taxpayer, it seems, makes two visits—he comes with his children when they are young, and he himself came when he was a child. He may come when bringing visitors around the city, but he seldom comes on his own. He would certainly gain from coming more often, but he is not attracted sufficiently to do so.

Man is moving more or less rapidly to an environmental crisis. The more adult citizens know of their own environment, their place in it, and mankind's complete dependence on his living and non-living surroundings, the more we shall be able to make sound judgements affecting our own future. Museums can play a role in the continuing education of the nation's citizens, and perhaps have a duty to do so.

In many ways the Museum is an "Everyman's University". Only 4 per cent of the population enjoy a university education and these learn to have access to a wide variety of sources of information. Perhaps museums should not so much cater for this group, but rather for the other 96 per cent who do not go to a university. It is also obvious that museums should change their displays and their approach as changes occur within the community and that this response should be rapid to be effective. They must also, if they are to attract a wider spectrum of the public, change their approaches to display techniques. More emphasis on temporary displays and on experiment with modern display approaches and techniques is long overdue in many Australian museums.

Display Planning

The next major display of a permanent nature in the Australian Museum will be the Hall of Life, a new hall to occupy a complete floor of the new East Wing facing William Street. This display will emphasize how living things function; how they reproduce, how they develop, how they regulate their numbers, and how they affect and are affected by their environment. These, the facts of life, are not displayed elsewhere in the Museum's halls and yet they are an area where exciting new advances in understanding are being made.

Two temporary exhibitions are also being planned. The first to be set up early in the new year is an exhibition on conservation showing some of the beautiful and the horrifying results of man's efforts and pointing out that man is a creature of choice and can determine what he wishes to do with his planet. The second is a Captain Cook/Sir Joseph Banks exhibition, using material loaned from a number of overseas institutions including the British Museum, the British Museum (Natural History), the National Maritime Museum at Greenwich, the Royal Society of London, the National Library, Canberra, and the National Herbarium of New South Wales. This will be mounted jointly with the British Council under the sponsorship of *The Australian* newspaper, and will comprise much genuine material gathered by Captain James Cook and Sir Joseph Banks on their voyage in the *Endeavour*. Planning for both these exhibitions is well under way.

GALLERY DEVELOPMENTS

The new Gallery of Melanesian Art was opened by the Governor of New South Wales, Sir Roden Cutler, V.C., K.C.M.G., C.B.E., K.St.J., B.Ec., LL.D., D.Sc., on 10th July, 1968, and received extensive and favourable publicity.

The Maori exhibit in the old Pacific Gallery was redesigned and relabelled.

Plans for the new Reptile Gallery have been completed and the Exhibitions Department has commenced the preparation of specimens for this gallery. Several field trips to localities in New South Wales have provided specimens and some of the material has been used in trials of new casting techniques and materials.

A new display featuring tropical echinoderms has been installed. The new exhibit complements one featuring temperate echinoderms of the Sydney district and needs only to have further crinoid specimens and a few holothurians added to it to be complete.

A display of recent mineral acquisitions was mounted in the Mineral Gallery. This consisted of specimens of gaspeite and other nickel minerals from Kambalda presented by Western Mining Corporation and specimens from the Cloncurry district presented by V. S. Daddow.

The major temporary exhibition during the year was a Conservation Exhibition arranged in conjunction with the National Parks and Wildlife Service and Taronga Park Zoo, held in the Daily Telegraph Building.

Aid to the Museum of Papua New Guinea

At the request of the Trustees of the Papua New Guinea Museum Mr Kingsley Gregg and Mr Rolf Lossin of the Australian Museum's Department of Exhibitions were sent to Port Moresby to re-design some of the display areas of the Museum and install new exhibits, in conjunction with their own staff. The President, Sir Allan Hanbury Mann, reports that his Trustees were very pleased with the design and the standard of the work executed.

HONORARY STAFF

Mr A. A. Wirth, well known Sydney gem merchant, was appointed an Honorary Associate.

Mrs V. Gregg and Mr L. Haines have visited the Museum regularly in connection with their researches on arachnids and moths respectively.

Mr K. Gillett and Mr A. Healy continued to help the Department of Invertebrates during the year.

Mr J. Voorwinde has sorted many samples of minute molluscs and Mr T. Garrard has given considerable assistance in the Department of Malacology, chiefly with identifications for public enquiries.

Mr K. A. Hindwood has again been most helpful, regularly visiting the Museum and helping with the identification of difficult specimens and identifying specimens for inquirers in the absence of the Curator of Birds.

Mr Gilbert Whitley has continued the heavy task of keeping up the card index in the Department of Ichthyology.

Mr F. A. McNeill, F.R.Z.S., Honorary Associate of the Museum and Curator of Crustacea until 1961, died on 24th February, 1969, aged 73 years. Since his retirement Mr McNeill had provided considerable assistance to the Department by continuing to visit the Museum regularly. His help during periods of absence of the Curator was especially appreciated and provided smooth continuity of effort in the Department.

Dr E. A. Briggs, D.Sc., Honorary Associate, died on 29th March, 1969. He was a university teacher and a former Curator of Lower Invertebrates at the Australian Museum. He made extensive collections from the Barrier Reef and he led expeditions to some remote parts of New Guinea adding valuable material to the collections.

STAFF

The Director went overseas to India, Europe and America to study material for a world wide revision of the fish genus *Lutjanus*, and to report for UNESCO on the feasibility of instituting tertiary level teaching in museology for Australia and South East Asia. This trip was supported by the Nuffield Foundation, the Trustees of the Science and Industry Endowment Fund, and UNESCO. He attended and contributed to the International Symposium on Coral Reefs in South India. The Director was elected Chairman of the Conference of Australian Museum Directors for 2 years from 1969 and Chairman of the Australian Museums Committee for UNESCO for the year. He continued to serve on the Executive of the Great Barrier Reef Committee.

Mr C. N. Smithers, Deputy Director and Curator of Insects, returned to Sydney in August 1968, after attending the XIIIth International Congress of Entomology in Moscow and visiting research institutes and museums in the United States of America, Canada, Britain, Holland, Austria, Germany, Sweden and Singapore.

Mr J. V. Peters was seconded to the Museum from the Department of Education for a second year to complete work on the Australian butterfly collections.

During the year Mr D. Moore, Curator of Anthropology, was Honorary Secretary of the Aboriginal Relics Advisory Committee (N.S.W.) and of the Anthropological Society of New South Wales. He was awarded a Churchill Fellowship to travel in Asia, Europe, and America during 1969 to study preservation of rock art and conservation of ethnological material.

Dr J. P. White, Assistant Curator of Anthropology, was awarded a Harkness Fellowship to carry out research in the U.S.A. in 1970-71.

Dr J. C. Yaldwyn, Curator of Marine Invertebrates (Crustacea and Coelenterates) since March, 1962, resigned on 6th December, 1968, to take up the post of Assistant Director at the Dominion Museum, Wellington, New Zealand.

Dr D. J. G. Griffin served on the Council of the N.S.W. Public Service Professional Officers' Association during the year and was elected Treasurer of the Australian Marine Sciences Association. Miss E. C. Pope, Curator of Marine Invertebrates, continued to serve on the Council of the Linnean Society of New South Wales, was a Vice-President until March, 1969, and has been appointed a member of the Great Barrier Reef Committee.

Mr H. J. de S. Disney, Curator of Birds, has been elected President of the Royal Zoological Society of New South Wales, is Council member of the Royal Australasian Ornithologists' Union, and was Assistant Editor of the Bird Banders Association of Australia.

Miss P. McDonald, Education Officer, returned from her overseas study tour of museums on 26th August, 1968.

ACKNOWLEDGEMENT OF CO-OPERATION

The Museum has continued to work closely with individuals and many other organizations and it is a pleasure to acknowledge assistance.

The Norfolk Island Fauna and Flora Society gave considerable assistance to Museum staff working on the island. Mr J. Smith and Dr T. Moss have sent interesting material from Ball's Pyramid and Cocos Islands respectively. Stones and Findings Limited kindly undertook polishing of ornamental stone without charge.

Assistance from the following organizations is gratefully acknowledged: Australian Research Grants Committee, Canberra; Bureau of Mineral Resources, Canberra; CSIRO Division of Fisheries and Oceanography, Cronulla and Redcliffe; CSIRO Wildlife Research Division, Canberra; Technical Committee on Oceanography, Canberra; the Royal Australian Navy, Garden Island; The Underwater Research Group of New South Wales; the Commonwealth Science and Industry Endowment Fund and the British Council.

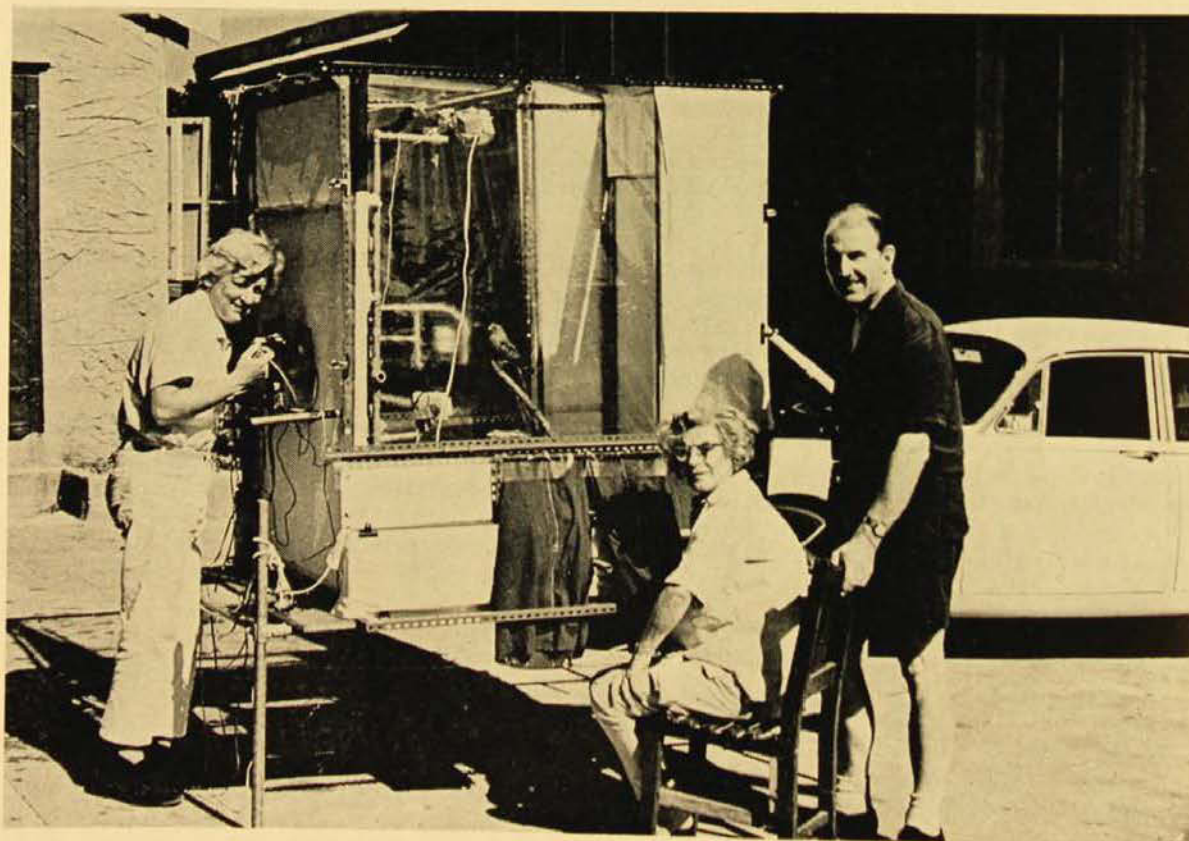
The Museum is indebted to the estate of the late Miss Barbara C. Dew for books on various natural history subjects. Mr Justice Myers continued his gifts of colour transparencies for teaching purposes. The Managing Director of Time-Life International (Australia) Pty Ltd donated 24 copies of the Life Nature Books for final awards in the Museum Walkabout series. The Education Department Biological Laboratory at the University of New South Wales prepared and presented to us embedded specimens of various invertebrates for use in the loan cases.

LECTURES

Members of the Museum staff were responsible for the Invertebrate Zoology course at Macquarie University and a considerable number of casual specialist lectures were given to various organizations by staff members.

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN BIRDS

During the year the Trustees accepted the responsibility for setting up a National Photographic Index of Australian Birds. The aim of this project is to obtain high quality colour photographs of every bird in Australia in its various colour phases both juvenile and adult. Funds have been donated for the first stage of this project, the parrot family, and a Trust to execute the project comprising the Hon. Sir Percy Spender K.C.V.O., K.B.E., K.St.J., Q.C. (Chairman), Mr F. P. Buckley, C.B.E., Dr Ursula Hoff, O.B.E., Professor Sir Leonard Huxley, K.B.E., D.Phil., Ph.D., M.A., F.Inst.P., F.A.A., Mr Laurence Le Guay, F.R.P.S., E.F.I.A.P., A.I.A.P., Dr F. H. Talbot, F.L.S., Mr R. W. Turner and Professor A. H. Voisey, D.Sc., has been appointed. Mr Donald Trounson, the original proposer of the scheme, is Executive Officer to the Bird Index Trust. The Index internegatives will be housed at the Australian Museum, Sydney, with sets of prints at the Australian Museum and one at the National Library, Canberra. Great co-operation has been obtained for the Index from bird photographers, and this is essential for the success of the scheme.



Miss Molly Clampett, Mrs Trounson and Mr Donald Trounson, who comprise the team who are organizing the National Photographic Index of Australian Birds, a project for all photographers of Australian birds. Mr Trounson and his team, as well as co-ordinating the Index, take many outstanding photographs themselves

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., Museum Assistant (until 31st January, 1969), JANET L. SMITH, Museum Assistant; CHERYL A. PIELICH, Museum Assistant (appointed 9th June, 1969)).

Research and Fieldwork. During the year the Curator continued his archaeological survey of the Hunter River Valley and a number of trial excavations were carried out. He also investigated a number of sites in western New South Wales on behalf of the National Parks and Wildlife Service and a site in northern Victoria at the request of the Australian Institute of Aboriginal Studies. The Assistant Curator extended his ethno-archaeological investigations to New Ireland and the Massim area of Melanesia.

Collections and Exhibitions. The relabelling, cataloguing, and storing of the Melanesian collections was continued. Although storage facilities are grossly inadequate, the new system used will obviate serious damage to the collection and makes items more accessible than previously. A start was made on checking and sorting the Australian collections in preparation for the installation of Compactus mobile shelving. The New Zealand collections were checked and recatalogued by Mr Wayne Orchiston.

With the help of the Assistant Curator, the Curator conducted a Summer School on Australasian Prehistory in the Hunter Valley during January, 1969.

Voluntary assistance was given to the Department by Mr Gregory Brown and Mr Wayne Orchiston.

Department of Entomology: (C. N. SMITHERS, M.Sc., Curator; D. K. MCALPINE, M.Sc., Assistant Curator; M. R. B. GRAY, M.Sc., Assistant Curator (Arachnids); J. V. PETERS (seconded from Education Department, Lepidoptera); G. A. HOLLOWAY, Technical Assistant; KLARA KOTA, Museum Assistant, ROBYN L. JEFFERY, Museum Assistant).

Research. The Curator's research on the Psocoptera has continued and a revised classification of the Order has been prepared and an account of this work is now in draft form. A small collection of British Psocoptera made by the Curator on his overseas trip has been studied and a paper prepared on it. In addition, he has carried out work on the Trans-Tasman relationships of the Psocoptera and has prepared redefinitions of many of the genera in the Order.

The results of his continuing butterfly migration research programme were discussed with Professor F. Urquhart in Canada and it is hoped that joint publication will result from this consultation. Migrations of Australian endemic species were studied and one paper prepared on *Vanessa kershawi*; data on other species is in process of being prepared for publication. The number of co-operators in the Migration Study Scheme is now nearly 300 and many school teachers have continued to find this work a useful activity for their classes. Research on the butterflies of Norfolk Island was carried out when opportunities arose to revisit the island twice in the year; a paper was prepared. Studies on the distribution of the birds of Norfolk Island were carried out in collaboration with the Curator of Birds; the object of the work was to establish what changes in the bird population had taken place due to human occupation of the Island and to provide sound scientific data on which the Administrator of the Island could base legislation for fauna protection and conservation. These studies progressed extremely satisfactorily.

The Assistant Curator (Arachnids) has commenced a study of distribution and adaptive trends in eastern Ctenizidae and investigations into the taxonomy of the Diplurinae have been initiated.

Mr Peters has carried out research on the butterfly collections and prepared a list of the types of Australian species in the collection.

Field Work. The Curator spent two periods of a fortnight each on Norfolk Island collecting Psocoptera and making general insect collections as well as co-operating with the Curator of Birds on bird distribution studies. In addition, a trip was made to Canberra to study the collections of the CSIRO Entomology Division. Sixteen days were spent in the field on migration studies and other collecting activity in New South Wales.

The Assistant Curator (Arachnids) has undertaken field work mainly in the drier inland areas of New South Wales, notably in the Euabalong and central and southern Darling regions.

Collections. Over 7,000 specimens were added to the collection mainly through the collecting activities of staff members and about 70 type specimens were registered. Amongst the collections given to the Museum was a small collection made by Mr J. Smith from Ball's Pyramid, near Lord Howe Island. The collection contained the remains of specimens of the Lord Howe Island Phasmid, a species which was for some years believed to be extinct. Sorting, arranging and identification of material has continued to the limit of time and space available.

The Australian butterfly collection has now been completely rehoused in new cabinets and a start made on rearranging foreign butterflies in the cabinets thus made available. This space, however, will be inadequate to complete rearrangement of the foreign butterfly material. Several groups of moths have been rehoused. The present dispersed arrangement of the collections is most undesirable; the need for more storage area for the insect collections is critical.

Information and Service. Over 4,000 enquiries were dealt with during the year; just over half dealt with insects and just under a half with arachnids.

Department of Environmental Studies: (H. F. RECHER, Ph.D., Curator (from 17th August, 1968); S. S. CLARK, M.Sc., Assistant Curator (from 28th April, 1969)).

Research. The Curator continued research on the relation between habitat diversity and bird species diversity; foraging, ecology and behaviour of the Reef Heron; habitat utilization by Honeyeaters; and agonistic behaviour of Reef Herons and Silver Gulls. The Assistant Curator began preliminary studies into the feasibility of a project on studying nutrient cycles in temperate rainforests in New South Wales.

Fieldwork. A large portion of the staff's time is spent in the field. The Curator spent 4 weeks during October/November, 1968, on One Tree Island studying Reef Heron ecology and behaviour and investigating the feasibility of a project on the relation between fish species diversity and habitat diversity involving the manipulation of the habitat. Biological survey work along the New South Wales coast was conducted in co-operation with the National Parks and Wildlife Service and with the Scientific Committee on Parks and Reserves.

Two weeks were spent at the Nadgee Faunal Reserve during which time studies were initiated on population dynamics of small mammals and some preliminary surveys of the flora completed.

Information and Services. A number of enquiries from the press were answered and information relating to conservation and ecology provided to various amateur and government conservation groups and individuals in Tasmania, Victoria, New South Wales, Queensland and the U.S.A.

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

Research. Virtually all of the Curator's research time has been devoted to his Ph.D. programme at Macquarie University.

Field Work. Six visits were made to Round Hill Fauna Reserve in western New South Wales as part of the Curator's Ph.D. programme.

Collections. Due in part to the congestion outlined in previous Annual Reports and in part to the absence of the Curator, a tremendous backlog of uncatalogued material has been built up in the Department. With the anticipated move to the new Spirit House early in the coming fiscal year it should be possible to have the collections reorganized and totally accessible within one to two years. During this reorganization an effort is to be made to computerise the cataloguing system to provide quick access to both the specimens in the collection and the data associated with them.

The Department recently received, on permanent loan, the existing type specimens of reptiles and amphibians from the Macleay Museum at the University of Sydney.

One thousand and forty-seven specimens of reptiles and amphibians were registered during the year.

Department of Ichthyology: (J. R. PAXTON, M.Sc., Ph.D., Curator; SONDR A BERESFORD, Museum Assistant (until 20th September, 1968); VIRGINIA MOORE, Museum Assistant (from 20th September, 1968)).

Research. The Curator has initiated a survey of the midwater fishes of eastern Australian waters. Research continues on the systematics and osteology of midwater fishes. Study has begun on the ecological significance of bioluminescence in Australian shallow water fishes.

Fieldwork. Fieldwork for the year included a 1-week collecting trip to Jervis Bay and the Shoalhaven drainage system. Freshwater fishes were taken from areas that will be affected by the proposed Shoalhaven Scheme of dams and pumping stations.

Nine days were spent with the Japanese-Australian Great Barrier Reef Expedition. During this period four dives on the Japanese Research Submarine *Yomiuri* were undertaken in the vicinity of One Tree Island. Valuable information on the vertical distribution of reef fishes was obtained.

One week was spent on the Australian Naval vessel *Kimbla*; during the cruise from Brisbane to Sydney, a number of midwater fish collections were made.

Collections. In addition to specimens resulting from the above fieldwork, acquisitions during the year included the following large collections of from 100 to 1,000 specimens;

The Gulf of Carpentaria, from the CSIRO prawn survey; off Brisbane from a CSIRO prawn survey; the Solomon Islands, from Dr W. Dawbin; Townsville, from G. Coates; and the type specimens from the Macleay Museum, Sydney University.

More than 3,000 specimens from 636 collecting stations were registered. The skeletal collection and the departmental library and register system were reorganized during the year.

Information and Service. Both public and scientific enquiries to the Department continued at a high rate.

Department of Invertebrates (Crustacea and Coelenterates): (J. C. YALDWYN, M.Sc., Ph.D., Curator (to 6th December, 1968); D. J. G. GRIFFIN, M.Sc., Ph.D., Assistant Curator (to 6th December, 1968), Curator (from 9th December, 1968); JANET HOLLOWAY, Technical Officer, Scientific; ANITRA ADAMSON, Museum Assistant (from December, 1968)).

Research. Dr Yaldwyn continued his revisionary studies on Crustacea Decapoda Natantia (shrimps and prawns) of New Zealand and Australia. He also completed, with Mr McNeill, a report on the pagurid hermit crabs from the Gulf of Carpentaria. Dr Griffin continued his studies on the majid spider crabs of Australia and the Indo-Pacific and on shore crabs, particularly fiddler crabs (genus *Uca*). Reports were completed on a new species of giant xanthid crab from Queensland and a new species of spider crab from Western Australia. With Dr P. J. Stanbury, Curator of the Macleay Museum, University of Sydney, data was gathered for an annotated list of the type specimens of decapod Crustacea in the Macleay Museum. In the course of this work a large part of the type material of the Australian Museum was also checked. Drs Yaldwyn and Griffin completed a report on giant pelagic tunicates from the Sydney area.

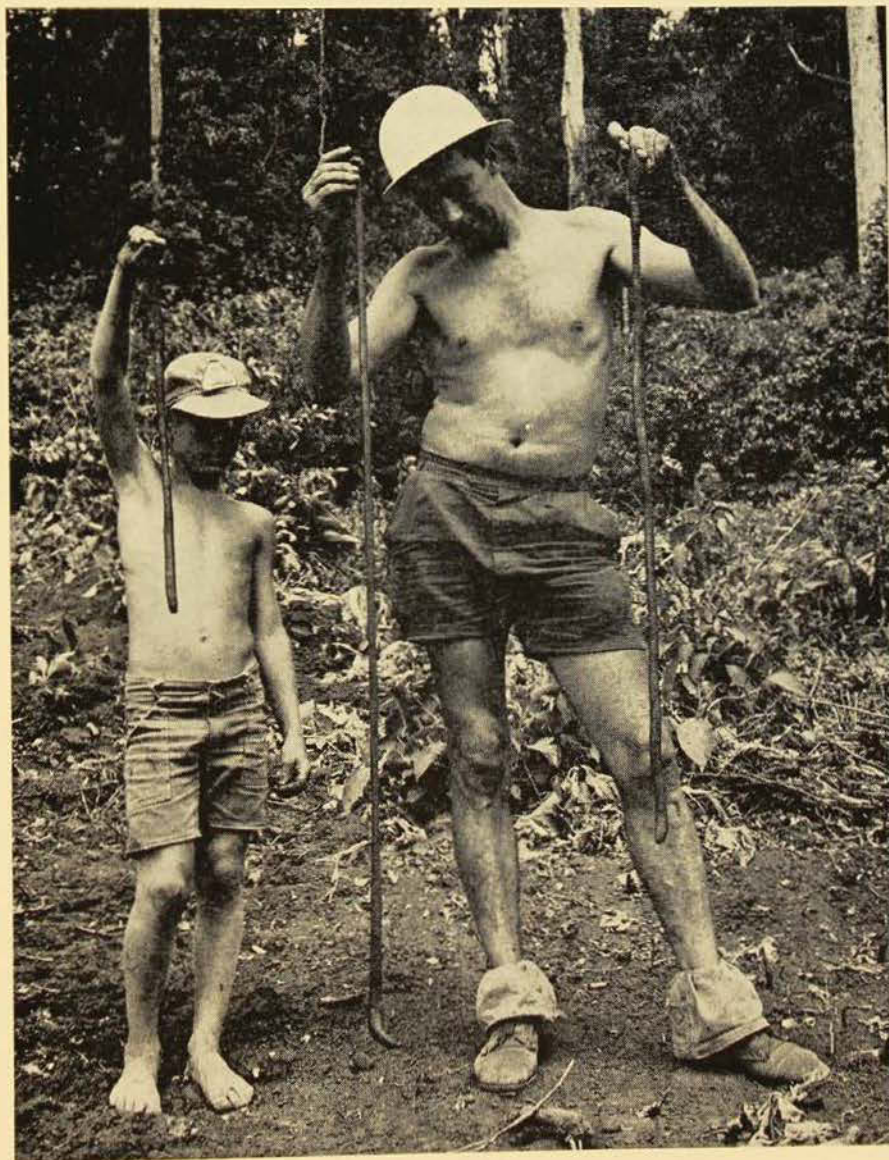
Fieldwork. Dr Griffin visited the Western Australian Museum and attended the annual conference of the Australian Marine Sciences Association in Perth. He spent 3 weeks in the Northwest Cape area of Western Australia on a joint expedition with members of the Western Australian Museum staff. Dr Griffin spent 5 weeks at One Tree Island. Work continued on the long term ecological survey of the reef and lagoon, further analysis of the invertebrate fauna of coral samples was carried out and general collections of decapod Crustacea were made.

Dr Griffin spent 2 weeks on Norfolk Island where representative samples of marine, freshwater and terrestrial Crustacea were taken.

Collections. More than 1,500 lots of Crustacea were registered during the year. Included were very large collections of decapod Crustacea from the Coral Sea and Swain Reefs; from One Tree Island and from Lady Elliott Island at the southern tip of the Great Barrier Reef, large type series of entocytherid ostracods, and types of parasitic copepods.

Reorganization of the collection of bryozoan lace corals was continued.

Information and Services. During the year the Department answered a wide range of enquiries from the public dealing mainly with jellyfish, corals and marine and fresh water crayfish.



During the collection of a series of giant earthworms, *Digaster longmani*, for an overseas museum, worms up to 5 feet 7 inches long, unstretched, were taken. Kyogle District, northern New South Wales

Department of Marine Invertebrates (Worms, Echinoderms, Ascidians and Sponges): (ELIZABETH C. POPE, M.Sc., Curator; MRS CHRISTINE DEACON, Museum Assistant (1st July to 17th October, 1968); Miss G. E. JENSEN, Assistant (appointed 23rd June, 1969)).

Research on collections of invertebrates from northern Australia has continued in connection with long-range biogeographical studies on the Australian intertidal fauna. Work has also continued on a comprehensive collection of starfishes from Fiji. Other collections are being sorted and named and are expected to yield many new records and extensions of geographical ranges—especially in the tropical fauna.

A checklist incorporating all the identifications of Echinoderms (other than crinoids and holothurians) which were made during the three expeditions to the Abrolhos Islands by pupils of Aquinas College, Perth, W.A., has been prepared.

A field trip was made to a State forest near Kyogle, N.S.W., to obtain giant earthworms for the American Museum of Natural History, New York, and further notes and photos of their field occurrence for our own records.

Interesting and notable additions have been made to the collections, though lack of space still precluded the incorporation in the correct place of all material received over the last 12 months. Type material of leeches, parasitic worms, starfishes and ascidians has been received over the last year. The large collection of crinoids from the Swain Reefs and other Museum expeditions to tropical seas has now been worked and named.

Department of Malacology: (W. F. PONDER, Ph.D., Curator; COLLEEN J. ROBINSON, Museum Assistant).

Research. A start has been made on the taxonomy of some Australian Thaisidae and Rissoidae. Work has been completed on the description of a New Zealand gastropod (Fasciolaridae) and a new species of aplacophoran (genus *Proneomenia*), the first record of this class from southern Australasia.

Considerable effort has gone into the compilation of a loose-leaf file system for Australian Mollusca which will form the basis of an Australian checklist as well as being a valuable research tool and identification aid. Several manuscripts completed in New Zealand are being prepared for publication.

Field work. Several local excursions have been made and also field work has been carried out at Jervis Bay. At this latter locality, and also at several places in the vicinity of Sydney, the Curator was given considerable assistance in the field by Mr N. Coleman. Excursions along the north coast of New South Wales to Brisbane provided useful comparative data on the intertidal species. A visit to Melbourne enabled the collection of a considerable amount of material as well as the opportunity to do some useful work at the National Museum. Ten days on the RAN ship *Kimbla* enabled the taking of seven dredge samples off the southern Queensland coast.

Collections. The curation of the research collections has taken the bulk of the time and effort in the running of the Department. There is a huge backlog of material that must be incorporated into the collections before they can be regarded as being efficient for research purposes. A complete relabelling programme using card labels has been initiated.

The dry and wet collections have reached a stage where further expansion is severely limited, and in many areas impossible.

During the summer the reprint collection was reorganized. Miss G. Thornley has been a valuable help in giving one day of her time a week to the Department.

Information and Services. Public identifications and enquiries were numerous, but in addition information, identifications and specimens have been supplied to workers in several Government and overseas institutions.

Display. Some preliminary discussion has been held on proposed additional Molluscan exhibits in the Invertebrate Gallery.

Department of Mammalogy: (B. J. MARLOW, B.Sc., Curator; LINDA M. GIBSON, Museum Assistant (from 30th June, 1969)).

Research. The results of 1967 work on seals on Dangerous Reef have been analysed.

Field work. Two short local field trips were made during the year, one to Dingadee near Dungog to inspect a very large colony of flying foxes, *Pteropus* sp. The second was with a party of 10 students of Vertebrate Zoology from Macquarie University who were taken to Upper Allyn near Eccleston for instruction in field techniques for the study of mammals. A good series of rats, *Rattus fuscipes* (= *assimilis*) and small dasyurids, *Antechinus stuarti* was collected and investigated.

Collections. A mounted specimen of a tarsier, *Tarsier bancanus* and a moon-rat, *Echinosorex gymnura*, neither of which was represented in our collection, were donated to the Australian Museum by the Sarawak Museum.

Display. Plans for the new Hall of Biology were drawn up prior to the departure of Mr David Rae for an overseas trip. A series of provisional labels was drafted which would give some guide to the potential content of the display. Future plans involve a full scale floor layout of the display.

The Compactus units have been installed in the new Spirit House and it is intended to move the whole collection of mammal skins and skulls into that area.

Department of Mineralogy: (R. O. CHALMERS, A.S.T.C., Curator; Mrs J. E. NAUGHTON, Technical Officer, Scientific).

Research. Work on the joint paper on Field Occurrence, Physical Properties and Morphology of Australites from new Australian Localities by Chalmers, Henderson and Mason is proceeding.

The geological occurrence and physical properties of a new occurrence of precious opal in acid volcanic rocks near Mullumbimby, New South Wales, was investigated.

Field work. Field work on australite investigations was centred on study of Pleistocene stratigraphy in the sandhills areas of the Leigh Creek District, South Australia and the "Walls of China" between Pooncarie and Balranald where high eroded dunes are extensively developed.

Visits were paid to two localities on the New South Wales-Victorian border where meteorites were collected in the past. A few days were spent in Broken Hill obtaining Broken Hill minerals from local collectors.

A short trip was made to the Mullumbimby area to investigate the field occurrence of precious opal in acid volcanic rocks. In connection with this investigation a short visit was paid to the University of Queensland and the Queensland Museum to examine similar specimens from other areas on the New South Wales-Queensland border.

Housing of collections. The transfer of the mineral collections from the basement in the old wing to the mineral store in the south wing is now complete.

Thefts of collections. All the specimens stolen from the gallery in March, 1968, viz. the glass models of famous historic diamonds, the cut prehnite cabochons and the faceted quartz were returned by post from Vancouver, presumably by the thief.

Information and Services. About 300 enquiries were received. The principal requests were for specimens of minerals, rocks and gemstones to be identified. With increase of interest in amateur mineral collecting, a number of requests were received for information on the geology of specific areas and location of mineral deposits and mining localities. A number of enquiries on preservation of building stone were received.

Information was given to research students at the University of New South Wales and the University of Sydney in connection with research problems that might be undertaken on the pegmatites at Euriovie, Broken Hill district and at Prospect.

Display. From time to time outstanding specimens are put on display. A special display of recent acquisitions was put in the Mineral Gallery. This consisted of specimens of gaspeite and other nickel minerals from Kambalda presented by Western Mining Corporation and specimens from the Cloncurry district presented by V. S. Daddow.

Department of Ornithology: (H. J. DE S. DISNEY, M.A., Curator; CAROLYN NELSON, B.A., Museum Assistant (to 13th February, 1969); PATRICIA N. MAXWELL, Museum Assistant (from 17th June, 1969).

Research. Records were continued on the seasonal variation of birds in the Mallee at Round Hill near Euabalong, including banding birds and a study of the breeding cycle. An ecological survey of the indigenous birds was made on Norfolk Island with Mr Smithers, and a paper prepared for publication. The main research on sex and age differences of Australian birds continued.

Field work. In continuation of the Mallee work six visits were made to the Round Hill Fauna Reserve, each of about a week's duration. A visit was also made in May to Menindee Lakes to study the effect of the recent good rains on the breeding of birds. Two visits of a fortnight each were made to Norfolk Island with Mr C. N. Smithers to study the ecology of the indigenous birds and also on the later visit to investigate the cause and give advice on how to control the destruction of petrels being found in heaps, having been eaten by some animal. This proved to be cats. On this survey on Norfolk a hundred birds were also banded, mainly sea birds.

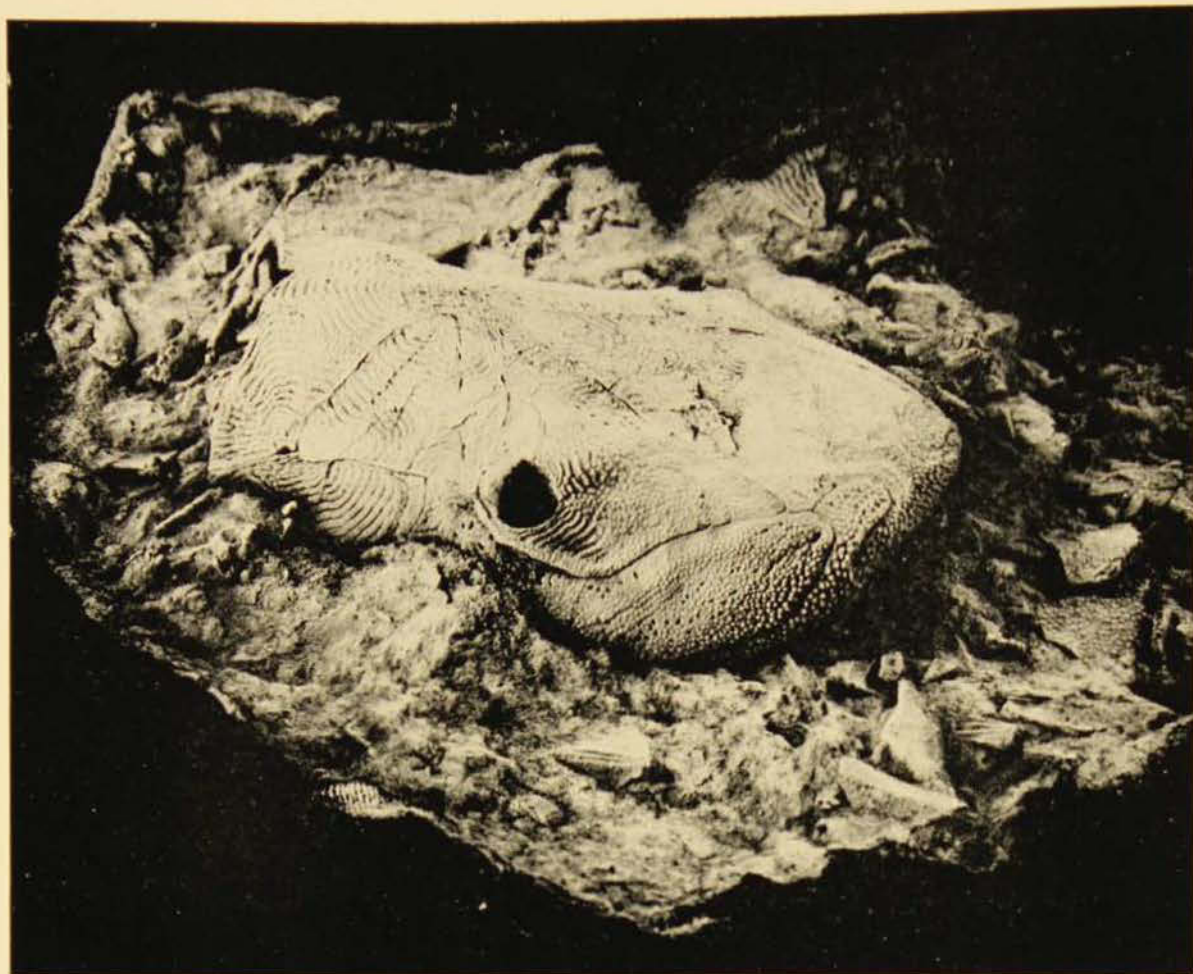
Collections. A total of 232 birds were received and registered during the year. One hundred and eighty-two were collected by Museum staff and eighty-two donated. Owing to other commitments it was not possible to have further specimens mounted for the identification gallery. Relabelling of the study collection in the drawers in the public gallery has continued.

Seventy specimens were obtained from Norfolk Island; the Museum previously had very few specimens from this island.

Department of Palaeontology: (A. RITCHIE, B.Sc., Ph.D., Curator; DOROTHY JONES, Museum Assistant).

The main emphasis of collecting and research work was directed towards fossil vertebrates and especially towards the Devonian fish faunas of western New South Wales. Two collecting trips to the Cobar-Louth-Wilcannia area led to the recovery of the largest quantity of well-preserved Devonian vertebrates ever found in eastern Australia. The fauna, largely of arthrodian fish, includes several genera and species, all of which appear to be new to science. Preliminary studies reveal that they are useful for stratigraphic correlation and for studies of arthrodire evolution.

Similar rich finds of Devonian vertebrate material were made in Victoria Land, Antarctica, by New Zealand geologists. Although originally destined for the British Museum because of the scarcity of vertebrate palaeontologists in New Zealand the material has now been sent to the Australian Museum for preparation and study.



An almost complete headshield of a new genus of arthrodiran fish from the Devonian rocks of northwestern New South Wales, found by Dr A. Ritchie and Mr K. Gregg of the Australian Museum. The head is 3 inches long. These fishes lived about 370 million years ago

The Curator collected Triassic fish from brickpits at Bowral and St Peters, Sydney, N.S.W. A rich deposit of bone-bearing cave earth, exposed in a quarry near Cow Flat, south of Bathurst, was brought to our attention by Mr T. G. Mason. This deposit was first visited by a Bathurst schoolboy, Norman Rutherford, who found a fine skull of the giant extinct macropod, *Sthenurus* which he presented to the Museum. The Curator later visited the site and recovered a large quantity of fossil marsupial remains. Large blocks brought back to the Museum for preparation yielded a complete skull of *Sarcophilus*, the Tasmanian devil.

Registrations during the year numbered 354 of which 36 were presented, 2 exchanged and 316 collected. Only a small proportion of the new Devonian fish material has been registered—the bulk has been stored in locality assemblages until preparation and sorting is completed. A considerable quantity will be set aside for exchange to build up a good comparative collection of Devonian vertebrates.

Rearranging, sorting and cataloguing of the collection continued. With the acquisition of the Devonian fish material the storage problem became critical. The stratigraphically arranged Krantz collection formerly housed in this store has been resorted into systematic categories and will be gradually incorporated into the main collection. The entire Tertiary mollusc collection has been transferred from pest-infested cabinets to new steel cabinets where it will be more readily accessible to workers on recent molluscs.

Approximately 220 palaeontological enquiries were dealt with in 1968–69, either through identification of material or reference to suitable literature.

Education Department: (Miss P. M. McDONALD, B.Sc., M.Ed., Education Officer-in-Charge; Mrs S. B. H. MAGUIRE, B.A., Miss W. J. MOORE, B.Ed., Mrs R. L. SHERIDAN, B.Sc., Dip. Ed., Mrs M. TYLER, A.S.T.C. (part-time), Assistant Educational Officers; Mr R. C. Inder, Technical Assistant).

Miss McDonald returned from her overseas study tour of museums on 26th August, 1968.

School Visits to the Museum. The total number of children attending the Museum classes organized by the Education staff was 24,647 comprising 519 visits. The number of classes making regular monthly visits had to be reduced again this year to provide a wider distribution of our facilities through the schools but even this curtailment was insufficient to cope with the numbers of classes requesting lessons. More staff and space are urgently required to cater for the educational needs of schools.

It was not possible to keep an accurate record of the number of schools visiting the Museum without appointment but 341 groups were registered at the main entrance.

Three classes were taken on field trips to study marine ecology and other requests had to be refused due to lack of time.

Several groups of handicapped children—spastic, deaf, mentally retarded, blind—were given special lessons suited to their disability.

Visits of Tertiary Students. A series of visits was made by various groups of trainee teachers from Sydney, Balmain, Alexander Mackie, Wagga Wagga, Newcastle and Wollongong Teachers Colleges and from St Joseph's Catholic Teachers College; they were given lectures on the museum educational services and nearly all watched demonstration lessons. Students from the Biology Departments of the universities and from the Art Departments of the technical colleges studied various exhibits as part of their class work.

Trainees and permanent staff from the New South Wales Ambulance Transport Service Board continued their series of visits to study venomous animals.

A field excursion on Aboriginal Art was arranged for a group of teachers at Broken Bay National Fitness Camp; this included a lecture, films, and recording rock engravings in the area.

Loan Services. A total of 199 loans were made during the year, comprising 127 collections of specimens and photographs and 72 travelling cases. Various specimens were added to the loan material from the curatorial departments, Taronga Zoo and other sources, and some material was withdrawn, due mainly to damage incurred during transit by rail or post. Three new cases on Aboriginal Art and one on the Platypus were completed and work is continuing on a further six cases of Aboriginal material.

Further specimens were prepared for future travelling cases and teaching purposes. Renovation and repairs have been carried out on loan and teaching specimens.

School Vacation Activities. Attendance at the school vacation film screenings was as follows:

September, 1968	..	..	..	..	..	..	..	3,274
January, 1969 ..	..	..	..	..	..	..	..	2,309
May, 1969 ..	..	..	..	..	..	..	..	1,432
Total..	..	..	..	..	..	..	..	7,015

Many of the play centres organized by the New South Wales Department of Education attended these film screenings as well as visitors to the Museum.

The Children's Room was visited by a total of approximately 9,700 people during the three school vacations, an average daily attendance of 285. Different displays and activities were arranged in the room for each vacation: "Our Melanesian Neighbours" in September, "Eskimo Summer" in January, and "Borneo Safari" 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 951 children and 18 qualified for membership of the Discoverers' Club, bringing the total active membership to 78. Meetings of the club were held in school vacations and members were taken on field trips to West Head to study and record Aboriginal rock engravings and to Little Bay to excavate an Aboriginal kitchen midden.

Eight senior members of the Discoverers' Club again assisted in the curatorial, preparation and photographic departments of the Museum for 3 weeks in the January school vacation.

The Education Week Exhibition of children's books, models, charts and other material 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.

Research. The results of some investigations carried on throughout 1967 were collated and roneoed copies were prepared under the title "Studies on Visitor Distribution in the Australian Museum Galleries".

Information and Services. Sets of free museum leaflets were sent to 71 school libraries, including those in other States and the Territory of Papua and New Guinea. A further 1,283 letters requesting information were answered; these included many requests for our class question sheets, which were sent to schools so that students could use them later during their museum visits when we were unable to offer further assistance.

Boy Scouts and Girl Guides were tested for their Australian Aborigines' and Naturalists' Badges.

A report on Miss McDonald's overseas study tour of educational work in museums was prepared and circulated to Education Officers in other museums in Australia and overseas.

Many of the Museum leaflets, including the Museum Educational Facilities leaflet, were revised before being reprinted.

Lectures on museum education were given to the Warringah Book Club and the New South Wales Branch of the Museums Association of Australia.

Miss McDonald took part in the preliminary discussions and was later elected to the Executive Committee of the newly formed New South Wales Branch of the Museums Association of Australia.

Formation of an Australian Working Group for the ICOM International Committee for Education and Cultural Action was instigated.

Display. All gallery labels were checked and many revised before their inclusion in new exhibits. The Education Officer-in-Charge took part in discussions of the proposed new Hall of Life. Three special displays were prepared and mounted in the Children's Room during the school vacations and an exhibition of children's projects was displayed during Education Week (see School Vacation Activities).



Winners of the prizes for having completed the two years series of Museum Walkabout questionnaires. This also gives entry to the Museum's Discoverers' Club

Back Row: Left to Right: Robert Hinch (Scots College); Claire Harwood (Sydney Girls High School); Mary Van Der Have (Riverside Girls High School); Gail Briaden (Strathfield High School); Geoffrey Peretz (Vauluse Boys High School).

Front Row: Left to Right: Mark Jeffries (Northcote Primary School, Victoria); Esther Agosten (Carlingford High School); Angela Clayton (Ascham).

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

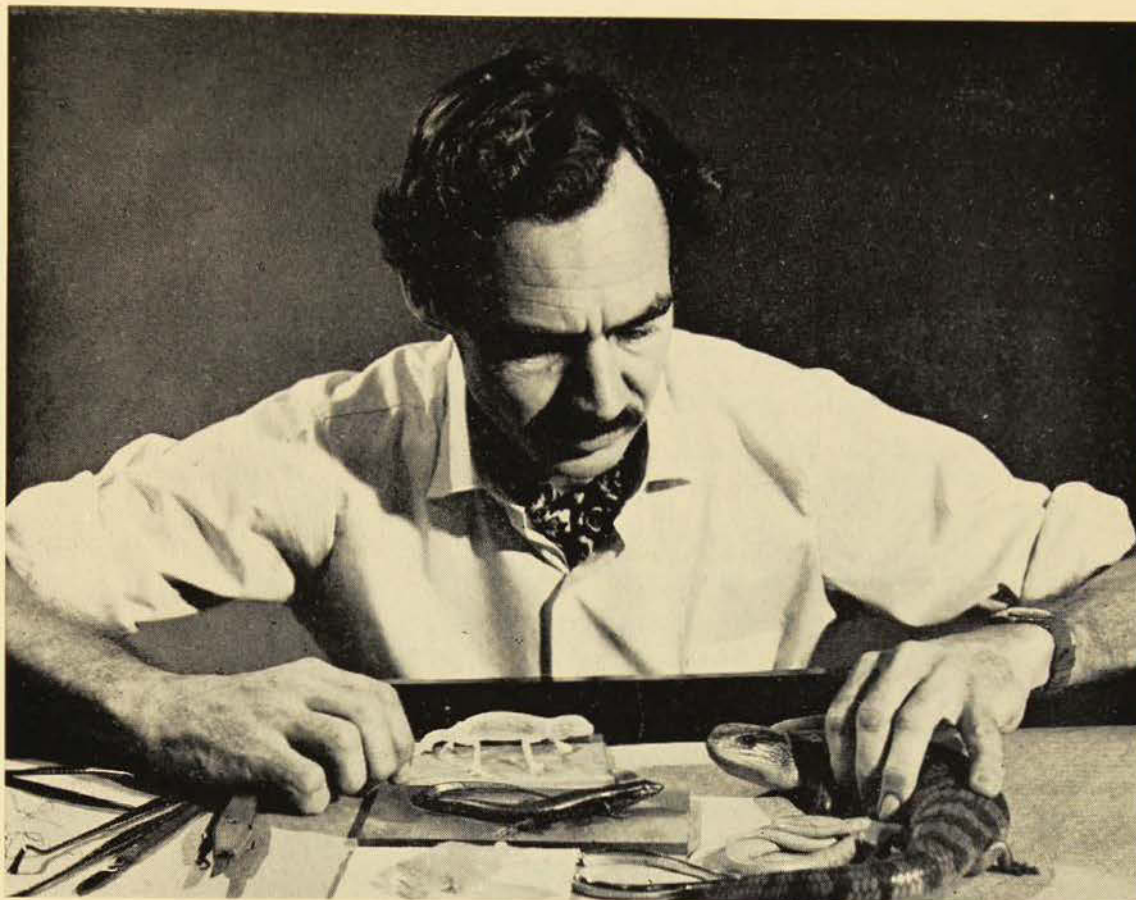
Art and Design Section: (D. RAE, B. BERTRAM, Exhibitions Officers; ELVIE BROWN, Ticket-writer; HELEN ASHTON, BEVERLY CREW, Production Assistants; DELLA CLARK, Typist).

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

Mr D. Rae spent 3 months in the U.S.A. and Europe studying recent trends in display which could be developed for use in the proposed Hall of Biology.

Mr R. Lossin and Mr K. Gregg spent 3 months in the Port Moresby Museum designing and building displays.

Assistance was given also to the Dubbo Museum and Historical Society, the museum at Kurnell and the Mitchell Library.



Mr Brian Bertram, Exhibitions Officer, with fibreglass casts prepared for the Reptile and Amphibian Gallery which is to be renovated. The finest details are registered in the silastomer mould, and transmitted to the cast. When painted the casts are difficult to tell from living material

A Technical Seminar was held in Adelaide in September and was attended by Mr F. J. Beeman, Mr B. Bertram, Miss H. Ashton, Mr P. Fluke and Mr C. Turner (Photography Section).

There has been an increasing demand by other departments for assistance in collection, taxidermy, metalwork, illustration and ticketwriting.

Library: (MARY G. E. DAVIES, B.Sc., A.L.A.A., Librarian; FELICITY A. ELWOOD, Library Assistant; JESSICA E. WATSON, Clerical Assistant).

The Museum library is growing steadily; periodical titles received have increased from approximately 1,300 in 1963-64 to 1,827 in 1968-69. The demand on the library has also grown partly because of the increase in staff of the Museum, partly because other libraries and also outside scientists and research workers have realized the richness of the Museum library's holdings in its special field.

During the year, 399 volumes were added to the library, 312 being books, the rest being periodicals and parts of series. Of these volumes 214 were received on exchange or given to us, including 85 books given to us from the library of the late Miss Barbara Dew, by her sister, Miss Elizabeth Dew. Currently the Museum receives 1,827 periodical titles of which we subscribe to 217, the rest are received on exchange or are given to us. Because of the disruption and delay caused by changes in staff no material was sent for binding except for four books urgently needing repairs and rebinding.

Seven hundred and seventy-four loans were made to libraries in all Australian States, both government and private. Three hundred and fourteen loans were supplied in the form of zerox copies both in Australia and to overseas libraries especially New Zealand and New Guinea libraries, though other countries including Malaysia are finding the Museum library a rich source of material. Many visiting and local scientists and research workers made use of the library as well as members of the general public. The number of visitors using the library is steadily increasing.

The 85 volumes of books from the late Miss Barbara Dew's library, included a complete bound set of *Australian Natural History* volumes 1-15, the Beaglehole edition of the *Endeavour* journal of Joseph Banks, Darwin's *Voyage of the Beagle*, and several books on the sea, marine life, Australian animals, birds and plants, in short a valuable collection of books on natural history.

The late Mr Melbourne Ward, in his will, left scientific books in his library to the Australian Museum. The Librarian visited Mrs Ward and made a preliminary examination of the library. A second visit was made to estimate the number of volumes. It is estimated that about 9,000 volumes are included in the library.

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).

Mr H. Hughes accompanied the Curator of Herpetology to Round Hill to obtain cine film footage and still photographs of lizard subjects.

Mr H. Hughes accompanied the Curator of Worms and Echinoderms to rain forests near Kyogle, to photograph and film giant earthworms which were being collected for the American Museum of Natural History. Mr C. Turner visited Canberra National Library to photograph Cook's journal in conjunction with his work at Captain Cook's Museum, Kurnell.

The pressure of photographic work delays the registration and filing of new material. This work was greatly assisted by the help of a Museum Assistant but it has not been possible to attend to all accumulated material.

The late Mr F. A. McNeill donated a large number of Barrier Reef photographic negatives to the collections.

Messrs L. Howes, A. J. F. Gibson and Mr A. Sinclair have each donated sets of colour transparencies (35 mm) ranging in subjects from insects to bird life. These have been of great use to the Education Officers.

A series of enlargements varying in size from 10 inches by 8 inches up to 6 feet by 4 feet have been prepared for an exhibition to be circulated throughout Australia by Kodak Pty Ltd. The display includes a number of colour prints made from 35 mm and 5 inch by 4 inch positive colour transparencies. Captions were written and other material supplied to Kodak. The exhibition is planned for November, 1969, in Sydney and then will be sent throughout Australia.

As subjects become available live specimens are being photographed in colour for use in planned displays of colour prints and illustrations for the Gallery of Reptiles and Amphibia.

Work for the year covered every aspect of Museum activity. Over 1,367 prints and negatives were made. The majority of photographs were used in Museum as well as overseas publications.

Two short documentary films dealing with Australian Aboriginal rock engravings and cave paintings entitled *Rock Engravings* and *Carnarvon*, which were completed last year, have been in demand. The film *Dangerous Reef*, giving an account of field work in South Australia with the Curator of Mammals, Mr B. J. Marlow, has been completed. It is an account of the life of the Australian Sea Lion (*Neophoca cinerea*).

The photographic premises which now contain black and white, colour, and X-ray equipment are very crowded. Proper storage space for much material and equipment is lacking and the one small studio is being used for both still and movie work.

Assistant Editor: (P. F. COLLIS).

The number of subscribers to the quarterly magazine *Australian Natural History* increased substantially during the year. This followed the commencement of a sales-promotion plan including the circularization of schools in all States and the sending of specimen copies of the magazine to potential readers nominated by subscribers.

However, very big increases in printing costs have made it necessary to increase the selling price of the magazine from 30c (35c posted) to 50c (55c posted) per copy and from \$1.40 to \$2.20 for an annual subscription (posted). The new prices will start with the December, 1969, issue.

Full details of the year's publishing activities appear under the heading "Publications".

Advertising of the Museum and its exhibits, cafeteria and film screenings was continued in Sydney newspapers, and *Australian Natural History* was again advertised in Sydney and interstate newspapers. Arrangements were made for a year's advertising of the Museum and its exhibits, publications and cafeteria to start in The Sydney Tourist Guide in July, 1969.

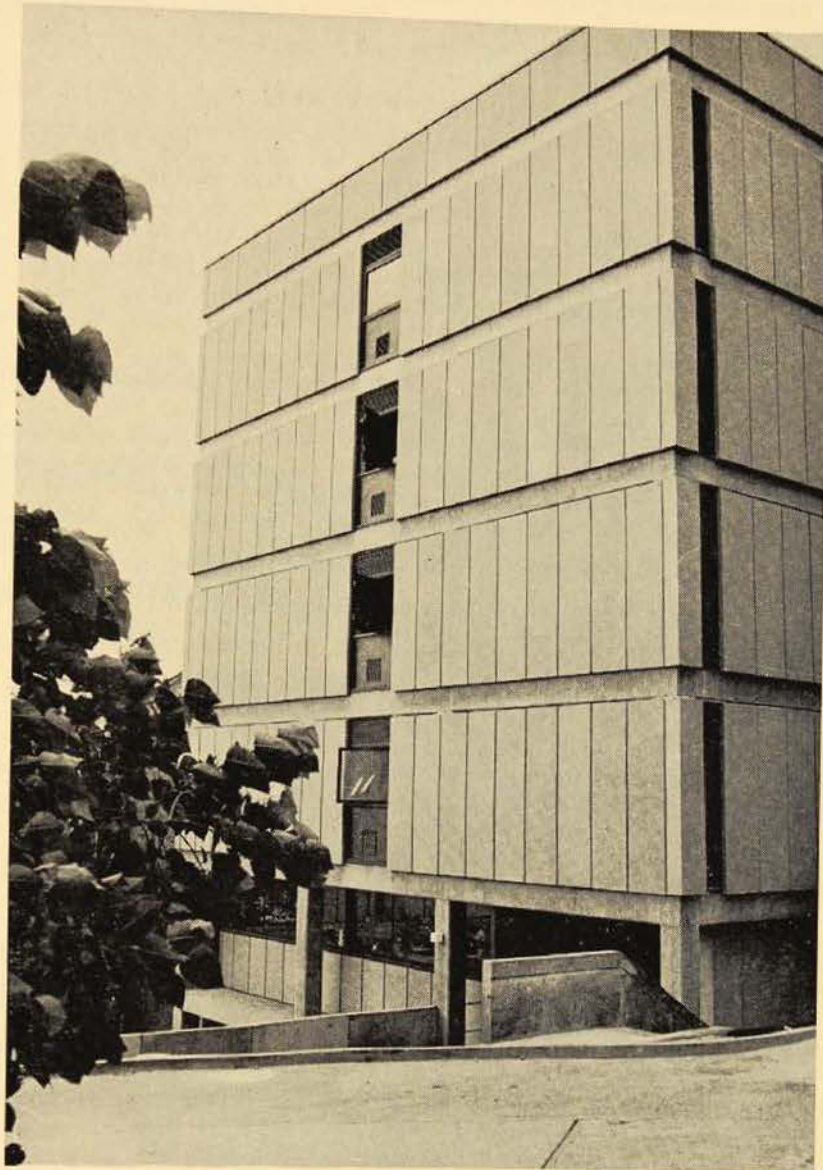
The Assistant Editor continued to act as Public Relations Officer, and answered many enquiries from the newspapers and the public.

ATTENDANCE

The counting devices have been in operation for most of the year. They were out of action for brief periods for repair. A total of 626,870 visitors was recorded. The attendance at film screenings during the school holidays was again over 7,000.

MUSEUM BUILDINGS

Construction of the new building to house spirit-preserved material was completed.



The new building completed in the southwest corner of the Museum's grounds to house spirit collections (upper four floors) and the major part of the Exhibitions Department (lower two floors). It has an air-conditioned silk screen room, a maceration room, steel workshop, and also houses a physiology laboratory. Spirit storage is Compactus-type movable storage on rails, which nearly doubles storage space

PUBLICATIONS

Nine parts of Volume 27 of *The Records of the Australian Museum* were published during the year—Nos. 11 to 19 inclusive. The preparation of the Index to Volume 27 was begun.

Nos. 3, 4, 5 and 6 of Volume 16 of the quarterly magazine *Australian Natural History* were published, and the articles for No. 7 were sent to the Government Printing Office. No. 4 was a special issue, devoted to Antarctica and its natural history. It contained 16 extra pages.

The fourth edition of the handbook *Exploring Between Tidemarks* was published, 10,000 copies being printed. This was 2,500 more than for the third edition and 5,000 more than for the first and second editions. Preliminary work began on the production of a second edition of the handbook *The Natural History of Sydney*.

A new free natural history leaflet, *The Portuguese Man-of-War or Bluebottle*, was published. Six existing leaflets were reprinted and four are in process of reprint.

Two articles published in *Australian Natural History* were reprinted for their authors.

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

Chalmers, R. O., 1969—

A New Occurrence of Precious Opal of Volcanic Origin near Mullumbimby, N.S.W.
Aust. Gemmol., X: (6): 10–13.

Disney, H. J. de S., 1968—

European Starling. *Aust. Bird Bander* 6 (3): 60–61.

Disney, H. J. de S., 1968—

White-naped and White-throated Honeyeaters. *Aust. Bird Bander* 6 (4): 84–85.

Disney, H. J. de S., 1969—

Robins of the Genus *Petroica*. *Aust. Bird Bander* 7 (1): 18–19.

Robins of the Genus *Petroica*. *Aust. Bird Bander* 7 (2): 38–39.

Griffin, D. J. G., 1968—

Hyastenus hilgendorfi De Man, a majid spider crab (Crustacea, Brachyura) new to Australia. *Aust. Zool.* 15: 103–196.

Griffin, D. J. G., 1968—

The designation of a neotype for *Cancer chabrus* Linnaeus (Decapoda, Grapsidae) and the status of *Plagusia capensis* De Haan. *Crustaceana* 15: 209–213.

Griffin, D. J. G., 1968—

Two new species of *Achaeus* (Crustacea, Decapoda, Majidae) from South Africa.

Griffin, D. J. G., 1968—

Ann. S. Afr. Mus. 52: 75–87.

Griffin, D. J. G., 1968—

Social and maintenance behaviour in two Australian ocypodid crabs (Crustacea, Brachyura). *J. Zool., Lond.* 156: 291–305.

Griffin, D. J. G., 1968—

A new species of *Cyclograpsus* (Decapoda, Grapsidae) and notes on five others from the Pacific Ocean. *Crustaceana* 15: 235–248.

Griffin, D. J. G., 1969—

Breeding and moulting cycles of two Tasmanian grapsid crabs (Decapoda, Brachyura). *Crustaceana* 16: 88–94.

Griffin, D. J. G., 1969—

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FINANCE

Expenditure from Consolidated Revenue for the year (excluding Statutory Endowment of \$2,000) was \$357,791.04 compared with \$295,958.33 last year.

Net income for Trustees' Funds (including Statutory Endowment) was \$48,098.59 compared with \$36,748.35 for 1967-68.

The cash balance in the Trustees' Accounts at 30th June, 1969, was \$16,945.64 including Grants of \$7,935.51 for special purposes. Trustees' Invested Funds at 30th June, 1969, 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.

W. H. MAZE,
President.

F. H. TALBOT,
Director.

Appendix

THE AUSTRALIAN MUSEUM—SUMMARIZED STATEMENT OF RECEIPTS AND
PAYMENTS FOR THE YEAR ENDED 30th JUNE, 1969

	RECEIPTS	\$	\$
Appropriation Account—			
Treasury Appropriation			357,791.04
Trustees' Account—			
General Funds—			
Statutory Endowment		2,000.00	
Grant towards Museum Requirements		6,000.00	
Museum Shop Sales		7,567.27	
Magazine Sales—Museum Shop		526.44	
Donations		376.28	
Subsidy from Sydney City Council		4,000.00	
Sale of Cine Films		796.00	
Interest		980.12	
Postage Receipts		283.97	
Rental for Cafeteria		470.00	
Royalties and Copyrights		1,388.35	
Contribution towards Upper Sepik Expedition		2,400.00	
Contribution towards Wildlife Conservation Exhibition		244.20	
Contribution from Papua and New Guinea Museum		5,654.62	
Miscellaneous Receipts		531.34	
			33,198.59
Grants—			
Australian Institute of Aboriginal Studies		300.00	
National Parks and Wildlife Service		2,000.00	
Rural Credits Development Fund		1,430.00	
		\$	
Australian Research Grants Committee Director		4,050.00	
Anthropology—Assistant Curator		2,520.00	
Ichthyology—Curator		4,600.00	
National Photographic Index of Australian Birds Transfer of Funds		2,749.00	
Donations		690.00	
		14,609.00	18,339.00
Balances as at 1st July, 1968—			
Cash at Bank and in hand—		\$	
Trustees' Funds		7,774.57	
Grants—			
Australian Institute of Aboriginal Studies		53.20	
Australian Research Grants Committee—Director		5,047.22	
		12,874.99	
Investments		12,330.00	25,204.99
			\$434,533.62

	PAYMENTS	\$	\$
Appropriation Account—			
Salaries, etc.	300,264.22		
Tea Money	218.80		
Rates	312.50		
Insurance of Buildings	100.00		
Travelling and Subsistence Expenses	6,610.71		
Motor Vehicles Running Costs	2,750.00		
Freight and Cartage	639.74		
Postal and Telegraphic Expenses	1,769.92		
Books, Periodicals and Papers	5,103.15		
Other Insurances	2,342.53		
Stores and Equipment	18,612.00		
Fees and Commissions	7,770.20		
Laundry Expenses	293.47		
Minor Expenses	3.80		
Grant towards Museum Requirements	6,000.00		
Storage Equipment	5,000.00		
			357,791.04
Trustees' Account—			
Costs of Publishing Magazine (net)	2,521.60		
Stock for Museum Shop	1,298.61		
Stores, Plant and Equipment	3,430.03		
Postages	778.41		
Travelling Expenses	1,151.96		
Museum Specimens	928.00		
Entertainment	397.15		
Miscellaneous Expenditure	484.42		
Freight	141.71		
Royalties and Copyrights	419.82		
Cine Film Production	2,731.55		
Research Grants	650.00		
Combined Upper Sepik Expedition	3,000.00		
Assistance to Papua and New Guinea Museum	5,654.62		
Teaching Aids for Education Section	375.25		
			31,963.03
Grants—			
Australian Institute of Aboriginal Studies—Travelling Expenses	\$ 54.00		
		54.00	
National Parks and Wildlife Service—			
Stores and Equipment	1,481.17		
Travelling Expenses	324.40		
		1,805.57	
Rural Credits Development Fund—			
Stores and Equipment	807.60		
Travelling Expenses	492.00		
		1,299.60	
Australian Research Grants Committee—Director—			
Stores and Equipment	1,543.36		
Travelling Expenses	240.00		
Freight	331.52		
Refund Salaries to Education Department	2,888.77		
Miscellaneous Expenses	9.15		
		5,012.80	
Australian Research Grants Committee—Anthropology—			
Stores and Equipment	756.62		
Travelling Expenses	1,379.70		
Miscellaneous Expenses	100.00		
		2,236.32	
Australian Research Grants Committee—Ichthyology—			
Stores and Equipment	1,656.62		
		1,656.62	
National Photographic Index of Australian Birds—			
Subsistence and Travelling	1,355.56		
Photography and Equipment	487.00		
Printing	822.29		
Miscellaneous Expenses	106.85		
		2,771.70	
Balance as at 30th June, 1969—			14,836.61
Trustees' Funds—			
Cash at Bank and in hand	9,010.13		
Investments	12,330.00		
		21,340.13	
Australian Institute of Aboriginal Studies	299.20		
National Parks and Wildlife Service	194.43		
Rural Credits Development Fund	130.40		
Australian Research Grants Committee—Director	4,084.42		
Australian Research Grants Committee—Anthropology	283.68		
Australian Research Grants Committee—Ichthyology	2,943.38		
National Photographic Index of Australian Birds	667.30		
		29,942.94	
			\$434,533.62