





the Australian Museum
1976 - 1977 **sydney**

REPORT
of
THE AUSTRALIAN MUSEUM TRUST
for the
YEAR ENDED 30 JUNE, 1977

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Further acknowledgments of co-operation are listed at Appendix 2.

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To the Hon. the Premier, Mr Neville Wran, QC,
MLA

Dear Premier,

In accordance with clause 18 of The Australian Museum Trust Act, 1975, I have pleasure in submitting to you on behalf of the Trust, the second report of the Trust.

Eleven meetings of the Trust were held during the year, the twelfth meeting being held on 23 June, 1977. At the first meeting for the year, on 24 June, 1976, Professor M. G. Pitman was elected President of the Trust, and Mr R. C. Richard was elected Deputy President.

When the year began there was one vacancy on the Trust. This was filled by Ms Carol Serventy, Conservationist and Writer, and currently President of The Australian Museum Society, on 24 November, 1976. Ms Serventy will serve as a member of the Trust until 21 April, 1978.

The Trust was active during the year in considering a number of major policy matters. In this 150th year The Australian Museum has achieved a standard of excellence in many of its activities and the Trust wishes to thank and congratulate the staff whose efforts have contributed so much to this success.

The Trust also wishes to express to you its appreciation of the Government's support during the year.

M. G. PITMAN, President.
D. J. G. GRIFFIN, Secretary to the Trust.
22 September, 1977.

Below: A special dinner to commemorate the Museum's 150th Anniversary was held in the Pacific Gallery on Wednesday, 30 March, 1977. Extreme left: Sir Roden Cutler and Lady Cutler and official guests arrive at the College Street entrance. Above: Earlier, a special dinner was held for staff of The Australian Museum

During its 150th year, The Australian Museum has continued to carry out its role as a major international institution—to increase and disseminate knowledge of man's natural and cultural heritage and to encourage understanding and appreciation of that heritage in the Australian region. To that end, the Museum is actively involved in education and research programmes both within and outside the Museum and has become increasingly active in extension activities and events which invite community participation and involvement. The attendance for the year was approximately 700,000, a rise of 22 percent over last year. Several hundred scientists and other specialists visited to study the collections and to consult with Museum staff. Some of the major events and activities of the year are described here.

150th Anniversary Celebrations

On 30 March, 1827, Lord Bathurst wrote to Governor Darling stating that he had received representations that it would be desirable to form a public museum at New South Wales, and he allowed a sum not exceeding £200 per annum to be dispersed for the purpose of assisting in the accomplishment of this objective.

On 30 March, 1977, The Australian Museum celebrated its 150th Anniversary. To mark the occasion, a special exhibition dealing with the Museum's history was opened by His Excellency the Governor of New South Wales, Sir Roden Cutler, VC, KCMG, KCVO, CBE, KStJ. Following the opening ceremonies, a celebration dinner was held after which the Honourable Neville Wran, QC, MLA, Premier of New South Wales, Professor Michael Pitman, President of The Australian Museum Trust, and the Museum's Director, Dr D. J. G. Griffin spoke of the Museum's outstanding contributions to the community and to science during the past 150 years and of its plans for even greater activity in the future. It was announced that Caltex Oil (Australia) Pty Ltd were sponsoring the sesquicentenary celebrations and a cheque for \$20,000 was presented

to the Museum by Mr Arthur Fitzgerald, General Manager of Economic and Corporate Relations for Caltex. (Further special exhibitions, events and activities will be held throughout the year.)

The exhibition, which was open to the public from 31 March to 26 June, portrayed The Australian Museum's contributions to scientific research in the fields of evolutionary zoology, environmental studies and anthropology over the past 150 years. One display recreated part of the Museum as it was a hundred years ago. Two audio-visual shows told its story. Various stages of the Museum's construction were illustrated by old plans (some of Museums which were never built) and by a model of the Museum building as it may be in the future. Old documents dating back to 1836, from the Museum's archives, charted the history of legislation by which the Museum is governed. Other sections included a display of beautiful old microscopes and descriptions, through old photographs and publications, of fieldwork and collecting and educational activities late last century.

Small temporary displays were exhibited outside the Museum at Overseas Telecommunications Commission (Martin Place), Bank of New South Wales (Wynyard), CBC Bank (Head Office, Martin Place) and David Jones (Elizabeth Street and Market Street stores); display stickers and poster displays were placed at Museum Station and at Town Hall Station.

In support of the Museum's 150th Anniversary, the Public Transport Commission of New South Wales mounted a statewide visit-the-Museum-by-train promotion, placing large, colourful posters designed by Museum artists and describing the year-long celebrations in every train station in New South Wales. ABC Radio's hour-long 'Science Show' was devoted entirely to the Museum on the Saturday following the official date of the Anniversary. Colourful celebration flags, designed by Museum artists were placed along William Street in front of the Museum and across Hyde Park (Park Street) and

at Martin Place. They remained for a month and will be raised again for a month at the opening of each major exhibition. As a gesture of support, the Sydney City Council waived the fee for the use of the flag poles.

During the first week of the celebrations ethnic dance performances were staged at the amphitheatre at Martin Place during lunch hours, a different group performing each day. These included the Mornington Island Dancers (Aboriginal), the Hibiscus Entertainers (Tongan), the Polynesian Association, a group of Indonesians, and students from Summer Hill and Artarmon Schools. The total audience was some 22,000 people.

In conjunction with the Sun newspaper, the Museum held a competition for the best natural history collections made by children aged 18 years and under. The project was divided into four age groups—under 8, 8–11, 12–15 and 14–18. Collections were limited to fifty specimens and the emphasis was on collections of non-living specimens such as shells, fossils and minerals. The winning entries will be displayed in the foyer of the Museum's Education Centre during the August school holidays.

Above right: This model of the Australian Museum including proposed future additions, was displayed as part of the 'History of the Museum' exhibition

Below right: The Australian Museum staff, photographed in the College Street foyer in March 1977, during the Sesquicentenary Celebrations

Dr Cogger's career started when he joined the Museum as a Cadet Preparator in 1952 at the age of 16. In 1955, he was given a full-time traineeship to Sydney University. After graduating in Science in 1959, he returned to the Museum as Assistant Curator of Birds, Reptiles and Amphibians. In 1961, he gained an MSc degree from Sydney University, and was appointed Curator of Reptiles and Amphibians. He was awarded the first PhD from Macquarie University in 1970.

Dr Cogger was Honorary Curator of Reptiles at Taronga Zoo Park from 1968-74 and is a Research Associate of the California Academy of Sciences. Since 1976, he has been Honorary Consultant of Nature and a member of the International Commission for Zoological Nomenclature.

Dr Cogger has carried out extensive field work in most parts of Australia, in New Guinea, the Philippines and in the southwest Pacific region. This work has included participation since 1966 as a consultant with CSIRO Division of Wildlife Research in major faunal and ecological surveys of Coburg Peninsula, McArthur River and Alligator River regions, Northern Territory. In 1969, he participated in the Scripps Institution of Oceanography/Yale University Expedition to New Guinea aboard the research vessel *Alpha Helix* to study the population genetics of free-living vertebrates. During 1972-73, another *Alpha Helix* expedition took him to Ashmore Reef, off Western Australia, as part of a study on the biology of sea snakes.

Above left: Dr Des Griffin

Below left: The Premier, The Hon. Neville Wran, announces the appointment of Dr Des Griffin as The Australian Museum's new Director, at the official opening of the 'Geological Exhibition', on 17 August, 1976

Dr Cogger's current research interests include a biogeographic survey of the islands of Torres Strait, a biogeographic and ecological survey of rainforests in eastern Australia, and the use of electronic data processing techniques in the storage and retrieval of biological and bibliographic data.

Director Emeritus

On 30 March, at the special dinner celebrating the 150th Anniversary of The Australian Museum—in the presence of His Excellency the Governor, Sir Roden Cutler, and Lady Cutler, the Honourable Neville Wran, and 320 invited guests—in the galleries of the Museum, Dr John Evans, Director of the Museum from 1954-66, was honoured by The Australian Museum Trust.

In March 1966, the Trustees placed on record their appreciation and recognition of Dr Evans' service to the Museum. Now they have carried that recognition a step further by conferring upon him a special and, to date, unique honour. On behalf of The Australian Museum Trust and the staff of The Australian Museum, the President, Professor Michael Pitman, presented Dr Evans with this citation, which reads:

"On this, the occasion of the Sesquicentenary of The Australian Museum, and in recognition of his outstanding contribution to the development and high standing of the Museum during the tenure of his Directorship, The Australian Museum Trust hereby confers on John William Evans, the title, *honoris causa*, of Director Emeritus."

Dr Evans came to the Museum with distinguished academic, research and administrative records. But it is for his record as a past Director of The Australian Museum that he was honoured on this occasion.

During the eleven-year tenure of his Directorship he wrought numerous and important changes in the Museum. He was responsible for major new building programmes—the first in many decades. He

initiated major new gallery developments. He encouraged radical new approaches to our educational, exhibition and publication programmes, and he obtained the first real increases in staff establishment for many years, which he combined with drastic changes in recruitment methods.

But most important, he brought to the staff of the Museum a new spirit of achievement—and a renewed sense of pride in the Museum's history and traditions.

New Manager for Lizard Island Research Station

An era in the development of the Lizard Island Research Station terminated with the resignation of Mr Steve Domm, who left his post as Resident Director on 30 November, 1976. In the three years he managed the station, he was very much responsible for converting a hot, bare, uninhabited and isolated corner of Lizard Island into a viable and well-used marine research station.

An exhibition of Kashmir Handicrafts in the Activities Room of the Museum's Education Centre complemented the special exhibit, 'Life In India and the Himalayas'



Gregory Millen/Australian Museum

The new Manager of the Lizard Island Research Station, Dr Barry Goldman, took up his appointment on 13 December, 1976. Dr Goldman has a long-standing association with The Australian Museum, having been the Director's Research Assistant from March, 1967 to June, 1970, and having visited the Museum on numerous occasions subsequently for further research and consultation. He was lecturer in the School of Natural Resources, University of the South Pacific, Suva, Fiji, from May, 1974, to September, 1975, where he was responsible for much of the early organization and curriculum development for the then newly created Diploma in Tropical Fisheries course. Dr Goldman has experience in collecting a broad range of marine animals and has worked in and studied a wide variety of tropical coral reef environments throughout the South Pacific, including many sites along the Great Barrier Reef, Papua New Guinea, Fiji, the Solomon, Cook, Gilbert, Tuvalu, Wallis, Society and Marquesas Islands, Samoa, Tahiti, and French Polynesia. His present research interests are centred on the effects of fishing intensity on the fecundity of protogynous reef fishes.

Queen's Fellow

Dr Susan Oldfield has come to The Australian Museum on a two-year Queen's Fellowship in Marine Science. She is working in the Department of Marine Invertebrates (Echinoderms), in the field of ophiuroid (brittlestar) systematics.

The conventional taxonomy of brittlestars is based on external morphological features, many of which are subject to variation due to growth and habitat differences. Dr Oldfield is using a scanning electron microscope to examine the internal skeletal anatomy of the jaw apparatus of numerous brittlestar species. Since these internal features vary in a systematic way, they can be used to corroborate or reorganize current brittlestar classification systems.

Dr Oldfield received a BA at the University of Oxford in 1972, then a PhD at the University of

Performances of Indian dance and music were held on Sunday afternoons in the Skeleton Gallery during November, 1976. These performances, held in association with the special Indian exhibition featured the instrumentalist Dr Sardool Singh and dancers Krishnan and Shakuntala Nair. The programme attracted a total of 1,489 people and was arranged by the Asian Dance and Music Centre of Australia, and Mr G. Hunt, Education Officer.

Mineral Gallery Opening

The new Mineral Gallery and special Geological Exhibition to mark the 25th International Geological Congress in Sydney was officially opened by the Premier of New South Wales, the Honourable Neville Wran, QC, MLA, on 17 August, 1976. Over 1,000 people attended the opening. The Premier's opening address was followed by a short speech by Academician V. Sobolev, President of the International Mineralogical Association. He thanked The Australian Museum on behalf of the invited IMA delegates, remarked on the importance of Museums for mineralogical research and commented favourably on the displays and the beauty of Australian minerals. He presented the Museum with a polished disc of Russian jade with a map of Russia inlaid in silver and garnet. Inspection of the exhibits was followed by a concert performance of 'Journey to the Centre of the Earth', composed by Rick Wakeman, conducted by Peter Foster and performed by the combined Warringah Symphony Orchestra, Warringah Choral Society, members of the Touring Theatre Company of Sydney, and soloists.

Young visitors to the Museum, looking at casts of Australian gold nuggets which formed part of the 'Geological Exhibition', held to celebrate the 25th International Geological Congress which was held in Sydney in August, 1976

Gregory Millen/Australian Museum



Highlights of the Geological Exhibition included mineral displays by the Mineralogical Society of New South Wales; a specially lighted revolving case of Australian gemstones, arranged by the Gemmological Association; a display of Australian gold which included models of historical nuggets; an open display of rocks collected during Australian Antarctic expeditions in 1911-14 (Mawson Expedition) and 1947-49 (Heard Island); an Australian oil and gas exhibit which included models of off-shore rigs; Satellite Imagery (Landsat photographs) of Australia; a geological strip map of Australia; New Zealand stone artefacts collected on the Cook voyages, and a moon rock from the Apollo 16 mission, on loan from The National Aeronautics and Space Administration (NASA), USA. The exhibition remained open for public inspection for two months.

Only the first stage of the New Mineral Gallery was completed. This involved rehousing the systematic collection in the newly mirrored bronze florentine cases around the inner side of the gallery; placing gemstones and precious metals back on display in security cases on the east wall, and arranging the world famous Broken Hill collection in a long case on the west wall. Other Australian minerals, meteorites and tektites were placed in temporary cases in the foyers outside the gallery.

New Mineral Acquisitions

Funds provided by The Australian Museum Trust enabled a number of new spectacular mineral specimens to be purchased for the gallery displays. Two important Australian minerals were a gold nugget (283.5g) from Leonora, WA and an unusual mass of coarse crystals of dyscrasite (silver antimonide) representative of earlier material from the Consols Mine, Broken Hill, NSW.

Exceptionally fine, large crystals of minerals from Peru included splendrant platy brown hübnerite (manganese tungstate) set amidst clear quartz

crystals; lustrous metallic grey tetrahedrite (a complex silver bearing sulphide) and dark amber yellow orpiment (arsenic trisulphide). Gem material included green tourmaline and a cut white beryl (150 carats) from Brazil, and emerald crystals in matrix from Russia. Secondary minerals from the Deccan Traps of India were represented by a radiating group of clear delicate natrolite crystals (sodium hydrated alumino-silicate) and an unusual stalactitic form of prehnite (calcium aluminum hydroxy-silicate). Other choice minerals bought were radiating needles of stibnite (antimony sulphide), pink rhombs of smithsonite (zinc carbonate) from Tsumeb, Africa and yellow translucent sphalerite (zinc sulphide) from Colorado, USA.

Important donations of minerals from copper and uranium mining fields in Africa were received from Mr Demetrius Pohl, Katanga, Zaire, and Tsumeb Corporation, South West Africa. A splendid example of yellow chrome cerussite crystals (lead carbonate) on dark gossan matrix from Magnet, Tasmania was given by Mr A. Chapman, an Associate of the Mineral Department.

Ethnographic

Three major collections from the Pacific Islands and Indonesia were purchased. The most important was the Forge collection of 104 traditional Balinese paintings on woven cloth. The collection was made by Dr Anthony Forge, Professor of Anthropology in the Department of Prehistory and Anthropology, Australian National University, during fieldwork in 1971-73. This collection is one of the largest and most systematically documented collections of its kind in the world. Most of the works are from the Kamasan

Right: Attendants in nineteenth century uniforms during the 'History of the Museum' exhibition



Gregory Milten/Australian M

School, the centre of this art style in the district of Klungkung in Bali. The collection also includes examples of cloth painting from Bangli, Batuan and other areas of Bali, for comparison. Some of the paintings can be dated to the nineteenth century and many were obtained from family temples or from the artists themselves while others were specially commissioned by Dr Forge. Among the latter are paintings by Manku Mura, one of the leading artists in the Kamasan School. The collection covers high quality paintings for religious use, average quality pieces for everyday use, works done specifically for sale to tourists, and a set of four showing the traditional techniques of this style of painting. Six paintings show transitional forms between the traditional style and various modern styles which have proliferated since the 1930's. The collection consists of wall hangings, pairs of flags, curtains, ceiling hangings, large paintings of Balinese weekly, monthly and yearly calendar systems, and strip paintings of stories depicted in panels. The paintings were used on ceremonial occasions in various parts of temples and their subject matter covers cosmology and religion, stories from classic Hindu literature and magical folk tales. The collection is extremely valuable for research into these aspects of Balinese culture, as well as for the study of Balinese art.

Under a new acquisition policy adopted by the Museum Trust, a field collecting expedition to the New Hebrides was undertaken by Mr Kirk Huffman following the completion of his term as Temporary Assistant Curator of Anthropology at the Museum. The expedition, organized in conjunction with the New Hebrides Cultural Centre, Port Vila, was designed to collect examples of the material culture of the Mbotgo't people of south-central Malekula Island. Sometimes erroneously called the 'small nambas', the Mbotgo't are one of the few remaining traditional groups in Melanesia, having maintained their almost complete isolation in the mountainous interior of Malekula until about 1968. Mr Huffman's visit in 1977 was his third since he began fieldwork

among the Mbotgo't in 1973. He purchased for the Museum an outstanding collection, totalling 116 specimens including ritual items as well as some items of everyday use. The Mbotgo't are now the best represented group in the Museum's New Hebrides collections. On behalf of the Trust, Mr Huffman also presented a selection of significant pieces to the New Hebrides Cultural Centre to assist in the development of their national collections.

The Department also purchased a collection of Irian Jaya artefacts from Dr M. T. Walker, Bathurst, NSW. Dr Walker has spent three years in Irian Jaya, much of the time in the Asmat and Dani areas. Forty-one items from these areas were purchased, filling many gaps in our coverage of the material culture of these peoples.

In addition to these purchases, the Department also received several donations of note. Mr S. Kellner, of Waverley, NSW, presented a basketry pig figure from the Middle Sepik area of Papua New Guinea, to mark the Museum's 150th Anniversary. Ms E. M. Simpson, of Colchester, England presented, through the office of the New South Wales Agent-General in London, artefacts from various Pacific Islands, including the Marshall Islands and the New Hebrides. Ms J. Cannon, of Mosman, NSW, presented a small collection of items from Africa collected by her in 1972.

Except where an artefact is appreciated and valued only for its aesthetic qualities, it is, without documentation, almost valueless. Pictorial archives which illustrate how and in what contexts these artefacts are or were used are also essential. It is pleasing, therefore, to report that in addition to some important donations of artefacts, the Department received copies of originals or some important archival materials. Mr C. W. Marshall, from whom the Museum purchased an important collection of Papua New Guinea artefacts in 1973, presented his original field notebooks, written in the 1920s and 1930's. The Department also acquired photographic



Gregory Millen/Australian Museum

Mr Alex Leckie, a specialist potter from Scotland, teaches children the finer points of pottery making at the Museum's after-school 'Drop-In' programme

materials on the Solomon Islands from Dr A. Capell, and of various parts of the Pacific from Ms L. J. Martin. Ms Martin also presented a collection of artefacts from the latter region. A collection of artefacts from Bougainville Island, Papua New Guinea and from Australia was bequeathed to the Museum by the late Ms E. McFadyen.

Sydney Harbour Fish Survey

A study of fish distribution in Sydney Harbour has been under way since February, 1972. The harbour

was arbitrarily divided into ten different areas, including the freshwaters of upper Middle Harbour, Lane Cove River, Parramatta River and their tributaries. During the last five years, fishes have been collected from all areas by a variety of methods including seines, gill nets, rotenone and quinaldine anaesthetics with hand nets. In addition, quarterly bottom trawls at twenty-four different sites in the harbour have been made for the last four years in conjunction with biologists from New South Wales State Fisheries.

To date, 485 different species have been collected; an additional 85 species (many of these larger sharks and rays) are known from old museum specimens, giving a grand total for the harbour of 570 species. This striking total compares with the 396 species recorded from England and northwest Europe, 447 species from Lord Howe Island and its coral reef, and 287 species from Chesapeake Bay in the USA. A total of 13 new species have been or will be described from the Sydney Harbour collections.

The vast majority of species occur in the outer Sydney Harbour where coastal conditions prevail. The vast quantities of water coming through the Sydney Heads on each tidal exchange have been instrumental in diluting effluents discharged within the harbour system. Further up the harbour, and particularly in the estuarine portions of Parramatta and Duck Rivers, there is a decrease in the number of fish species present. Although some of the decrease is due to decreases in habitat variability and salinity, water pollution has certainly influenced fish distribution there. During the five years of the survey, as water quality has improved, a small but significant number of fishes have returned to the Upper Parramatta and Duck Rivers. We are now in a position to further document any increases in species numbers in different areas of the harbour.

Preliminary computer analyses of the quarterly trawling samples are now under way; fish distribution indicates Sydney Harbour can be divided into three major ecological regions. A proposed survey of invertebrates in the harbour by other Australian Museum scientists may give further information in this area.

Hawkesbury River Estuary

Estuaries are places of great natural beauty and productivity. Thus they are valuable to man for recreation and fishing. They are also used in a variety of other ways including waste disposal,

extractive industry and transport. Estuaries are also very interesting from a scientific point of view because of their strong gradients, fluctuating nature and role in the life-cycle of many species. Paradoxically, the research effort into estuaries has been meagre in NSW.

Dr Alan Jones from the Museum's Department of Environmental Studies has initiated a study in the Hawkesbury estuary that aims to describe and analyse the communities of benthic (bottom-dwelling) animals in relation to features of the environment such as water salinity and sediment type. Sampling is boat based and employs a Smith-McIntyre grab which is operated by power winch. Samples are sieved and sorted and the numbers of different species counted. These data will then be subjected to a wide range of numerical analyses which should aid the testing of existing hypotheses and the generation of new ones.

This study not only encompasses the entire length of the estuary but also accommodates time-related effects by carrying out sampling during each of the four seasons. To date, summer and autumn sampling has been completed. An additional feature of this project is that it will provide base-line data in the event of future environmental impact.

Drop-in Programme

Since it began in March, 1976, the Drop-in Programme has provided creative after-school activities for children living near the Museum. The programme runs each Tuesday and Thursday from 3.30-5.30 pm. The activities offered relate to the interests of the Museum and have included the study of other cultures through crafts, music and dance, collecting small animals in a nearby vacant lot and studying them with microscopes, making models of volcanoes and casting fossils in plaster. Regular visits are made to the gallery exhibits, behind the scenes to look at the collections, and to exhibitions elsewhere in Sydney. These act as inspiration for follow-up activities.



Gregory Millen/Australian Museum

During the course of the programme, the Museum has received excellent co-operation from local schools and community organizations in publicizing 'Drop-in'. A total of 167 children from 21 schools have attended since 1 July, 1976, an average of 20.5 per afternoon session. During the first school term of 1977, an average of 29 children attended each afternoon, 50 percent higher than for the corresponding period in 1976. Comments from children, parents and teachers indicate the programme is greatly valued by the community.

Two talented young people, Paul and Gilla Pulati, act as tutors for the programme in consultation with Mr Glenn Hunt, Education Officer. Many specialist tutors, including overseas visitors, are also involved for specific projects.

A grant from the Community Arts Board of The Australia Council, enabled the programme to run from September to December, 1976. The Australian Museum Trust provided the balance of funds. A grant from the Bernard van Leer Foundation will enable the programme to be developed for up to three years from 1 July, 1977.

Outer Urban Exhibits

Recognizing the desirability of providing a service to outlying suburbs with poor access to the Museum, a pilot travelling exhibit was prepared using specially engaged temporary staff.



Gregory Millen/Australian Museum

Above left: Ms Faith Singh from India teaches children fabric printing using hand carved wood blocks, in the traditional Indian manner, as part of the 'Drop-In' programme

Below left: Schoolchildren participating in the Museum's 'Drop-In' programme were taken behind the scenes to explore the Museum's Conservation Laboratory by the Head of the Materials Preservation Section, Sue Walston



Gregory Millen/Australian Museum

Geoff O'Donnell, Assistant in the Museum's Department of Anthropology, measures a New Hebridean basketry pig figure, presented to the Museum by a leading Sydney artefact dealer, to commemorate the Museum's 150th Anniversary

This exhibit, 'Man, A Peculiar Primate', based on primate evolution, consisted of a flexible, integrated system of panels and display cases capable of being transported in a 35cwt goods van and erected by two or three men. The first showing was at Merrylands, in the Holroyd Council Chambers for a period of one month from 4 February, 1977. Response from the target areas was excellent, and the exhibit has been booked out for the remainder of the year.

In recognition of the necessity of cultural support for these outer urban areas and the success of the pilot project, the Government of NSW has made available funds for the continuation of the Museum's Outer Urban Programme. Another exhibit is now being prepared and others are at planning stage.

Computerization

As mentioned in previous annual reports, considerable advances have been made in pilot studies designed to explore the problem involved in using computers to process, store and retrieve data associated with the Museum's vast collections. This work has been supported primarily by grants from the Australian Biological Resources Study.

During the past year, full-scale development of this programme has been achieved. The entire herpetological collection, dating from the mid-1800's and numbering approximately 70,000 specimens, is now serviced by a computer-based catalogue which permits rapid retrieval of associated data on a wide range of criteria. Computer-generated distribution maps can be produced on request, while effective editing and updating of the data base is now possible for the first time. Microfiche facilities permit large volumes of data to be provided at low cost for scientific workers around the world.

In the Department of Ichthyology, collection station records from 1969 are currently stored on computer files while, as in Herpetology, geographic data for older records are being reprocessed and encoded for the computer record.

The Department of Anthropology, under grants from the Australian Institute of Aboriginal Studies, has been proceeding with an ambitious programme of developing a computer-based descriptive catalogue of its large and important collections of Australian Aboriginal ethnography.

New Wildlife Index

Owing to the continuing success of the National Photographic Index of Australian Birds, as exemplified by its involvement in the publication of the Reader's Digest *Complete Book of Australian Birds*, it was decided during the year to extend the activities of the Index to include mammals, and possibly other groups of animals at a later time. To encompass this changing role, the name of

National Photographic Index of Australian Birds has been changed to the National Photographic Index of Australian Wildlife. The two current Indexes (Birds and Mammals) will be administered by the Trust, acting upon the advice of separate advisory panels.

SCIENTIFIC DEPARTMENTS

Department of Anthropology

Over the past five years, major changes have taken place in the location and arrangement of the Department's collections. With the Pacific Islands' collection now rehoused in the Yurong Street site, it has been possible to sort, check and catalogue about 80 percent of the collection. For the first time in 90 years, this and other sections of the Department's collections at the Rushcutters Bay store rooms can now be regarded as being in reasonable, though not ideal, conditions. During 1976-77 Ms Wakelin-King completed the sorting, checking and listing of artefacts relating to Ancient Civilization, the Americas and Indonesia, and it is now possible to use those collections for research, exhibition and other educational activities. Similar work is in progress on the African collection and of collections of musical instruments and weapons. Through the assistance of Professor A. Rohn, University of Kansas, Wichita, and Professor M. B. Stanislawski, School of American Research, Santa Fe, New Mexico, important sections of the American Indian holdings were documented, revealing that the Department holds some important materials from the Great Plains and southwest areas of the USA. In conjunction with these documentation projects, detailed photographic records have been made of American Indian pottery and basketry.

Ms Wakelin-King and Mr O'Donnell rationalized the filing systems for data relating to the collections in general, especially items exchanged with other institutions, and devised a cumulative system for exhibitions pertaining to the Department.



A striking poster panel, produced by Museum artists, was placed on display under contract with Transportation Displays International, in the Arrival Lounge of Sydney's International Airport

Mr O'Donnell catalogued over 100 house and canoe models, and rehoused them at the Rushcutters Bay storerooms. He also processed two major collections purchased during the year—the Walker collection from Irian Jaya, and the Huffman collection from the New Hebrides. Mr O'Donnell and Ms Wakelin-King jointly registered the large collection of contemporary items purchased in 1972 for the *Indonesia Today* travelling exhibition, and arranged the storage of the Forge collection of 104 Balinese



Gregory Millen/Australian Museum

cloth paintings in special acid-free conditions. This collection, probably the most important of its kind in the world, has been fully photographed and catalogued.

In January, 1977, Ms M. Koettig was appointed to replace Ms Gastineau, as Graduate Cataloguer for the computer catalogue project for the Australian ethnographic collections. She revised several sections of the establishment file, greatly improving its usefulness. She completed major sections covering shields, baskets and carved trees, and entered these on to the file, together with data on spears, spear-throwers and tjuringas, previously prepared by Ms Gastineau. The file now holds data on over 2,500 specimens and is available for consultation by both Museum staff and others interested in Aboriginal material culture.

New card catalogues were devised for the Pacific Island ethnographic collections and the general osteological collections. Ms Czuchnicka initiated a project to recatalogue and re-identify in terms of sex, age and pathology, the human osteological materials and has processed about one-half of the collection. She also rehousing and recatalogued the 18th century specimens attributed to Cook's voyages and began work on a detailed catalogue of the *malanggan* carvings from New Ireland. This group of carvings has been photographed by Ms J. Steele in a joint project between the Museum and the Institute of Papua New Guinea Studies.



Heather McLennan/Australian Museum

Krishnan Nair from the Asian Dance and Music Centre of Australia teaches children Indian dancing during 'Drop-In to The Australian Museum'. Some twenty children were also tutored in the art of Indian dancing during a course on Folk and Classical dances of India, in January, 1977

In another photographic project, the Department received copies of photographs taken in 1934 by Professor H. I. Hogbin of his anthropological field-work on Wogeo Island, Papua New Guinea. Professor Hogbin is allowing the Department to make copies of his extensive photographic collection, which constitutes invaluable research data for the study of material culture. Copies of the photos have been deposited as relevant, with the Institute of Papua New Guinea Studies and with the Solomon Islands Museum. The work is being carried out by Mr A. Townsend, Government Printing Office.

At various times during the year, the Department provided training facilities for several non-museum people. Ms S. Frangos joined the Department under the 'attachment' scheme of the Museum Studies Diploma course at the University of Sydney. Training was also offered, under the schools' 'Work Experience Programme', to three school students.

The year was a busy one for the Department in exhibition work. Whereas in 1975-76 the Department was involved in seven exhibitions, in 1976-77 it assisted with ten; the material loaned for the Opera House exhibition of South Pacific music and dance were returned to the Museum; the musical instruments display was transferred from the Australia Music Centre to the Seymour Centre of the University of Sydney; and planning proceeded with three other exhibitions to be staged in 1977-78. The major exhibition effort of the year was the temporary exhibition 'Life in

Aleki Prescott, from Tonga, regarded by many as one of the best woodcarvers of the South Pacific, visited the Museum during the August 1976 school holidays. He repaired a pre-1915 Tongan Kava bowl using sennet rope specially air-freighted from Tonga. He also gave demonstrations of traditional wood carving

Gregory Millen/Australian Museum



Gregory Millen/Australian Museum



India and the Himalayas' as detailed in the introduction. Ms Wakelin-King prepared a special 'Walkabout' (childrens educational questionnaire) for the exhibition.

At the request of the Agent-General for NSW in London, a small exhibition of traditional and contemporary Aboriginal arts and crafts was prepared for his London offices.

The exhibition on the history of the Museum contained a section on the work of the Department over the last 100 years and as part of the publicity for the 150th anniversary, a small display of Asmat artefacts was shown at David Jones' Elizabeth Street store. Two small displays were mounted in the Museum Bookshop to advertise articles on New Zealand and the New Hebrides, appearing in *Australian Natural History*. Units were also prepared for the Outer Urban Travelling Exhibit and the Museum train, and the first item in the 'Treasures of The Australian Museum' programme was displayed. A small section on Aboriginal desert adaptations was provided for the Arid Zone Gallery.

Three seminars were organized by the Department. Professor B. Reynolds, James Cook University of North Queensland, Townsville, gave a general staff seminar on the ethics of acquisition of museum specimens, Professor J. Golson and Mr P. Hughes, Department of Prehistory, Australian National University, Canberra, gave a Cellar Seminar on the prehistory of agriculture in the highlands of Papua New Guinea, and Dr R. Fletcher, Department of Anthropology, University of Sydney, gave a Cellar Seminar on human proxemics and kinesics.

Two important collections were purchased during the year—the collection of Balinese cloth paintings from Professor E. Forge of Canberra and a selection of Irian Jaya artefacts from Dr M. T. Walker of Bathurst.

Mr Huffman organized a collecting expedition to the New Hebrides where he purchased an important suite of artefacts not previously represented in the

Museum's collections. These collections are detailed in the Introduction.

The Museum's sesquicentenary year also marked an important event for the National Museum and Art Gallery of Papua New Guinea which opened its new buildings at Waigani on 27 June, 1977. The opening was conducted by the Prime Minister, the Right Hon. M. Somare, who is also President of the Board of Trustees of the National Museum and Art Gallery. The Australian Museum was represented at the official opening by Dr J. Specht, who also delivered, on behalf of The Australian Museum Trust, seventeen artefacts from our anthropological collections. This gift marks the first phase of implementation of the policy adopted in 1973 of repatriating to Papua New Guinea selected artefacts to assist the National Museum and Art Gallery in the development of its collections. The present donation included several kinds of artefacts not previously represented in their collections—a *malanggan* mask, Buka paddles, a stone figure from New Ireland and spears from Manus Island and New Britain. The majority of the specimens returned were obtained by The Australian Museum in the nineteenth century; all are important from historical as well as from a scientific aspect.

The Department also assisted Ayer Productions in scenes for its film, *The Last Wave*, which were shot within the Aboriginal Gallery. Several members of the Department appear as extras in the film. A sled used by Douglas Mawson on his last polar expedition was loaned to Dick Smith Electronics to help advertise an Antarctic flight in March, 1977. Artefacts were also loaned to Professor A. Rohn, in connection with courses in American ethnography and archaeology at the University of Sydney.

Ayer Productions shoot scenes in the Museum's Aboriginal Gallery for their film The Last Wave



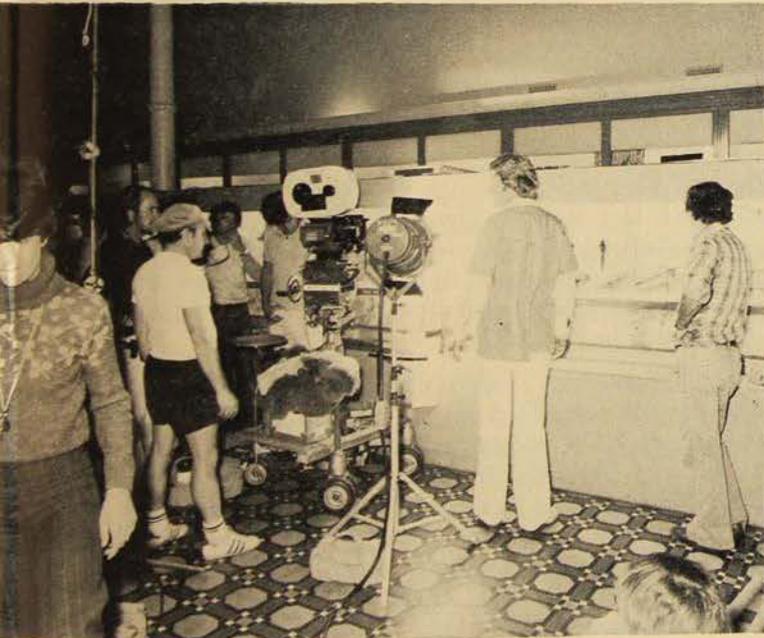
Gregory Millen/Australian Museum

During the year, Mr Moore concentrated on completing his Hunter River Valley archaeological survey. An extensive excavation was carried out in a large rock shelter on the MacDonald River, north of Wiseman's Ferry. Material from this and five earlier excavations was analysed and with the assistance of Mr D. Hain, CSIRO, Division of Computing Research, the results were processed through a series of statistical programmes. Ms V. Attenbrow was engaged on a grant from The Australian Museum Trust to assist with the analysis of the resultant print-out.

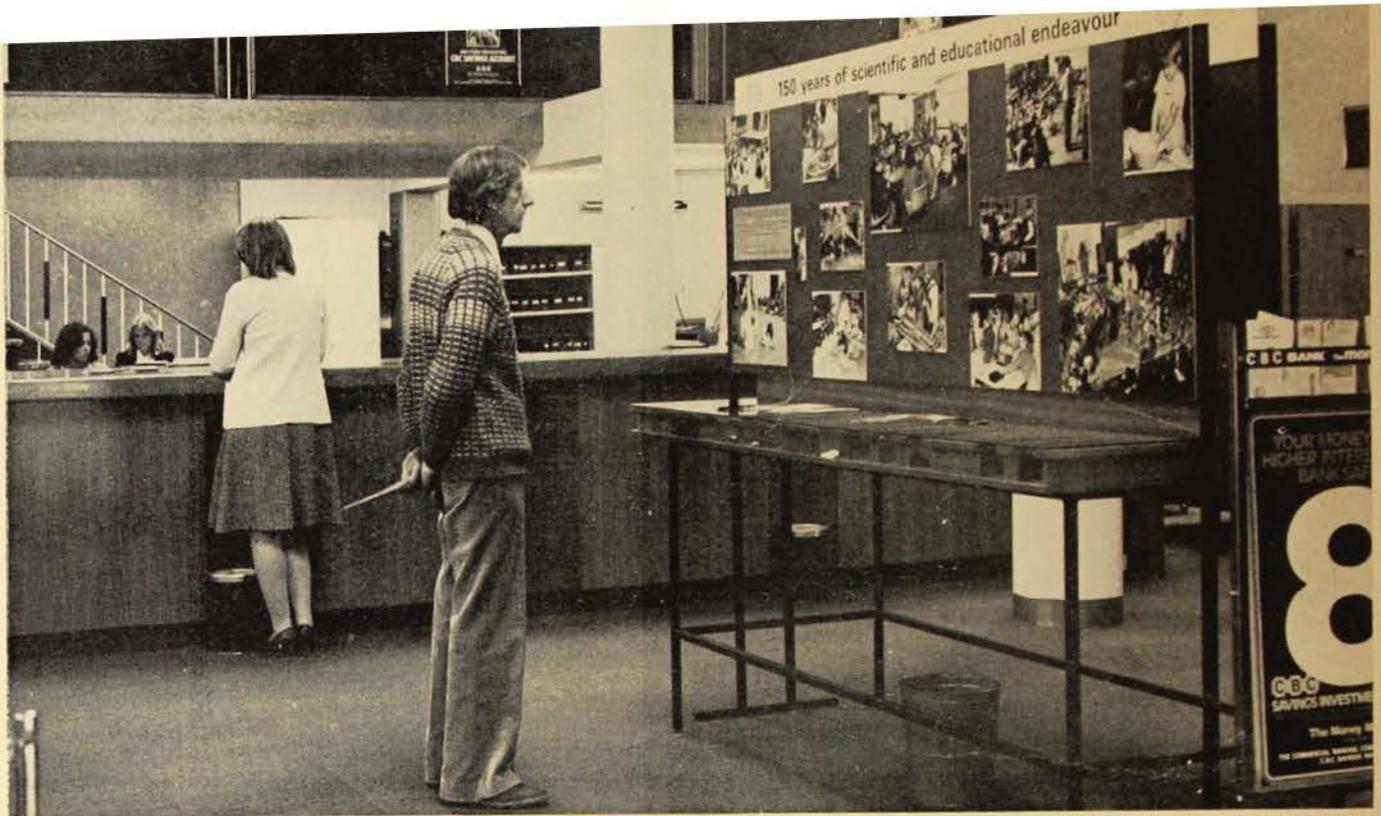
Mr Moore's monograph on his Cape York/Torres Strait research, *The Australian-Papuan Frontier in the 1840's*, was accepted by the Australian Institute of Aboriginal Studies for publication in its Ethnohistory series.

Assisted by a special grant from The Australian Museum Trust, Dr Specht and Ms Czuchnicka visited Norfolk Island in October-November, 1976 to conduct an archaeological enquiry into pre-European settlement of the island. They were accompanied by Dr B. F. Leach, Department of Anthropology, University of Otago, New Zealand. Although Norfolk was deserted when discovered by Cook in 1774 and when the first penal colony was established there in 1788, stone artefacts and other evidence of pre-European settlement have been reported at various times. Some of the stone artefacts are in the collections of The Australian Museum. A thorough survey of the island in 1976 did not locate any sites of pre-European date other than what appears to be a much-disturbed site on Slaughter Beach. Additional finds of stone artefacts were reported by local inhabitants. Dr Specht and Ms Czuchnicka are preparing a monograph on this research.

Ms A. Ross was employed on a grant from The Australian Museum Trust to conduct a preliminary analysis of potsherds from two test excavations conducted by Dr Specht on the Huon Peninsula of Papua New Guinea in 1972. Initial results suggest



Gregory Millen/Australian Museum



Howard Hughes/Australian Museum

A small temporary exhibit was displayed in the Head Office of the CBC Bank at Martin Place as part of the Museum's Sesquicentenary Celebrations

that although the sites are less than one kilometre apart and are of approximately the same age, containing similar styles of pottery, different clay sources may have been used to make the pots. Further work is planned on the mineralogical and chemical composition of the sherds.

Preparation continued on the final report of archaeological and other investigations on Long Island, Madang Province, Papua New Guinea. This work, conducted in 1973, involves seven authors and is being compiled under the general supervision of Dr Specht. Its principle concern is the human utilization of a volcanic island that has been highly active throughout its history. Thermo-luminescence dating of selected sherds has been carried out by

Dr A. Mortlock, Faculty of Science, Australian National University. These dates, together with radiocarbon-14 age determinations and a detailed study of the tephrostratigraphy of the island are providing a framework for the prehistory of human settlement on this island.

Ms Czuchnicka began the analysis of human osteological remains from an Aboriginal burial site at Barham, NSW, excavated in 1972 by the National Parks and Wildlife Service of NSW. She also provided assistance to Dr A. G. Thorne, Department of Prehistory, Australian National University, Canberra, for the identification and study of human remains from Norfolk Island and from Watom Island, Papua New Guinea.



Gregory Millen/Australian Museum

A display panel describing Museum activities was erected at 'Yengo', the country property of Mr and Ms Peter Pigott, during a garden party held as a fund-raising activity by The Australian Museum Society

Under Dr Specht's direction, Mr D. Bell began a review of fishing gear from the Solomon Islands, held by The Australian Museum and by the Otago Museum, New Zealand. A multi-variate analysis is planned with the assistance of Mr D. Hain.

Department of Arachnology

Work on material from the eastern Australian rainforest survey proceeded with the examination of spider collections from twelve sites in north Queensland and northern NSW. Besides recording many new genera and species, several families previously unrecorded from Australia were noted. Many species previously recorded only from the Melanesian region are recognized.

The rainforest litter fauna, which was the subject of particular collecting efforts, provided numerous species of amaurobiid spiders whose affinities are now under study. Other amaurobiid work has concentrated on the genus *Forsterina* and its allies involving material from Australia, New Caledonia and Lord Howe Island.

A taxonomic project on the genus *Atrax* involving blood protein comparisons is proceeding in collaboration with the Commonwealth Serum Laboratories. The first results from this work are currently being analysed.

Sorting and housing of much rainforest survey materials has added substantially to the collections.

Part of this material (family Linyphiidae) has been sent overseas for detailed examination. Assistance with this work was provided by Mr J. Crancher (Trust short-term assistance grant) who also helped with the compilation of distribution data for the genus *Atrax*.

A large backlog of material from various sources has been incorporated into the collections with the assistance of two voluntary workers, Ms R. Sheridan and Ms H. Shusta.

A valuable contribution was made by Ms K. Spitzer (student vacation assistant) who translated a large number of keys from Latin to English. Mr J. Crancher worked on the rainforest and *Atrax* collections.

A start has been made upon the computerization of the collections. For this purpose, the system of providing each accessed specimen (or group of data-identical specimens) with a registration number has been revived under the prefix letters KS. The work of updating and renewing the catalogue cards is continuing with assistance from temporary helpers.

A short field trip to the Singleton area and several day collecting trips were made. Identification work has been undertaken for the NSW Department of Agriculture, the Forestry Commission of NSW, Macquarie University, University of Sydney, CSIRO, and the Commonwealth Serum Laboratories.

Numerous public enquiries were dealt with. Facilities, and data on the tick collections were provided for Mr B. Lauder of the NSW Department of Agriculture and on the Dinopid spider collections for Mr A. Austin of the University of Sydney.

Department of Entomology

Dr McAlpine and Miss Schneider carried out work on the Acalyptrate Diptera of Australia. An additional six new species of *Poecilohetaerus* (Family Lauxaniidae) have been discovered and descriptions



Heather McLennan/Australian Museum

are being prepared. Study of the new genus *Librella* was carried out. Evidence was found indicating a possible relationship of this little known Australian fly to the cryptochetid genus *Phanerochaetum* from the Oligocene of Europe. Theoretical work on the peculiar spiral vibrissae of certain Australian clusiid flies was completed and written up. Theoretical work on the evolution of stalked eyes (following last year's field studies of *Achias*) was developed and the project completed for publication. A study of the upside-down flies of Australia and the Ethiopian Region was completed for publication, a new family of Diptera being established for these and the Oligocene genus *Anthoclusia*.

In Dr Smithers migration research programme, observations and records have been accumulated on the Zodiac Moth, *Alcides zodiaca*. This spectacular, day-flying moth is common in north Queensland and is a regular migrant but remarkably little is known of its biology.



Heather McLennan/Australian Museum

In the Wanderer butterfly project, analysis of data on overwintering behaviour, nature and size of clusters, and their distributions through the Hunter Valley, Sydney Basin and Adelaide area has been carried out. The sites chosen for overwintering appear to have some topographical features in common, for example, they are located on high ground (usually in wooded gullies) adjacent to large, flat expanses of land such as wide valley floors or open agricultural land. The data was partly prepared for publication.

A considerable amount of data on population movements of other species has been accumulated for late analysis; most of this relates to various species of moths and butterflies.

Dr Smithers has completed taxonomic treatment of several families of Psocoptera from the Melanesian island arcs. The most important of these is the Myopsocidae, a family of bark-dwelling species. When all families have been dealt with, this taxonomic

Various ethnic groups, sponsored by the Museum, performed in the amphitheatre at Martin Place during the first week of the Museum's 150th Anniversary Celebrations

work is to be used as the basis for a zoogeographical study of the arcs.

Parallel with the island work, taxonomic treatment of Australian material has revealed several new genera and two families not previously known from Australia, Amphientomidae and Epipsocidae. The former family is remarkable in that the wings and bodies are clothed in scales, as in the moths. Recently collected material from the Northern Territory was found to contain a species similar to one known from Indonesia.

Dr Smithers was asked to complete a chapter on the Psocoptera for a textbook on African insects. He also completed a comprehensive paper on Irish Psocoptera which was based on a large collection made by Mr J. V. Peters and which contained a new species. Discovery of new species in Britain is now a rare event.

Fieldwork by Dr Smithers on Lord Howe Island and Norfolk Island resulted in new records of species from both islands. The oak leaf-mining moth (*Phyllonorycter messaniella*) was recorded from Norfolk Island for the first time. This European species recently became a pest in Australia but had not been known to occur on Norfolk.

Several important collections have been given to the Museum. Mr N. W. Rodd presented a large collection of Hymenoptera (wasps and bees). He was a colleague of the late Tarlton Rayment whose collection, containing many types, was somewhat neglected prior to his death. The Rodd collection contains some of Rayment's species and these specimens now assume considerable importance as reference materials.

Mr Graeme Rushworth presented his butterfly collection. About 200 of the known 360 Australian species are represented amongst the 3,500 specimens. Several of the species are now rare or are no longer found in the localities from which Rushworth collected them due to urban expansion or industrial development etc. The collection is particularly rich in Victorian species.

Mr L. C. Haines presented a collection of about 600 beetles. Again, many of these were taken from localities in which the species are no longer common.

A significant collection of Diptera from Cape York Peninsula donated by Ms M. Walford-Huggins included a remarkable ant-mimicking platystomatid fly representing a new genus.

These collections represent one of the ways in which amateur scientists associated with the Museum continue to assist in providing knowledge about our fauna.

Through these donations and the specialized collecting of staff, together with smaller amounts of material from other donors, about 20,000 specimens were added to the insect collections of which about 550 were type specimens.

The policy of finding specialists to work on parts of our collections on which staff are not actively carrying out research has continued and 136 loans were sent out, representing several thousand specimens.

In addition to several collecting trips in New South Wales, Dr Smithers visited Lord Howe Island and Norfolk Island. A longer field trip with Professor Thornton of La Trobe University was made to the New Hebrides as part of the Melanesian arc zoogeographical research project. This completed the field work programme for the arcs, which has been supported by the Australian Research Grants Committee.

Students from the International Training Institute have again visited the Department and discussed the operations of a scientific department.

Department of Environmental Studies

A benthic survey of the entire Hawkesbury River estuary was initiated. Its aims are to describe and analyse the benthic invertebrate community patterns in time and space, relate these to features of the environment, and provide baseline data in anticipation of future environmental impact by man.

Dr Jones, in collaboration with non-museum colleagues organized a numerical taxonomy workshop for users and developers of the CSIRO TAXON computer programmes. The workshop was held in the Museum and attracted participants from Brisbane and Canberra.

The Shelf Benthic Survey Report for Caldwell Connell Engineers and the Metropolitan Water Sewerage and Drainage Board has been completed under the title, *An Ecological Survey of Nearshore Waters East of Sydney, NSW 1973-75*.

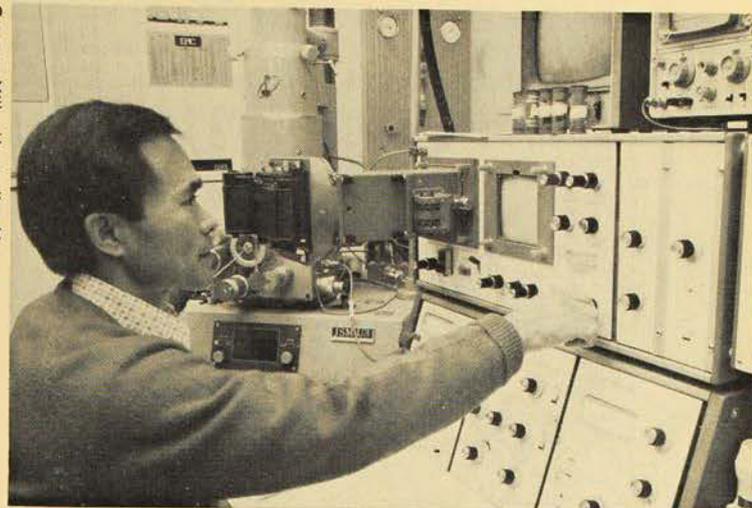
Members of the Department have represented the Museum at various environmental enquiries, prepared advisory statements for local government, and delivered papers and seminars.

During 1976-77, research was carried out on the effects of fire and of clear-felling forestry practices on bird and mammal populations. This was largely a continuation of work carried out in previous years but the studies on fire were extended to the Brisbane Water National Park. Two areas in the park have been studied since 1967 with emphasis on the ecology and behaviour of honeyeaters (Meliphagidae). The results of this research have been prepared for publication and have established a base on which to measure the effects of fire on bird populations. Accordingly, in co-operation with the parks service, both areas were burnt and studies are now in progress on the effects of these fires on birds. This work complements departmental studies on the effects of fire on small mammals following the 1972 wildfire at Nadgee Nature Reserve, Eden. The Department is continuing to monitor small

Ms H. Dlugaj and Mr R. Lawrence, temporary assistants, gave valuable service working on the collections. Ms L. Uxley has spent considerable time reorganizing the departmental library.

Of the thirty visiting workers who studied in the department during the year, eleven of them were from overseas. In the total are included nine Australian students studying fish systematics and ecology. During the year, 57 loans totalling more than 2,500 specimens have been made and fourteen exchanges involving more than 890 specimens were sent out. Specimen identifications were made for a number of scientists in universities and State and Federal organizations. A one month survey indicated the department answers more than 1,200 inquiries annually. A number of scientific papers were reviewed for journals and public lectures given.

Gregory Millen/Australian Museum



Research Assistant, E. K. Yoo, from the Museum's Department of Malacology, photographs minute molluscs with the aid of the scanning electron microscope (SEM) at the University of Sydney



Gregory Millen/Australian Museum

First recorded specimen of Achatina falica, the Giant African Land Snail, from Australia. Collected near Cairns it was sent to the Museum for identification. Since then the area has been closely investigated and some hundreds of specimens collected, but it now appears that its infestation has been controlled

Department of Malacology

Studies on minute gastropods were continued by Dr Ponder and Mr Yoo and the third major manuscript resulting from this work was submitted. Dr Ponder also continued work on several other projects, in particular on the carrier shells *Xenophora*. Land-based fieldwork supporting these projects was carried out in northern NSW and Queensland and HMAS *Kimbla* was used to collect samples from the shelf and slope off Sydney, Lord Howe Island and southern Queensland. Additional fieldwork was carried out in Victoria where the main object was to collect representative collections of Tertiary Mollusca in conjunction with Mr T. A. Darragh of the National Museum of Victoria. Dr Ponder also visited the Bureau of Mineral Resources, Canberra, to study Tertiary Mollusca from Papua

New Guinea. Mr Loch participated in a CSIRO cruise to the Gulf of Carpentaria and obtained a very useful collection of benthic molluscs.

Dr J. B. Burch continued work on Queensland rainforest molluscs, Australian freshwater snails and the land snail genus *Helicarion*. Dr Burch resigned following an extensive period on leave without pay, to resume his previous position in the University of Michigan.

Two very significant donations to the collections were the large collection of South African molluscs of Mr R. Stobbs and an excellent collection of Queensland gastropods presented by Mr I. Loch. Trust assistance enabled the virtual completion of the curation of the primary type collection and the Shelf Benthic Survey collection. A very high level of assistance was obtained from volunteer workers.

Department of Mammalogy

Mr Marlow accompanied by Mr Mike Dingley, Preparator, undertook a collecting trip to the Northern Territory from 4 July to 10 August, 1976. Specimens of mammals not previously represented in the collection were obtained.

It was not possible, due to overseas travel commitments, to continue studying the life history of the Australian Sea lion in South Australia. However, the opportunity to visit a large breeding colony of Australian Fur Seals was offered by Mr R. Warneke. The visit, which took place at Seal Rocks off Phillip Island, Victoria, was made between 19 and 30 November, 1976. Most valuable information on the comparative behaviour of the Australian Fur Seal (*Arctocephalus pusillus doriferus*) and the Australian Seal lion (*Neophoca cinerea*) was obtained. The Technical Officer, Ms Linda Gibson, made a collecting trip to the Singleton area from 17 to 21 January.

The Department provided a number of specimens and services to outside organizations including

Long Horn Steer and rhinoceros horns which were lent to the Department of Textile Physics, CSIRO, Ryde for a display held on 22–23 July. Photographs were supplied to *Australian Encyclopaedia*, a number of specimens were made available to an artist working on National Parks and Wildlife Service posters, deer antlers were supplied to the Australian Opera Company, and identifications were made of animals illegally imported into the country. Identifications were also requested by Department of Customs (Animal Quarantine).

Department of Marine Invertebrates (Crustacea and Coelenterates)

Dr J. K. Lowry joined the department as Curator in August, 1976. His particular research interest is the taxonomy and zoogeography of marine gammaridean amphipods. Currently, he is studying shallow water amphipods from the subantarctic islands of New Zealand and Australia with Mr G. D. Fenwich, who joined the department in April for a five-month period.

With the help of Mr D. Beechy (CSIRO), the Crustacean collections are being converted to a computerized data retrieval system. Mr A. Hantos (TAMS) worked for one month preparing trial data for the conversion.

Dr Lowry participated in cruises aboard HMAS *Kimbla* and FRV *Kapala*, collecting deep sea Crustacea off the Queensland and NSW coasts. In May, the department participated in a joint collecting trip to Lord Howe Island with phycologists from the Department of Botany, Melbourne University. The resulting collections are presently being studied and incorporated into the Museum holdings. Preliminary studies have indicated an interesting warm temperate/tropical crustacean fauna in the shallow waters around the Island with fairly low diversity and large population size.



Gregory Millen/Australian Museum

Department of Marine Invertebrates (Worms and Echinoderms)

Dr Hutchings was awarded an ARGC grant to study the distribution and abundance of the cryptofauna of Lizard Island. Together with her Research Assistant, Ms Weate, four trips were made to Lizard. In January, 1977, a series of samples were collected at various depths (10, 20, 30, 40m) on Yonge Reef, outer barrier, and are currently being analysed. Samples collected in 1975 and 1976 are being identified to species level. Many of the polychaetes are either new species or new records for that area.

In conjunction with Dr Rainer of CSIRO Division of Fisheries and Oceanography, a paper on the polychaetes of Careel Bay, Pittwater, NSW is nearing completion. This paper includes a key which should be relevant to most NSW estuaries. All the material from the Merimbula Survey carried out in 1975-76 with Professor John Day, a visiting Research Fellow, has been identified and is being written up for publication. In conjunction with Dr Leon Collett, Ministry for Conservation, Victoria (formerly from NSW State Fisheries), over 200 diving core samples have been collected from *Posidonia* sea-grass communities throughout NSW estuaries. Approximately half this material has been sorted and identified. Large quantities of material from NSW State Fisheries and The Australian Museum South Coast Survey has been incorporated into the collections.

Mr Stan Edmonds from the South Australian Museum, a leading world expert on the systematics of sipunculans (peanut worms), spent some time in the Museum identifying and reorganizing the collections. The sipunculan collection, which is a good representation of the Australian fauna, is now completely identified.

Several polychaete types have been deposited in the collections by Dr J. Kudenov, Ministry for Conservation, Victoria.



Gregory Millen/Australian Museum

Top: Dr Frank Rowe, Department of Marine Invertebrates (Worms and Echinoderms), assisted by one of the school students who participated in the 'Work Experience Programme'

Above: Amanda Lowe from Bethlehem College, Ashfield, examines an Indonesian bronze artefact while assisting in the Museum's Department of Anthropology, as part of the 'Work Experience Programme'

Dr Rowe, together with Drs Ponder and Lowry, spent nine days on HMAS *Kimbla* during November, 1976, collecting invertebrates between Sydney, Lord Howe Island and Brisbane, to depths exceeding 2,000m.

In April, Dr Rowe spent two weeks on Lizard Island with staff from CSIRO (Cronulla, NSW) examining local waters for plankton content and collecting ascidians for gut analysis. A week was spent with Mr A. Birtles at James Cook University, Townsville, Qld. A two-day dredging programme was conducted from the University's research vessel *James Kirby* from which the echinoderms, particularly holothurians, were identified and their local distribution analysed.

In June, Dr Rowe visited the museums in Hobart and Melbourne to complete documentation of the echinoderm collections as a step towards the revision of the Australian echinoderm fauna.

Dr Rowe is currently revising the asteroid genera *Hacelia*, *Ophidiaster*, *Tamaria* and *Nepanthia* in co-operation with Ms L. M. Marsh, Western Australian Museum and has almost completed a revision of the asteroid genera *Nardoa* and *Gomophia*, which will involve the description of several new taxa. A report on the holothurian fauna of Guam has been completed.

Ms Ogg spent three weeks collecting echinoderms from Lord Howe Island and Elizabeth Reef on the Sydney University's research vessel *Matthew Flinders*.

Museum Education Officers and Discoverers collect rock specimens while on a field trip near Sydney during the August, 1976 school holidays

Gregory Millen/Australian Museum



She made two visits to Lizard Island with staff from CSIRO Cronulla, and made collections of echinoderms and assisted with feeding experiments on plankton and crinoids.

The study of ascidian settlement by weekly examination of plates in Port Hacking, Sydney, has shown discrete settlement periods and will allow age determination of individual specimens to be made. Growth rates of three species of local ascidians are now being studied. Histological examinations are being carried out on the gonads.

Since joining the department in February, 1977, as a visiting Queen's Fellow, Dr Oldfield has been reviewing the ophiuroid collections in which she has found new species records and extensions of

species range in Australian waters. She is concurrently undertaking a scanning electron microscopical study of internal skeletal elements of the ophiuroid families Ophiocomidae, Ophiodermatidae, Ophiotrichidae and Amphiuridae in order to determine generic limits within them. Reports on the genera *Ophiotrix*, *Macrophiotrix*, *Ophionereis* and on collections of ophiuroids from Swain Reefs, Great Barrier Reef, and Minnie Waters, northern NSW are almost completed.

Over 1,800 echinoderms received from donations and staff field trips have been incorporated into the collection during the year, an increase over previous years. Of particular interest have been collections of crinoids (feather-stars) from Lizard Island, north Queensland, Lord Howe Island and New Caledonia.

Museum Education Officers and Discoverers embarked on a rock collecting expedition west of Sydney to supplement the teaching collection at the Museum

Gregory Millen/Australian Museum





Gregory Millen/Australian Museum

Sally Robinson from the Museum's Exhibitions Department explains to a group of visitors, the techniques involved in silk screen printing

Specimen exchanges have been conducted with the Western Australian Museum and the Pambansang Museo, Manila, Philippines.

Miss Veronica Curtis was employed under a short-term Trust grant between September and December, 1976, to relocate and label type-specimens of Porifera. A total of 619 types were located and these are arranged alphabetically by species epithet. A handwritten list is now available. Mr Martin Robinson was similarly employed to sort collections made by Drs Ponder (Mollusca), Lowry (Crustacea) and Rowe (Echinodermata) during a cruise on HMAS *Kimbla* in November, 1976. Ms Berenice Marshall has, on a voluntary basis, been assisting Ms Ogg with relabelling both wet and dry echinoderm collections and in cataloguing journals within the department.

Identifications have been made for Ms J. E. Watson (Marine Science and Ecology) and Dr P. Saenger (SEAQ), for which fees were paid to the Museum Trust. Collections of holothurians have been identified for the Western Australian Museum, the Tasmanian Museum and Art Gallery and the South Australian Department of Fisheries. Crinoids have been identified for Mr J. Rideout, Queensland University.

Department of Mineralogy and Petrology

Dr G. Gibbons, on sabbatical leave from the NSW Institute of Technology, spent the latter six months of 1976 working with the Department and became involved in research on meteorites. He addressed the Cellar Seminar Group on the 'Ecology and the Geological Past' at The Australian Museum, on 2 September, 1976. Mr Mat Bin Din Arshad, a Colombo Plan student from the Universiti Kebangsaan Malaysia, completed his six months study period with The Australian Museum and returned to Kuala Lumpur at the end of August. Mr J. Weir

was hired to help the Department on two occasions during the year and much valuable work was done by two voluntary helpers, Mr P. Jenkins and Mr P. Evans.

The completion of Stage I of the reorganization of the Mineral Gallery, detailed in the Introduction, called for major work on both permanent and temporary displays and exhibits at the beginning of the year. In addition to the many special displays mounted for the occasion of the IGC within the Museum, a temporary exhibit was set up in the Macleay Museum.

The Moon Rock Display was sent by the National Aeronautics and Space Administration, USA as The Australian Museum's contribution to the 2nd National Mineral Exhibition held at Glen Waverley in August, 1976. A more permanent mineral exhibit was mounted at the NSW Institute of Technology.

Purchases and donations included a number of choice mineral specimens, as detailed in the introduction. Exchanges included acquisitions of rare W. Australian minerals (M. Pryce and J. Just), Queensland garnets (R. Helt), Saharan minerals (H. Kulke), American borates (Lyman Museum, Hawaii), Australian zeolites and lead minerals (P. Anderson) and Italian minerals (M. Cinque).

Registered minerals now stand at 44,700 (increase of 339). Several suites were collected by the Department including lead-copper-zinc minerals from the Woodlawn Mine gossan, from the Pambula pyrophyllite mine and from the Yerranderrie silver mine.

Registered rocks now stand at 9,700 (increase of 209). These comprise Cainozoic volcanic rocks from Queensland and Tasmania and a suite of Western Australia rocks donated by the WA Geological Survey.

The main research by Mr Sutherland was concentrated on the Queensland volcanic fields. The northern Bowen basin research is being prepared for publication.

Fieldwork was spread over a large area of central Queensland, collecting from the basaltic provinces of Monto and Bauhinia and from the large dissected shield volcano comprising the Buckland Tablelands and Carnarvon Range. A number of new volcanic centres were located and a large variety of lavas suitable for detailed petrologic and age-dating studies were sampled.

A study of secondary zeolite minerals in the Jurassic dolerites of Tasmania was completed for publication.

Mr J. Pixley, compiled a card index of rare minerals, up to date to 1977.

Specimens of the Murchison Meteorite were filmed in May by the ABC for a documentary on extraterrestrial life, and data on Australian Mineral Collections were completed for the Second World Directory of Mineral Collections.

The XENMEG catalogue (Eds S. Wass and A. Irving) was published through the department as a special publication of The Australian Museum, and a 'Minerals of Australia' poster was prepared with exhibitions and TNT for sale by TAMS and the Museum Bookshop.

R. O. Chalmers, Research Associate, compiled detailed information on the geology and origin of arid zone regions for the Arid Australia Exhibit and wrote a history of the Departments of Minerals and Fossils (1827-1901) to be published in *The Australian Museum, 150 Years*. He attended the 25th International Geological Congress and the 10th International Mineralogical Association meeting held at the University of Sydney from 16 to 25 August, 1976. He was a joint leader of the International Mineralogical Association Excursion to the Flinders Range-Olary Province, South Australia, and Broken Hill, NSW prior to the Congress.

Department of Ornithology

The collection has been reorganized, with several separate collections now being incorporated into the main collection. The backlog of registration was brought up to date by Mr G. O'Donnell. A large storage area where the very large birds are kept was cleaned and the birds rearranged with the help of Mr M. Barrett. Both these people were employed on a temporary basis.

A total of 751 specimens were registered and incorporated into the collection. This included 109 African birds previously collected by the curator in East Africa, 134 clutches of New Guinea eggs collected by Dr R. Bulmer, and 11 specimens collected by Mr A. Stokes on New Caledonia. These additions include many species previously unrepresented in the collections.

Ms S. Niadi and Ms M. Hirst of TAMS worked in honorary capacities helping with the registration of specimens. Mr W. Longmore spent a week helping with the verification of specimens in the collection and Mr R. Thompson, a Discoverer, spent a week helping curate the collection.

Mr Disney and Dr P. J. Fullagar of CSIRO Division of Wildlife Research have examined the taxonomic relationship between the similar, flightless woodhens of Lord Howe Island *Tricholimnas sylvestris* and the New Caledonian *T. lafresnayanus* in light of a recent review of the family Rallidae which suggested that the Lord Howe Island species should be removed from the genus *Tricholimnas* of which the New Caledonian bird is the type. Their findings do not agree with this and are in draft for publication.

Right: A blind woman, Ms Dawson, examining Australian animals in the Museum's Education Centre

Heather McLennan/Australian Museum



An attempt was made to establish the present status of *T. lafresnayanus* on New Caledonia. This species has not been reliably reported since the turn of the century. With a grant from the Trust, Mr A. Stokes, who has worked with the Lord Howe Island bird under Mr Disney's supervision, was sent to New Caledonia for three weeks. In the time available, he did not manage to observe one, but he did not preclude the possibility there may still be a few present in some of the most remote areas of the island. While he was there, Mr Stokes was able to collect several species of birds for the Museum which were previously unrepresented in the collection.

At the request of the Lord Howe Island Board, Mr Disney drew up an Ornithological Research and Management Programme for the island. The Island's

two rangers, Mr B. Thompson and Mr P. Beaumont, are capturing and banding all young unbanded birds and sending Mr Disney regular reports. They recently climbed down into the Razor Pocket on Mt Gower and found a young unbanded bird. The very steep climb down makes this area very difficult to get into and the only person to have previously visited the area for woodhens was Roy Bell while collecting for Gregory Mathews in 1913. While on leave overseas, Mr Disney took the opportunity to examine the woodhen specimens in the British Museum (Natural History) and the Museum d'Histoire Naturelle, Paris.

'Bird in the Hand' research continued and papers on the sex and age differences of the Golden Whistler, *Pachycephala pectorallis* and Pallid Cuckoo, *Cuculus pallidus* were published. The study of skull

Technical Officer, Bob Jones from the Museum's Department of Palaeontology, carefully removes rock and plaster from the rib-cage of the plesiosaur which was excavated from the opal mine of Mr Ken Harris at Whitecliffs, NSW in July, 1977

Gregory Millen/Australian Museum



pneumatization in birds has continued and a paper was presented to the 4th Pan-African Ornithological Congress in the Seychelles in November on "Skull Pneumatization in African Birds with Reference to Ageing and Breeding and Some Comparisons with Australian Species" which will be published in the proceedings of the Congress.

Mr Walter Boles, Technical Officer of the department, spent three weeks in July helping with the Rainforest Survey on Thornton Peak and other north Queensland sites. In September he carried out a collecting trip with Preparator, Mr M. Dingley, to Broken Hill and western NSW. Very little collecting has been done in this area. He took the opportunity when on leave overseas to visit the American Museum of Natural History to examine woodhens for Mr Disney and to examine flycatchers as well as the Mathews Australian Collection. He also visited the Museum of Natural History of the University of Kansas to study flycatchers.

Department of Palaeontology

Dr Ritchie carried out research work on three main areas of early vertebrate evolution—Ordovician vertebrate remains from the Northern Territory, Silurian vertebrates from Estonia, Norway and Britain, and on *Groenlandaspis* and its relatives, a group of Devonian arthrodiran fishes with a world-wide distribution.

The study of the Ordovician vertebrate material from south of Alice Springs in the Northern Territory was completed and a paper on the findings prepared in association with Ms Joyce Gilbert-Tomlinson of the Bureau of Mineral Resources, Canberra who collected much of the material and provided the stratigraphic information. Two new genera of fossil agnathans were described, *Arandaspis* and *Porophoraspis*, the first Ordovician vertebrates to be described from the Southern Hemisphere.

During a visit to Estonia, USSR in late 1976, Dr Ritchie examined Silurian ostracoderm material from the island of Oesel in the Baltic and similar material in the American Museum of Natural History in New York whilst returning to Australia. He was able to demonstrate that a poorly known anaspid described from the Silurian of Oesel, *Caarolepis*, was in fact a second species of a well-known genus, *Rhyncholepis*, from the Silurian of Norway.

After Dr Ritchie had presented a talk in Estonia in September, 1976, on his Devonian research work on the distribution and evolution of *Groenlandaspis*, he was shown and loaned for study the first example of this genus from continental Europe, from a borehole core recovered from a depth of 490m near Minsk in Byelorussia. Subsequently, a French colleague, Dr Phillipe Janvier, drew his attention to the presence of the same genus in the late Devonian of southern Turkey and northern Iran; these represent the first records from Asia. During a private visit to Paris in December, Dr Ritchie and Dr Janvier prepared a preliminary report on the Asiatic discoveries. These extend the known distribution of this once poorly known arthrodire to five continents and additional discoveries are probable.

Mr Jones successfully completed his MSc qualifying project, a study of a late Devonian succession of interbedded marine and continental sediments in the Gap Creek area, west of Orange, NSW. He recovered a wide range of micro- and macrofossil material which helps to clarify the age and stratigraphic correlations of the Devonian succession in central NSW. He is currently extending the research work to a larger area.

During the year, Ms Mary White completed the reorganization of the Palaeozoic and Mesozoic plant fossil collection. Using her own system of cross-indexing, the collection is now accessible for research

and study. Only the Tertiary collection remains to be organized in this manner. She has continued to prepare for publication, many of the interesting palaeobotanical discoveries made during her reorganization of the collections.

Ms Lyndall Dawson, studying for an MSc at the University of NSW is carrying out a comprehensive revision of the Museum's large collection of Pleistocene marsupial fossils from the Wellington Caves, NSW.

In July, 1976, Dr Ritchie and Mr Jones visited White Cliffs opal field in western NSW at the invitation of an opal miner, Mr Ken Harris, to excavate and recover an almost complete skeleton of a marine reptile, a plesiosaur, from the Cretaceous deposits. The bones of the skeleton were largely replaced by opal, mostly of a non-precious variety. The specimen was brought back to the Museum, safely encased in a plaster jacket for preparation and study. Preliminary work showed it to be undoubtedly the most complete plesiosaur yet recovered from the Cretaceous of Australia. The skull was still in place, the rib cage was virtually complete (but in a very fragile condition), most of the backbone was present and only the tail and the smaller distal bones of the four paddles appeared to be absent, probably lost before burial. The Museum was unable to reach a mutually satisfactory purchase price with the owner, Mr Harris, who subsequently (in October) removed the partly prepared specimen and took it back to White Cliffs for local, private display. The Museum still retains first option to buy the specimen if, or when, Mr Harris should decide to sell it.

In August, 1976, during the 25th International Geological Congress held in Sydney, the department organized a two-day excursion to Wellington Caves to examine the Pleistocene bone deposits and to Forbes and Canowindra to see Devonian fish sites. Some sixteen vertebrate palaeontologists, including many from overseas, participated.

During January, 1977, Utah Development Company Ltd informed the Museum that they had struck a rich layer of late Permian fossil fish in their open-cast coal-mine near Blackwater in central Queensland. Mr Jones visited the site and, with the assistance and support of Utah staff, recovered about two dozen beautifully preserved actinopterygian fish specimens, representing at least five genera, all of which are probably new to Australia. Dr Ritchie had collected similar material from a nearby site in 1969. The material is currently being studied by Mr Le Duy Phuoc, a postgraduate student from Saigon, working under Dr K. S. W. Campbell, Department of Geology, Australian National University, Canberra.

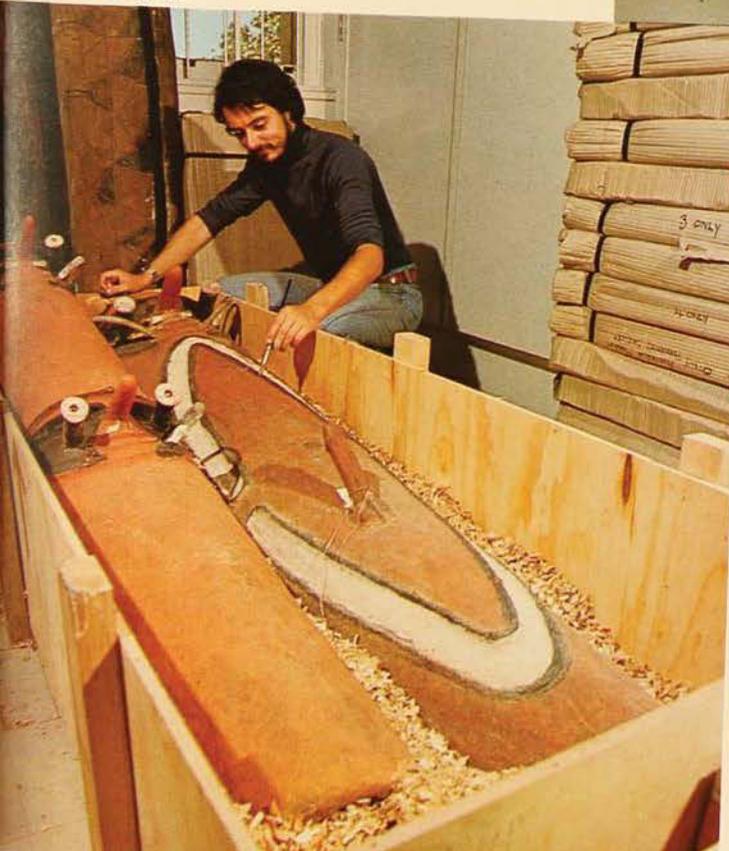
In May and June, 1977, Dr Ritchie and Mr Jones visited the Ordovician sites in the Northern Territory which have produced not only the first Ordovician vertebrates from the Southern Hemisphere but also the most complete Ordovician fish yet discovered.

Some 950 specimens were registered in 1976-77; the total number of specimens now registered is 58,900. The largest number were Palaeozoic and Mesozoic plant specimens of scientific importance, located and identified by Ms M. White during the reorganization of the palaeobotanical collections. These have now been rehoused in a new area of the Fossil Store, accompanied by the palaeobotanical reprints and relevant monographs. Other additions included Devonian fish and invertebrate remains from near Orange, NSW and late Permian actinopterygian fish from Blackwater, Qld, collected by Mr Jones.

Several fine collections of display and comparative material were obtained from other institutions mostly in exchange for casts of Australian and Antarctic Devonian fish. These included casts of type of figured Devonian vertebrates from North America (Field Museum, Chicago); original specimens of cephalaspids (*Thyestes*, *Dartmuthis*,

Below: Kirk Huffman with two of the many Mbotgo't ceremonial artefacts collected by him on behalf of The Australian Museum Trust. These two items were made for Nalwan ('the life') circumcision rites for young boys. They originate from south central Malekula Island, New Hebrides.

Gregory Millen

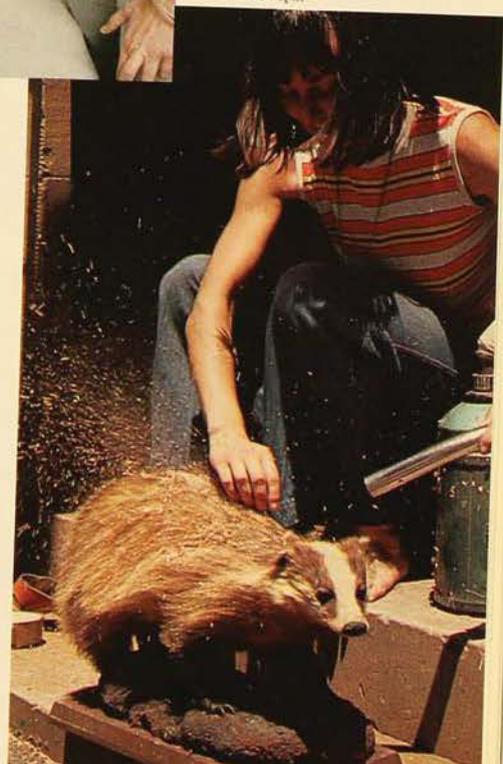


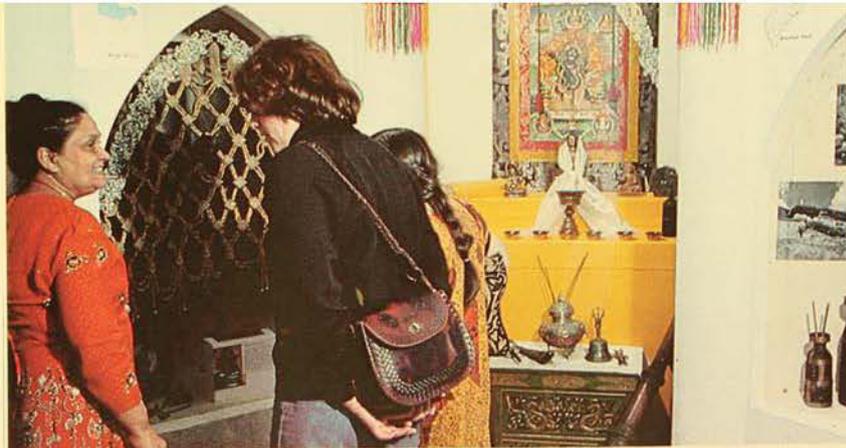
Left: Pat Townley from the Museum's Materials Preservation Section with a bird figure from Irian Jaya. This item requires urgent conservation treatment which can only be undertaken after sufficient quantities of the red and grey seeds with which it is decorated, are obtained to replace those that are missing.

Howard Hughes

Gregory Millen

Right: Judy Leon, volunteer in the Museum's Preparation Section, has washed and is drying a mounted specimen of a European Badger, *Meles meles*. This specimen was included in the 'History of the Museum' exhibit.





Gregory Milten



Gregory Milten

Above Left: Visitors explore the 'Life in India and the Himalayas' exhibition. Left: The Australian Museum mounted a display of ethnographic musical instruments at the Australia Music Centre as part of the Centre's opening celebrations. The exhibit was later displayed at the Seymour Centre for the Performing Arts.



Gregory Milten

Left: Museum Education Officer, Ed Wilson, discusses with a group of school children, the Museum's pilot Outer Urban Exhibition, 'Man, A Peculiar Primate'. Two more travelling exhibitions for Sydney's outer suburbs will be launched later this year.

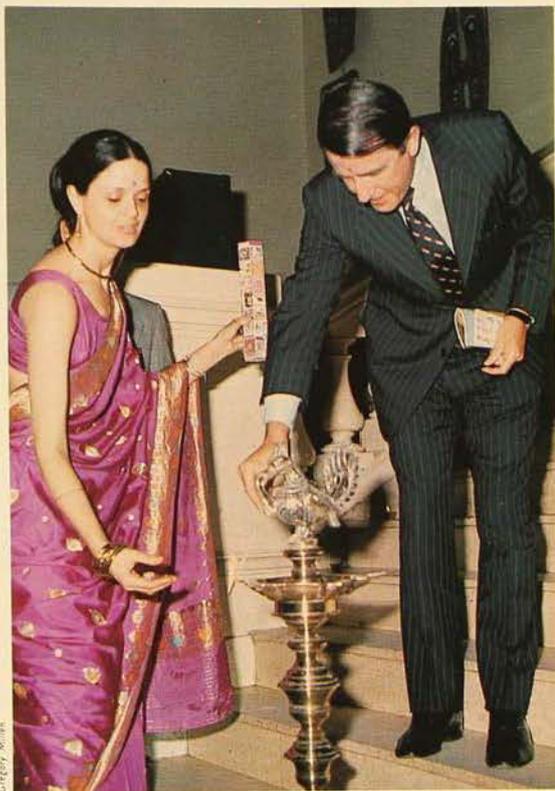
Right: A typical Museum laboratory of late last century was re-created, complete with scientist, as part of the 'History of the Museum' exhibition, 30th March—26th June, 1977.



Gregory Milten

Below: Krishnan Nair performs the famous Indian 'Peacock Dance' at the official opening of 'Life in India and the Himalayas'. Performances were also given on Sunday afternoons in November.

Left: Guests at the official opening of 'Life in India and the Himalayas' admire classical Indian costumes displayed in Air-India's 'Sringar' costume exhibition shown concurrently with 'Life in India and the Himalayas'. This splendid collection had been shown only once before, in Bombay.



Gregory Millen

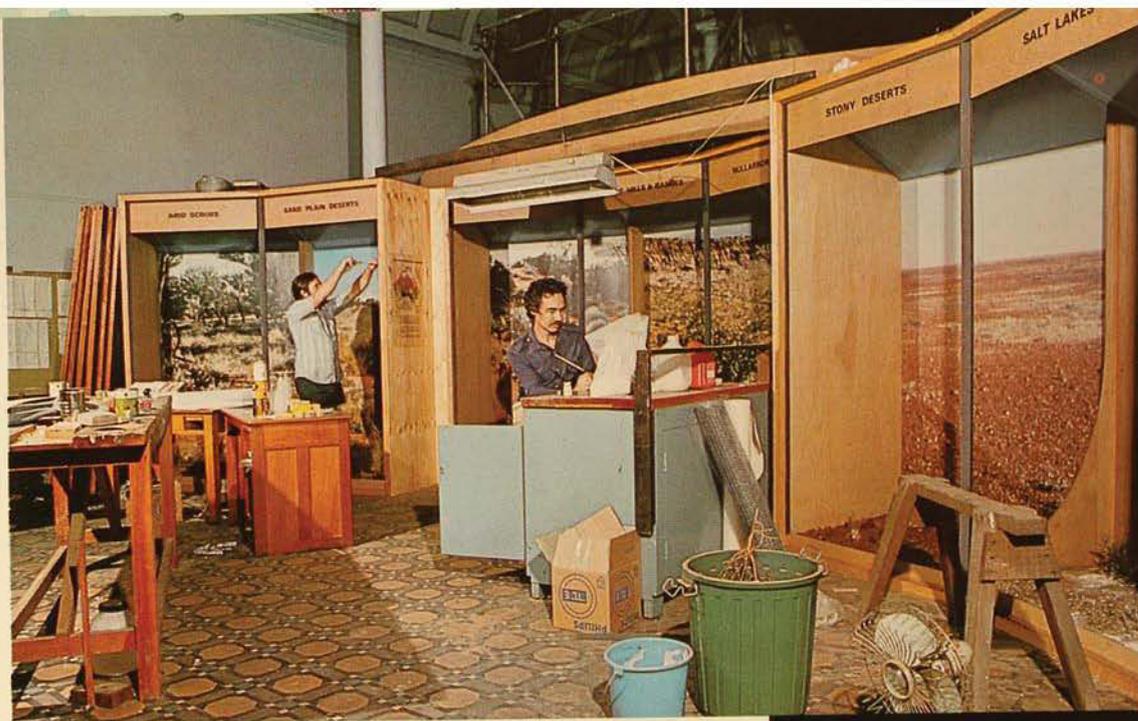


Gregory Millen

Above: The Hon. Neville Wran, Q.C., M.L.A., Premier of N.S.W., lights a traditional Indian oil lamp to mark the official opening of 'Life in India and the Himalayas', assisted by Museum Public Relations Officer, Nancy Smith. Below: The Australian Museum Bookshop was re-designed and expanded when it was moved to its new location in the south wing of the main foyer.

Gregory Millen



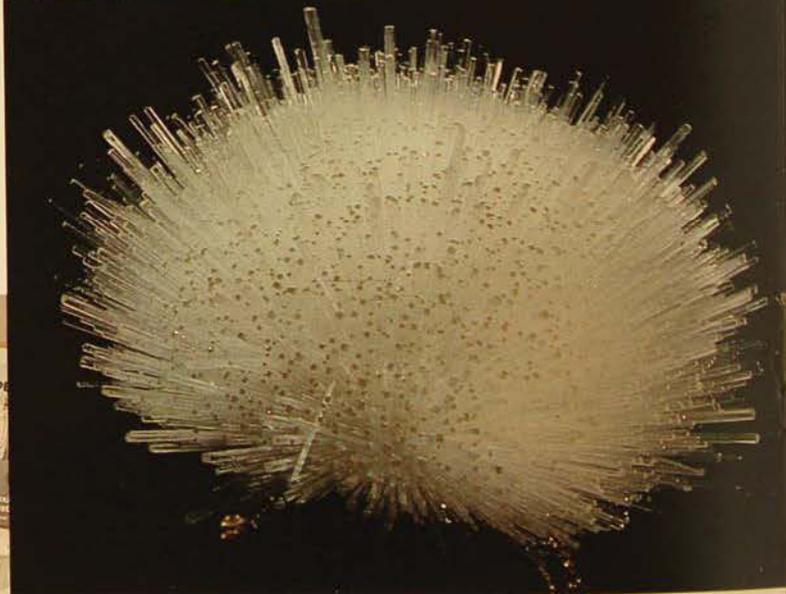


Gregory Millen

Above: Museum Exhibitions staff prepare dioramas in the Museum's newest gallery, ARID AUSTRALIA, which was opened in July, 1977.

Right: An exceptionally fine specimen of Natrolite from Poona, India. It was purchased by the Museum from a Sydney mineral dealer and measures approximately 10 cm. in diameter.

Below: Museum artists prepare one of the panels to be fitted into the new Museum Train.



Gregory Millen



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Tremataspis); casts of labyrinthodont and dinosaur specimens and Mesozoic turtles (*Struthiomimus* skull, *Tyrannosaurus* endocranial cast etc.) from the American Museum of Natural History, New York; casts of type Devonian ostracoderms from China (Academy of Sciences, Peking); original specimens of Devonian psammosteid ostracoderms from the Baltic (Estonian Academy of Sciences, USSR); casts of type and figured Tertiary marsupials from central Australia, (National Museum, Melbourne; Queensland Museum, Brisbane); a complete skull of an early Tertiary oreodont, a herbivorous mammal, from Wyoming, USA (Mr Greg Cohen, Chullora, Sydney).

Many workers used the collections during the year, notably Dr Eugene Gaffney, American Museum of Natural History, New York, who carried out a complete revision of the available material of the extinct late Pleistocene horned turtle, *Meiolania platyceps* from Lord Howe Island, during the IGC. Ms Lyndall Dawson is revising the Museum's fossil vertebrate collections (mainly marsupial) from the Wellington Caves' bone deposits, in the light of recent marsupial discoveries and Dr Ralph Molnar has checked all the fossil reptile material.

Functional Anatomy Unit

Mr Strahan was largely occupied with detailed design and execution of the first Outer Urban Exhibit — 'Man, A Peculiar Primate' — with researching, writing, and editing a pictorial history of the Museum, and with provision of information for the temporary exhibition on the history of the Museum. As a consequence, anatomical researches proceeded rather slowly. One collecting trip was made to Victoria in May, 1977. Mr Strahan continued his studies on the microanatomy of the protopancreas in Australian lampreys. In collaboration with Mr K. Robinson, he began a study of the morphology of the skull of phalangeroid marsupials.

Director's Research Laboratory

Research studies on the spider crabs of the family Majidae from the Indo-Pacific were continued during the year and a collection of spider crabs from the coast of Somalia was received for study from Dr Vannini (Istituto di Zoologia dell'Universita, Florence). Research studies of lobsters of the family Thalassinidae with Dr G. C. B. Poore (Marine Pollution Studies Group, Ministry for Conservation, Victoria) and studies of deep water lobsters of the families Scyllaridae, Palinuridae, Nephropidae and Polychelidae were completed.

Deputy Director's Research Laboratory

With the appointment of Dr H. G. Cogger to the Deputy Directorship, the research activities of the Deputy Director's Laboratory constitute an integral part of the Department of Herpetology, and have been reported under that Department. Ms Elizabeth Cameron was appointed as Graduate Research Assistant to the Deputy Director on 7 February, 1977. Ms Cameron had previously been a research associate of Dr Cogger and Associate Professor H. Heatwole (University of New England) under a joint ARGC Grant to study components of the fauna and flora of the Torres Strait region.

MATERIALS PRESERVATION SECTION

The current research interest of the Conservation Laboratory is the development of treatments for the stabilization of lyctus damaged hardwoods. This work has been assisted by the Sydney Technical College who have carried out a series of analyses and tests on thermo-plastic resins for possible further experimental work in the Laboratory. The Division of Wood Technology has also provided considerable assistance in the identification of timbers and have provided comparative timbers specially selected and milled for the purpose. With further development, this research will indicate the specific materials and methods most suitable



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for the long-term conservation of particular groups of timber similar to the damaged artefacts in the collections. It is expected that with an increase in staff this calendar year, and additional testing and analytical equipment, this research will progress at a more satisfactory pace.

Most of the general conservation and restoration work undertaken by the laboratory during the year has related to items required for temporary exhibitions at this Museum and overseas. These have included 'Life in India and the Himalayas', 'History of the Museum', and the Cook Exhibition to be held at the Bernice P. Bishop Museum in Hawaii. In addition, considerable time was devoted to the treatment of artefacts that were being returned to the Papua New Guinea Museum and Art Gallery, Port Moresby, which were displayed at the opening of that museum in June, 1977.

Two of the most interesting projects on which the laboratory has been working during the year, involve ceremonial items from New Britain and the North West Coast of America. The New Britain item is a 'mythical animal', 3.4m long, used during ceremonial dances, with a framework of bamboo and cane, covered in large leaves encased in an outer covering of painted coconut fibre.



Gregory Millen/Australian Museum

Top left: Pat Townley from the Museum's Materials Preservation Section restores an extremely fragile pith head-dress (Shola). Worn by Bengali bridegrooms, this item formed part of Air India's 'Sringar' costume exhibit

Bottom left: Agnes Kalalihookaha Cope, from Hawaii, teaches 'Drop-In' children how to weave armlets from Pandanus leaves

Work on this item was initiated when it was found that it was deteriorating virtually to the point of no return. The extremities were in shreds, the leaves were so brittle that any movement caused them to crumble and the coconut fibre was shredding into tatters. This item has been slowly dismantled, each construction detail minutely recorded with drawings and photographs and every component material fully treated. The various conservation treatments were developed by the conservation staff although the majority of the work is being carried out by volunteers.

The Ravens Head Mask from the North West Coast of America, composed of carved and painted wood decorated with natural fibres, woollen fibres, various cottons and feathers, and iron and copper nails is receiving the same comprehensive treatment. Insects had badly damaged the fibres, feathers and wool and most of the cotton was severely damaged by iron and copper corrosion products. The majority of the component materials have undergone chemical cleaning and stabilization. The wool has been respun so that it can be plaited into its original form. The National Library of Australia, the CSIRO Division of Protein Chemistry and the Handweavers and Spinners Association of NSW assisted with the project.

With the exception of a few problem pieces which are still being worked on, the entire Melanesian pottery collection has now been restored. This has been the particular project of a single volunteer worker, Mr L. Fleischmann, for the past two and a half years. One of the laboratory's newest volunteers is giving specific attention to the conservation of badly damaged items from the Solomon Island Collections.

The conservation of the Museum's Aboriginal Bark Painting collection is nearing completion. Since the project extended beyond the anticipated three years, a number of volunteer assistants has been recruited to ensure its completion within this calendar year.

Ms Walston spent three weeks at the Conservation Laboratory of The Australian National Library, undertaking the treatment of early documents and architectural plans and posters which were included in the 'History of the Museum' exhibition.

The conservation laboratory responded to a wide variety of enquiries both from the public and institutions housing cultural material. Advice was provided on the conservation of individual items and on whole collections. A large proportion of enquiries related to building design and development and training.

EDUCATION SERVICE

The Education Centre has lived up to the expectations held for it and is successfully providing facilities for the meetings of various groups within the community. On weekdays, the teaching areas are used for a variety of lesson programmes with visiting school classes, for the after-school 'Drop-In to the Museum' sessions and in school holidays for activities open to children and family groups. The rooms are used during evenings and weekends by groups representing various societies—zoology, conservation, gemmology, photography, diving, museology—as well as for Museum staff meetings and seminars.

The lesson programmes and gallery exhibits continue to attract large numbers of school groups. Where possible, special lessons are developed in association with temporary exhibitions such as 'Life in India and the Himalayas' as well as new programmes for senior secondary classes, combined museum and fieldwork or practical work sessions, and special facilities for handicapped students. The total number of groups attending these programmes was 768, comprising 35,896 pupils. Approximately 1,543 classes (some 46,500 pupils) visited the Museum without appointment and for these we are able to



Gregory Millen/Australian Museum



Gregory Millen/Australian Museum

provide only minimal assistance. Of these groups, secondary schools exceeded primary classes in numbers for the first time (655 to 494). The secondary groups studied classification of animals, evolution of vertebrates and man, and the Hall of Life exhibits.

Demonstration lessons and lectures on the Museum's educational services were given to groups of teacher trainees from Colleges of Advanced Education and Universities in Sydney. Students from the Museum Studies Diploma course at the University of Sydney attended seminars on museum education given by the Education staff. One of these students spent two weeks at the Museum; part of this period was devoted to assisting with the holiday programme in May, 1977. As part of the orientation course for new officers of the Division of Cultural Activities, a survey of the Education Centre and information on its activities was provided. Groups of school inspectors, administrators and other personnel from Asian, African and Pacific countries were given lectures on the Museum's education role.

Members of the NSW Ambulance Transport Service Board continued their series of visits to study venomous animals. A lecture was given to the Leichhardt Rotary Club on the education programmes.

Top left: Students from Summer Hill Primary School gave a dance performance in the Hallstrom Theatre during Education Week, 1976. The dance was based on an Egyptian theme which the children themselves devised. They also made their own costumes

Left: Children from Hurstville Primary School performed ceremonial music on instruments they had made themselves, when they spent a day at the Museum showing visitors work they had done as a follow-up to a Museum lesson on the peoples of Melanesia

During the year a total of 624 loans was made to both metropolitan and country schools, comprising 42 collections of specimens and 582 school loan travel cases. A new case on the Fairy Penguin was put into service; further cases on Sharks are nearing completion. The demand for these cases is still very high and many applications have to be refused or delayed.

Some thirty-five reptile and amphibian casts or freeze-dried specimens, fifty-four birds (both fresh skins and reconditioned gallery mounts), and eleven wet boxes were prepared for the teaching collection. Casts of ten reptiles and three sharks were prepared for the school loan travel cases. New systems for the production of renewable moulds and for painting casts have been developed. Renovation of the preparation rooms has commenced; while there is inconvenience at the moment, these alterations will render the Education Section more self-sufficient and improve production of teaching specimens. Mr Millar, Preparator, has continued his studies for the Biological Technicians Certificate and has now progressed to Stage III.

Since it began in March, 1976, the 'Drop-In to The Australian Museum' programme has provided creative after-school activities for children living near the Museum. This activity is detailed in the Introduction.

As part of the 'Work Experience Programme', three senior high school students assisted for one week in various Museum departments and gained experience in a possible future career in museums.

The special exhibits and activities in the Education Centre during the school vacations attracted a total of some 5,700 people during the three school vacations. Different events were staged each vacation—Rocks, Minerals and Fossils in August-September, 'Life in India and the Himalayas' in January and 'Life in the Sea' in May; the first two were staged to make full use of temporary exhibitions. During the first week of September,

a Tongan wood carver, Aleki Prescott, gave exhibitions of wood carving, and discussed his work with visitors in the Hallstrom Theatre; this programme was arranged by Ms McLeod. On 3 September an Identification Day was held when students could bring their geological specimens in for identification by curators and their assistants.

Two special courses for children were arranged during the holidays. The first, on insects 10–14 January was organized by Ms McLeod. Tutored by Ms Margaret Schneider of the Museum's Entomology Department, this course included studies of insect life, a field trip to collect specimens and experience in using an identification key.

The course on folk and classical dances of India, 17–21 January was organized by Mr Hunt. Tutored by Krishnan and Shakuntala Nair, some twenty children learnt a folk and a classical dance and gave a performance in the main entrance hall of the Museum on the last day of the course.



Gregory Millen/Australian Museum

Film screenings were arranged in the three vacations, the films relating to the special activities or exhibits. They were attended by a total of 4,800 people.

Museum 'Walkabouts' were completed by 332 young people; this lower figure reflects increased use of the new introductory Walkabout, 'What is a Museum?' which is not counted towards the Walkabout awards. Eighteen students completed the Walkabout series, received their Life Nature book and joined the Discoverers' Club during the year. Seven Club meetings were held during school holidays and the Museum Discoverers' Society, the senior group, met seven times in the evenings. One field trip was held, 6–9 September, 1976, to collect rock and mineral specimens in the Oberon-Goulburn area. Discoverers, under the guidance of Mr J. McDougall, Education Officer, took part in this trip. Items illustrating everyday life in Sydney were collected and despatched to the Museo de Historia de la Ciudad in Barcelona, and a similar collection from the young people of that Museum arrived here in May. The Discoverers will make a special display of this material later. Other activities included a costume party to celebrate the Museum's 150th Anniversary and the making of an animated film. During January, 1977, six Discoverers assisted in various Departments of the Museum, the Trust providing an honorarium for each student. One Discoverer helped with the Museum's visitor survey.

Exhibits in the Education Centre included displays for each school holiday programme, displays in relation to the 'Drop-In' programme and a special

Pat McDonald, Education Officer-in-Charge, and schoolchildren, admire a Ring-tailed possum, Pseudocheirus peregrinus. Mounted specimens are an extremely valuable aid in the teaching of natural history

exhibition of educational material for the Museum Education Conference.

The Children's Book Week display 9-19 July, 1976, was held in the Long Gallery and incorporated natural science books for children from ten publishing houses. This display created interest amongst children and school librarians and resulted also in increased revenue for the Museum Bookshop. The event was organized by Ms McDonald.

The annual exhibition of models, posters and dioramas made by children as a follow-up to their Museum lessons was held during Education Week, 15-20 August, 1976. Arranged by Ms Maguire, it continued through the school vacation. A further activity during Education Week was held on 18 August when pupils from Summer Hill Public School spent the day showing visitors the type of activities initiated by their Museum visits. These included displays of models and posters and the screening of their own films; the children also answered questions from visitors and manned an Information Desk. Spectacular dance-dramas on Ancient Egypt and Conservation were performed by the children throughout the day.

Hurstville Public School visited the Museum from 29 November-1 December, 1976, and erected an igloo and a palm-leaf hut in the Hallstrom Theatre to show visitors the activities undertaken as a result of their Museum studies. Other activities included pottery, making stone tools and recounting myths and legends of the Eskimo and Pacific Island peoples. This programme was under the direction of their teachers and Ms Maguire, Education Officer.

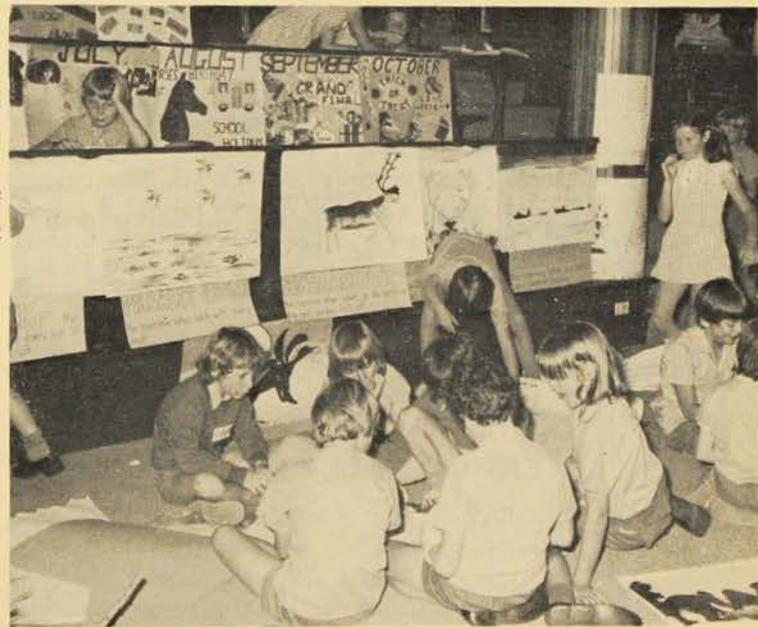
Young students from Hurstville Primary School spent a day in the Museum's Hallstrom Theatre, showing the public the work they did as a follow-up to a Museum lesson on Eskimos

An exhibition of Kashmiri Handicrafts was held in the Education Centre in January, 1977, and attracted much interest from those who participated in the holiday craft activities relating to India. The handicrafts were supplied courtesy of the Government of Kashmir.

Mr E. J. Wilson, Education Officer, was involved in the production of the pilot Outer Urban Exhibit, 'Man, a Peculiar Primate', and has also arranged special lectures for teachers at each site. Increasing numbers of school children are visiting this display when it is in their area.

Education Officers have been associated with the production of the following new galleries: Marine Gallery, History of the Museum (Ms McDonald); Mineral Gallery, Pacific Gallery (Ms Maguire); Arid Zone Gallery, Life in India and the Himalayas (Mr Hunt); Conservation of Australian Fauna (Mr McDougall).

Gregory Millen/Australian Museum



A number of Museum Discoverers worked with Mr Wilson on the production of a four-minute animated film entitled *The First 150 Years*, with a grant from the Sydney Scientific Film Society. This film formed part of the 'History of the Museum' exhibition. On 15 April, the Museum Discoverers held a party to celebrate the Museum's 150th Anniversary.

During lunch hours of the week 28 March-1 April, various dance groups gave performances in the Martin Place Amphitheatre as detailed in the Introduction. Pupils from Summer Hill and Artarmon Schools also performed on the evening of Thursday, 31 March and at the Museum on Saturday, 2 April. The final performance was given for TAMS families and Museum visitors. These events were organized by Ms McDonald and Ms Maguire.

The Museum Education Association of Australia held its Biennial Conference from 20-23 April at The Australian Museum and other centres in Sydney, on the theme Museum Training. Some 100 museum educators from interstate and overseas attended this conference.

Preliminary planning has been carried out for the collections project which will involve the exhibition of young people's collections of specimens, in the Museum during the Spring school vacation, 1977. The children's collections project, detailed in the Introduction, was organized by Mr McDougall.

The results of the Museum's survey of visitors were collated, and a survey of areas from which pupils attending museum lessons, and unexpected school classes, has been undertaken.

EXHIBITIONS DEPARTMENT

As detailed in the Introduction, the first of a planned series of travelling exhibits, 'Man, a Peculiar Primate', was completed and had its first showing at Merrylands in February. Designed to serve

suburbs with poor access to the Museum, the exhibit has been booked out for the remainder of the year.

Another aspect of the Museum's extension services, the Museum Train, is well under way with temporary staff specially engaged for the project, working on exhibits. Two carriages are being outfitted by the Public Transport Commission of NSW at the Railway Workshops at Eveleigh, under the supervision of the NSW Government Architect's Office.

The first stage of renovations to the Mineral Gallery was completed and opened in August to coincide with the meeting of the International Geological Congress in Sydney. A major temporary exhibition on minerals and geology was mounted to coincide with the opening of Stage I renovations of the Mineral Gallery.

Substantial progress was made with the Arid Zones Gallery, all major structural work having been completed. Two specially mounted collecting trips to Central Australia, one in association with Army personnel, yielded much useful material for the gallery.

A re-assessment of priorities in view of staff available limited progress on structural work in the Marine Gallery, however, preparation of specimens continued throughout the year.

'Life in India and the Himalayas' opened in the Long Gallery on 4 November, 1976, for a period of three months. This exhibition was planned in conjunction with the Asian Studies Curriculum Committee of NSW. Simultaneously, a major exhibition on Indian Costume, 'Sringar', prepared by Air India, was shown in the renovated former Pacific Gallery.

As part of the sesquicentenary celebrations of the Museum, the 'History of the Museum' exhibit was opened on 30 March, 1977. This exhibit is one of three major temporary exhibits planned for the sesquicentenary year.

A number of mounted specimens of Australian fauna was lent to the Australian Exhibit Organization to be included in an exhibition to be sent to China by the Federal Government.

In conjunction with an exhibition of early stringed instruments by Australian craftsmen at the Australian Music Centre from 23 June to 12 July, 1976, the Museum lent for display, a collection of early Australian, Indonesian and Melanesian instruments. The Museum exhibit was transferred to the Seymour Centre on 6 August, 1976, and remained on display until 1 October, 1976.

An exhibition of South Pacific Performing Arts was held in the Exhibition Hall of the Sydney Opera House from 11 June to 9 July, 1976. The Museum lent a collection of seventy artefacts, mainly New Hebridean, for the exhibition.

LIBRARY

The Library has maintained a high rate of acquisition, a total of 687 bound volumes being registered (571 books and 116 volumes of serials), along with 77 plans of the Museum for the archives, nearly 50 percent (317) being presented as gifts. A set of five volumes of hummingbird photographs taken by Mr C. Greenwault was kindly donated to the Museum through the American Museum of Natural History and DuPont. Only 62 sets of these prints were produced and these were sent to the major museums in the world.

Regular binding was resumed; over 100 volumes were dealt with by Library staff. A total of 3,030 loans of all kinds, of which some 80 percent were internal loans to staff, were handled by the Library. In addition, another 847 loans were made to outside institutions in the form of photocopies totalling some 13,621 pages. In return, the Museum received 62 items on loan. The imbalance is a reflection of the importance of the Museum's collection to scientific research, both within Australia, and



Gregory Millen/Australian Museum

A special display of natural history books was set up in the Long Gallery by Education Officers during Book Week, 1976

overseas. The latter was again well represented in these requests. In addition, over 430 readers from outside the Museum used the Library's facilities.

While cataloguing of new material has remained steady, 464 books and 120 periodicals being given entries, the reorganization of the present collection has continued at an increased rate with 7,635 catalogue entries being made.

A separate research library, the Gilbert Whitley Memorial Library, has been established at the Museum's Lizard Island Research Station. Cataloguing of this material has been performed in the main Library.



Heather McLennan/Australian Museum

Left to right: Museum photographer, Howard Hughes with Angelo Revello and Phil Judd, at Atlab Film Laboratory, Epping, NSW, doing the sound mix for Howard's Mornington Island films, "The Boomerang" and "Preparing for the Corroboree"

PHOTOGRAPHIC AND VISUAL AID SECTION

Photography in many forms was required for the Sesquicentenary celebrations, including material for audio-visual displays, photography to assist in the modelling of specimens, reproductions of documents and books, publicity photographs, and help with a super 8mm animated film by the Education Centre's Discoverers Club.

Fieldwork included visits to New South Wales rainforests to complete photography work which has been used in various reports and publications as well as joining the Exhibitions Department's

Arid Zone expedition to obtain photographic material for the new Arid Zone gallery. This gallery uses large murals made commercially from photographic originals reproduced by electronically controlled spray guns onto various materials like paper or canvas. Similarly, a photograph was reproduced (approximately 2m x 3m) on to woollen material to provide curtains for windows in the William Street vestibule.

The independence of Papua New Guinea has created renewed interest in our collections of early New Guinea and Papuan material. Not only have we supplied prints from these valuable negatives for New Guinea itself and various researchers, but for other organizations as well, such as the Museum of Modern Art in New York.

Mornington Island Councillors with copies of films, "The Boomerang" and "Preparing for the Corroboree", presented to them on behalf of the Museum and the Aboriginal Arts Board of the Australia Council



Howard Hughes/Australian Museum

The second film shot on Mornington Island, *Preparing for the Corroboree* was completed and depicts the manufacture of Aboriginal artefacts. This film together with the previous film, *The Boomerang*, is proving to be a very successful project. During June, 1977, prints of these films were taken to Mornington Island and on behalf of the Museum and the Aboriginal Arts Board, were presented to the community in recognition of their help and co-operation in this production. The community was delighted with the finished films and was prepared to help with any future projects.

The Bird Index continued to require assistance with the selection of photographic material for their collections and with its expansion to include mammals. Assistance was given in regard to several matters including the consideration of technical matters relating to the archival aspects of the collections. Film sales generally have been steady. With the increasing use of video tape in schools, it is now intended to offer our films on video-cassette and it will be interesting to see how this market will develop. In the meantime, cassettes were prepared to send overseas to assist in selling to the European television market. For several days, these tapes were played in the Museum galleries to the public where they created a great deal of interest.

A great handicap to our work has been the limitations of space. This is expected to be relieved to some extent by additions shortly to be commenced, however, this will not overcome our need for a larger studio than the one we have at present.

PUBLICITY/PUBLICATIONS SECTION

A vigorous and much expanded programme of publicity and advertising was undertaken for the Museum's Sesquicentenary Celebrations as detailed in the introduction.

Media coverage of Museum activities has been very good during the past year with more than 150 items having been found in the printed press alone—an

average of three mentions per week. Television coverage has also been good, particularly with the educational activities and with various projects in the Conservation Laboratory. Radio stations frequently include Museum events in their community affairs announcements.

The Australian Museum Bookshop was relocated and expanded in the south wing off the main foyer. The range of items carried by the shop has been enlarged and diversified to include a wide variety of contemporary artefacts from Australia and the Pacific as well as models, posters, slides, postcards, greeting cards, T-shirts, pencils, pens, rulers, folders and other promotional items. Sixteen new postcards and three new posters were published by the Museum. The list of book titles available has also been significantly expanded. Plans for even greater diversity of stock are in hand.

The designations of the Museum's popular quarterly magazine, *Australian Natural History*, were changed from March/June/September/December to January-March / April-June / July-September/October-December, naming each issue for an entire quarter rather than for a particular month. Five issues were published. June, 1976, was a special issue on New Zealand; September, 1976, contained a special supplement, 'Of Time and Deeds and Empty Cities', dealing with man's need for natural areas; December, 1976, and January-March, 1977, were general issues; and April-June, 1977, a special issue, took an historical look at research in the natural sciences in Australia—in commemoration of the Museum's 150th Anniversary. Beginning with the New Zealand issue, the New Zealand Government Printer, Wellington, became the magazine's distribution agent in New Zealand. Full-page, four-colour ads for Air-India and for the Public Transport Commission of NSW (Museum-by-train promotion) were placed on the back cover of the December, 1976, and the January-March, 1977, issues, respectively.



Heather McLennan/Australian Museum

Museum personnel prepare to pack a selection of Australian mammals, birds and reptiles which were sent to China for display at the Museum of Natural History in Peking

Six numbers of the *Records of the Australian Museum* (Volume 30) have been published since 30 June, 1976. These were: A Revision of the Australian and Tropical Indo-Pacific and Tertiary and Recent Species of *Pisinna* (= *Estea*) (Mollusca; Gastropoda; Rissoidae), by W. F. Ponder and E. K. Yoo (No. 10); Deepwater Decapod Crustacea from Eastern Australia: Brachyuran Crabs, by D. J. G. Griffin and Diane E. Brown (No. 11); The Indigenous Earthworms (Megascolecidae: Oligochaeta) of Lord Howe Island, by B. G. M. Jamieson (No. 12); The Genus *Lenophila* (Diptera, Platystomatidae), by David K. McAlpine and Se Pyong

Kim (No. 13); A Catalogue of Echinoderm Type-specimens in The Australian Museum, Sydney, by F. W. E. Rowe and D. L. Pawson (No. 14); Annotated Checklist of the Fishes of Lord Howe Island, by G. R. Allen, D. F. Hoese, J. R. Paxton, J. E. Randell, B. C. Russell, W. A. Starck II, F. H. Talbot and G. Whitley (No. 15). Twenty other numbers are currently in press. In order to streamline the production of the *Records*, an Editorial Board, comprising Drs Griffir Ponder, McAlpine and Ritchie and Mr Stewart, was set up in October, 1976. For the sake of economy (and to qualify for Australian Government Book Bounty) it was decided that several numbers of the *Records* should be printed together; this arrangement commenced with Volume 30, Numbers 12-14.

Two free educational leaflets were reprinted: *The Blue Planarian Worm* (No. 72) and *Shovel-headed Garden Worm* (No. 15). Four others are currently in press and a further six are in process of revision. A set of five brochures was produced for the exhibition, 'Life in India and the Himalayas', and a booklet, *An Australian Diary*, for the 'History of the Museum' exhibition. A pictorial history, *The Australian Museum: 150 Years*, is in preparation.

LIZARD ISLAND RESEARCH STATION

A change in the management of the station has taken place as detailed in the introduction.

The Lizard Island Research Station continues to attract a large number of visitors and it seems that with the amount of usage and upsurge of interest, the station is providing a much needed research facility for Australian marine science.

The station is still only designed to cater for fourteen visitors and some of the facilities (such as the compressor) are at times, stretched to their limits.

The following is a listing of the scientists who have visited the station since Christmas, and a brief description of their projects: Ms Keren Kleinspehn

spent two weeks studying phyletic relationships and behaviour among Gastropod molluscs as part of her Doctoral programme at Princeton University.

Dr David Smith from the CSIRO Division of Fisheries and Oceanography at Cronulla spent two weeks using radio-isotope labelled zooplankton to investigate coral reef food webs. He was assisted by Dr David Moriarty (from the same institution) who was also looking at the trophic role and biomass of bacteria in the sediment and open water.

Ms Sue Talbot (University of Sydney) with the assistance of Professor Frank Talbot (Macquarie University) spent two weeks studying the behaviour of mysid shrimps and other lagoonal zooplankters. Professor Talbot also continued his work on the spatial distribution of chaetodont fishes around the large patch reefs inside the barrier reef.

Mr Ian Lucas, Accounts Examiner, assessing methods of streamlining certain procedures in the office



Howard Hughes/Australian Museum

Professor Michel Pichon from James Cook University returned for another five weeks to continue his studies on the growth and development of coral reefs and on coral taxonomy. Ms Zena Dineson, also from James Cook University, spent five weeks on her Doctoral programme in conjunction with Professor Pichon. Mr Alistair Birtles (James Cook University) spent six weeks studying the ecology and taxonomy of crinoids.

Dr Bob Olafson from the Australian Institute of Marine Science in Townsville (AIMS) arrived for five days to extend his studies on land derived pollutants in reef province waters. As there is no significant usage of pesticides and fertilizers north of Cooktown, Lizard Island waters are assumed to be relatively free of pollutants.

Dr Bill Hamner (AIMS) stayed for three weeks studying zooplankton behaviour, and investigating the importance of zooplankton to the energetics of the planktivorous fishes of the outer barrier and patch reefs.

Mr Gordon Anderson (Macquarie University) spent two and a half weeks on his continuing Doctoral programme investigating predation in reef fish communities, and recruitment patterns among reef fishes on artificial reefs in the Lizard Island lagoon.

Dr Pat Hutchings of the Department of Worms and Echinoderms at The Australian Museum spent four weeks examining coral reef cryptofauna with particular emphasis on the polychaete worms.

Mr Brad McCulloch from the Kamerunga Horticultural Research Institute in north Queensland spent four days collecting native fruit flies.

Mr Greg Stroud, a Doctoral student at James Cook University, returned for a further six weeks to continue his studies on the parapercid fishes.

Ms Helen Larson, from the Department of Ichthyology at The Australian Museum, spent two and a half weeks collecting gobies for taxonomic studies and examining the association between certain gobies and soft corals, notably the gorgonians.

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN WILDLIFE

The project now operates under its new title—National Photographic Index of Australian Wildlife. The change was recommended by the Bird Index Trust and approved by The Australian Museum Trust following a decision to start work on a Mammal Index to take its place alongside the existing Bird Index.

The Advisory panel, on Field Programmes and Grants for the Bird Index was Dr D. L. Serventy, Chairman, and Mr E. L. Carthew; Mr H. J. de S. Disney; Mr H. D. Millen; Mr K. A. Muller; Mr Vincent Serventy; Mr E. C. Slater; Mr R. W. Turner (*ex officio*) and Mr A. D. Trounson (*ex officio*).

The Technical Sub-Committee comprised Mr H. D. Hughes; Mr H. D. Millen; Mr E. C. Slater and Mr A. D. Trounson, the Selection Panel consisted of Mr H. J. de S. Disney (Science); Mr Arthur Robinson (Art); and Mr Ederic C. Slater (Technical). Assistance has also been given by members of The Australian Museum staff.

The Advisory Panel On The National Photographic Index Of Australian Mammals was appointed in

March, 1977, and comprises Dr A. G. Lyne, Chairman and Mr T. J. Bergin; Mr H. D. Hughes; Mr B. J. Marlow; Mr H. D. Millen; Mr V. N. Serventy; Mr E. C. Slater; Mr R. Strahan. *Ex officio* members are Mr R. W. Turner; Mr E. L. Carthew and Mr A. D. Trounson. Honorary Secretary to the panel is Mr R. Strahan.

The panel has met twice (on 8 March and 24 May, 1977). It has defined the nature of the new collection and the preparatory work which has to be done before actual operations can begin. Excellent progress is being made on these tasks, particularly in the compilation by Mr Strahan of a practical checklist of species and distinguishable forms on which both the photographers and the Index staff can work. This list, in itself a notable document, will include vernacular names and an allocation of checklist numbers. A number of photographers have promised to submit photographs for the new collection.

Substantial progress continued to be made in building the Bird Index. Four sessions of the Selection Panel (designated stages XXV–XVIII) took place, with the following results:

	1976–77	(1975–76)	Totals to date
(1) Photographs submitted	1,310	(2,522)	16,314
(2) Photographs accepted for the Index (target 5 000)	363	(612)	4,149
(3) Species represented in the Index (target 803)	20	(55)	734
(4) Photographs accepted for the Transparency Section	303	(357)	1,467
(5) XT classification included in 4*	76	..	167
(6) Species represented in the Transparency Section not yet included in the Index .. .. .	..	..	28
(7) Total number of species for which photographs are held (items 3 and 6) .. .. .	..	..	762

* XT classification relates to a photograph of Index standard of a species for which the quota of photographs has already been reached in the collection. A duplicate is included in the Transparency Section so that track of it is not lost.



Gregory Millen/Australian Museum

Technical Officer, Walter Boles, from the Museum's Department of Ornithology, with the help of an assistant, re-arranged the storage area where the very large birds are kept

A number of photographers again received assistance with their field expenses, the provision of film and the loan of first-class camera equipment under the Bank of New South Wales \$20,000 Grants Scheme. The cash available under the Scheme (launched in 1973) has all but been fully spent but photographic equipment worth some \$5,000 remains as an asset for future loans.

The Technical Sub-Committee met on several occasions and produced a Report on two important questions: new photographic materials which it advocates should be employed for the Mammal Index; and measures which should be taken to provide for the preservation of the matrix of the Bird Index (internegatives) and the future Mammal Index (duplicate transparencies). The Executive Committee held three meetings.

The Reader's Digest Complete Book of Australian Birds, based on photographs selected from the Index, was launched by the Prime Minister the Rt Hon. Malcolm Fraser, CH, MP, at the National Library, Canberra on 18 October, 1976. The Index office collaborated closely with the *Reader's Digest* organization during the four year gestation period of the book in response to a proposal put to Sir Percy Spender in 1973 by *Reader's Digest* and supported by the Bird Index Trustees. The book makes a notable contribution to the stated objective of the Index of promoting the reproduction of work in the collections for the enjoyment and enlightenment of the community.

A significant part of the total effort continued to be devoted to fund-raising, and donations from private sources totalled \$18,124. A further grant of \$15,000 was received from the Australian Government.

THE AUSTRALIAN MUSEUM SOCIETY

'Man B'long Custom' and 'The Hidden World of the Mbotgo't', a film and lecture by Mr Kirk Huffman began the year's programme. Mr Har Mander Singh came from India to speak on 'Frontier Tribes of India', Captain Mohan Kohli spoke on 'Conquering the Himalayas' and Mr Bob Kingsbury on 'Filming in an Indian Village', in the series of lectures specially arranged to complement the exhibition, 'Life in India and the Himalayas'. Dr Des Griffin spoke on his hopes and plans for the Museum. 'Sub-tidal Nature Photography' (Mr Steve Parish), 'Lake Eyre Expeditions' (Ms Roma Dulhunty), 'Archaeology on the Jordan-Israel Border' (Professor Basil Hennessy), 'Lake Eyre and the Simpson Desert' (Mr Vincent Serventy), 'You can't tell the Age of a T'ang Horse' (Professor J. C. Kelly) were titles of other lectures in an interesting and varied programme. The present facilities and equipment for lectures are inadequate but the Society hopes these can be improved.

Members enjoyed parties at the opening of the Mineral Gallery, the preview of the 'Life in India' exhibition, at Christmas after the Director's lecture

and were able to attend the Celebration Dinner of the 150th Anniversary. A spring Garden Party at Yengo, the country property of Mr and Mrs Pigott, and an Art Union, were held to raise money for the running expenses of the Society.

Overseas visitors used a hospitality room during the week of the 25th International Geological Congress, and Smithsonian Associates visiting Australia were given a reception in the main foyer.

Special events for the 150th Anniversary included the Celebration Dinner on 30 March, a family day on 2 April and four historical walks with Ms Ann Pigott. A field trip to Lizard Island was cancelled because of the air controllers strike, to the great disappointment of those involved. Visits to the Royal Botanic Gardens, Taronga Zoo and the Chinese Exhibition at the Art Gallery of New South Wales completed the programme.

Members have again enjoyed assisting the Museum as volunteers in many departments, at Sunday afternoon concerts, by carrying out and collating the Museum Visitor Survey and with preparations for the Celebration Dinner. We look forward to continuing and expanding this support.

The Society hopes that by a vigorous publicity programme and by continuing the low cost of its subscription and functions, to make it possible for many more members of the public to become aware of and to enjoy the special attractions and facilities of the Museum. To this end, the Society was helped by a special grant of \$1,000 from the Premier and Minister for Cultural Activities.

Ms Faye Cameron, who had been Executive Vice-President of the Society since its inauguration in 1971, resigned at the Annual General Meeting of the Society on 27 April, 1977. It is largely due to the efforts of Ms Cameron that the Society is now held in such high esteem both inside and outside the Museum. Ms Susan Bridie, newly appointed Executive Secretary, has assumed the administrative duties of the Society.

ANNUAL REPORT 1976-1977

Membership and attendance at functions are increasing steadily. Financial membership now stands at 1,078. There are 253 Honorary Members; Trustees, Associates, Staff and Discoverers.

OTHER PROFESSIONAL ACTIVITIES

Museum staff continued membership in professional organizations and attended meetings throughout Australia and overseas during the year. Information was supplied by all departments to the public and to outside organizations and institutions and lectures were given by staff on a variety of topics.

A young school student puts the finishing touches to her batik cloth painting during 'Drop-In to The Australian Museum', the free after-school activities programme for local schoolchildren



Heather McLennan/Australian Museum

Mr B. Bertram attended the UNESCO Seminar, 'Science Museums and the Future', which was held in Brisbane from 16 November, to 19 November, 1976.

Mr Boles is a member of the Executive Committee of the NSW Field Ornithologists Club and Assistant Secretary of the Australian Bird Study Association. He is Vice-Chairman of the Ornithological Section of the Royal Zoological Society of NSW and on the Executive Committee of the County of Cumberland Bird Atlas.

Dr Cogger attended the 1976 General Meeting of the Australian Society of Herpetologists at Jervis Bay in November and also attended the Annual Meeting of the Editorial Advisory Committee for *Australian Wildlife Research* of which he is a member. He continued as a Councillor of the Linnean Society of NSW, as Research Associate of the California Academy of Sciences, and as Honorary Associate of the University of Sydney and of the University of NSW. During the year he was elected to the International Commission for Zoological Nomenclature and Honorary Consultant to the Survival Service Commission of the International Union for Conservation of Nature.

Mr P. Colman is a co-opted Councillor of the Nature Conservation Council (NSW) Executive. He attended a Symposium on Molluscs held at Shoreham, Westernport, Victoria, from 25 to 27 February, 1977.

Lectures were given by Mr Disney to the Ornithological Section of the Royal Zoological Society of NSW and to the Parramatta Hills and District Fauna and Flora Society. He continued to serve on the council of the Royal Zoological Society of NSW and the Field Investigation Committee of the Royal Australasian Ornithologist Union. He is President of the Australian Bird Study Association (formerly the Bird Banding Association of Australia), and continues as scientist on the selection panel of the National Photographic Index of Australian Birds.

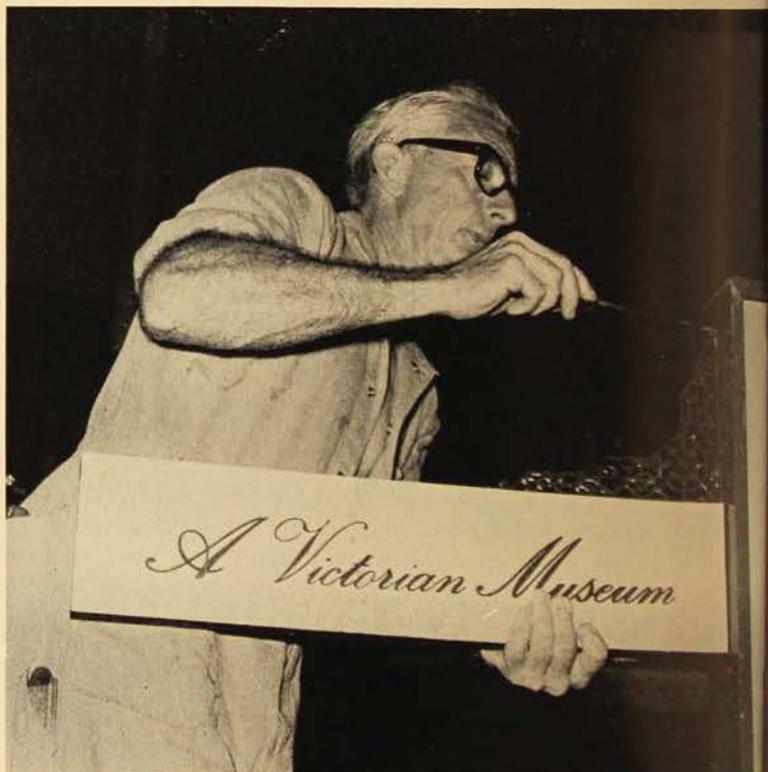
He was also appointed as Honorary Associate Supervisor for Ms A. Cam, PhD student at Macquarie University.

Mr Gray gave lectures to the Royal Society of NSW, the Museum Discoverers Club, the Hills Fauna and Flora Society and the Singleton Rotary Club.

Ms B. Duckworth attended the Symposium on Molluscs held at Shoreham, Westernport, Victoria, from 25 February to 27 February, 1977.

Dr Griffin continued as President of the Australian Marine Sciences Association and as Vice-President of the Museums Association of Australia. He attended the UNESCO Seminar 'Science Museums and the

Artificer, Terry Lang attaches the finishing touch to the special 'History of the Museum' exhibit which was opened by the Governor of New South Wales, Sir Roden Cutler, on 30 March, 1977



Gregory Millen/Australian Museum



Gregory Millen/Australian Museum

Part of the 'History of the Museum' exhibit in the Long Gallery consisted of a reconstruction of a typical Victorian museum

Future' and the Annual Conference of the MAA in Brisbane in November. During the year, as a member of the NSW National Parks Advisory Council, Dr Griffin inspected several National Park areas with the Council. He also continued as a Councillor and member of the executive of The National Trust of Australia (NSW) and as a member of the Scientific Advisory Committee of the NSW Public Service Board.

Ms J. Hingley attended the 25th International Geological Congress and the 10th International Mineralogical Association meeting, held at the University of Sydney from 16-25 August, 1976. She also attended the 2nd Geological Society of Australia Convention at Monash University in February, 1977, and took part in the 3rd Australian

National Conference and School on X-ray Analysis held in Canberra at the same time.

Dr Hoese is Secretary of the Australian Society for Fish Biology, and is the external supervisor for two graduate students at the University of New South Wales.

Mr Hunt has continued as a Council member of the New South Wales Branch of the Museums Association of Australia and as Vice-President of the Association for Environmental Education (NSW). He also represented the Museum on the NSW Public Service Professional Officers' Association, and attended the Museum Education Association of Australia Conference in Sydney 20-23 April, 1977.

In July, Dr Hutchings presented a paper on the distribution and abundance of cryptozoa at Lizard Island, Queensland, to an International Symposium on "The Management of Some Tropical Shallow Water Ecosystems", held in Jakarta, Indonesia. Another paper, "The Management of Mangroves in an Urban Situation", written jointly with Dr Harry Recher, was also given at this symposium. Dr Hutchings also attended the Third International Coral Reef Symposium in Miami in May.

Mr Jones attended the 25th International Geological Congress held in Sydney in August, 1976.

Ms L. Juska attended the UNESCO Seminar, 'Science Museums and the Future', which was held in Brisbane from 16 to 19 November, 1976.

Mr Marlow attended the Mammals of the Sea conference, held in Bergen, Norway, 31 August-9 September. While overseas, the opportunity was taken to visit a number of museums. The following institutions were visited: British Museum (Natural History), London; American Museum of Natural History, New York; Smithsonian Institution, Washington; Field Museum of Natural History, Chicago. He attended a Mammal Society meeting held at Fowlers Gap, NSW 5-14 January and the Annual General Meeting of the Mammal Society held

at Macquarie University 19–21 May. He was invited to sit on the Committee and Selection Panel for the Mammal Section of the National Photographic Index of Australian Wildlife.

Dr McAlpine contributed a paper on the Family Classification of the Diptera to a symposium at the XV International Congress of Entomology in Washington, DC. He also visited the Smithsonian Institution, Washington; the British Museum (Natural History), London and the Natal Museum, Pietermaritzburg, where he studied the collections of Diptera. Dr McAlpine has served on the Council of the Linnean Society of New South Wales.

Ms McDonald attended the meetings of the ICOM International Committee for Education and Cultural Action in Sweden and visited the museums in Hong Kong, Taiwan, Japan and Sweden 23 August–24 September, 1976. She also attended the Eleventh Triennial Conference of the International Council of Museums in Leningrad and Moscow 13 May–9

June, 1977. She attended the UNESCO Seminar, 'Science Museums and the Future', held in Brisbane 17–19 November, and the Annual General Conference of the Museums Association of Australia on 10 November, 1976. She also attended the meeting of the Australian National Committee for ICOM held in Melbourne, 9 February, 1977. Ms McDonald was formally appointed The Australian Museum's representative on the Board of Studies for the Museum Studies Diploma Course at the University of Sydney. She continued to serve as Secretary of the Museums Association of Australia until 10 November, 1976, when she was elected President of that organization. She also continued as Vice-President of the ICOM International Committee for Education and Cultural Action (until 24 May, 1977), as President of the Museum Education Association of Australia (until 22 April, 1977, when she was elected Vice-President). She continued as a Council member of the Australian National Committee for ICOM and has continued to represent the Museum on the TAMS council.

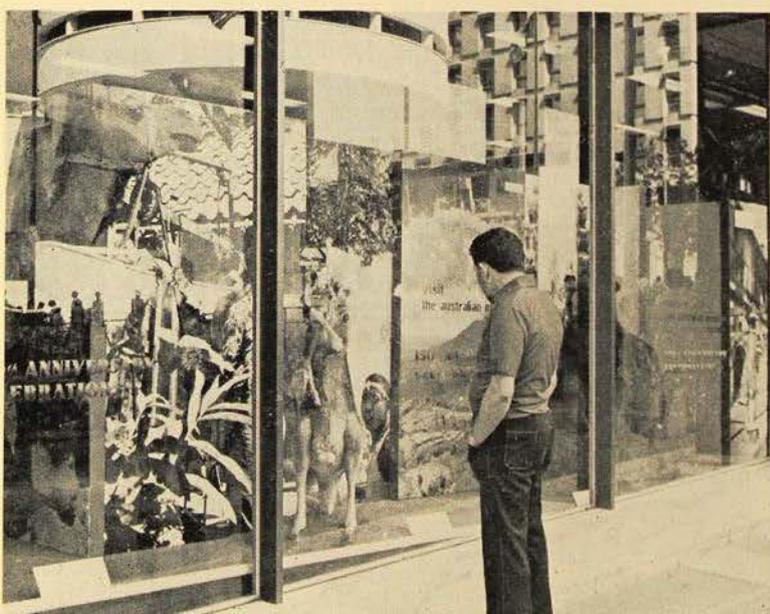
Mr McDougall and Ms McLeod attended the UNESCO Seminar, 'Science Museums and the Future', held in Brisbane 17–19 November, the Annual General Conference of the Museums Association of Australia on 10 November, 1976, and the Museum Education Association of Australia Conference on 'Museum Training' held in Sydney 20–23 April, 1977. Ms McLeod has continued as Honorary Secretary of the Association for Environmental Education (NSW).

Mr I. Loch attended the Symposium on Molluscs held at Shoreham, Westernport, Victoria, from 25 February to 27 February, 1977.

Mr Moore served as member of the Advisory Committee on Aboriginal Relics to the National Parks and Wildlife Service of NSW, and of the Material Culture Advisory Committee of the Australian Institute of Aboriginal Studies. He was reappointed to the Council of the Anthropological Society of NSW and was adviser on Aboriginal Relics

THE AUSTRALIAN MUSEUM

An exhibit promoting the Museum's 150th Anniversary Celebrations was set up in the windows of OTC, Martin Place, Sydney, in March, 1977



Heather McLennan/Australian Museum

to the National Trust of Australia. He assisted the NSW Institute of Technology on an architectural project to design a museum to be built at a rock art site, and gave lectures to the Sutherland Shire Historical Society and the Maritime Section of the Royal Australian Historical Society.

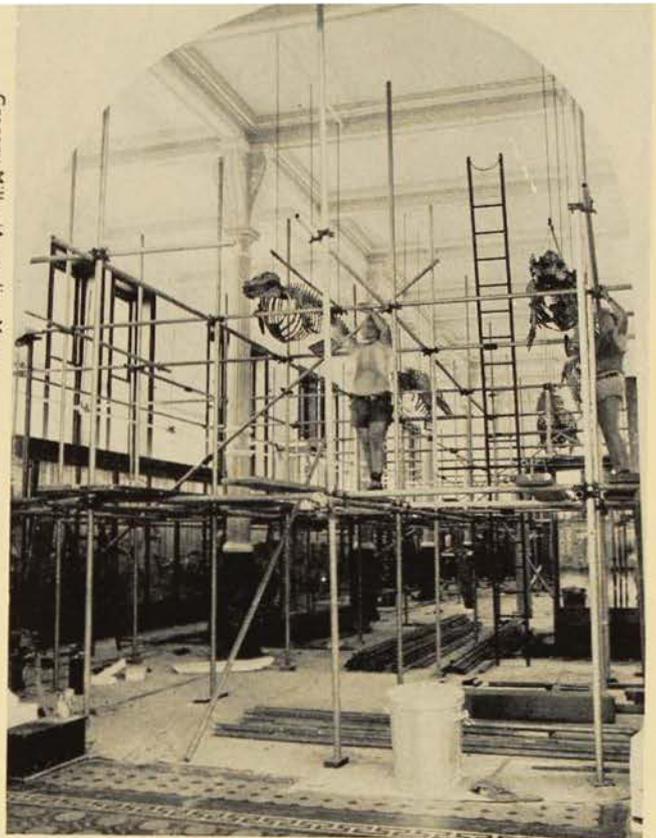
Dr Paxton continues as President of the Australian Society for Fish Biology and is supervising graduate students at the University of Sydney and Macquarie University.

Dr Ponder continued as Chairman of the Sydney Branch of the Malacological Society and was elected Chairman of the newly formed Council of Australian Museum Malacologists. He attended the Symposium on Molluscs held at Shoreham, Westernport, Victoria, from 25 February to 27 February, 1977.

Dr Ritchie attended the 25th International Geological Congress held in Sydney in August, 1976. He was invited by the Estonian Academy of Sciences to participate in a Colloquium on Middle Palaeozoic Fishes held in Tallinn, Estonia, 28 September–2 October, 1976. He gave two talks, one on the 'Origins, evolution and palaeogeographic distribution of the Devonian arthrodiran family, *Groenlandaspidae*', and another on 'The oldest vertebrates, new discoveries from the Ordovician of the Amadeus Basin, Northern Territory, Australia'. This was the first occasion on which the All-Union Vertebrate Palaeontology Conference had been opened to include a large number of Western participants. Before returning to Australia, Dr Ritchie visited and studied material in the British Museum (Natural History), London; Museum of Comparative Zoology, Boston; American Museum of Natural History, New York; Field Museum, Chicago; and California Academy of Sciences and University of Berkeley, San Francisco. Dr Ritchie is on the Council of the Linnean Society of NSW.

Ms S. Robinson attended the UNESCO Seminar, 'Science Museums and the Future', which was held in Brisbane from 16 to 19 November, 1976.

Gregory Millen/Australian Museum



Workmen erect scaffolding prior to the repairing of the Museum's popular Skeleton Gallery

Dr Rowe spoke to the Museum Discoverers on his visit to Guam and has been appointed a member of the Great Barrier Reef Committee. The department is organizing the International Echinoderm Conference to be held at The Australian Museum in March, 1978.

Dr Smithers remains a Council member of the Australian Entomological Society.

Ms Smith attended the UNESCO Seminar, 'Science Museums and the Future', which was held in Brisbane in conjunction with the Annual Conference of the



Colourful flags in the streets near the Museum marked the opening of each special exhibition during the Sesquicentenary year



Museums Association of Australia, and the Eleventh Triennial Conference of the International Council of Museums (ICOM) where she was elected to the Executive Council of the International Committee for Museology. She is also a member of the ICOM International Committee for Public Relations, Council member of the New South Wales Branch of the Museums Association of Australia, and a member of The Museums Association (UK). En route to and from the ICOM Conference in Leningrad and Moscow, Ms Smith visited museums and historic sites in thirty-nine cities in Hong Kong, Macau, Taiwan, Japan, England, France, Spain, Italy, Greece, Turkey, Israel, India, Thailand and Singapore, and the Western Australian Museum in Perth. She also served as a panelist at a session of the Museum Education Association of Australia's Biennial Conference.

Dr Specht was reappointed Secretary of the Anthropological Society of NSW and served on the sub-committee for the Oceanic Cultures Study

Project of the Australian National Commission for UNESCO. In April-May, 1977, Dr Specht participated in a second mission to the South Pacific to investigate aspects of cultural preservation and development on behalf of the Department of Foreign Affairs, Australian Government. This mission was a follow-up to that of 1974 which provided a baseline for Australian cultural aid to the Pacific from 1974 to 1977. The 1977 mission visited eight Pacific Islands countries and its report is expected to provide a framework for continued Australian cultural aid from 1977 to 1979. Dr Specht also served on the Standing Committee which advises the Department of Foreign Affairs on the operation of the cultural fund.

Mr Strahan was reappointed an Honorary Associate of the School of Zoology of the University of New South Wales, re-elected Vice-President of the Royal Zoological Society of New South Wales, Chairman of its Mammal Section, and Editor of its *Field Guide to the Mammals of New South Wales*. He continued to serve as Councillor of the Australian and New Zealand Association for the Advancement of Science (ANZAAS) and as Honorary Editor of its journal, *Search*. He was appointed a Trustee of the Photographic Index of Australian Wildlife and Honorary Secretary of its Advisory Panel (Mammals).

Mr Sutherland attended the 25th International Geological Congress and the 10th International Mineralogical Association Meeting, held at the University of Sydney from 16 to 25 August, 1976. He acted as convenor of the Symposium on 'Museums and Curating' at the latter. He presented his paper 'K-Ar dating of Tertiary Basalts, Northern Bowen Basin Region, Qld—implications for petrologic models' to 2nd Geological Society of Australia Convention in Melbourne on 1 February, 1977. He gave a paper on 'Dynamic Volcanism of Australia' to the S. W. Carey Appreciation Symposium, Orthodoxy and Creativity at the Frontiers of Earth Science, Hobart on 7 February and to the University of Wollongong, Department of Geology Symposium, on 15 April, 1976. He gave two short

talks on the 'Minerals of Volcanic Rocks' and the 'Gem Minerals in Volcanic Rocks' to the Mineralogical Society of NSW on 3 June and the Northside Gem Club on 16 June, respectively. Mr Sutherland attended the S. W. Carey Appreciation Symposium, at the University of Tasmania in February, 1977. He is The Australian Museum representative on the Geological Co-ordination Committee for NSW Government Departments and the Australian representative on the Museums Commission of the International Mineralogical Association. He is on the Editorial Board of the *Australian Mineralogist*, a Patron of the Mineralogical Society of NSW, a Trustee of Hatton's Corner Geological Reserve, NSW and a Panelist in the NSW Lapidary Club.

Ms Walston gave various lectures during the year to Anthropology and Museum Studies students at the University of Sydney, and also presented an extended paper on 'The Conservation of Museum Objects' at Newcastle at one of the on-going series of Country Museum Seminars. Organized by the Division of Cultural Activities, Premier's Department, these seminars are designed to provide practical and administrative assistance to small museums throughout NSW. She is currently editing the proceedings of The National Conservation Conference held in Canberra, 1976, by The Institute for the Conservation of Cultural Material. Ms Walston is also President of the ICCM, and is presently organizing the next National Conference to be held in Sydney in August, 1978.

Mr Wilson attended the Eleventh Triennial Conference of the International Council of Museums in Leningrad and Moscow 13 May-9 June and visited museums in Canada, the USA and the United Kingdom from 25 April to 29 May, 1977, and the Museum Education Association of Australia Conference in Sydney 20-23 April, 1977.

Mr E. K. Yoo attended the Symposium on Molluscs held at Shoreham, Westernport, Victoria, from 25 February to 27 February, 1977.

STAFF

DIRECTOR—D. J. G. Griffin, MSc, PhD (from 17-8-76)
DEPUTY DIRECTOR—H. G. Cogger, MSc, PhD (from 3-12-76)

SCIENTIFIC DEPARTMENTS

PRINCIPAL CURATOR—C. N. Smithers, MSc, PhD

ANTHROPOLOGY

CURATORS—D. R. Moore, MA, DipAnthrop (Head of Department to 20-12-76); J. R. Specht, MA, PhD (Head of Department from 20-12-76)

ASSISTANT CURATOR—K. W. Huffman, BA (Hons.) (Cantab), DipEthnol (Oxon) (to 6-8-76)

TECHNICAL OFFICERS—H. Czuchnicka, BA; Z. Wakelin-King, BA

ASSISTANT—G. O'Donnell (from 20-9-76)

GRADUATE CATALOGUER—M. Koettig, BA (from 7-1-77)

ARACHNOLOGY

ASSISTANT CURATOR—M. R. Gray, MSc (Head of Department)

ASSISTANT—C. A. Horseman

ENTOMOLOGY

CURATORS—D. K. McAlpine, MSc, PhD, DIC; C. N. Smithers, MSc, PhD (Head of Department)

RESEARCH ASSISTANTS—G. Daniels; M. Schneider, BSc

TECHNICAL OFFICER—G. A. Holloway, BSc

ASSISTANTS—R. D. Brewer; K. C. Kota

ENVIRONMENTAL STUDIES

CURATOR—H. F. Recher, BSc, PhD

ASSISTANT CURATOR—A. R. Jones, MSc, PhD

TECHNICAL OFFICERS—R. Knox, BSc (to 15-6-77); D. Milledge; H. Posamentier, MSc (to 10-2-77); J. Settle; P. Tyrell, BSc (from 16-6-77)

ASSISTANT—C. Short

HERPETOLOGY

CURATOR—H. G. Cogger, MSc, PhD (Senior Research Scientist)

TECHNICAL OFFICER—H. Ehman, BSc (to 24-12-76)

TECHNICAL ASSISTANT—P. Webber

ASSISTANT—A. Young

ICHTHYLOGY

CURATOR—J. R. Paxton, MSc, PhD

ASSISTANT CURATOR—D. F. Hoese, BA, PhD

TECHNICAL OFFICERS—D. J. Blake, BA; H. K. Larson, MSc

MALACOLOGY

CURATORS—J. B. Burch, MSc, PhD (to 6-5-77); W. F. Ponder, MSc, PhD (Head of Department)

RESEARCH ASSISTANT—E. K. Yoo, BSc

TECHNICAL OFFICER—I. Loch

TECHNICAL ASSISTANT—P. H. Colman

ASSISTANTS—B. G. Duckworth; J. O'Regan (from 18-10-76 to 30-6-77)

MAMMALOLOGY

CURATOR—B. J. Marlow, BSc

TECHNICAL OFFICER—L. M. Gibson

MARINE INVERTEBRATES (Crustacea and Coelenterates)

CURATOR—J. K. Lowry, MA, PhD (from 1-8-76)

RESEARCH ASSISTANT—G. D. Fenwick, MSc (to 1-4-77)

TECHNICAL OFFICER—D. E. Brown, BA

ASSISTANT—R. Ferster, BSc (to 31-8-76)

MARINE INVERTEBRATES (Worms and Echinoderms)

CURATORS—P. A. Hutchings, BSc, PhD; F. W. E. Rowe, BSc, PhD, MInstBiol, FLS (Head of Department)

VISITING QUEEN'S FELLOW—S. Oldfield, PhD (from 1-2-77)

RESEARCH ASSISTANT—P. Weate, BSc

TECHNICAL OFFICER—J. Ogg, BSc

ASSISTANTS—H. Dlugaj (from 8-11-76 to 26-11-76 and from 4-4-77 to 22-4-77); K. Handley

MINERALOGY AND PETROLOGY

CURATOR—F. L. Sutherland, MSc

TECHNICAL OFFICER—J. E. Hingley, BAppSc

ASSISTANT—G. A. Brady, MA

ORNITHOLOGY

CURATOR—H. J. de S. Disney, MA

TECHNICAL OFFICER—W. Boles, BSc

PALAENTOLOGY

CURATOR—A. Ritchie, BSc, PhD

TECHNICAL OFFICER—R. K. Jones, BSc

ASSISTANT—D. Jones

FUNCTIONAL ANATOMY UNIT

RESEARCH FELLOW—R. Strahan, MSc, MInstBiol, FISH, FLS, FRZS

TECHNICAL ASSISTANT—G. Serkowski

RAINFOREST RESEARCH UNIT

RESEARCH ASSISTANT—J. Broadbent, BSc, PhD (to 31-12-76)

DIRECTOR'S RESEARCH LABORATORY

RESEARCH ASSISTANT—H. Tranter, BSc

DEPUTY DIRECTOR'S RESEARCH LABORATORY

RESEARCH ASSISTANT—L. Cameron, MSc (from 7-2-77)

LIZARD ISLAND RESEARCH STATION

RESIDENT DIRECTOR—S. Domm, BSc (to 30-11-76)

MANAGER—B. Goldman, BSc, PhD (from 13-12-76)

MATERIALS PRESERVATION SECTION

OFFICER-IN-CHARGE AND ASSISTANT CURATOR—S. Walston, DiplnstArch

CONSERVATOR—P. Gill

ASSISTANT—P. Townley

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EDUCATION OFFICERS—G. S. Hunt, BSc, DipEd; J. N. McDougall, BSc, DipEd; J. M. McLeod, BA, DipEd; S. B. A. Maguire, BA; M. M. Tyler, ASTC (part-time); E. J. Wilson BSc

PREPARATORS—R. C. Inder; D. B. Millar

TYPISTS—K. Bowcock (from 24-11-76 to 18-4-77); E. McPhee (from 24-1-77); B. Shiner (from 2-5-77); R. L. Thompson (to 24-11-76); J. E. Watson (to 12-1-77)

EXHIBITIONS DEPARTMENT

CHIEF—B. Bertram

EXHIBITION OFFICERS—J. Freeman, AIDIA, ESTC, CDesign (Interior) (Acting Chief to 4-1-77); L. Juska, LIDIA; D. Rae

TYPIST—J. Raffin

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SENIOR ARTIST—K. Gregg (from 13-12-76)

ARTISTS—M. Kolotas, ASTC, DipDesign (Graphics); S. Robinson, ASTC, DipDesign (Painting)

ASSISTANTS—D. Beeman (from 25-10-76); A. Burrows; R. Cowell (from 4-1-77)

OUTER URBAN EXHIBIT

ARTISTS—R. Downes, ASTC, DipDesign (Interior) (from 4-2-77); B. Matzick, DipDesign (Display).

ASSISTANTS—L. Clapton (from 4-2-77); S. Souter (from 7-2-77)

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PREPARATORS—J. Cases; S. Clark; G. Hangay; R. Lossin; R. Witchard

ASSISTANT PREPARATORS—M. Dingley; R. Scott-Child

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ARTIFICERS—K. Forster; T. Lang; J. Neish

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LIBRARIAN—N. Boness, BA, DipLib, ALAA

CATALOGUER—E. E. Giles, BA, DipLib (part-time)

LIBRARY OFFICER—F. D. Pearce

TYPIST—H. Spitzer

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PHOTOGRAPHER—G. J. Millen

PHOTOGRAPHIC OPERATOR—H. McLennan

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ASSISTANT EDITOR—R. S. Stewart

PRODUCTION ASSISTANT—L. E. Ryan

ADMINISTRATION

SECRETARY—M. McNamara, AASA

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OFFICER-IN-CHARGE—V. J. Dwyer (to 9-5-77); K. Todd (from 4-5-77)

CLERKS—S. Gulson; I. Lucas; B. J. James (from 24-2-77); S. J. Wright (from 8-6-77); W. H. Tarvey (from 10-10-76); M. La Kiss (to 24-2-77); M. A. Carrick (to 10-6-77); R. Helm (to 1-10-76)

CLERICAL ASSISTANTS—G. Brady (from 4-4-77); G. Owens (to 20-1-77); V. Parker

CLERICAL ASSISTANTS (BOOKSHOP)—P. Russell; B. Jones (part-time)

STENOGRAPHER/TYPISTS—C. Choy (from 3-6-77); V. Morrissey (from 29-11-76); L. Oxley (to 26-11-76); S. Russell (to 25-1-77); C. A. Sinclair; A. Whilby (from 21-10-76); J. Williams; D. ter Wisscha; B. Wright

RECEPTIONIST/TYPIST—C. Spicer

TELEPHONISTS—A. Sommer (from 13-12-76); S. Smart (to 20-12-76)

STOREMAN/DRIVER—B. Bellamy

ATTENDANTS AND SECURITY

SUPERVISOR—W. Wason

SENIOR ATTENDANT—J. Lewis

ATTENDANTS—R. Aylward; N. Bevan; B. Buckley; R. Cooper (from 18-10-76); S. Coops; N. Crocker (to 28-9-76); M. Duncan; J. E. Elias (from 17-1-77); J. Finney; F. Folkes; K. Forsyth; K. Graham; S. Harris (to 7-6-76); D. Hodges; R. Holmes; N. Maker (from 19-4-76); R. Miller (to 17-6-77); M. Neligan; E. Papadellis; P. Powess (from 26-4-77); K. Randall; L. Reardon (to 11-8-76); A. Rosewarn; K. Smith; D. Walden; R. West; I. Williams (from 9-7-76 to 22-4-77); S. Zimeris

NIGHT SECURITY OFFICERS—R. Heland; D. Paterson; H. Pierson; R. Souter; J. Stark; H. Ward

CLEANERS—E. Drakoulaki; J. Elias; M. Fernandez; S. Kovah; P. Permuses

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN WILDLIFE

EXECUTIVE OFFICER—A. D. Trounson

EXECUTIVE TRUSTEE—E. L. Carthew

ARCHIVIST (photographs)—J. M. Trounson

CLERICAL ASSISTANT—Z. Middleton (part-time)

BOOKKEEPER—M. Bell (casual)

STENOGRAPHERS—B. Hewitt (casual); A. Robins (casual)

THE AUSTRALIAN MUSEUM SOCIETY

EXECUTIVE VICE PRESIDENT—C. F. Cameron, BA (to 27-4-77)

EXECUTIVE SECRETARY—S. A. Bridie (from 18-5-77)

CLERICAL ASSISTANT—B. Thomas

APPENDIX I DONATIONS

Donations of specimens and archival material were donated to the Anthropology Department by Dr A. Capell, Lindfield, NSW; J. Cannon, Mosman, NSW; L. J. Martin, World Health Organization, Geneva, Switzerland; E. M. Simpson, England; S. Kellner, Waverley, NSW; A. Prescott, Tonga; D. Stuart-Fox, Newcastle, NSW; J. Wise, Sydney, NSW; C. W. Marshall, Killara, NSW. To mark the Museum's 150th Anniversary, S. Kellner presented a basketry pig figure from the middle Sepik River area of Papua New Guinea. C. W. Marshall presented his original field note books written in the 1920's and 1930's; photographic material from Dr A. Capell, Solomon Islands; L. J. Martin also donated photographic material of the Pacific and the highlands of Irian Jaya; L. Martin presented a collection of artefacts from the highlands of Irian Jaya; J. Cannon donated a selection of African items; E. Simpson, England, donated through the NSW Agents General's office in London, a collection of New Hebridian and other Pacific Islands' items; a collection of artefacts from Bougainville Island, Papua New Guinea and Australia was bequeathed by the late E. McFadyen, Gordon, NSW.

The Department of Arachnology received donations of Cavernicolous fauna (mainly spiders) from M. Marx; Araneida (types) from Dr R. Forster and Dr D. Blest; Araneida (general) from R. Maxcord and Dr R. Emery; Pseudoscorpionida (types) from Dr M. Beier and Dr A. Richards.

Important collections of Crustacea were donated by FRV *Kapala*, NSW State Fisheries; Dr A. J. Bruce, Heron Island Research Station; G. D. Fenwick, University of Canterbury, New Zealand; C. Pregoner, University of NSW; S. Talbot, University of Sydney; D. Tranter, CSIRO, Cronulla.

Significant and important collections have been donated to the Department of Entomology: Hymenoptera by N. W. Rodd; Lepidoptera by G. Rushworth; Coleoptera by L. C. Haines; Diptera by M. Walford-Huggins; Diptera and material of several other orders by G. Daniels; Neuroptera and Psocoptera by M. Moulds; a collection of mainly Hymenoptera and Diptera, from Fiji by R. Eastwood; various orders by C. E. Chadwick.

A collection of freshwater turtles of special significance was donated to the Department of Herpetology by Dr. J. Parmenter, University of New England.

Collections of fishes were donated to the Department of Ichthyology by FRV *Kapala*, NSW State Fisheries; Roche Pharmaceutical; R. Kuitert; N. Coleman.

Large and scientifically valuable collections of Queensland and South African Mollusca were donated to the Department of Malacology by I. Loch and R. Stobbs. Other useful donations came from J. Kerlake; H. Wise; J. Wise; R. Kuitert; F. Plant; T. Garrard; R. Burn; J. R. Penprase and NSW State Fisheries.

The Department of Mammalogy received donations of native and overseas mammals from Taronga Zoo; small marsupials from Stephen Morton, University of Melbourne; rodents from C. H. Watts, Institute for Medical and Veterinary Science; marsupials and rodents from A. Rose, National Parks and Wildlife Service; bats from J. Menzies, University of Papua New Guinea; bandicoots from G. Lyne, CSIRO Division of Wildlife Research.

A variety of specimens were donated to the Department of Marine Invertebrates (Worms and Echinoderms) by N. Coleman, Associate, The Australian Museum; a valuable intertidal collection of polychaetes from South Australia by S. Edmonds, South Australian Museum; Dr R. Gibson, Liverpool Polytechnic, UK, continues to deposit valuable type collections of Australian nemerteans in the collection; a valuable collection of polychaetes from Calliope River, Gladstone, Queensland from Dr P. Saenger, Southeast Queensland Electricity Commission; a group of polychaetes (F. Terebellidae) representing several genera to The Australian Museum by the Division of Worms, Smithsonian Institute of Natural History; littoral echinoderms from Victoria and South Australia by Dr B. J. Smith, National Museum, Victoria; echinoderms from northern Queensland (vicinity of Lizard Island) by Ian Skinner, Roche, Dee Why, NSW; from Lizard Island and northern coast of NSW by N. Coleman, Associate, The Australian Museum; from 400 fathoms off the coast of NSW by K. Graham, State Fisheries; a collection of crinoids from New Caledonia from Dr and Mrs R. Catala, Aquarium, Noumea, New Caledonia; echinoderms from E. C. Pope, Roseville, NSW; collection of amphiuroid ophiuroids from Queensland by Dr P. Saenger, Southern Electric Authority, Queensland; holotypes and three paratypes, a new species of the apodid holothurian genus *Trochodota* by S. Shepherd, Department of Fisheries, South Australia; paratype of a new species of apodid holothurian (*Rynkatorpa*) by A. M. Clark, British Museum (Natural History).

The Department of Mineralogy and Petrology received donations of Zircons from the Harts Range, Northern Territory by D. Morgan; secondary minerals from copper mines, near Yass, by H. Hanley; secondary minerals from Mt Costigan, NSW, by P. Morrissey; copper-uranium minerals from Zaire, Africa, by D. Pohl; suite of manganese oxides from Groote Eylandt, Northern Territory; a large suite of excellent minerals from the classic Tsumeb Mine, South West Africa, by the Tsumeb Corporation Ltd; copper arsenates from Dome Rock by B. Ryall; polished ornamental stones by A. Gardner; display specimen of chrome cerussite by A. Chapman; display specimen of covellite by J. Murphy; display specimen of borax by J. Woolfe; other donations were received from Mara Gems and Minerals; Newmont Pty Ltd; Waverley Gem Club; Western Australia Department of Mines; P. Anderson; P. Bridge; B. Clarke; G. Clifton; T. Coldham; K. Davey; G. Gibbons; R. Hill; I. Mumme; D. Pitt; J. Pixley; R. Pogson; E. Re; R. Taplin; H. Worner.

Specimens to the Department of Ornithology were donated by National Parks and Wildlife Services (NSW); Taronga Zoological Park; T. H. Abey; B. G. Amery; J. Armstrong; M. Bailey; Mrs Beddows; C. Bennett; R. Bergen; T. and C. Bonser; J. A. Broadbent; A. Cann; G. C. Campbell; T. Carthew; J. Cases; G. P. Clancey; S. Clark; H. G. Cogger; W. T. Cooper; B. Cerfe; S. Debus; M. Dingley; A. D'Ombrain; B. W. Finch; P. Fluke; J. M. Forshaw; A. Fox; A. Gibson; D. Goldney; M. Gray; V. Gregg; L. C. Haines; G. Hangey; G. Holmes; Mrs Howie; J. Izzard; N. Kurtz; S. G. Lane; A. Leisman; J. Leone; G. J. Logan; M. Lottmidge; N. W. Longmore; R. V. Loucks; J. K. Lowry; S. Marchant; D. Milledge; R. Moffat; A. K. Morris; K. Muller; J. E. Noyce; T. O'Shea; R. B. Pheasant; M. Potter; H. Recher; A. B. Rose; M. Sawtell; R. Shick; D. I. Smedley; L. Smith; D. Stenhouse; A. Stewart; A. Stokes; B. Thompson; D. M. Wanless; W. Watson; H. Wells; L. Wheeler; Mrs Whipps; R. Witchard and S. Zimeris.

Donations to the Palaeontology Department included a superb specimen of the early Permian mesosaur, *Brasilosaurus sanpauloensis*, presented by Francesco Massidda for public display in the Hall of Fossils; Triassic plant fructifications from NSW by S. Ash, University of New England; a Carboniferous coral, *Michelinia*, by Archie Chubb, Gloucester, NSW; Devonian plants from the late Dr Ida Brown; Pleistocene marsupial and bird remains from NSW cave deposits by Dr Jeanette Hope, Department of Prehistory, ANU, Canberra.

The Department of Education received some superb black and white photographs of various kinds of penguins for the school loan travel case on these birds from the Australian Department of Supply; a set of enlarged colour photographs of insects from the Jacaranda Press, Brisbane.

Among the more notable items presented to the Library during the year were Davies, K. C., Zoological Collections of the Oxford University Museum, presented by the University; Salvat, B., and C. Rives, Coquillages de Polynesie, presented by the authors; Every Australian Bird Illustrated, presented by Walter Boles, Australian Museum; Manuscripts of the anthropological writings of Alfred Leopold Oschatz, presented by H. Wolgast; Greenwalt, C. H., Hummingbirds, Vol. 1-5, presented by the author. Time-Life International (Australia) presented Life Nature Books to the Education Department for Discoverers' Awards.

The National Photographic Index of Australian Wildlife received donations from D. K. Best, Sydney; A War Widow, Sydney; B. R. Baxter, Sydney; J. F. Cahill, Sydney; K. E. Armstrong, Sydney; M. MacDonnell, ACT; E. Szekeres, Sydney; F. H. Mommlarts, NSW; E. M. G. Morgan, NSW; H. H. Heinemann, Sydney; S. F. Story, ACT; P. Stewart, ACT; Dr B. Lindemann, ACT; P. Flynn, Sydney; C. C. C. Rowe, NSW; John Sands Holdings, Sydney; Schroeder Darling and Company, Sydney; Bland Payne Australia Ltd, Sydney; Abbotsleigh School, Sydney; Australian Mining and Smelting, Melbourne; Hamersley Iron Pty Ltd, Melbourne; Lady Coles.

APPENDIX 2 ACKNOWLEDGMENTS OF CO-OPERATION

The following organizations provided general assistance to the Museum and its staff in important ways including provision of research facilities and advice:

Air India; Allan Hancock Foundation, Los Angeles; Australian Regular Army; British Museum (Natural History), London; CSIRO Division of Fisheries and Oceanography, Cronulla, Mineral Physics, Wildlife Research; Collins Publishers; Conservation Section, National Library of Australia; Department of Chemistry and Metallurgy, Sydney Technical College; Department of Materials Science, NSW Institute of Technology; Division of Wood Technology, Forestry Commission of NSW; Electron Microscope Unit, University of Sydney; Forestry Commission of NSW; Gemmological Association, Sydney; Geochronology Laboratory, University of Queensland; Geological and Mining Museum; Geological Survey Library; Geology Department, NSW Institute of Technology; Geology Department, University of Sydney; Government of India; Government Stores Department, Clothing Factory Branch; Jododex (Aust.) Pty Ltd; Kashmir Government Arts Emporium, Srinagar, India; Lord Howe Island Board; Macleay Museum; Maritime Services Board of NSW; Melbourne University Press; Mitchell Library, Sydney; Museo de Historia de la Ciudad, Barcelona; Museum National d'Histoire Naturelle, Paris; NSW State Fisheries; National Museum of Victoria; National Parks and Wildlife

Service (NSW); Northeastern Regional Laboratory; *Reader's Digest*; School of Earth Sciences, Macquarie University; Smithsonian Institute of Natural History, Washington DC; South Australian Museum; Specialist Services and Applied Research Section, Geological Survey of NSW; Specialist Services Section, Department of Mines; *Sun Newspaper*; Tasmanian Museum and Art Gallery, Hobart; Technical and Field Survey Pty Ltd; US Geological Survey; Utah Development Company Ltd, Blackwater, Queensland.

The following individuals also helped the Museum during the year: Dr M. Archer, Queensland Museum; V. Attenbrow, Chippendale, NSW; M. Aubrey; Douglass Baglin; Dr A. Baker, National Museum of New Zealand; Dr J. Baker, Roche Research Institute of Marine Pharmacology; Dr E. Ball, Australian National University, Canberra; Dr S. M. Bard, Hong Kong; R. Barwick, Australian National University; B. Baun; Mr Begaud, Societe Caledonienne d'Ornithologie, Noumea; Dr R. Begg, Forestry, Fisheries and Wildlife, NT; Dr D. Bell, Rose Bay, NSW; Dr U. Bier, Institute of Papua New Guinea Studies; J. Birmingham, University of Sydney; A. Birtles, James Cook University, Queensland; R. Blong, Macquarie University, NSW; Dr and Mrs R. J. Boles, Emporia State University, Kansas, USA; Ray Bostock; Dr D. Braithwaite, Monash University, Victoria; D. F. Branagan, University of Sydney; P. Bridge; Jan Cain; John Calaby, ANU; John Carnemolla; Dr and Mrs Catala, Aquarium, New Caledonia; C. E. Chadwick; R. O. Chalmers; A. Chapman; A. M. Clark, British Museum (Natural History), London; B. Clark; Dr R. Clarke, Emporia State University, Kansas, USA; Joan Cocks; D. Colchester; T. Coldham; Marie Cole; N. Coleman, Associate, Australian Museum; J. T. Collins, Museum Natural History, University of Kansas, USA; E. Connell; L. Cook; W. T. Cooper, Bungwahl, NSW; T. Corkhill, Balgowlah, NSW; J. Crancher; A. Crawford, National Cultural Council, Papua New Guinea; L. Dawson, University of NSW; J. Dixon, National Museum of Victoria; M. le Colonel Dominique, Chef d'Etat-Major, French Army, Noumea; S. Dovos; K. Dundas, Art Gallery of NSW; Dexter Dunphy, University of NSW; F. Dwight; P. Earhart; Peggy Ebby; S. Edmonds, South Australian Museum; Monsieur C. Erad, Museum National d'Histoire Naturelle, Paris; Margot Evers; J. Farrand, American Museum of Natural History; D. K. Feil, ANU; Mlle S. Feles, Noumea; C. Finaughty; W. Fisher, Australian Consul-General, Noumea; Leo Fleischmann; B. Flemming; H. O. Fletcher, Honorary Associate, Australian Museum; A. Fox, National Parks and Wildlife Service (NSW); Shirley Franges; E. Friese, Taronga Zoo and Aquarium; Caroline Gabell; Dr Eugene Gaffney, American Museum of Natural History, New York; I. C. J. Galbraith, British Museum (Natural History); Dr Garanger, Paris, France; T. A. Garrard; Dr D. George, British Museum (Natural History), London; G. George, Colin MacKenzie Sanctuary, Healesville, Victoria; J. Gerritsen; G. Gibbons; Dr R. Gibson, Liverpool Polytechnic, UK; S. Gibson; P. and J. Gill; R. le Goff, Le Directeur des Relations Publique, Societe Le Nickel, Noumea; D. Goodwin, British Museum (Natural History), London; G. Gordon, National Parks and Wildlife Service, Queensland; J. Gordon; F. Gey, Conservateur Chef du Service des Eaux et Forets, Noumea; P. Griffin; V. Grogan; P. Grogan; H. Hanniman; H. Henley; P. Hilleard; Prof. H. I. Hogbin, Woollahra, NSW; F. Holmes; Keith Holmes; K. W. Huffman, Cambridge, England; Dr I. Hughes, Australian National University; Dr P. Humphrey, Museum of Natural History, University of Kansas, USA; J. Huntington, CSIRO Division of Mineral Physics; T. Ireland; N. Ireland; Dr Surrey Jacobs; P. Jenkins; N. Jewell; L. A. S. Johnson, Royal Botanic Gardens and Herbarium, Sydney; Dr M. Jones, Smithsonian Institution of Natural History, Washington DC; B. Joris; Heather Joynes; Jillian Judell; Dr Rad Jura; J. Kerslake; Dr E. Kirsteuer, American Museum of Natural History; Archbishop Klein, Cathedrale Presbyterie, Noumea; Captain M. Kohli; L. Kramer, University of Sydney; Dr J. Kudenov, Fish and Wildlife, Ministry for Conservation, Victoria; Dr Elga Mark-Kurik, Estonian Academy of Sciences; M. LeCroy, American Museum of Natural History; T. Lang, NSW;

Dr W. Lanyon, American Museum of Natural History; Dr A. K. Lee, Monash University, Victoria; F. Leon; M. Lloyd; Dr G. Lyne, CSIRO, Prospect, NSW; F. McCarthy; D. McColl; D. McGillivray; J. McKean, CSIRO, Division of Wildlife, Canberra; W. V. MacFarlane, Waite Agricultural Research Institute; Prof. N. W. MacIntosh, Bellevue Hill, NSW; Jack Mahoney, Department of Geology, University of Sydney; Mary Mather; L. M. Marsh, Western Australian Museum, Perth; Dr G. Maynes, Biological Sciences, Macquarie University; M. Mengel, Museum of Natural History, University of Kansas, USA; Pere Mingram, Cathedrale Presbytere, Noumea; Ralph Molnar, Department of Human Anatomy, University of NSW; Dr A. Mortlock, Australian National University; M. Moulds; C. Murray; Prof. R. de Naurois, Museum National d'Histoire Naturelle, Paris; Dr J. Nelson, Monash University, Victoria; Prof W. Newell, University of Sydney; Dr. D. Newton, New York, USA; M. I. Nikitin; M. O'Ferrall; Dr G. Oddie, University of Sydney; S. Park, Otago Museum; R. Parker, Glebe, NSW; S. and F. Paul, Noumea; D. Pearson; J. Pernetta, University of Manitoba, Canada; Dr M. Pettibone, Smithsonian Institution of Natural History, Washington DC; R. Piggot; J. Pilger, Allan Hancock Foundation, Los Angeles; J. Pixley; C. Powell, Manchester, England; Betty Price; Yvonne Pyrzakowska; K. Radomir, Brno, Czechoslovakia; F. Ramsay; Dr P. Rancurel, Office de la Recherche Scientifique et Technique Outre Mer, Noumea; J. Read, Boat Skipper, LFB *Souverain*; Reverce, Noumea; Pere Riocreux, Cathedrale Presbytere, Noumea; N. W. Rodd; Prof A. Rohn, Wichita, USA; A. Ross, Glebe, NSW; Mr Rossart, Noumea; Leslie Rowan; Gabriella Roy; E. Rundquist, Museum of Natural History, University of Kansas, USA; G. Sansom, Monash University, Victoria; Dr Bob Schaeffer, American Museum of Natural History, New York; P. E. Scherwin; Daryl Sharples; E. Gregory Sherman; R. Sheridan; Dr G. Hartmann-Schroeder, Zoologisches Institute, Hamburg; H. Shusta; I. Skinner, Roche, Dee Why, NSW; Ed Slater; Dr B. Smith, National Museum of Victoria; Dr D. F. Smith, CSIRO, Cronulla; Dr D. Snow, British Museum (Natural History); G. R. Cunningham Van Someran, Kenya National Museum, Nairobi; K. Spitzer; Dr van de Spoel, Zoologisches Institut, University of Amsterdam; P. Stanbury, Macleay Museum; Prof M. Stanislawski, Arizona, USA; J. Steele, Cremorne, NSW; S. Stephenson, National Museum of Victoria; H. Strahan; L. Sutherland, Sydney, NSW; Dr A. G. Thorne, Australian National University; G. Thornley; G. Tombs; T. Tonnelier, Societe Caledonienne d'Ornithologie, Noumea; N. Tsering; M. Tuckson, Wahroonga, NSW; Nodine Turner; C. Turner; Jean Vere; G. P. Virtue; J. Voorwinde; Dr F. Vuillumier, American Museum of Natural History; P. Ward, University of Sydney; J. Watson, Associate, National Museum of Victoria; Gregory Webber; D. Werner; Dr J. P. White, University of Sydney; S. J. Smith-White; A. Williams, Sydney, NSW; J. Wise; Judy Yule; W. Zeidler, South Australian Museum.

APPENDIX 3 OVERSEAS VISITORS

- Africa: Dr A. Bass, Oceanographic Research Institute; Dr W. Rudman, University of Dar es Salaam, Tanzania
- Belgium: Dr R. Vochten, Universitet, Antwerpen

- Canada: Dr A. J. Baker, Royal Ontario Museum, Toronto, Ontario; Dr C. McGowan, National Museum of Ontario; Dr L. Moyd, National Museum of Canada, Ottawa; Prof J. R. Nursall, University of Alberta, Edmonton; Dr M. Taylor, University of British Columbia
- China: Members of the Official Chinese Delegation in connection with the Chinese Exhibition
- Denmark: Dr O. Petersen, Mineralogical Museum, Copenhagen
- England: Dr Z. Boucek, British Museum (Natural History); Dr A. Clements, Shell Oil; R. Entwistle, London; L. Entwistle, London; Dr T. Ford, University of Leicester; Dr R. Fortey, British Museum (Natural History); P. Gathercole, Museum of Archaeology and Ethnology, Cambridge; R. Hatt, Curator, Royal Commonwealth Institute, London; Alison Heath, Education Officer, Department of the Environment, London; Dr K. A. Spencer, Cornwall; Dr Margaret Weston, Director, Science Museum, London
- France: Dr A. Bassett, Université de Paris; Mlle L. Beltan, Museum National d'Histoire Naturelle, Paris; Prof. C. Guillemin, Director, Geological Survey, Paris; Prof. J. P. Lehman, Museum National d'Histoire Naturelle, Paris
- Germany: Dr G. Moh, University of Heidelberg; Dr W. Schilly, retired Curator, Bonn University Museum; Prof. H. Vidal, Director of the Geological Survey of Bavaria; Dr T. Schultze-Westrum, Munich
- Indonesia: Mr I. Gusti P. Raka, Director, Bali Arts Centre
- Japan: Mr E. Fujii, Far Seas Fisheries Research Institute; Dr H. Kono, Far Seas Fisheries Research Institute; Dr N. Morimoto, Osaka University; Dr I. Sunagawa, Tokyo University; Dr O. Tabet, Shimonoseki University of Fisheries; Dr S. Veno, Department of Zoology, National Science Museum, Tokyo
- Malaysia: Mr L. Chin, Director, Sarawak Museum

- Netherlands: Dr P. Van Bree, Unstitute Voor Taxonomische Zoologie, Amsterdam; Dr H. Kulke, Sonarem, Division Recherches, Alger, Algeria; Dr J. Verseveldt, Zwolle; Dr P. Zwaan, Rijksmuseum van Geologischen Mineralogic
- New Zealand: Dr A. Ayling, Auckland University; Dr A. Baker, National Museum, Wellington; Dr P. Berquist, University of Auckland; Dr D. Blest, University of Canterbury; Dr R. K. Dell, Director, National Museum, Wellington; M. R. Gregory, University of Auckland; F. C. Kinsky, National Museum, Wellington; Dr B. F. L. Leach, Department of Anthropology, University of Otago; Dr A. Moeed, Ecology Division, DSIR, Lower Hutt; Prof. Pilgrim, University of Canterbury, Christchurch; Dr K. Wodzicki, former Director, Wildlife Service, DSIR
- Noumea: T. Tonnelier, New Caledonia
- Papua New Guinea: Dr and Mrs U. Beier, Institute of Papua New Guinea Studies, Boroko; A. Crawford, National Cultural Council; Dr B. J. Egloff, National Museum and Art Gallery, Waigani; R. Lacey, Department of History, University of Papua New Guinea, Waigani; Mr Magnolias, Ministry for the Arts; Dr J. Menzies, University of Papua New Guinea, Waigani; Mr Naumpa, Baiyer R. Sanctuary, Mt Hagen; Dr C. Pain, Department of Geology, University of Papua New Guinea, Waigani
- Philippines: Mr Raimondo Albano, Director, Cultural Centre of the Philippines, Manila
- Scotland: Prof G. Y. Craig, University of Edinburgh; A. Lecki, Glasgow School of Art; Prof. Sir F. H. Stewart, University of Edinburgh
- Singapore: R. Pitt, Union Oil; M. Pitt, Union Oil
- Spain: Dr M. Font-Altaba, University of Barcelona
- Sweden: Dr J. Bergstrom, University of Lund; Prof. R. Bohlin, University of Uppsala; Dr D. Nilsson, Gothenburg Museum; Prof. R. Olsson, University of Stockholm
- Thailand: Chira Chandrannond, Director, National Museum of Thailand, Bangkok

USA: C. Christensen, University of Arizona; Agnes Kalalihookaha Cope, Executive Director, Waianae Culture and Arts Society, Hawaii; L. Darling, Connecticut; Dr P. Desautels, Smithsonian Institute, Washington; Dr P. Ehrlich, Stanford University; Mr J. Ferdyn, Fallbrook, California; Dr W. Fischer, Colorado College; Dr E. Gaffney, American Museum of Natural History, New York; W. Green, Federation for the Arts, New York; J. Harris, Fallbrook, California; B. Harris, Fallbrook, California; Dr M. Hecht, American Museum of Natural History, New York; Prof. G. Isaac, University of California; Dr A. Kaeppler, Bernice P. Bishop Museum, Honolulu; Prof. E. Kay, University of Hawaii; Mr W. Leicht, Lagoon Beach, California; Dr E. L. Lundelius, University of Texas; Dr B. Mason, Smithsonian Institute, Washington; F. Mather, Woods Hole, Oceanographic Institute; Dr C. Moore, Arizona State University; Dr B. Nafpaktitis, University of Southern California; Dr N. Newell, American Museum of Natural History, New York; Dr O. Owre, University of Miami; A. Parker, California; Prof. C. G. Remington, Yale University, New Haven, Connecticut; Dr P. Ribbe, Virginia Polytechnic Institute and State University; Dr M. H. Robinson, Smithsonian Institute, Washington; Prof. A. Rohn, Department of Anthropology, University of Kansas, Wichita; Dr R. Rofen, Aquatic Research Institute; Dr R. Rose, Bernice P. Bishop Museum, Honolulu; Dr R. Schroeder, University of Oklahoma; Dr A. Solem, Field Museum of Natural History Chicago, Dr J. Terrell, Field Museum of Natural History, Chicago; Dr J. C. Wright, Bernice P. Bishop Museum, Honolulu

USSR: Prof. V. Sobolev, Academy of Science USSR, Novosibirsk; Dr N. Sobolev, Academy of Science USSR, Novosibirsk

APPENDIX 4 PUBLICATIONS BY STAFF

- Boles, W. E., 1976. The "Rediscovery" of the First Record of the Bush-hen for Australia. *Aust. Birds.* 11: 21-25.
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APPENDIX 5 FINANCIAL STATEMENT

The year showed a moderate increase in funds available to the Museum, total funds increasing by 13 percent to almost 2.6 million dollars. Receipts by the Trust (excluding State Government Endowment to the Trust) showed a large rise of 47 percent compared with a rise in funds from Government of 14 percent and of donations to special projects including the Lizard Island Research Station and the National Photographic Index of Australian Wildlife of 85 percent. Funds received from granting agencies and by way of contracts declined by 12 percent over the previous year, continuing the trend of the last three years. The proportional total contribution by State Government increased slightly from 80 percent to 81 percent of total expenditure.

Salaries paid from all sources increased by 20 percent during the year, reflecting an increase in activity of the Museum as well as inflation.

Because of increased contributions by State Government and increases in returns from revenue raising activities such as sales of books, etc., the Trust was again able to spend more on purchase of items for the collections and for display (57 percent) and on its Exhibition Programme (65 percent).

The increase in funds available to the Museum this year was again less than in previous years, the increase in 1974-75 over 73-74 being 35 percent compared with the modest 13 percent in the period under review. Partly because of this, reserves of the Trust have again declined and are now 16 percent less than they were two years ago. Indeed after taking into account surpluses on grants and contracts undertaken over the last few years and not yet transferred to the Trust's own funds, the funds available to the Trust at the beginning of the new financial year will be at a minimum level. This will again emphasize the importance of the Trust's ability to raise funds by way of donations if the Museum is to continue the programme of activities in maintenance of collections, research and education which the Trust has set.

THE AUSTRALIAN MUSEUM

CONSOLIDATED FINANCIAL STATEMENT
FOR THE YEAR ENDED 30TH JUNE, 1977

RECEIPTS								1977	1976
								\$	\$
Balance as at 1st July	..	..	..	..	..	..	..	107,300	120,383
Treasury Appropriation	..	..	..	..	..	..	..	2,016,229	1,765,806
Trustees Account	..	..	..	..	..	..	..	135,708	92,083
Grants and Contracts	..	..	..	..	..	..	..	210,928	239,631
Donations, etc.—Special Project	..	..	..	..	..	..	..	109,288	58,694
Dinosaur Account	..	..	..	..	..	..	..	..	5,963
								<u>2,579,453</u>	<u>2,283,550</u>

PAYMENTS								1977	1976
								\$	\$
Salaries	..	..	..	..	..	..	..	1,918,205	1,597,837
Stores and Equipment	..	..	..	..	..	..	..	152,122	114,997
Travel	..	..	..	..	..	..	..	54,448	59,102
Other Payments	..	..	..	..	..	..	..	353,745	404,314
Balance as at 30th June	..	..	..	..	..	..	..	100,933	107,300
								<u>2,579,453</u>	<u>2,283,550</u>

**THE AUSTRALIAN MUSEUM STATEMENT OF RECEIPTS
CONSOLIDATED REVENUE—RECEIPTS**

	1977 \$	1976 \$
Appropriations	1,956,229	1,728,806

	\$1,956,229	\$1,728,806
--	-------------	-------------

TRUSTEES FUNDS—RECEIPTS

	1977 \$	1976 \$
Balance as at 1st July	492	17,629
Consolidated Revenue—		
Statutory Endowment		2,000
Contribution towards Museum requirements	60,000	35,000
Museum shop sales	58,383	40,203
Australian Natural History Magazine Sales	35,290	23,723
Red Telephone	308	218
Photocopies	1,628	
Cinefilm sale	6,863	9,165
Royalties and Copyright	20	3,030
Donations	1,259	7,008
Interest	5,221	6,519
Miscellaneous	6,689	2,217
Donation from Caltex—150th Anniversary	20,000	
Dinosaur shares	42	
Balance as at 30th June	22,410	

	\$218,610	\$146,712
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AND PAYMENTS FOR THE YEAR ENDED 30TH JUNE, 1977

CONSOLIDATED REVENUE—PAYMENTS

	1977	1976
	\$	\$
Salaries	1,576,425	1,427,259
Meal Allowance	1,624	944
Rent, Rates, etc.	69,845	56,516
Maintenance, Alteration, Additions and Renewals	1,770	1,356
Travelling and subsistence expenses	28,983	25,153
Motor Vehicle—Running Cost	21,088	20,314
Freight, Cartage and Packing	12,296	6,737
Books, periodicals	15,887	12,260
Postal Expenses	16,198	14,384
Fees for Services rendered	5,955	3,643
Stores and Provisions	118,845	95,334
Printing	34,991	31,879
Laundry Expenses	648	731
Other Insurance	3,400	2,092
Equipment for storage of Museum specimens	29,046	27,909
Overseas Travel	4,230	2,175
Minor Expenses	197	120
Travelling Museum Expenses	14,801	..
	<u>\$1,956,229</u>	<u>\$1,728,806</u>

TRUSTEES FUNDS—PAYMENTS

	1977	1976
	\$	\$
Stock for Museum Bookshop	59,363	26,689
Stores, plants and equipment	75	2,797
Travelling expenses	7,981	11,297
Computer costs	724	636
Entertainment	5,984	3,398
Purchase of specimens	34,574	21,928
Research grants	3,000	..
Cinefilm Production	3,555	5,359
Photocopies	1,608	537
Honoraria	6,055	4,787
Scientific Departmental Assistance	11,970	8,637
Exhibition assistance	859	..
Education programme	3,517	..
Reprints	869	895
Printing	10,165	8,750
Red Telephone	311	417
Cost of publishing Australian Natural History	40,029	34,705
Miscellaneous	2,574	2,912
Fees for services rendered	1,344	556
Marine Hall	4,119	5,375
Cost associated with dinosaurs .. .. .	..	291
Mineral Gallery	4,174	5,915
Arid Zone Exhibition	5,419	..
Indian Exhibition	4,606	..
Temporary Exhibition	4,691	339
S.E.M.	1,044	..
Balance as at 30th June .. .. .	..	492
	<u>\$218,610</u>	<u>\$146,712</u>

AND PAYMENTS FOR THE YEAR ENDED 30TH JUNE, 1977

RECEIPTS		EXPENDITURE		BALANCE	
1977	1976	1977	1976	1977	1976
\$	\$	\$	\$	\$	\$
30,830	62,612	38,435	50,544	Dr. 990	6,615
65,088	58,271	53,203	63,039	17,306	5,421
*1,670	..	..	..	Nil	Dr. 1,670
..	..	129	227	7	136
11,343	11,028	5,263	11,248	6,612	532
11,001	14,146	21,851	18,733	5,640	16,490
..	..	1,500	..	Dr. 16	1,484
..	..	..	21	7,135	7,135
..	840	887	..	Nil	887
239	16,119	3,051	14,944	Nil	2,812
12	4,304	..	2,252	Nil	Dr. 12
7,291	35,839	8,305	40,488	2,859	3,873
..	12,501	7,700	2,827	11,974	19,674
70	..	535	1,914	1,300	695
8	..	8,359	8,273	Dr. 186	8,165
..	310	..	137	173	173
2,141	1,355	6,433	3,721	Nil	4,292
1,483	1,806	2,190	2,077	Dr. 978	Dr. 271
500	1,000	500	1,000	Nil	Nil
..	1,000	600	400	Nil	600
..	1,000	..	1,000	Nil	..
..	500	..	..	500	500
..	17,000	15,113	964	923	16,036
32,000	..	..	..	32,000	..
20,233	..	20,684	..	Dr. 451	..
950	..	1,191	..	Dr. 241	..
10,739	..	5,441	..	5,298	..
10	..	..	..	10	..
12,000	..	..	..	12,000	..
3,330	..	16	..	3,314	..
..	..	..	..	Dr. 610	Dr. 610
<u>\$210,928</u>	<u>\$239,631</u>	<u>\$200,316</u>	<u>\$223,809</u>	<u>\$103,569</u>	<u>\$92,957</u>

**THE AUSTRALIAN MUSEUM STATEMENT OF RECEIPTS
THE AUSTRALIAN**

								RECEIPTS	1977	1976
								\$	\$	\$
Balance as at 1st July	..	..	..	..	..	..	..	921	3,811
Membership Subscription	..	..	..	..	..	..	..	6,566	5,149
Lecture Admission	..	..	..	..	..	..	..	22,645	7,618
Interest	..	..	..	..	..	..	..	89	66
Donation	..	..	..	..	..	..	..	254	299
Australian Natural History	..	..	..	..	..	..	..	2,244	1,729
Badges	..	..	..	..	..	..	..	74	245
Cultural Grants	..	..	..	..	..	..	..	1,000	500
								<u>\$33,793</u>	<u>\$19,416</u>	

NATIONAL PHOTOGRAPHIC

								GENERAL ACCOUNT—RECEIPTS	1977	1976
								\$	\$	\$
Balance as at 1st July	..	..	..	..	..	..	..	11,561	8,506
Donations	..	..	..	..	..	..	..	21,427	15,761
Colour slides	..	..	..	..	..	..	..	26	261
Interest	..	..	..	..	..	..	..	1,092	294
Australian Government Grant	..	..	..	..	..	..	..	15,000	15,000
Refunds	..	..	..	..	..	..	..	86	..
								<u>\$49,192</u>	<u>\$39,822</u>	

AND PAYMENTS FOR THE YEAR ENDED 30TH JUNE, 1977
MUSEUM SOCIETY

	PAYMENTS	1977	1976
		\$	\$
Lecture Fees		140	180
Members Functions		13,052	5,672
Salaries		5,474	4,679
Printing and Stationery		941	609
Honoraria		3,438	2,649
Postage and Mailing		2,470	2,715
Telephone		464	383
Australian Natural History Magazine		1,291	1,082
Miscellaneous		2,077	526
Balance as at 30th June		4,446	921
		<u>\$33,793</u>	<u>\$19,416</u>

INDEX OF AUSTRALIAN WILDLIFE

	GENERAL ACCOUNT—PAYMENTS	1977	1976
		\$	\$
Salaries		23,101	18,340
Photography		8,684	5,683
Travelling and subsistence		2,263	716
Postage		583	494
Printing and Stationery		447	508
Entertainment		199	61
Stores and Equipment		296	32
Miscellaneous		442	1,023
Telephone		171	163
Insurance		210	242
Expeditions	999
Balance		12,796	11,561
		<u>\$49,192</u>	<u>\$39,822</u>

THE AUSTRALIAN MUSEUM STATEMENT OF RECEIPTS
NATIONAL PHOTOGRAPHIC

READERS DIGEST PROJECT ACCOUNT—RECEIPTS								1977	1976
								\$	\$
Balance as at 1st July	..	..	..	..	..	..	..	293	1,505
Readers Digest Association Payments	..	..	..	..	..	..	..	30,210	6,295
Interest	..	..	..	..	..	..	..	111	55
								<u>\$30,614</u>	<u>\$7,855</u>

BANK OF NEW SOUTH WALES GRANTS SCHEME—RECEIPTS								1977	1976
								\$	\$
Balance as at 1st July	..	..	..	..	..	..	..	1,076	4,834
Donations—Bank of New South Wales	..	..	..	..	..	..	..	..	5,000
Interest	..	..	..	..	..	..	..	115	191
Sale of Equipment	..	..	..	..	..	..	..	755	232
								<u>\$1,946</u>	<u>\$10,257</u>

SALES ACCOUNT—RECEIPTS								1977	1976
								\$	\$
Sales of Readers Digest Complete Book of Australian Birds	..	..	..	..	..	..	..	7,594	..
								<u>\$7,594</u>	<u>..</u>

AND PAYMENTS FOR THE YEAR ENDED 30TH JUNE, 1977
INDEX OF AUSTRALIAN WILDLIFE

READERS DIGEST PROJECT ACCOUNT—PAYMENTS										1977	1976
Paid to Photographers—											
Option Fees	..	..	..	..	..	..	..	..	..	\$	\$
Full Fee	..	..	..	..	..	..	..	..	..	12,732	2,494
Premium Fees	..	..	..	..	..	..	..	..	..	11,489	5,067
Bank cheque charges	..	..	..	..	..	..	..	..	..	93	..
10 per cent levy by Museum	..	..	..	..	..	..	..	..	..	13	..
Donation to Photographers	..	..	..	..	..	..	..	..	..	2,474	..
Miscellaneous	..	..	..	..	..	..	..	..	..	3,303	..
Balance as at 30th June	..	..	..	..	..	..	..	..	..	..	1
										510	293
										<u><u>\$30,614</u></u>	<u><u>\$7,855</u></u>

BANK OF NEW SOUTH WALES GRANTS SCHEME—PAYMENTS										1977	1976
Grants	..	..	..	..	..	..	..	..	..	\$	\$
Repair and Maintenance	..	..	..	..	..	..	..	..	..	345	1,953
Equipment	..	..	..	..	..	..	..	..	..	49	..
Films and Processing	..	..	..	..	..	..	..	..	..	701	..
Insurance	..	..	..	..	..	..	..	..	..	172	871
Iron Range Expedition No. 11	..	..	..	..	..	..	..	..	..	120	106
Balance on 30th June..	..	..	..	..	..	..	..	..	..	..	6,251
										559	1,076
										<u><u>\$1,946</u></u>	<u><u>\$10,257</u></u>

SALES ACCOUNT—PAYMENTS										1977	1976
Readers Digest and Collins	..	..	..	..	..	..	..	..	..	\$	\$
Miscellaneous	..	..	..	..	..	..	..	..	..	6,065	..
Balance at 30th June	..	..	..	..	..	..	..	..	..	66	..
										1,463	..
										<u><u>\$7,594</u></u>	<u><u>..</u></u>

THE AUSTRALIAN MUSEUM
STATEMENT OF BALANCES AS AT 30TH JUNE, 1977

	FUNDS	1977	1976
		\$	\$
Trustees Account		22,410 <i>Dr.</i>	492
Grants Account		103,569	92,957
National Photographic Index of Australian Wildlife—			
General Account		12,796	11,561
Sales Account		1,463	..
Readers Digest Project		510	293
Bank of New South Wales		559	1,076
The Australian Museum Society		4,446	921
		<u>\$100,933</u>	<u>\$107,300</u>
		<u> </u>	<u> </u>
	REPRESENTED BY	1977	1976
		\$	\$
Investments—			
Trustees Account
Grants Account		72,500	80,400
National Photographic Index of Australian Wildlife—			
General Account		6,000	..
Grants Scheme Account		509	1,000
		<u>\$79,009</u>	<u>\$81,400</u>
		<u> </u>	<u> </u>
		1977	1976
		\$	\$
Cash at Bank and on Hand—			
Trustees Account		22,410 <i>Dr.</i>	492
Grants Account		31,069	12,557
National Photographic Index of Australian Wildlife—			
General Account		6,796	11,561
Sales Account		1,463	..
Readers Digest Project		510	293
Bank of New South Wales Grant Scheme		50	76
The Australian Museum Society		4,446	921
		<u>\$100,933</u>	<u>\$107,300</u>
		<u> </u>	<u> </u>
Subject to Audit.			