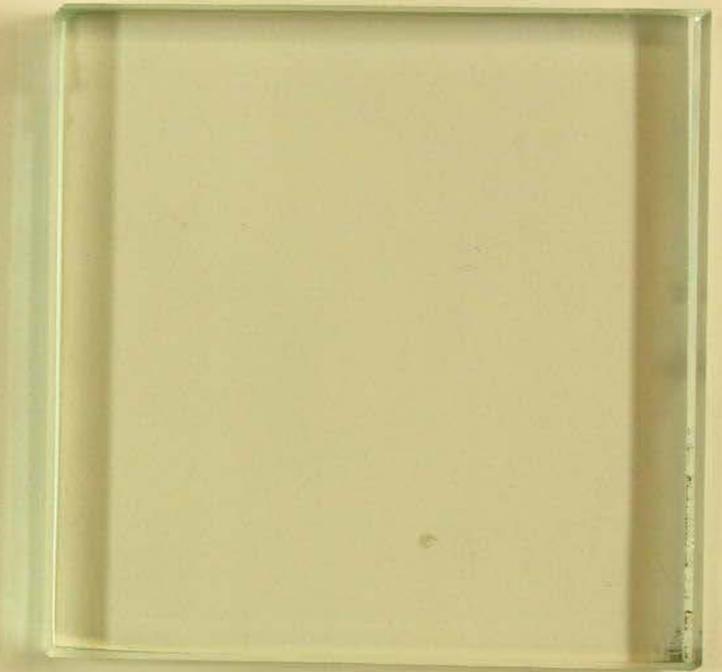




THE AUSTRALIAN MUSEUM
ANNUAL REPORT 1974-1975



COVER: Two small marsupials, Antechinus stuartii (shown) and the related Antechinus swainsonii, have been the subjects, along with two native rats, Rattus lutreolus and R. fuscipes, of a major study of the habitat requirements of small mammals. Monitoring of these and other species in the Nadgee Nature Reserve has also enabled Museum scientists to examine the effects of wildfire and regrowth on small mammal populations. Photo: Wendy Clayton

REPORT

of the

TRUSTEES OF THE AUSTRALIAN MUSEUM

for the

YEAR ENDED 30 JUNE, 1975

ACKNOWLEDGEMENTS

The Trustees, Director, and staff of the Australian Museum have pleasure in thanking the following organizations which provided funds by way of research grants or grants-in-aid, assisting Museum staff in undertaking research and other projects of interest to the Museum:

Australian Research Grants Committee
Australian Biological Resources Study Interim Council
Australian Institute of Aboriginal Studies
Australia Council
Australian Department of Foreign Affairs
Australian Department of Environment
Ian Potter Foundation
The Commonwealth Foundation
The British Council
BHP Ltd
James Kirby Foundation
Bernard van Leer Foundation
Roche Research Institute for Marine Pharmacology
The Taiping Foundation
The Janss Foundation
Mr J. S. Proud
Mr B. Larkman
Council of the City of Sydney

Further acknowledgements are listed at Appendix 2.

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* Deceased 30th November, 1974 † Deceased 17th July, 1975

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To His Excellency the Governor:

In accordance with Clause 10 of The Australian Museum Act 1902-1936, the Trustees of The Australian Museum have the honour to submit to you their 121st annual report for the year ending 30 June 1975.

Trustees

Eleven ordinary meetings and one special meeting were held during the year. Professor M. G. Pitman was elected President of the Board of Trustees at the annual meeting on 19 December, 1974. Dr K. L. Sutherland retired from the position after three years as president; Dr Sutherland subsequently resigned from the Board effective 30 June, 1975, after having been appointed Chairman of the NSW Science Advisory Council. Two Trustees, Sir Frank McDowell (28-11-74) and Mr G. A. Johnson, MBE (26-9-74) retired from the Board during the year. Dr J. Baker, PhD, FRACI, Director of Research, Roche Research Institute for Marine Pharmacology, and Professor D. J. Anderson, BSc, PhD, Professor of Botany, University of New South Wales, were elected to the Board on 28 November, 1974, and 26 March, 1975, respectively.

M. G. PITMAN, President.

The Australian Museum is actively involved in education and research programmes. Approximately 548 000 people visited the public galleries during 1974-5 and several hundred scientists and other specialists visited to study the collections and consult the Museum staff. Some of the major events and activities of the year are described here.

Resignation of the Director

Dr Frank Talbot resigned as Director of The Australian Museum on 19 June, 1975, to take up the position of Professor and Director of the newly-created Environmental Studies Programme at Macquarie University. Dr Talbot joined The

Australian Museum as Curator of Fishes in August 1964 and became Director in January 1966. He had previously been Curator of Fishes and Assistant Director of the South African Museum, Cape Town following studies at the Universities of Witwatersrand, Cape Town and Durham.

During the last ten years he has actively continued his research interests in the biology of coral reefs and the systematics of several groups of fishes. He was instrumental in the establishment of the Museum's field station at One Tree Island on the Great Barrier Reef (now managed by the University of Sydney), and of the Lizard Island Research Station at the northern end of the reef. He was also associated with the establishment of the Museum's *National Photographic Index of Australian Birds* and of the Australian Museum Society. His many public lectures, radio talks and television interviews—on coral reefs, undersea exploration, conservation and the role of museums—have brought much attention to the work of The Australian Museum. Dr Talbot has been associated with many professional societies and boards. He is a member of the Australian Academy of Sciences Fauna Committee, the UNESCO Australian National Committee for Museums and Libraries, and the Australian Government's Committee of Inquiry into Museums and National Collections. He was President of the Museums Association of Australia from 1971 to 1974.

Death of Former Curator

Mr Ellis Le Geyt Troughton, Research Associate and former Curator of Mammals, died at the age of 81 on 30 November, 1974. He joined the staff in 1908 as a cadet, working first on molluscs and subsequently in anthropology and the general vertebrate collection, and was appointed a Second Class Assistant in 1913. During World War I, he served as a stretcher-bearer in France and returned to take charge of the Museum's new Department of Mammals and Skeletons. In 1920, he was appointed First Class Scientific Assistant, which position he held until the classification of Curator was introduced



An exhibition of antique Cambodian sculpture, from the private collection of D. B. Snelling, Consul General for the Khmer Republic, was held at The Australian Museum from July to September, 1974

in 1948. He retired from the Museum in 1958. Author of 168 publications, he is best known for his taxonomic work on Australian bats, rodents, dasyurid marsupials and for his *Furred Animals of Australia* which, in ten editions over three decades from 1941, was a standard reference work.

New Staff

Two distinguished scientists joined the staff of the Museum during the year.

Dr Jack Burch, formerly Professor of Zoology at the University of Michigan, Ann Arbor, USA, is one of the world's leading authorities on freshwater and terrestrial molluscs. He joined the staff of the Museum in March 1975 as Curator of Molluscs.

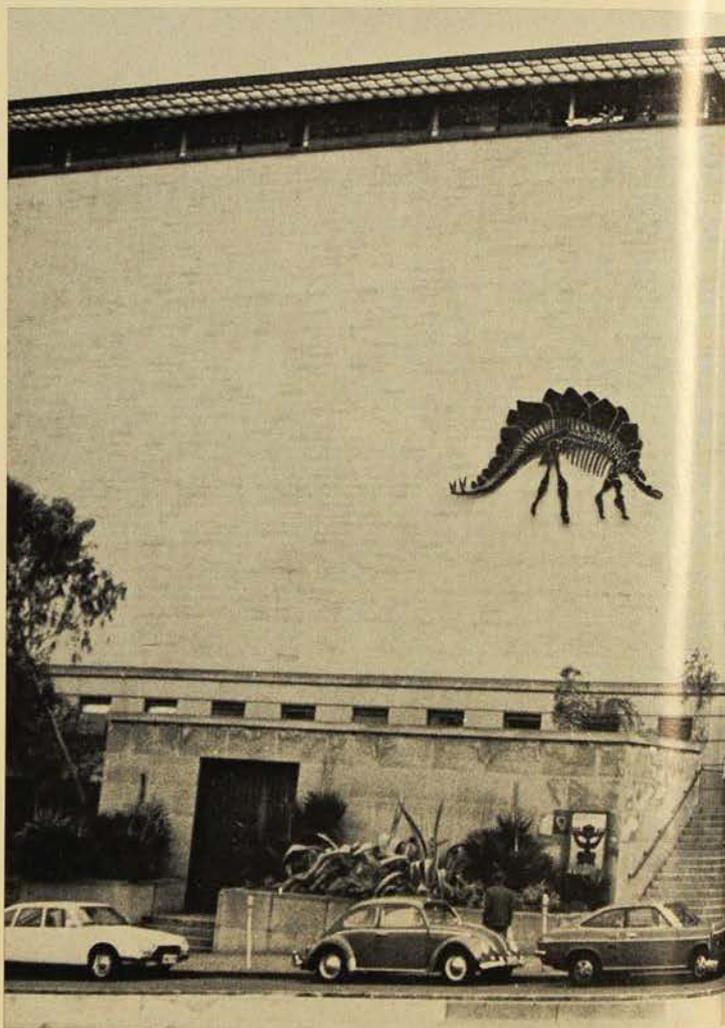
Mr Ronald Strahan, formerly Director of Taronga Zoological Park, Sydney, resigned from that position to take up the post of Research Fellow at the Museum. Mr Strahan is an authority on the biology of jawless vertebrates and has carried out research in the anatomy, morphology and behaviour of a wide variety of other vertebrate animals and will continue these studies within the new Functional Anatomy Unit. The name of the Museum's new unit is not intended to suggest that it will assume responsibility for all aspects of animal structure and function but rather that it will concentrate upon certain aspects of vertebrate anatomy where a greater understanding of function will contribute to the solution of problems of evolution.

In July 1974, the Public Service Board accepted recommendations for increases in the scientific, exhibition and education staff of the Museum over the next five years. Seven new professional scientific staff and fourteen support staff will be added to the Museum's establishment; seven new staff will be added to the Exhibitions Department and five to the Education Service.

Education Centre

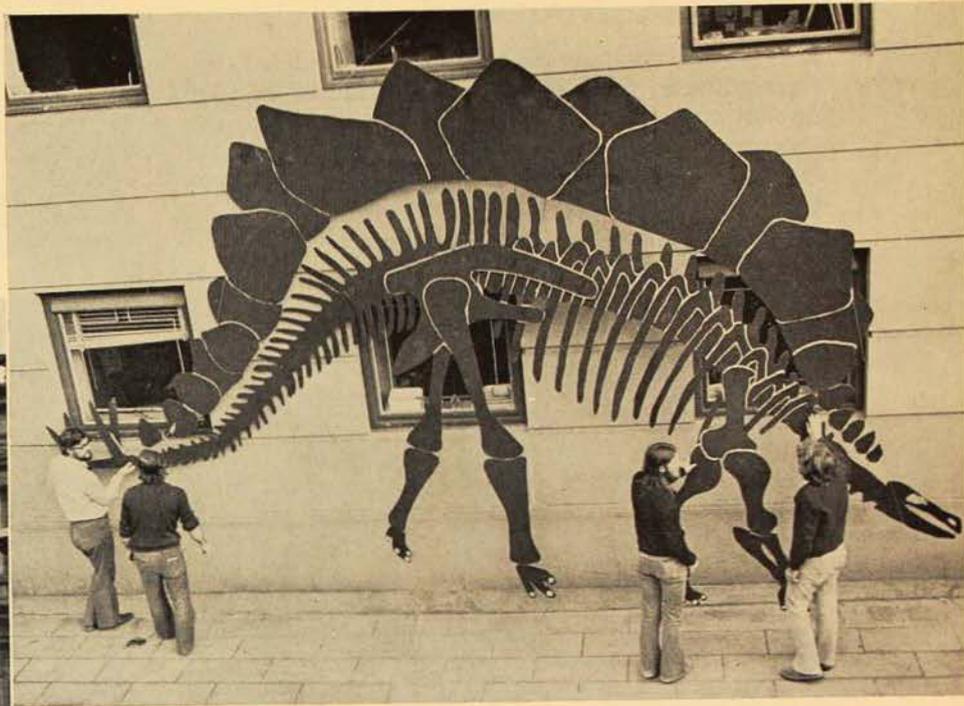
At the close of this year, the new Education Centre had been nearly completed. It will be officially opened in July, 1975. The centre is

connected to the main building by an attractive foyer and the three floors include teaching areas, laboratory, projection and preparation rooms, and staff offices. The complex has been designed to encourage flexibility of approach and variation in teaching methods for large and small groups or individual projects, for the study of living or preserved specimens, and for the use of a variety





Howard Hughes/Australian Museum



Heather McLennan/Australian Museum

of audio-visual aids. With the new centre it will be possible to expand the present educational programmes and to provide courses on specific subjects for teachers, for students at all levels of the school system, and for other adults. Programmes will be developed for groups with special needs such as handicapped and under-privileged children, migrants, and elderly people.

A life-size plywood replica of the skeleton of the Stegosaurus was hung on the William Street wall of the Museum during the Dinosaur Appeal

Bernard van Leer—Australian Museum Scholarships

Following the involvement of the Bernard van Leer Foundation in the highly successful Hall of Life Art Exhibition of children's paintings, held at the Museum during May and June, 1974, an amount of \$25,000 has been allocated to the Museum by the Foundation to enable up to six senior students from secondary schools to enrol at tertiary level in creative courses which relate to the activities of the Museum.

Dinosaur Appeal

Since no museum in Australia has a complete dinosaur skeleton or replica in its collections or on display, Dr Alex Ritchie, Curator of Fossils, devised a scheme to sell "shares" at one dollar each to the children of NSW providing an opportunity for these children to make a unique contribution to their Museum.

Assisted by Mr Ed Wilson, Education Officer, the Dinosaur Appeal was launched on May 6 with the construction by members of the Museum Discoverers' Club, of a full-size plywood mobile of Stegosaurus (the "Stegmobile") in the College Street entrance foyer. The contributions through schools were forwarded to the Bank of New South Wales and deposited in a special Dinosaur Account.

By the end of the year under review, \$6,500 had been obtained and it seemed most likely that the Appeal would succeed. The replicas of *Stegosaurus* and *Dilophosaurus*, are to be transported from the USA free of charge by TNT Courier System.

Temporary Exhibitions

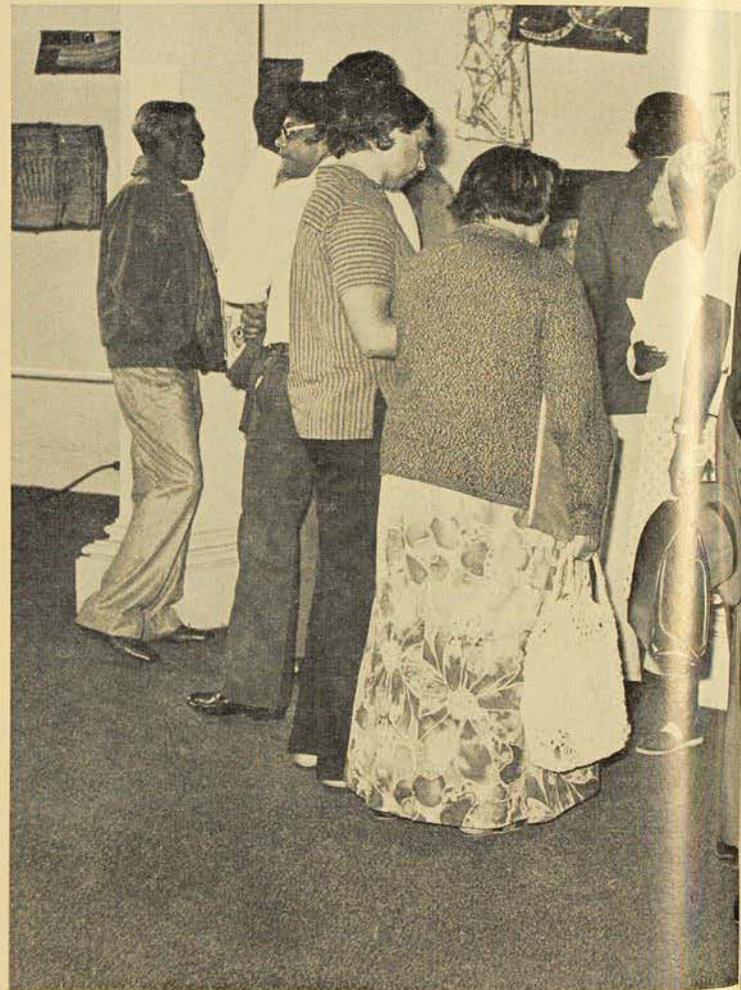
There were four temporary exhibitions during the year.

An exhibition of antique Khmer sculpture, based on the private collection of Mr Douglas Snelling of Sydney, was shown in July 1974.

In September 1974, contemporary batik wall hangings by Indonesian artists Sadarwoto and

Krijono were displayed. They were in attendance during the exhibition, giving demonstrations of their craft and discussing the art form with visitors.

An exhibition of bark paintings, initially set up to demonstrate progress in conservation techniques, was later incorporated into a Pacific Crafts exhibition, which also featured tapa cloth, Maori weaving, New Guinea pottery, and contemporary Aboriginal crafts. The exhibition was mounted to coincide with the



Gregory Millen/Australian Museum

Asian Assembly of the World Crafts Council in Sydney, 17–24 May 1975. A second exhibition, "Art of Oceania", was received from UNESCO and shown in the College Street gallery at the same time.

The travelling exhibition, "Indonesia Today", first mounted in The Australian Museum in September 1973, continued its circulation during the year and was well-received in Perth, Darwin, Brisbane, Hobart, and Launceston.



RESEARCH

The Museum continues to be active in its traditional areas of research—systematic zoology, anthropology and geology. Such research is essential to an understanding of our environment and constitutes the base on which many other fields of biological, medical and geological research is built. It is heavily dependent on the Museum's collections, and many field and laboratory studies are broadly aimed at making the collections more valuable as research tools.

In response to changing community needs, a greater component of the Museum's research effort is now geared to broader ecological and environmental problems, especially as these problems relate to the conservation and wisest use of our heritage and our natural resources. With changing trading patterns and increased cultural contact, a greater effort is now made to relate the material cultures of the Melanesian and Australian Aboriginal peoples to the people themselves.

Conservation of Aboriginal Bark Paintings

The Museum's collection of Aboriginal bark paintings, dating back to the turn of the century, is one of the largest and most representative in the world but, until recently, much of this fragile material was in poor condition and continuing to deteriorate. Although techniques for the preservation and restoration of European works of art are well established, the Materials Preservation (Conservation) Laboratory had to undertake basic research to devise methods for the conservation of paintings on bark. Sue Walston, Head of the

Members of the Aboriginal Arts Board of the Australia Council visited the Museum in April, 1975, to inspect the Bark Painting Conservation Project



Conservation Laboratory, developed a complex series of physical and chemical treatments for cleaning and consolidating the cracked and flaking layers of paint, disinfestation and disinfection against insects and mould, and provision of individually formed backings to support each bark. Treated paintings are mounted in specially designed glass-fronted box frames for storage and display.

To implement these techniques, the Museum, with a grant from the Aboriginal Arts Board of the Australia Council, employed a conservator for one year. In July 1974, Peter Gill was appointed to undertake the treatment of the bark paintings. Mr Gill has treated almost half of the 350 bark paintings in the collection and these are now available for research and display. In April, 1975, members of the Aboriginal Arts Board visited the Museum. They showed considerable interest in the project and have agreed to fund the conservator's

After Cyclone Tracy, Sue Walston, Head of the Materials Preservation Section, flew to Darwin at the request of the Director of the Museums and Art Galleries of the Northern Territory to advise on emergency treatment for damaged material and on subsequent restoration techniques

salary for a further year, during which it is expected that conservation of the collection will be completed.

Following a request from the Director of the Museums and Galleries of the Northern Territory, Ms Walston flew to Darwin for two weeks to

undertake emergency treatment of the Museum's collections damaged during Cyclone Tracy and to advise on storage and conservation requirements.

Pine Plantations and Native Birds

In an attempt to estimate the impact upon native birds of the felling of native eucalypt forests and their replacement by exotic pine plantations, Mr John Disney has carried out a survey on the central tableland of the Great Dividing Range near Bathurst, NSW, comparing species diversity in wet sclerophyll forest, dry sclerophyll forest, and pine plantation. Study areas of 8 hectares were set out in each habitat and the number of species and nests seen in each were recorded monthly over a period of two years. Of a total of 66 species seen, 55 were in wet sclerophyll, 45 in dry sclerophyll, and 33 in pines. The wet sclerophyll area was by far the richest bird habitat and appeared to provide optimum conditions, having many old trees with cavities suitable for nests, a good understorey and thick ground vegetation. Fewer species nested in the dry sclerophyll area and even fewer in the pine plantation. Unfortunately it is the fauna-rich wet sclerophyll that is being removed for the planting of pines; land under dry sclerophyll is regarded as less suitable for this purpose. It is clear that every hectare of wet sclerophyll lost involves a diminution in bird populations for which there is no alternative habitat.

If the change is not to be irreversible in an area, large blocks of native forest must be left within pine plantations and undisturbed strips retained along the sides of creeks, with corridors of native vegetation between each remnant area to provide for the movement of the small, non-flying animals that also depend upon wet sclerophyll forests for their continued existence.

Small Mammals Survey

Compared with other continents, Australia has relatively few species of mammals. Perhaps for

this reason, certain species of dasyurids and native rats occur over an amazingly wide range of habitats. In surveys carried out by Dr Recher, Mr Lunney and Mr Posamentier of the Museum's Department of Environmental Studies, Stuart's Antechinus (*Antechinus stuartii*) and the Bush Rat (*Rattus fuscipes*) were collected in most forest and shrub habitats between the sea and the tableland in southeastern NSW and, almost always, were the *only* mammals trapped.

The ecology of these two species and the related Swainson's Antechinus (*Antechinus swainsonii*) and Swamp Rat (*Rattus lutreolus*) has been a particular interest of the Museum since 1969 and studies on these have been carried out at a number of locations along the east coast. The habitat preferences of the two pairs are somewhat different: Swainson's Antechinus prefers wetter forests than does Stuart's Antechinus; the Swamp Rat is generally found in open grassland whereas the Bush Rat occurs in shrub and forest.

Both species of Antechinus breed during the winter and *all* males die before the young are born in the spring. In contrast, the rats reproduce in the spring and summer and, although few live longer than a year, there is no synchronous death.

The Museum's studies of the ecology of small mammals are designed to provide information on the animals' habitat requirements, their basic biology, population trends, and the extent to which these are affected by fire and clear-felling of forests. Such information is necessary for the rational management of natural areas.

Sea Snakes

Dr Harold Cogger participated in the Ashmore Reef Expedition (1972-3), a programme of studies on sea snakes conducted jointly by Pennsylvania State University and the Scripps Institution of Oceanography, University of California, and working from M.R.V. *Alpha Helix*. The expedition was so successful that members of the research team, led by Dr William Dunson from Pennsylvania State

University, are collaborating in the production of a book on the biology of sea snakes, to which Dr Cogger is contributing a review of the sea snakes of Australia and New Guinea.

This has involved the study of more than 1 300 specimens, most of which are lodged in The Australian Museum, constituting the most comprehensive collection of the Australasian species and one of the major collections in the world. Dr Cogger's studies have shown that there is great diversity in the Australasian region with some 32 species (of a world total of approximately 55 species) recorded from the area.

Deep-sea Animals

The animals of the deep sea, bizarre in shape and strangely coloured have always fascinated mankind, but the deep-sea animals off Australia have received little attention so far. Recently the NSW State Fisheries Research Vessel *Kapala* has carried out extensive investigations of deep-sea areas off the New South Wales coast, and the resultant fish, mollusc, crustacean and echinoderm specimens are now being studied by Museum scientists and incorporated into the Museum's collections. Many of the species are new to science while many others have not been found previously in Australian waters. In some cases the number of known species has been doubled as a result of the *Kapala's* investigations.

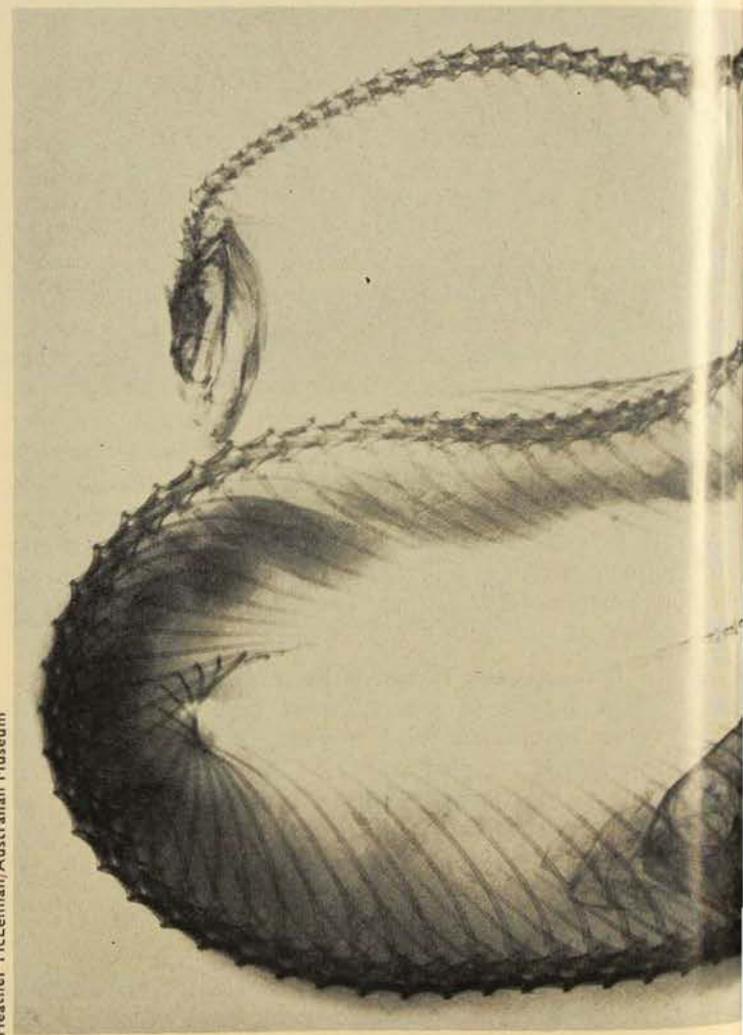
Cave Spiders

Among the many interesting aspects of the biology of cave spiders is the occurrence of relict species—cave-adapted descendants of former surface-dwelling forms that no longer exist. Mr Michael Gray's study of the distribution and relationships of such relicts is providing data of relevance to broader problems of zoogeography and evolution.

There is seldom a sharp boundary between a cave and the surrounding surface habitat. Soil and forest litter grades into the cave entrance and so does the associated spider fauna that occupies these layers: most of the spiders of Australian caves can

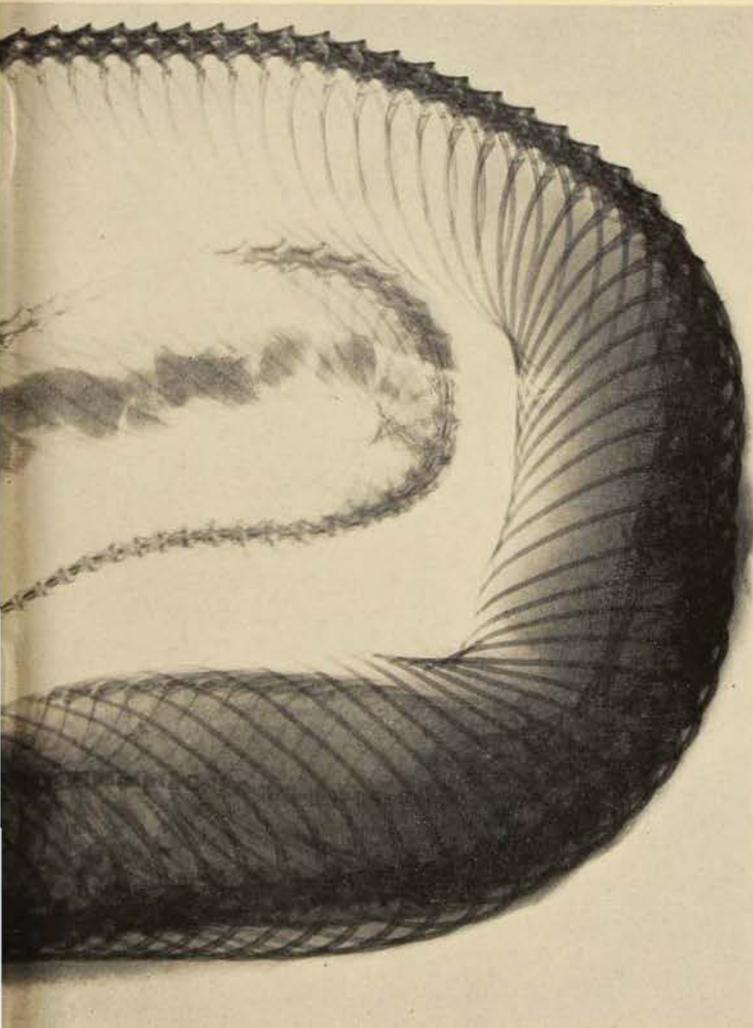
also survive in appropriate surface habitats. These trogloniles, which comprise a diverse group of at least 100 species from 22 families, are most abundant in the food-rich twilight zone near the cave entrance, where they are the dominant invertebrate predators.

The trogloniles—species that are more rigidly adapted to cave life and cannot survive on the



Heather McLennan/Australian Museum

surface—are far fewer in number and are generally confined to the deeper, food-poor regions of a cave. Only 7 families (which also comprise some 60 per cent of the troglomorphic fauna) contribute 10 species to the Australian troglomorphic fauna, which is restricted almost entirely to well-separated cave systems across the temperate southern part of the continent.



The troglomorphic of the Nullarbor Caves appear to be relicts of a once richer troglomorphic fauna that has become reduced by increasing aridity. In Roaches Rest Cave, the single exoskeleton of a blind cave spider belonging to the family Mygalomorphidae has been found. This species appears to have become extinct in Recent time.

Another remarkable species, *Tartarus mullamullagensis*, leads a precarious existence as a single, small population in the end chamber of Mullamullung Cave (NSW), 6 km from the entrance. Its closest known relatives are a number of forest-dwelling and troglomorphic spiders from southwestern Australia. Since a number of other invertebrate groups in southwestern Australia appear to have originated in eastern Australia, the occurrence of this relict species suggested that its relatives might also occur in eastern Australia and even have originated there. Subsequent collecting has verified both of these hypotheses, with the recording of three eastern species, one of which is primitive to the group as a whole.

Eurobodalla Shire Estuaries

All too often, no study of a natural area is made until it has deteriorated so badly as to arouse widespread protest. The Museum's baseline survey of estuaries in Eurobodalla Shire, southern NSW, provides a satisfying exception to the general rule.

An X-radiograph of an Olive Sea-Snake, Aipysurus laevis, which has swallowed a fish. This snake is common in Australia's tropical seas, especially in shallow reef and coastal waters. It grows to about 1.6 metres and is highly venomous. Dr Harold Cogger, Curator of Herpetology, has recently completed a review of the sea-snakes of Australia and Melanesia

Commissioned by the CSIRO Division of Land Use and assisted in planning by the NSW State Fisheries and CSIRO Division of Fisheries and Oceanography, the Museum mounted a survey of six selected estuarine systems in Eurobodalla Shire between August and October 1974. In accordance with its brief, the survey team compiled an inventory of the fauna of the estuaries, an evaluation of the constituent habitats, and the effect upon these of presents and likely future human activities.

An integral component of the research programme was the development of standardized sampling techniques to monitor the biological productivity of each area, and the definition of "indicator" species or groups, variation in the abundance of which will act as an early warning system.

Most of the aims of the survey have been met; the situation as of 1975 has been mapped and measured and future changes may be quantified by reference to the established baselines. The survey has shown that some habitats of certain estuaries are already adversely affected by human activity and that these ecosystems are particularly vulnerable to foreseeable increased pressures upon them. Protective measures are required if these environments are to retain their biological productivity.

Studies of NSW estuaries are being continued next year by Dr John Day, former Professor of Zoology at the University of Cape Town, who is visiting the Museum for one year, funded by a grant from the Australian Research Grants Committee.

One Tree Island Research Station

On January 1, 1975, the Trustees of The Australian Museum handed over control of the One Tree Island field station to the University of Sydney which will continue to maintain the island as an active research facility.

Work by The Australian Museum at One Tree Island began in 1966 and a small permanently-manned field station was built in 1971. Continuous work at One Tree Island by Museum staff has provided valuable collections of organisms from this part of

the Great Barrier Reef as well as important ecological information on a number of groups of animals. During the past four years, during which a permanent field station was established, over 100 research workers including more than 40 from overseas, have visited One Tree Island. As a result of multi-disciplinary studies, One Tree Island is now one of the best-known coral reef ecosystems anywhere in the world.

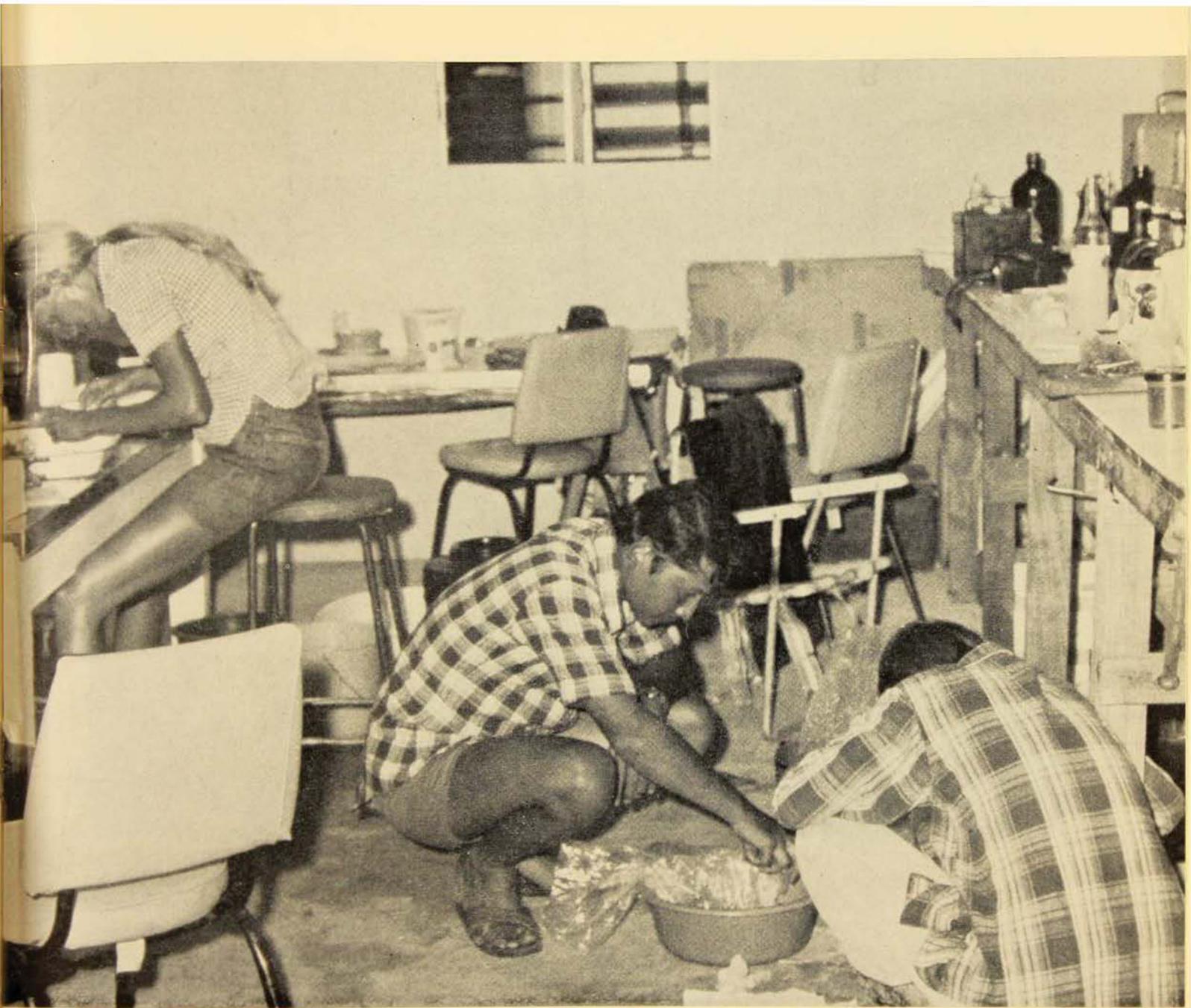
Lizard Island Research Station

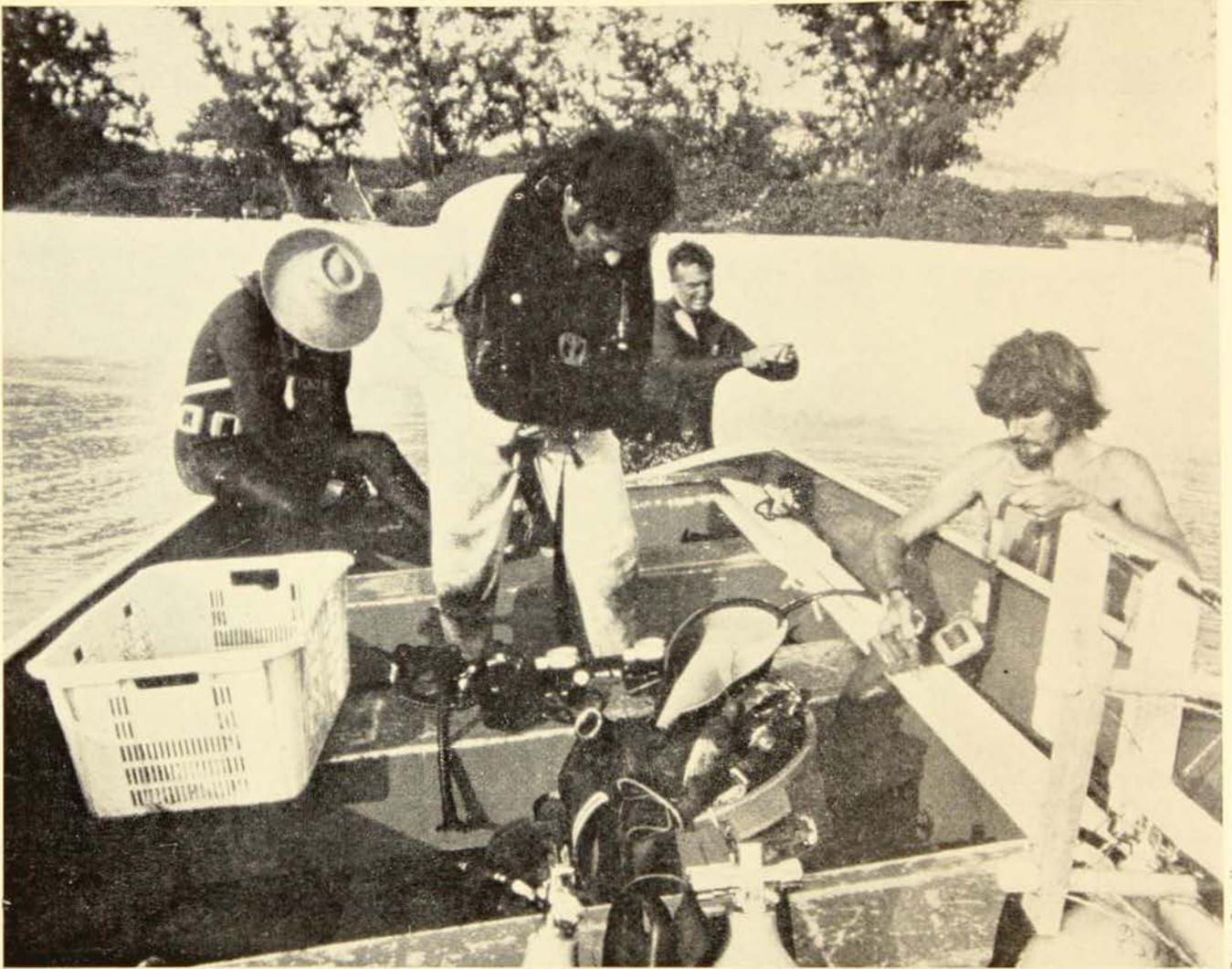
The building of the research station at Lizard Island, on the Great Barrier Reef north of Cooktown, continued during the year with the completion of three residential cottages. A temporary laboratory and other small buildings were completed in 1973 and a large permanent laboratory is planned for construction later in 1975.

Biological Mapping

Through the support of the Australian Biological Resources Study Interim Council, Dr Smithers arranged for a visit to Australia by Dr F. H. Perring. Dr Perring is the originator and organizer of the schemes operative in Great Britain for the mapping of plant and animal species. In recent years there has been discussion of the possibility of establishing similar schemes in Australia and as many individuals were already, or were about to be involved in such activities in this country, it seemed advisable to attempt to co-ordinate efforts for maximum efficiency, to establish the extent of present activities

*Diane Brown, Department of
Crustacea, Katsusuke Meguro,
Research Assistant to the Crown
Prince of Japan, and Helen Larson,
Department of Ichthyology, examine
the day's collection in the temporary
laboratory at the Lizard Island
Research Station*





Barry Russell

Museum scientists and visitor Paul Ehrlich (centre) prepare one of the small diving boats for a collecting trip near the Museum's Lizard Island Research Station, northern Great Barrier Reef

and obtain some guidance from an experienced person in this field. A highly successful three-day meeting was held in October 1974, at which important practical recommendations were made to the Australian Biological Resources Study Interim Council.

The trustees and staff of the Museum are pleased to thank the many organizations and individuals whose co-operation assisted in so many ways during the year. Details are provided in Appendices 1 and 2.

DEPARTMENT REPORTS SCIENTIFIC DEPARTMENTS

Department of Anthropology

Mr David Moore completed his analysis of material excavated at Cape York and Prince of Wales Island and completed his study of the ethnography and archaeology of the Cape York-Torres Strait region. He also continued his archaeological survey of the lower Hunter Valley.

Dr Jim Specht spent one month on archaeological fieldwork at Talasea, West New Britain District, Papua New Guinea, investigating the prehistoric exploitation of the Talasea obsidian sources, particularly in the Lapita pottery period. Activities included the mapping of former settlements including two new Lapita pottery sites, collection of oral traditions relating to the recent prehistory of the area and location of obsidian sources utilized at the time of white contact. A grant from the Ian Potter Foundation made possible the participation as field assistant of Mr J. Rhoads, a graduate student from the University of Minnesota, U.S.A. Mr Lin Sutherland, Curator of Mineralogy and Petrology, joined Dr Specht to assist in the study of these sources, and to advise on aspects of volcanic history of the region and the impact of volcanism on the human populations.

In co-operation with Dr M. Walker and Mr D. Anson of the Department of Anthropology, University of Sydney, Dr Specht began a study of the petrology of Lapita pottery from New Britain.

The major move of the Pacific Islands' collections to controlled-climate storage in the Yurong Street building was commenced in April, 1975, after protracted delays due to malfunctioning of the climatic control system and inadequacies in the automatic fire-prevention system.

Manuscript material in the museum archives relating to the anthropological collections was photocopied and filed. Systematic photography of the collections commenced with the Aboriginal bark paintings, Indonesian *wayang kulit* puppets, Aboriginal carved trees, and the Cook-Banks collection. The North American Indian material, Aboriginal bark paintings, Aboriginal carved trees, excavated Australian archaeological materials, and the Cook-Banks collection were checked and their documentation commenced. Mr Jackson Jacob (Thunalgundin) of Mornington Island checked and documented the collections from his area. Ms J. A. Rosenthal completed a descriptive catalogue of the Melanesian pottery collection.

The pilot project to computerise the catalogue of the Australian Aboriginal ethnographic collection made considerable progress, about 2 000 items being catalogued and card-punched for the first major trial of the system.

Important purchases included Indonesian items collected by Mr H. van den Berg, and traditional crafts from Mornington Island. A prehistoric stone carving from the Ramu River of Papua New Guinea which had been on loan to the Museum for many years, was purchased from its owner, Ms P. England.

Ms Lynn Hosking and Ms M. Tuckson, Associate of the Museum, visited Papua New Guinea to collect pottery and to document the pottery technology of several areas.

Ms M. Hirst, a TAMS volunteer, assisted with the reorganization of Departmental photographic records. Mr L. Fleischmann and Ms E. Stokes, both TAMS volunteers, began work on the repair and restoration of Melanesian pottery and on the treatment of Pacific Islands' bark-cloth respectively.

Ms M. Collier (ANU), a vacation assistant, systematized the Australian archaeological collections.

To speed up the answering of inquiries and general reference, the departmental library was entirely reorganized by area and subject and a start was made on rationalizing the reference systems, general filing, and photographic archives.

At ANZAAS 1975, Mr Moore presented a paper on "The Ethnography and Archaeology of Cape York and the Prince of Wales Group" and Dr Specht read a paper, co-authored with Mr Sutherland, "Talasea: an obsidian source in New Britain".

Dr Specht attended a conference on "The Art of Oceania" at McMaster University, Canada, in September 1974 and presented a paper, "The Analysis of Rock Art in Melanesia".

Dr Specht also took part in the Mission on Cultural Preservation and Development to the Pacific Islands on behalf of the Australian Government in October-November, 1974. As an observer, he attended the UNESCO Consultation on the Oceanic Cultures Programme in Canberra.

Mr Moore continued as Chairman of the Advisory Committee on Aboriginal Relics (NSW), as a member of the Advisory Committee on Material Culture to the Australian Institute of Aboriginal Studies, and as advisor to the Conservation Committee of the National Trust (NSW). Dr Specht was re-elected Hon. Secretary of the Anthropological Society of NSW.

The Department assisted the repatriation of artefacts donated by Ms N. McDonald to Papua New Guinea, the Solomon Islands and Fiji. At the request of the Oenpelli Council, an Aboriginal dreaming stone from West Arnhem Land, collected by Mr F. D. McCarthy in 1948, was returned to its original location.

A special exhibit on Western Desert Aborigines was prepared at the request of the NSW Education Department. A foyer exhibit of edge weapons from the Melbourne Ward Collection was prepared with the assistance of Mr Terry Lang, Artificer, Exhibitions Department.

Director's Research Laboratory

The census of fish populations on experimental artificial reefs at One Tree Island was completed, bringing to an end the second phase of a long-term study of the ecology and dynamics of coral reef fish communities.

In October, Professor Paul R. Ehrlich (Stanford University) visited Lizard Island with Dr Talbot, Mr Barry Russell and Mr Gordon Anderson, and a joint study of the behaviour of chaetodontids (butterflyfishes) was made.

In January-February, work on the fish communities of the northern Great Barrier Reef at Lizard Island was begun, using the facilities of the Australian Museum's new Research Station. Dr Talbot, Mr Russell and Mr Anderson made a series of quantitative samples of the fishes in a leeward habitat at Yonge Reef, on the Outer Barrier system. General collections of fishes were made also at Lizard Island in a variety of habitats. A series of artificial reefs was established in the lagoon at Lizard Island. Colonization of the reefs by fishes is being monitored by Mr Anderson. The work at Lizard Island will provide a direct comparison with the completed One Tree Island study and is aimed at answering questions about the origin and maintenance of highly diverse fish communities. Dr Talbot visited New Zealand in August and addressed the Royal Society of New Zealand's Challenger Expedition Centenary Meeting in Wellington. In January he presented a paper on problems of assessment of the impact of pollution on open ocean ecosystems to the ANZAAS Symposium on Environmental Assessment. In May, he was invited to James Cook University of North Queensland to give a series of three lectures on the results of the fish ecology research programme currently being carried out on the Great Barrier Reef.

Mr Russell has begun a PhD study on the taxonomy and systematics of the wrasse genus *Pseudolabrus* and allied genera, and in March-April visited museums and institutions in New Zealand

to collect and examine material. Other work being carried out by Mr Russell includes research on the taxonomy of Indo-Pacific lizard fishes (*Synodontidae*), mimetic behaviour of marine fishes, and the ecology and behaviour of sabre-tooth blennies.

Mr Anderson has continued his research into the taxonomy of Australian and New Zealand tripterygiids.

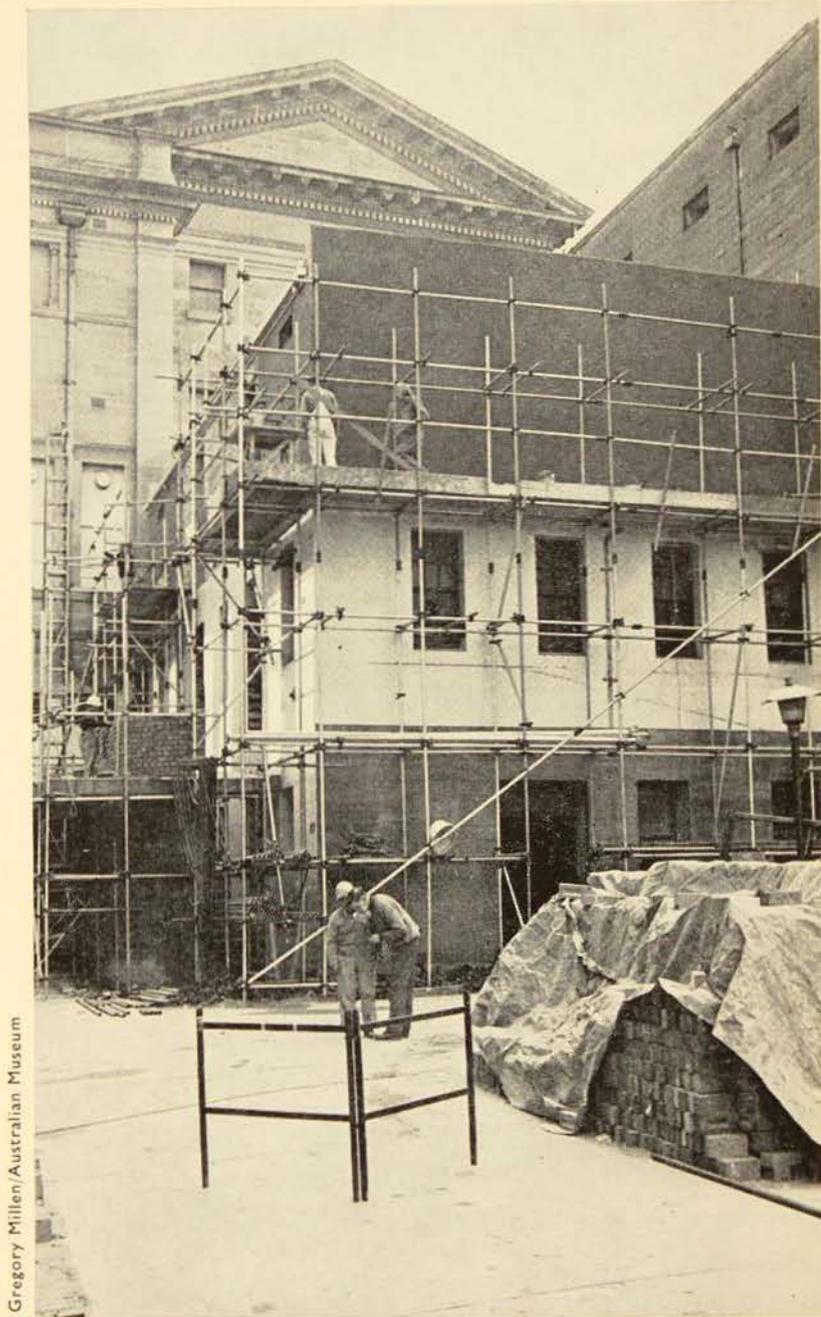
Department of Entomology and Arachnology

Dr Courtenay Smither's taxonomic work on the Psocoptera has involved study of material from several regions. Australian collections of Myopsocidae (bark lice associated with algae and lichens, especially in damp forests) have been described and, with the aid of the loan of important old material from the Naturhistorisches Museum in Vienna, revisionary work has been carried out.

The first year's work in Muogamarra Nature Reserve north of Sydney has revealed the presence of at least 50 Psocoptera species, several of which are undescribed. More intensive biological and ecological work is planned on the more abundant species.

The study of butterfly migration indicates that there are three main overwintering zones for the Wanderer (*Danaus plexippus*). The Australian patterns are found to mirror the North American patterns. Factors controlling the movements are now under investigation. Analysis of the accumulated migration records of the Caper White (*Anaphaeis java*) are under way. Observers in the butterfly migration scheme have also enabled a remarkable, short-lived but very widespread

The nearly completed Education Centre which was officially opened early in the new financial year



Gregory Millen/Australian Museum



This landscape in the Boudi state forest near Bombala on the NSW south coast is typical of areas where native eucalypt has been cleared for wood chipping. The Museum's Department of Environmental Studies has recently completed a survey on the effect of the wood chip industry on ecosystems in this area

migration of the Cineraria moth (*Nyctemera amica*) to be detected. Observers on Norfolk Island have also reported and submitted specimens of several species of butterflies not previously recorded from the island.

Dr David McAlpine continued his research on the systematics, biology and evolution of Australian acalyprate flies with continuing support from the Australian Research Grants Committee. Revision of the platystomatid genus *Lenophila* was completed.

The very large genus *Sapromyza* (family Lauxaniidae) is being studied.

Mr Gray has completed systematic work on the Australian members of the family Gradungulidae (Hypochilodae); revisionary work on the spiders of the superfamily Amaurobioidea is continuing. A report on the taxonomy and distribution of the funnel web spiders (*Atrax*) was compiled. This complex group is of considerable medical importance.

A continuation of the rearrangement of the butterfly collection has been made possible through the help of Mr G. Daniels, who has also worked on the collection of Robber Flies (*Asilidae*). Sixty-eight loans, representing over three thousand specimens have been sent to specialists for study. Three hundred and twenty-six type specimens were registered and about ten thousand specimens added to the collections.

Dr Smithers continued to represent the Royal Zoological Society of NSW on the Council of the Australian Entomological Society. Dr McAlpine continued to serve on the council of the Linnean Society of New South Wales and was elected to the Publications and Editorial Committee of that Society. He has served on the Editorial Committee of the Australian Entomological Society.

Mr Gray accepted an invitation to join the Australian Speleological Research Council.

Ms V. Gregg, Mr M. Moulds, Mr G. Daniels and Mr E. C. Chadwick have assisted in the Entomology Department with work on the collections. Through the courtesy of Mr R. Rofe of Camden, Museum staff were given free access to the important Wanderer overwintering sites on his property; his help has made our Wanderer work much easier than it would otherwise have been.

Department of Environmental Studies

Most of the research activities of this Department are designed to monitor changes in plant and animal populations over a number of years. The Department also participates in biological surveys and in attempts to assess the impact of development or

proposed development on the environment. These activities are often limited in duration and are in response to requests for assistance from groups or organizations outside the Museum. Our continuing research programmes often provide important baseline data in assessing environmental impact or in planning the conduct of biological surveys.

Research continued into the habitat requirements of small mammals at various places along the NSW coast and the effects of wildfire on small mammal communities in the Nadgee Nature Reserve. The study into the effects of beach sand mining on the regeneration of coastal vegetation was continued. Dr Clark presented a paper on this work at a meeting of the Ecological Society of Australia in May, 1975, and his early results confirmed that mining substantially reduces environmental diversity. Work on the ecology of honeyeaters (*Meliphagidae*) by Dr Recher was continued and is being expanded to look more closely at the pollination biology of the honeyeaters and the *Banksia* species which are their principal source of nectar. This part of the study was initiated by Dr Lyn Carpenter of the University of California, Irvine, who spent three months at the Museum in 1975.

Other departmental studies have been concerned with the ecology of the Hawkesbury River estuary, the biology of the Swamp Rat, *Rattus lutreolus*, and the ecology of herons. The department has also been involved with the Museum survey of rainforests and with the implementation of the recommendations made in the report on Lord Howe Island; this report was published by the Lord Howe Island Board and summarized in a paper in *Biological Conservation*.

The department also participated in an environmental impact study of the Eden woodchip industry. This study provided an opportunity to apply the findings of the Nadgee study to forest management practices, established a base for experimental studies of the relationships of small mammals with their habitats and provided additional information on

the effects of wildfire on native ecosystems. A survey of estuarine habitats in Eurobodalla Shire was completed for CSIRO Division of Land Use Research and the department participated in other environmental studies for the NSW Electricity Commission and the Department of Public Works.

Members of the department gave university courses and numerous public lectures and presented papers to various scientific bodies including ANZAAS, the Ecological Society of Australia and the Australian Mammal Society.

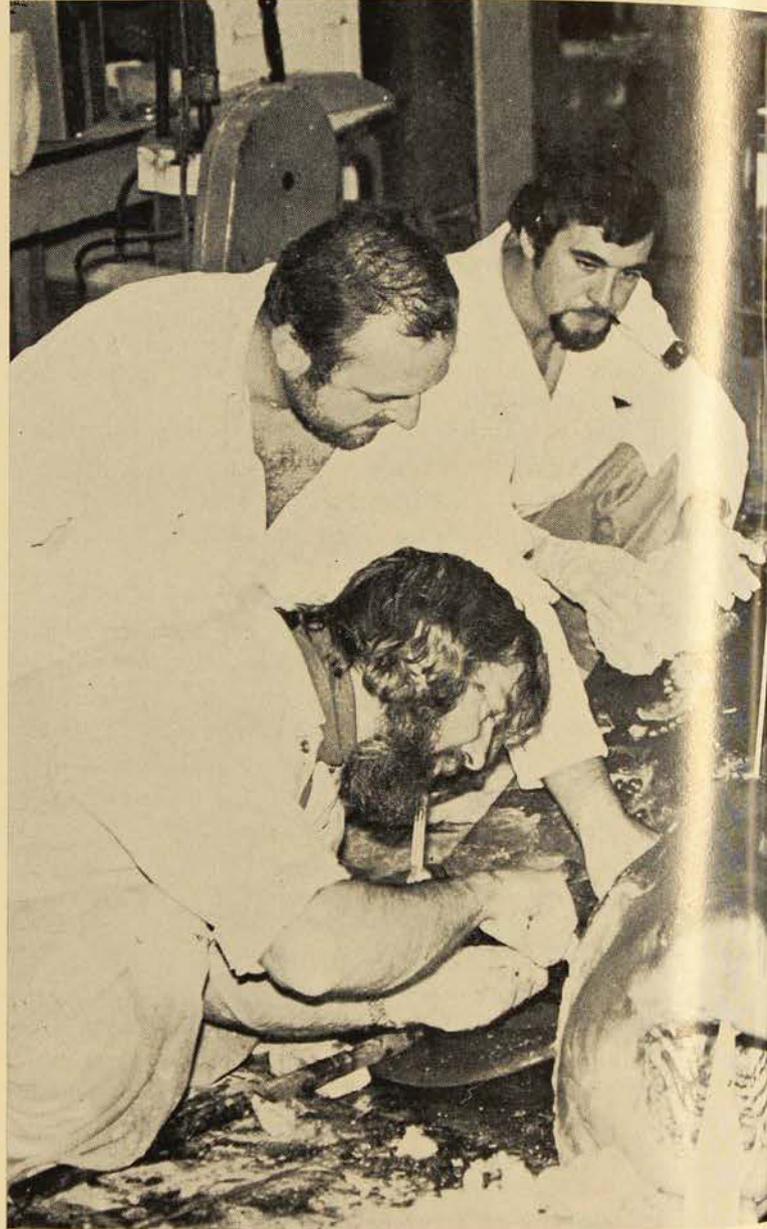
Department of Herpetology

The Department's research programme was primarily concerned with three major projects during the year.

Following field work in 1972-3 in Indonesia and the Timor Sea, a review of the sea-snakes of Australia and Melanesia was completed, as detailed in the introduction. As a result of this study, several major taxonomic problems have been delineated and these will be the subject of future research.

In continuation of previous extensive field work and research in northern Australia, Dr Cogger, jointly with Prof. H. Heatwole of the University of New England, obtained an ARGC grant to study the distribution and relationships of the fauna of the Torres Strait region. In June-August, 1974, field work was undertaken in the islands of the eastern and central groups (Cogger, Heatwole and E. Cameron), while in February-March, 1975, wet-season studies were carried out in the western group of islands (Cameron, Webber and Young). Specialists in other groups are providing much valuable information on the faunal and floral relationships of the region.

The list of primary types of reptiles and amphibians in the Australian Museum collection was rechecked and updated. While otherwise on leave in the United Kingdom, Mr Webber spent 10 days in the Library of the British Museum (Natural History) clarifying a number of bibliographic problems which had arisen in the course of completing a checklist





Howard Hughes/Australian Museum

Preparators cast a mold from a 3 metre White Pointer Shark, to be displayed in the Museum's new Marine Gallery

of Australian reptiles and amphibians and a bibliography of Australian herpetology.

Mr P. Rankin, an undergraduate student at Macquarie University, was employed in the Department during the 1974 Christmas vacation to assist primarily in the reorganization of the snake collection.

A total of 5 813 specimens of reptiles and frogs was registered during the year. Specialized information and advice was provided to other government departments, universities and other scientific institutions, and hospitals, and large numbers of enquiries from the public were answered.

In view of Dr Cogger's prior involvement and interest in the use of computers, the Department of Reptiles and Amphibians was selected for a pilot study to examine the methods and problems involved in storing, retrieving and manipulating data associated with the collections. Funds for this study were initially provided by the Trustees, but for the past year have been derived from a grant, for various computer studies, from the Australian Biological Resources Study.

Dr Cogger was elected a Vice-President of the Linnean Society of New South Wales, a Vice-President of the Australian Society of Herpetologists, and was re-elected a Research Associate of the California Academy of Sciences. He continued as a member of the Interim Council of the Australian Biological Resources Study.

Department of Ichthyology

Dr Paxton spent five weeks in Indonesia studying luminescent fishes on the *Alpha Helix* Expedition of Scripps Institution of Oceanography. During a three-month study tour of European and American museums, numerous type specimens were examined in conjunction with his research on myctophid and other Australian fishes.

Dr Hoese and Dr R. M. McDowall of New Zealand received a grant to survey the freshwater fishes of New South Wales. The study, carried out in

conjunction with New South Wales State Fisheries, has surveyed in 6 months 16 of the 42 drainage systems in the state. Several taxonomic studies are being carried out by Dr McDowall. The freshwater survey has obtained 40 species and 260 lots containing over 12 000 specimens, increasing the freshwater fish collection by 25 per cent. Mr I. Briggs, the field officer for the freshwater survey, and the Assistant Curator have been studying recruitment and growth of fishes in south coast estuaries.

Mr K. Meguro, a research assistant to His Imperial Highness, Prince Akihito, the Crown Prince of Japan, has worked in the Department for nine months on the taxonomy of freshwater and estuarine Australian gobiid fishes. Dr Hoese, Mr Meguro and Ms Helen Larson spent four weeks at Lizard Island studying the habitat associations of coral reef gobiid fishes.

During the year about 8 000 lots and 50 000 specimens have been obtained. Approximately half of the material has been collected by the Museum, and half has come from donations and exchanges. Over 1 400 lots and 11 000 specimens have been registered. Considerable exchange material has been received from the Western Australian Museum and the Queensland Museum, as well as some overseas museums. The exchange programme has been increased to obtain material rare or absent from the existing collection.

Due to space limitations, the collection is being reorganized, with the sharks and rays being moved to Rushcutter's Bay storage. Additional shelving has been added and it is hoped that space requirements will be met for three to five years. With the reorganization, the types are being separated from the main collection to allow proper curation. Ms R. Kuronoma has given invaluable assistance with all the above work.

The collection obtained by the Fisheries Investigation Ship *Endeavour* in 1909 and 1910, which had been maintained as a separate collection, has now

been incorporated into the main collection to make it more accessible to scientists. Work has continued on a cross-index of the collection by locality, using computer methods.

Mr G. P. Whitley (Research Associate) continued to assist in maintaining the department's collection record system and literature index file. Ms Jan Long, a TAMS volunteer, assisted with the departmental reprint collection. Mr Rudi Kuitert (Associate) continued to collect marine fishes for the department. Ms Diane Blake, a Macquarie University student, assisted Dr Paxton during the summer.

Twenty visiting scientists worked in the Ichthyology Department during the year for a total of 20 man-months. Over forty loans were made, totalling over 400 lots and 2 000 specimens. A large number of public and scientific enquiries was answered and public lectures were given by Dr Paxton and Dr Hoese to various societies in Sydney. Dr Paxton taught a third-year course at Macquarie University on the biology of fishes. Dr Paxton and Dr Hoese served as council members of the Australian Society of Fish Biology.

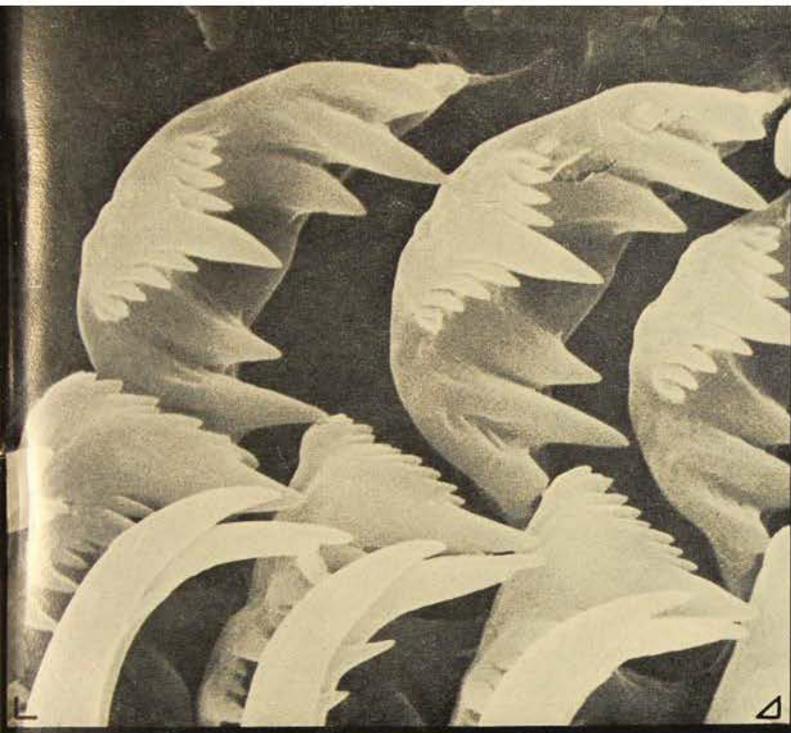
Department of Malacology

Studies on Australian micro-molluscs, supported by the Australian Research Grants Committee, have continued. Dr Winston Ponder studied types and other material relevant to this work in the Tasmanian Museum, the South Australian Museum and the National Museum of Victoria. A large number of specimens has been photographed using the scanning electron microscope at Sydney University.

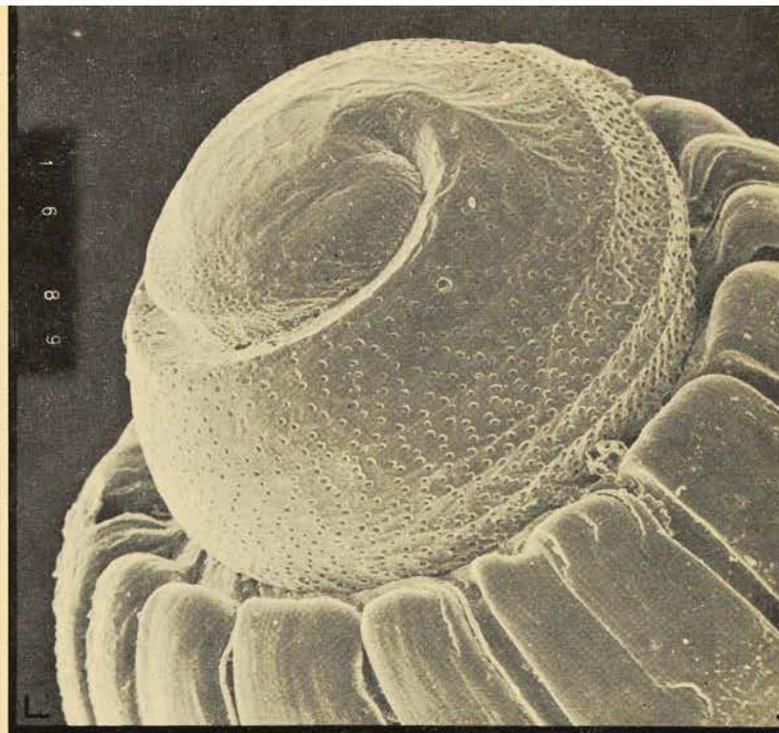
Mr T. A. Garrard (Associate) has completed a major revision of the Australian species of the Architectonicidae.

A loose-leaf system incorporating all Australian and many Indo-Pacific Recent and Tertiary Mollusca is almost complete and is presently being indexed by Mr C. Murray, a TAMS volunteer.

Field work was carried out at Lizard Island during



Diane Higginbothon/Sydney University SEM Unit



Diane Higginbothon/Sydney University SEM Unit

ABOVE: Some of the radular teeth of a species of the Rissoidae, *Lucidestea*, magnified $\times 6400$ by scanning electron microscopy. These minute snails are about 2 mm in length and are abundant on algae throughout Australia and the Pacific.

RIGHT: This $\times 170$ enlargement, also a scanning electron micrograph, shows the pitted protoconch of *Pissina costata*, a marine snail which occurs commonly from Tasmania to south western Western Australia along the continental shelf in depths of 36 to 200 metres. The actual size of the whole shell is 3 mm in length, 1.4 mm in diameter. Microscopic details such as these are not clearly visible under ordinary microscopic examination and so the SEM provides the best method of examining these minute structures

December, northern Tasmanai in March and in mid-Queensland rainforests during April-May.

Considerable progress has been made in curating the existing research collections and in adding new material to the collections. Considerable hold-ups are caused by the lack of sufficient trained personnel to sort and identify material. Much of the work is being done by nine TAMS volunteers and additional help was given by Ms L. Back (vacation assistant) and three Museum Discoverers during the Christmas holidays.

The research value of the collections was considerably enhanced by the incorporation during the year of the Tertiary and Quarternary mollusc collection. However, a considerable amount of effort needs to be made to incorporate additional fossil mollusc material to cover the numerous gaps in this collection.



David Millidge

Dr Ponder served as a committee member on the Sydney Branch of the Malacological Society of Australia.

The department was opened to the Malacological Society for inspection in August, 1974, and June, 1975.

Department of Mammalogy

Mr Basil Marlow visited Kangaroo Island for one week in September 1974, to investigate possible sites in the area in connection with further studies on the Australian Sea-lion.

Ms Linda Gibson participated in the first of the field trips to survey the fauna of Queensland rainforests. This study is being conducted in association with the Queensland Museum under a grant from the Australian Biological Resources Study Interim Council.

Work has commenced on placing information on the mammal collection in a computer-based data bank. A collection of twenty-three small African mammals has been received from Mr W. F. H. Ansell, formerly of the Game Department in Zambia. A total of 121 specimens was assessed into the collection and 53 were sent out on loan.

Mr Marlow was absent overseas on leave for four months from March to July, 1975.

Department of Marine Invertebrates (Crustacea and Coelenterates)

Dr Desmond Griffin and Ms Helen Tranter continued their studies on the spider crabs collected by the Siboga Expedition in Indonesia from 1899-1900, and on collections in the Indo-Pacific by the Dr Th. Mortensen Expedition.

*A mangrove swamp at Brabathalle Bay:
Tuross Estuary which was investigated
as part of the survey of estuaries in
Eurobodalla Shire*

Detailed studies of the deep-water decapod crustaceans taken by State Fisheries Research Vessel, *Kapala*, were continued. A report on the crabs has been completed, and a report on the lobsters and related groups is nearing completion. Studies on the shrimps and prawns has now commenced. This work has been assisted by Ms Penny Weate.

An investigation of the family Thalassinidae was commenced with Dr G. C. B. Poore of the Fisheries and Wildlife Division, Victorian Ministry of Conservation.

The Copepoda and Amphipoda collections were recatalogued and expanded. A total of 600 lots of crustaceans and 85 lots of corals were registered. There remains a tremendous back-log of unregistered specimens—collections from Museum surveys in New South Wales, at One Tree Island, Lizard Island, and in South Australia, and half of the barnacle collection.

In August, the department co-operated with other Museum departments in biological survey work in estuaries in Eurobodalla Shire. In January-February, Ms Diane Brown spent three weeks on Lizard Island with members of the Department of Ichthyology, collecting corals and crustaceans from the reef, as well as from the mangrove and freshwater habitats on the island.

Scientific and public enquiries were answered on freshwater and marine crayfish, prawns, crabs, corals and jellyfish, and specimens were identified for numerous institutions and organizations.

Visiting research workers during the year included Mr Terry Walker, Zoology Department, University of Tasmania; Mr Geoff Westcott, Zoology Department, University of Melbourne; and Ms Alison Green, Tasmanian Museum and Art Gallery.

Department of Marine Invertebrates (Worms and Echinoderms)

Dr Pat Hutchings and Dr Harry Recher (Department of Environmental Studies) have completed a



Harry Recher

three-year ecological study of Careel Bay, Pittwater, New South Wales. Their recommendation that the area be declared a nature reserve has been accepted by the Warringah Shire Council.

Research activities on wetlands are now being

Pat Hutchings, Department of Worms and Echinoderms, carries out investigations on habitat types and animal populations in the Careel Bay estuary at Pittwater, near Sydney

centred on Patonga Creek, Broken Bay, where Drs Hutchings and Recher are carrying out an intensive sampling programme in an effort to assess productivity. Other areas that have been examined during the year are Tuross Lakes, on the South Coast of New South Wales and the four lakes at Gosford, where a two-monthly sampling programme has been carried out. In January, 1975, Dr Hutchings and Ms Penny Weate spent three weeks on Lizard Island and, in co-operation with Professor M. Pichon (James Cook University, Townsville), sampled the coral infauna along a transect across the outer ribbon reef. This material is currently being analysed together with material from One Tree Island. A systematic study of a collection of Terebellidae, Ampharetidae and Trichobranchidae (Polychaeta) made by Professor Stephenson (Queens-

land University) has been completed. This study will form the basis for a major revision of the three families.

Dr John Day, formerly Professor of Zoology, University of Cape Town, South Africa, is visiting the department as a Senior Research Fellow for a year (March, 1975-6). He is supported by a joint ARGC grant, with Dr Hutchings. They are preparing a list of over 400 polychaete species and their synonyms, recorded from Australia and New Zealand. Dr Day will study the Merimbula estuary in New South Wales, and plans to sample it during each season.

Dr Frank Rowe spent three weeks studying the echinoderm collection in the Tasmanian Museum (Hobart) and collecting echinoderms and ascidians from the southeast coast of Tasmania. Over 250 specimens were obtained. Three days were spent in the National Museum of Victoria, making a preliminary study of the echinoderm collection with particular reference to specimens from Tasmanian waters. At the invitation of Professor L. G. Eldredge, University of Guam, Dr Rowe spent three weeks on Guam studying sea cucumbers and the *beche de mer* industry. A study of the holothurian fauna of the local reef-flats was made, and about 100 specimens will be sent to The Australian Museum.

Systematic studies of some asteroid genera, collections of echinoderms from Swain Reefs (Queensland) and from the Gulf of Carpentaria have reached an advanced stage. An account of the

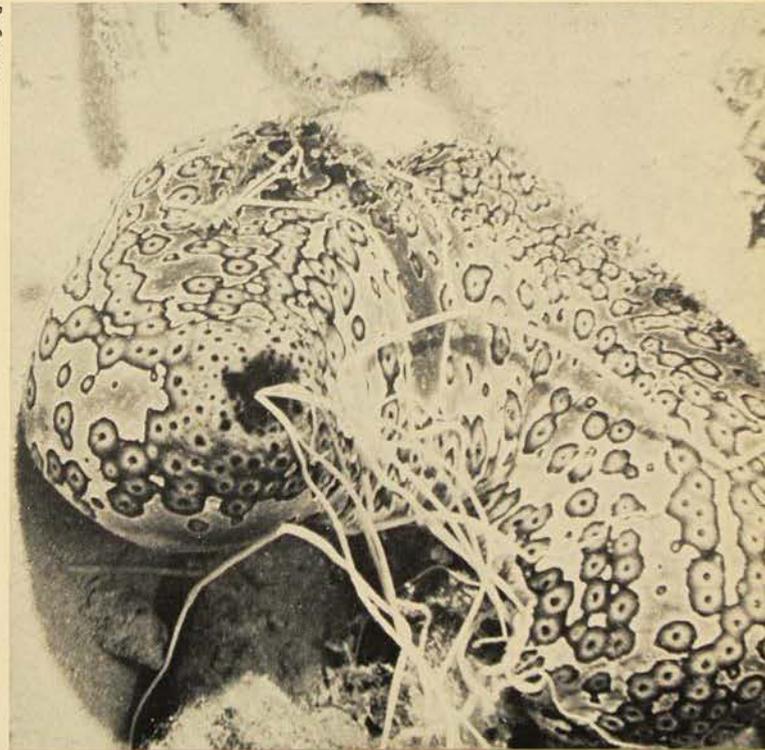
asteroid genus *Heteronardoa* and its occurrence in the Indian Ocean has been completed after a study of material sent from the Western Australian Museum and the Smithsonian Institution (USA). An investigation of the anatomy of the aberrant sea-star *Podosphaeraster polyplax* has been undertaken by Dr Rowe in co-operation with Professor D. Nichols, University of Exeter, England. The study of seasonal cycles of ascidians in Port Hacking, New South Wales, is continuing.

Large quantities of polychaete material from the Shelf Benthic Survey off Sydney's North Head and the south coast of Tuross Lakes has been incorporated into the collection. Over 1500 echinoderm specimens have been added during the year. The type-specimens of echinoderms and ascidians have been separated from the general collection for easier access and greater safety. Space limitations have necessitated the removal of the collection of dried sponge specimens to storage at Rushcutters Bay.

Mr N. Coleman and Mr I. Loch have continued

This sea cucumber, Bohadschia argus, occurs commonly in waters around Guam where Frank Rowe has studied these animals and the beche de mer industry

R. Strong



to collect specimens for the department. As a result of their efforts, the range of some known Australian species of echinoderms has been extended and new species records for Australia established.

Dr Hutchings gave part of the Marine Ecology course at the University of Sydney to final year Zoology students (October-November, 1974) and a paper at the underwater congress, "Oceans 75", in Melbourne (June, 1975).

Dr A. Baker (National Museum of New Zealand, Wellington) worked in the department from July-October, 1974, examining the collection of ophiuroids. Dr R. Gibson (Liverpool Polytechnic, England) visited the department in June, 1975, to examine the nemertean collection. As a result, large quantities of material are being sent to Liverpool for further identification by Dr Gibson. This material together with some from Victoria, will form the basis of a major research study of the Australian nemertean fauna. Ms E. Pope (Associate) continued her research on barnacles and zonation and is describing two giant star-fishes from New Caledonia and Guam.

Department of Mineralogy and Petrology

Mr Lin Sutherland's major research project on volcanic rocks in Tasmania and North Queensland reached an advanced stage with virtual completion of major and trace element geochemistry. This included X-ray fluorescence analyses of lavas and rock inclusions, completed at the Earth Science Laboratories, Macquarie University, and extensive electron micro-probe analyses of groundmass minerals, megacrysts and xenolithic assemblages determined on the facilities at the Research School of Earth Sciences, Australian National University. Field work on the Bowen Basin basalts in north Queensland was finalized during a visit in July. A study was made of a unique occurrence of lherzolitic inclusions on tholeiitic basalt from Andover, Tasmania. Minor research projects included geochemical analysis of pumice deposits associated with pottery and obsidian sites at Talasea,

West New Britain, being studied by the Museums' Department of Anthropology, and geological studies of the Gloucester sapphire-ruby field, New South Wales, which was visited by Mr Sutherland and Ms Joan Hingley in April, with a local prospector Mr A. Chubb.

Considerable collecting was accomplished during a field trip to select sites of mineralogical interest for the forthcoming International Mineralogical Association excursion planned for the International Geological Congress activities in August, 1976. The area visited extended from the Broken Hill region, NSW, through the Olary Province into the northern Flinders Ranges, SA, participants included Mr Sutherland, Ms Hingley, Mr R. O. Chalmers (Research Associate) and staff from the Division of Mineralogy, CSIRO, Bureau of Mineral Resources, Broken Hill University College, NSW Department of Mines and 2nd Division Workshop Battalion, Moorebank.

Representative samples of the volcanic rocks of the Willaumez Peninsula were collected during the visit to West New Britain in June-July, 1974, and duplicate sets of these were exchanged with the National Museum of Victoria and Macquarie University. During a visit to the Government Chemical Laboratories, Perth, WA, in March, Ms Hingley sorted and arranged a collection of Western Australian mineral suites, including recently identified species, for shipment to The Australian Museum.

Registered minerals now stand at 43 649 entries, an increase over the year of 454. Exchanges of overseas suites were made with G. Smith, A. Gardner, D. Pohl, A. Chapman and J. Wolfe, and of general Australian material with J. West, D. Pohl and G. Hume; gemstones from the USA were purchased from J. E. Ferdyn. No rocks were registered during the year due to a backlog of cataloguing, but exchange sets of Greenland alkali granites and the world's oldest rock (the 4 billion years old Amitsoq gneiss) were received from Dr N. Haed,

*Neil Carrick from the Museum's survey team samples a quarter-metre of substrata for yabbies *Callinassa* sp. during the *Eurobodalla* estuarine survey carried out for the CSIRO.*



David Millidge

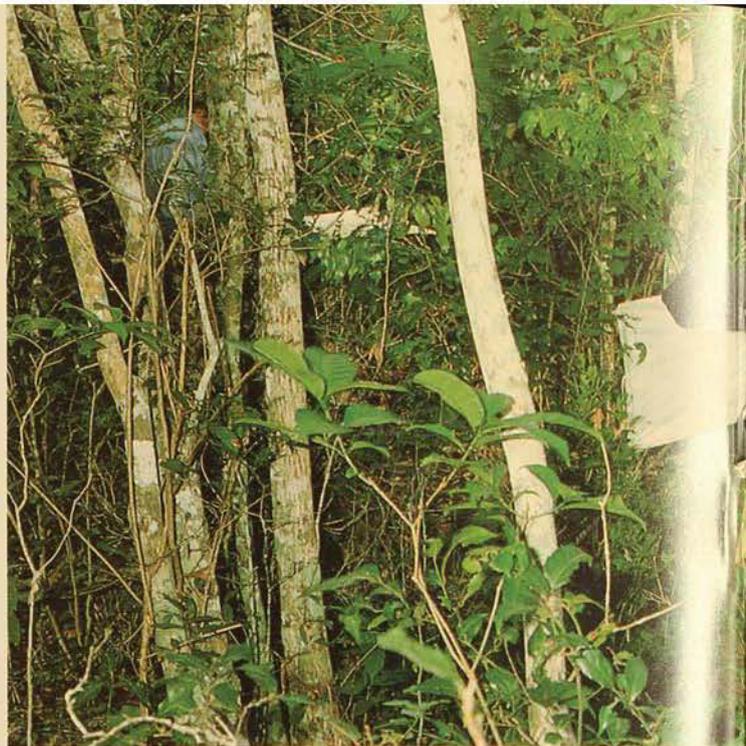


Gregory Millien / Australian Museum

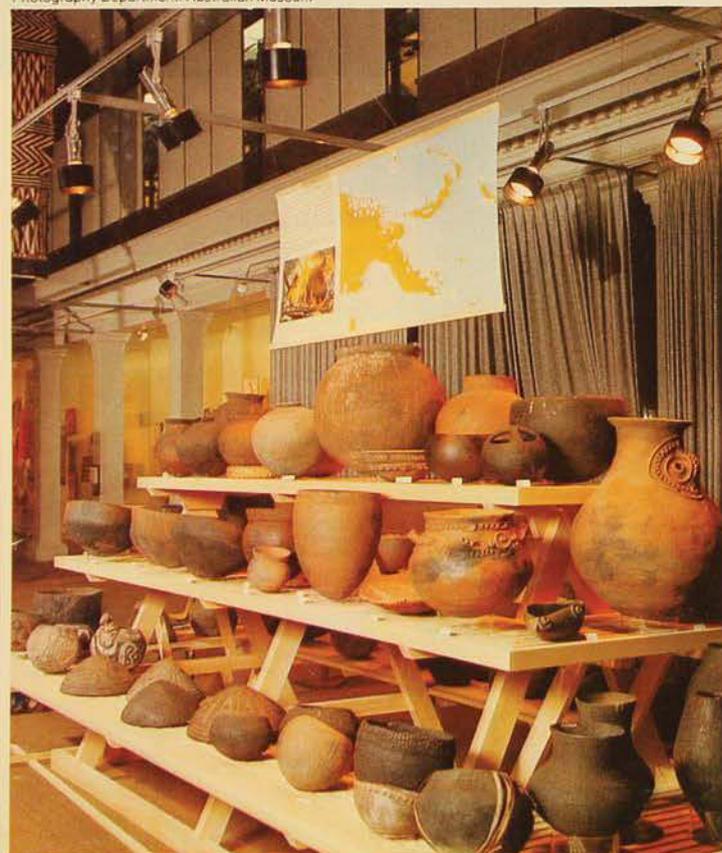
Peter Gill, Conservator in the Materials Preservation Section, carefully cleans and preserves Aboriginal Bark Paintings from the Museum's Collection.



Photography Department/Australian Museum



Photography Department/Australian Museum

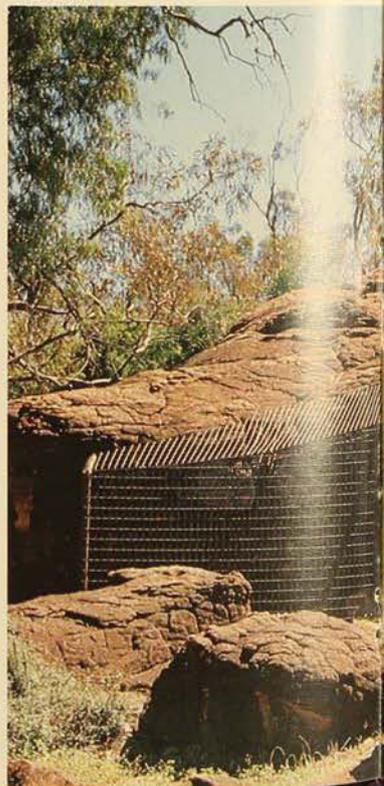


Above left: The 'Stegmobile', a full-size mobile of the skeleton of Stegosaurus, was built in the main entrance foyer by members of the Museum Discoverers Club to launch the Museum's Dinosaur Appeal.

Above: Museum scientists collecting specimens for study as part of the Rainforest Survey Programme.

Left: Traditional New Guinea pottery formed part of a crafts exhibition at the Australian Museum from May to June 1975. This exhibition coincided with the Asian Assembly of the World Craft Council held in Sydney during May 1975.

Sue Walston

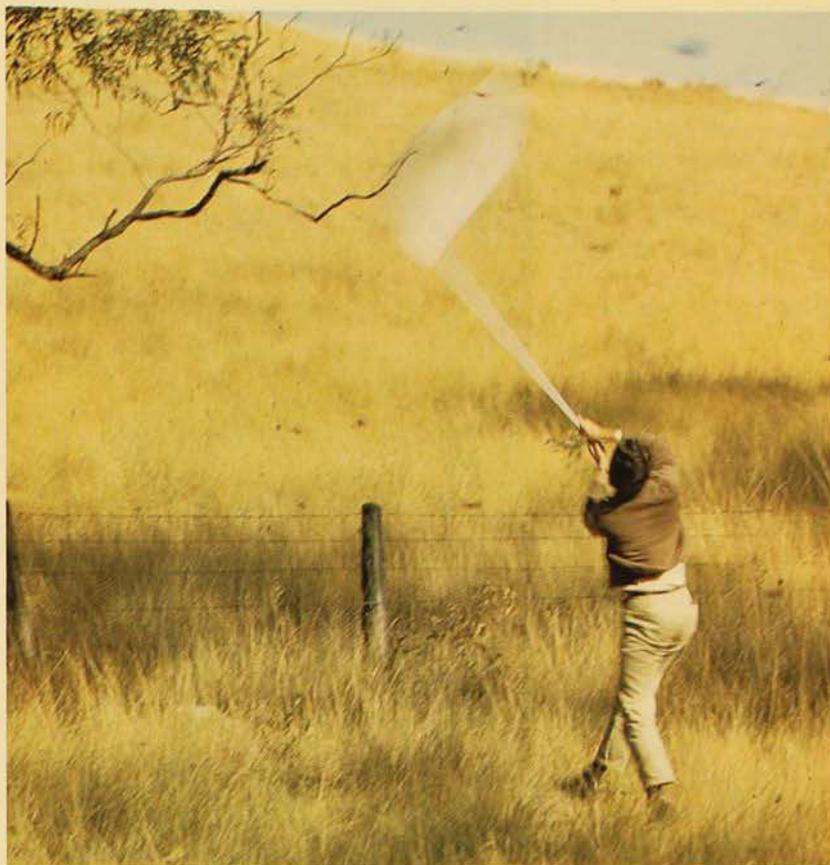




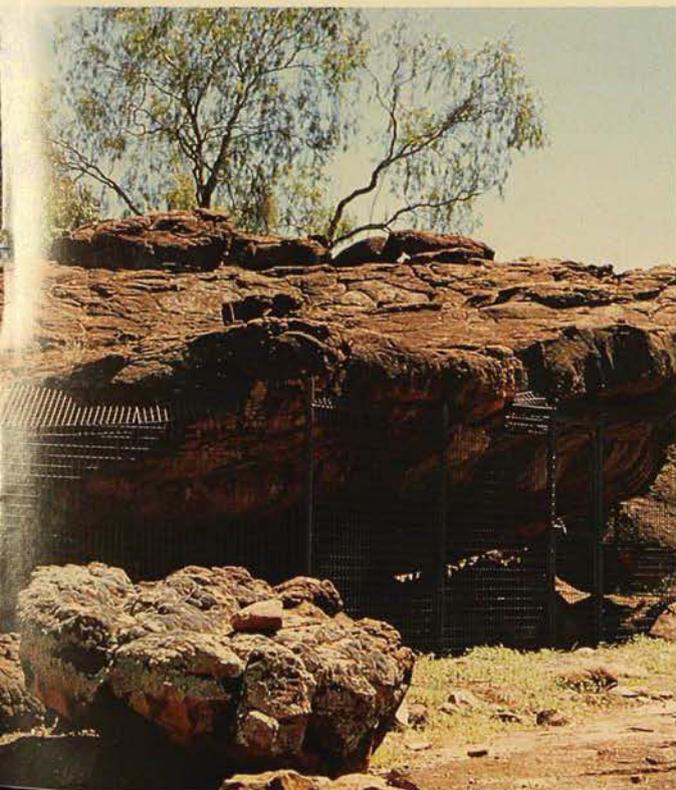
Right: Entomologist Geoff Holloway captures butterflies at Camden, NSW as part of a continuing study of butterfly migration being carried out by C. N. Smithers.

Below: Weld-mesh fencing was constructed around this Aboriginal painted site at Mount Grenfell near Cobar in Western NSW by the National Parks and Wildlife Service. Sue Walston, Head of the Museum's Materials Preservation Section has been making recommendations to the service on the conservation of painted sites in this area which contains some of the finest Aboriginal Cave Paintings in the State.

Bottom right: Jackson Jacob (Thunalgualdin), an Aboriginal storyteller from Mornington Island entertained children in the Hallstrom Theatre during the May 1975 school holidays.



Howard Hughes / Australian Museum



Gregory Millen / Australian Museum



Gregory Millen / Australian Museum

Biggs

The Redfin, *Perca fluviatilis*, was introduced from Europe and has become quite widespread in the inland rivers and lakes of NSW.



In the Herpetology laboratory, a female of the rare Fijian Iguana, *Brachylophus fasciatus* emerges from her egg.



ul Webber

Copenhagen Mineral Museum. A rare stony meteorite from the Millbillillie fall was received from the Wiluna district, Western Australia.

Mineralogical and volcanological talks were given to the Bankstown Lapidary Club and the NSW Institute of Technology students geology club. Mr Sutherland convened the Museum's Seminar Committee.

At the Geological Society of Australia Specialist Group in Geochemistry and Mineralogy Meeting in July, Mr Sutherland was elected the Australian representative on the International Mineralogical Association Commission on Museums. He attended the Geological Society of Australia Joint Specialist Group Meeting on Volcanism and Ore Genesis in July, the Challenger Centenary Deep Sea Drilling Symposium in August, and the Tenth Symposium on Advances in the Study of the Sydney Basin in April. Supervision of the geological details of the earth section model for the Hall of Life was completed and audio-visual programmes on the moon and earth structures were prepared and recorded. Meteorites were displayed in two exhibits at the Australia '75 Festival of Science and Creative Arts in Canberra in February-March. A small exhibit on Australian sapphire sources was prepared for the Northside Gem Club show at Lindfield in May. Material related to diamonds was loaned for display at the Broken Hill Gemshow in May.

Department of Ornithology

Mr John Disney continued his research on the taxonomic, morphological and anatomical relationship of the age and sex differences of Australasian birds with particular regard to moult. A paper on skull pneumatization in birds was presented to the 16th International Ornithological Congress.

Research on the Lord Howe Island Woodhen continues. Visits were made in February, 1975, to check population success of the breeding of birds on the top of Mount Gower. Eleven adults and six chicks were seen and the latter colour-banded. Apparently, three adults had been lost since

February, 1974. On a second visit at the end of May, sixteen birds were seen. One female and two which had been seen in February could not be found but as one female and one male which had been missed February were observed, it seems that the total number on Mount Gower remains much the same, although there has been some loss of adults.

The study of bird populations in pine forests, completed during the year, is detailed in the introduction.

The number of specimens registered during the year was two hundred and fifty-five. Sixty specimens were received from the American Museum of Natural History in exchange for specimens collected by them in New South Wales on exchange from the Iraq Natural History Museum, and 51 specimens from the NSW National Parks and Wildlife Service. Other specimens were donated by members of the public.

Lectures were given to a combined meeting of the Ornithological Section of The Royal Zoological Society of New South Wales and the New South Wales Field Ornithologists Club, and to the Hunters Hill Horticultural Society.

A joint paper (with Dr P. J. Fullagar of the CSIRO Division of Wildlife Research) on the rare and endangered species of birds on Lord Howe Island was presented to the International Council for Bird Preservation.

Mr Disney wrote the text of the catalogue of an exhibition of 66 bird photographs, "Some Scientific Uses of the National Photographic Index of Australian Birds" mounted in the National Library, Canberra, for the 16th International Ornithological Congress. This was displayed from August, 1974, until February, 1975. Mr Disney continued to serve on the Selection panels of the Index and acted as Chairman of the Field Programmes and Grants Committee in the absence of Dr D. L. Serventy.

Mr Disney served as council member and Chairman

of the Field Investigation Committee of the Royal Australasian Ornithologists Union, as a member of the Scientific and General Committees of the International Ornithological Congress, as Vice-president of the Bird Banders Association of Australia, and as Council Member of the Royal Zoological Society of New South Wales. He attended the meetings of the 16th International Ornithological Congress in Canberra from 12th–17th August, 1974, and the International Council for Bird Preservation 16th World Conference in Canberra from 19th–24th August, 1974.

Department of Palaeontology

Dr Alex Ritchie's main research project is a detailed study of the late Devonian anthrodiran genus, *Groenlandaspis* now known to be represented by at least six species on four continents; and of earlier species of related genera occurring in Australia and Europe.

Middle Ordovician vertebrate material collected in the field has been augmented by additional material hitherto overlooked in the Bureau of Mineral Resources, which contains the most complete specimens of Ordovician vertebrates ever discovered.

In late 1974, Dr Ritchie and Mr Bob Jones, assisted by various volunteers, excavated a fish-bed in a quarry near Hornsby Heights, NSW, reported by Mr Gordon Bollinger of Hornsby. About 25 extremely well-preserved fossil fish specimens were recovered. Specimens of *Cleithrolepis*, *Macroaethes*, *Enigmatichthys*, etc., were recovered together with a fine fossil insect wing.

In January, 1975, a potentially important early fossil marsupial site near Merriwa, NSW, was investigated by a team of Museum Discoverers supervised by Dr Ritchie, Mr Jack Mahoney of the University of Sydney and Mr Ed Wilson, Education Officer at the Museum. The local council kindly lent the services of a grader to expose the bone-bearing deposits along a stock route but, although some useful specimens were recovered (*Diprotodon*, various extinct macropods, etc.) the deposit was not rich enough to warrant a prolonged excavation. Investigations were carried out during the year on reported fossil bone deposits in limestone caves at Jenolan and near Timor, north of Muswellbrook, NSW.

A total of 827 specimens including about 200 donations were registered during the year. In exchange for casts of Australian and Antarctic Devonian fish material, the American Museum of Natural History, New York, presented 7 specimens of Cretaceous teleosts preserved in nodules from Brazil. Canterbury Museum, Christchurch,



Gregory Millen

Museum scientists prepare for the first survey trip to the Rainforest



Jim Specht

presented a superb complete skeleton of a medium-sized moa, *Euryapteryx gravis*, in exchange for replicas of the recent Devonian fish discoveries from Antarctica for use in that Museum's new Antarctic displays.

In early 1975, Ms Mary White commenced, on a part-time basis, the reorganization, checking and cataloguing of the fossil plant collections prior to their removal to the Rushcutters Bay Store. In the course of this work Ms White made major discoveries of morphologically and taxonomically significant material previously unrecognized in the Museum's collections. These discoveries clarify some outstanding problems in Australian palaeobotany.

In addition to this preparation work on the new

Devonian fossil fish material, Mr Jones has also completed preparation and reconstruction of some extremely delicate arthropod skeletons removed from calcareous nodules by means of an acid technique.

Museum mineralogist, Lin Sutherland examines an obsidian source in Talsea, West New Britain, as part of a co-operative study with Jim Specht, Department of Anthropology

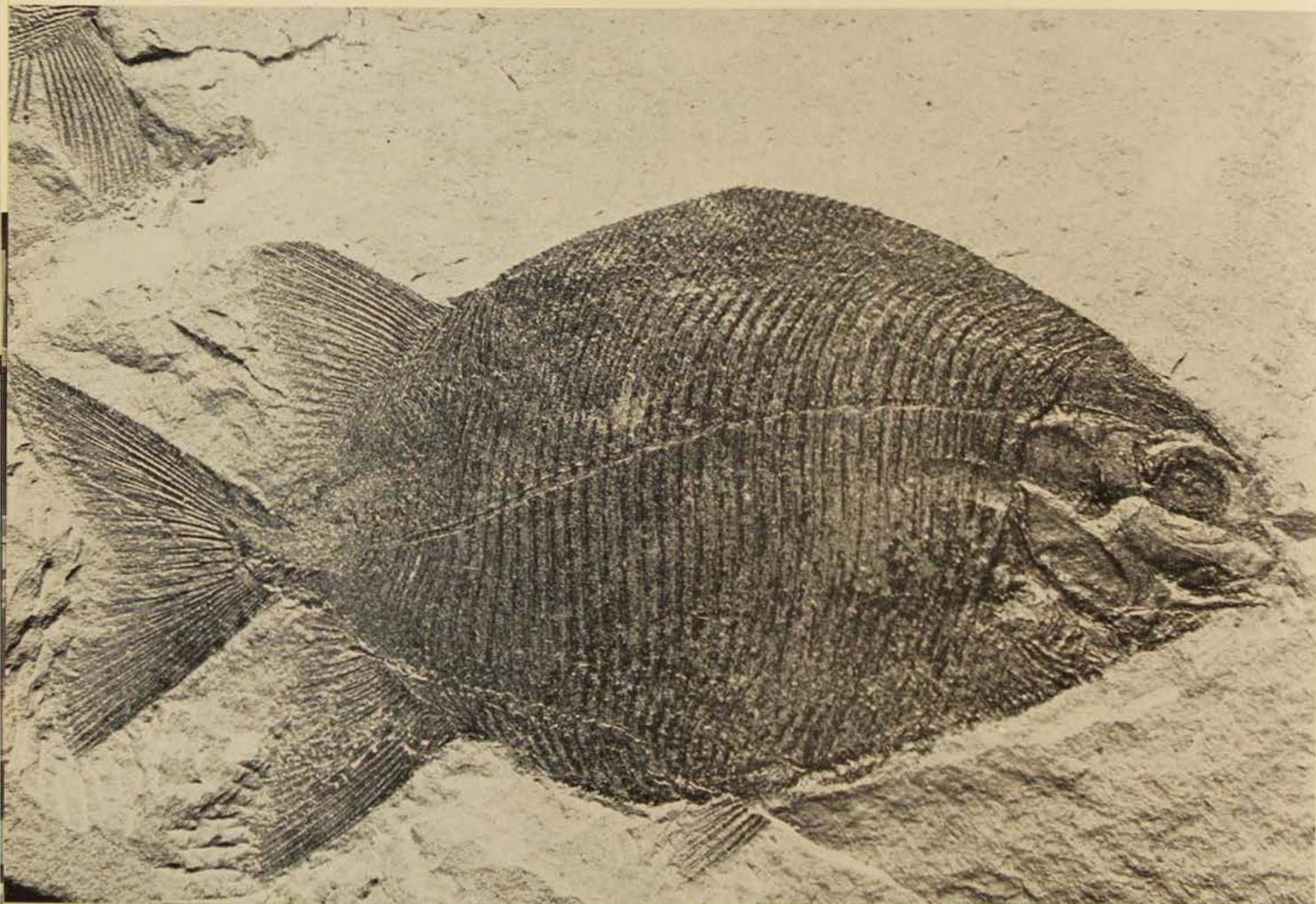
Dr Ritchie gave his annual, 13-week course, "Evolution of the Vertebrates" in the School of Earth Sciences, Macquarie University. Lectures on researches on fossil fish of Australia and Antarctica were given to local natural history and lapidary societies. Lectures on the evolution of dinosaurs were given to the pupils of six schools in the Sydney area and also to the management staff of Thomas Nationwide Transport Ltd.

The range of fossil casts for exchange purposes, mainly replicas of Devonian fish material from Australia and Antarctica, was considerably extended during the year. These are proving exceptionally

valuable in obtaining useful comparative, teaching and display items from overseas institutions at little cost.

Functional Anatomy Unit

Mr Ronald Strahan completed a study of the mating behaviour of the platypus and commenced a comparative study of the structure and function of the head and forelimbs in phalangers, kangaroos, and bandicoots. He continued his researches on the structure of the protopancreas of Australian lampreys and described the changes that occur in this organ in the course of metamorphosis of the lamprey, *Mordacia mordax*. Two collecting visits



were made to the Moruya River, southern New South Wales, to collect lampreys.

The first known species of hagfish peculiar to Australia, *Eptatretus longipinnis*, was described from specimens forwarded by the South Australian Museum and incorporated in a key to the 5-7 gilled members of the Eptatretidae.

Mr Strahan was reappointed an Honorary Associate of the School of Zoology of the University of New South Wales and a part-time lecturer in the School of Biological Science, Macquarie University, and was elected a vice-president of the Royal Zoological Society of New South Wales.

MATERIALS PRESERVATION SECTION

The Conservation Laboratory is conducting a comprehensive investigation into the deterioration problems and conservation requirements of the Museum's ethnographic collections. The first stage of this project, associated with the biodeterioration of the materials composed of wood and fibres has now been completed.

This survey, which was carried out in collaboration with the Wood Technology Division of the Forestry Commission, included the identification of the types and source of insects and fungi present in the Museum, the degree of damage sustained by the collections and the measures required to prevent further infestation. Ms S. Aldridge, a science graduate from Macquarie University, assisted with this project.

This fossil of a freshwater fish, Cleithrolepis granulatus, was recently excavated from Hornsby Heights, NSW and is from the middle Triassic period—200 million years ago. It is the most commonly found fossil in the Sydney area

The second stage, aimed at identifying the conservation and restoration requirements of the collections in terms of treatments, materials, and labour required is now under way. The National Herbarium of the Royal Botanic Gardens, is assisting with the identification of plant material in order that a reserve stock of accurately matched raw material may be obtained for restoration work.

The purpose of this project is to identify the problems associated with the deterioration of the collections and to assess the immediate and long-term conservation and restoration needs of the collections. This is required in order to establish an efficient conservation and staffing programme.

Mr Peter Gill was appointed in July, 1974, on a grant from the Aboriginal Arts Board of the Australia Council, to undertake the conservation of the Aboriginal Bark Painting Collection. This project has been described in more detail in the introduction.

The Conservation Laboratory has organized a project in collaboration with the Department of Chemistry, Sydney Technical College, to investigate the chemical, physical and ageing properties of synthetic products available for potential use in the conservation of museum material. Research in this field is essential; many of the products recommended for conservation purposes have proved ineffective and occasionally deleterious.

Activity in general conservation and restoration work on the collections has increased markedly during the past twelve months due to the help of voluntary workers and students and to the appointment of a new assistant.

The laboratory has maintained a regular inspection of conditions in storage areas and galleries and has advised on changes or modifications where required. The air treatment plant servicing the Conservation Laboratory and Anthropology storage areas is now fully operational and excellent conditions are being maintained. Work on a new fumigation

area incorporating an ethylene oxide vacuum chamber is now under way and will be completed by the end of the year.

Ms Sue Walston visited Mootwingee Historic Site in the far west of New South Wales with the Aboriginal Relics Advisory Committee, to inspect progress on the conservation of the engravings. She also visited Mt Grenfell Aboriginal Area near Cobar with Mr Joe Dolanski, Mineralogist from the Specialist Services and Applied Research Section, Geological Survey, to conduct investigations into the pigments and binding media used in Aboriginal rock paintings. These investigations are part of a research project on the conservation of Aboriginal painted and engraved sites.

The Conservation Laboratory responded to a wide variety of enquiries from the public and from 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 staff development and training. An increasing number of enquiries are coming from museums in the Pacific region.

Ms Walston conducted a practical class for Sydney University Anthropology honours students on the conservation of ethnographic material. Two archaeology students and one anthropology student from Sydney University have been working for one day a week in the Conservation Laboratory to obtain practical experience in conservation.

Ms Walston was invited to attend a three-day seminar in Hobart on the Conservation of Building Materials organized by the Interim Committee on the Inquiry into the National Estate. She also lectured on the conservation of a wide variety of museum collections at two of an ongoing series of Country Museum Seminars held at Wagga Wagga and Port Macquarie. These seminars, organized jointly by the Department of Culture, Sport and Recreation and the Department of Tourism are designed to provide prac-

tical and administrative assistance to small museums throughout New South Wales.

EDUCATION SERVICE

A total of 487 school groups, comprising 23 307 children, attended the Museum classes organized by the Education staff. Approximately 1 670 classes, some 70 000 children, attended the Museum without appointment. Four classes were taken on field trips to study marine ecology. Groups of spastic, mentally retarded, and deaf children were given special lessons.

Demonstration lessons and lectures on the Museum's educational services were given to various groups of trainees from all Teachers' Colleges and Colleges of Advanced Education in Sydney. Members of the NSW Ambulance Transport Service Board continued their series of visits to study venomous animals. Lectures were given to members of the View Club of Australia. Two final-year students from Sydney College of Advanced Education, Susan Hall and Karl Bossard, spent their practice teaching periods at the Museum in November, 1974.

During the year, 636 loans comprising 57 collections of specimens and 579 loans of travel cases, were made to metropolitan and country schools. Five new cases on "Aborigines of the Western Desert" were introduced in January and three more cases, two on "Seagulls" and one on "Possums", are nearly completed.

With the opening of the new Education Centre, large numbers of specimens will be required and Mr David Millar was appointed to prepare these. He has repaired and restored many of the existing specimens and prepared skeletal material, casts, wetboxes, mounted specimens, freeze-dried and embedded material and alizarin transparencies, a total of some sixty vertebrates and numerous invertebrate animals. Experimental work in new preparation techniques has been carried out. He has undertaken additional training with the Museum's



Preparation Section and a course in Biological Laboratory Technology at Sydney Technical College.

The Children's Room was visited by a total of approximately 7 200 people during the three school vacations, an average daily attendance of 210. Different displays activities were arranged in the Room for each vacation: "A Naturalist in Victorian Times" in August, "Caves and Caving" in January and "Crafts" in May. Film screenings were arranged in the three vacations and were attended by a total

Krijono and Sudarwato (shown), Javanese batik artists, demonstrated the making of batik paintings for two weeks during November 1974. The display continued until December, 1974

of 3 280 people, an average of 100 per day. Jackson Jacob (Thungalinaldin), an Aboriginal storyteller gave performances of Aboriginal songs and dances, as well as telling children's stories, at the Museum on two days of the May school holidays. These were very successful, attracting capacity audiences and wide press coverage.

Museum Walkabouts were completed by 559 children. In addition to this, we now have an introductory Walkabout which is not counted towards the assignment score. Thirty-four students completed the Walkabout series, making them eligible for membership in the Museum Discoverers Club. Club activities included six meetings and a one-day field trip to Heathcote to study native orchids. Longer field trips were organized to the Budawang Ranges in August and to Merriwa in January, the latter to assist the Curator of Fossils. Ten Discoverers assisted in the curatorial departments of the Museum during the January vacation, the Trustees providing an honorarium for each student.

The Discoverers' Society, the senior group of the Club, has met 17 times at the Museum in the evenings. Both Club and Society are presently engaged in preparing a faunal survey at the Field of Mars Reserve, Ryde, for the Ryde-Hunters Hill Fauna and Flora Protection Society.

The Education Week Exhibition, an annual display of children's work based on their Museum visits, was held 12th August-6th September. Prizes were provided by the Trustees of the Museum.

Some 1 400 requests for the Museum's free leaflets were received and about 1 000 letters from teachers, pupils and other museums were answered.

Mr Glenn Hunt attended the International Conference on Museum Education organized by the Group for Educational Services in Museums, in London, 6th-11th April, and visited museums in the United States, United Kingdom, Netherlands, India, Singapore and Malaysia. Financial assistance

to undertake this trip was provided by the Commonwealth Foundation, The British Council, The Ian Potter Foundation, The Australian Department of Foreign Affairs and the Trustees of The Australian Museum.

Ms Patricia McDonald and Mr Roger Inder attended the Annual Conference of the Museums Association of Australia in November where Ms McDonald delivered a paper on the International Council of Museums' new statutes. In December, Ms McDonald delivered the keynote address at the Regional Museums Seminar. In March, the five Education Officers attended the UNESCO Museum Education Seminar in Adelaide, where Mr Hunt spoke on museum education for special groups.

Howard Hughes/Australian Museum



In April, Ms McDonald attended the Annual Conference of the Art Galleries Association of Australia in Sydney and, in June, a residential course on "The Natural Environment" at Mittagong, where she led a seminar on education in museums. She has continued to attend the meetings of the UNESCO Museum Staff Training Committee, to serve as Honorary Secretary of the Museums Association of Australia, as a Vice-President of the ICOM International Committee for Education and Cultural Action, and as a Council Member of the Association for Environmental Studies (NSW).

The Museum's education programmes were studied by visitors from museums and art galleries in several countries.

EXHIBITIONS DEPARTMENT

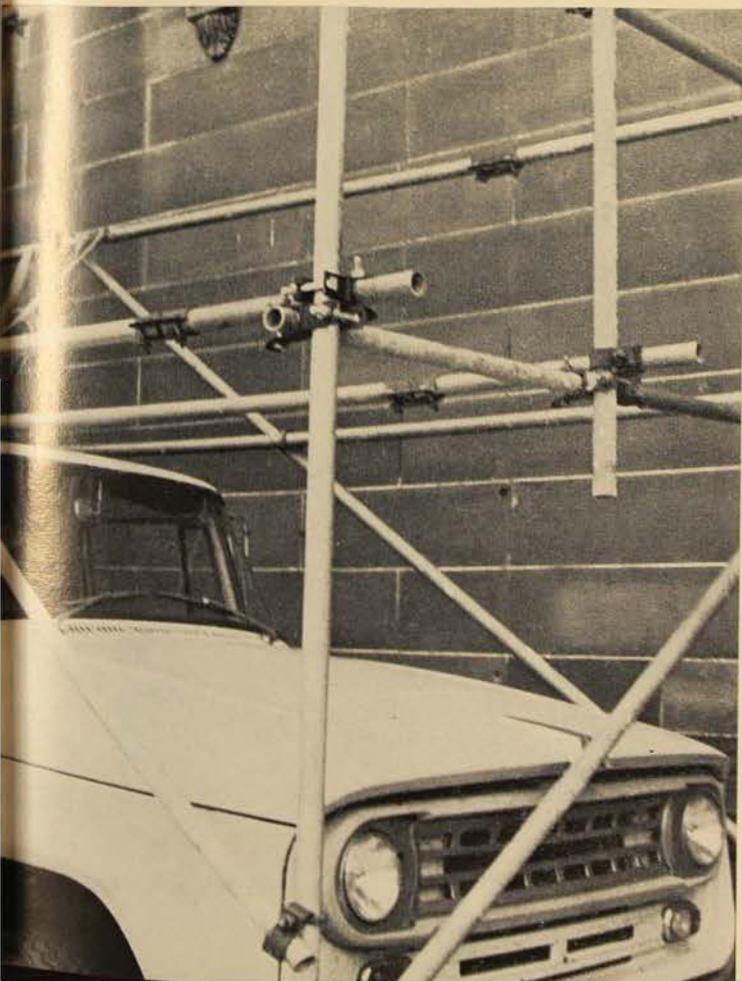
The Hall of Life, the most difficult gallery yet attempted by this Department, was opened on 4th December, 1974. Other activities related to long-term development concerned the Marine Hall, Mineral Gallery, Pacific Gallery and the Arid Zones exhibits.

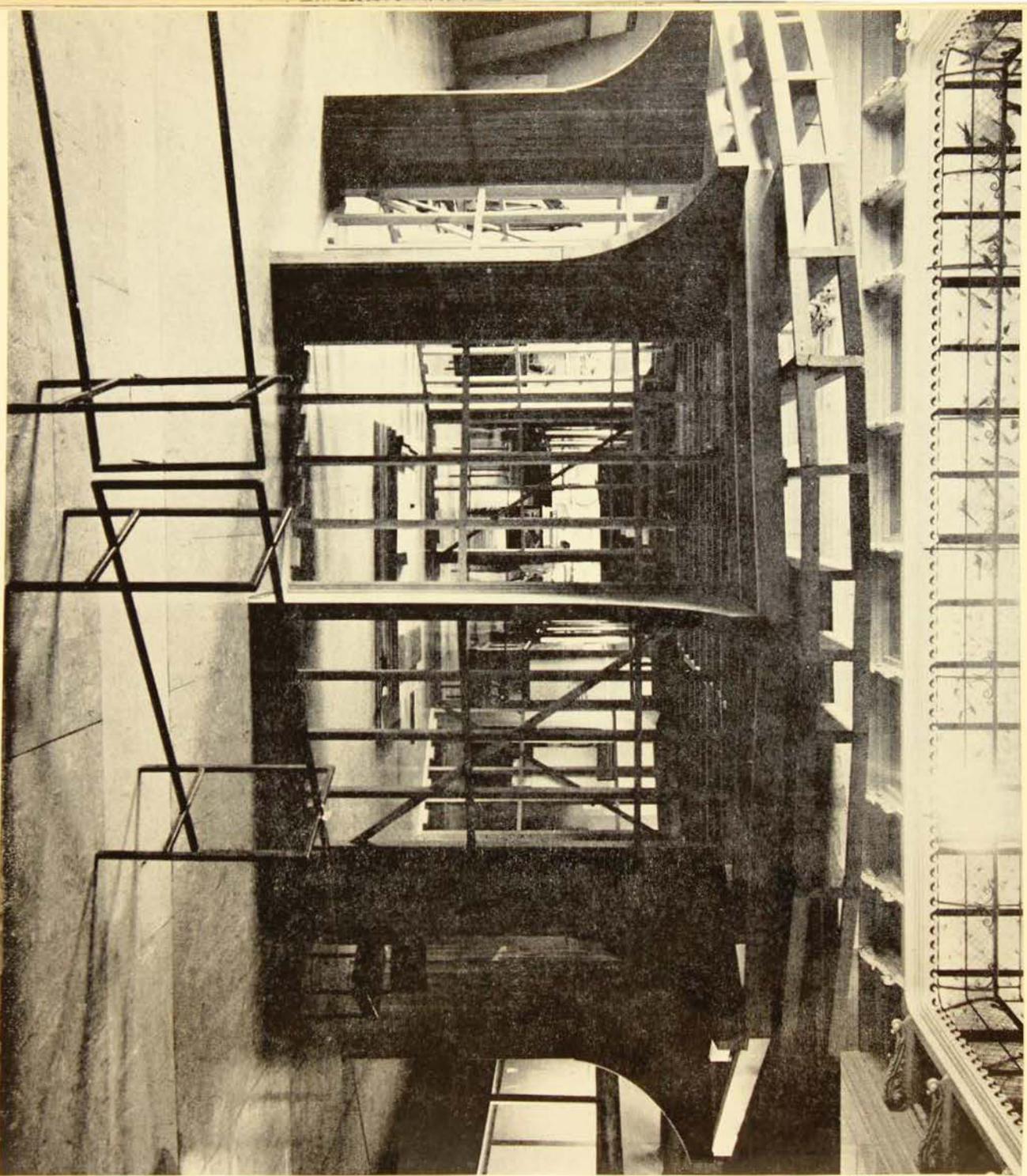
Construction of the Marine Hall is now well advanced. Artificers have erected the lower level of the core structure and artists and preparators are working on the showcases and exhibit material. An important part of this area is a coral reef diorama, information and material for which was collected by a field party consisting of Dr Hutchings, Department of Marine Invertebrates, Mr Jeff Freeman, Ms Sally Robinson and Mr Steve Clark. Forty-five fish moulds were made at One Tree Island on the Great Barrier Reef.

Working plans have been drawn up for reconstruction of the Mineral Gallery and, funds permitting, this is due for completion in time for the International Geological Congress, to be held in August, 1976. Plans are being drawn up for a new gallery of Pacific Islands peoples. The old Melanesian Gallery, closed for more than 10 years, has been stripped, repaired, and relit. It will initially contain a series of Arid Zone exhibits. The Department of Public Works has repainted the Bird Gallery and carried out minor repairs and painting in the College Street entrance.

Smaller exhibits on the subjects of "Western Desert Aborigines", "Aboriginal Prehistory" and the "Evolution of Man" were installed during the

Artificer Alf Carpenter and Geoff O'Donnell, Department of Anthropology, transfer a 5.5 metre Micronesian outrigger canoe to the Museum's storage areas at Rushcutters Bay





Gregory Millen/Australian Museum

THE AUSTRALIAN MUSEUM

year. Fifteen new bird and two new mammal mounts have been placed in the gallery exhibitions and a further fifty animals have been mounted or freeze-dried for various purposes.

Temporary exhibitions included Khmer Sculpture, contemporary batik wall hangings, Aboriginal bark paintings and Pacific crafts, and art of Oceania. "Indonesia Today" completed a tour of major Australian museums and was returned to Sydney.

The department assisted the Australian Exhibit Organization with specimens for EXPO '75 to be held in Okinawa and Mr Jim Frazier travelled to the U.S.A. to repack material used in EXPO '74, Spokane, Washington. He extended his trip to visit a number of North American museums.

Mr Bertram gave the display segments of two further seminars arranged for the benefit of New South Wales country museums, one at Wagga Wagga in December and one at Port Macquarie in June.

The Exhibitions Department thanks Mr R. Grunnell for providing a large shark specimen for costing.

LIBRARY

There was a slight decrease in the total number of volumes registered (507), but an increase of volumes purchased, from 278 to 415. The Library received 108 new periodical titles during the year. Sixty-one volumes were bound and a further fifty-one were sent for binding in June, 1975.

The number of loans to outside libraries (1 333) remained much the same, although nearly half the requests were filled by Xerox copies rather than original publications. There were 150 loans to the Museum from other libraries, an increase of one-third over last year's figure.

This structure is to house an automatic theatre and showcases in the new Marine Gallery, scheduled for completion by the end of 1976

Only 418 of the 507 publications registered this year were catalogued. Ms Barbara Mew and Ms Sue Buttel both worked part-time classifying the older books in the Library. This work is being done to allow all the books held in the new wing stacks to be arranged by subject.

During the year assistants from the Anthropology Department went through the old files stored in the strongroom, sorted them, tidied them, and put them in archives boxes, with brief note of the contents. These are now stored in the small archives room, making this material much more accessible.

PHOTOGRAPHY AND VISUAL AIDS SECTION

More than 700 negatives and 4 000 black and white prints were produced as well as over 800 colour photographs of all kinds. Radiographs of shells were prepared as part of an exhibit for EXPO '75. Copies of early historical New Guinea photographs have been made for the Papua New Guinea Art Gallery and Museum. The Museum has around 100 000 photographs and a large number of these have been sorted and placed into easily examined albums in more than twenty categories.

During April, Gregory Millen joined the Queensland Rainforest Survey teams in the field. His photographs will be used for reference and to illustrate various investigations and reports on the survey.

Two films titled, *Australian Reptiles, Part 1, "Lizards"* and *Part 2, "Snakes"*, were completed. These are the last of the series of nine films sponsored by the Broken Hill Proprietary Company Limited. Three of these have sold more than forty prints, three more than thirty prints and one more than twenty prints. Already "Snakes" and "Lizards" have sold nine prints each.

PUBLICITY/PUBLICATIONS SECTION

The Museum's quarterly magazine, *Australian Natural History*, has shown a considerable increase

in both subscription orders and over-the-counter sales in the Museum Bookshop. Copies are now purchased on a regular basis for resale by the Western Australian Museum, the Queensland Museum, and the Australian Government Publishing Service, and occasionally by others whose interests are related to a particular issue of the magazine. The print order has subsequently risen from 4 500 at the beginning of last year to 10 000 copies at the last printing.

The June, 1974 issue, a special issue on Lord Howe Island, sold out in a short time and an additional printing was required. This issue, still in demand is now out of print for the second time, bringing total sales so far to 10 000 copies.

The September, 1974 issue contained a special supplement dealing with Aboriginal rock paintings and their conservation. Additional copies of the supplement were printed and sold separately when the whole issues were no longer available. Both are now out of print. With the success of this supplement, it was decided that each September, a special supplement will be published. Although the December, 1974 issue was general, containing articles on a variety of topics, it also sold out in a short time, indicating a greater demand for the magazine and the necessity for printing larger quantities.

As a trial, copies of the March issue were sold through newsagents in several Australian cities, but final sales reports are not yet available from the distributor. Arrangements were made with an international syndication agency for the reprinting of selected articles from *Australian Natural History* in overseas publications, and trades of advertising space were arranged with *Habitat*, published by the Australian Conservation Foundation and with *Wild-life in Australia*, published by the Wildlife Preservation Society of Queensland.

Due to increases in postage and printing costs, the magazine's annual subscription price was raised from \$2.50 to \$4.50 and the single copy price from

70c to \$1 as of 1 March, 1975.

The June, 1975 special issue dealt with caves and caving in Australia.

Twelve numbers of Volume 29 of the *Records of The Australian Museum* were published during the year. These were:

The Psocoptera (insecta) of Norfolk Island, by C. N. Smithers and I. W. B. Thornton (No. 8); *Cymodetta gambosa*, a new Sphaeromatid isopod (crustacea) from Australia, with notes in its mating behaviour, by Thomas E. Bowman and Helmut Kuhne (No. 9); The earthworm genus *Oreoscolex* (Oligochaeta: Megascolecidae) in New South Wales, by B. G. M. Janieson (No. 10); Contributions to the knowledge of the Alpheid shrimp of the Pacific Ocean, part XVIII: A new species of the genus *Alpheus* from the mouth of the Sepik River, New Guinea, by Albert H. and Dora M. Banner (No. 11); The Alpheid shrimp of Australia, part 2; the genus *Synalpheus*, by Dora M. and Albert H. Banner (No. 12); The Swain Reefs Expedition; Crinoidea, by A. M. Clark (No. 13); The External features of the heads of leafhoppers (Homoptera, Cicadelloidea), by J. W. Evans (No. 14); New Pogonophora from Indonesia, by Eve C. Southwood (No. 15); The Psocoptera (Insecta) of Lord Howe Island, by C. N. Smithers and I. W. B. Thornton (No. 16); A revision of the Gobiid fish genus *Kelloggella*, by Douglass F. Hoese (No. 17); *Periclimenes colemani* sp. nov., a new shrimp associate of a rare sea urchin from Heron Island Queensland (Decapoda, Natantia, Pontoniinae), by A. J. Bruce (No. 18); Australian species of *Haliophasma* (Crustacea: Isopoda: Anthuridae), by Gary C. B. Poore (No. 19).

A revision of *Australian Aboriginal Stone Implements*, by F. D. McCarthy, which has been out of print for two years, was completed.

In addition to the above publications, seventy-nine papers were published by staff. These are listed in Appendix 4.

A new series of Museum advertisements was designed and implemented, a new brochure describing Museum publications was printed, and a *Guide to Exhibits* and a colourful publicity brochure (designed by the Museum's Design and Art Section) were produced.

The Section kept in frequent contact with the media during the year, gaining press, radio and television coverage of Museum activities and arranged catering and invitations for special events at the Museum.

Invaluable voluntary assistance was given by Ms Betty Clark, a member of TAMS.

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN BIRDS

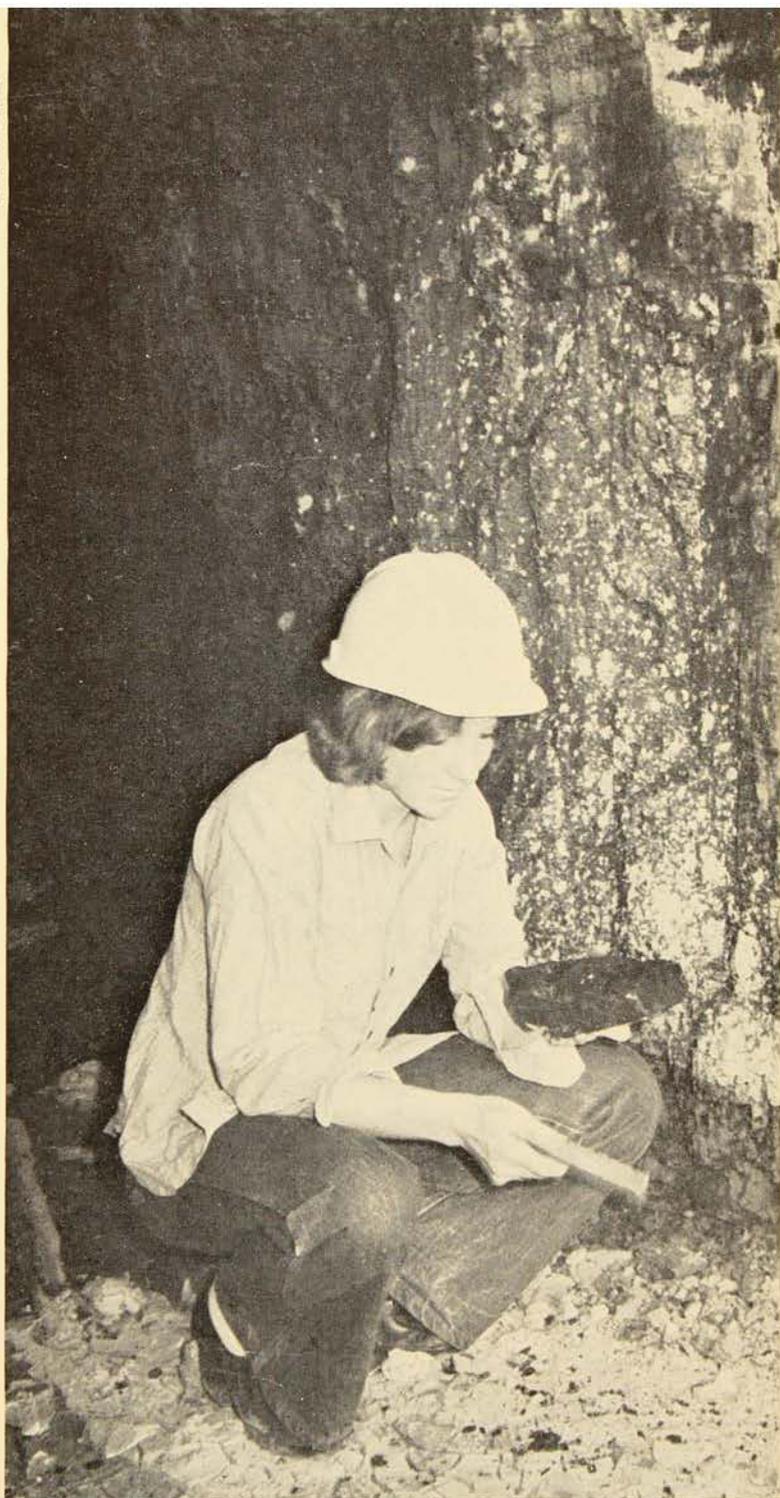
During the year, there were five sessions of the Selection Panel designated Stages XVI–XXII. Of a total of 2 083 photographs submitted, 508 were accepted for the Index and 97 for the Transparency Section. These represented 47 species new to the Index and 12 new to the Transparency Section.

Totals at 30th June, 1975 were:

Photographs submitted	12 398
Accepted for the Index	3 173
Accepted for the Transparency Section	807
Species for the Index	637
Species in the Transparency Section not represented in the Index ..	60
Total number of species jointly represented in the Index and the Transparency Section	697

Joan Hingley, Department of Mineralogy and Petrology examines specimens in a coal mine in southern NSW

Peter Morrissey



An expedition comprising five teams was mounted under the auspices of the Index in October, 1974, to photograph birds in the Cairns-Coen area of Cape York Peninsula. Two teams under the direct control of the Index, equipped with two four-wheel drive vehicles operated in the Peninsula. The other teams, already in the area, operated in the vicinity of Cairns and the Atherton Tablelands. A valuable series of photographs was obtained for the Index.

A number of photographers received grants under the Bank of New South Wales Grants Scheme during the year in the form of cash, film, or the loan of special equipment for special projects. The most notable achievement was a Grant-aided expedition to the Prince Regent River area of northwest Australia to photograph the rare Black Grass Wren and other species of that region.

As a contribution to the 16th International Ornithological Congress held in Canberra in August, 1974, the National Library mounted a major exhibition of its ornithological material in which the Index was made the central feature. It was accompanied by an associated display based on a paper produced by Mr H. J. de S. Disney, Curator of Birds at The Australian Museum, in which some of the scientific uses of the Index were illustrated. The Index, of which no counterpart is known to exist elsewhere, created much interest among the delegates and favourable comment from many quarters. As a result of the Exhibition many enquiries were received from institutions throughout Australia (Museum, State Libraries, Institutes of Technology and a University) about the possible provision of replicas. The Trustees of the Index have agreed in principle to have replicas of the Index produced.

As a result of an appeal by Sir Percy Spender to the Australian Government during the previous year, a grant of \$15,000 was received through the National Library. It was made clear that the grant was an *ad hoc* contribution and that governmental support in future years would depend on the

recommendations of the Committee of Inquiry into Museums and National Collections. The grant enabled the budget estimates of \$27,000 for the year to be met and a modest balance to be carried forward. Pledges of financial support obtained as a result of intensive fund-raising activities during the formative years of the Index project were all fulfilled during the year, with the exception of one further payment due from Reader's Digest for \$US10,000 to be paid in 1976. In view of this, a submission was made by Sir Percy Spender to the Special Minister of State for a further grant for the financial year 1975-76.

The Trustees held their Ninth Meeting on 2nd December, 1974. The Executive Committee met on five occasions, and the Advisory Panel on Field Programmes and Grants met twice.

The Index moved to a self-contained centre at 19A Boundary Street, Rushcutters Bay, in March 1975, in premises rented by the Museum. Covering some 1200 sq ft, the area includes an exhibition gallery and a set of administrative offices. Concurrently with the move the Index took over the running of the accounts from the Museum to bring the control of the project under one roof. Operations have been greatly facilitated by this generous provision of space by the Museum.

THE AUSTRALIAN MUSEUM SOCIETY

Continuing its aim to form a bridge between the Museum and the public, The Australian Museum Society provided a busy programme of 23 functions—11 lecture evenings, 5 field trips, 4 exhibitions and

Lyn Hosking, Department of Anthropology, examines pottery on a recent collecting trip to Papua New Guinea

film previews, 2 visits behind the scenes at the Museum, and 1 restaurant party. The Council is constantly aware that activities must cater not only for members who have a general interest in the Museum and wish to learn more about it in an informal way, but also those whose interests are specific and who seek detailed information.

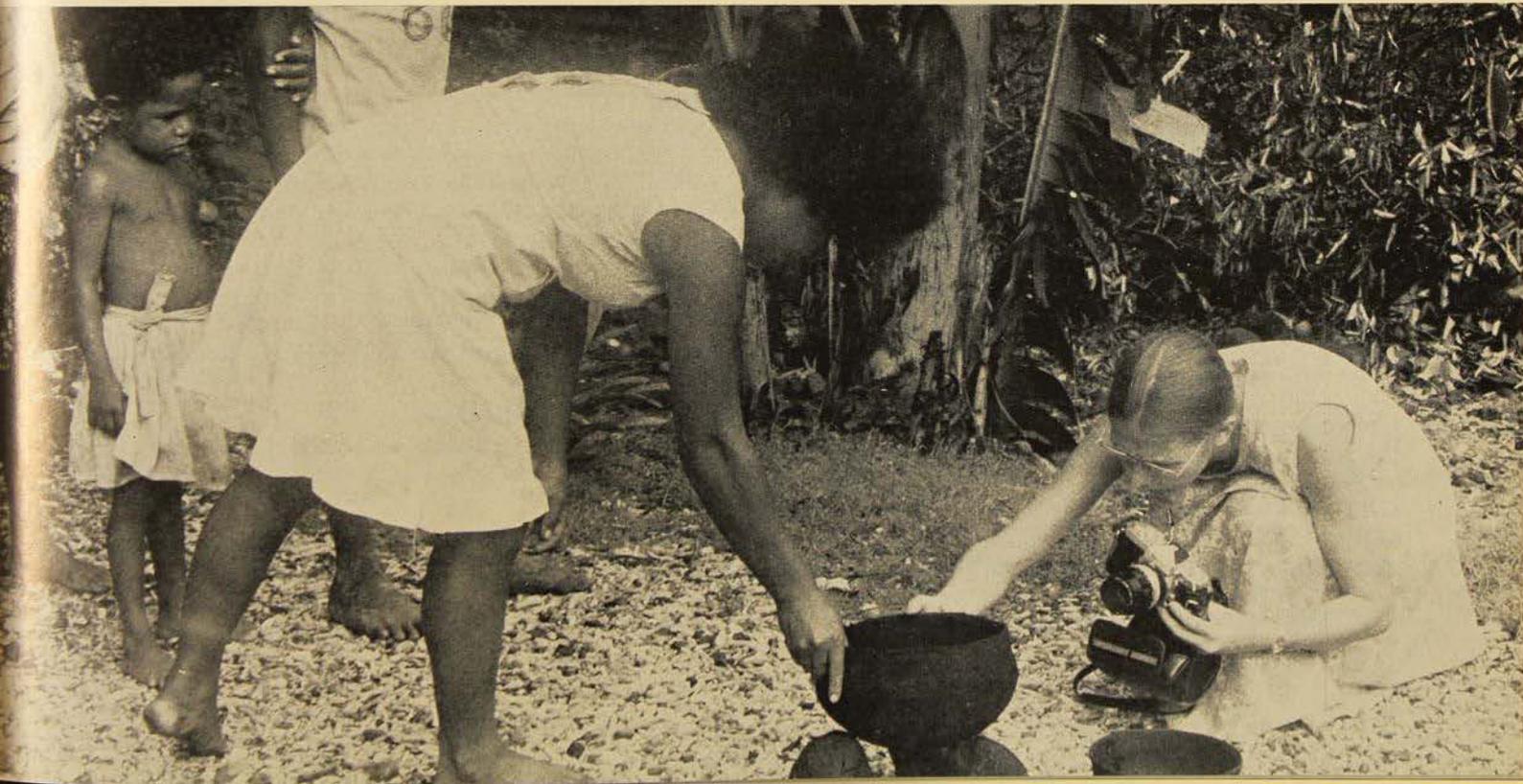
Highlights of the lecture evenings were the Lord Howe Island lectures when representatives of three Museum Departments discussed their research projects there, and the series entitled "Papua New Guinea—Past, Present and Future", when, over a month, speakers of international repute gave their views on conditions and problems in the territory. TAMS was pleased to have Dr Paul Ehrlich as guest of honour at a dinner and lecture in the Museum. Interesting and unusual field trips included a twilight visit to Taronga Zoo and a day out on the N.S.W. State Fisheries Research Vessel, *Kapala*. TAMS

members were delighted to have the opportunity to be first to view the completed Hall of Life.

The Society paid its respect to the Director, Dr Talbot when he left the Museum by holding a candle-light dinner in the Skeleton Gallery in his honour, and by making him a life member.

Because of rising costs the TAMS Council approved of an increase of membership subscriptions and offered members the option of purchasing *Australian Natural History* at a separate discounted rate. A special grant from the Minister for Cultural Activities, was received in late 1974. TAMS membership since inauguration has remained about the same, around 1 200 members.

TAMS volunteers have, on request, worked in several Museum departments. Their work has been generally of a routine clerical nature relieving scientific and editorial staff of these chores. TAMS looks forward to continuing and extending this support.



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(to 19-6-75)

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EDITORIAL ASSISTANT—R. S. Stewart (from 30-9-74)

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CLERICAL ASSISTANTS—C. Green (from 15-7-74 to 6-3-75); M. A. LeHen (to 31-7-74); J. Marshall (from 9-12-74 to 10-3-75); V. Parker (from 2-6-75)
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RECEPTIONIST/TYPIST—C. Spicer

TELEPHONISTS—S. Smart; C. Targett

STOREMAN/DRIVER—B. Bellamy

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SUPERVISOR—W. Wason

SENIOR ATTENDANT—J. Lewis

ATTENDANTS—T. Anstey (to 16-8-74); R. Aylward; N. Bevan; B. Buckley (from 10-3-75); W. Childs (from 4-7-74); S. Coops; E. Dowd (from 5-11-74 to 18-11-74); M. Duncan; K. Graham (from 8-10-74); S. Harris; P. Hagan (from 18-5-75); R. Holmes; D. Hodges; T. Jones (from 10-3-75 to 17-4-75); R. Miller; F. O'Connor (from 23-8-74 to 20-9-74); M. Neligan; E. Papadellis; K. Pike (from 5-12-74 to 11-3-75); K. Randall; L. Reardon; A. Rosewarn; G. Ross (from 17-3-75 to 2-4-75); K. Russell (from 4-12-74 to 17-1-75); G. Smedley (to 4-3-75); K. Smith; J. Solomon; D. Walden; S. Zimeris

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CLEANERS—R. Diaz; E. Drakoulaki; Y. Fernandez; W. Gough (from 4-4-75); P. Peza (from 11-11-74); C. Sierre (casual 2-1-75 to 27-2-75)

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THE AUSTRALIAN MUSEUM SOCIETY

EXECUTIVE VICE PRESIDENT—F. Cameron, BA

CLERICAL ASSISTANT—B. Thomas

APPENDIX I DONATIONS

Donations to the mollusc collection came from NSW State Fisheries (F.R.V. *Kapala*), Mr I. Loch, Ms J. Hunter, Ms H. Woodward, Mr N. Coleman, Mrs J. Kerlake, Ms J. Campbell, St Judes High School (New Ireland), Mr J. O. Bailey, Dr M. Tevesz, Mr R. Lockyer, Mr Brian Clark and Ms S. McKay.

Donations of mammal specimens were received from the following people and institutions: Mr G. Maynes (Macquarie University, Sydney), Dr T. Oritsland (Institute of Marine Research, Bergen, Norway), Dr C. Groves (Department of Prehistory and Anthropology, ANU, Canberra), Dr W. Bergman (Zoological Museum, University of Amsterdam, Netherlands).

Important herpetological material was given to the Museum during the year by Dr B. Goldman, Prof. H. Heatwole, Mr B. Miller, Mr F. Parker, Mr R. Pengilley, Mr P. Rankin, Mr R. Wells.

Donations to the collections of the Entomology Department were made by Mr and Ms A. Walford-Huggins, Mr M. S. Moulds, Mr G. Daniels, Mr J. V. Peters, Mr J. G. Brooks and Mr A. Atkins.

Valuable donations of Australian fishes were made by Mr N. Coleman, Dr G. Webb, Mr R. Kuitert, Mr R. Steene, NSW State Fisheries and the CSIRO Division of Fisheries and Oceanography; Dr B. Goldman donated a large collection of fishes from Fiji. Colour photographs were donated by Mr N. Coleman, Mr R. Kuitert, Mr R. Steene, Dr G. Allen and Dr J. Randall.

Specimens of crustacea were donated to the collections by Dr John S. Lucas (James Cook University of North Queensland, Townsville); Dr A. J. Bruce (London, England); Dr G. C. B. Poore (Fisheries and Wildlife Division, Victorian Ministry of Conservation); Dr V. Gotto (Department of Zoology, Queen's University of Belfast, Northern Ireland); Janet M. Bradford (New Zealand Oceanographic Institute, Wellington, NZ); Mr N. Coleman (Sydney); Mr Ian Loch (Townsville, Qld); Mr Charles Pregenzer (University of NSW); Mr Patrick De Dekker (University of Newcastle, NSW); CSIRO, Division of Oceanography (Cronulla, NSW); NSW Littoral Society; NSW State Fisheries (F.R.V. *Kapala*); Australian Government Department of Science, Antarctic Division (Victoria); Sydney University Crocodile Research Facility (Maningrida, Arnhem Land).

A wide variety of marine invertebrate specimens was presented by NSW State Fisheries (F.R.V. *Kapala*). A small collection of ten species of asteroids from the Philippine Islands was given by Mr A. de Celis, Curator of Echinoderms, Philippines National Museum. The Western Australian Museum and the Smithsonian Institution have each donated specimens of the asteroid genus *Heteronardoa*, including a paratype of a new species.

Important donations to the Anthropology collections were made by Professor E. J. Hartung, Ms M. R. McKenzie, Ms N. McDonald, and Professor I. Hogbin. Several collections of important anthropological photographs were donated by Mr M. Giner (New Hebrides), Ms G. Bell (field photographs taken on Tonga by F. L. S. Bell), Professor I. Hogbin (Solomon Islands) and Mr C. W. Marshall (Fly River and Eastern Highlands, Papua New Guinea). Mr Marshall also donated copies of his field notebooks and survey maps.

A large and important collection of fossil brachiopods, mostly of Permian age, was donated by Dr Ida Browne; Dr John Roberts (University of NSW) gave an important collection of Carboniferous brachiopod and other invertebrates; and a fine specimen of *Zeuchthiscus* (a Triassic fish), from Somersby, near Gosford, NSW, was presented by Mr John Patterson (Wyoming, NSW).

Donations to the mineral collection included Western Australian suites presented by H. Boucher, S. Stubbs and others; a set of bismuth and gold ores from Tennant Creek, NT, including new species, presented by R. Large, University of New England; an interesting range of sapphires and rubies from Gloucester, NSW, and given by A. Chubb; jades from near Tamworth, NSW, presented by I. Pitt; and an extensive range of thunder eggs from Queensland, and Mexican geodes, given by G. Hume.

The second volume of *Fishes of South and West Japan*, by T. A. Glover, was donated to the Library by The Faculty of Fishes, Nagasaki University. Mr Ron Strahan donated the following publications: *American Folk Lore Society Memoirs*, vols 18-20, 22-26, pt 1, 28-31, 33 (1925-39); *Contribution from the Biological Laboratory*, Zool. Ser. of the Science Society of China, vols 6-16 and some of vols 1-5; *Penguin Science News*, Nos 1-54 (1947-1960); *Penguin New Biology*, Nos 1-31 (1945-1960).

APPENDIX 2 ACKNOWLEDGEMENTS OF COOPERATION

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

The University of Sydney Scanning Electron Microscope Unit; School of Earth Sciences, Macquarie University; NSW Institute of Technology; James Cook University of North Queensland; Lord Howe Island Board; Department of Morbid Anatomy, Prince Alfred Hospital; NSW State Fisheries; Wood Technology Division, State Forestry Commission; NSW Department of Mines; Geological Survey of NSW; Air Pollution Control Branch, State Pollution Control Commission; National Herbarium and Royal Botanical Gardens; In-service Education Branch, NSW Department of Education; CSIRO Divisions of Fisheries and Oceanography and of Wildlife Research; NSW National Parks and Wildlife Service; NSW Water Conservation and Irrigation Commission; NSW Zoological Parks Board; Jemalong Shire Council; Merriwa Shire Council; TIME-LIFE International (Australia) Pty Ltd; Universitetets Zoologiske Museum, Copenhagen, Denmark; University of Guam, Guam; South African Museum, Cape Town, South Africa; Museum d'Histoire Naturelle, Geneva, Switzerland; British Museum (Natural History), London, England; The American Museum of Natural History, New York, USA; Bernice P. Bishop Museum, Hawaii, USA; Museum of Comparative Zoology, Harvard University, USA; Smithsonian Institution, Washington, DC, USA.

The following individuals also helped the Museum during the year: Mr G. George, Baiyer River Sanctuary, Mt Hagen, PNG; Mr J. Mahoney, Department of Geology, University of Sydney; Mr N. Coleman, Associate, The Australian Museum; Mr I. Loch, Cairns; Mr A. de Celis, Philippines National Museum; Mr A. J. Dartnall, Museum and Art Gallery of the Northern Territory (formerly at Tasmania Museum); Ms L. Marsh, Western Australian Museum; Dr D. L. Pawson, Smithsonian Institution, USA; Dr K. Fauchald, Allan Hancock Foundation, USA; Mr G. Prestedge, Midway Point, Tasmania; Dr G. R. Allen, Western Australia Museum; Mr R. McKay, Queensland Museum; Dr P. Heemstra, CSIRO Division of Fisheries and Oceanography; Dr R. Kenney, James Cook University; Mr U. E. Friese, Taronga Zoo; Mr H. O. Fletcher, Research Associate, The Australian Museum; Dr Ralph Molnar, University of NSW; Mr John Clifton, Forbes; Mr Ian Watchorn, Newcastle; Mr Gordon Bellinger, Hornsby.

APPENDIX 3 OVERSEAS VISITORS

- Austria: Ms F. Hoess, Austrian Embassy.
- Canada: Mr P. Hilgeford, Dr B. Reynolds, National Museum of Man, Ottawa; Prof. H. Homden, Ottawa
- Cook Islands: Mr O. Joseph, Director of Cultural Development
- England: Mr M. Barbetti, Research Laboratory for Archaeology, Oxford; Dr J. M. Flegg, British Trust for Ornithology; Dr R. Gibson, Liverpool Polytechnic; Mr C. J. O. Harrison, Mr B. Levey, Mr C. Walker, British Museum, London; Dr P. Herring, Institute of Oceanographic Sciences; Mr R. Lubbock, Cambridge University, Ms Renee Marcouse, Victoria and Albert Museum, London; Mr T. Measham, Tate Gallery, London; Dr K. A. Spencer
- France: Ms M. Vivienne, Station Marine d'Endoume, Marseilles
- Germany: Dr T. Schultza-Westrum, Munich
- Ghana: Dr L. Grimes, University of Ghana
- Holland: Prof. van Akkaren, Leiden
- Hong Kong: Dr S. M. Bard, University of Hong Kong
- Indonesia: Dr Soekarja (Karl) Somadikarta; Ms I. Suchrian, National Museum of Indonesia, Jakarta; Drs Sutayasa, National Archaeological Institute, Jakarta
- Japan: Mr E. Fujiwara, World Wildlife Fund; Dr M. Hayashi, Yokosuka City Museum; Dr K. Kuronuma, Tokyo; Mr K. Meguro, Household of the Crown Prince of Japan, Tokyo; Dr I. Nakamura, Kyoto University
- New Caledonia: Ms P. Catala, Noumea
- New Zealand: Mr A. Ayling, Dr W. Ballantine, Dr J. H. Choat, Dr B. A. Foster, Dr. J. Walsby, University of Auckland; Dr A. Baker, National Museum, Wellington; Dr P. M. Johns, University of Canterbury; Dr R. M. McDowall, Fisheries Research Division, Wellington; Mr S. Park, Otago Museum, Dunedin; Mr R. Scarlett, Canterbury Museum, Christchurch; Dr C. Wallace, University of Waikato, Hamilton; Dr Gordon Williams, Wildlife Division, DSIR, Wellington
- Papua New Guinea: Dr G. Baker; Dr W. Beattie, Dr B. J. Egloff, Mr J. Mokuma, Mr G. Mosuadoga, Mr D. Smidt, Papua New Guinea Art Gallery and Museum, Port Moresby; Dr J. Beier, Institute of Papua New Guinea Studies, Port Moresby; Dr A. Crawford, Godogara Cultural Centre, Balimo; Dr G. George, Baiyer River Sanctuary, Mt Hagen; Mr B. Gray; Mr J. Haugie, Director of Cultural Affairs, Port Moresby; Mr N. Oran, University of Papua New Guinea; Mr Mark Wilson, Dept of Agriculture, Stock and Fisheries, Port Moresby.
- Solomon Islands: Ms Anna Craven, Mr H. Isa, Solomon Islands Museum, Honiara
- South Africa: Dr and Mrs A. Kemp; Dr Robert Liversidge; Mr T. Oatley
- Thailand: Mr Buabusaya
- USA: Dr Bock, Dr L. Short, American Museum of Natural History, New York; Dr and Ms Collias, University of California, Los Angeles; Prof. P. Ehrlich, Stanford University;

USA: Prof. J. R. Harlan, University of Illinois; Mr W. K. Jones, Eisenhower Museum, Kansas; Dr K. Knapp, Smithsonian Institution, Washington, DC; Dr A. J. Kohn, University of Washington, Seattle; Dr Mathias Komor, New York; Dr A. Miller and Dr S. Miller, Cabrillo Marine Museum, San Pedro, California; Prof. A. Schultz, University of Hawaii, Honolulu; Prof. R. Shutler, University of Iowa; Dr Y. Sinoto, Bernice P. Bishop Museum, Honolulu

APPENDIX 4 PUBLICATIONS BY STAFF

- Brown, D. E. and H. F. Recher, 1974. The first record of *Podophthalmus vigil* (Crustacea: Portunidae) from New South Wales. *Crustaceana* 27: 223-224.
- Clark, S. S. (with J. Pickard), 1974. Vegetation and Environment. *Aust. Nat. Hist.* 18 (2): 56-59.
- Clark, S. S. (with J. Pickard), 1975. Lord Howe Island Weeds. In: H. F. Recher and S. S. Clark (eds), *Environmental Survey of Lord Howe Island*. Govt Printer, Sydney, pp. 77-80.
- Clark, S. S. and H. F. Recher, 1974. The flora and fauna of the Botany Bay region. Pp 38-43. In: Anderson, D. J. (ed.), *A Handbook Of The Botany Bay Region*. The Botany Bay Project Committee.
- Clark, S. S., 1975. Pattern analysis of the Vegetation. In: H. F. Recher and S. S. Clark (eds), *Environmental Survey of Lord Howe Island*. Govt Printer, Sydney. Pp 37-46.
- Clark, S. S., 1975. The effect of Sand Mining on Coastal Heath Vegetation in New South Wales. *Proc. Ecol. Soc. Aust.* 9: 1-16.
- Cogger, H. G. (with D. A. Lindner), 1974. Frogs and Reptiles. In: H. J. Frith and J. H. Calaby, (eds), *Fauna Survey of the Port Essington District, Coburg Peninsula, Northern Territory of Australia CSIRO Div. of Wild. Res. Tech. Paper* (28): 63-107.
- Cogger, H. G., 1974. Thermal Relations of the Mallee Dragon *Amphibolurus fordii* (Lacertilia: Agamidae). *Aust. J. Zool.* 22 (3): 319-339.
- Cogger, H. G., 1974. Amphibians and Reptiles. In: Alligator Rivers Region Environmental Fact-finding Study. Wildlife, pp. 1-16. (Restricted distribution; data summarized in "A Review of the Alligator Rivers Region Environmental Fact-finding Study".) The Department of the Northern Territory and the Australian Mining Industry Council, Darwin, 1974.
- Cogger, H. G., 1975—Voyage of the Banded Iguana. *Aust. Nat. Hist.* 18 (4): 144-149.
- Colman, P., 1975. Terrestrial Mollusc Survey. In: H. F. Recher and S. S. Clark (eds.), *Environmental Survey of Lord Howe Island*. Govt Printer, Sydney. P. 47.
- Disney, H. J. de S., 1974. Survey of the Woodhen. In: H. F. Recher and S. S. Clark (eds), *Environmental Survey of Lord Howe Island*. Govt Printer, Sydney. Pp 73-76.
- Disney, H. J. de S. et al., 1974. Bird in the Hand. Bird Banders Association of Australia, Sydney. Pp. 1-130.
- Disney, H. J. de S., 1974. Woodhen. *Aust. Nat. Hist.* 18 (2): 70-73.
- Disney, H. J. de S., 1975. Cranial Pneumatization and its Correlation with Age. *Emu*. 174 supplement, p. 321.
- Griffin, D. J. G., 1974. Spider Crabs (Crustacea: Brachyura: Majidae) from the International Indian Ocean Expedition. 1963-1964. *Smithson. misc. Contr.* (182): i-iv; 1-35.

- Gray, M. R., 1975. Survey of the Spider Fauna. In: H. F. Recher and S. S. Clark (eds), *Environmental Survey of Lord Howe Island*. Govt Printer, Sydney. Pp. 50-54.
- Gregg, K. and J. Frazier (with D. Popham), 1974. Inside the Life Unit. *Aust. Nat. Hist.* 18 (4): 129-135.
- Hoese, D. F., 1975. A revision of the gobiid fish genus *Kelloggella*. *Rec. Aust. Mus.* 29 (17): 473-484, figs.
- Hutchings, P. A. and H. F. Recher (with D. Foster, Z. Nittim and R. Nittim), 1974. Careel Bay, Pittwater, N.S.W. Development proposal for the recreational and cultural use of the bay. *Univ. N.S.W. Wat. Res. Lab. Tech. Rep. No. 74/21*.
- Hutchings, P. A., 1974. A preliminary report on the density and distribution of invertebrates living in coral reefs. *Proc. 2nd Int. Coral Reef Symp.* 1: 285-297.
- Hutchings, P. A., 1975. Status of Annelid Fauna. In: H. F. Recher and S. S. Clark, (eds). *Environmental Survey of Lord Howe Island*. Govt Printer, Sydney. p. 48.
- Hutchings, P. A. and H. F. Recher, 1974. The fauna of Careel Bay, with comments on the ecology of mangrove and sea-grass communities. *Aust. Zool.* 18: 99-128.
- McAlpine, D. K. (with G. C. Steyskal), 1974. Platystomatidae Schiner 1862: proposed conservation as a family group name over Achiidae Fleming, 1821 (insecta, Diptera). Z.N. (S.) 2053. *Bull. zool. Nomencl.* 31: 59-61.
- McAlpine, D. K., 1975. The subfamily classification of the Micropezidae and the genera of Eurybatinae (Diptera: Schizophora). *J. Ent.* (B) 43: 231-245.
- McAlpine, D. K. (with D. H. Colless), 1975. Chapter 34, Diptera. In: *The Insects of Australia. Supplement 1974*. Melbourne University Press. Pp. 91-96.
- Marlow, B. J. (with J. E. King), 1974. Sea-Lions and Fur Seals of Australia and New Zealand—The Growth of Knowledge. *J. Aust. Mammal Soc.* 1 (2): 117-136.
- Milledge, D., 1975. Banding Japanese Snipe in Tasmania. *Aust. Bird Bander*, vol. 13 (1).
- Moore, D. R., 1974. The Australian Museum's Indonesia Today Exhibition. *Kalori*, 48: 28-33.
- Moore, D. R., 1975. Computerization of Museum Catalogues. *A.I.A.S. Newsletter (New Series)*. 3: 43.
- Moore, D. R., 1975. Archaeologists and Aborigines. *A.A.A. Newsletter* 2: 8-9.
- Paxton, J. R., 1974. Myctophid fish recorded from New Zealand as *Lampanyctus guentheri* reidentified as *L. australis*. *N.Z. J. Mar. Freshwat. Res.* 8 (4): 711-712.
- Paxton, J. R. (with J. B. Fitzgerald), 1974. Cruise report for *Kapala* cruises 23-26 March, 1971 and 10 August, 1972. N.S.W. Fisher. *Kapala Cruise Rept*, 17: 1-15.
- Paxton, J. R. (with G. R. Allen), 1974. A Tropical Outpost in the South Pacific. *Aust. Nat. Hist.* 18 (2): 50-55.
- Paxton, J. R. (with J. K. Dooleu), 1975. A new species of tilefish (Family Branchiostegidae) from Eastern Australia. *Proc. Linn. Soc. N.S.W.*, 99 (3): 151-156.
- Ponder, W. F., 1974. A review of the Australian species assigned to *Rissopsis* Garrett with a description of a new species of *Rissopsetia* (Mollusca: Gastropoda). *J. Malac. Soc. Aust.*, 3 (1): 25-35.
- Recher, H. F., 1974. Colonization and Extinction: The Birds of Lord Howe Island. *Aust. Nat. Hist.* 18 (2): 64-68.

- Recher, H. F., 1975. Environmental survey of Lord Howe Island: Synopsis and Recommendations. In: Recher, H. F. and S. S. Clark (eds). *Environmental survey of Lord Howe Island*. Govt Printer, Sydney. Pp. 1-18.
- Recher, H. F. and S. S. Clark, 1974. Exploitation v. Conservation. *Aust. Nat. Hist.* 18 (2): 74-77.
- Recher, H. F. and S. S. Clark, 1974. A biological survey of Lord Howe Island with recommendations for the conservation of the island's wildlife. *Biol. Conserv.* 6: 263-273.
- Recher, H. F. and S. S. Clark (eds), 1975. *Environmental survey of Lord Howe Island*. Govt Printer, Sydney.
- Recher, H. F., D. Lunney, and H. Posamentier, 1974. Effects of wildfire on small mammals at Nadgee Nature Reserve, N.S.W. *Proc. Third Fire Ecol. Symp. Forest Comm. Vict.*
- Recher, H. F., D. Lunney, and H. Posamentier, 1975. A grand natural experiment: the Nagdee Wildfire. *Aust. Nat. Hist.* 18 (5): 154-163.
- Ritchie, A., 1975. *Groenlandaspis* in Antarctica, Australia and Europe. *Nature, Lond.* 254: 569-573.
- Rowe, F. W. E., 1974. A catalogue of the Sladen Collection in the Royal Albert Memorial Museum, Exeter, Devon. *Biol. J. Linn. Soc.* 6: 179-243, 3 pls.
- Russell, B. C., 1974. Chance Encounter on a Rubber Reef. *Aust. Nat. Hist.* 18 (3): 110-113.
- Russell, B. C., 1975. The development and dynamics of the community of a small artificial reef. *Helgolander Wiss. Meeresunters.* 27: 298-312.
- Russell, B. C., F. H. Talbot and S. Domm., 1974. Patterns of colonization of artificial reefs by coral reef fishes. *Proc. 2nd Int. Coral Reef Symp.*, 1973. 1: 207-215.
- Smithers, C. N., 1974. New records of Choristidae (Mecoptera). *Aust. Ent. Mag.* 2 (1): 1.
- Smithers, C. N., 1974. (Psocoptera: Chap. 24, pp. 50-51). In: *The Insects of Australia. Supplement 1974*. i-viii, 146 pp. frontis, 42 figs.
- Smithers, C. N., 1974. Status of the taxonomy of the Hexapoda of Southern Africa. (Psocoptera). *Ent. Mem. Dept Agric. Techn. Serv. Repub. S. Afr.* 38: 46-49, fig. 13.
- Smithers, C. N., 1974. Two new species and additional records of *Taeniostigma* Enderlein (Psocoptera: Stenopsocidae) from Australia. *J. Aust. Ent. Soc.* 13: 211-217, 17 figs.
- Smithers, C. N., 1974. A migration of *Vanessa kershawi* (McCoy) (Lepidoptera: Nymphalidae) in Western Australia. *W.A. Nat.* 13 (1): 16-17.
- Smithers, C. N., 1974. Arthropoda of the sub-antarctic islands of New Zealand. 4. Psocoptera. *J. R. Soc. N.Z.* 4 (3): 315-318.
- Smithers, C. N., 1974. A new Australian species of *Stenopsocus* (Psocoptera: Stenopsocidae). *Aust. Ent. Mag.* 2 (2): 31-33, 4 figs.
- Smithers, C. N., 1975. New Psocoptera records from Australian Caves. *Aust. Ent. Mag.* 2 (3): 45-46.
- Smithers, C. N., 1975. Additions to Australian Myopsocidae (Psocoptera). *Aust. Ent. Mag.* 2 (3): 51-54, 8 figs.
- Smithers, C. N. (with O. R. Evans), 1974. The appearance of *Anaphaeis java peristhene* (Boisduval) (Lepidoptera: Pieridae) on Norfolk Island. *Aust. Ent. Mag.* 2 (1): 9-11.

- Smithers, C. N. (with I. W. B. Thornton), 1974. The Myopsocidae (Psocoptera) of New Guinea and New Caledonia. *Trans. R. Ent. Soc. Lond.* 126 (1): 91-127, 95 figs.
- Smithers, C. N. (with I. W. B. Thornton), 1974. The Philotarsidae (Psocoptera) of New Caledonia. *Pacif. Insects.* 16 (2-3): 177-243. 247 figs.
- Smithers, C. N. (with I. W. B. Thornton), 1974. The Psocoptera (Insecta) of Norfolk Island. *Rec. Aust. Mus.* 29: 209-234, 67 figs.
- Smithers, C. N. (with I. W. B. Thornton), 1975. The Psocoptera (Insecta) of Lord Howe Island. *Rec. Aust. Mus.*, 29 (16): 453-472, 54 figs.
- Smithers, C. N., D. K. McAlpine, P. Coleman, and M. R. V. Gray, 1974. Island Invertebrates. *Aust. Nat. Hist.*, 18 (2): 60-63.
- Smithers, C. N., 1975. Note on the Island's Butterflies. In: H. F. Recher and S. S. Clark (eds). *Environmental Survey of Lord Howe Island.* Govt Printer, Sydney. p. 49.
- Specht, J. R., 1974. Of *menak* and Men: Trade and the Distribution of Resources of Buka Island, Papua New Guinea. *Ethnology.* 13 (3): 225-237.
- Specht, J. R., 1974. Lapita Pottery at Talasea, West New Britain. *Antiquity.* 48 (192): 302-306.
- Specht, J. R., 1974. Stone Pestles on Buka Island, Papua New Guinea. *Mankind.* 9 (4): 324-328.
- Specht, J. R. and L. Hosking, 1974. The Pacific Islands' Collections in The Australian Museum. *South Pacif. Bull.* 24 (2): 10-16.
- Strahan, R., 1974. Agnatha. In: *Encyclopaedia Britannica*, 15th edition. 1: 310-311.
- Strahan, R., 1975. Status and husbandry of Australian Monotremes and Marsupials. In: R. D. Martin (ed.), *Breeding Endangered Species in Captivity.* 171-182, Academic Press, Lond.
- Sutherland, F. L., 1974. "High-pressure inclusions in tholeiitic basalt and the range of lherzolite-bearing magmas in the Tasmanian volcanic province". *Earth and Planetary Science Letters*, 24: 317-324.
- Sutherland, F. L. (with R. H. Tedford, M. R. Ranks, N. R. Kemp and I. McDougall), 1975. "Recognition of the oldest known fossil marsupials from Australia". *Nature, Lond.* 255: 141-142.
- Sutherland, F. L., 1975. Magmatism associated with the dispersion of the Australasian segment of Gondwanaland. In: *Gondwana Geology, Proc. Third Gondwana Symp.* A.N.U. Press, Canberra, 1975.
- Sutherland, F. L. and A. Ritchie, 1974. Defunct Volcanoes and Extinct Horned Turtles. *Aust. Nat. Hist.* 18 (2): 44-49.
- Sutherland, F. L., 1974. Down under Australia. *Aust. Nat. Hist.* 18 (4): 136-143.
- Talbot, F. H. and C. N. Smithers, (1974). Comment: on the regulation of the export of insect specimens. *Search.* 5: 233-235.
- Walston, S., 1974. Aboriginal Rock Paintings: Studies in Conservation. *Aust. Nat. Hist.* 18 (3): 96-105.
- Walston, S., 1974. Conservation for small Museums. In: *The Management of Small Museums.* N.S.W. Ministry of Cultural Activities, pp. 9-15.
- Walston, S., 1975. Rock Art—deterioration and conservation. In: *The Preservation of Australia's Aboriginal Heritage* (ed. Robert Edwards). Australian Aboriginal Studies, No. 54, pp. 104-107, Australian Institute of Aboriginal Studies, Canberra.

APPENDIX 5 FINANCIAL STATEMENT

During the year total funds available to the Museum (excluding amounts for construction and maintenance of buildings and purchase of furniture) increased to \$1,894,569, more than 35 per cent in excess of the previous year's figure of \$1,335,442. Funds from State Government increased to \$1,396,056, an overall increase of 38.5 per cent, receipts by Trustees increased by 57 per cent to \$85,204 and funds received by way of grants and contracts increased by 35 per cent to \$235,490, a rather small increase compared with the previous year's extraordinary 159 per cent increase. The proportional contribution of the State Government remained at 78 per cent, the same level as in 1973-74. Salaries against all funds increased by 29 per cent during the year to \$1,181,857 (68 per cent of total expenditure) of which salaries of new staff recruited during the year accounted for 3 per cent (approximately \$27,000). There were decreases over the year in the amounts spent on travel and equipment of 11 per cent and 28 per cent respectively due principally to very high reductions in spending on these items by Trustees.

A feature of the year was the much improved state of the Trustees Funds. The year finished with the funds withdrawn in 1973-74 being redeposited in investments which stood at \$83,830 at June 30, 1975 compared with \$42,978 at the end of the previous year. This was principally due to increased contributions from State Government by way of its special grants (\$52,000 compared with \$27,000 the previous year), a relatively small increase in the spending of Trustees Funds and, in addition, the receipt of substantial amounts to support the Lizard Island Research Station and to carry out special environmental surveys.

Although the overall financial situation of the Australian Museum is unlikely to be entirely satisfactory during 1975-76 the end-of-year situation suggests that in the coming year the Museum may be able to allocate its resources more fully than in the past to acquisition and gallery development.

THE AUSTRALIAN MUSEUM
CONSOLIDATED FINANCIAL STATEMENT
FOR THE YEAR ENDED 30TH JUNE, 1975

RECEIPTS	1975	1974
	\$	\$
Balance at 1st July	42,978	73,917
Treasury appropriations, etc.	1,396,056	1,008,581
Trustees account	84,204	53,747
Grants and contracts	234,888	173,510
Donations, etc.—special projects	86,578	45,346
Grants written off by Trustees	610	..
Dinosaur A/C	6,964	..
	<u>\$1,852,278</u>	<u>\$1,355,442</u>

PAYMENTS	\$	\$
Salaries, etc.	1,181,857	914,815
Stores and equipment	112,029	126,484
Travel	32,717	45,341
Other payments	403,695	225,824
Balance at 30th June	121,980	42,978
	<u>\$1,852,278</u>	<u>\$1,355,442</u>

THE AUSTRALIAN MUSEUM
STATEMENT OF RECEIPTS AND PAYMENTS
FOR THE YEAR ENDED 30TH JUNE, 1975

CONSOLIDATED REVENUE—RECEIPTS

	1975	1974
	\$	\$
Appropriations	<u>1,342,056</u>	<u>979,581</u>
	<u><u>\$1,342,056</u></u>	<u><u>\$979,581</u></u>

TRUSTEES FUNDS—RECEIPTS

	1975	1974
	\$	\$
Balance as at 1st July, 1974	4,890	49,713
Consolidated Revenue—		
Statutory Endowment	2,000	2,000
Contribution towards Museum Requirements	52,000	27,000
Museum Shop Sales	28,659	22,152
Australian Natural History Magazine Sales	22,765	6,189
Red Telephone	126	177
Photocopies .. .. .	..	430
Grant by BHP Ltd for Film Production	2,718	8,000
Cinefilm Sales	14,321	6,012
Royalties and Copyrights	935	4,717
Subsidy .. .. .	..	750
Donations	5,990	297
Interest	4,223	3,672
Miscellaneous	4,467	1,315
Sydney County Council—Subsidy .. .. .	..	..
	<u><u>\$143,094</u></u>	<u><u>\$132,460</u></u>

CONSOLIDATED REVENUE—PAYMENTS								1975	1974
								\$	\$
Salaries, etc.	..	..	..	..	..	..	..	1,095,548	808,444
Meal allowances	..	..	..	..	..	..	..	1,032	1,512
Rent, Rates, etc.	..	..	..	..	..	..	..	51,128	38,557
Insurance	..	..	..	..	..	..	..	2,113	..
Maintenance Alterations Additions and Renewals	..	..	..	..	..	..	..	995	..
Travelling and Subsistence Expenses	..	..	..	..	..	..	..	20,797	..
Motor Vehicles—Running Costs, etc.	..	..	..	..	..	..	..	13,910	9,997
Freight, Cartage and Packing	..	..	..	..	..	..	..	5,408	3,443
Books, Periodicals and Papers	..	..	..	..	..	..	..	11,575	8,913
Postal Expenses	..	..	..	..	..	..	..	8,605	5,998
Fees for Services Rendered	..	..	..	..	..	..	..	3,504	1,083
Stores and Provisions, etc.	..	..	..	..	..	..	..	64,253	48,291
Printing	..	..	..	..	..	..	..	22,831	10,875
Laundry Expenses	..	..	..	..	..	..	..	562	382
Other Insurance	..	..	..	..	..	..	..	2,005	2,035
Equipment for Storage of Museum specimens	..	..	..	..	..	..	..	35,000	19,923
Overseas Travel	..	..	..	..	..	..	..	2,640	2,954
Minor Expenses	..	..	..	..	..	..	..	150	75
								<u>\$1,342,056</u>	<u>\$979,581</u>

TRUSTEES' FUNDS—PAYMENTS								1975	1974
								\$	\$
Stock for Museum Bookshop	..	..	..	..	..	..	..	21,767	20,353
Stores, Plant and Equipment	..	..	..	..	..	..	..	10,689	30,928
Travelling Expenses	..	..	..	..	..	..	..	7,444	18,610
Computer Costs	..	..	..	..	..	..	..	5,691	7,522
Entertainment	..	..	..	..	..	..	..	3,005	2,351
Purchase of Specimens	..	..	..	..	..	..	..	11,451	9,848
Research Grants	..	..	..	..	..	..	..	440	1,474
Freight	..	..	..	..	..	..	..	71	38
Cinefilm Production	..	..	..	..	..	..	..	15,851	11,385
Photocopies	..	..	..	..	..	..	..	..	834
Library Purchases	..	..	..	..	..	..	..	..	712
Honoraria	..	..	..	..	..	..	..	2,760	4,364
Reprints	..	..	..	..	..	..	..	574	341
Printing	..	..	..	..	..	..	..	..	3,928
Red Telephone	..	..	..	..	..	..	..	287	150
Cost of Publishing Australian Natural History	..	..	..	..	..	..	..	34,260	3,988
Miscellaneous	..	..	..	..	..	..	..	2,563	4,013
Bonnard Exhibition	..	..	..	..	..	..	..	..	..
Fees for Services Rendered	..	..	..	..	..	..	..	528	3,624
Marine Hall	..	..	..	..	..	..	..	2,427	1,882
Royalties	..	..	..	..	..	..	..	..	1,225
Dept Assistance	..	..	..	..	..	..	..	2,388	..
Cafeteria	..	..	..	..	..	..	..	5,850	..
Balance at 30th June, 1975	..	..	..	..	..	..	..	15,048	4,890
								<u>\$143,094</u>	<u>\$132,460</u>

THE AUSTRALIAN MUSEUM STATEMENT OF RECEIPTS

GRANTS ACCOUNT

	RECEIPTS		EXPENDITURE		BALANCE	
	1975	1974	1975	1974	1975	1974
	\$	\$	\$	\$	\$	\$
Australian Research Grants Committee	51,730	32,203	53,171	37,212	(5,453)	(4,012)
Joint Coral Reef Research Project	71,246	25,014	48,465	48,112	6,825	(15,956)
Ian Potter Foundation	3,100	7,600	8,340	7,999	(1,670)	3,570
National Geographic Society .. .. .	..	..	..	387	..	..
Siboga Trust .. .. .	..	..	68	..	363	431
Bushell Trust	500	..	500	..	..	..
Australian Institute for Aboriginal Studies ..	315	10,000	8,256	3,937	752	8,693
*Rural Credits Development Fund Balance from 73/74 .. .. .	..	..	..	1,032	(610)	(610)
CSIRO Science and Industry Endowment Fund ..	..	..	..	1,000	..	..
Dinosaur A/C .. .. .	..	..	102	..	(102)	..
Prime Minister's Department—Australian Council for the Arts	21,182	250	7,020	203	21,077	6,915
Keith Hindwood Memorial Fund	20	65	..	45	1,484	1,464
Shelf Benthic Survey—						
Sewerage Outfall Study—Caldwell Connell ..	734	73,613	6,182	47,094	7,156	12,604
CSIRO Eurobodalla Survey	19,312	2,576	20,406	1,436	46	1,140
Laurie Montgomery & Petit	6,400	..	4,763	..	1,637	..
Indonesian Exhibition	1,500	9,499	4,842	6,708	(2,064)	1,278
Australian Biological Resources Study	20,446	12,690	24,614	..	8,522	12,690
Van Leer Foundation	10,000	..	..	..	10,000	..
Department of Environment—						
Lord Howe Island Woodhen Survey	4,600	..	1,991	..	2,609	..
Coastal Seabird Study	16,790	..	352	..	16,438	..
W. D. Scott Woodchip Survey	7,013	..	355	..	6,658	..
Totals	\$ 234,888	173,510	189,427	155,165	73,668	28,207

* Debit Balance of \$610 for Rural Credits Development Fund brought forward from 1973/74 written off during year 1974/75.

ND PAYMENTS FOR THE YEAR ENDED 30TH JUNE, 1975

THE AUSTRALIAN MUSEUM SOCIETY

										RECEIPTS	
										1975	1974
										\$	\$
Balance at 1st July, 1974	..	..	..	..	..	..	..	..	..	1,159	3,294
Members Subscriptions	..	..	..	..	..	..	..	..	..	6,759	4,302
Lecture Admissions	..	..	..	..	..	..	..	..	..	7,852	5,952
Interest	..	..	..	..	..	..	..	..	..	82	101
Donations	..	..	..	..	..	..	..	..	..	1,649	1,460
ANM	..	..	..	..	..	..	..	..	..	1,450	..
										<u>\$18,951</u>	<u>\$15,109</u>

										PAYMENTS	
										1975	1974
										\$	\$
Lecture Fees	..	..	..	..	..	..	..	..	..	320	170
Member's Functions	..	..	..	..	..	..	..	..	..	3,137	4,940
Salaries	..	..	..	..	..	..	..	..	..	3,529	2,052
Stores, Equipment, Freight	..	..	..	..	..	..	..	..	..	..	..
Printing and Stationery	..	..	..	..	..	..	..	..	..	916	892
Honoraria	..	..	..	..	..	..	..	..	..	2,832	3,208
Postages and Mailing	..	..	..	..	..	..	..	..	..	2,468	1,302
Telephone (and Miscellaneous)	..	..	..	..	..	..	..	..	..	288	232
Australian Natural History Magazine	..	..	..	..	..	..	..	..	..	1,135	684
Miscellaneous	..	..	..	..	..	..	..	..	..	516	470
Balance at 30th June, 1975	..	..	..	..	..	..	..	..	..	3,810	1,159
										<u>\$18,951</u>	<u>\$15,109</u>

**THE AUSTRALIAN MUSEUM STATEMENT OF RECEIPTS
NATIONAL PHOTOGRAPHIC**

GENERAL ACCOUNT—RECEIPTS

	1975	1974
	\$	\$
Balance at 1st July, 1974	4,796	7,048
Donations	15,056	18,758
Colour Slides	53	580
Interest	244	244
Miscellaneous	8	500
Recoup from N.S.W. Grants Scheme	15,000	1,512
Readers Digest Options	1,011	..
Contra	156	..
	<u>\$36,324</u>	<u>\$28,642</u>

READERS DIGEST PROJECT ACCOUNT—RECEIPTS

	1975	1974
	\$	\$
Balance at 1st July, 1974	100	4,000
Readers Digest Association Payments	8,525	1,850
Interest	13	6
	<u>\$8,638</u>	<u>\$5,856</u>

BANK OF NEW SOUTH WALES GRANTS SCHEME—RECEIPTS

	1975	1974
	\$	\$
Balance at 1st July, 1974	3,825	..
Donations—Bank of New South Wales	5,000	10,000
Interest	80	81
Sale of Equipment	749	..
Refunds	25	..
	<u>\$9,679</u>	<u>\$10,081</u>

AND PAYMENTS FOR THE YEAR ENDING 30TH JUNE, 1975

INDEX OF AUSTRALIAN BIRDS

GENERAL ACCOUNT—PAYMENTS

	1975	1974
	\$	\$
Salaries	8,379	8,379
Entertainment	64	66
Printing, etc.	1,473	1,131
Clerical Assistance	5,896	2,386
Travel and Subsistence	1,836	767
Stores and Equipment	317	447
Miscellaneous	260	470
Telephone	283	389
Postage	428	364
Insurance	319	197
Photography	4,865	9,250
Grant	1,500	..
A. V. Chivist	2,072	..
Expedition 1974	156	..
Balance 30th June	8,476	4,796
	<u>\$36,324</u>	<u>\$28,642</u>

READERS DIGEST PROJECT ACCOUNT—PAYMENTS

	1975	1974
	\$	\$
Options Exercised	4,213	..
Option fees for photographs	990	5,745
Miscellaneous	1	11
Museum Commission	918	..
In our Proportion Options	1,011	..
Balance 30th June	1,505	100
	<u>\$8,638</u>	<u>\$5,856</u>

BANK OF NEW SOUTH WALES GRANTS SCHEME—PAYMENTS

	1975	1974
	\$	\$
Insurance	133	..
Grants	1,414	2,780
Equipment	1,770	2,381
Repairs and Maintenance .. .. .	..	133
Films and Processing	1,400	815
Hire of Equipment .. .. .	..	130
Miscellaneous	128	17
Balance 30th June	4,834	3,825
	<u>\$9,679</u>	<u>\$10,081</u>

THE AUSTRALIAN MUSEUM
STATEMENT OF BALANCES AS AT 30TH JUNE, 1975

FUNDS

	1975	1974
	\$	\$
Trustees Account	15,048	4,890
Grants Account	74,278	28,207
National Photographic Index of Australian Birds—		
General Account	8,476	4,797
Readers Digest Project	1,505	100
Bank of N.S.W. Grants Scheme	4,834	3,825
The Australian Museum Society	3,810	1,159
Bank of N.S.W. Dinosaur Account	6,964	..
Trustees Suspense Account	7,065	..
	\$121,980	\$42,978

REPRESENTED BY

	\$	\$
Investments—		
Trustees Account	11,757	10,588
Grants Account	63,573	26,742
National Photographic Index of Australian Birds .. .. .	..	..
General Account	5,000	5,000
Grants Scheme Account	3,500	..
	\$83,830	\$42,330
Cash at Bank and on hand—	\$	\$
Trustees Account	3,291	(5,698)
Grants Account	10,705	1,465
National Photographic Index of Australian Birds—		
General Account	3,476	(203)
Readers Digest Project	1,505	100
Bank of N.S.W. Grants Scheme	1,334	3,825
The Australian Museum Society	3,810	1,159
Bank of N.S.W. Dinosaur Account	6,964	..
Trustees Suspense Account	7,065	..
	\$121,980	\$42,978