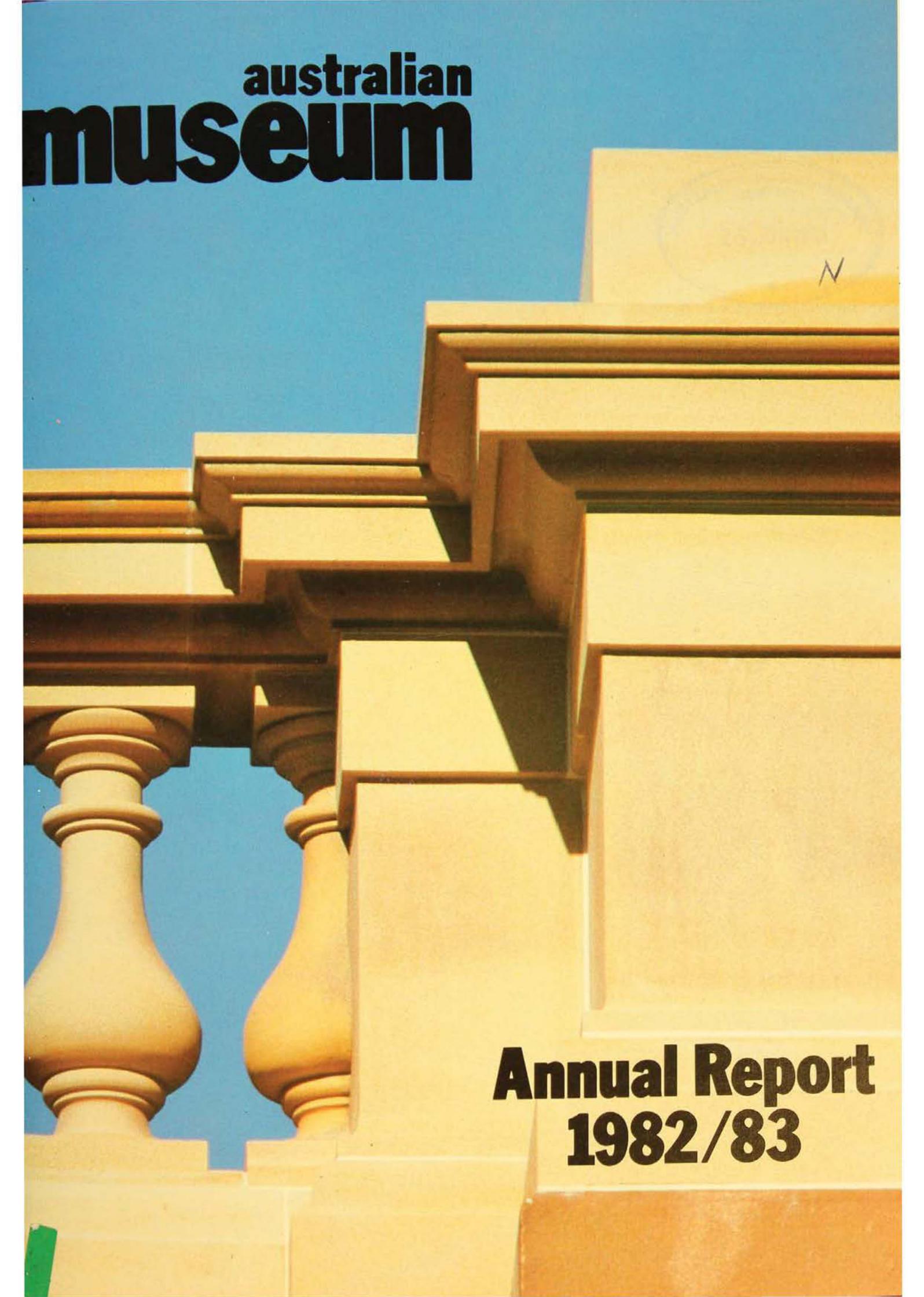

the australian museum sydney

6-8 College Street
Sydney 2000
Telephone: 339 8111

Hours: Sunday, Monday 12-5
Tuesday-Saturday 10-5
Public Holidays 12-5

The background of the cover is a photograph of classical architecture, showing a series of stone columns and entablatures in a warm, golden-brown hue against a clear blue sky. The columns have decorative capitals. The text is overlaid on this image.

**australian
museum**

**Annual Report
1982/83**

THE AUSTRALIAN MUSEUM TRUST

ANNUAL REPORT FOR THE YEAR ENDED 30 JUNE 1983

The Australian Museum

President

J. T. Baker, OBE, MSc, PhD, FRACI

Deputy President

K. H. Cousins, CMG

Director

D. J. G. Griffin, MSc, PhD

Director Emeritus

J. W. Evans, MA, ScD, DSc

The Trust and staff of the Australian Museum have pleasure in thanking the following organisations and individuals who provided financial assistance through research grants or donations during the year.

Benefactors

Westpac Banking Corporation Ltd
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 William Bowmore, Newcastle, NSW
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 Smithsonian Institution
 Lizard Island Reef Research Foundation
 Comalco Ltd
 Queensland Electricity Generating Board
 Roadshow Distributors Pty Ltd
 Dr Telford Conlon



Sponsorship of the Wandervan was secured from the Council of the City of Sydney for the period of June 1982 to June 1984. The Wandervan visited 143 centres this year. Here the Lord Mayor of Sydney, Alderman Doug Sutherland, presents a cheque to Museum Director Des Griffin. Looking on is Ms Anne Saunders.
 Photo: J. Fields.

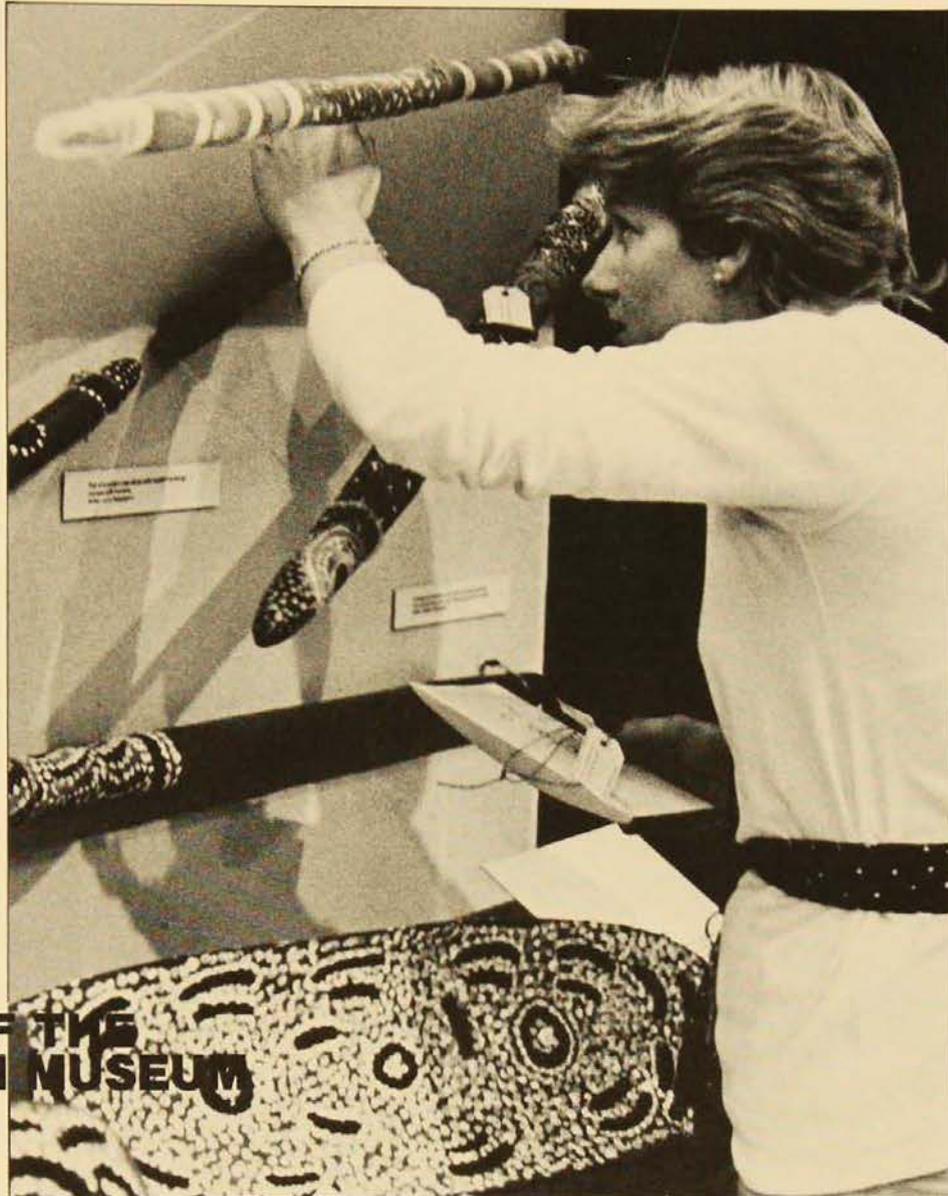
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The Wandervan Extension Service for Handicapped Groups is one of the Museum's most important educational facilities. It enables the Museum to reach people from all over the metropolitan area who might not otherwise visit the Museum. Here, Ms Anne Saunders, Education Officer, introduces one of Australia's more cuddly inhabitants to some children from a handicapped school.
Photo: K. Lowe.



THE AIMS OF THE AUSTRALIAN MUSEUM ARE . . .

- to increase and disseminate knowledge of our natural environment and cultural heritage;
- to increase our understanding and appreciation of these things.

In achieving these aims the Museum gives special emphasis to the Australian region.

High quality and extensive collections of animals, rocks, minerals and anthropological artefacts are held by the Museum. These constitute reference material for identifying, describing and classifying the features of our natural environment and, through further research, to enhance understanding of the world around us . . . this is the Museum's scientific function.

The Museum creates exhibitions and conducts educational programs . . . this is the Museum's interpretive function.

As a centre of expertise the Museum provides information to the public, industry and government . . . this is the Museum's service function.

The Museum gives emphasis to good public relations and engages in promotional activities, including publishing, to provide information about its activities . . . this, in part, is the Museum's public responsibility.

Ms Lyn Sullivan from the Exhibitions department makes final adjustments to a temporary exhibit which opened during National Aborigines Week.
Photo: K. Lowe.

THE AUSTRALIAN MUSEUM TRUST

President

J. T. Baker, OBE, MSc, PhD, FRACI

Deputy President

K. H. Cousins, CMG

Members

Professor D. J. Anderson, BSc, PhD
Professor D. T. Anderson, PhD, DSc, FRS, FAA
(from 28.7.82)

K. K. Klugman, BA, MA

J. A. Landels

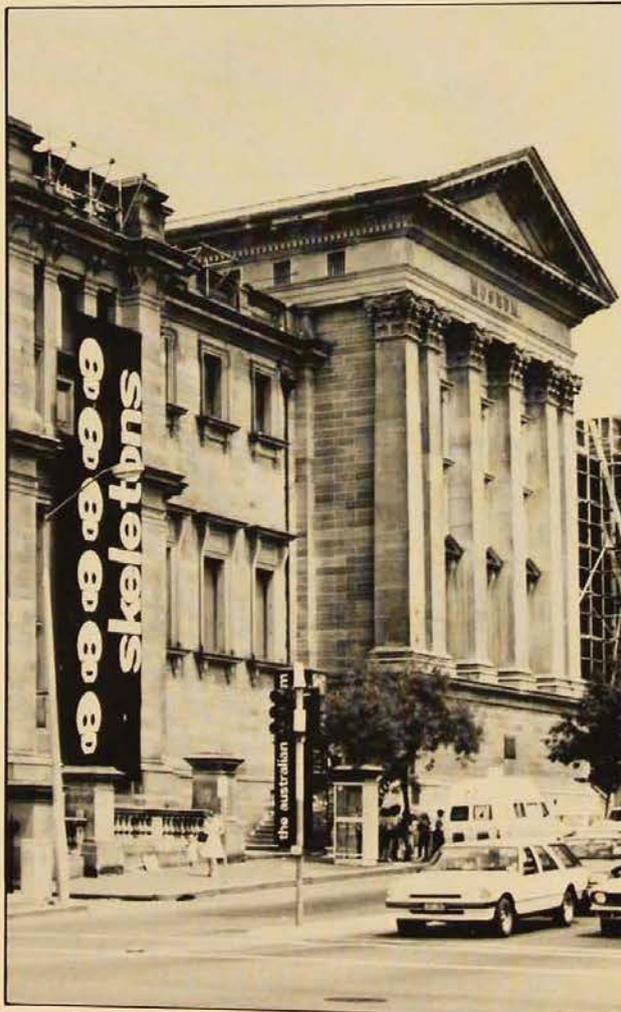
L. B. McClelland (from 28.7.82)

P. Pigott, AM

C. M. Serventy, OAM, BA

I. Wojak, BA

The Australian Museum Trust comprises ten people. Eight are appointed by the Governor of New South Wales on the recommendation of the Minister responsible for Cultural Activities. The remaining two members are elected by the eight appointed Trustees. Each Trustee is appointed for a term of four years, and five Trustees retire every two years. The President and Deputy President are elected by the Trust each year. The Trust is constituted and its powers defined by the Australian Museum Trust Act 1975.



Promotion of exhibitions is an important facet of attracting increasingly large numbers of visitors to the Museum. Part of this promotion includes large banners strung up on the Museum's facade, which have attracted a great deal of interest from the public.
Photo: J. Fields.

LIZARD ISLAND RESEARCH STATION

Management Committee

J. T. Baker, OBE, MSc, PhD, FRACI (Chairman)

D. J. G. Griffin, MSc, PhD

B. Goldman, MSc, PhD (Director, Lizard Island Research Station)

P. Ogilvie

Associate Professor H. Heatwole, PhD

The Committee is appointed by the Australian Museum Trust.

THE AUSTRALIAN MUSEUM SOCIETY COUNCIL

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R. A. Pearson, BA, LLB

Vice-President

C. Williams (until 30 April 1983)

M. A. Hazel (from 1 May 1983)

Executive Secretary

S. Bridie

Secretary

W. Wilkins, BA

Council Members

D. J. G. Griffin, MSc, PhD

N. Ireland

L. Mahoney

G. McIvor

S. Quirk, BScAg, DipEd

B. Ross-Wilson

R. Saunders

C. M. Serventy, OAM, BA (until 30 April 1983)

V. N. Serventy, AM, BSc, BEd (from 1 May 1983)

F. L. Sutherland, MSc, PhD

D. M. Tuckson

A. B. Wilson (Honorary Treasurer)

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN WILDLIFE

Founding Chairman

The Hon Sir Percy Spender, KCVO, KBE, KStJ, QC

Committee of Management

K. H. Cousins, CMB (Chairman until 20 April 1983)

J. H. Broinowski, CMG, FCA
(Chairman from 20 April 1983)

D. J. G. Griffin, MSc, PhD

L. le Guay, FRPS, EFIAP, AIAP

V. N. Serventy, AM, BSc, BEd

R. Strahan, MSc, MIBiol, FSIH, FLS, FRZS

G. L. McKenzie, AASA

The Committee is appointed by the Australian Museum Trust.

PRESIDENT'S REPORT

The Honourable, The Premier of New South Wales,
Mr Neville Wran, QC, MP
Parliament House
Sydney

Mr Dear Premier,

I have pleasure in presenting the Annual Report of the Australian Museum Trust for the year ended 30 June 1983.

The Trust met nine times during the year, all meetings being within the Australian Museum. Operations of the Trust were enhanced by the system of sub-committees which met between Trust meetings to consider specific areas of importance to the Museum at a level of detail not practicable in normal Trust meetings. This system also allowed the Trust to invite experts in relevant fields to participate in a very important advisory role. The Trust is particularly grateful for the impact provided by these people.

Committees so formed were:

Finance:	Convenor Mr J. Landels
Fund Raising:	Convenor Mr K. Cousins
Staffing:	Convenor Dr J. Baker
Marketing:	Convenor Mrs K. Klugman
Program Review:	Convenor Professor Derek Anderson

On 10 June 1982 the membership of the Trust was not complete. However, on 28 July 1983 the Governor in Council approved the appointment to the Trust of Mrs Lorna McClelland and Professor D. T. Anderson FRS. These members have very quickly become effective members of the Trust. No other changes in composition of the Trust occurred during the reporting period.

Within the Museum, the attraction and relevance of the programs and exhibitions resulted in a continued increase in the number of visitors. In times of general financial constraints, this popularity brings with it problems ensuring there is an adequate number of attendants to ensure the valuable exhibits are not incorrectly handled or inadvertently damaged. Dr Griffin, the Director, has already introduced training programs designed to assist staff in various areas of responsibility to be more effective in the discharge of their duties. However, some areas may require increased staff appointments in the near future.

The Museum has been active in planning for the major exhibition of the 'Dinosaurs from China' (scheduled for 18 August to 30 October 1983) and we are confident that the people of New South Wales will value this exhibition.

Other activities of the Museum have also resulted in increasing public awareness of the Museum, its staff and its programs. The publication *Australian Natural History* attracts wide recognition for the quality of its articles and the excellence of its presentation. Other well-patronised facets of the Museum are the periodic mineral sales and the Museum Shop.

Members of the Australian Museum Society continued to actively support Museum functions and programs and their activities are attracting more members.

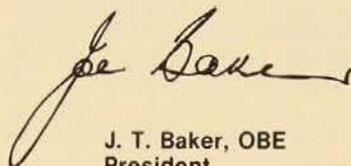
During the year we were fortunate to receive the financial support of many sections of the community. Two of the best publicised were the grant of \$100,000 from the Suntory Company of Japan in support of the Lizard Island Research Station, and the support of the Commonwealth Banking Corporation of Australia for the Museum Train.

The Trust greatly appreciates the support of your Government, and acknowledges the excellence and commitment of Museum staff. The leadership of Dr Des Griffin merits special mention. His foresight in recognising development and training needs is of great benefit to the Museum. Consistent with the need for forward planning, he has established a group of his senior staff to review the Corporate Plan and to identify any modifications which may merit attention in the medium or longer term. Such planning

is necessary to protect the enormously valuable holdings of the Museum.

You will be particularly aware of our concern for the proper housing, curation and exhibitions of the Pacific Collection, and of our long-term plan for additional buildings to allow the functions and objectives of the Museum to be most efficiently prosecuted.

It is an honour to represent the Trust in presenting to you this report which so clearly illustrates the vitality and integrity of the Australian Museum.


J. T. Baker, OBE
President



Like putting together a giant jigsaw puzzle, Mike Traynor, Richard Scott-Child (l-r both on scaffold), Rolf Lossin, Jim Giffen and George Hangay (l-r) prepare a *Mamenchisaurus* for the opening of the dinosaur exhibition.
Photo: J. Fields.

DIRECTOR'S REPORT

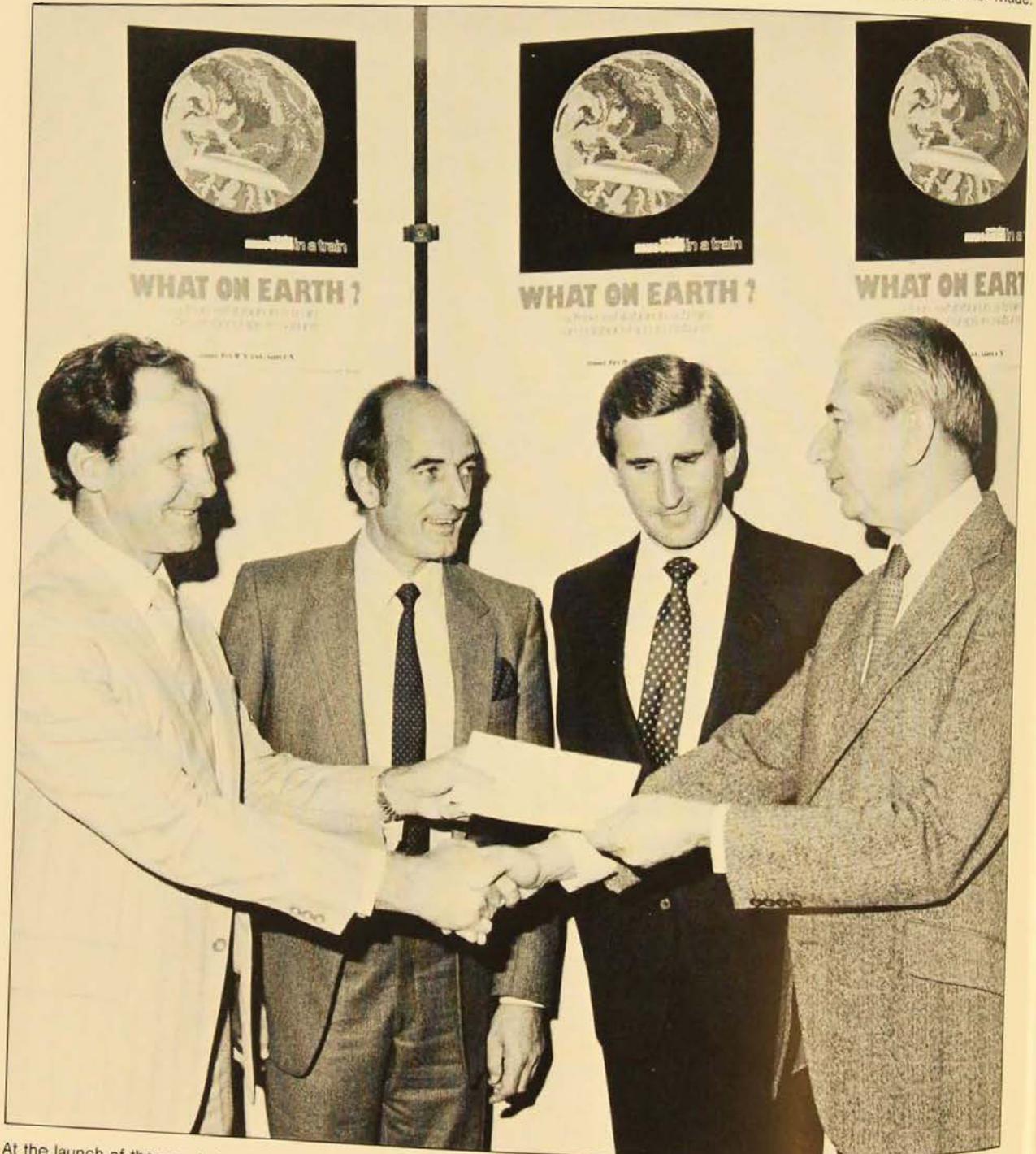
The year commenced with clear guidelines for the future in the areas of marketing, exhibitions production and with advances in a number of special projects under way.

The year under review was extremely difficult financially with some initial reductions in staffing levels and activities required. However, the Trust's funds increased slightly and next year appears to offer promise.

The priority accorded to the new Train meant that the planning commenced in late 1981 had to be completed. The new Train, with its exhibition 'What on Earth — an exhibition on Relationships in Nature', was launched by The Hon. L. J. Brereton, MP, on behalf of the New South Wales Government on 2 June. The Commonwealth Bank of Australia sponsored the project with a grant of \$50,000. With an extensive network of branches throughout the State and its efficient contacts with schools, the Bank is an ideal sponsor. Roadshow Australia Pty Ltd also agreed to assist with a grant of \$4,000.

Working from material compiled during a one-day seminar on exhibition planning held in late 1981, a group of senior staff assisted Chief of Exhibitions, Mr Rob Joyner, to prepare the important document, the *Museum's Exhibit Guideline*. This outlines the procedures in the exhibition process — from initiation by the Director to completion, subsequent review and any alterations. It seeks to clarify the responsibilities of people involved in the project and identifies the timing of reviews of progress. Understanding the relationship between project team members and network planning members is an integral part of the guideline. Use of the Guideline was made mandatory on 1 October 1982 and the document is subject to annual review.

Continuing from the review of the Education Section completed in 1981, evaluation of the school loan case program was completed and recommendations made.



At the launch of the new train exhibition by The Hon. L. J. Brereton (second from right), Major General G. Maitland, AO, OBE, ED, Director, looks on. Photo: K. Lowe.

Expansion of the program, supported in part by a grant from John Fairfax & Sons Ltd, neared completion with new cases on insects and a variety of other topics. The number of cases now exceeds 100. During the year well over 250,000 children in schools throughout New South Wales were reached. A review of the marketing of all education programs was undertaken with the generous assistance of Neill, Riley and Associates. A need for improvement in all printed material and in communication with schools was identified. Design work was commenced by the Exhibitions Department and market research will be done to determine reactions toward printed material and how it is used within schools. The objectives of all these activities include the improvement of communication with the Museum's audience as well as the effectiveness with which school groups use the Museum and its exhibitions.

Two major findings of the survey *Attitudes to and Perceptions of the Museum* conducted by Neill, Riley and Associates were proposals to reclassify Attendant staff to Security Officers and Information Officers, and refurbish the main College Street foyer. Strong evidence showed that existing security arrangements were not preventing loss of or damage to a number of important items on exhibition and that the public regarded the Attendants as somewhat austere and forbidding.

The classification of Attendant will be eliminated and additional cleaning staff and security officers employed. A new classification of Information Officer will be introduced to play an effective role in assisting visitors.

Little progress was made on the refurbishing of the College Street foyer. Demands on staff time for other programs including the major temporary exhibition 'Dinosaurs from China', led to the program eventually being given a lower priority than desirable. The project is now scheduled for completion in November 1983. The foyer will be further improved by shifting showcases housing 'Treasures' to the Long Gallery. The additional space will be for visitor orientation and expansion of the Shop.

The basis of the Museum, like many other museums, is its collections and scientific research. Although these activities have grown and improved, and output of research in natural sciences ranks among the best in Australia, its formal organisation and allocation of resources have hardly advanced. A new scheme introduced this year established four divisions, Vertebrate Zoology, Invertebrate Zoology, Geology and Anthropology, with Chairmen reporting to the Deputy Director. Certain technical staff within each scientific division also have more duties in collection management and report to Chairmen rather than to departmental heads. Less emphasis is thus given to a highly compartmentalised structure with its concentration of all research and curatorial functions at departmental level.

Refining the corporate planning process was achieved by establishing a corporate planning advisory group to prepare new draft objectives and identify major policy issues. Progress was made at initial meetings but further progress depends upon reappraisal of the form in which the plan should be organised and the extent of staff involvement in formulating statements of purpose. Like most museums, corporate planning at the Australian Museum is not a distinct function with staff allocated to it on a full-time basis.

Small progress was made in implementing a detailed equal employment opportunity management plan. However, following consideration of staff training and development by the Trust's staffing committee, a program was drawn up for senior management and courses for other staff are being planned.

Careful attention to allocation of funds confirmed that the Museum would proceed with acquisition of computer facilities including word-processing. Equipment and programming will be in full use by the end of 1983. Progress towards full computer-based storage of vertebrate animals collections data was substantial.

Significant advances were made in the production of the Museum's major scientific publication *The Records of the Australian Museum*. Redesign and changes of printer reduced costs some 15% and further efficiency is likely with production of articles by word-processing.

The Museum's three special projects, the Lizard Island Research Station; the National Photographic Index of Australian Wildlife; and the Australian Museum Society enjoyed significant achievements.

The new research vessel for the Lizard Island Research Station, *Sunbird*, was completed early in January 1983 and delivered to Lizard Island by early February. The 14m aluminium motor sailing catamaran, designed by Mr Loch Crowther of Sydney and built by SBF Engineering, Perth, is excellently equipped with modern navigation aids and contains a small laboratory, large deck space and berths for six scientists and two crew. *Sunbird* was commissioned on 16 April at Cairns, Queensland, by The Hon Barry Jones, MP, Australia's Minister for Science and Technology. It will put the whole of the northern part of the Great Barrier Reef within easy reach of research scientists and provides for low cost research. Suntory Ltd of Japan, whose interest in coral reef research had stimulated The Japan Foundation to provide a grant of approximately \$250,000 to the Research Station in 1980, announced a further grant of \$100,000 at the commissioning ceremony. Design of expanded laboratory facilities was well advanced by year's end.

The National Photographic Index of Australian Wildlife produced the first in a series of books on Australia's birds, *Wrens and Warblers*, published by Angus and Robertson in October 1982. In early 1983 the manuscript and photographs for the *Complete Book of Australian Mammals*, edited by Mr Ronald Strahan was delivered to Angus and Robertson for publication in September 1983. The publication will be generously sponsored by Castlemaine Tooheys Ltd. Proceeds from sales and sponsorship will considerably benefit the Index and the Museum. The mammal book will be a major contribution to public understanding and appreciation of Australia's unique mammal fauna.

The Museum Society continued an active program of talks, excursions and continued to provide great assistance to the Museum in projects such as the coffee shop, *Museum as a Venue* and the volunteer program. The Society will play a major role in the Chinese Dinosaur Exhibition. The Society agreed to be a joint sponsor of the new Mineral Gallery, the major sponsor of which is the Utah Foundation.

Finally, it is appropriate to turn again to review financial trends. In the current year, funds available to the Museum increased by some 21.5% overall. Substantial grants were again obtained from various agencies in competition with other scientific establishments. The Trust's general funds increased markedly. The discretionary funds available to the Trust at the end of the year stood at \$160,026, a substantial increase over the previous year.

I again want to thank my colleagues and Trustees for substantial assistance. I also wish to thank the considerable number of volunteers who have contributed so much to the Museum.



D. J. G. Griffin
Director
29 September 1983

SCIENTIFIC ACTIVITIES

ANTHROPOLOGY

Highlights for the department included continuing preparations for the new Aboriginal Gallery, major acquisitions for the Aboriginal collection and cataloguing the Museum's Micronesian and Polynesian material.

The primary concerns of the department are the past and present native peoples of Australia and the Pacific Islands, with lesser emphasis on Indonesia and other parts of the world. The department seeks to improve knowledge and understanding of the non-Western cultures of these regions, particularly through research in the field and on collections in reserve. It encourages indigenous people to be involved in museum activities. Such was the case with the involvement of nine Warlpiri women in the Women and Arts Festival. Such participation is important, particularly where it contributes to the achievement of indigenous peoples' cultural aspirations.

STUDENT RESEARCH SUPPORTED The Australian Museum Trust made seven post-graduate research grants-in-aid for work on Australian-based anthropology projects. The value of this scheme is reflected in the range and quality of theses and research reports in the Museum library. Among those using the department's collections was Ms Jean Anderson, whose thesis on style change in bark paintings from Arnhem Land was accepted in 1983 for the Diploma in Anthropology at the University of Sydney, NSW. Among the 1982-83 grant recipients was Mr Richard Mulvaney, Australian National University, Act, who is preparing a study of the Morrison collection from Singleton, NSW. This collection, made last century, has been split up in recent years, coming to the Australian Museum partly as a purchase and partly as a tax incentives donation.

Other student research on Aboriginal collections included a study of Holocene time period skulls by Ms Sheila von Holst-Pellekaan, University of Sydney; regional variation in coolamons (shallow wooden dishes) by Ms J. Dudman, La Trobe University, Vic; and work on the Chitty-Jones collection by Mr Barrie Paterson, Museum Studies Course, University of Sydney. Mr Paterson prepared a descriptive catalogue of the Chitty-Jones collection of 24 artefacts collected in the mid-19th century around Naracoorte, SA. This important collection was held privately in the United Kingdom until its owner's death in 1979 when it was repatriated to the Australian Museum through Mrs Mary Chitty.

CATALOGUING THE COLLECTIONS Through the year, Dr Specht and Ms Lissant Bolton worked on Phase-2 of the UNESCO Oceanic Cultural Property Survey. This is an artefact-by-artefact list of major public collections of Micronesian and Polynesian material throughout Australia. Under the terms of a contract awarded to the Museum by UNESCO, the collections in each State are recorded and the raw data sent to the Australian Museum for collating and publication. The three-volume report will be published in 1983-84.

In anticipation of this project, the department employed Ms Sue Thomsett to catalogue the Micronesian collections. Both the Polynesian and Micronesian collections are now properly catalogued. Work continued on the cataloguing and storage of the bark-cloth collection. Ms Bolton and Mr O'Donnell completed registration of a large proportion of the Pacific material in the Ward Bequest.

The centenary of the destruction of the Museum's anthropological collections in the Garden Palace fire was marked on 22 September. In 1982 Ms Tessa Corkill carried out a project to identify any surviving material. She located approximately 120 artefacts and a group of students from the Museum Studies Course at University of Sydney, produced a small exhibition to mark the occasion.

Conditions in the Pacific Islands' storage areas render most sections inaccessible for research. The department has had to discourage interest in them until conditions improve. However, following the reorganisation of the Fiji

collection by Ms Corkill, Ms Wendy Jones (Museum Studies Course, University of Sydney) prepared a research paper on the Fijian items received in an exchange program with the University of Cambridge Museum of Archaeology and Anthropology in the 19th century. Ms Fiona Stanton, Mus. Stud. Course, University of Sydney, produced a similar catalogue of the Banaba (Ocean Island) collection. This is the principal Banaba collection in Australia and most of it was collected early this century.

Mr David Moore, Museum Associate, completed his catalogue and photographic record of the department's Torres Strait collection, following his extensive study of collections in the United Kingdom.

'OLD WORLD' COLLECTION The department holds several collections for which it does not have specific curatorial expertise. The materials from the ancient civilisations of the Old World fall into this category. Part of the collection has been on loan to the Nicholson Museum, University of Sydney, for many years. During 1982-83 the department reviewed this loan and renegotiated a new loan with the School of History, Philosophy and Politics at Macquarie University NSW, which now holds the bulk of the collection. Such loans make the collections available for display and teaching purposes, as well as assisting in relieving storage problems. As part of the transfer of items to Macquarie University, Ms Denise Scott, Museums Study Course, University of Sydney, prepared a research paper on material from the Beni Hasan site in Egypt excavated by J. Garstang in 1902-04.

EXHIBITIONS Preparations for the new Aboriginal Gallery continued, with Drs R. Lampert and D. Losche completing their texts for the various sections of the exhibition. The department employed Ms Sally Robins for six months to supervise the assembly and photography of artefacts for the exhibition and to start procedures to monitor artefact movements.

Mr Cedric Roberts from Lismore, an elder of the Bandjalang people, and Mr Ted Thomas, representing the Wallaga Lake community, visited the Museum. They advised on content and display techniques for sections of the new Aboriginal Gallery dealing with life on the northern and southern coasts of New South Wales respectively.

The department's main involvement in temporary exhibitions was as part of the Women in Art Festival and showed Women and Art in Aboriginal Australia, Papua New Guinea and Indonesia. Nine Warlpiri women from Yuendumu, NT, visited the Museum and demonstrated aspects of their culture as part of the Festival and exhibition.

RETURN OF ARTEFACTS In 1982-83 the Trust completed an agreement with the Auckland Institute and Museum, NZ, for the exchange of a Maori carved wooden bowl in return for an Aboriginal carved tree. The carved tree originally stood at an Aboriginal burial ground near Dubbo, NSW, but was cut down and deposited in the Museum in 1891 and was sent to Auckland in 1935. The Maori bowl is a 1907 replica of an important old bowl from New Zealand. The return of the carved tree is the first return of an Aboriginal artefact from an overseas museum to the Australian Museum.

ACQUISITIONS Major acquisitions for the year were the Aboriginal collections. The department purchased a collection of 71 artefacts, to augment material purchased earlier in the year, from the representatives of the Yuendumu Women's Museum. Their visit to Sydney was invaluable as it allowed a more detailed documentation of objects, in both Warlpiri and English, than would otherwise have been possible.

The department also bought two canoes from Maningrida, NT, and commissioned a range of artefacts from Ramingining, NT, through Mr John Mundine. These are documented in detail, and Mr Mundine has made video-tapes of the manufacture and use of some items.

The department was fortunate in obtaining the assistance of Ms Jenny Lindsay, Indonesian Studies Department, University of Sydney, who on its behalf commissioned 42

dance masks from Java. In addition to this fine research collection, an artist, Warnowaskito of Jogjakarta, Indonesia, also made some duplicate masks which the Museum will make available for activities of Indonesian Studies and theatre students. The department also acquired some important additions to the Indonesian regional textiles collection, including two complete, documented Balinese dance costumes and a collection of rare items from the eastern islands of Indonesia.

Acquisitions from the Pacific area were few. When the large Mel Ward collection of Pacific artefacts was incorporated it highlighted the critical space problems in the Pacific store. The Trust approved the re-allocation of acquisition funds to document parts of the Gulf of Papua collection. Under the supervision of Ms Bolton, the department engaged Ms S. Thomsett for six months to catalogue and arrange photography of this collection.

PROFESSIONAL SOCIETIES/ACTIVITIES Ms Bolton continued to serve as circulation secretary for the Bulletin of the Conference of Museum Anthropologists and was elected Associate Editor of the Pacific Arts Association Newsletter.

Dr Lampert was re-elected President of the Australian Archaeological Association and continued to represent the Museum on the Council of the National Trust of Australia of New South Wales and on the Aboriginal Sites Advisory Committee of the National Parks and Wildlife Service of New South Wales.

Mr O'Donnell completed his term as Treasurer for the Anthropological Society of New South Wales and Dr Specht served as Vice-President for the same society. Dr Specht continued as a member of the Australian National Commission for UNESCO and of the Advisory Committee to the Fund for the Preservation and Development of South Pacific Cultures (Department of Foreign Affairs, Canberra) and was elected to the New South Wales Branch Committee of the Museums Association of Australia.

FIELD RESEARCH Ms Kate Kahn, and Ms Anne Kumm from the James Cook University, Qld, undertook fieldwork in the rainforest region of northern Queensland to make contact with elder rainforest Aborigines. The initial aim was

to seek assistance and involvement of the people in the development of the rainforest section of the new Aboriginal gallery. Ms Kahn and Ms Kumm purchased a small collection of artefacts for the Gallery and obtained photographs and tape recordings, both in Djirbal and English.

Dr Lampert made two field trips to the Flinders Range, SA, continuing his study of the early human settlement of Australia. In the first season he was accompanied by Professor R.V.S. Wright, University of Sydney, and Dr Phillip J. Hughes, Australian National University. At Hawker Lagoon they identified three superimposed strata containing distinctive stone industries. They also found evidence of high water in the adjoining lagoon associated with human activity on the shore, probably in the late Pleistocene or early Holocene period. The second season yielded a larger sample of cultural materials including samples for carbon dating. With Mr J. Alkin, Dr Lampert continued the analysis of excavated material from the Hawker Lagoon site. Dr Lampert also completed his comparative study of waisted stone tools in South Australia, Queensland and the Papua New Guinea highlands.

Dr Specht, with David Bell, Macquarie University, and David Hain, Computer and Data Services of Australia, Melbourne, Vic, completed a study of composite fish hooks and trolling in the Solomon Islands.

CONFERENCES ATTENDED Ms Bolton and Mr O'Donnell participated in the International Council of Museums (Australia) conference in Sydney, on Documentation in Museums, at which Dr Specht presented a paper titled 'Where does documentation begin?'

Dr Lampert spoke on his recent research in the Flinders Range at the annual conference of the Australian Archaeological Association in Hobart. Dr Losche presented a paper 'Utopian Visions and the Division of Labour in Abelam Society' at the Australian Anthropological Society in Canberra.

Ms Khan represented the Museum at the Australian Academy of Humanities symposium on 'Who owns the Past?' in Canberra which dealt with many important issues



The Museum Trust completed an agreement with the Auckland Institute and Museum in 1982-83 for the exchange of a Maori carved wooden bowl in return for an Aboriginal carved tree. The bowl is a 1907 replica of an important bowl from New Zealand. Photo: J. Fields.

relating to the cultural heritage of Australia Aboriginal people. Dr Specht and Mr O'Donnell also attended.

Both Dr Specht and Ms Bolton attended the 15th Pacific Science Congress in Dunedin, NZ. Ms Bolton presented two papers on inventories of anthropological collections with special reference to those undertaken in Australia. Dr Specht, with Mr D. Bell and Mr D. Hain, presented a paper 'Beyond the reef: trolling in the Solomon Islands'.

Ms Wakelin-King gave a paper on 'Indonesian Cultural Motifs' at a colloquium on 'The Popular Arts of Asia' held at the Art Gallery of New South Wales. Mr O'Donnell addressed Sydney University students on employment in museums and Ms Bolton spoke about the Abelam people at the opening of the 'Abelam Museum-on-the-Road Exhibition' in Paddington. Dr Specht gave lectures to external students of the University of New England, NSW on Papua New Guinea prehistory and to students of the Museum Studies Course, University of Sydney. He also contributed to a radio program on the repatriation of cultural property and protecting the cultural heritage. Mr O'Donnell appeared on two television programs about museums and the department's collections. For the Australian Museum Society, Dr Lampert introduced the film 'Mourning for Mangatopi' and Dr Specht led three tours of the Pacific Islands collections.

Dr Specht represented the Australian National Commission for UNESCO at the Regional Advisory Committee meeting of the UNESCO Project for the Study of Oceanic Cultures held on Rarotonga, Cook Islands in August 1982. With Mr R. Langdon, Australian National University, he participated in a review of Australian cultural aid in the Pacific for the Department of Foreign Affairs, Canberra, ACT.

DONATIONS The department gratefully acknowledges the receipt of donations from the following people: E. F. Bickel; M. Blanc; N. Carter; W. Godfrey; N. Kent; K. Kahn; A. McLaughlin; E. Rogers; C. A. Sadlier; R. Williams; and R. Wilson.

OVERSEAS VISITORS Professor B. Trigger, Canada; Madame Y. Yang and Ms S. Wang, Peoples' Republic of China; Mr D. Melvin, Cook Islands; Mr D. Fanshaw, Fiji; Dr K. Kupka, France; Dr M. de Foster, and Ms V. Gaikhorst, Holland; Dalang P. Darmoko and Mr B. Gunardjo, Indonesia; Professor and Mrs A. Hishimuyra, Japan; Dr O. Nordland, Norway; Mr M. Kundun, PNG; M. T. Mawe, PNG; Ms P. Swadling, PNG; Mr S. Eoe and Mr B. Craig, PNG; Dr A. Evangelista, Philippines; Mr M. Clark, Solomon Islands; Ms S. Samou, Solomon Islands; Mr F. B. Hilly, MP and Mr J. Tutua, Solomon Islands; Professor L. Y. Yuen and Dr H. S. Chang, Taiwan; Mr. P. Gathercole, UK; Mr G. Lewis, UK; Mrs M. Chitty and Mrs M. Gardiner-Bernal, UK; Dr R. Cooler, USA; Dr. G. Corbin, USA; Dr K. Barlow, USA; Dr H. Geertz, USA; Dr D. Lipsett, USA; Dr A. Kaeppler and Mr T. Moreel, USA; and Mr J. Keitadi, Vanuatu.

ARACHNOLOGY

The department aims to contribute to the knowledge of Australian spiders as well as expand and maintain collections of spiders, scorpions, ticks, millipedes, centipedes and related minor groups. It also aims to provide information about these animals to scientific and educational groups as well as the public.

RESEARCH Mr Mike Gray used chemical techniques in a study at Macquarie University, NSW of the evolutionary relationships of funnel web spiders (Atrax: Hexathelidae). He has also extended work on the Australian Filistatidae (small, rather rare spiders which live mainly under bark) to include Asian and oceanic species.

A revision of the classification of Mouse Spiders of the genus *Missulena* (Actinopodidae), with Mr R. Faulder continued. The department also began investigations of spider collections from the Bondi State Forest project in association with the Department of Vertebrate Ecology.

FIELD WORK The department has almost completed a collection of live specimens for studies of funnel web spiders. Samples of species came from northern New South Wales, southern Queensland and Victoria. This work was supported by an Australian Biological Resources Study grant. A trip to the Mount Kaputar region, NSW, provided material for this work as well as for the Insect Gallery.

COLLECTIONS Shelving rearrangement and rebottling is under way to increase the department's storage space.

The Araneomorph spider type catalogue has been revised.

Dr M. Harvey of Monash University, Vic undertook work on the pseudoscorpion collections and Dr L. Koch of the Western Australian Museum has been studying the centipede collections.

SERVICES AND EDUCATION Mr M. R. Gray gave lectures to visitors from the Australian Institute of Medical Technicians' Biological Sciences, Macquarie University, Sutherland and District Hospital, Concord Hospital, Prince Alfred Hospital and the New South Wales College of Nursing.

Staff assisted with teaching and work experience programs, worked on the Invertebrate Gallery and completed text for the arachnid/myriapod (spiders, centipedes, etc) cases. Collection for the gallery continued.

The department dealt with numerous public enquiries and requests from institutions for information, identification and loan material during the year.

OBITUARY Mrs Vera Levitt-Gregg, a Research Associate of the Museum, died recently. Mrs Levitt-Gregg had a long association with the Entomology and Arachnology Departments, spanning some 30 years. With her husband, Max, she was a driving force behind the Parramatta and Hills District Natural History Society and was a member of the Royal Zoological Society of New South Wales. She was interested in all aspects of natural history and conservation, but was particularly interested in spiders, especially funnel webs.



Funnel Web spiders are one of the most important research areas for the Department of Arachnology. Samples of species for study came from field work in northern New South Wales, southern Queensland and Victoria.
Photo: J. Fields.

DIRECTOR'S RESEARCH LABORATORY

The laboratory is responsible for conducting research of special interest to the Director. Dr Griffin and Mrs Helen Tranter continued studies on spider crabs (family Majidae), particularly those from the deep sea. Collections taken from below 200 metres in the Indian and Pacific Oceans during the Danish Deep-Sea Expedition (1950-52) are currently being studied. Other studies cover recent collections by the CSIRO research vessel, *Soela*, on the Northwest shelf and specimens collected by the New Zealand Oceanographic Institute research vessel, *Tangaroa*, off the New South Wales coast after it visited Sydney in October 1982.

ENTOMOLOGY

The department achieved a broad spectrum of activities which included increasing the collections, research and a variety of formal and informal educational activities.

COLLECTIONS About 21,000 specimens were added to the collections. Much of the collecting effort was aimed at acquiring material for the Insect Gallery. Unfortunately, the continuing drought reduced populations of many groups which are usually abundant. An extensive exchange of beetle material with the Transvaal Museum, South Africa, enriched the collections.

FIELD WORK Dr David McAlpine and Mr Kay Khoo made collections and field observations on the north coast of New South Wales and the Brisbane, Qld district. The cryptic leaf butterfly, *Dolechallia bisaltide*, was found at Iluka Nature Reserve, its apparent southern limit. Many rare flies were obtained as well. Collections at the Department of Entomology, University of Queensland, and Department of Primary Industry, Indooroopilly, Qld, were examined during the trip.

Mr Khoo and Mr Barry Day made very successful excursions to Minnamurra Falls and Collaroy to obtain material of *Cyamops*, a little-known genus of small flies, while Dr Courtenay Smithers concentrated on the New England area and the eastern side of Barrington Tops, combining research and collecting Psocoptera and Neuroptera for the Insect Gallery.

MAJOR RESEARCH ACTIVITIES The taxonomic survey of the large group of flies known as the Acalyptrate Diptera has been a major part of Dr McAlpine's research, in which he has been assisted by Mr Khoo. In the Australasian region these flies comprise more than 2,000 species placed in 44 families. Some important groups are the leaf-mining flies, fruit flies, Eucalyptus gall flies, picture-winged flies and drosophilids.

Certain families are of special interest for the problems they present in geographic origins and dispersal, eg the Platystomatidae and Heleomyzidae, two families of flies well represented in Australian forests. Certain genera of Platystomatidae and Tephritidae (true fruit flies) show extraordinary diversity in secondary sexual adornments, some of which have been demonstrated to function in aggressive and sexual behaviour. Study of these structures in living and preserved material has led to new or modified theories regarding their evolutionary significance.

Significant new samples of Heleomyzidae and Platystomatidae have been received for study, enabling identification keys to species of several genera to be drawn up. Good progress has been made in the systematic work in these families.

Dr McAlpine and Mr Khoo made field observations on upside-down flies, *Neurochaeta inversa*, and established



Spider Crab, *Cyrtomaia Horrida*. This female was found in the waters off northern Queensland.
Photo: J. Fields.

that pollen of the host plant elephant's ears, *Alocasia macrorrhiza*, is a significant food source for adult flies.

Mr Khoo completed descriptions of the Australian species of *Cyamops* (family Periscelididae) and commenced study of New Guinea species, all of which are undescribed.

Dr Smithers completed work started while holding the Barrow Island Research Grant from the Western Australian Petroleum Company. Several papers on this material have been accepted for publication.

The Melanesian Arc Zoogeographic Study has progressed well, with preliminary analysis suggesting that the Melanesian Arc Islands have been colonized in different ways by different groups of Psocoptera. Several families await classification and this extensive work will be completed within the next two years allowing fuller analysis of the zoogeography of these insects in the Australasian area.

Several smaller projects have also been undertaken, such as the study of material collected in Queensland by the 'Earthwatch' expedition and Psocoptera associated with galls on grasses from Southwest Africa. Studies of small collections such as these all contribute to an understanding of the relationships within the group, which is necessary for proper completion of work on Australasian forms.

SERVICES Dr McAlpine provided specialist identifications of Diptera for CSIRO, the New South Wales Department of Agriculture, Forest Research Station at Bulolo, PNG, and Department of Primary Industry at Konedobu, PNG. Some of this work meant undertaking minor research projects in order to provide the necessary information.

He has also assisted the National Parks and Wildlife Service in providing information on potential reserve sites.

Dr Smithers was asked to comment on a plan of management for Norfolk Island, to provide advice on natural history matters on Christmas Island and to advise on establishing a bird sanctuary at Singleton, NSW. He was also involved in a two-day workshop for amateur entomologists held at the University of Sydney, by the Entomological Society of New South Wales and in the preparation of a series of tapes, broadcast by Macquarie University Radio, entitled 'Systematics and the species concept'.

Material of various insect groups was identified for quarantine officers, a Tasmanian dune survey, the Royal Botanic Gardens and the Amsterdam Museum.

A group of Colombo Plan students visited the Museum to discuss with Dr Smithers the role and implementation of research in museums in developing countries. Students enrolled in Newcastle College of Advance Education, NSW, post-graduate course in natural history illustration visited the department and used insect material for their work.

Finally, texts associated with a forthcoming postage stamp issue were discussed with Australia Post.

OVERSEAS VISITORS Visitors to the department and their areas of study included: Dr B. Endrody-Younga, Pretoria, South Africa (Coleoptera); Dr J. Majer, Pecs, Hungary (Diptera); Dr E. Munroe, Dunrobin, Ontario, Canada (Lepidoptera); Mr M. J. Parsons, Bulolo, PNG (Lepidoptera); Dr C. Dahl, Uppsala (Diptera); Miss J. Powzyc, Cambridge, Massachusetts, USA (general illustrating); Dr H. Duffels and Mrs Duffels, Amsterdam Museum (cicadas).

PROFESSIONAL SOCIETIES Dr McAlpine continued to serve on the Council of the Australasian Native Orchid Society and is involved in measures to protect the habitat of certain endangered species.

He also delivered lectures to the Entomological Society

of New South Wales and the Parramatta and Hills Fauna and Flora Society, NSW.

Dr Smithers gave several lectures to natural history societies and addressed The Australian Museum Society meeting on his migration research. He was re-elected President of the entomological Society of New South Wales and President of the Linnaean Society of New South Wales.

Dr Smithers was also elected an Honorary Life Member of the Australian Entomological Society for distinguished service to entomological science. There have been only four previous recipients of this honour.

ACKNOWLEDGEMENTS The department has received material from many collectors. Max and Barbara Moulds have again been very active in providing materials for research and Dr S. Endrody-Younga was responsible for arranging an exchange of material with the Transvaal Museum, South Africa.

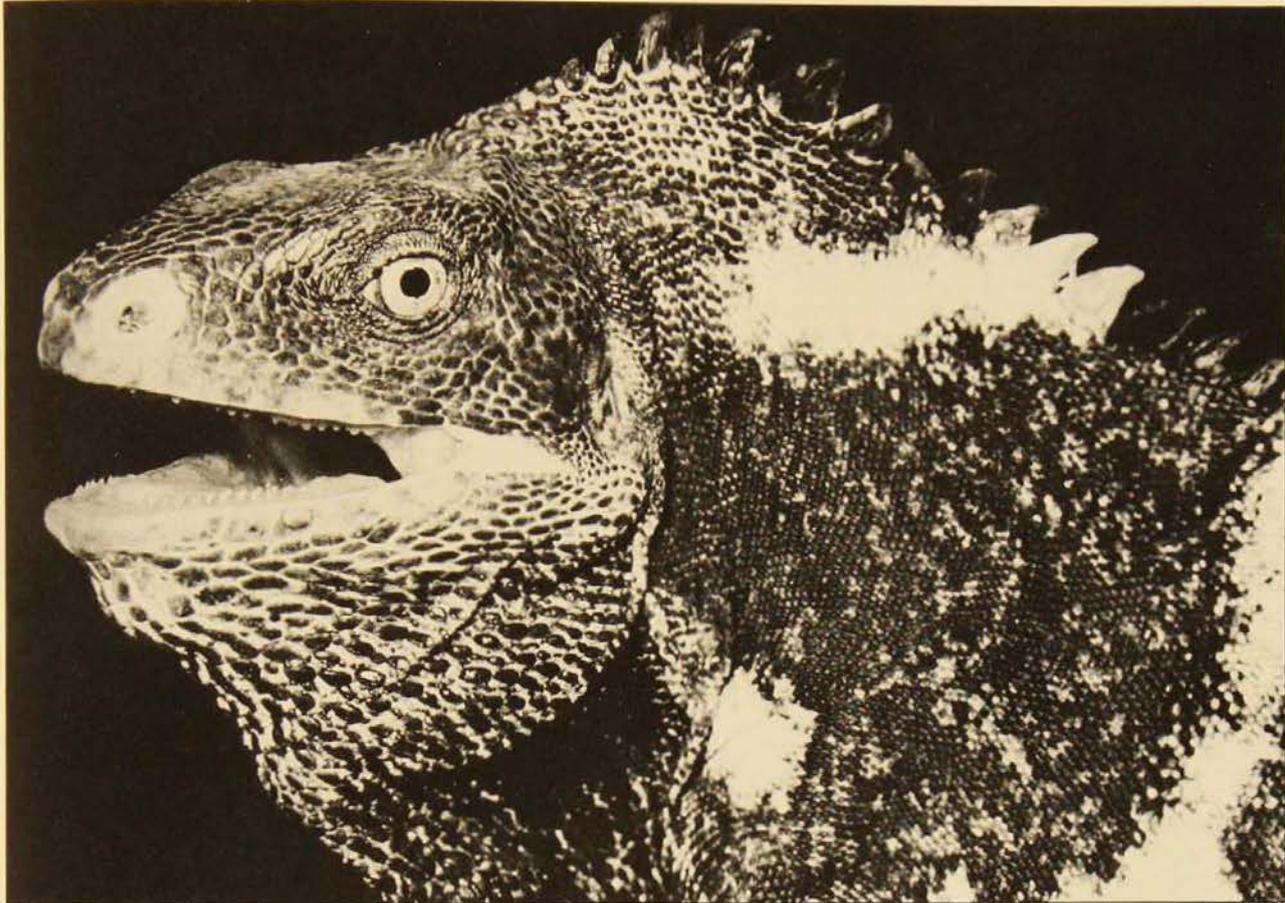
FUNCTIONAL ANATOMY UNIT

With the retirement of Mr Ronald Strahan in November, 1982, this unit ceased. In the last five months of his service as Research Fellow, Mr Strahan was engaged in an analysis of the skulls of rat-kangaroos and pygmy-possums.

Mr Strahan was also concerned with checking the proofs of the *Complete Book of Australian Mammals*, a task which he continued through his three months of retirement, before being re-appointed as Executive Officer (part-time) of the National Photographic Index in February 1983.



Designed by Glenn Ferguson of exhibitions, one of the motifs for use in the new insect gallery.



The rare Crested Iguana (*Brachylophus vitiensis*) was the subject of a survey carried out by Dr Hal Cogger on tiny Yaduatoba Island in Fiji for the National Trust of Fiji.
Photo: Dr H. Cogger.

HERPETOLOGY

This year the department completed one of its major long-term projects: a checklist of the reptiles and amphibians of Australia.

A draft checklist, initially prepared by Dr Hal Cogger, was greatly modified and enlarged to fit the format of the Zoological Catalogue of Australia. This will appear as Volume I of the Catalogue by Dr Cogger, Ms Elizabeth Cameron and Ms Heather Cogger, to be published by the Bureau of Flora and Fauna, Canberra, ACT, in 1983.

Dr Cogger's other research was mainly concerned with the classification of sea snakes and with a survey of the Weipa district, Qld, to assess the impact of the cane toad, *Bufo marinus*, on native reptiles and frogs.

Dr Allen Greer spent the year on leave of absence in Europe and North America. He visited major research collections to advance his studies of the classification of lizards and evolution within the family Scincidae.

In the absence of Dr Greer, the department invited Dr Gregory Mengden to act as Visiting Curator. Dr Mengden is researching the genetic material and protein chemistry of venomous elapid snakes. These snakes have immovable fangs at the front of the upper jaws. All dangerous Australian land snakes (the cobras and their allies; mambas, kraits, coral snakes and sea snakes) are included in this group.

Mr Ross Sadlier continued his studies of skink lizards of New Caledonia, the Cunningham Skink, *Egernia cunninghami*, complex in eastern Australia and the reptiles of western Arnhem Land.

PETER RANKIN TRUST FUND This fund, set up by the Australian Museum Trust in 1979 to assist students in herpetology, made its second round of awards in 1982, dispersing \$906 in two grants. One grant was awarded to Mr Glen Burns, University of New England, NSW, for work

on the reproductive biology and population ecology of sea snakes. The second grant was awarded to Messrs Steven Delean and Chris Harvoy, Seaview Downs, SA, for work on the biology of the gecko, *Nephurus*, in South Australia.

Applications for the third round of awards were invited in May 1983.

EDUCATIONAL SERVICES A number of undergraduate and postgraduate students were assisted by the department in their research during the year. Among them were: Messrs Craig James, honours student, University of Sydney, NSW, working on the ecology of tropical skinks; Fred Patchell, honours student, University of Sydney, working on legless lizards; Steve Donnellan, doctoral student, Macquarie University, NSW, working on the cell classification of skinks; Michael Mahony, doctoral student, Macquarie University, working on Australian frogs; David Milton, honours student, Griffith University, Qld, working on the ecology and structure of lizards of the White Skink, *Egernia whitii*, complex; Glen Shea, undergraduate student, University of Sydney, working on classification of the blue tongue lizards genus *Tiliqua*; and Eric Gibson, honours student, University of New England, working on classification and ecology of elapid snakes of the *Pseudechis guttatus* complex.

Participation in the Museum's group teaching program for primary school students and the State secondary schools Work Experience Scheme continued.

The department lent spirit specimens of dangerous snakes to the State Emergency Services and TCN Channel 9 for lecture purposes.

CONSULTATION A total of 543 individual specimens were identified for the Bureau of Customs, 70% of which were listed under the world endangered species act. The most significant proportion (40%) were sea turtles (family Cheloniidae) which are brought in by tourists as whole mounts or shells; 6.4% were crocodiles (family

Crocodylidae), 9% were pythons (family Boidae) and 12.5% goanna lizards (family Varanidae) all of these were imported mainly for the fashion trade.

Mr Fred Hersey, New South Wales National Parks and Wildlife Service, sought advice on new posters being produced by the Service. Australia Post also sought advice on the series of reptile and frog stamps issued during the year.

COLLECTIONS The department's main aim this year was to consolidate and organise the herpetological collection following its move to new laboratories in 1981.

Lack of adequate storage space remains a major problem. It was necessary this year to transfer large sections of the spirit collection from tank to drum storage.

Most problems caused by major building work last year have been overcome.

Approximately 3,000 specimens were added to the collection, major additions coming from the following individuals and institutions: Ms Marion Anstis; Mr G. Webb, Research Officer for the New South Wales Forestry Commission; and Mr S. Donnellan, doctoral student at Macquarie University.

One of the department's major programs over the past three years has been the upgrading of its computer database. In the near future the department will be able to offer printouts of Museum records for other institutions or workers. Such a facility has already been used by the Bureau of Flora and Fauna, Canberra, in a project which involves mapping the wide range of environmental parameters of elapid snakes. Dr Cogger attended a workshop at the Bureau's Canberra headquarters on 18 April 1983 to review this program.

Dr Cogger also attended a workshop organised by the Bureau of Flora and Fauna in Adelaide, SA, on 5-6 October 1982, which examined the problems of establishing frozen tissue banks in museums and other organisations in Australia.

An active exchange program was carried out with overseas institutions.

LOCAL VISITORS During the year the department was host to the following visitors: Dr Richard Shine, University of Sydney, examined the spirit collection for elapid snake ecology; Mr Col Limpus, Queensland National Parks and Wildlife Service, examined the sea turtle collection; Dr Peter Rawlinson, La Trobe University, Vic, examined elapid snake types in the spirit collection; Professor J. F. A. Spreti, Department of Parasitology, Queensland University, examined the *Rana daemeli* spirit collection for parasitic worms; Mr John Wombey, CSIRO Wildlife Research Division, examined spirit collections and conducted discussions on reptiles of the Kakadu National Park; Dr Ken Johnson, Conservation Commission of the Northern Territory, consulted Museum records of Newcastle Waters, NT; Dr D. Walton, Bureau of Flora and Fauna, Canberra, consultant on Zoological Catalogue of Australia Vol 1; and Professor H. Heatwole, University of New England, consultant on several publications on leticandid sea snakes and discuss progress of joint research. Ms Gerri Milroy undertook a project on Gould's monitor, *Varanus gouldii*, within the departmental laboratory for which she was awarded first place in New South Wales for the BHP Secondary School Science Awards.

OVERSEAS VISITORS Professor H. C. Dessauer, Louisiana State University, USA, immunological studies on elapid snakes; Professor J. Legler of Utah University, USA, classification and ecology of Australian turtles; Professor N. Tamiya of Tohoku University, Japan; Dr Andre Menez of the Centre of Nuclear Studies, SacLay, France and Mr M. Guinea, ex University of the South Pacific, Fiji, relationships and venom of hydrophiid snakes (sea snakes).

VOLUNTEERS AND TEMPORARY ASSISTANCE Ms Jenny Webber and Mr Glen Shea continued to assist in curatorial and general departmental duties. Ms Webber and

Ms Debbie Bushell were employed temporarily to assist in re-organising the amphibian collection.

LOANS A total of 29 loans, representing some 1,827 individual specimens, were sent to other institutions. Twenty-two loans, containing 1,498 specimens, were sent to other Australian museums and universities, while the remaining seven loans, of 329 specimens, went to overseas institutions. Thirty loans, involving 701 individual specimens, were requested by departmental staff or on behalf of students from other institutions.

ICHTHYOLOGY

The continuing computerisation of all collection information was one of the major activities this year. The department maintains a large fish collection and researches the relationships, distribution patterns and biology of marine estuarine and freshwater fishes. It also provides information to scientific groups and the public.

RESEARCH ACTIVITIES Research over the year concentrated on the relationships of gobies by Dr Doug Hoese and Ms Denise Rennis. Other areas included the ecology of Sydney harbour fishes and evolutionary relationships of deep-water fishes by Dr John Paxton, Ms Dianne Bray and Mr Mark McGrouther, as well as the relationships of the dories by Ms Bray. Dr Jeff Leis, with the assistance of Ms Sally Reader, continued his studies on the scientific classification and distribution of larval fishes of the northern Great Barrier Reef and participated in a co-operative project with CSIRO on the Northwest Shelf, WA. Ms Jenny Gates, Dr Hoese and Dr Paxton continued compiling the checklist of Australian fishes.

COLLECTIONS Collection records of 38,000 lots from the years 1925-1981 have now been placed into the computer. Over 3,000 lots of fishes were added to the collection over the year. A total of 79 loans were sent out, consisting of 670 lots and some 1,600 specimens. There were 25 exchanges of fish material which included 165 lots and approximately 1,100 specimens.

Storage of part of the fish research collection at the Rushcutters Bay annexe is still a serious problem. Re-organisation of the large specimens held in drums and tanks should be completed shortly and additional shelving has been added in the spirit house.

FIELD WORK Dr Hoese and Ms Rennis spent six weeks from September to November collecting freshwater and estuarine fishes between Townsville and Weipa, Queensland, particularly in mangrove habitats. Dr Leis spent two weeks in October and four weeks in February at Lizard Island Research Station collecting newly hatched fishes, and filled in as Acting Director at the Station from December to February during Dr Barry Goldman's absence.

VISITS TO OVERSEAS MUSEUMS Dr Leis spent a month visiting museums in Europe where he concentrated on spiny puffer fishes. Ms Rennis spent a week looking at gobies collections in museums in the United States. Dr Paxton worked in fish collections in Hong Kong and The Peoples' Republic of China in September.

CONFERENCES Three members of the staff attended the ninth annual conference of the Australian Society for Fish Biology in Hobart, Tas, in July, where Dr Leis presented a paper on the porcupine fishes of Australia. In September, Dr Paxton attended the second Chinese Ichthyological Conference near Nanjing where he presented two papers and was elected an honorary foreign member of the

Chinese Ichthyological Society. Dr Leis attended the second International Symposium on Marine Biogeography and Evolution in the Pacific in Sydney and presented a paper on larval fish dispersal and the East Pacific barrier.

VISITORS The department received many Australian and overseas scientists during the year: Dr J. H. Choat, University of Auckland, NZ, used the Museum collection to continue his studies on parrot fishes; Dr T. Wongratana, Chulalongkorn University, Bangkok, Thailand, reviewed and updated the department's collection of sardines and anchovies; Dr L. V. J. Compagno, Tiburon Center for Environmental Studies, California, USA; Dr E. J. Denton, Marine Biological Association, Plymouth, UK; Dr H. L. Fierstine, California State University at San Luis Obispo,

California, USA; Dr A. E. Lewis, Ministry of Agriculture and Fisheries, Suva, Fiji; Dr J. E. Randall, Bishop Museum, Hawaii, USA; and Dr P. J. Whitehead, British Museum, London, UK. Curators from museum fish departments in Adelaide, Darwin, Melbourne and Perth worked in the department.

VOLUNTEERS The department appreciates the help given by volunteers throughout the year. Those volunteers not associated with The Australian Museum Society include: S. Cater, A. Gill, P. Hall and K. Nielsen.

ACKNOWLEDGEMENTS FOR DONATIONS OF FISH MATERIAL: CSIRO Fisheries and Oceanography; Macquarie University; New South Wales State Fisheries; and Royal Ontario Museum, Canada.



Dr John Paxton examining deep sea fishes at the South China Sea Institute of Fisheries in Guangzhou, China, in August 1982.



MALACOLOGY

The Department of Malacology is responsible for the development of the Museum's mollusc collections (snails, slugs, bivalves, squids, amongst others).

An important addition to the research collections was a series of fine Tertiary Molluscs from New Zealand's North Island, purchased by the Australian Museum Trust. However, space and manpower constraints continued to severely limit the development of the collections.

RESEARCH Dr Winston Ponder completed reviews of the generics of the two families of small marine snails belonging to the superfamily *Rissoacea*. His research concentrated particularly on anatomical characters. Two new families were also described and a manuscript prepared on a group of peculiar gastropods, *Botelloides*, which closely resemble some rissoaceans but belong to a different sub-order (Trochacea).

Dr Ponder was also engaged in field studies of a family of freshwater snails (Hydrobiidae). Research of these snails found in mound springs in northern South Australia provided information for comment on the Olympic Dam environmental impact statement. Dr Ponder's research is supported by a grant from the Australian Research Grants Scheme which provides a salary for an assistant, Ms Jane Hall.

Dr Bill Rudman continued his major revision of the Chromodorididae, a large group of brightly coloured nudibranch seaslugs. More than 350 species of Chromodorididae have been found in the tropical Indo-West Pacific faunal region. A Marine Sciences and Technologies research grant allowed the department a research assistant, Mr Geoff Avern, to help with this project.

An Australian Biological Resources Study (ABRS) research grant was awarded to Dr Rudman. Ms Louise Mennes was employed to prepare thin sections to study cellular details as part of a study of the relationships within a major group of nudibranch slugs, the Aeolidae.

LOANS AND EXCHANGES Outside workers continued to make heavy use of the collections, which is evidence of their great scientific value. The department sent out 44 loans comprising 2,454 specimens.

KEITH SUTHERLAND AWARD The 1982 recipient of the award was Mr B. Jenkins of Sydney for his project on the classification of the *Siphonariidae*, a group of intertidal air-breathing limpets. This award was introduced in 1981 to assist outstanding graduate students and others to undertake research in malacology.

Dr Winston Ponder and assistant researched freshwater snails (*Hydrobiidae*) in mound springs in northern South Australia which provided information for the Olympic Dam environmental impact statement.

FIELDWORK An ABRS-funded project, conducted jointly by the Queensland Museum and Dr Ponder, involved the collection of terrestrial and freshwater molluscs in northern New South Wales and southern Queensland rainforests.

Another co-operative venture was made possible when New Zealand Oceanographic Institute research vessel, *Tangaroa*, visited Australia in October. The visit enabled Dr Ponder and Mr R. Springthorpe, Department of Marine Invertebrates — Crustacea and Coelenterates, to participate in some deep-sea, bottom sampling on the continental slope of New South Wales and the Tasman Basin.

Fieldwork for Dr Rudman's research project was carried out at Heron Island and in the Eden-Malacoota area of southeastern New South Wales. Mr Ian Loch collected seaslugs (opisthobranchs) and other material in north Queensland.

Dr Ponder and Ms Hall surveyed freshwater habitats in southeastern New South Wales and carried out some marine sampling.

Dr Ponder and Mr Phil Colman participated in a major expedition to central Australia in May-June. The expedition was organised by Dr A. Solem from the Field Museum of Natural History, Chicago, USA, with the Australian Museum and the South Australian Museum.

While on leave, Mr Loch made extensive collections in Malaysia and the Philippines and Dr Ponder made collections in New Zealand and Hong Kong.

CONFERENCES Dr Ponder and Dr Rudman attended an ABRS meeting held in Canberra during November to discuss priorities in mollusc research.

Several members of the department participated in the Australian Museum Society's 'Shells of Botany Bay' field excursion in November.

Dr Ponder took leave to attend the second International Workshop on the Malacofauna of Hong Kong and Southern China, in Hong Kong during April. His participation was sponsored by the Commonwealth Foundation.

OBITUARY The death of Mr Jacques Voorwinde was a major loss to the department. Mr Voorwinde was an active Associate and volunteer for many years. He specialised in sorting samples containing small molluscs. His large collection, housed in the Museum, and the many thousands of lots sorted by Mr Voorwinde have added

considerably towards what is believed to be one of the largest and most important collections of small molluscs in the world.

ACKNOWLEDGEMENTS The department would like to thank the following bodies for assistance during the year: Electron Microscope Unit, University of Sydney; School of Biological Sciences, Macquarie University, NSW; New South Wales State Fisheries Department; New Zealand Oceanographic Institute; Western Australian Museum; South Australian Museum; National Museum of Victoria; Queensland Museum; British Museum (Natural History), UK; Smithsonian Institution's National Museum of Natural History, USA; Los Angeles County Museum, USA; National Museum of New Zealand; National Museum of Wales; Australian Marine Photographic Index; and Taronga Park Zoo, NSW.

VISITORS Visitors working extensively on our research collections included: Dr C. Hickman, University of California, Berkeley, USA, who was in the department for several months working on Trochidae and Dr T. Shuto from Kyushu University, Japan, working on Turridae for four weeks; Dr R. T. Abbott, Melbourne, Florida, USA; Mrs S. Boyd, Ms J. Phillips, Dr C. C. Lu and Dr B. Smith, National Museum of Victoria; Mrs T. Bratcher, Los Angeles, California, USA; Mr W. Cernohorsky, Auckland Institute and Museum, NZ; Mr J. Healy, University of Queensland; Dr T. Ino, Tokyo, Japan; Dr A. Kohn, University of Seattle, Washington, USA; Mr D. Reid, James Cook University of North Queensland; Dr A. Scheltema and Dr R. Scheltema, Woods Hole Oceanographic Institute, Massachusetts, USA; Mrs S. Slack-Smith and Dr F. Wells, Western Australian Museum; Dr A. Solem, Field Museum of Natural History, Chicago, USA; Mr J. Stanisc, Queensland Museum; Mr A. Visser, Holland and Dr W. Zinsmeister, Ohio State University, USA.

DONATIONS The following made donations to the department: Dr J. van Aartsen, Mr N. Coleman, Dr B. Darvell, Brother Faux, Mr T. Garrard, Mr N. Gomersall, Mr T. C. Good, Mr K. Graham, Mr O. Griffiths, Mr J. Hicks, Mr R. Houart, Ms J. Hunter, Mr R. King, Mrs M. Lloyd, Mr C. Nielsen, Mrs E. Povall, Dr C. Pregoner, Professor J. Le Renard, Mr M. Shea, Dr C. Todd, Mr J. Trondle, Dr A. Waren, Mrs B. Ward, H. Woodward and Mr D. Young.

MAMMALOGY

The aims of the department include informing the public about the biology and natural history of mammals, implementation of research projects, publication of research results, as well as the acquisition and curation of a representative collection of mammals from both Australia and overseas. Answering enquiries from other scientists and the public and assisting in exhibitions are some of the ways these aims are achieved.

FIELD WORK In January the department was told of a large skull and a number of bones lying in rock at the northern end of Forresters Beach near Terrigal, NSW. A preliminary investigation revealed the skull was of a sperm whale and was in very good condition. An attempt was made to obtain it. The department asked the Australian Army for assistance because of the weight of the skull (approximately 200 kg) and its location was inaccessible by vehicle. The Army provided a helicopter and personnel who, with the use of a sling net, lifted the skull and bones 1.5 kilometres to where a museum truck was waiting. The skull is now being prepared for eventual registration in the Scientific Collection.

As a result of publicity given to this helicopter lift, the department was informed of a large sperm whale that died on Lakes Beach near Budgewoi, New South Wales, 12 years ago and was subsequently buried by the local Wyong Council.

In February, an attempt was made to locate the skeleton using hand-held steel probes, but was unsuccessful. A second attempt, using a mechanical back hoe, was also unsuccessful mainly because the landform and the beach had changed since the burial. Requests were then made through a number of local organisations for photographs of the whale at the time of the stranding. Two photographs were obtained and these will be examined to narrow the search area for a third attempt to recover the skeleton.

ADDITIONS TO THE COLLECTION Three rare live Dusky Hopping Mice, *Notomys fuscus*, were obtained from South Australia and put on display in a specially constructed area in the Mammal Gallery. The birth of a single young mouse a few days after arrival added to the public's interest in these



This is one of the three rare Dusky Hopping Mice from South Australia which are on display in a specially constructed area in the Mammal Gallery.

Photo: H. & J. Beste.



native rodents. This was the first time an Australian museum has displayed live mammals as part of a permanent gallery.

Work continued on the final edit of the mammal collection on the computer.

Major additions to the collection included the sperm whale skull, a complete Minke Whale skeleton and a number of small dolphins from the Coffs Harbour, NSW dolphinarium.

The following institutions and organisations also donated specimens: National Parks and Wildlife Service; Forestry Commission; Taronga Park Zoo, NSW; Australian National University, ACT; La Trobe University, Vic and University of New South Wales.

CONSULTATION The department provided information and specimens to a variety of organisations including: CSIRO, Division of Textile Physics; Department of Archaeology, University of Sydney; and the National Parks and Wildlife Service.

Ms Linda Gibson gave talks on marsupials to Oatley Flora and Fauna Society and provided assistance to the Museum Education Section with its volunteer program, work experience students and group program.

Specimens were lent to the Sydney City Council for a major exhibit in Japan and to Telecom for a Royal Easter Show display.

There was a marked increase in the number of requests for the loan of specimens from the commercial entertainment industry. A policy of charging for the hire of these specimens was attempted this year and resulted in \$750 being received.

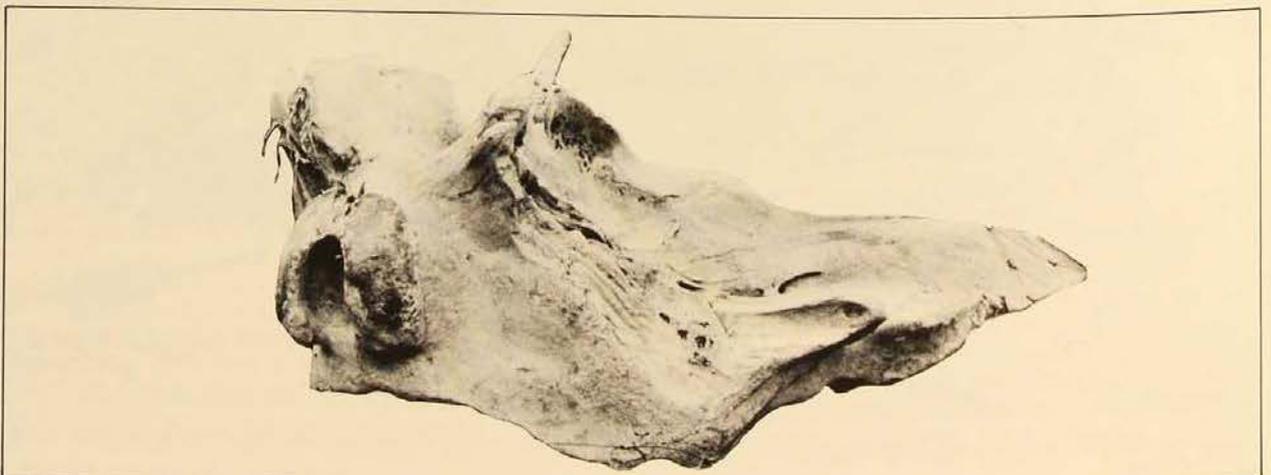
A total of 94 individual items were identified for the Australian Department of Customs.

OVERSEAS VISITORS The department welcomed the following visitors from overseas who carried out investigations alongside a number of Australian visitors on the marsupial and cetacean (whales, dolphins etc) collections: Dr Graham Ross, Port Elizabeth Museum and Oceanarium, Port Elizabeth, South Africa; Dr Tatsuo Sakai, Department of Anatomy, University of Tokyo; Mr Judd Case, University of California, Berkeley, USA; Mr Gerard Van Leasden, Utrecht, The Netherlands; and Mr Tom White, University of California, Los Angeles, USA.

STAFF Mr John Hoey's employment as Technical Assistant ended on 12 November 1982. The position was not reinstated.

Ms Gibson was overseas on leave for three months in 1982.

ACKNOWLEDGEMENTS The department received considerable assistance from a number of individuals and organisations including; the Department of Defence and the Navy in providing access to Commonwealth Lands and assistance with fieldwork; the Australian Army in providing a helicopter and men to assist with the whale skull; and the Wyong Shire Council who assisted with men and machinery in attempts to locate the buried sperm whale skeleton.



MARINE ECOLOGY

The department aims to provide information which will help authorities plan and manage marine and estuarine environments, as well as answering specific questions relating to the effects of people on marine environments.

The department's research areas include the Hawkesbury River estuary and selected Great Barrier Reef islands. Both the estuary and the reef are environmentally sensitive, vulnerable and require major research efforts to provide the ecological knowledge for adequate management. Long-term information is virtually absent and ecological mechanisms governing the distribution of species are poorly understood.

Research has concentrated on the bottom-dwelling (benthic) animals, considered the most reliable indicators of environmental conditions as they are relatively immobile and cannot easily escape disturbances or pollution.

CURRENT RESEARCH Three research projects are under way. The first was initiated in 1976 and seeks to describe and analyse the benthic community of the Hawkesbury estuary. Estuarine communities vary considerably in space (responding to changing salinity gradients and changing sediments) and in time (seasonally, annually and associated with floods and droughts). An adequate description and monitoring must therefore encompass both aspects. Samples are taken every season from all over the estuary. Volunteers have assisted with the time-consuming sorting of samples, and four years' data are now available for some sites.

Dr Alan Jones presented results for the crustacean community at a Crustacean Workshop at University of Sydney, NSW, and a paper was completed for presentation at the Australian Museum Polychaete Conference.

A grant recently awarded by the Coastal Council of New South Wales will enable the backlog of samples to be sorted. An earlier grant from the New South Wales Pollution Control Commission (SPCC) enabled Mr Fabian Byers to analyse five years of sediment samples. The results by Dr Jones were written up and were presented to the SPCC as a technical report. The manuscript will be submitted for publication.

The second project is a description of the sediment of invertebrate communities from the lagoon floor at Lizard Island on the Great Barrier Reef. Two manuscripts have been submitted for publication.

Another project assesses the effects of dredging and effluent disposal on the bottom-dwelling community near Brooklyn, Hawkesbury River, NSW. Both projects are nearing completion. One manuscript will be submitted this year.

VISITORS Professor Charles H. Peterson, University of North Carolina, USA, and Professor Roger H. Green, University of Western Ontario, Canada, visited the department.

MARINE INVERTEBRATES — CRUSTACEA AND COELENTERATES

Studies of the evolution and higher classification of lysianassoid fauna (marine creatures related to beachhoppers) as well as a major re-organisation of the crustacean collections, were the most important activities of the year.

The department is responsible for increasing and maintaining research collections of crustaceans (lobsters, prawns and crabs), coelenterates (jellyfish and anemones), and moss animals (bryozoans). The main subjects of research are the marine forms of slaters and the research collection for this group is increasing rapidly.

The department is also involved in teaching students and assisting other scientists studying marine invertebrates.

RESEARCH Four papers on the naming and relationships of subantarctic lysianassoids were submitted for publication. Unfortunately, research on the extensive subantarctic collections has ceased because of insufficient funding.

Dr Jim Lowry and Ms Helen Stoddart are studying the very large Australian lysianassoid collections accumulated by the Australian Museum and the National Museum of Victoria during the past decade. A revision of a group of lysianassoids is almost complete. This revision is based on Museum collections and material borrowed from other institutions.

Dr Lowry and Ms Stoddart completed their studies of the protandric hermaphrodite (an animal which is firstly male then female), *Acontistoma marionis*. This is the first fully documented discovery of sequential hermaphroditism among the Amphipoda. Results of this study will soon be submitted for publication.

Dr Lowry and Mr Roger Springthorpe have finished 13 months of sampling of the amphipod, *Melita* n.sp. and its host, the brittle starfish, *Ophioneis schayeri*, which live together harmoniously. Mr Anthony Saleme, a volunteer worker, is currently measuring and sexing the hundreds of specimens in this life-history study.

FIELD TRIPS During July Dr Lowry attended a workshop for scientific editors held at Clyde Cameron College, Wodonga, Vic.

In October he took part in a diving expedition at a small group of islands north of the Coburg Peninsula in the Arafura Sea. The expedition, organised by the Northern Territory Museum and Art Gallery, Darwin, visited several islands and took hundreds of marine samples. Financial assistance from the Australian Museum Trust enabled the crustaceans to be sorted and some groups are under study.

In April the department took part in a one-day workshop on Crustacea held at the University of Sydney in honour of Professor Eric Dahl, visiting from Sweden.

COLLECTION MANAGEMENT The crustacean collections underwent a major re-organisation during the year. All crustacean groups except the decapods (animals with five pairs of walking legs) were expanded as part of a long-term plan to rationalise management of the collection. All crustacean type material was removed from the general collection and stored separately and most type-material has been checked against the register. The decapod collection will be re-arranged and expanded in the coming year, but the re-organisation cannot be completed until the hard coral collection has been removed from the collection area.

During the year there were 1,234 new specimens acquired. Twenty-five loans were despatched and 10

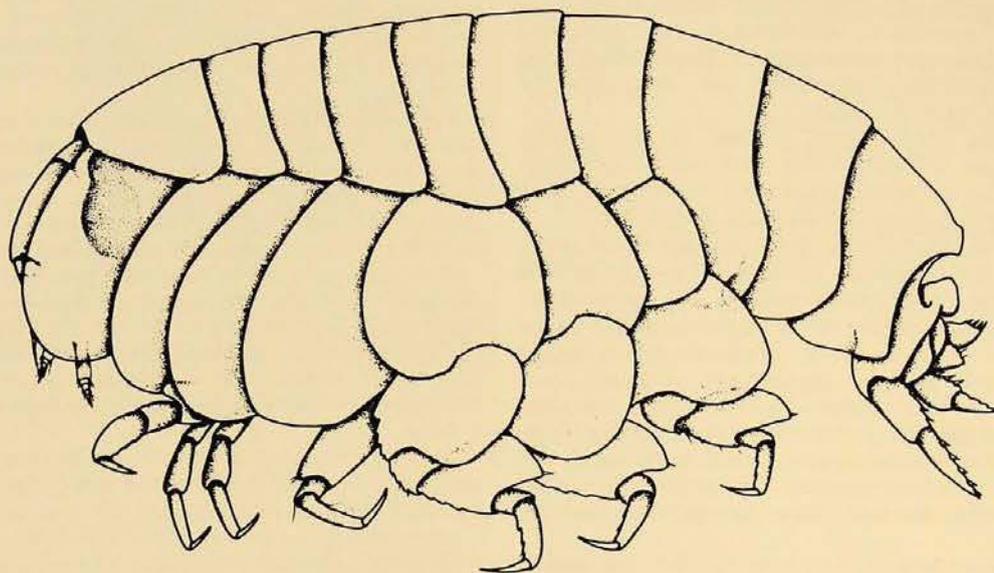
◀ The Australian Army helicopter and personnel used a sling net to lift the sperm whale skull and bones 1.5km to a waiting museum truck.
Photo: J. Fields.

◀ This 200kg sperm whale skull required an Army helicopter and personnel to retrieve it from a rocky shore in New South Wales. The skull is still under study and joins the only other one of its kind, a complete skeleton collected last century which is suspended from the ceiling of the Museum's College Street foyer.
Photo: J. Fields.

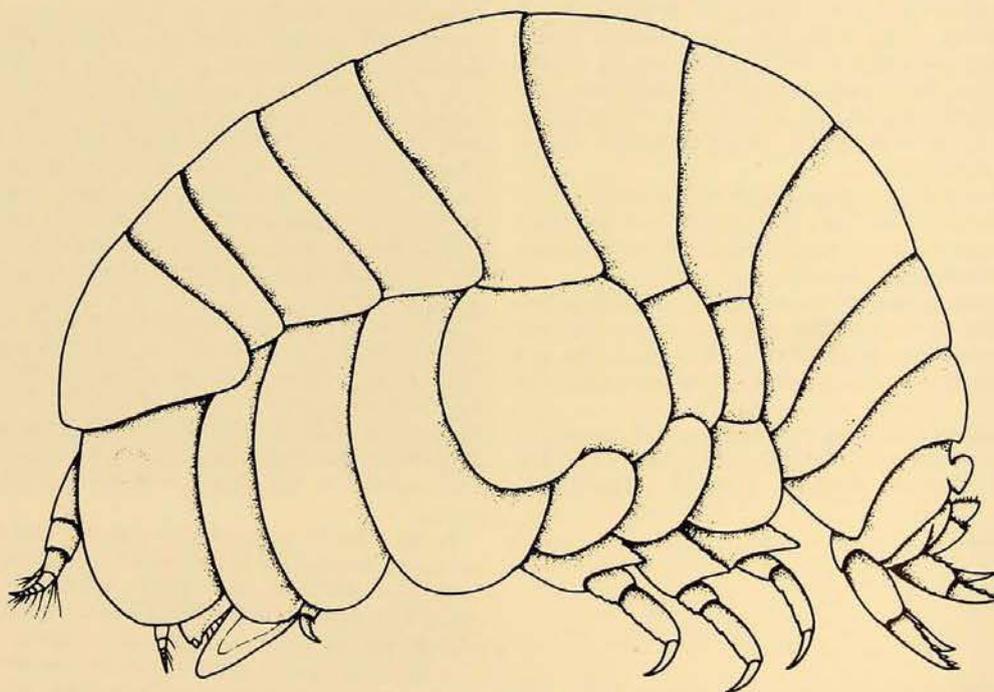
loans were returned. Type-material was donated by: Dr G. C. B. Poore, National Museum of Victoria; Mr N. L. Bruce, Queensland University; and Dr P. Naiyantr, Chulalongkorn University, Bangkok, Thailand. Other material was donated by: Dr Poore, Dr B. Kensley, Smithsonian Institution's National Museum of Natural History, Washington, DC, USA; Dr K. Rhode and Dr F. Roubal, University of New England, NSW; Mr B. Hodgson, Electricity Commission of

New South Wales; and Mr N. Coleman, Australasian Marine Photographic Index.

VISITORS Dr P. Bock and Dr P. Cook, British Museum (Natural History), London, UK; Professor E. Dahl, University of Lund, Sweden; Dr C. McLay, University of Canterbury, Christchurch, NZ; and Dr J. Sieg, University of Osnabruck, West Germany visited the department.



MALE



FEMALE

Male and female of the protandric hermaphrodite (an animal which is first male then female) *Acontiostoma marionis*, currently under study in the Crustaceans and Coelenterates Department. This is the first fully-documented discovery of sequential hermaphroditism among the Amphipoda.
Illustrations: Sharne Dunlop.

MARINE INVERTEBRATES — ECHINODERMS

The department aims to research the form and distribution of echinoderms (starfishes, sea urchins) inhabiting the Indo-West Pacific continental shelf, especially that of the Australian continent. The department also aims to publish information gathered in the research, as well as maintain and expand the research collections of echinoderms, sponges and tunicates (sea-squirts).

One of the main projects being undertaken is a worldwide revision of the feather-starfish family, Comasteridae, which is well represented in Australian waters.

NSW FAUNAL STUDY The Australian Research Grants Scheme extended its support for Dr Frank Rowe's research for a second year, until December, 1982.

A powerful electron microscope, not previously used in the systematic analysis of the species, was used to highlight the importance of oral 'feathers' of feather-stars from New South Wales. This study has led to a worldwide revision of the family. The use of the microscope on dental structures has also led to a new understanding of the brittle star genus, *Clarkcoma*, which occurs in southern Australia, including New South Wales, and New Zealand.

TASMANIAN FAUNA Dr Rowe and Mr Lyle Vail published a paper on the distribution of Tasmanian fauna. The preparation of a more detailed account is in progress.

SEA-CUCUMBER MANUSCRIPTS Dr Rowe completed two manuscripts on collections made from the East Indies and New Guinea which are held in the Rijksmuseum, Leiden, Holland, as well as collections made at Enewetak Atoll in the South Pacific. The Enewetak collection forms part of a volume outlining research carried out on Enewetak over the past 25 years.

SEA-STARS FROM PARIS AND WESTERN AUSTRALIAN MUSEUMS Dr Rowe is describing a collection of sea-stars in the genus *Asterodiscides*, collected from Madagascar in the Indian Ocean and from the Western Australian coast. Dr Rowe, who has made a special study of this genus, has already described a new family and several new species. He also described a new spherical sea-star *Podosphaeraster*, from material sent from the Musee Nationale d'Histoire Naturelle, Paris, and collected in the Atlantic Ocean.

VISIT TO OVERSEAS INSTITUTIONS Assisted by the Australian Museum Trust, Dr Rowe made a 10-day visit to the National Museum of New Zealand (NMNZ) and the New Zealand Oceanographic Institute (NZOI) in Wellington. The purpose of his visit was to examine echinoderm collections to determine species relationships between New South Wales and New Zealand. The visit resulted in the completion of a joint project with Dr A. Baker (NMNZ) describing deep-sea irregular (or heart) urchins from New South Wales and the Tasman Sea, the determination of a number of species common to New South Wales and New Zealand, examination of feather-stars housed both in the NMNZ and NZOI, and further agreements to exchange material between institutions for the benefit of collections.

COLLECTIONS The echinoderm collection continues to grow, mainly due to material received from Lizard Island (Mr L. Vail, James Cook University; the identification of deep-sea material resulting from FRV Kapala collections in New South Wales; collections received from Alaska (Dr G. Bakus, University of Southern California, Los Angeles, USA) and various locations in Australia and New Guinea (N. Coleman, Australian Museum Associate).

SPONGE COLLECTIONS Ms Ann Hoggett and a volunteer, Mr Broughton, re-organised the entire echinoderm collections. Continued assistance from Professor Bergquist, University of Auckland, NZ, enabled assimilating the sponge collection, which was donated in

June 1981 by the Roche Research Institute for Marine Pharmacology, along with the revision and updating of the systematic order of the collections stored in alcohol. Mrs Mary Rowe, another volunteer, is relabelling and re-organising this part of the collection.

VISITORS Visitors to the department included: Mrs Loiset Marsh, Western Australian Museum; Professor P. Bergquist, University of Auckland, NZ; Dr W. Main and Dr D. McKnight, New Zealand Oceanographic Institute, Wellington, NZ; Dr D. Blake, University of Illinois, USA; Dr D. Pawson, Smithsonian Institution, Washington, DC, USA; Dr G. Thompson, Department of Fisheries, Hong Kong; Dr R. Crump, Dale Fort Field Station, Wales, UK; Mr J. Hooper, Museums and Art Galleries of the Northern Territory; Mr L. Vail, James Cook University, Qld.

LOANS Thanks go to the following people and organisations for the loan of material: Ms A. N. Clark, British Museum (Natural History), London, UK; Dr D. Devaney, Bernice P. Bishop Museum, Hawaii, USA; Professor D. J. Hartmann, Zoologisches Museum, Universität Hamburg; Mr W. Zeidler, South Australian Museum, Adelaide, SA; Miss A. Green, Tasmanian Museum and Art Gallery, Hobart, Tas; Mr R. Green, Queen Victoria Museum, Launceston, Tas; Mrs S. Boyd, National Museum of Victoria, Melbourne, Vic; Dr A. Guille, Musée Nationale d'Histoire Naturelle, Laboratoire de Biologie des Invertébrés Marins et Malacologie, Paris; Dr R. Wollacott, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA; Dr D. Pawson, Smithsonian Institution, Washington, DC, USA; Dr J. C. den Hartog, Rijksmuseum van Natuurlijke Historie, Leiden, Nederland; Dr S. van der Spoel, Zoologisch Museum, Universiteit van Amsterdam, Nederland; and Dr F. J. Madsen, Universitetes Zoologiske Museum, Copenhagen, Denmark.

MARINE INVERTEBRATES — WORMS

The department maintained its active research program into polychaetes which are extremely abundant marine worms and important in many marine environments. Until recently they have been almost neglected in Australia.

The department has three main long-term research objectives: to describe the polychaete fauna of Australia and provide keys for the non-specialist; to undertake a long-term study on the recruitment and establishment of polychaete communities and their roles in coral reef ecosystems; and to study bio-erosion of coral substrates by living organisms.

Some aspects of each of these objectives were achieved during the year.

The department also tries to stimulate interest in all aspects of the biology of polychaetes. A visiting curatorship was awarded to Dr K. Fauchald of the Smithsonian Institution's National Museum of Natural History, Washington, DC, who spent four months in the department, undertaking a revision of the family Eunicidae.

The family Eunicidae is one of the largest and most important group of polychaetes. The family includes the famous Palolo Worm and several, including the bloodworm, are used by fishermen as bait. Eunicids are commonly thought of as carnivores because they possess well-developed teeth. However, they are far more probably scavengers. They range in length from a few millimetres to a metre or more and the larger ones are iridescent. Dr Fauchald has found several new species and has documented changes in body form which occur with age.

Participants for the first International Polychaete Conference, to be held in the Museum during July 1983,

began arriving in May and June. Over 70 specialists were expected to attend the conference.

In February 1983, Mr Ed Easton, of the British Museum (Natural History), UK, took up a visiting curatorship in the department. Mr Easton has undertaken an extensive revision of New South Wales earthworms which will lead to a better understanding of these animals and a major re-organisation of the earthworm collections.

CORAL REEF STUDIES Dr Hutchings continued to receive support from the Queens Fellowship and Marine Research Allocations Advisory Committee. These grants enabled a study to determine major causal organisms and rates of bio-erosion at Lizard Island. The initial results were presented at the Pacific Science Congress in New Zealand in February 1983. The study clearly shows the importance of polychaetes, sipunculans or 'peanut worms', bivalves and sponges, in the boring of coral substrates. Thus strong differences in the patterns and rates of bio-erosion occur according to environment and season.

Additional funding was allocated by the Great Barrier Reef Marine Park Authority for comparative work in the Capricorn section of the Great Barrier Reef. This study will be carried out by a graduate student supervised by Dr Hutchings and Dr Peter Davies, Bureau of Mineral Resources, Canberra.

Dr Hutchings is completing the analysis of how polychaete worms establish themselves over several years at Lizard Island. A partial analysis of this data was presented at the Australian Coral Reef Symposium held in Brisbane, November 1982.

STUDIES OF HAWKESBURY RIVER Dr Hutchings and Ms Anna Murray, Department of Marine Ecology, completed a major study on the estuarine polychaetes of New South Wales. Over 180 species have been described, 34 of which are new to science, including four new genera. Many of the species are newly recorded from New South Wales. A key to all the species was provided.

CONTRACT WORK The Queensland Electricity Generating Board is investigating the impact of heated effluent on animals living in the mud or sandy deposits on the bottom of estuaries. Dr Hutchings and Mr Chris Glasby identified polychaetes from the Calliope River, South Queensland, to assist the Board in its investigations. Several new species and many new records are present in this collection and these will be described shortly.

Dr Hutchings also assisted in identifying material from the Bass Strait survey being carried out by the National Museum of Victoria.

PRODUCTION OF KEYS The Coastal Council of New South Wales has awarded Dr Hutchings funds to produce an illustrated key to common estuarine polychaetes of New South Wales. This study was initiated and will be published by the Coastal Wetlands Society. It is planned for completion at the end of 1983.

RESEARCH WITH OTHER INSTITUTIONS Dr Hutchings is completing a study of polychaete recruitment in the Gulf of Eilat, Israel. It began in August 1981 with Professor Yossi Loya, the University of Tel Aviv.

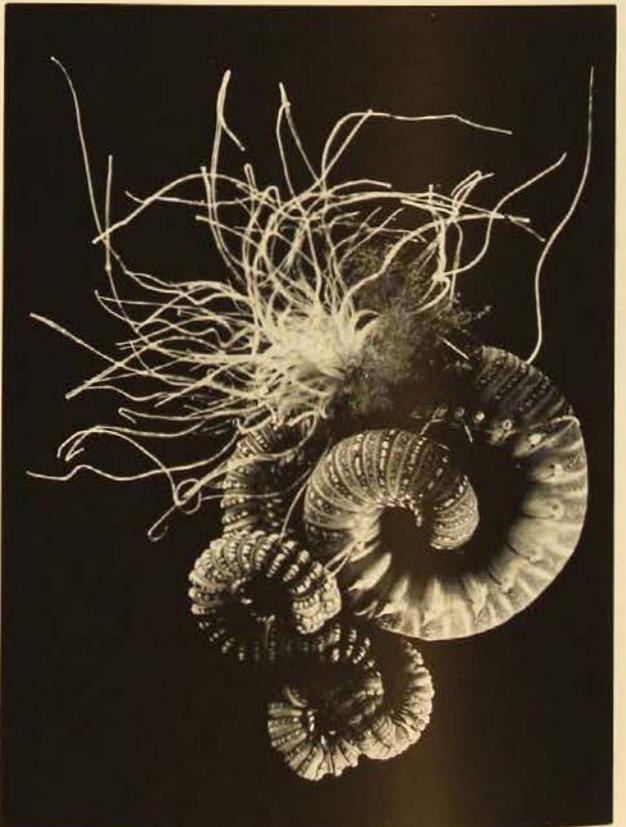
During March and April, Dr Hutchings joined a group of scientists from the Smithsonian Institution's National Museum of Natural History, Washington, DC, in an expedition to Aldabra in the Indian Ocean. There she worked with Dr B. Kensley and Dr K. Fauchald on the fauna of various intertidal and sub-tidal habitats. They hope to return to Aldabra annually to investigate long-term changes in each community under investigation. Aldabra was chosen as the reef is in pristine condition and very few long-term studies have been carried out on the benthos and soft substrates (soft sea bottom) in tropical regions. The results of these studies will be compared with those already obtained from the Caribbean and the Great Barrier Reef.

Dr Hutchings and Dr Peter Saenger, a Brisbane consultant, are completing a book on Australian mangroves. The book is planned for publication by Queensland University Press in 1984.

VISITORS Visitors to the department during the year included: Professor Ian Ball, Institut voor Taxonomische Zoologie, Universiteit van Amsterdam; Professor J. Sprent, University of Queensland; Dr Peter Davies, Bureau of Mineral Resources, Canberra; Professor W. Knight-Jones and Dr P. Knight-Jones, University College, Swansea, University of Wales; Dr H. ten Hove, Universitei van Leiden; and Mr Peter Parks and Dr David Shales, Oxford Scientific Films, UK.

DONATIONS Dr S. Rainer, CSIRO Fisheries; Mrs R. Brown, Macquarie University, NSW; Dr F. Roubal, University of New England, Armidale; Professor R. Brinkhurst, Canada; Dr G. Hartmann-Schroder, Universitat Hamburg, Federal Republic of Germany; Professor K. Rohde, University of New England, NSW; Ms K. Atkinson, Sydney; and Mr Anthony Healy, Sydney, all contributed to the department.

LOANS Dr Hutchings would like to thank the following Museum Curators for loaning material during the year: Dr J. Kirkegaard, Zoologist Museum, Denmark; Dr L. Wallin, Zoologiska Museet, Sweden; Dr R. Olerod, Naturhistoriska Riksmuseet, Stockholm; Dr G. Hartmann-Schroder, Zoologische Institut und Zoologisches Museum, Hamburg, West Germany; Dr D. George and Mr A. Muir, British Museum (Natural History), London, UK; Dr H. Levi, Museum of Comparative Zoology, Harvard, USA; Dr Hartwich, Zoologisches Museum, Berlin, West Germany; Mme Renaud-Mornant, Musee Nationale d'Histoire Naturelle, Paris; Dr Lu, National Museum of Victoria; Dr P. Mather, Queensland Museum; and Mr W. Zeidler, South Australian Museum.



The attractive *Loimia medusa* which lives in mudflats in estuaries on the east coast of Australia. Photo: K. Atkinson.

MINERALOGY AND PETROLOGY

The department aims to enlarge and maintain representative collections of minerals and rocks from both Australia and overseas. The collections are a base for scientific research as well as display and include gems and ornamental stones in addition to materials from space, such as meteorites and tektites (natural glass remnants of meteorites).

The present research projects in the department concentrate on volcanic rocks in eastern Australia and high pressure minerals and rocks brought up from the Earth's lower crust and upper mantle.

INTERNATIONAL INPUT During the year Dr Lin Sutherland travelled overseas to present current research results at three major conferences. Dr Sutherland also collected specimens for the Museum and visited a number of major museum mineral and geology galleries.

One of the main topics he covered at one of these conferences was the subject of high pressure garden-bearing mantle rocks from Tasmanian basaltic lavas. This was given to the Third International Kimberlite Conference at Clermont-Ferrand in France in August-September 1982.

Dr Sutherland discussed eastern Australian zircons at the 13th International Mineralogical Association Meeting at Varna in Bulgaria in September 1982. He also discussed the relation of eastern Australian volcanism to sea-floor spreading zones at the 25th Pacific Science Congress held at Dunedin, New Zealand, in February 1983.

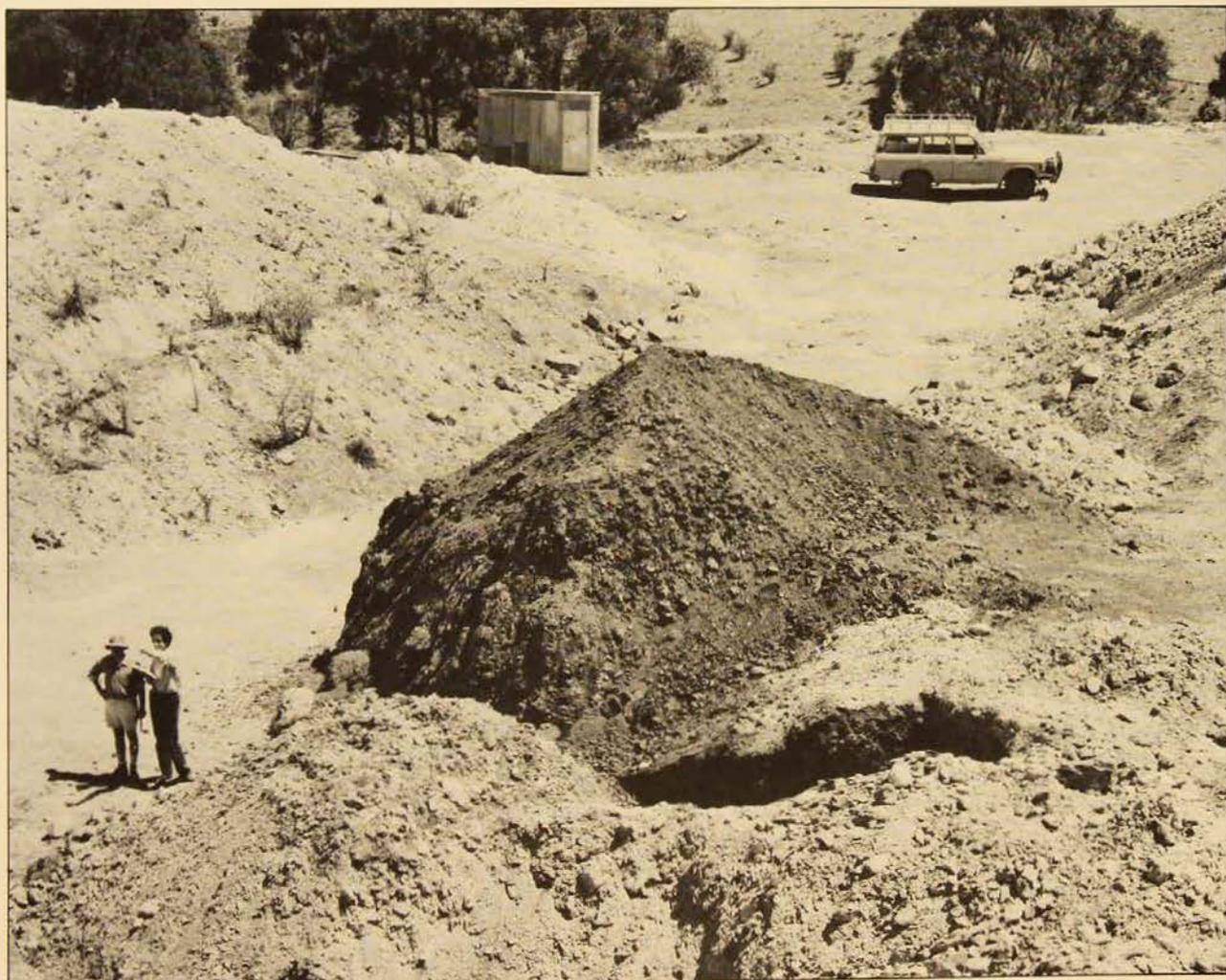
In Europe, Dr Sutherland collected metamorphic and volcanic rocks from the Eclogite volcano and Moho excursions which extend through the Massif Central region of France into the Ivrea Alpine zone of northern Italy. Lead-zinc minerals and metamorphic rocks were collected from the Rodopes Mountain in Bulgaria. This region is particularly interesting because deposits are similar to those in Broken Hill, Australia. He also collected samples from the Wanaka-Haast region of New Zealand's South Island.

Visits to a variety of institutions with mineral and geological displays provided a broad background on possible styles and techniques for the Museum's new Mineral Gallery. Dr Sutherland inspected the National Science Museum of Japan, Tokyo; the Natural History Museum, Paris; the Natural History Museum, Basel, Switzerland; the Geology Museum, Zurich University, Switzerland; and a number of local natural history and mining museums in Bulgaria.

RESEARCH The main research activity was a project on a number of gem pipes in eastern Australia. The department used a geophysical survey by Mr Ross Pogson and formation model proposed by Dr Julian Hollis and Dr Sutherland to complete a study of a gem pipe at Ballogie in Central Queensland. Analysis began on gem pipes at Brigooda and a diamond pipe at Walcha.

Drs Hollis and Sutherland presented preliminary accounts of these gemstone occurrences (including zircon sources) to the 6th Australian Geology Convention in Canberra in February.

The department carried out joint studies with several outside institutions. They included the University of Nice,



The main research activity of the Department of Mineralogy involved field studies of a number of gem pipes in eastern Australia. Mr Ross Pogson and Drs Julian Hollis and Lin Sutherland studied a gem pipe at Brigooda, Central Queensland, and a diamond pipe at Walcha, New South Wales (pictured here).
Photo: J. Fields.

France; the Geological Museum, Oslo, Norway; the School of Earth Sciences, Macquarie University, NSW; the Geology Department, University of Melbourne, Vic; the Division of Mineralogy, CSIRO, Sydney, NSW; and the Bureau of Mineral Resources, Canberra, ACT. Many of these studies involved specialised equipment not available in the Museum.

Dr Sutherland convened a one-day seminar on Volcanism in Eastern Australia. This was organised by the Museum and the Geological Society of Australia.

MINERAL SALE The department held a public mineral sale in the Long Gallery of the Museum during August. Ms Joan Hingley and Mrs B. Clark, a volunteer, organised the sale, at which overseas minerals, gemstones and fossils were on offer. Dr Sutherland and Ms Hingley gave radio and television interviews to promote the event and 16,000 people attended the sale. The Museum gained \$18,000 from the mineral sale.

COLLECTIONS AND DONATIONS A major donation of 96 pieces from the Coltheart mineral collection was made by Mrs R. Coltheart of Sydney under the provision of the Tax Incentives for the Arts Scheme. Other donations included a suite of rare Indian amethyst and corundum (Mr R. Weston); chalcocite crystals from Mount Gunson, South Australia (CSR Ltd); gold telluride from the Emperor Gold Mine, Fiji (Mr M. Leu); a meteorite slice from Kyancutta, South Australia (Mr Fotheringham); an exceptional pyrosphalite from Broken Hill (Mr B. Atkinson); a collection of rare Japanese minerals (The National Science Museum of Japan); and a suite of newly described Western Australian minerals (Mr David Vaughan).

EXCHANGES AND LOANS The main exchange was eleven meteorite pieces from collections in the USA and West Germany. Other exchanges related to zeolite minerals from East Martinique in the Caribbean, from the Geological Survey of the Antilles and Guyana, and Irish zeolites from an American collector.

Special loans for display purposes included 90 high-quality crystallised minerals for display at the Nepean College of Advanced Education, NSW. Loans of scientific samples for important research projects included zircon for study by the Research School of Earth Sciences, Australian National University, ACT; the Division of Chemical Physics, CSIRO, Clayton, Vic; the Geology Department, Melbourne University, Vic; and the Geology Department, University of Nice, France. The Dorrigo meteorite was lent to the Geophysics and Planetary Physics School at the University of California, USA. The rare Broken Hill minerals roeppelite and schefferite were lent to the National Museum of Melbourne, Vic and the University of New England, Armidale, NSW. A range of clay samples were sent to the Geology Department, James Cook University, Qld.

ACQUISITIONS Most of the more exceptional mineral purchases were Australian specimens, but large azurite crystals, partly replaced with malachite, from the Tsumeb Mine and a showy cluster of diamond crystals from Africa were included.

The more spectacular Australian pieces were a 12-carat golden sapphire from Queensland; an extremely large example of the rare mineral tetradymite from the Shamrock Gold Mine, Qld; crystallised gold in host rock from Wehla, Vic; unusually large bismuthinite crystals from Biggenden, Qld; and good examples of minerals from Broken Hill, NSW; Cleveland, Tas; Whim Creek Copper Mine, WA; and Mount Bonnie, NT.

A set of four minerals of particular beauty was put on display to gain donations to buy them. These were fluorite and sulphides from Chihuahua, Mexico; rhodocrosite from Roumania; and gypsum from Naica, Mexico.

Some of the best Broken Hill minerals in the Mineral Gallery appeared as illustrations in a book published by Conzinc Rio Tinto of Australia to celebrate the centenary of the discovery of the Broken Hill Mine.

VISITORS Overseas and local visitors to the department included: Ms Jody Anderson, Registrar, Geology

Department, Denver Museum of Natural History; Mr Jose Barba, Municipal Museum, Barcelona, Spain; Dr L. Chadderton, Division of Chemical Physics, CSIRO, Clayton, Vic; Professor J. Davies, Macquarie University, North Ryde, NSW; Mr Glenn Day, Valhalla Museum of Natural History, New York, USA; Dr David Drurey, Scott Polar Research Institute, Cambridge, England; Dr Maurie Duggan, Curator of Geological Collection, Bureau of Mineral Resources, Canberra, ACT; Mr Kent England, Merced, California, USA; Dr Andrew Gleadow, Geology Department, Melbourne University, Vic; Dr Paul Green, Geology Department, Melbourne University, Vic; Professor M. Guss, Department of Inorganic Chemistry, University of Sydney, NSW; Dr Sohan Koul, Division of Chemical Physics, CSIRO, Clayton, Vic; Dr Keith Lockwood, Bureau of Mineral Resources, Canberra, Act; Dr Olsen and Mrs Olsen, Field Museum of Natural History, Chicago, Illinois, USA; Professor Steven Smales, Mathematics Department, University of California, Berkeley, USA; Dr John Taylor, Atomic Energy Commission, Lucas Heights, NSW; and Dr Jan Van Moort, Geology Department, University of Tasmania.

ORNITHOLOGY

The Ornithology Department concentrated on promoting and advancing ornithology in Australia through research and the maintaining of a range of specimen materials. Highlights included the investigation of several new approaches to specimen preservation and cataloguing the department's collections.

ADDITIONS TO THE COLLECTION Approximately 500 specimens, mostly of study skins, were added to the department's collection. A large number of skeletons were prepared but are yet to be registered. Major additions included first specimens for the collection of northern subspecies of Olive Whistler, *Pachycephala olivacea macphersoniana*, the first specimen of the Banded Land Rail, *Rallus philippensis andrewsi*, from the Cocos (Keeling) Islands, the second specimen from Australia of the Little Ringed Plover, *Charadrius dubius*, and a young Lord Howe Island Woodhen *Tricholimnas sylvestris*.

Ms J. Ovenden donated specimens of rosellas, *Platycercus*, and related parrots from her postgraduate studies on their relationships.

The department received 46 skins from the Queensland Museum. These were collected during a fieldwork project undertaken in 1978.

Mr R. H. Green, Queen Victoria Museum, contributed several chicks of the Tasmanian Native Hen, *Tribonyx mortierii*.

The Queensland Museum provided several species of waders which had been killed by severe hailstorms in the Brisbane area. The New South Wales National Parks and Wildlife Service and the Department of Agriculture Veterinary Research Station, Wollongbar, NSW, donated large collections of frozen material.

COMPUTER REGISTER Ms Mary de Jose completed the editing of the current (O) ornithological register. Transcription of earlier registers on to computer sheets continued.

CURATORIAL PROGRAMS The department examined several new approaches, including freeze drying of smaller specimens as study skins and retention of pelts or power skins of some skeletal specimens. A reference collection of bones was begun to assist in identifying material from fossils, archaeological findings and pellet analysis. A representative species of each family will be included. A method of relaxing mounted specimens in order to reposition them was used to incorporate important mounts

into the skin collection. These were mostly rare or important foreign species not represented in the skin collection.

Copies of inventories prepared by the American Ornithologists Union of alcoholic and skeletal specimens in world museums were received free of charge. They will prove invaluable in determining priorities for acquisitions.

Mr Wayne Longmore neared completion of a comprehensive list of the types held by the department. This collection contains a number of Australian and southwest Pacific type specimens. The department also started to catalogue the Mason Brothers' New Guinea Collection which was received in 1883 and contains over 1,000 specimens.

Mr Longmore also discovered a misidentified specimen which was the 13th known specimen of the very rare Wattled False Sunbird (*Neodreopanis hypoxantha*) of Madagascar.

DEPARTMENTAL ACTIVITIES Mr Walter Boles provided scientific assistance for the production of the new Skeleton Gallery. He wrote introductory text and labels for the bird skeletons. He served as Vice-President and Assistant Editor of the Australian Bird Study Association and as the Museum's representative on the Taxonomic Advisory Committee of the Royal Australasian Ornithologists' Union (RAOU).

Mr Boles organised the paper session on honeyeaters for the RAOU's Scientific Day in Melbourne, Vic, and was camp-out organiser for the RAOU's Annual Congress and Camp-out.

Mr Longmore assisted with the organisation and running of the camp-out. Several visits were made to Mount Boss State Forest, the site of the proposed camp-out. Mr Boles

assisted the Wildlife Section of the Forestry Commission with a survey of the birds of the state forest.

During Mr Boles' absence on leave for six months, Mr Longmore acted as officer-in-charge of the department, and was Treasurer of the Australian Bird Study Association.

RESEARCH Mr Boles neared completion of the section on native and introduced finches for the combined RAOU Checklist of Australian Birds and ABRS Faunal Directory of Australia. He worked in the collections of the National Museum of Victoria, South Australian Museum, Queensland Museum and National Wildlife Collection. He also spent a week in the Mathew's Ornithological Collection at the National Library, Canberra, consulting historical references.

Other projects included the description, development and systematic valuing of juvenile plumages of perching birds, particularly Australo-Papuan robins, and relationships of Australasian birds, particularly flycatchers.

Mr Longmore continued his work on the biology and relationships of honeyeaters. He and Mr Boles worked on their study of the distribution of rainforest birds.

Two papers resulting from fieldwork in the Clark Range, Qld, were published. Mr Longmore and Mr Boles described a new species of honeyeater (*Meliphaga hindwoodi*). This bird was named after the late Mr K. A. Hindwood, who was Honorary Ornithologist at the Museum. Mr Boles also named a new subspecies of the Brown Thornbill as part of a revision of this species.

VISITING SCIENTISTS Dr P. V. Rich, Monash University, Vic, spent a month in the department working on several projects including a study of the fossil flamingoes of Australia. Mr R. F. Baird, Monash University, pursued his research on the skeletons of Australian perching birds. He was hired on temporary assistance to curate and prepare material for the department's skeleton collection.

OVERSEAS VISITORS Scientific — Dr W. B. Davis Jr, Boston University, USA; Mr A. D. Forbes-Watson, Academy of Natural Sciences; Mr W. D. Harden, South Prairie Raptor Research Centre Inc; Mr S. Hollihan, Canada; Professor J. A. Keast, Queen's University, Belfast; Dr D. S. Wood, Carnegie Museum, USA; and Mr J. A. Jenkins, New Zealand.

Also, artists: Mr L. Dane, Puerto Rico, whose sculpture commissioned for the opening of the Queensland Cultural Centre was based on material studied in the department, and Mrs J. Powzyk, USA, who prepared sketches and paintings for a book on Australian wildlife. She used specimens in the department during her five month stay.

CONSULTATIONS During the year the department held consultations with the following: Department of Business and Consumer Affairs (Customs); Animal Quarantine Service (NSW Div); New South Wales National Parks and Wildlife Service; Australian National Parks and Wildlife Service; Forestry Commission of New South Wales; Macleay Museum; University of New South Wales, Royal Australasian Ornithologists Union; and students of several universities. The department continued to assist with group teaching, work experience students and vacation teachers projects organised by the Education Section. Identification of birds for export also continued.

ACKNOWLEDGEMENTS Several Australian institutions and overseas museums provided information and supplied specimens for study: New South Wales National Parks and Wildlife Service; National Museum of Victoria; South Australian Museum; Queensland Museum; CSIRO Division of Wildlife and Rangelands Research; Queen Victoria Museum and Art Gallery; Macleay Museum; American Museum of Natural History, British Museum (Natural History); Western Australian Museum; Field Museum of Natural History; New South Wales Department of Agriculture Veterinary Research Station, Wollongbar; Forestry Commission of New South Wales; Royal Australasian Ornithologists' Union; Fisheries and Wildlife Department of Victoria; Australian National Parks and Wildlife Service; Monash University; Rijkmuseum van Natuurlijke Historie, Leiden; and Taronga Zoological Park.



Lord Howe Island Woodhen.
Photo: E. Slater.



PALAEONTOLOGY

The discovery and excavation of the pelvis of *Diprotodon*, the casting of one of the Museum's palaeontological treasures and an important symposium, co-sponsored by the Museum, were all highlights of the past year.

The Palaeontology Department aims to maintain a comprehensive selection of plant and animal fossils (invertebrate and vertebrate) from all geological periods in Australia. A representative selection of comparative material from other continents is also maintained.

Departmental research concentrates on the early evolution of vertebrates (Ordovician, Silurian and Devonian) in Australia and their relationships with similar faunas overseas. It also involves Palaeozoic and Mesozoic fossil plants of eastern Australia and Pleistocene fossil marsupials of New South Wales.

The palaeontological collections of around 69,000 specimens include a wide range of type specimens and others featured in scientific literature. During the year 560 specimens were registered, of which 401 were presented.

RESEARCH AND FIELDWORK Research was kept to a minimum during the year because of commitments to the Museum Train and to the proposed memoir on the Devonian armoured fish, *Groenlandaspis*, the Curator's principal research project.

To date, *Groenlandaspis* and its close relatives have been recorded from some 25 main sites on five continents: Australasia, Antarctica, Greenland, Europe and Asia. Most of the finds are of species and even genera new to science. New *Groenlandaspis* finds during 1982-83 came from Freestone Creek, eastern Victoria, collected and forwarded by Mr John Long, Monash University, Vic; from

near Forbes and Grenfell, NSW, collected and donated by participants at the Early Vertebrate Symposium; and Irish material located in the University of Reading, UK.

OVERSEAS CONFERENCE AND STUDY TOUR Dr Alex Ritchie took leave from 9 September to 17 October, 1982, to participate in two conferences in the United Kingdom. He presented a paper, "Discovery of the Pleistocene vertebrates of Wellington Caves, NSW" at the 'Vertebrate Palaeontology — History of Collection and Curation' meeting organised by the British Museum (Natural History) and the Geological Society of London. At the 30th annual 'Vertebrate Palaeontology and Comparative Anatomy Symposium' at the University of Cambridge, he gave a paper, "*Palacolepis*, a new genus of placoderm (Phyllolepididae) from the Late Devonian of New South Wales, Australia". During the visit illustrated lectures on recent Australian fossil discoveries were given to the Junior Naturalists' Society of the Royal Scottish Museum, Edinburgh; to the Department of Geology, University of Edinburgh; and to the Palaeontology Department, British Museum (Natural History), London.

Dr Ritchie also worked on fossil fish collections in the Zoology and Sedgwick Museums, University of Cambridge; the British Museum (Natural History) and Institute of Geological Science Museum, London; in the Royal Scottish Museum, Edinburgh; the Hunterian Museum, University of Glasgow; and the Department of Geology, University of Reading.

DIPROTODON PELVIS RECOVERED In April 1983 Mrs Louise Dunn of "Kenloi", near Tamber Springs, in northern NSW, reported the discovery of a complete pelvis of the extinct giant marsupial, *Diprotodon*, in Cox's Creek. The specimen lay about 20 m from the site where Mrs Dunn discovered a superb *Diprotodon* skull and most of the associated skeleton (but lacking the pelvis) in 1979. These were excavated by a Museum party and are now in the Palaeontology collection. The new find was recovered by

◀ A major addition to the Palaeontology collection was the pelvis of a *Diprotodon* discovered near Tambar Springs, NSW. A protective plaster cast was made of the pelvis, which then underwent intensive study at the Museum. Photo: K. Lowe.

VERTEBRATE ECOLOGY

The department aims to conduct basic research into the ecology and behaviour of Australian vertebrates and to apply the principles of ecology to problems of land management. The ecology of fire, nectar-feeding birds and forest vertebrates are the main research areas. Studies are also conducted on the forest vertebrate populations, the pollination biology of Australian plants, as well as the effect of introduced honeybees on native bees and nectar-feeding birds.

Dr Ritchie and Mr Bob Jones and the excavation was recorded by Ms Kate Lowe, Photography Department. Although the pelvis is the correct size to have belonged to the nearby skeleton, it lay about 3 m lower and it appears unlikely that the pelvis and skeleton belonged to the same animal.

CASTING OF DEVONIAN FISH SLAB A mould was prepared of one of the Australian Museum's treasures, a two metre long sandstone slab on permanent display in the Hall of Fossils. It was discovered near Canowindra, central NSW, in 1956. The slab contains impressions of at least 114 separate fossil fish dating from the Late Devonian period about 360 million years ago. Four distinct types of long-extinct fish are present, *Bothriolepis*, *Remigolepis*, *Groenlandaspis* and *Canowindra*, the last being named after the town near where it was found. This unique fossil assemblage is the remains of a mass death of fish in a dried-up pool. It has now been cast and the mould was prepared by Mr Jones. Fibreglass casts can now be produced from this mould with the specimens seen as positives, not negatives as on the original slab. Part of the cast will be installed beside the slab in the Hall of Fossils. Fibreglass replicas of this ancient fish-kill should prove an invaluable exchange item with other museums.

CASTING CHINESE DINOSAURS Mr Jones visited the National Museum of Victoria, Melbourne, 25 July-8 August, 1982, to participate in the moulding and casting of the original specimens of the spectacular Chinese dinosaurs, *Mamenchisaurus* and *Tsintaosaurus*.

MSc AWARDED TO Mr R. K. JONES In November, 1982, Mr R. K. Jones, Technical Officer (Scientific), was awarded a Master of Science degree by the University of Sydney for his thesis, "The Late Devonian Succession and Faunas of Central and South-Eastern New South Wales".

INTERNATIONAL SYMPOSIUM A specialist symposium on the evolution and biogeography of early vertebrates (Ordovician — Carboniferous) was held during February, 1983, at the Australian Museum and the Australian National University, Canberra. It was sponsored by the Australian Academy of Science, the Australian Museum and the Association of Australian Palaeontologists. The symposium attracted 14 overseas research workers (from China, France, UK, USA, USSR) and many Australian vertebrate palaeontologists and comparative anatomists. Many of the papers presented appear in an issue of the Proceedings of the Linnaean Society of New South Wales.

Most of the visitors spent a considerable time examining the large and varied Devonian fossil fish collections from Australia and Antarctica brought together by Dr Ritchie over the past 15 years. Field trips were organised to sites near Grenfell, Forbes, Canowindra, Braidwood and Wee Jasper. The experienced field collectors recovered many new and valuable fossil specimens. Most visitors joined a five-day symposium excursion led by Dr Ritchie and Mr Jones to examine the extremely rich Early-Middle Devonian fish sites of the Mulga Downs Group, near Cobar, NSW. Several new and important specimens were recovered during the excursion and added to the Museum collection.

EFFECTS OF FIRE Research on the effects of logging and fire on the fauna of the state forests in the Eden district was suspended for the year. The extreme drought and the need to write up completed studies were the principal reasons for the research postponement. In co-operation with Mr Dan Lunney of the National Parks and Wildlife Service, Dr Harry Recher continued to monitor the effects of wildfire on small mammal populations in the Nadgee Nature Reserve. Dr Recher also continued the census of breeding bird populations on burnt and unburnt heaths on Impressa Morr in Nadgee.

HONEYEATER ECOLOGY Dr Graham Pyke and Dr David Paton continued studies of honeyeaters and pollination ecology of nectar-rich flowers. These projects were supported by grants from the Australian Research Grants Scheme and the Queen Elizabeth Fellowship Scheme. Among the plants investigated were: Christmas bell, *Blandfordia* app.; Mountain devil, *Lambertia formosa*; and Waratah, *Telopea speciosissima*. All are common flowers in the coastal heaths of New South Wales and require special management to ensure their conservation.

Dr Recher and Dr Pyke expanded studies on the movements of honeyeaters. This research is carried out in the Brisbane Waters National Park near Pearl Beach, NSW. Birds are netted and banded in three different habitats. The objectives are to determine how long individuals remain in the area, whether birds return to the same area each year and how far they move during the course in the season. The numbers of honeyeaters and the pattern of their movement can then be related to the abundance of nectar or insects which the birds eat. Several thousand birds have been banded and the one recorded furthest from the banding area is an Eastern Spinebill Honeyeater, seen in a backyard at Kirribilli, Sydney, NSW.

HONEYEATER ENERGETICS Professor R. E. MacMillan, on sabbatical from the Department of Ecology and Evolutionary Biology, University of California, Irvine, USA, joined the department during the year. Dr MacMillan is working with Drs Recher and Pyke on Honeyeater ecology and is especially interested in the amount of energy the birds must obtain at different temperatures. Dr MacMillan is also studying the behaviour of Honeyeaters in the field to test his hypothesis that there is a relationship between a bird's energy requirements, its size and relative position in the social hierarchy of the species. Dr MacMillan recorded the frequency of aggressive interactions between species and the outcome of each encounter to determine social status.

A research laboratory was established on Dangar Island, near Brisbane Waters, so that the energy requirements of Honeyeaters could be measured immediately after capture.

ACKNOWLEDGEMENTS The Forestry Commission and National Parks and Wildlife Service permitted work on lands under their management.

INTERPRETIVE ACTIVITIES

COMMUNITY RELATIONS

The Office of Community Relations aims to inform the community of the Museum's active contribution to knowledge and its role as an educator. This is mainly achieved through press, television, radio, advertising and publications.

PUBLICATIONS Among the publications the department produced during the year was a new *Guide to the exhibitions in the Museum*. This is a folder incorporating a map and information about the Museum, plus informative leaflets about each gallery.

The 1983 calendar was attractively composed of six large posters of Australian mammals. It was the last and most successful of all calendars produced by the Museum. Most of the 3,000 calendars were sold within four months, many from advertising in the Museum's quarterly magazine, *Australian Natural History*.

Four issues of *Australian Natural History* were produced, taking the magazine into its 21st volume. To meet competition on the shelves in newsagents, a new design for the magazine was achieved. It is now sold through newsagents in NSW, ACT, Vic and Tas. There are over 10,000 subscribers. A total 18,000 copies per edition are printed.

A reader survey of *Australian Natural History* was conducted to define a profile of readers and discover future editorial requirements. Over 25% of all questionnaires issued were returned. This confirmed that *Australian Natural History* readers are some of the most responsive magazine readers in the country. Analysis of this survey is not yet completed.

It was an eventful year for *Records of the Australian Museum*. There were eight issues of the *Records* and four issues of *Memoirs* published. With Dr Jim Lowry as managing editor and Mr Tony Bishop as editor, the mailing list was updated and classified, the magazine modernised and a broader range of papers obtained.

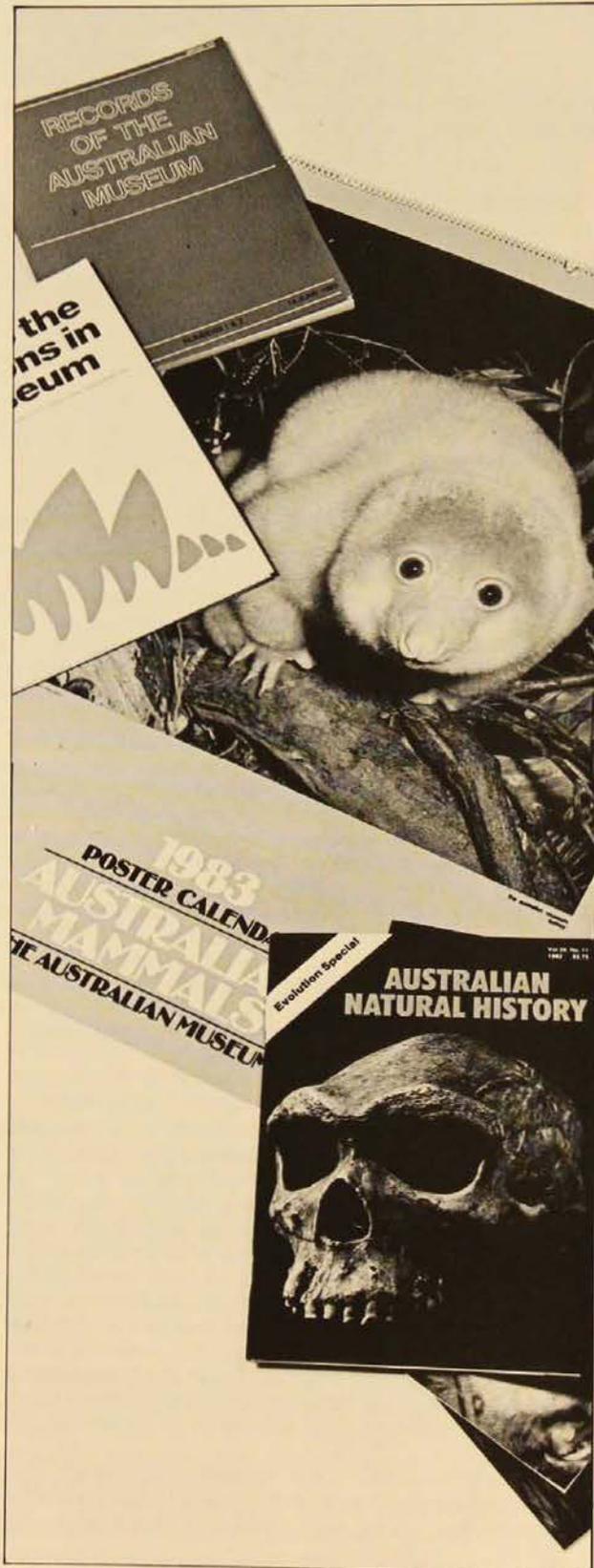
These achievements, coupled with large reductions in production costs and the reduction of unpublished papers, have made the journal a highly competitive scientific journal.

In an effort to widen the potential audience, the Museum joined forces with the Museum Society to produce a bimonthly brochure. The first issue appeared in February. One side gave details of Museum news, while the other outlined Society events. In total, three issues of the older style and three of the new style were produced.

PUBLICITY The 'Museum on the Road' exhibition, the Skeleton Gallery opening, the new Train exhibition opening, a warehouse sale and several other temporary exhibitions all provided good publicity during the year. The most significant achievement was the first ever Museum television advertisement which was produced during May. It was so successful that the number of visitors to the Museum increased by 150% during the May school holidays and gross income from both the Museum and coffee shop more than doubled for the period. Advertising has also contributed to the unprecedented success of *Australian Natural History* magazine.

THE SHOP The Museum Shop provides visitors with a source of high quality educational goods relevant to the Museum as well as being an important source of revenue. Highlights of the year were a warehouse sale and the busy January and May school holiday periods.

Despite many difficulties due to staff absences, shop income increased by 16% over the 1981-82 financial year.



These publications were produced during the year. It is noteworthy that *Australian Natural History* has more than 10,000 subscribers.
Photo: J. Fields.

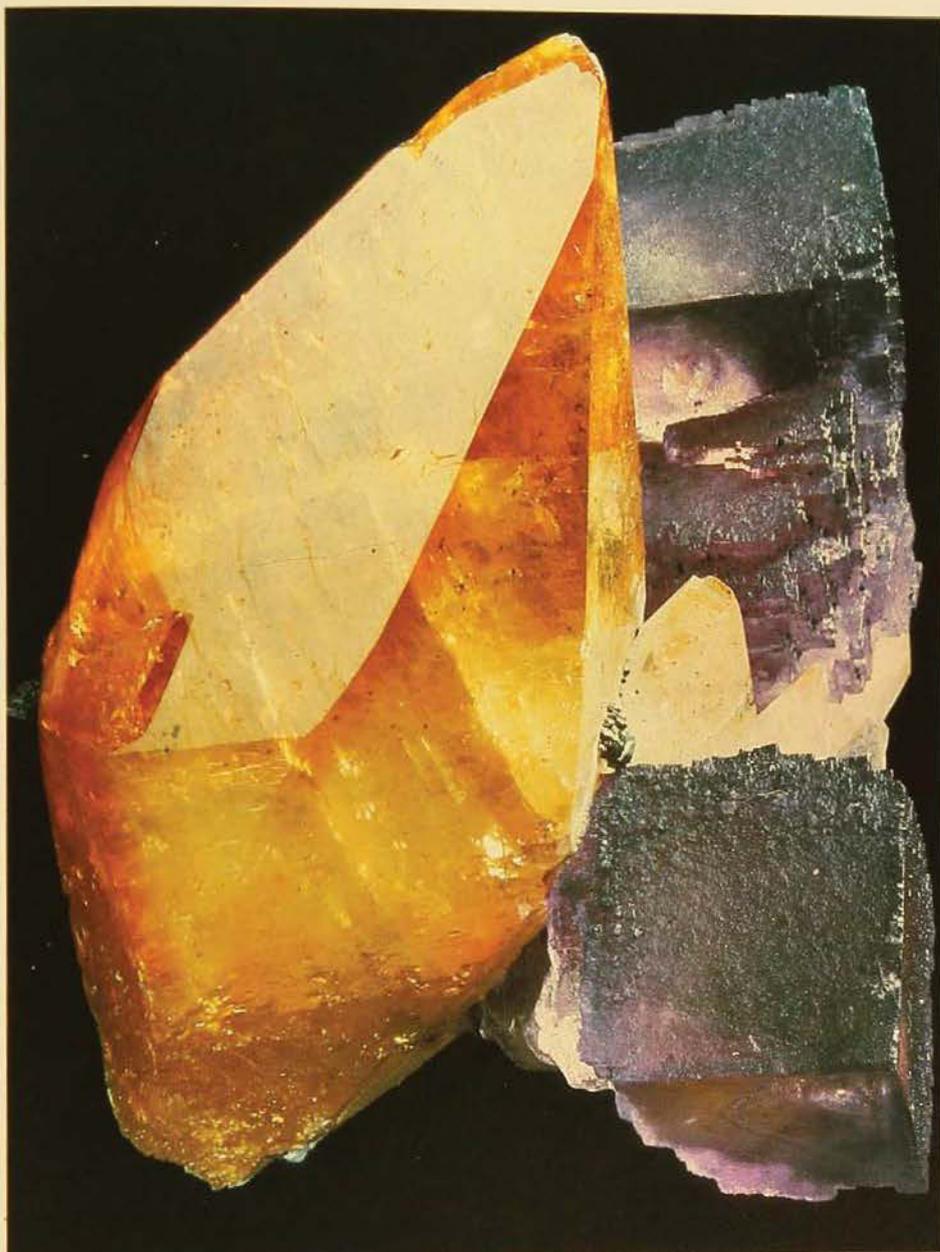


Now part of the Museum's Anthropological collection is this colourful mask and costume of the "old man" — a stock character of the Balinese TOPENG (masked drama). Here worn by TJOKORDA RAKA KERTHYASA in a traditional pose. Photo: J. Fields.

Insect collecting scoops, devised by the Museum's Preparation Department, photographed in action near Fowler's Gap, N.S.W. Photo: J. Fields.

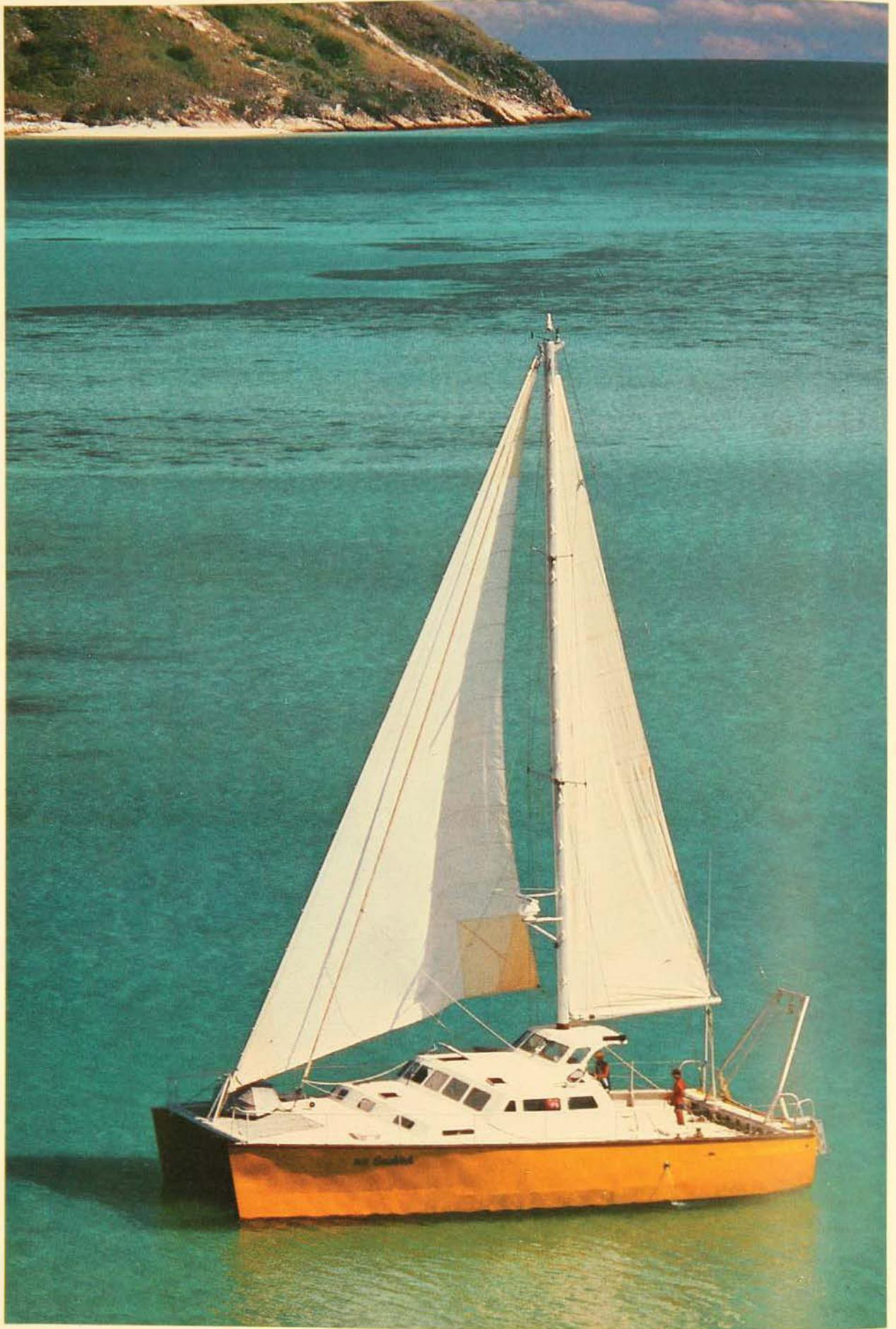






Also shown actual size is this piece of Fluorite with Calcite from Elmwood mine in Tennessee, U.S.A. The specimen is currently on display in the Museum's mineral gallery.
Photo: J. Fields.

◀ At left, reproduced actual size, is a spectacular feather star (*Comanthina nobilis*). Photographed at night while feeding.
Photo: Neville Coleman.



One of the highlights of the year was the launching of the new research vessel Sunbird for the Lizard Island Research Station. Sponsored by Suntory, the 14m x 7m aluminium sailing catamaran will put the whole of the northern part of the Great Barrier Reef within easy reach of research scientists.

Photo: B. Goldman.

EDUCATION SECTION

The main aims of the Education Section are to provide educational programs which help create interest in subjects being studied, communicate knowledge and develop attitudes consistent with the Museum's fundamental purpose.

SCHOOL GROUPS Education Officers taught 984 classes comprising 27,000 children during 1982-83, which represent an increased number of classes but decreased number of children compared with last year. This reflects the emphasis on lessons which involve the children in more practical activities. Smaller class sizes with an Education Officer, class teacher and often a volunteer have allowed children more 'hands-on' experience.

A major emphasis in lesson preparation has been on writing new activity sheets and preparing teachers' information packs. These not only give great assistance to classes having booked a visit with an Education Officer but also benefit some of the classes visiting the Museum without an appointment.

New marketing methods for education programs are being developed with a view to improving the quality of printed material as well as evaluating distribution and effectiveness for schools.

Three sessions of children teaching each other were held at the Museum with 80 children from 10 schools participating. At the orientation session, children learned to use objects in teaching, visited the scientific departments of their interest, and used the galleries to obtain information and devise assignments for each other. Ms Robyn Lilienthal, Consultant in Education for Talented Children, helped develop this program.

WORK EXPERIENCE High school students wanting work experience continued to regard the Museum as a popular venue and 49 students participated, particularly in the Exhibitions Section and scientific departments.

VOLUNTEERS A four-week training course for 15 volunteers was held in March, 1983, resulting in a total of 25 department volunteers. Volunteer work is varied and includes assistance with school classes, holiday activities, the Wandervan, Museum on the Road, Travel Case, art work, publicity, clerical assistance and care of the teaching collections, printed material and leaflets.

TEACHERS AND TEACHER TRAINEES Demonstration lessons and lectures on the Museum's educational facilities were given to trainee teachers from various tertiary colleges and to international teachers from Macquarie University, NSW. Three courses for teachers were organised in school holidays. The department took part in various in-service courses including one at Wagga Wagga, NSW, on museum education, which was the first of its kind.

ADULT EDUCATION Special programs and lectures were provided for people from the Migrant Education Centre, adult students and community groups.

MUSEUM TRAIN ACTIVITIES The Museum Train completed its first NSW tour on 25 July 1982 with a visit to the Wollongong area. During its five years the Train has stopped at 111 country centres. It was visited by 336,000 people, of these 159,000 were children in school classes. The Train's average attendance was 42.4% of a town's population.

When the train returned to Sydney it was completely refurbished by the State Rail Authority. A new exhibition entitled 'What on Earth? A Study of Relationships in Nature', was produced by the Museum's Exhibitions Department and has been installed. New educational material was prepared.

In May the Commonwealth Banking Corporation of Australia donated \$50,000 in sponsorship. Village Roadshow also contributed \$4,000.

This new exhibition was opened on 2 June by The Hon. L. J. Brereton, MP, on behalf of the New South Wales

Government and remained on show at Central Railway Station for four days. It then began a tour of western New South Wales with a fortnight at Lithgow, then Broken Hill.

MUSEUM ON THE ROAD Another new exhibition was launched this year. Sponsored by Unilever Australia Ltd, "Abelam — A People of Papua New Guinea" opened in March, 1983. It is the first ethnographic exhibition to go on the road and is proving tremendously popular.

Transported in a new Mitsubishi truck, these exhibitions are erected at libraries, shopping centres, civic centres and galleries in urban and country areas. Appreciation is extended to the growing number of enthusiastic and hard-working co-ordinators in each centre who organise required space, handle publicity and take school bookings. These co-ordinators recorded visits by 27,178 school children and estimated the total number of visitors at 129,000.

Successful tours of country areas continued with 'Arid Australia', 'Story of the Earth' and 'Life in the Sea' completing circuits of the western and south coast regions of New South Wales. 'Mammals in Australia' remained on the urban circuit this year.

SCHOOL LOAN CASES The School Loan Service continued expanding with the placement of 24 additional cases in service during the year. Nine new cases on insects are nearing completion.

A total of 839 loans was made to schools throughout the state. These were limited to one loan per term per school so that as many schools as possible could be introduced to the service. Many requests, however, could not be filled. A reprint run of the Loan Case brochure was donated by John Fairfax and Sons Ltd.

The School Loan Case Service was awarded a Certificate of Merit in the 'Best Educational Program' section of the 1983 Museum of the Year Awards, conducted by the Museums Association of Australia (NSW Branch).

WANDERVAN The Wandervan extension service for special groups visited 143 centres this year, reaching 5,955 individuals. Twenty of these centres were visited more than once. The centres included schools for physically and intellectually disabled, centres or homes for the frail and elderly, migrant centres, hospitals, rehabilitation units and remand centres.

Sponsorship of the Wandervan came from the Council of the City of Sydney for the period June 1982-June 1984. The van was repainted with the sponsor's name and logo. Much media publicity was received this year for the Wandervan in connection with the Council's sponsorship and other facets of the service.

Extra activities conducted by the Wandervan included talks to Rotary Clubs, a teaching program for disabled children and attendance at charity events. Two country trips were conducted, the first to the Newcastle region and the second to the lower south coast. The van visited nine centres, reaching 205 children.

A special program was held at the Museum during Senior Citizens Week and over sixty elderly people attended. Numerous handicapped classes have visited the Museum informally and nine special groups have been involved in Education Centre lessons.

SCHOOL HOLIDAY ACTIVITIES Special activities for children and family groups in each of the school holidays were: 'Birds in Australia', August-September (to mark the opening of the new Bird Gallery); 'Life in the Sea' in January; and 'Skeletons' in May (to mark the re-opening of the Skeleton Gallery). These activities attracted 9,500 people.

Family field trips were incorporated into courses for teachers and children during the January holidays. Participants learned about mammals and the seashore at the Museum and then went into the field to continue their studies.

Courses for high school students and teachers were held during the May holidays in association with the Geological and Mining Museum 'Story of the Earth'

exhibition, which explained recent changes in geology from global processes such as continental drift to events in the Sydney region. One week-long course on 'classification' was held in January for 30 Year 11 students from all over New South Wales. Activities included lectures, practical work and fieldtrips. The course was run in association with Taronga Zoo and the Royal Botanic Gardens.

The Museum Discoverers' Club has been organised for children who have a particular interest in natural history. In order to join they must complete a series of questions in "Museum Walkabout" question booklets. During the year 15 students completed the series and joined the Discoverers' Club.

SUNDAY AT THE MUSEUM The 'Sunday at the Museum' program includes family activities relating either to Museum exhibits such as 'Rocks and Minerals' or to topics such as 'communication' or 'people'. Often more than 400 people attended in an afternoon.

PREPARATION OF SPECIMENS The section's staff prepared over 300 specimens for teaching use in the School Group, Museum Train and holiday activities programs.

EVALUATION Innovations in the school visit program were assessed in July by a meeting of teachers and by questionnaire. Teachers' satisfaction with the program has increased significantly. The Museum Train and Loan Case programs were also evaluated and are highly regarded.

SPECIAL ACTIVITIES AND DISPLAYS During Children's Week in October, youngsters from the Manly-Warringah School for Crippled Children talked to visitors about their studies of Australian Aborigines, carried out as part of the teaching program. An exhibition of prize-winning entries in the United Nations Junior Media Peace Prize was held in January, 1983.

EXHIBITIONS Education Officers were associated with the

production of the following exhibitions: 'Dinosaurs from China', Museum Train, Skeleton Gallery (P. McDonald); 'Mammals in Australia' travelling exhibition (G. Hunt); 'Birds in Australia', Insects (J. McLeod); 'Women and Arts, Abelam — Papua New Guinea' gallery and travelling exhibition, Australian Aboriginal Gallery (C. Davey); Museum Train (S. Main); 'Abelam — Papua New Guinea' travelling exhibition (A. O'Neill).

CONFERENCES Ms McDonald was on the organising committee for the Australian International Council of Museums (ICOM) Seminar on Museum Documentation in August, 1982, and attended the Museums Association of Australia Annual Conference in Canberra during October, 1982. Ms McLeod and Ms O'Neill also attended the conference. Dr Hunt attended the British Group for Education in Museums Conference in Norwich, England, in August, 1982, where he presented a paper on the peer teaching program.

PROFESSIONAL ACTIVITIES Ms McDonald attended meetings of the following professional committees or councils of which she is a member: Board of Studies for the Museum Studies Course, the University of Sydney; Museums and Galleries Committee of the New South Wales Cultural Grants Advisory Council; Education Committee of the National Trust of Australia (NSW) (Deputy Chairman); Women's Liaison Officer; Australian National Committee for ICOM (Vice-President); Museum Education Association of Australia.

Dr Hunt continued as Secretary of the New South Wales Council of Heritage Organisations. Ms McLeod is Secretary of the Museums Association of Australia (NSW Branch). Mrs Davey is the Deputy Spokeswoman for the Museum. Ms O'Neill is a member of the Project Reef-Ed Team developing Great Barrier Reef teaching materials for the Great Barrier Reef Marine Park Authority.





Shown here preparing an exhibition panel is Desiree Deklerc. Photo: J. Fields.

GRANTS During the year the following bodies contributed: City Council of Sydney (Wandervan); John Fairfax and Sons Ltd (brochures for school loan cases); Commonwealth Banking Corp of Australia (train exhibition); and Roadshow Dist P/L (train publications).

ACKNOWLEDGEMENTS OF CO-OPERATION State Rail Authority; New South Wales Department of Education; Royal Botanic Gardens; Geological and Mining Museum; Taronga Zoo; National Parks and Wildlife Service; Ms Robyn Lilienthal, New South Wales Department of Education; and Neill Riley and Associates.

DONATIONS Time-Life International (Australia) Pty Ltd, Sydney, NSW; Ms Dianne Parkes, Henty, NSW; Mrs Constance Hall, Wellington, NZ; Mrs Carol Serventy, Sydney, NSW; and Mr and Mrs Moseley, Fairy Meadow, NSW.

INTERNATIONAL VISITORS Salome Samou, Solomon Islands Museum; Ger van Wengen, Rijksmuseum voor Volkenkunde, Leiden, Holland; Sri Hartani and Sri Suko, Indonesian Armed Forces Museum, Jakarta; and Leiton Mani, Fiji Education Centre, Suva, Fiji.

After five years' continuous touring, the Museum Train was withdrawn from service, re-designed and a totally new exhibition — "What on Earth" — was installed. The exhibit was designed in prefabricated modules so that off-track time for the servicing could be reduced. It is shown here at Lithgow, NSW. Photo: J. Fields.

EXHIBITIONS

Regular reviews of semi-permanent galleries, frequent and relevant temporary exhibitions, extension services and effective use of visitor areas are some of the activities done by the Exhibitions Department.

NEW SEMI-PERMANENT GALLERY The new Skeleton Gallery, or 'The Bone Ranger Rides Again', opened on 14 January, 1983, after eight months' preparation. Some 150 freshly cleaned skeletons were moved to make way for the new Aboriginal Gallery and were assembled in a dramatically lit presentation on the third floor.

The department assembled imaginatively posed skeletons of fishes, reptiles, birds and mammals within a grand Victorian gallery which had been redecorated for the occasion. Sounds of living creatures enlivened the exhibition.

NEW MUSEUM IN A TRAIN EXHIBIT After five years of continuous touring, the Museum Train was withdrawn, redesigned and a new exhibition installed.

The exhibit was designed in prefabricated modules which meant the train would spend less time off the track.

The Hon. L. J. Brereton, MP, opened the new exhibition entitled 'What On Earth', on 2 June 1983. The Museum in a Train project is sponsored by the Commonwealth Banking Corp of Australia.

NEW MUSEUM ON THE ROAD EXHIBITION 'Abelam — A People of Papua New Guinea' was launched on 21 February, 1983, at the OTC Centre in Sydney. This

exhibition was produced in accordance with the policy of developing an extension of each semi-permanent gallery. The 'Abelam Museum on the Road Exhibition' is sponsored by Unilever Australia Ltd.

PROJECT INITIATIONS The Exhibitions Advisory Committee, comprising the Chief of Exhibitions, the Deputy Director and four senior staff, was established by the Exhibits Guideline to advise the Director and the Trust on exhibition programming. The committee met three times during the latter part of the year.

The first meeting, in March, endorsed the general aims and forecasts of the Exhibits Guideline Exhibition Development Plan.

A second meeting, in April, agreed that planning for new exhibitions to replace the Hall of Life (completed in 1974) and the Melanesian Gallery (1968) should begin.

The committee also endorsed changes to the new Mineral Gallery, to the College Street foyer and 'Treasures' displays, all of which will now proceed.

As the year closed, proposals for temporary exhibitions for 1984-85 were under construction. The program to be adopted will incorporate topical exhibitions on controversial subjects relating to the Museum's fields of interest.

PROJECTS IN PLANNING The Insect Gallery advanced into full production after final endorsement of the design in 1982. Located on the third floor, with the 'Birds in Australia' exhibition, this gallery will contain over 3,000 specimens of insects, spiders and other land invertebrates. Live exhibits are planned with a nest of scorpions and a bull-ant colony.

The department's Aboriginal Gallery model will be submitted for review in July 1983 after many months of careful analysis. Installation of this semi-permanent exhibition will commence after the 'Dinosaurs from China' temporary exhibition has been removed in November 1983. The Aboriginal Gallery is sponsored by BHP Ltd.

The Mineral Gallery plans were the subject of market research last year and an expanded brief was prepared for this challenging project. An Exhibition Project Team was

formed and a detailed survey of the proposed content began. The Mineral Gallery is jointly sponsored by the Utah Foundation and the Australian Museum Society.

TEMPORARY EXHIBITIONS Massim Art opened on 24 August 1982 and was shown until 26 September 1982. The Wollongong City Art Gallery loaned over 170 beautifully carved and decorated objects from the Massim tribe of Papua New Guinea.

WOMEN ARTISTS Indonesia, Australia and Papua New Guinea celebrated the 'Women and Arts' Festival during October 1982. The exhibit contrasted the work of women from particular locations in the three countries and compared them to contemporary western art. Women from the Yuendumu Cultural Centre in the Northern Territory came to Sydney to perform traditional dances during the exhibition.

The Museum hosted the Lord Howe Island Art Prize between 12 February and 13 March, 1983. Paintings by Sydney artist Ms Josonia Palaitis were hung in the Long Gallery, along with a small display of Island memorabilia.

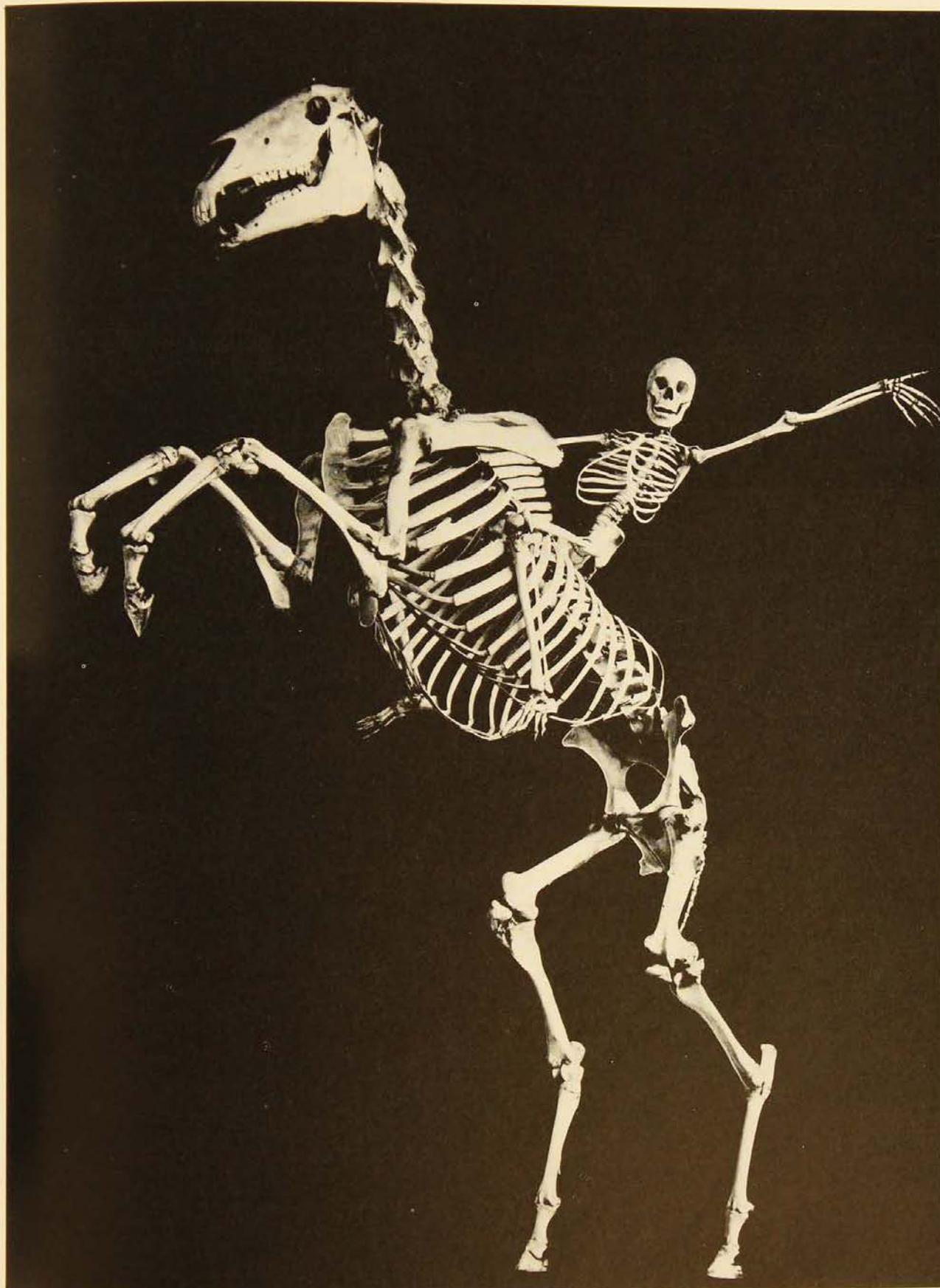
The Australian Museum Society launched a merchandising initiative at the 1983 Sydney Royal Easter Show with a sample bag containing advance publicity material for the forthcoming 'Dinosaurs from China' exhibition. The department built the Society's award-winning stand.

EXHIBITION MAINTENANCE Two staff positions were created: an audio-visual technician's position in place of an existing vacancy and a temporary position of preparator responsible for exhibit maintenance.

ACKNOWLEDGEMENTS The following organisations were vital to ensuring the success of exhibitions: Commonwealth Banking Corp of Aust, and Roadshow Distributors Pty Ltd, Museum in a Train; Unilever Australia Ltd, Adalam Museum on the Road; BHP Ltd, The Aboriginal Gallery, Utah Foundation, The Mineral Gallery; The State Bank of New South Wales, The Mammal Exhibition; The Wollongong City Art Gallery, Massim Art; and the Australian Museum Society.



Nine Warpiri women from the Yuendumu Cultural Centre in the Northern Territory came to Sydney to perform traditional dances during an exhibition of their work as part of the "Women and Arts" Festival in October 1982. Photo: K. Lowe.



The Bone Ranger Rides Again is one of the centrepieces of the Museum's new Skeleton Gallery. Exhibits in the gallery range from elephants, hippos and whales down to mice and small birds.
Photo: J. Fields.

SERVICE ACTIVITIES

LIBRARY

The monographs, periodicals and archival material held in the Museum's Library are a major source of specialised information, not only for research undertaken within the Museum but also for the scientific and educational activities of many other organisations and individuals.

The Library this year suffered from lack of resources in all areas, combined with increased demands on its services.

ACQUISITIONS While normal acquisitions remained approximately the same as last year, the Library also acquired the scientific volumes of the Mel Ward Collection and some thousands of volumes of the Linnaean Society Library. The integration of these collections is monumental. The Library employed people to assist with one of the moves and another person to assist part-time with the Mel Ward Collection and much work is still needed to make both collections accessible.

SPACE LIMITATIONS Additionally, space problems compound the difficulties. Both collections are currently stored at the Museum's annexe at Rushcutters Bay and parts of the collections at least will have to remain there until an appropriate space can be found within the Museum. The stack area, comprising one whole floor of the William Street wing of the Museum, is full and our current acquisition rate of 500-600 monographs, 500 subscription serial titles and two-thousand exchange and gratis serial titles during the year means the Library has to find more space and thoroughly rationalise the collection.

This may result in some items being found to be superfluous to the collection, while others which are used infrequently may have to be relocated.

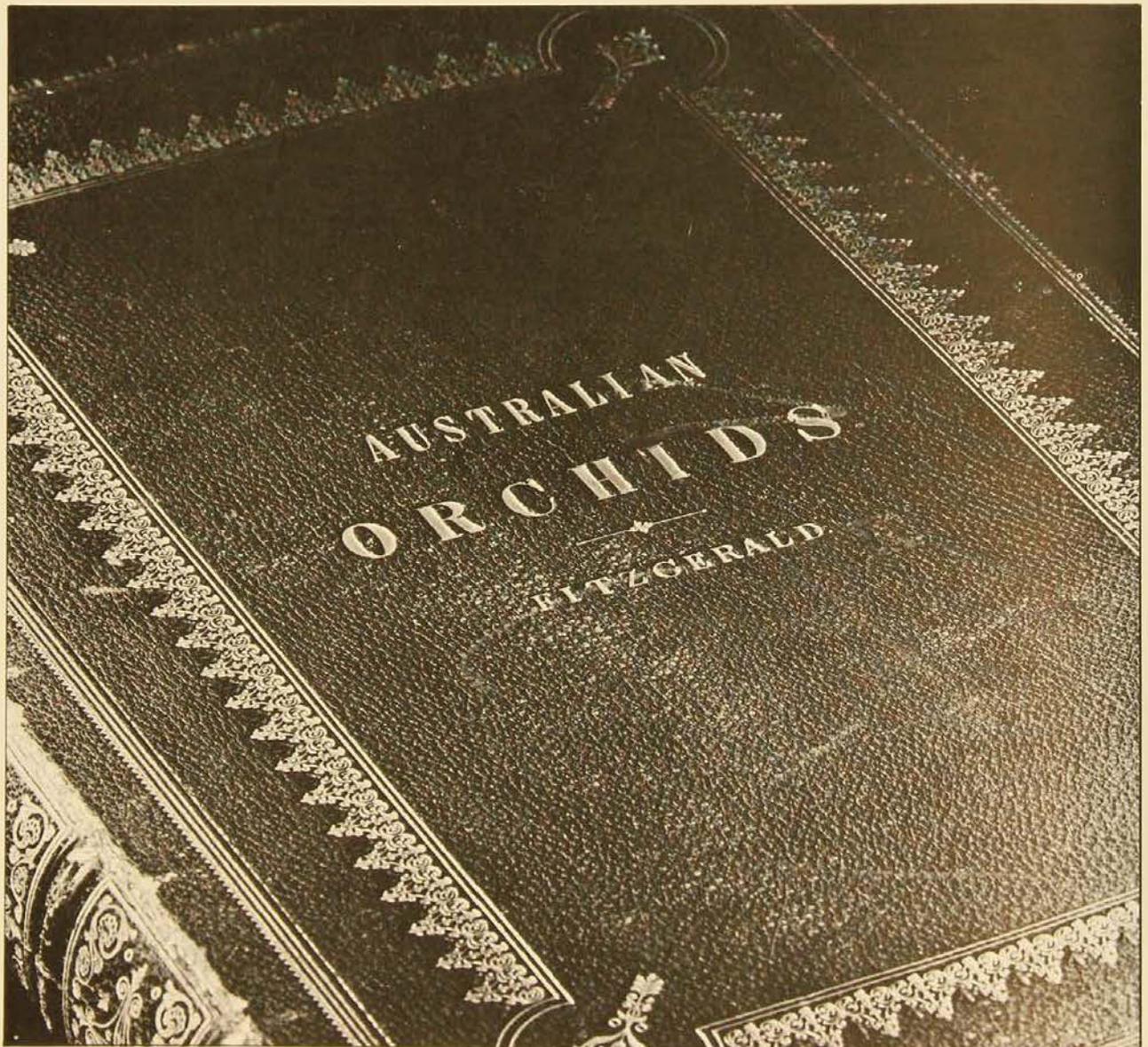
Efforts are being made in both directions. However, because staff resources are being over-committed, it appears unlikely that these objectives will be achieved soon.

STATISTICS	1982-83	1981-82
Monographs acquired	550	562
Monographs catalogued	600	530
Staff loans	2,051	2,471
Staff inter-library loan request	608	651
External inter-library loan request	* 759	1,679
Binding	1,049	1,396

* Decrease because Library was without a photocopier for eight months.

EQUIPMENT The Library equipment acquired: photocopier with document feed and reduction capabilities; microfiche/film reader/printer; and an electronic 'memory' typewriter used in the duplication of catalogue cards, address labels, form letters, etc.

Renovations have been made to an existing area in the stack to enable all the archival material to be located together in reasonable conditions. The binding backlog is an ongoing problem. Initially no funds were allocated for binding, however, a small allocation was made to keep the program going. It is hoped that a larger allocation in the next financial year, in the light of the major importance of the collection, will help to partially resolve problems in this area.



MATERIALS CONSERVATION

The aims of Materials Conservation are to prevent damage to the collections and to stabilise the condition of individual objects through the development of research and treatment programs.

NEW ABORIGINAL GALLERY The Aboriginal Gallery was the major area of interest. From March, 1983, there were four people working full-time on preparations for the gallery. The department temporarily employed three additional people to cope with the large work-load involved with preparing the display. One of the new conservators, Ms Thurid Clark, from the United States of America, has considerable experience in conservation of ethnographic objects gained at the Parks Service, Harpers Ferry, USA.

Problems encountered so far include the removal of inks (old registration numbers), repairs to broken and split leaves, cracking resins, and objects made of brittle skin.

A major conservation problem with the Museum's anthropology collection is the unbound, powdery, flaking pigments on a variety of substrates such as wood, shell, bark and grasses. A preliminary experiment was carried out using cellulose ethers to stabilise the pigments. Further experiments need to be done before its use can be recommended. Preliminary work required to consolidate the Pukamani Poles from Bathurst and Melville Islands which will go on exhibition in the Aboriginal Gallery is the next stage in the investigation.

ABELAM TRAVELLING EXHIBITION The 'Abelam Museum on the Road Exhibition' is the Museum's first ethnological travelling exhibition. The often severe environment of the travelling exhibit included regular vibration and movement, very high light levels and extremes of humidity and temperature. All are potentially harmful and steps were taken to minimise their impacts. Recommendation to the Project Team for the 'Abelam Museum on the Road Exhibition' was that fragile objects be acquired only for the life of the exhibition. Periodic monitoring of the objects on display occurred in order to assess conditions and treatments.

ABORIGINAL CARVED TREE Removing an Aboriginal carved tree in the old Aboriginal Gallery to make way for the new Skeleton Gallery provided the section with an interesting problem. A radiographic inspection of the tree, to determine if it was strong enough to be moved horizontally, showed little support between the base and the hollow upper half. (A conservator will need to work for six months full-time in order to dismantle the tree and reassemble it in storage.)

COMPUTER MONITORING The computer system required new software in order to give a statistical summary of each week's data. The machine is now working full-time collecting environmental data (such as relative humidity and temperature) from public galleries in the Museum and recording this information on floppy disc. This database will allow more accurate conclusions about the Museum's environment. The Pacific Storage area and the new 'Bark Store' should be on-line by the end of 1983.

EGYPTIAN LOAN MATERIAL Over 1,000 Egyptian artefacts from the Museum's anthropology collection are being lent to the Department of History, Philosophy and Politics, Macquarie University, NSW. Over 700 condition reports were completed according to usual loan procedures.

RELOCATION OF FUMIGATION CHAMBER The chamber was moved adjacent to Yurong Street, is operational and exceeds world safety standards. Final approval is awaited from the Division of Occupational Health, Department of Industrial Relations, to use the chamber regularly and reduce the backlog of material awaiting fumigation.

CONFERENCES Ms Sue Walston, Ms Sue Phillips, Ms Karen Coote and Mr David Horton-James attended the Institute for the Conservation of Cultural Material (ICCM) Conference in Canberra, ACT; Ms Walston and Ms Coote attended the International Council of Museum Conference in Washington, DC, USA.

STAFF ACTIVITIES Mr David Horton-James is Secretary for the New South Wales Division of ICCM. Mr Horton-James also organised a Workers' Education Association course entitled 'Museum Conservators at Work'.



The removal of an Aboriginal carved tree in the old Aboriginal Gallery (shown here) presented the section with an interesting problem.
Photo: J. Fields.

◀ This is one of the many valuable scientific volumes which form the Mel Ward Collection.
Photo: J. Fields.

PHOTOGRAPHY

The Photography Department provides documentary and creative photographic services to the Museum and outside organisations. Photographs from the archives and material taken on assignment are available for publications, education, display and scientific activities.

Enlarging and maintaining the photographic archives is another function. More than 100,000 black and white negatives and several thousand colour film images make up the collection.

FRANK HURLEY COLLECTION The archive includes the negatives of remarkable photographs taken by Captain Frank Hurley in New Guinea during a 1926-27 expedition. This valuable collection, consisting of over 1,000 plates, was slowed in being upgraded to archival standards because of insufficient funds. All negatives were cleaned, printed and new copy negatives were made. Prints and negatives still remain to be sorted, filed and proper arrangements made for storing the original plates. Many negatives were in worse condition than originally thought, which caused concern about the state of some other photographs in the Museum's collection. Recent approval to have a book of Hurley's work published, offers a new prospect for the photographs.

NEW TECHNIQUES The department keeps abreast of developments in image-making methods, equipment and materials, assessing their potential for any special requirements of the Museum. Some of these are: satellite remote-sensing; light-intensifying lens system; and stereo scanning electron microscopy. The department's experimental work in three-dimensional imagery in photographs and x-rays continues with encouraging results.

ACTIVITIES The pre-Christmas release of the book 'Minerals of Broken Hill' occurred at the CRA Ltd's head office in Melbourne, Vic. Museum staff photographer, Mr John Fields, and other contributors, attended the launching. This definitive work includes photographs of the best Broken Hill specimens from the Museum collection.

During the year photographers documented insect-collecting in western New South Wales; the excavation of a *Diprotodon* pelvis at Tamber Springs, NSW; the retrieval of a sperm whale skull from Forrester's Beach, NSW (with the assistance of an army helicopter and crew); and site studies of a diamond prospect near Walcha, NSW; the commissioning of RV Sunbird, the Lizard Island Research Station's new vessel, at Cairns, Qld. Additional work was done at the research station for three national publications. A number of day trips for special projects, such as pollination studies, mangroves and Museum displays on location, were also photographed by the department.



Museum photographer John Fields is shown here taking the photograph which appears on page 20. On the far right, notice the television camera crew, as this retrieval captured much media attention.
Photo: S. Quirk.

ADMINISTRATION

The division is responsible for staffing, finance, administration (including security, attendants and cleaning) and building development in non-public areas.

ACCOUNTS BRANCH Investigation of computerised accounting systems occurred in late 1982. An approval was obtained in January, 1983, from the Secretary, Premier's Department, to call tenders to supply the Museum with a micro-computer and associated software system.

The general objectives of the Museum for installing an electronic data-processing system are:

1. to improve efficiency in the areas of financial reporting, commitment reporting and the process of receipting and payments; and
2. to provide a framework whereby the increasing accounting workload and administrative duties can be catered for within the limitations of current Public Service staffing policies.

The general uses for the system are: general accounting and related work; Museum Shop operation; staff information/statistics/filing; and limited, high-quality word-processing.

Tenders closed in mid-May and by the end of the year arrangements were being made to place an order with Burroughs Ltd for a B20 micro-computer system and software.

Major staff changes occurred during the year, including the senior position of Senior Clerk/Accountant, but work disruption was minimal. The re-organisation, streamlining of procedures and preparation for the changeover to the computer system continued.

STAFF BRANCH The Staff Branch provides a support system for the Museum's 162 permanent positions and for temporary positions which are created, usually for short periods, to enable specific tasks to be undertaken. During the year 22 permanent positions were advertised and filled, while at times up to 40 people were employed on a temporary basis. These temporary positions are funded either from Consolidated Revenue Funds, Trust Funds or from grants received from other organisations. A total of 179 people were employed on a temporary basis during the 1982/83 financial year.

In December, 1982, the Museum sent a detailed submission to the Premier's Department seeking a substantial increase in grading for the two positions within the Branch. Discussions about this matter make the Museum hopeful that the proposal will be supported by the Department to the Public Service Board.

RECORDS SECTION The records section comprises some 1,416 files. A computerised file index was prepared, greatly facilitating access to individual files. This is seen as the first step in rationalising and developing an adequate filing system.

The Museum's storage and security of files was significantly improved during the year.

Use of an in-house computer in the 1983-84 financial year will enable quicker updating and modification of the file list, including the capacity to report about files on a main user basis.

BUILDING WORKS Building construction and maintenance works are undertaken and funded by the Public Works Department. Major works completed during the year included the fitting out of the old Skeleton Gallery for the 'Chinese Dinosaur Exhibition'; re-roofing the former 'Child Welfare Building' currently housing the Pacific artefact collection; renovation to the attendants' amenity room; provision of a first-aid room off the Long Gallery; major alterations to the internal College Street entrance area; air conditioning the bark painting storage area and Anthropology Department.

Design and/or preliminary work commenced on other major projects, including redevelopment of the Education Department; walkway and foyer improvements to the Anthropology Department; modifications to the Exhibitions Department (Spirit House); and landscaping the William Street frontage bank area and garden plots.

The Museum conveyed formally in June to the Head, Building Construction and Maintenance Branch of the Public Works Department, its pleasure at the manner in which jobs were undertaken and agreed, and time schedules adhered to in the above projects.

The Museum is also pleased to report that major stonework restoration of the College Street facade has commenced. The first stage (costing \$500,000) will be carried out under contract to the Public Works Department, during the period to December, 1983.





The Hon. Barry Jones, MP, Minister for Science & Technology (second from right), examines plans of Lizard Island with Mr K. Narumi, Senior Managing Director of Suntory Ltd. (second from left), Mr Hidenori Tokuda, Director of Suntory Ltd. (Australia) (left) and Dr Barry Goldman, Director of Lizard Island Research Station (right).
Photo: J. Fields.

SPECIAL PROGRAMS

LIZARD ISLAND RESEARCH STATION

The past year was hectic at the station, with many visitors as well as completion and commissioning of the new research vessel.

The Lizard Island Research Station is operated by the Australian Museum and provides one of the best facilities in the world to support research on coral reefs. The accommodation, boats, diving equipment, aquaria and laboratories are available for scientists to study various aspects of the biology, ecology, geology and oceanography of northern Barrier Reef waters.

NEW RESEARCH VESSEL The most notable event of the year was the completion of the long-awaited research vessel—work boat, the RV Sunbird. Designed by Mr Lock Crowther, a world-renowned naval architect, to the Director's specifications, the RV Sunbird was built by SBF Engineering in Fremantle, WA, after tenders were called last May. It was completed in late December and sailed to Lizard Island via Darwin in February. The trip took 21 days at sea and was a good 'shake-down' cruise. Crew for the voyage were: Dr B. Goldman (Master), Ms L. Goldman (Purser and Mate), assisted by Mr L. Crowther (designer) and Ms C. Sinclair — Perth to Broome; Dr B. Russell and Ms C. Short — Broome to Darwin; Dr D. Griffin, Ms J. McLeod and Dr B. Russell — Darwin to Lizard Island.

The RV Sunbird, which cost \$230,000, was made possible by a generous donation from the Japan Foundation, initiated by Suntory Ltd, together with assistance received from Taylor Marine, KFV Fisheries, Headland Engineering, Don Dunbar, Alcan Ltd and the Queensland Government.

The official commissioning of the RV Sunbird was performed in Cairns on 16 April by the Minister for Science and Technology, the Hon Barry Jones. Also present were Mr K. Narumi, Senior Managing Director of Suntory Ltd; Mrs Narumi and representatives from scientific institutions and the community. A cruise of the Cairns inlet, a ceremony at the Pacific Hotel, followed by a dinner at the Northern Heritage Hotel, concluded the day. On 17 April a small party, including Mr Jones, Dr Baker and special guests, flew to Lizard Island to see the station's facilities and to see the RV Sunbird in operation. The vessel had been sailed overnight from Cairns (a distance of 140 nautical miles) by Mr John Barnett and Mr Zolly Florian of James Cook University.

VISITORS This year was the busiest yet. A total of 108 researchers and assistants visited the station, 12 of them coming more than once. The average daily occupancy throughout the year was 8.5 visitors and 7.6 researchers.

Apart from those who visited the station to see RV Sunbird in operation, notable visitors included: Mr Saji, President of Suntory Ltd, accompanied by Dr Griffin and Dr Baker for three days in November; Mr John Gayler, Member of Federal Parliament for Leichhardt, and his wife; and Mr Mick Young, Special Minister of State, and his wife on 30 May; and Mr Bob Scott, State Member of Parliament for Cook, on 3 June.

FUTURE DEVELOPMENTS Mr Barney Lynn, a Cairns-based architect, familiarised himself with the station's layout and discussed future developments. He was commissioned to design the extension to the laboratory block, plans for which are almost complete. The new laboratory, to be built late in 1983, will contain offices for the Director and Secretary, a library/seminar room, store-room, radio-isotope laboratory and an air-conditioned laboratory for analytical instruments. The old laboratory block will be partially renovated.

PUBLICATIONS Seventeen new publications emerged from work done wholly or in part at the Lizard Island Research Station. This brings the total to 104.

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN WILDLIFE

The aim of the Index is to assemble and maintain its expanding collection of well-documented colour photographs. These photographs illustrate the appearance, development and behaviour of Australian vertebrate animals. The resource is available for use by biologists, authors and publishers.

NEW PUBLICATIONS *The Wrens and Warblers of Australia*, the first book to be produced entirely by the Index, was published in November by Angus and Robertson. The book was so successful that the Index decided to continue with a series of nine volumes to cover all bird life of Australia.

Mr Ronald Strahan, Executive Officer, has been working on *The Australian Museum's Complete Book of Australian Mammals* since 1980. In June 1983 the publication reached page-proof stage. It aroused considerable interest among booksellers, and the publishers increased the initial printing from approximately 25,000 to about 60,000, reducing the retail price from \$60 to \$45. *The Australian Museum's Complete Book of Australian Mammals* will fill a significant gap in Australian zoological literature.

The book is sponsored by Castlemaine Tooheys Limited who provided a grant of \$50,000 to cover the costs of preparing the text and photographs. This donation has also allowed the Index to embark upon other publications. Two bird books of the style of *The Wrens and Warblers of Australia* and two smaller, popular books on specialised groups of Australian mammals are being planned.

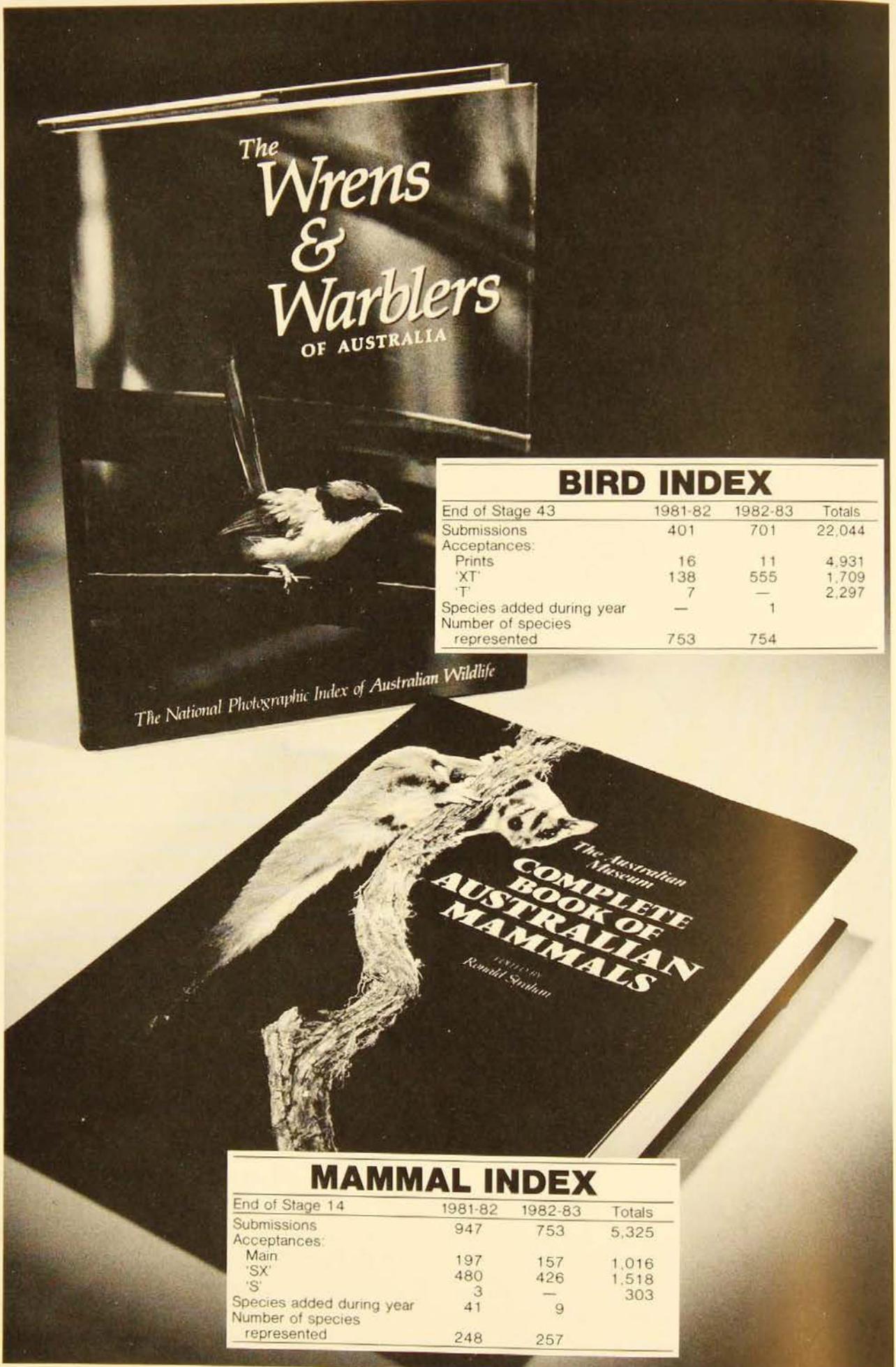
A fourth edition of *Species and Subspecific Forms of Australian Mammals* is in preparation.

COLLECTIONS AND ADDITIONS 120 x 175 mm Bird Index photographic prints are housed in 30 steel filing cabinets at the Index rooms in the Museum's Rushcutters Bay annexe. The corresponding internegatives are housed in the Museum's Photography and Visual Aids Section. A duplicate set of prints is on exhibition in the National Library, Canberra.

A second collection of bird photographs in the form of 35 mm transparencies is housed at Rushcutters Bay. This collection has increased in size and general utility. Transparencies were originally classified in the category 'XT' (good quality but surplus to the requirements of the print collection) and 'T' (lesser quality but of technical interest).

Nine species were added to the collection during the year. The Index now has representatives of all except two recognised species of Australian mammals, excluding whales and dolphins. The missing representatives are the Warabi, a tiny rock-wallaby from the Kimberleys, Western Australia, which was described in 1978, and a rodent from Cape York which was described in 1980 but have not yet been photographed. A dozen new species are in the process of being described. The Index faces a continuing challenge to maintain its portrait gallery but the emphasis on acquisitions is now in the areas of detailed anatomy, development and behaviour.

Tables on the following page show the state of the collection as at 30 June 1983. ▶



The
**Wrens
&
Warblers**
OF AUSTRALIA

The National Photographic Index of Australian Wildlife

BIRD INDEX

End of Stage 43	1981-82	1982-83	Totals
Submissions	401	701	22,044
Acceptances:			
Prints	16	11	4,931
'XT'	138	555	1,709
'T'	7	—	2,297
Species added during year	—	1	
Number of species represented	753	754	

The Australian
Museum
**COMPLETE
BOOK OF
AUSTRALIAN
MAMMALS**
EDITED BY
Ronald Suthern

MAMMAL INDEX

End of Stage 14	1981-82	1982-83	Totals
Submissions	947	753	5,325
Acceptances:			
Main	197	157	1,016
'SX'	480	426	1,518
'S'	3	—	303
Species added during year	41	9	
Number of species represented	248	257	

Photo: J. Fields.

GENERAL ACTIVITIES The Index worked closely with the office of Community Relations, providing illustrations and text for *Australian Natural History* magazine. A considerable amount of material was also provided for commercial publications, including two Australian encyclopaedias.

COMMITTEE OF MANAGEMENT The Committee meets at least four times a year to determine general policy and supervise finances. In May 1983 Mr K. H. Cousins, CMG, retired as the first Chairman of the Committee and Mr J. H. Broinowski, CMG, FCA, was elected Chairman.

STAFF The Index comprises an Executive Officer, Archivist, Clerical Assistant and Typist, all of whom work part-time. Mr Ronald Strahan, who retired from the Museum in November 1982, was re-appointed Executive Officer of the Index in February 1983. Mr Strahan was re-elected President of the Royal Zoological Society of New South Wales and elected New South Wales representative

on the Council of the Australian and New Zealand Association for the Advancement of Science (ANZAAS). He attended the Congress of ANZAAS held in Perth in May, 1983. Mr Strahan was also appointed a member of the Australasian Specialist Group of the Survival Service Commission of the International Union for the Conservation of Nature.

VOLUNTEERS Mr E. L. Carthew and Mr J. de S. Disney spent many months reorganising the bird print collection from order of accession to systematic order, thus vastly increasing its utility. They also began sorting and cataloguing a large collection of glass negatives and lantern slides of historic interest.

DONATIONS Mr A. G. Wells and Mrs Wells donated ten mammal photographs and Mr N. Chaffer donated fifty photographs of birds.

THE AUSTRALIAN MUSEUM SOCIETY (TAMS)

This year the Society grew gradually, both in numbers and members, and in available funds. Increased membership resulted in a widened range of activities.

FUNCTIONS The Society undertook a total of 67 functions including a variety of social functions, lectures, field trips and excursions.

The Society continued the policy of seeking a distinguished overseas speaker to deliver lectures. Mr Kailash Sankhala, Chief Wildlife Warden of Rajasthan, gave a series of three lectures on India. This visit was made possible by the donation of an airfare by Going Places Travel. Dr Jim Hazel and Mrs Mary Hazel, Mr Vincent Serventy and Mrs Carol Serventy and Dr Lin Sutherland and Mrs Nancy Sutherland provided accommodation for Mr Sankhala.

A proposal was launched for the Society and Utah Foundation to provide joint sponsorship of the new Mineral Gallery.

AWARD WINNING STAND Another initiative was the placement of a stand at the Royal Agricultural Society's Easter Show. The stand was designed by Exhibitions Chief, Mr Rob Joyner, and won second prize for best display in the Royal Hall of Industries. This was an excellent result for the Society's first entry at the show.

The Society launched two books during the year: *Traditional Pottery of Papua and New Guinea* by Ms Margaret Tuckson and Ms Patricia May; and *Wrens and Warblers*, edited by Mr Vincent Serventy and Mr Arnold McGill, assisted by Mr Terry Lindsey.

The coffee shop continued as a valuable service to Museum visitors.

Again the Society gave direct assistance to the Museum by helping organise and cater conferences, seminars and functions.

VOLUNTEERS The efforts of volunteers, most notably Ms Joan Cocks and Mrs Mardi Jones, helped considerably in the administrative area.

Over 170 volunteers placed by TAMS in most areas of the Museum added to the Society's overall contribution. Co-ordination of these volunteers was handled by Mrs Herti Verge.

Mrs Carol Serventy once again represented the Society on the Australian Federation of Friends of Galleries and Museums.

CONTRIBUTION Generous support was forthcoming from the following benefactors and sponsors: Mr W. S. Tatlow; Readers Digest Services Pty Ltd; ANZ Banking Group Ltd; Dr J. Hazel and Mrs Hazel; Mrs Nadine Turner; Ms D. Parkes; Dr. R. McEvedy; Mr D. S. Greatorex; Mr P. Wallman and Mrs Wallman; Mr A. J. Flores; Mr Herbert Mitterer; Mr J. D. Macanish and Mrs Macanish; Mrs Ilma Scandrett; Mr K. Winsbury and Mrs Winsbury; and Dr H. Kramer and Dame Leonie Kramer.



One of the distinguished overseas visitors who addressed the Society was Mr Kailash Sankhala, Chief Wildlife Warden of Rajasthan, who gave a series of three lectures on India.

MUSEUM'S FINANCES

HIGHLIGHTS Receipts from all sources during the year amounted to \$6,131,906 million, comprising income from granting agencies in the private sector, Museum trading operations, other projects and State Government funds.

Payments from all sources totalled \$6,537,052, an increase of 21.5% over the previous year.

STATE GOVERNMENT FUNDS State Government funds were provided to meet salary commitments of the Museum's permanent staff; general operating, maintenance and working expenses; endowment and special subsidy contributions; and major plant acquisitions. State Government funds represented 73% of the total funds available to the Museum. This is a slight increase in State Government funding compared to the previous year's 70%.

The State Government allocation to the Museum, including salary supplements received during the year, increased by 18.8% over the previous year, although the majority of this increase related to the various wage and salary increases which occurred in the first half of the year. The Government's special subsidy for sponsorship obtained for Museum programs was held at the previous year's level (\$200,000) while the statutory endowment allocation was reduced by 9% to \$125,000.

The statutory endowment allocation enables the Museum to purchase items for the collections, construct exhibitions and fund other special programs. The special subsidy is provided as an incentive with the Government matching, on a dollar for dollar basis, sponsorship monies raised from private sources.

A reduction in funding of salaries for permanent positions and other working expenses also occurred, which necessitated constant monitoring of expenditure and the holding of some positions vacant during the year to ensure that expenditure was contained within the allocation available.

TRUST ACCOUNTS The Museum operates two main Trust accounts, the General and Grants Accounts.

Funds within the General Account are generated through: merchandising, including the sale of books, magazines, catalogues, artefacts, replicas, films, hire of parts of the Museum buildings for public and private functions; donations and interest on investments.

This income is immensely important to the Museum as it provides a degree of financial independence, enabling projects to be undertaken which would not otherwise be possible.

All scientific grants and sponsorship funds are accounted for within the Grant Account.

Trust General Account Income of the Trust General Account amounted to \$991,289, an increase of \$102,445 over the previous year. These funds are the separate income of the Trust of which the major items (excluding the State Government Statutory Endowment and Special Subsidy) contributing to the total are Bookshop, 27.5%; Australian Natural History Magazine, 10.5%; Mineral Sales, 8%; and Interest on Investments, 4%.

The following increases occurred in respect of the main income items in comparison with the previous financial year: Bookshop, +17%; Australian Natural History Magazine, +28%; Mineral Sales, +55%. Interest on Investments dropped by 48.5% to \$40,586 and reflected less liquidity available to the Museum during the year and lower interest rates.

Payments in respect of this Account amounted to \$875,131, reflecting a decrease of 2% on the previous year. Payments relating to the major classifications/functions as a percentage of the total payments were, Collection Acquisition and Documentation, 8%; Shop, 21.5%; Australian Natural History Magazine, 14%; Exhibitions, 12%; Mineral Sales, 7%.

A lower level of payments (compared to budget) occurred in relation to exhibitions (although this also reflected sponsorship of the Museum Train within the Grant Account) and some special programs.

Trust Grant Account Income of the Trust Grant Account amounted to \$679,472, an increase of \$61,868 over the previous year. The main sources of income were, sponsorship for Special Programs, \$200,000 (29% of total income); Marine Science and Technologies Centre, \$92,810 (13.5%); Australian Research Grants Scheme \$68,360 (10.5%) and Australian Biological Resources Study \$50,421 (8%).

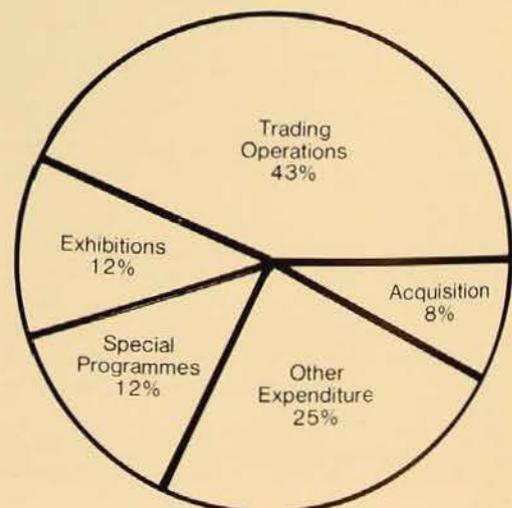
Payments from this account increased by 15% compared with the previous year, to \$875,778.

Payments relating to the major classification/functions were, Scientific Research \$322,282 (36.5% of total payments); Lizard Island (Scientific Research), \$255,804 (28.5%); Exhibitions, \$207,049 (24%); National Photographic Index, \$50,473 (6%) and Educational Programs, \$39,369 (5%).

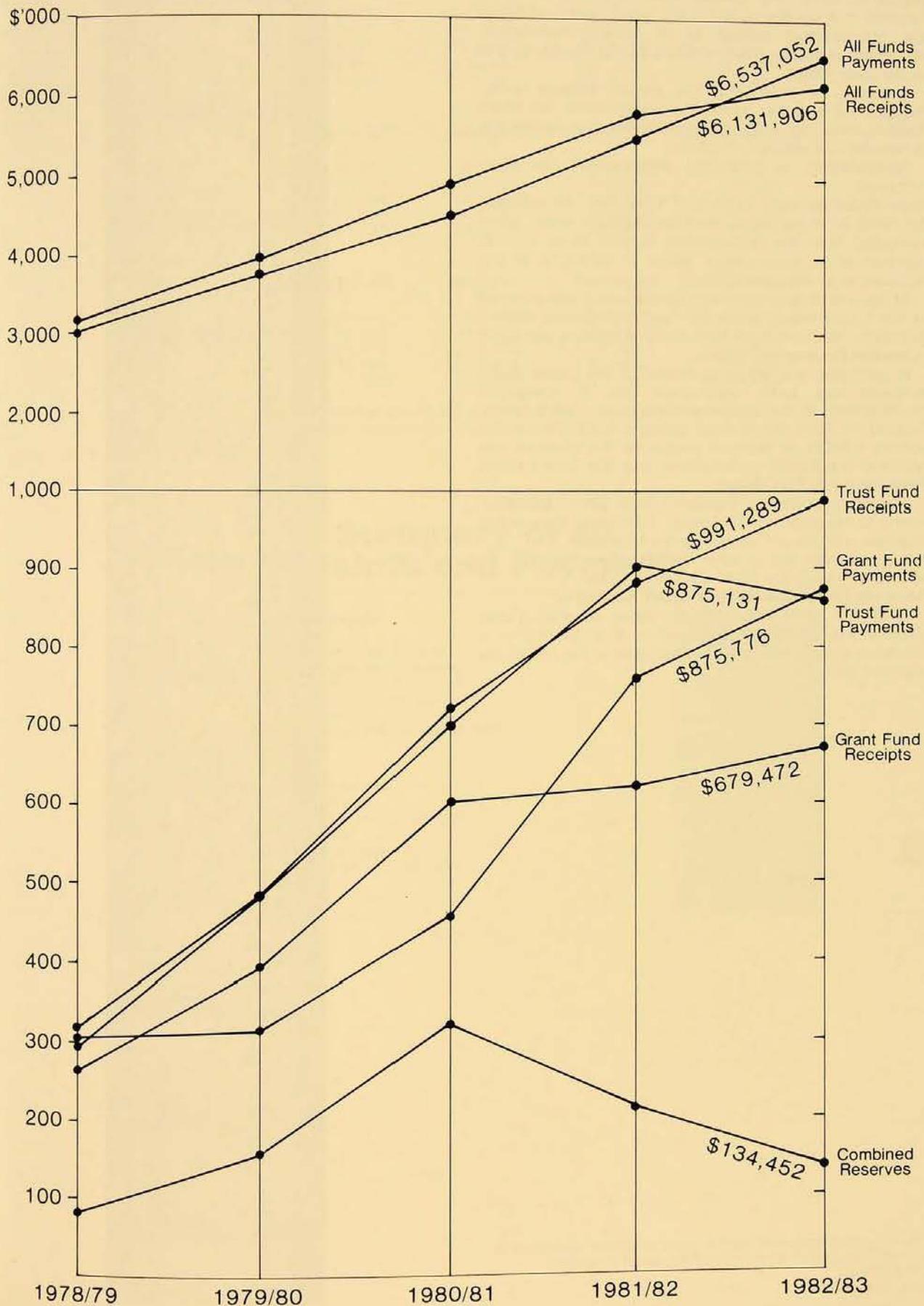
Trust Fund Receipts 1982/83



Trust Fund Payments 1982/83



The Australian Museum Receipts and Payments/Combined Reserves



APPENDIX A

SUMMARY OF ACCUMULATED FUNDS

Trust General Account The excess of receipts over payments within the General Account during 1982-83 resulted in a surplus of \$116,158 which, when added to the accumulated surplus as at 1/7/82, resulted in accumulated surplus funds of \$160,026 in this Account as at 30 June 1983.

It should be noted that this surplus reflects under-expenditure in some items, the commitments for which must be met in the 1983-84 financial year. In particular this is relevant to Exhibition Programs.

Nevertheless, a substantial improvement has been achieved.

Trust Grant Account A deficit of \$196,304 was achieved for 1982-83 in respect of the Grant Account which, when deducted from the accumulated surplus as at 1/7/82, resulted in an accumulated deficit of \$25,574 in this Account as at 30 June 1983.

At the end of the year, major deficits were being carried in the Lizard Island, Museum Train and Abelam Gallery Accounts; the 'Dinosaurs from China' Exhibition and some Australian Government Grants.

In particular, the deficit operation of the Lizard Island Account has been maintained due to continued development of the Research Station on Lizard Island. Despite the State Government ceiling of \$200,000 on the special subsidy of Museum programs, the Museum has obtained substantial contributions from the Lizard Island Reef Research Foundation.

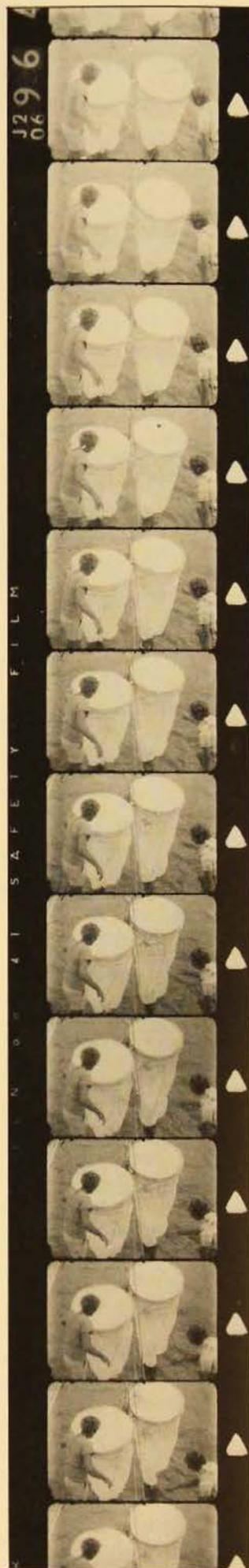
The Esso-sponsored 'Dinosaurs from China' Exhibition opens to the public on 18 August, 1983, and is expected to return a significant surplus to the Museum.

It is expected that all other deficits will, in the main, be recovered during the 1983-84 financial year.

Reserves (Trust General and Grant Accounts)

As at 30 June 1983, the combined reserves (Trust General and Grant Accounts) stood at \$134,452 — a decrease of \$80,146 over reserves held at the end of the previous year.

Swinging drag nets overboard in order to collect specimens is an important part of work on the new research vessel RV Sunbird.
Film: J. Fields.



Summary of Trust Accounts for Five Years

General Account

Year	Balance B/F \$	Receipts \$	Payments \$	Closing Balance \$
78-79	-19,265	308,455	248,775	40,415
79-80	40,415	482,765	482,893	40,287
80-81	40,287	707,936	701,229	46,994
81-82	46,994	888,844	891,970	43,868
82-83	43,868	991,289	875,131	160,026

Grants Account

Year	Balance B/F \$	Receipts \$	Payments \$	Closing Balance \$
78-79	101,410	258,783	312,015	48,178
79-80	48,178	394,157	315,849	126,486
80-81	126,486	602,067	453,852	274,701
81-82	313,850*	617,604	760,724	170,730
82-83	170,730	679,472	875,776	25,574 DR

Combined

Year	Balance B/F \$	Receipts \$	Payments \$	Closing Balance \$
78-79	82,145	567,238	560,790	89,593
79-80	89,593	876,922	798,742	166,773
80-81	166,773	1,310,003	1,155,081	321,695
81-82	360,844	1,506,448	1,652,694	214,598
82-83	214,598	1,633,548	1,713,694	134,452

* This included balances from National Photographic Index of Australian Wildlife accounts which were taken over by the Museum on 1 July 1981.

Summary of all Receipts and Payments

1982		Receipts		1983	
\$	%			\$	%
391,365	7	Balance as at 1 July		234,003	4
3,722,125	65	Consolidated Revenue		4,498,356	69
888,844	16	Trust General Account		991,289	15
617,604	11	Trust Grant Account		679,472	11
73,466	1	Coffee Shop		84,410	1
2,194		Peter Rankin Memorial Fund		3,232	
<u>5,695,598</u>	<u>100</u>			<u>6,490,762</u>	<u>100</u>
		Payments			
3,036,064	53	Salaries		3,538,819	55
276,173	5	Stores and Equipment		259,064	4
98,348	2	Travel		88,521	1
2,051,010	36	Other Payments		2,445,581	38
234,003	4	Balance as at 30 June		158,777	2
<u>5,695,598</u>	<u>100</u>			<u>6,490,762</u>	<u>100</u>

Statement of Balances as at 30 June 1983

1982		1983
\$	Funds	\$
214,598	Trust Accounts	134,392
12,256	Peter Rankin Fund	14,582
7,149	Coffee Shop	9,743
—	Consolidated Fund	—
18,361	The Australian Museum Society	12,787
<u>252,364</u>		<u>171,504</u>
	Represented by:	
	Investments	
200,000	Trust Accounts	100,000
10,000	Peter Rankin Memorial Fund	13,100
4,000	Coffee Shop	5,000
10,000	The Australian Museum Society	10,000
	Cash at Bank	
14,598	Trust Accounts	34,392
2,256	Peter Rankin Memorial Fund	1,482
3,149	Coffee Shop	4,743
8,361	The Australian Museum Society	2,787
<u>252,364</u>		<u>171,504</u>

D. J. G. Griffin,
DIRECTOR

The accounts of the Australian Museum Trust have been audited as required by Section 17 of the Australian Museum Trust Act, 1975, and Section 50 of the Audit Act, 1902.

In my opinion, the above Statement of Balances, the Summary of Receipts and Payments and Annexures "A" to "F" inclusive, read in conjunction with the Notes thereto, give a true and fair view of the financial position of the Trust as at 30 June 1983 and the transactions for the year then ended.

AUDITOR-GENERAL
OF NEW SOUTH WALES

Statement of Receipts and Payments Consolidated Funds

1982		1983
\$	Receipts	\$
3,722,125	Treasury Appropriations	4,498,356
<u>3,722,125</u>		<u>4,498,356</u>
	Payments	
3,036,064	Salaries	3,538,819
98,348	Travel	88,521
51,637	Motor Vehicle Running Costs	45,211
46,711	Travel Removal and Subsistence Expenses	43,310
196,228	Stores	191,659
	Stores, Provision, Furniture, Equipment, Minor Plants, etc (including maintenance and repairs)	
110,759	Building	94,672
3,557	Maintenance, Alterations, Additions and Renewal	2,659
107,202	Rents, Rates, etc	92,013
200,781	Other Working Expenses	517,280
—	Advertising and Publicity	92,015
36,393	Books, Periodicals and Paper	41,932
25,859	Fees for Services Rendered	15,025
10,844	Freight, Cartage and Packing	6,770
—	Gas and Electricity	95,563
1,490	Laundry Expenses	978
3,239	Meal Allowance	3,955
353	Minor Expenses	168
17,192	Other Insurance	33,183
7,294	Postal and Telephone Expenses	60,752
98,117	Printing	166,939
79,945	Special Appropriation	67,405
70,000	Major Plants and Equipment and Other Equipment for Storage of Museum Specimens	
9,945	Overseas Visits	
<u>3,722,125</u>		<u>4,498,356</u>

Trust Grant Account

Grants	Receipts		Payments		Balance 30 June	
	1982 \$	1983 \$	1982 \$	1983 \$	1982 \$	1983 \$
Australian Government Grants						
Australian Biological Resources Study						
1982						
Dr H. Cogger I	40,341	23,380	39,708	60,533	22,151	15,001 DR
Dr P. Hutchings	7,157	—	9,670	—	2,921 DR	2,921 DR
Dr J. Leis	5,925	—	8	—	4,526	426
Dr J. Paxton I	22,975	1,200	14,220	—	10,073	11,273
Dr J. Paxton II	—	—	—	19,874	—	19,874 DR
Dr W. Ponder	—	641	4,015	1,346	4,206 DR	4,911 DR
Dr H. Cogger II	4,500	—	3,123	5,621	1,377	4,244 DR
Mr M. Gray	8,000	—	1,933	4,403	6,067	1,664
1983						
Dr H. Cogger	—	9,000	—	—	—	9,000
Dr W. Rudman	—	4,250	—	6,611	—	2,261 DR
Dr J. Paxton	—	11,850	—	304	—	11,546
Australia Council — Aboriginal Arts Board						
Aboriginal Conference	—	—	—	—	112	112
Grant to McCarthy	—	—	140	8	1,587	1,579
Minor Grants	—	—	—	—	500	500
Grants towards the purchase of Tiwi Carvings	—	—	—	—	178	178
Visiting Curator of Tribal Art	—	—	—	—	835	835
Grant towards production of 'Dugong Dugong' film	—	—	8,128	5,098	5,098	—
Aboriginal Gallery Consultants	—	8,000	—	1,666	—	6,334
Women in Art Festival	—	4,000	—	4,000	—	—
Australian Institute of Aboriginal Studies	230	—	14,282	1,917 CR	1,917 DR	—
Australian Marine Science and Technologies Advisory Council						
1982						
Dr H. Choat	6,645	—	2,141	4,546	4,504	42 DR
Dr B. Goldman and Dr F. Talbot	—	—	10,975	—	NIL	—
Dr B. Goldman	26,028	—	33,378	4,190	4,190	—
Dr P. Hutchings	19,000	—	17,763	16,366	16,018	347 DR
Dr W. Rudman	15,030	—	12,908	7,914	9,653	1,739
1983						
Dr P. Hutchings	—	20,872	—	15,814	—	5,058
Dr W. Rudman	—	23,190	—	3,224	—	19,966
Dr B. Goldman	—	48,748	—	28,097	—	20,651
Australian Research Grants Committee						
1980						
Dr P. Hutchings	—	—	235	—	NIL	—
Dr J. Lowry	—	—	273	—	NIL	—
Dr D. McAlpine	22	—	—	—	NIL	—
Dr W. Ponder	—	—	2,690	—	NIL	—
Dr J. Specht	—	—	4,878	743	743	—
1981						
Dr P. Hutchings	3,075	—	4,479	—	1,058	1,058
Dr R. Lampert	2,325	—	1,475	—	969	969
Dr D. McAlpine	6,500	—	5,953	1,077	1,077	—
Dr H. Recher	13,935	—	16,915	—	505	505
Dr W. Ponder	8,522	—	5,964	3,479	3,479	—
Dr F. Rowe	4,930	—	5,250	747	747	—
Dr J. Specht	7,963	1,293	15,714	—	1,293 DR	—
1982						
Dr R. Lampert	2,550	3,435	112	5,177	2,438	696
Dr D. McAlpine	7,971	7,971	6,996	4,864	975	4,082
Dr H. Recher	12,008	20,583	12,519	16,045	511 DR	4,027
Dr W. Ponder	7,536	7,536	7,802	7,123	266 DR	147
Dr F. Rowe	5,500	5,500	7,345	2,295	1,845 DR	1,360
Dr J. Specht	6,185	6,185	46	2,221	6,139	10,103
1983						
Dr D. McAlpine	—	8,000	—	12,874	—	4,874 DR
Dr W. Ponder	—	9,150	—	11,179	—	2,029
Department of Science and Environment						
Queen's Fellowship						
Dr J. Leis	—	—	122	—	1,122	1,122
Dr D. Paton	45,284	—	30,863	17,759	18,384	625
National Employment Strategy for Aboriginals						
Mr P. Gordon	12,369	11,360	12,080	14,541	6,462 DR	9,644 DR
Ms V. Duncan	—	5,321	1,114	9,204	1,114 DR	4,997 DR
Ms F. Burns	—	—	—	3,840	—	3,840
TOTAL AUSTRALIAN GOVERNMENT GRANTS	302,406	241,565	315,217	300,866	103,979	44,669

Trust Grant Account

Grants	Receipts		Payments		Balance 30 June	
	1982 \$	1983 \$	1982 \$	1983 \$	1982 \$	1983 \$
Other Scientific Grants						
Australian Conservation Foundation						
Sperm Whale Survey	640	—	—	—	NIL	—
Australian Garbage Project	—	—	—	—	1,608	1,608
Cape York Study Grant from Comalco Ltd	—	2,256	106	2,164	92 DR	—
CRA Ltd Grant for Malangan Restoration	—	—	—	—	500	500
Electricity Commission						
Colo River Project	—	—	191	—	NIL	—
Angus Colliery Project	3,925	—	719	3,206	3,206	—
Great Barrier Reef Marine Park Authority						
Dr J. Leis	2,400	—	2,956	—	NIL	—
Dr B. Russell	—	1,509	—	798	667 DR	44
Dr H. Choat	—	9,900	—	—	—	9,900
Dr P. Hutchings	—	—	—	204	—	204 DR
Greenpeace — Sperm Whale Survey	—	—	515	—	NIL	—
Larval Fish Study — Grant from Dr J. Leis	500	—	965	35	35	—
Forestry Commission of New South Wales Grants						
Dr Holmes	—	—	233	291	291	—
National Parks and Wildlife Service	—	—	254	1,585	2,174	589
Whales Trust	9,000	—	—	—	9,000	9,000
Ian Potter Foundation — Upper Mantle Project	—	—	875	—	—	—
Lizard Island Research Station	165,030	176,889	305,131	255,804	10,408 DR	89,323 DR
New South Wales Pollution Control Commission	899	—	3,555	298 CR	298 DR	—
UNESCO-Oceanic Cultural Property Survey	—	7,280	—	7,035	378	623
Harris-Daishowa Grant for Forestry and Wildlife Research	15,791	1,876	9,704	5,127	3,251	—
National Photographic Index of Australian Wildlife						
Main Accounts	10,533	7,342	24,174	39,228	7,780 DR	39,666 DR
Sales Accounts	32,550	16,397	7,915	11,245	33,970	39,122
Sponsorship	503	25,000	—	—	24,456	49,456
Commonwealth Scientific Industrial Research Organisation						
Dr G. Pyke	4,855	—	4,500	355	355	—
Smithsonian Institution Grant						
Dr P. Hutchings	—	4,962	1,522	—	1,522 DR	3,440
New South Wales Coastal Council						
Dr A. Jones	—	—	—	1,198	—	1,198 DR
Queensland Electricity Generating Board						
Dr F. Rowe	—	1,708	—	516	—	1,192
TOTAL OTHER SCIENTIFIC GRANTS	246,626	255,119	363,315	328,493	58,457	14,917 DR
Education/Exhibitions Grants						
Broken Hill Proprietary Co Ltd sponsorship						
Aboriginal Gallery	20,000	7,250	—	—	28,180	35,430
Bernard Van Leer Foundation (Australia)						
Scholarship	—	—	—	4,558	4,558	—
John Fairfax and Sons Ltd						
Grant for School Case Project	12,000	8,489	10,541	9,948	1,459	—
Bushell Trust Grant — travelling exhibition	—	—	—	1,674	1,674	—
The State Bank of NSW — Mammal Exhibition	11,655	10,214	13,389	8,917	1,297 DR	—
The Australian Museum Society						
sponsorship of Bird Gallery	12,417	12,583	2,152	—	10,265	22,848
Unilever Australia Ltd.						
sponsorship of Abelam Gallery	12,500	28,460	36,382	7,786	28,174 DR	7,500 DR
Department of Youth and Community Service						
Drop-In	—	—	—	214	214	—
Westpac Banking Corp Ltd/City Council of Sydney						
sponsorship of Wandervan	—	31,550	19,728	22,974	8,576 DR	—
Utah Foundation — sponsorship of Mineral Gallery	—	40,000	—	—	—	40,000
'Dinosaurs from China' Exhibition	—	30,081	—	140,346	—	110,265 DR
Commonwealth Banking Corp of Aust/Roadshow						
Dist Pty Ltd — sponsorship of Museum Train	—	14,161	—	50,000	—	35,839 DR
TOTAL EDUCATION/EXHIBITION GRANTS	68,572	182,788	82,192	246,417	8,303	53,326
TOTAL ALL GRANTS	315,198	437,907	445,507	574,910	66,760	68,243 DR

Coffee Shop

	1982		1983
	\$		\$
	19,365	Receipts	7,149
	72,649	Balance as at 1 July	83,757
	—	Sales	292
	817	Miscellaneous	361
	<u>92,831</u>	Interest	<u>91,559</u>
		Payments	
	38,239	Purchase of goods for resale	45,052
	32,169	Salaries	19,089
		actual payments	
		3,444	
		repayments to be made to Museum	
		15,645	
	1,274	Other Costs	2,875
		Distribution of surplus funds:	
		The Australian Museum	7,400
	7,000	The Australian Museum Society	7,400
	7,000	Balance as at 30 June	<u>9,743</u>
	<u>7,149</u>		<u>91,559</u>
	<u>92,831</u>		

Peter Rankin Memorial Fund

	1982		1983
	\$		\$
	11,156	Receipts	12,256
	952	Balance as at 1 July	1,419
	1,242	Donations	1,813
	<u>13,350</u>	Interest	<u>15,488</u>
		TOTAL	
		Payments	
	1,080	Scholarships	906
	14	Bank charges	—
	<u>12,256</u>	Balance as at 30 June	<u>14,582</u>
	<u>13,350</u>	TOTAL	<u>15,488</u>

Appendix B Research Associates

G. Coates
Crown Prince Akihito
M. Archer, PhD
H. Bell
I. Bennett, MSc
J. B. Burch, PhD
R. Burn, MAScS
R. Catala, DSc
C. E. Chadwick
R. O. Chalmers, ASTC
W. Dawbin, DSc
H. J. de S. Disney, MA
B. Egloff, MA, PhD
J. W. Evans, MA, ScD, DSc
F. Evans
H. O. Fletcher, MSc
J. Forshaw
K. Huffman
P. Kailola, BSc
F. D. McCarthy, DipAnthrop, DSc
J. Mahoney, BSc
J. E. Marlow, BSc (Hons)
L. Moffat, PhD
R. B. New, PhD
D. Newton
J. Pickett, MSc, DPhilNat
E. C. Pope, MSc, CMZS
A. A. Racke, Drrernat (Brno)
L. R. Richardson, MSc, PhD
W. Starck, PhD
F. H. Talbot, MSc, PhD, FLS, FRZS, FRSA
I. W. B. Thornton, PhD
G. Theischinger
J. P. White, MA, PhD
J. C. Yaldwyn, MSc, PhD

Appendix C Associates

B. Bertram
A. Chapman
D. Chapman
N. Coleman
L. Courteny-Haines
G. Daniels
A. F. D'Ombrain, AM
D. D. Francois, MSc, PhD
J. Frazier
T. A. Garrard
K. Gillett, ARPS
A. Healy
J. Kerslake
R. Kuitert
C. Lawler
D. H. Lewis, PhD
T. R. Lindsey
N. M. Longmore
D. Linder
D. F. McMichael, CBE, MA, PhD
W. McReddie
D. R. Moore, MA, DipAnthrop
M. Moulds
F. Parker
H. Paxton, BA(Hons)
D. Rae
N. W. Rodd
R. Steene
D. Scambler
M. Tuckson
A. H. Voisey, DSc

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Appendix E Staff

DIRECTOR — D. J. G. Griffin, MSc, PhD
DEPUTY DIRECTOR — H. G. Cogger, MSc, PhD

Scientific Departments

ANTHROPOLOGY

CURATORS — R. J. Lampert, PhD (Head of Department to 7.2.82); J. R. Specht, MA, PhD (Head of Department from 8.2.82).

ASSISTANT CURATOR — D. Losche, MA, MPhil, PhD.
TECHNICAL OFFICERS — L. Bolton, BA(Hons), DipMusStud; K. Khan, BA(Hons), DipAnth, JP; Z. Wakelin-King, BA(Hons); G. O'Donnell, BA(Hons); P. Gordon; S. Thomsett, BA(Hons), DipMusStud (from 12.7.82).

ARACHNOLOGY

ASSISTANT CURATOR — M. R. Gray, MSc (Head of Department).
TECHNICAL ASSISTANTS — C. A. Horseman; H. Parnaby (from 6.12.82 to 7.1.83); M. Robinson (from 13.12.83 to 20.12.83).

ENTOMOLOGY

CURATORS — C. N. Smithers, MSc, PhD (Principal Curator and Head of Department); D. K. McAlpine, MSc, PhD, DIC.
RESEARCH ASSISTANTS — K. C. Khoo, BSc(Hons); M. R. Robinson, BAppSciBiol (to 21.8.82).
TECHNICAL OFFICER — G. A. Holloway, BSc; O. Griffiths, BSc(ZooHons) (to 29.12.82).
ASSISTANTS — B. J. Day; B. Duckworth (from 21.2.83).

DATA BASE MANAGEMENT

DATA BASE MANAGER — D. Beechey.
ASSISTANT — F. Burns (from 28.3.83).

HERPETOLOGY

CURATORS — H. G. Cogger, MSc, PhD; A. E. Greer, BA, PhD (Head of Department, on leave after 1.4.82).
VISITING CURATOR — G. Mengden (from 29.11.82).
TECHNICAL ASSISTANT — R. Sadler (Acting Head of Department).
ACTING TECHNICAL OFFICER — D. Kent.

ICHTHYOLOGY

CURATORS — D. F. Hoese, BA, PhD (Head of Department); J. R. Paxton, MSc, PhD.
TECHNICAL OFFICERS — D. Blake, BA, DipEd; D. Brown, BA; M. McGrouther; D. Rennis, MSc.
RESEARCH FELLOW — J. Leis, BA, PhD.
RESEARCH ASSISTANT — J. Gates, BA (to 10.6.83).

MALACOLOGY

CURATORS — W. F. Ponder, MSc, PhD; W. B. Rudman, MSc, PhD (Head of Department).
TECHNICAL OFFICER — I. W. Loch.
TECHNICAL ASSISTANTS — P. H. Colman; B. Duckworth (to 20.2.83); L. Mennes (from 24.3.83).
RESEARCH ASSISTANTS — G. J. Avern, BScDipEd; J. Hall, BA, BSc(Hons).

MAMMALOLOGY

TECHNICAL OFFICER — L. M. Gibson (Acting Head of Department).

MARINE ECOLOGY

ASSISTANT CURATOR — A. R. Jones, MSc, PhD (Head of Department).
TECHNICAL OFFICER — A. Murray, BSc.

MARINE INVERTEBRATES — CRUSTACEA and COELENTERATES

CURATOR — J. K. Lowry, MA, PhD (Head of Department).
RESEARCH ASSISTANT — H. E. Stoddart, MSc(Hons).
TECHNICAL OFFICER — R. T. Springthorpe, BSc.

MARINE INVERTEBRATES — ECHINODERMS

CURATOR — F. W. E. Rowe, BSc, PhD, MIBiol, FLS (Head of Department).

TECHNICAL OFFICER — L. Vail, BSc, MSc, LWOP (from 1.3.82); A. Hoggert; C. Travers (from 10.1.83 to 20.6.83).

MARINE INVERTEBRATES — WORMS

CURATOR — P. A. Hutchings, BSc(Hons), PhD.
ASSISTANT — K. Handley.
RESEARCH ASSISTANT — F. Byers, BSc (to 27.8.82); D. Randall, BSc; C. Glasby (from 14.1.83 to 17.5.83); R. Eggers (from 11.8.82 to 25.5.83).

MINERALOGY and PETROLOGY

CURATOR — F. L. Sutherland, MSc, PhD.
TECHNICAL OFFICER — J. E. Hingley, BAppSc, FGAA; J. Hollis (from 24.12.82).
TECHNICAL ASSISTANT — R. E. Pogson, BAppSc(Hons).

ORNITHOLOGY

CURATOR — Vacant.
TECHNICAL OFFICER — W. E. Boles, BSc (Acting Head of Department).

PALAEONTOLOGY

CURATOR — A. Ritchie, BSc, PhD.
TECHNICAL OFFICER — R. K. Jones, BSc.
ASSISTANT — D. Jones.

VERTEBRATE ECOLOGY

CURATOR — H. F. Recher, BSc, PhD.
TECHNICAL OFFICER — G. Gowing, BSc(Hons).
RESEARCH FELLOW — G. Pyke, BSc(Hons), PhD.
QUEEN ELIZABETH II FELLOW — D. Paton, BSc(Hons), PhD (to 1.1.83).
TECHNICAL ASSISTANT — D. Allen, BSc (to 10.7.83).

TERRESTRIAL INVERTEBRATE ECOLOGY

ASSISTANT CURATOR — T. J. Kingston, MA, DPhil (Head of Department).
TECHNICAL OFFICER — G. Serkowski (LWOP from 6.4.83).

DIRECTOR'S RESEARCH LABORATORY

RESEARCH ASSISTANT — H. Tranter, BSc.

Administration and Services Division

SECRETARY — G. McKenzie, AASA.
SENIOR CLERK/ACCOUNTANT — K. Todd (to 14.6.83); N. Legg, BAEC (from 5.4.83).

GENERAL OFFICE

CLERKS — B. M. James (to 21.3.83); I. Lucas; A. Crame; M. Ton; G. Nicol (from 8.4.83).

STENOGRAPHERS/TYPISTS — D. ter Wisscha; M. Sindel; K. Murray (to 24.1.83); K. McRae; V. Jenkins; S. Young; C. Sinclair; J. Adams; A. Thomas; T. Goh (from 24.1.83).

RECEPTIONIST/TYPISTS — C. Maloney (to 3.1.83); A. Lee (from 24.1.83); K. Hawkey (from 6.9.82).

TELEPHONIST — A. Sommer.

STOREMEN/DRIVERS — J. Rusten; W. Rixon.

STAFF BRANCH — Staff Clerk — V. Lee; Clerks — E. Hart; R. Anderson (from 12.4.83).

TEMPORARY EMPLOYEES — During the year the Museum was able to participate in the State Youth Employment Training Program. The following persons were employed under the Scheme. Z. Christofides (from 17.6.83); P. Iking (from 16.6.83).

COMMUNITY RELATIONS OFFICE

HEAD — S. Quirk, BScAg (to 30.6.83).

EDITOR — R. Hughes, BSc.

PUBLICITY OFFICER — S. White.

EDITORIAL ASSISTANTS — V. Richmond, BSc; A. D. Bishop, BSc(Hons).

CIRCULATIONS OFFICER — C. Hart, BSc.

MUSEUM SHOP — Manager, J. Harty.

CLERICAL ASSISTANTS — J. McIntosh; G. Nicol (from 30.8.82 to 7.4.83); S. Curry (from 8.4.83).

EDUCATION SECTION

EDUCATION OFFICER-IN-CHARGE — P. M. McDonald, BEM, BSc, MEd, FMAA.

EDUCATION OFFICERS — C. S. Davey, BA, DipEd; Z. Harkness (part-time); G. Hunt, BSc, DipEd, DipSpecEd; S. Maguire, BA (part-time); T. I. O'Neill, BAppSc, CertEd (from 11.1.82); J. G. Hunter, BA, THA, MACE (to 8.10.82).

EDUCATION OFFICER (SPECIAL PROJECT) — A. Saunders, BA, DipEd.

EDUCATION OFFICERS (MUSEUM TRAIN) — S. O. Main, BA, DipEd (to 7.10.82); J. Blevins (from 2.5.83); S. Montgomery (from 2.5.83); K. S. Weeks, BSc, MA (to 2.5.83).

PREPARATORS — R. C. Inder; D. B. Millar; H. White, DipIndDes (to 30.6.83).

TYPISTS — F. Coleman; A. Karayan; E. McPhee.

EXHIBITIONS

CHIEF — R. Joyner, AIDIA.

EXHIBITIONS OFFICERS — J. Freeman, BSc(Arch), AIDIA; R. Ross-Wilson; R. Sim, DipFine Art (Industrial Design); K. Gregg.

DESIGNERS — B. Matzick, DipDesign(Display); S. Robinson, ASTC, DipDesign(Painting); G. Ferguson, STA, DipArtEd.

ASSISTANTS — J. Powell, DipArts(Interior); S. Morris; V. Duncan.

TYPIST/ASSISTANT — L. Sullivan-Brown.

PREPARATION SECTION

CHIEF PREPARATOR — G. Hangay.

PREPARATORS — R. Moloney (from 22.11.82); M. Dingley; J. Hood; O. Keywan; R. Lossin; E. McLeod; T. Ralph; R. Scott-Child; A. Carpenter; H. Magor; T. Lang; K. Forster.

LIBRARY

LIBRARIAN — G. Baker, ALAA.

LIBRARY OFFICERS — N. Bain; A. M. McConochie.

TYPIST — H. Spitzer.

CLERICAL ASSISTANT — C. M. Pyne.

MATERIALS CONSERVATION SECTION

HEAD — S. Walston, DiplnstArch (LWOP from 20.12.82); D. Horton-James (Acting from 21.12.82).

TECHNICAL OFFICER — S. Phillips, BSc; D. Midwinter (to 9.7.82); A. Gaulton (from 5.4.83), BSc(Hons); T. Clark (from 12.4.83); K. Soderlund (from 14.4.83).

PHOTOGRAPHY AND VISUAL AIDS SECTION

PHOTOGRAPHER AND VISUAL AIDS OFFICER — H. Hughes, FRPS, AIAP.

PHOTOGRAPHER — J. Fields.

PHOTOGRAPHIC OPERATOR — C. Lowe, K. Handley.

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN WILDLIFE

EXECUTIVE OFFICER — R. Strahan, MSc, MIBiol, FLS, FSIH, FRZS.

ARCHIVIST/CLERICAL ASSISTANT — M. R. Gordon.

CLERICAL ASSISTANT — D. Greig.

ATTENDANTS and SECURITY

SUPERVISOR — W. Seears (from 18.10.82).

SENIOR ATTENDANT — W. Claessen (to 17.3.83); J. McGrath (from 18.3.83).

ATTENDANTS — C. Baldwin (to 2.8.82); S. Folkes (to 7.10.82); K. Randall (to 24.5.82); R. Stubbington (to 26.11.82); J. Laughton; B. Walsh; R. Davies; E. Mair; C. Adcock; A. Lomas (to 10.10.82); W. Payne; R. Scott; D. Waldon; H. Barrows; A. Denman; J. McGrath; I. Jurray (to 8.11.82); H. Butler (from 5.10.82); P. Lawrow; C. Picklum (from 29.11.82); A. Johnston; (from 5.10.83); W. Grice (from 18.10.82); B. Jenkins (from 1.9.82 to 30.6.83).

SECURITY OFFICERS — H. Ward; H. Pierson; D. Patterson; S. Landy; W. Jones (to 18.10.82); E. Martin; K. Randall (from 25.5.83).

CLEANERS — E. Drakoulaki; J. Fernandez; J. Gerzina (to 16.7.82); J. Casey; J. Elias; C. Minio; A. Szanto (from 27.9.82).

Appendix F

The Australian Museum Society Volunteers working in the Museum, June 1982-June 1983

Anthropology

J. Owen
M. Nash
B. Conyers
C. McGrath
D. Lautrec
M. Kelly
R. Momson
A. Charlesworth
A. Mann
F. Duncan
N. Wyatt-Spratt
A. Woodnott
P. Ikinge
V. Geary
P. Boyer
G. Alkin
P. Johnson
T. Corkill
P. Watt
R. Prochaska
S. Florek
A. Mattea
J. Webster
B. Goodsell
C. Wadley

Arachnology

G. Copp
E. Sheridan
L. Hopwood
E. Balmer

Entomology

S. Burns
D. Scrambler
C. Chadwick
M. Holmes
R. Simon
K. Miller
B. Lormer
K. Eldridge

Herpetology

M. Savage

Ichthyology

M. Thomason
J. Haylett
A. Daniel

Malacology

T. Garrard
J. Kerslake
S. Bull
J. Davis
J. Doyle
H. Haneman
P. Howarth
T. Ireland
N. Ireland
A. Leroi
F. Mobbs
D. Pearson
D. Steggle
H. Steggle
G. Thornley
R. Williams
J. Wise
P. Zylstra
J. Hunter
H. Woodward
G. Clark
P. Burton
J. Cullen
J. Dean
S. McGeachy

Marine Ecology

C. Lemam
D. Jenkins

P. Hanley
L. Barber
L. Evans
A. Bradley
R. Marsh
A. Chapman
D. Roberts
M. Ray

Crustacea

M. Whiles
H. Smith
S. Dunlap
L. Cantrelle
L. Baron
S. Reader
F. Allen
E. Silk
E. Gavin
S. Kable
T. Saleme
P. Ross
A. Munday
C. Keily

Echinoderms

B. Marshall
J. Hartman
H. Broughton
M. Rowe
C. Travers

Marine Invertebrates

C. Glasby
R. Eggert

Mineralogy and Petrology

B. Clark
A. Chapman
D. Chapman
J. Keen
J. Hollis
K. Underwood
J. Pixley
L. Hepburn
E. Hepburn
G. Moss
M. Moss
N. O'Shea
J. Sheerin
B. Jenkins
J. Jenkins
F. Smith
S. Sexton
J. Sexton
F. Whitham
I. Whitham
G. Rowlands
N. Primrose
P. Jenkins
B. England
D. Mylius
S. Mylius
D. Henley
G. Sutherland
N. Robinson
L. Gibson
G. Stolarski
A. Henley
J. Chapman
M. Burfett
T. Coldham
P. Exton
G. Laking

Ornithology

L. Haines
M. de Jose
M. Hirst
M. Leeder
T. Carthew

H. King
J. Lindsey
W. Longmore
M. Allen
F. Pascoe
I. McAllan
D. Larkins
S. Crouch

Palaeontology

C. Jones
R. Rowe

Invertebrate Ecology

R. Marsh

Vertebrate Ecology

R. Edelstein
J. Madgwick
D. Bushell
L. Evans
L. Notley
T. Armstrong
M. Brouwer
D. Secombe
M. Gerber
D. Denehy

Community Relations

E. Hepburn
P. Cooper
B. Whitewick
R. Lee
W. Deal
G. Catchpool
D. Mordin

Education

S. Pidcock
B. Weekes
A. Tyrie
L. Oakes
E. Evans
S. Lord
M. Zarmarian
R. Porter
J. O'Donnell
J. Farquhar
G. Lowe
D. Stokes
A. Rudkin
J. Drew
M. Thiedeman
N. Gill
M. Pahlou
G. Selikowitz
S. Anderson
C. Frasca
S. Kelly
A. Joedicke
J. Debenham
B. Lassig
G. Giopoulos
K. Head
L. Norrie
J. Moore
K. Liddiard
M. Copp

Preparations and Exhibitions

P. White
J. Giffen
O. Hasler
D. Beck
R. Cohen

Library

C. Cantrell

Materials Conservation

H. Joynes
N. Turner
M. Dunn
L. Fleischman
N. Demyttenaere
J. Scott-Waine
V. Talbot-Windeyer

Photography

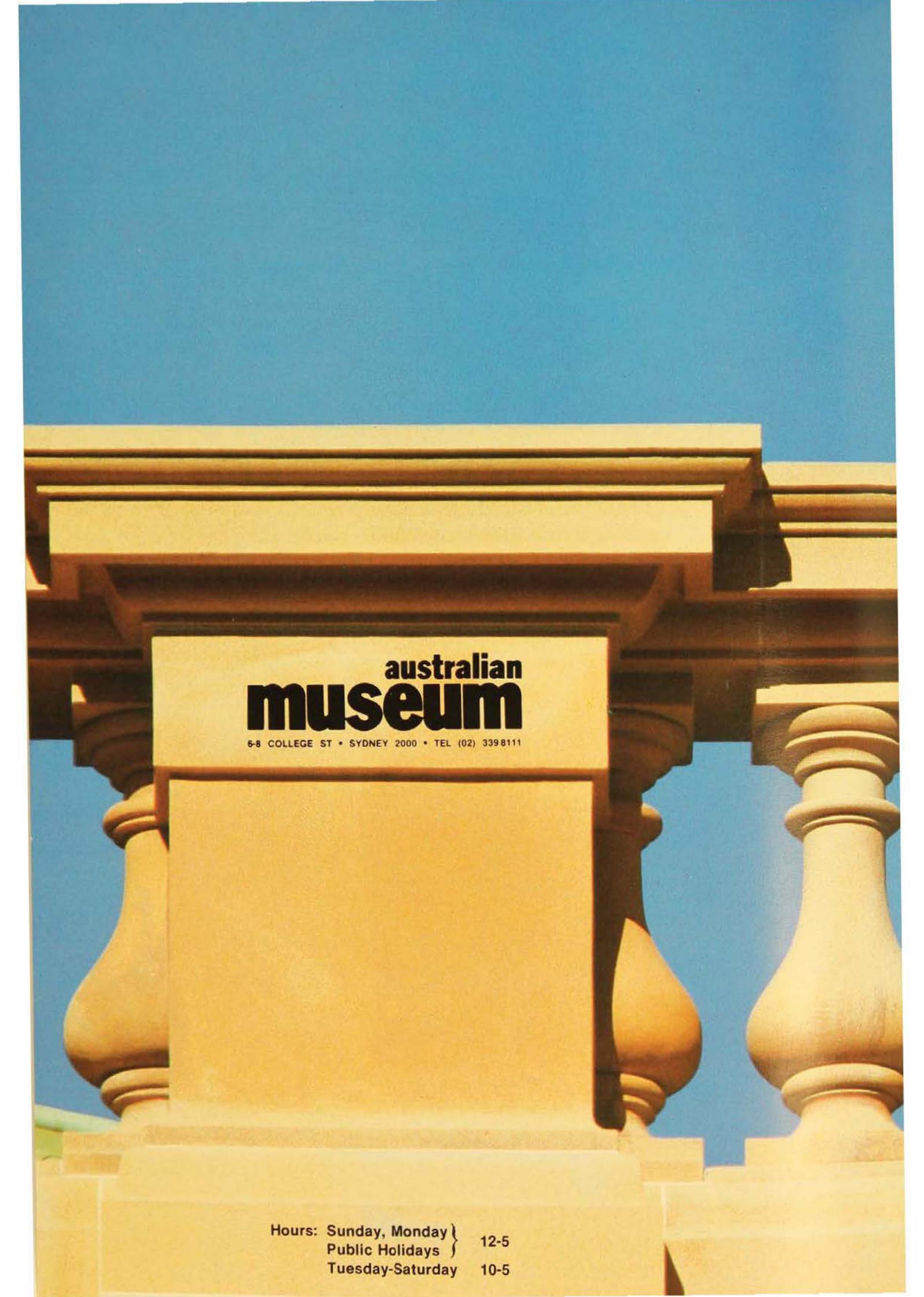
R. Gurnani-Smith
A. Brown
B. Lawson
B. Pulsford

Photographic Index

T. Carthew
H. J. De S. Disney

TAMS Volunteers

H. Verge
J. Cocks
M. Jones
R. Lee
M. Lee
C. van Raalte
B. Huff-Johnstone
K. Ireland
G. Bishop
E. French
F. Shinn
A. Verge
C. Williams
T. Williams



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