australian museum

Annual Report 1983/84

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.

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The Australian Museum Trust

Annual Report

for the year ended 30 June 1984

Contents

Mission

The mission of the Australian Museum is to increase and disseminate knowledge about and encourage understanding of, our natural environment and cultural heritage, especially in the Australian region: acquisition and preservation of collections are central to the achievement of the mission.

Philosophy — a Museum for the Future

The Australian Museum intends to continue to grow and develop as an organisation based in Sydney providing services to the public principally throughout New South Wales, but with an active involvement in all of Australia and its neighbouring regions. We are determined to maintain our place as one of the world's major natural history museums.

In seeking to encourage others to understand and appreciate the world around us we shall continue scientific/scholarly studies generally relevant to the collections, pursue effective educational programs and exhibitions, where appropriate with others, and communicate with our audiences.

In acquiring and managing collections we will emphasise foreseeable opportunities for research and communication to the public. We also intend to preserve our collections and the information we have gained about them for the benefit of future generations.

We intend that all people may have access to the Museum and its facilities and the opportunity to share its accumulated knowledge.

We intend to focus our resources on distinct programs and projects: evaluation of the success of those programs will be a central feature of management.

In pursuing our objectives we will respect the rights and wishes of the peoples whose knowledge and material culture forms the basis of our cultural resources, not needlessly affect the environment and will consciously abide by legislation and conventions protecting wildlife and cultural heritage.

As a major institution established by government and attracting increasing public interest and participation and achieving high standards of performance, we will seek greater financial support by government. We intend to be responsive to the fundamental policies of government.

We see financial and moral support for the Museum as a responsibility of the private citizen and the commercial sector, as well as of government. The Museum must be active in gaining and strengthening that support: we see an obligation to account for that support and how it has advanced the Museum's objectives. We believe that it is also appropriate that the Museum undertake commercial enterprises relevant to its objectives; we seek to recover costs of services where the consumer has a capacity to pay.

We seek to be, and be seen as, a stimulating and responsive organisation to work in by providing appropriate career and personal development opportunities, and opportunities for individual staff to be involved in setting the Museum's objectives. Those responsible for managing programs will be delegated authority for allocation of staff and financial resources.

Above all, we intend that the Museum be seen by those who pay for it, those who use it and those who work in it, as progressive, entrepreneurial, relevant, contributing to the community, credible, friendly, reliable, ethical and exciting.

Highlights for the year

The Museum reached approximately one million people, including some 400,000 in extension activities.

The dinosaur exhibition brought one-quarter-of-a-million people to the Museum during its three months.

Research was conducted in a variety of locations including: The Great Barrier Reef, South Australia, Papua New Guinea as well as in New South Wales.

Scholars from China, Denmark, England, Israel and USA visited the Museum on special programs to study collections and accomplish research. Special assistance was given to many students.

Further evaluations of educational activities and exhibitions highlighted successes of those programs and provided guidance for improvement.

Documentation of collections and access to information about them was improved through new schemes and increased use of computers.

Project budgeting was introduced throughout. Computerisation of accounting and staffing information started. Arrangements to review biological research and collection programs were initiated

Financial support increased in the year by 22%. The New South Wales Government increased support by 11%. Support from outside State Government grew by 48% to reach 35% of total revenue and 32% of all expenditures. The dinosaur exhibition generated over $250,000 net to the Trust and over $1 million was provided by other granting agencies and benefactors.

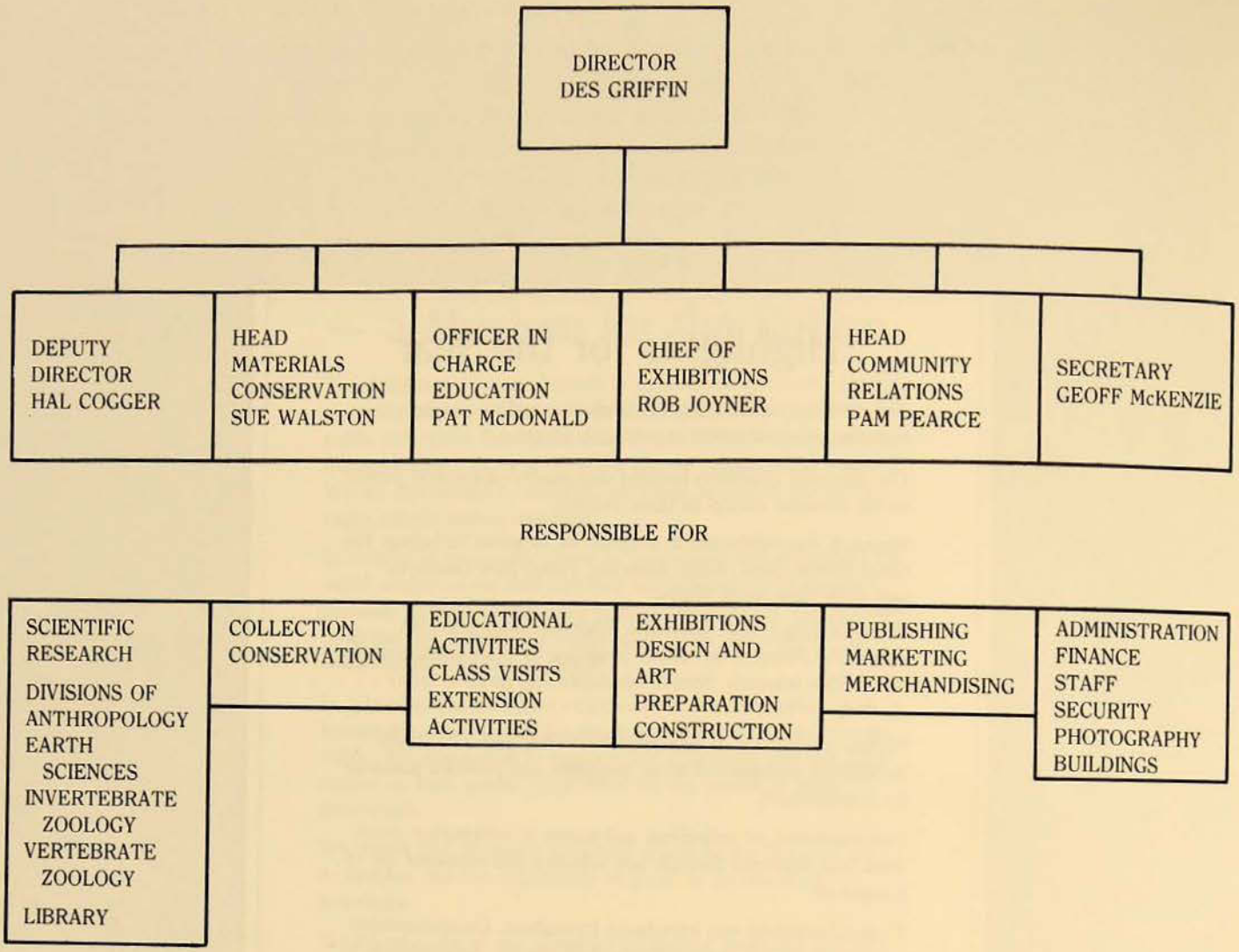
The Museum's shops increased revenue by 55% in the year.

New support from business was obtained for the Lizard Island Research Station, Fellowships for doctoral students and for educational activities.

Staff training and development programs were increased with the completion of the first phase of a management program, and introduction of a program for receptionists, secretaries and guides.

Implementation commenced of the management plan to assure equal opportunity in employment.

New corporate planning was initiated, the plan for senior management completed, and planning at other levels commenced.



Corporate Planning

An important investment for the future was made this year, when the new corporate planning process was finalised, together with a corporate plan for senior management.

Planning in this sense involves the justification of desired goals and the formulation of strategies to reach those goals. When attained, these should lead to improvement of the organisation's ability to achieve its overall aims and purpose. One should ask what must we do now to be able to deal with the future.

The Museum has been involved in corporate planning since 1975. Its two plans in 1976 and 1980 focused on the next three years. The plans were long, prepared by senior staff and intended for implementation by people throughout the Museum.

After a year of discussion it was finally agreed, by a group established to devise a new corporate plan, that a new process be introduced. This would remove long-winded statements of unassessable goals, which had formerly been sent off for others to achieve.

Planning is now proceeding by identification of a few major issues and of major objectives relevant to them. The objectives must be in assessable terms. Planning is proceeding at different levels - people are preparing the plans on which they will work.

The MISSION and the PHILOSOPHY - the first revised from earlier statements, the second produced for the first time - will guide all plans.

Planning will be an annual cycle tied to budgets.

The plan for senior management was finalised at the end of June 1984. In May 1984 the document authorising the start of planning at the next administrative level - in sections, offices and other functional groups - was issued.

THE AUSTRALIAN MUSEUM TRUST

PRESIDENT - J T Baker, OBE, MSc, PhD, FRACI until 21/4/84
K K Klugman, MA from 21/4/84

DEPUTY PRESIDENT - K K Klugman, MA until 21/4/84
J A Landels from 21/4/84

MEMBERS

Professor D J Anderson, BSc, PhD
Professor D T Anderson, PhD, DSc, FRS
L B McClelland
C M Serventy, OAM, BA
F Bandler from 21/4/84
M N Little from 21/4/84
R Williams from 21/4/84
P Piggot, AM until 21/4/84
I Wojak, BA until 21/4/84
K H Cousins, CMG until 21/4/84

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.

LIZARD ISLAND RESEARCH STATION

MANAGEMENT COMMITTEE

Professor D T Anderson, PhD, DSc, FRS
J T Baker, OBE, MSc, PhD, FRACI
D J G Griffin, MSc, PhD
B Goldman, MSc, PhD
P Ogilvie
Associate Professor P Sale, PhD

The Committee is appointed by the Australian Museum Trust.

THE AUSTRALIAN MUSEUM SOCIETY COUNCIL

PRESIDENT - R A Pearson, BA, LLB (to 21/3/84)
C Williams (from 21/3/84)

VICE PRESIDENT - M Hazel

EXECUTIVE SECRETARY - S Bridie

SECRETARY - W Wilkins, BA

COUNCIL MEMBERS

D J G Griffin, MSc, PhD
N Ireland
L Mahoney
G McIvor
B Ross-Wilson
R Saunders
V N Serventy, AM, BSc, BEd
F L Sutherland, MSc, PhD
D M Tuckson (to 21/3/84)
A Dickinson (from 21/3/84)
A B Wilson (Honorary Treasurer)

NATIONAL PHOTOGRAPHIC INDEX OF AUSTRALIAN WILDLIFE

Founding Chairman of Trustees
The Hon Sir Percy Spender, KCVO, KBE, KStJ, QC

Committee of Management
J H Broinowski, CMG, FAC (Chairman)
K H Cousins, CMG
D J G Griffin, MSc, PhD
L Le Guay, FRPS, EFIAP, AIAP
V N Serventy, AM, BSc, BEd
R Strahan, MSc, FSIH, FRZS, FANZAAS
G McKenzie, AASA, CPA

The Committee is appointed by the Australian Museum Trust.

Pictured at a meeting of the Australian Museum Trust, seated from left: President Kris Klugman; Director Des Griffin; Trust members Professor Don Anderson and Carol Serventy. Standing from left: Dr Hal Cogger, Deputy Director; Trust members Robyn Williams, Professor Derek Anderson, Lorna McClelland, John Landels and Museum Secretary Geoff McKenzie. (Not in photograph, F Bandler and M Little).
Photo: Kate Lowe

President's Report

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

Dear Mr Premier,

I have much pleasure in presenting the Annual Report of the Australian Museum Trust for the year ended 30th June, 1984.

As Dr Joe Baker filled the position of President until April 21, 1984, it is fitting that his report convey the message of developments in the Museum, to which he contributed so generously of his time. I would like to pay tribute to Dr Baker for his dedication and his conscientious efforts in promoting the Museum's interests during the period of his Presidency. With the incoming talented Trust, I welcome the opportunity to follow his example.

K.K. Klugman
President

Dr Baker reports.

My term as President of the Trust from 27 July 1978 to 21 April 1984 was one of my happiest and most rewarding professional associations.

I have appreciated the support of Trust members and the dedication of Dr Des Griffin and of his senior staff. However, one must stress that the vast majority of staff with whom I have rubbed shoulders at functions or in visits to the Museum displays and departments, have shown great enthusiasm for the Museum. This can only fill us with hope for the future and confidence that this Museum will retain its high international standing as a museum of natural history.

OBJECTS OF THE TRUST My philosophy was to adhere closely to the fundamental objectives of the Trust, *viz* "to propagate and to increase knowledge about the natural environment of Australia - particularly in the natural sciences of biology, anthropology, and geology". One of my earliest actions as President of the Trust was to develop a paper for discussion which expanded this fundamental objective and particularly addressed the important role of anthropology in the Museum.

Greater public awareness of Australia's natural environment and cultural heritage has come not only from more attractive exhibitions within the Museum, from an expanded use of the Museum Train, from Outer Urban (Museum on the Road) Exhibitions and from the use of the Wandervan, but also from a carefully calculated use of publicity to bring the Museum to the people and to bring the people to the Museum.

REFLECTION In 1978 the Museum had initiated a series of challenging displays which would represent different characteristics of Australia's natural heritage.

An indication of public interest in the activities of the Australian Museum has been the increasing strength of The Australian Museum Society (TAMS), in financial support for exhibitions and in providing a focus of activities for Museum supporters, in offering them varied and innovative programs.

Another activity which has been strengthened enormously in the last two to three years has been the National Photographic Index of Australian Wildlife, from which will come the regular production of a series of high quality books comparable with "Wrens and Warblers of Australia" and "Mammals of Australia".

The publication, "Australian Natural History", has improved its quality to become one of the most attractive natural history magazines in Australia.

During the last six years we have seen innovations such as the mineral sales which commenced in 1979 and have proved both popular and profitable. The bookshop has been extended and although it has certainly not yet reached its full potential, it is becoming more and more a Museum Shop which can be made an attractive part of the Museum where people will be able to purchase mementos and artefacts to remind them of the times spent at the Australian Museum. The move to computerisation within the Museum, the development of staff improvement schemes and the establishment of a committee system within the Trust are other innovations.

Much of the initiative for developments came from the Director subsequent to an overseas visit. For example, he proposed to the Trust and we readily agreed, that the first series of the joint Trust-staff working committees, each of which provided for outside representation, should cover the areas of: (a) building (b) community relations (c) staffing and finance (d) program review and (e) bicentennial planning. The system has proven successful, allowing less frequent meetings of the Trust itself, yet providing for a greater continuity of involvement of individual members of the Trust in the Museum. The Trust welcomes the continuing challenge of maintaining and extending the high reputation of the Museum and of its staff.

We have seen the pressing need to provide better facilities for visitors and staff and we have been most active in pursuing with you, Mr Premier, the necessity for additional display space and particularly for satisfactory storage of some of the most valuable collections of the Australian Museum. The Pacific collection has been the focus of our attention over the past three years but the need for expanded display areas, a better flow of visitors throughout the exhibits, more adequate library space and,

President of the Trust, Kris Klugman with Dr Joe Baker at a farewell function to mark his retirement after six years as President.
Photo: Kate Lowe

importantly, properly designed and increased space for the special interests and capabilities of staff also have very high priority, if the Museum is to fulfil its obligations to the community.

There are two other aspects that I would like to mention in this "reflection" on some of the highlights that I have seen in my term as President. One is the exhibition of 'Dinosaurs from China'. It is probably unfair to select one exhibition from among all the excellent exhibitions that have taken place in the past five to six years. However, 'Dinosaurs from China' was of a nature of the magnitude that had not been attempted previously in the Museum. It was successfully achieved by good management practices, which we have now come to expect from the Director. A significant aspect in the success of the exhibition was the excellent support provided by the individuals of TAMS and particularly by Susan Bridie in the executive function she filled prior to and during the exhibition. The success of the exhibition demonstrates that there are some features of natural history which have the drawing power to attract people out of their homes and away from their television bondage.

The final reflection is on the Lizard Island Research Station. The concept of the Lizard Island Research Station was developed by the then Director, Dr Frank Talbot. Undoubtedly people like Des Griffin, who were on his senior staff, had a significant role to play. The developments that have taken place in the space of approximately ten years are very significant. The management has successfully attracted support from scientists and from business and further promoted the station's already esteemed reputation throughout the marine scientific world.

At my first meeting as President we were considering the purchase of a research vessel for the Lizard Island Research Station and we were in receipt of a gift from the Queensland Government towards this purpose, and of a loan from the New South Wales Government. From this 'seed money' the Trust of the day proceeded with an analysis of the best type of boat to construct or purchase.

We now see a research station with very good accommodation, laboratory facilities and a research vessel capability not matched by any other station in the Great Barrier Reef region. Tribute must be paid to Dr Barry Goldman, Director of the Station and Mrs Lois Goldman, Secretary to the Station, who have provided the inspiration for the last six years of development. Further development will be consistent with the needs of marine science as they become more sophisticated and more instrument-demanding.

The strengthening of the Lizard Island Reef Research Foundation, which had been developed by a former Trustee, Sir John Proud, and formed during the Presidency of Michael Pitman has been of great importance to these developments. It has been my pleasure to be associated with the Foundation. There is no doubt that it has helped to significantly develop one aspect of the Museum's activities. It is also clear that it has not yet reached its full potential.

THE FUTURE Five and three-quarter years ago when I assumed the Presidency, I had planned that my term should be for no more than four years because I foresaw the development to the activities associated with the Bicentenary of White Settlement in Australia celebrations as requiring in the Trust a leader with close business connections. But I do believe that the time still exists for the Trust to obtain the necessary business support and government commitment to ensure that meaningful activities can be developed by the Museum for 1988.

The Trust will also require conscientious attention to the demands of planning the additional space which you, Mr Premier, have indicated will be provided for the Museum to house the Pacific collection and certain other necessary related activities. One would hope that this development can also be ensured for opening not later than 1988.

These two associated activities above will occupy a great deal of time in the deliberations of the Trust within the next two to three years.

Additional to the present planned building development, I believe that there is merit in the Trust being interested in your concept of modifying the centre of Sydney in a way that will make it an attractive cultural area. I am confident that the planning within the Museum will continue to produce exhibitions of the highest quality and of the highest appeal to the public. The Trust will be challenged to assist the Director in obtaining not only the financial contributions from commerce but the increased commitment of Government on the basis of subsidy.

The Australian Museum, as a museum of natural history, represents the basic interaction of man with nature and provides the opportunity for the most complete education for an understanding of the development of our natural and cultural heritage. At this stage in Australia's development we represent several distinctive cultural heritages which must be understood and respected if we are to live in close harmony together. Other cultural institutions such as the Art Gallery and the Museum of Applied Arts and Sciences represent human achievements which are important to understand and interpret.

The challenge to the staff is to generate exhibitions which can illustrate this interdependence. The challenge to the Trust is to facilitate such exhibitions and to take every opportunity to foster in the minds of the business community and in the minds of you and your government, an understanding of the true cultural significance of a museum of natural history and of the importance of the Australian Museum.

Your commitment to the objects of the Australian Museum, and your energetic support of the Trust are greatly appreciated.

J.T. Baker, OBE

Director's Report

The year opened with the promise of modest amounts of money being available from the Trust to fund special projects. There had been intense activity leading to the opening of the dinosaur exhibition. Decisions had been made to introduce computer facilities including word processing and there was ongoing concern for effective marketing, in our education programs, in the way visitors are greeted and in the general presentation of the Museum. Projects such as corporate planning and staff development were underway. Construction of important large exhibitions - on Aboriginal Australians and on Insects - were being designed.

Dinosaurs from China, was the most successful exhibition ever staged at the Museum. It brought just under a quarter of a million visitors to the Museum, involved many staff, gained the commitment of over 200 volunteers and increased revenue by almost one million dollars. The Trust Funds benefitted by over $250,000. Visitor surveys showed that the exhibition was considered interesting, informative and good value for money.

At the opening of the exhibition the Premier gave an undertaking to have the Government provide a new wing to the Museum to house its collections, provide public access to those collections and relieve congestion.

Development of the Museum is essential. Without development, the Australian Museum will play no significant part in marking the bicentenary in 1988 of European settlement in Australia. The collections of Pacific cultural material are crowded together. Access to the items is extremely difficult and ineffective air circulation leads to the threat of damaging mould. The Aboriginal cultural material is located in a warehouse. There is no exhibition space suitable for major temporary exhibitions. Indeed, preliminary planning for the bicentenary envisages an exhibition having to utilize scaffolding erected around the perimeter of the 'Long Gallery'. Staff in many areas work in cramped conditions with up to three times as many people as was originally planned for those areas. The unique library cannot give a decent service to staff or visitors because of inadequate space. The only meeting rooms for staff are in the Education Centre and are available only after 2.30 in the afternoon.

The Museum Trust has consistently endorsed a proposal to develop the courtyard area bound by the William St to the north, the College St wing to the west and the South wing. All those areas contain exhibition space and the development would link those, dramatically improving visitor flow. A new orientation area at the entrance to the building would lead to a major temporary exhibition space capable of housing exciting travelling exhibitions and displaying the Museum's cultural treasures. Floors below would contain service areas as well as storage and conservation laboratories. Floors above would allow storage of all the outstanding anthropological collections on site, thereby enhancing collection management. The Education Centre would be relocated and enlarged.

Several significant events took place early in the year whilst the dinosaurs dominated the public mind.

The first international conference on marine worms (polychaetes) brought more than 90 scientists from around the world to a week of meetings and excursions. This conference followed earlier ones on many other groups of animals (crustacea, molluscs, fishes) and areas of interest (deserts and culture contact) held since 1977.

Recognition of our commitment to efficient collections information management for public benefit and of the need to handle our accounts and staffing information efficiently, led to the establishment of a 'Database Manager's' position and the acquisition of a minicomputer system - The Burroughs 320 - microcomputers and word processors. The Burroughs system will facilitate project budgeting, accounting and financial management activities. Microcomputers will allow more rapid entry - and identification - of collection data via a menu-driven system displayed on video monitor as well as access to better statistical and 'number crunching' packages. Acquisition of word processors does no more than bring administrative functions into the 1980s.

Market research and commitment to effective marketing continued with a decision to substantially improve the quality of material made available to school teachers and their classes. A major publication program for 'Teacher's Ideas Packs' (TIPS), activity sheets, school newsletters and posters was initiated and will be generously helped by sponsorship of $20,000 from Caltex Oil (Australia) Pty Ltd. By June 1985, TIPS on 20 topics will be available and may reach 300,000 children each year.

The corporate planning process advanced substantially with a decision to introduce planning at various administrative levels. People at each level are expected to prepare their own plans. The planning cycle is tied to the budget cycle. The plan is to address a few major issues and a few objectives within each issue. Each objective is to be assessable and accompanied by strategies to achieve the objective. The plan for senior management was completed and referred to the Trust to gain their support. Planning at middle management-supervisor level commenced. The statements of mission and of philosophy are central to the plan at all levels and appear elsewhere in this report.

The divisional arrangement grouping scientific activities, formerly set apart in numerous departments was further strengthened and will continue into the next year.

Training and development programs advanced with the completion of the first phase of a program for senior staff involving lectures, study of literature and films, and two workshops dealing with interpersonnel issues. Up to 20 senior staff benefitted from this program. A program for receptionists, guides and secretarial staff commenced and courses for supervisors and for security staff were planned. Training and development is becoming a major challenge for the Museum's management.

Important advances were made throughout the Museum: in the visiting fellows program, in publications, in exhibitions, in the library, in the training of Aboriginal people, in managing and operating community museums and in other areas.

The Museum's special programs — Lizard Island Research Station, National Photographic Index of Australian Wildlife and The Australian Museum Society again enjoyed significant achievements.

At Lizard Island, major extensions to the laboratory building were completed with financial assistance from the Japan Foundation, James N Kirby Foundation and Esso Australia Ltd. The Station's research vessel, RV Sunbird, launched in April 1983, was chartered by many groups of scientists including groups studying coral spawning — research revolutionising our thinking about coral communities and their distribution.

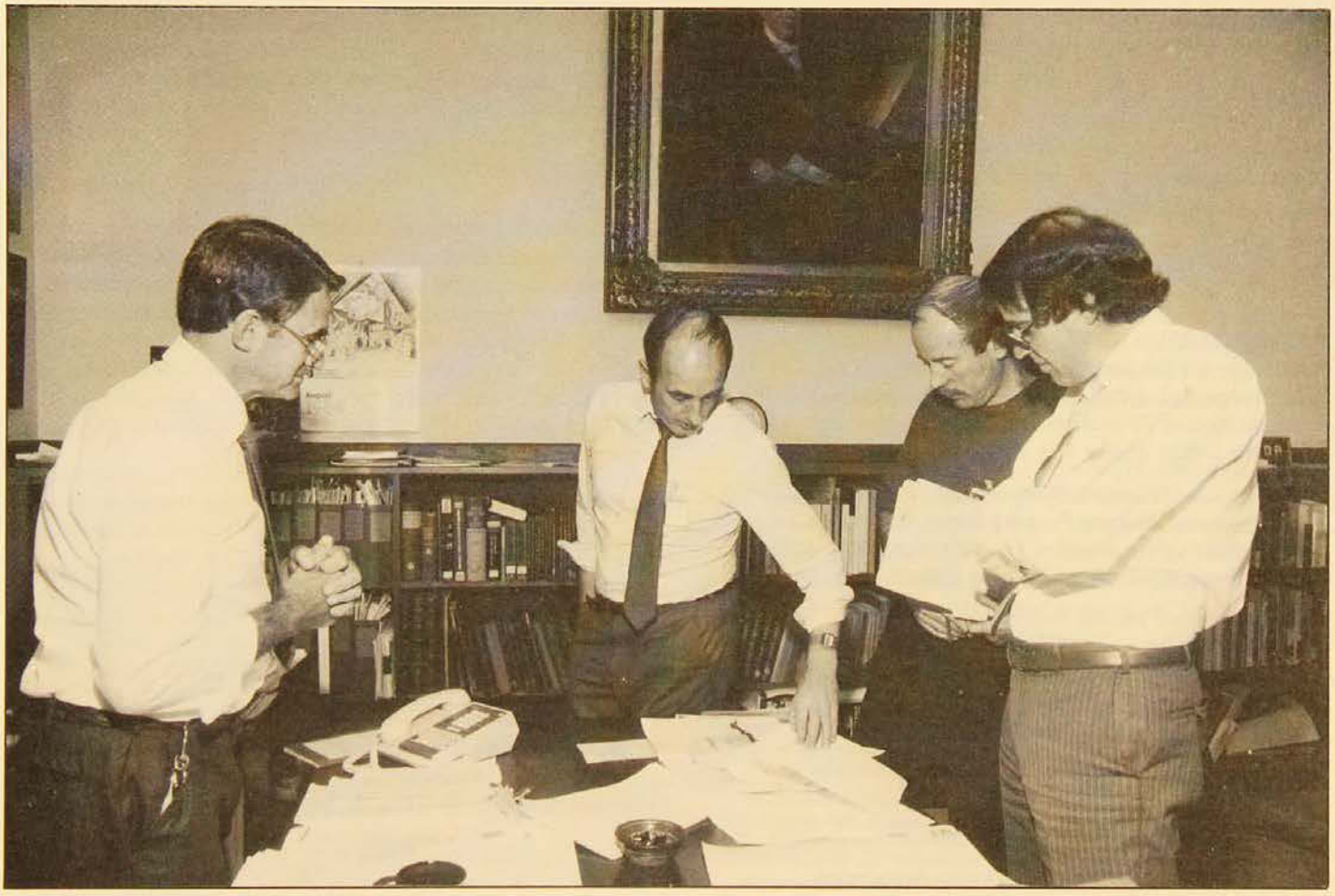
The Australian Museum's "Complete Book of Australian Mammals" edited by Ronald Strahan. Executive Officer of the National Photographic Index of Australian Wildlife is based on superb photographs from the Index's collection. It was published in October by Angus & Robertson and reached the national best seller list shortly afterwards.

The Australian Museum Society (TAMS) played a major part in supporting the dinosaur exhibition and arranged important market research to guide its membership program.

The financial climate was reasonably satisfactory, with the Trust's funds augmented by the dinosaur exhibition and increases in the accumulated surplus funds. However, the underlying growth in Trust Funds is small: indeed it may be declining. Total non-State Government funds again exceeded 30 percent of total funds available.

I again have pleasure in thanking my colleagues and the Trust, especially retiring President Joe Baker, for their support over the year.

D.J.G. Griffin
Director
29 September 1984



Dr Hal Cogger (Deputy Director) Dr Des Griffin (Director) Rob Joyner (Chief of Exhibition) and Geoff McKenzie (Secretary) discuss the proposals for the new building.
Photo: Kate Lowe

Scientific Activities

Division of Anthropology

Through research, use of the collections and active participation in exhibitions, the division seeks to increase knowledge and appreciation of the cultural heritage of the indigenous peoples of Australia, the Pacific and Indonesia.

Activities are directed to both the past and the present, through archaeological and ethnographic research in the field and on collections.

The division is particularly concerned with promoting cooperation with indigenous peoples to ensure access to items and information relating to their heritage.

HIGHLIGHTS

Initiation of a training program for Aboriginal people to organise and manage community museums

The preparation of photographs and catalogue of the Aboriginal ethnographic collection from New South Wales

The completion of the field documentation of the Museum's collections from the Orokolo area of the Papuan Gulf in a joint project with the National Museum and Art Gallery of Papua New Guinea

MAJOR PROJECTS ADVANCED Studies in the Pacific, co-ordinated by Dr Jim Specht, saw major progress of the Gulf Field Documentation Project, in Papua New Guinea, and included the addition of 78 artefacts. This project is described more fully in the section dealing with acquisitions.

Jim Specht and Ms Lissant Bolton worked on Phase Two of the UNESCO Oceanic Cultural Property Survey. The results are being published in three volumes: Volume I appeared in April and Volumes II and III will be published in 1984-85.

These volumes will provide item-by-item inventories of artefact collections from Polynesia and Micronesia held by all major Australian museums. These inventories will serve Pacific islanders as they collate information about their heritage, and will also be an important reference work for scholars.

Lissant Bolton continued to improve storage conditions for the Pacific collection, by re-organising the long weapons collection with the assistance of a volunteer, Mr A Mattea.

ACCESS TO ABORIGINAL HERITAGE IMPROVED Australian studies, co-ordinated by Dr Ron Lampert, were marked by increasing involvement with Aboriginal communities. Funded under the Wage Pause Scheme, seven Aboriginal trainees were each given a three month course in museum anthropology. Conducted by Ms Sue Thomsett and many other staff members, tuition was based largely on work experience. The trainees were selected by Aboriginal communities at Tweed Heads, Wellington, Bourke and the Batemans Bay - Wallaga Lake region of the New South Wales south coast.

Through this training program, the division hopes to assist Aboriginal communities in protecting and developing their cultural heritage, especially by encouraging them to use the division's collection and expertise.

The trainees took a course to assist them in establishing local museums within their community areas. This was augmented by visits to the communities by Museum staff. Sue Thomsett and Mr Phillip Gordon visited Tweed Heads and Maclean, while Ron Lampert visited Wellington, Newcastle and Nowra. These trips were to advise and encourage Aboriginal communities in establishing museums which display items of their cultural heritage. Many of these items are Aboriginal artefacts lent from the Museum's collections.

ABORIGINAL ARTEFACTS RECORDED Another project, also funded under the Wage Pause Scheme and directed towards making heritage material more readily available to Aboriginal communities in New South Wales, was the establishment of a complete photographic record of all New South Wales artefacts in the Museum's ethnographic collections. Mr Richard Bolzan and Mr Craig Youden, guided by Phillip Gordon, made the record and assembled it on a card catalogue. It is planned to publish this material in illustrated book form.

Aided by a grant from the Australian Institute of Aboriginal Studies, a computer register of all Aboriginal artefacts in the Museum's ethnographic collection was completed. Mrs Nan Goodsell, guided by Mr Geoff O'Donnell, computerised information about some 20,000 artefacts. The system allows quicker access to a more comprehensive range of data than the previous system, and future developments include a microfiche version.

A national ethnographic survey of Aboriginal artefacts in all major museums in Australia was started. Based here, the survey is sponsored by the Council of Australian Museum Directors. It is being coordinated by Dr Betty Meehan.

The new Aboriginal Gallery, now in the production stage, was worked on by Dr Dianne Losche and Ron Lampert, with assistance from Mrs Kate Khan and Phillip Gordon. A field trip to north Queensland yielded display materials for one section of the gallery.

REBURIAL POLICY CONTINUES The policy of returning human skeletal remains to Aboriginal communities for reburial continued. Phillip Gordon took several sets of remains to Wallaga Lake for reburial in the Aboriginal cemetery.

ABORIGINAL COLLECTION IMPROVEMENTS Storage and documentation of the Aboriginal collection were improved. Ms Penny Ikinger sorted and stored a backlog of New South Wales archaeological material received by the Museum under the National Parks and Wildlife Act. Phillip Gordon extended and partly reorganised the Aboriginal ethnographic store and Kate Khan documented a large collection of women's ceremonial material from Yuendumu, purchased during the previous year.

With the commissioning of the new bark painting store room, Ms Zoe Wakelin-King moved all Aboriginal bark and other paintings into air conditioned storage. Space was then found in the new store to house the Museum's small but highly important North American collection.

Geoff O'Donnell was seconded to the Museum of Australia for five weeks to advise on establishing registration procedures.

RESEARCH EXPANDED Jim Specht worked with Dr Julian Hollis, formerly of the Mineralogy Dept, on the petrology of New Britain ground stone tools in the Museum's collections with the aid of samples collected in the field during 1979-81.

During May and June Jim Specht joined a team from the Department of Prehistory, Australian National University, Canberra, ACT, on a tour of four island provinces in Papua New Guinea to prepare for a major joint archaeological research project in 1985. This project will explore questions about the origins, development and significance of the Lapita pottery makers in the Bismarck Archipelago of Papua New Guinea between about 4,000 and 2,500 years ago.

Jim Specht's main activity was the preparation of a book with Mr John Fields, Photography Dept, on the Papuan photographs of Captain Frank Hurley, noted explorer and photographer.

A selection of 100 plates, from a total of 1,120 frames, will be published late in 1984 by Robert Brown and Associates. Each plate has a commentary, with many quotations from Hurley's original field diaries which are held by the National Library of Australia.

With Mr David Bell and Mr David Hain, Jim Specht completed the revision of a paper about Solomons Islands compound fish hooks.

FIELDWORK CONTINUED IN FLINDERS RANGES Ron Lampert continued his research on the prehistory of the Flinders Range with a further field season of excavations at the Hawker Lagoon site. Rain softened the soil which made it easier to excavate samples of the stone industries for analysis than was previously possible. Aided by volunteer Mr S Florek, analysis of the samples is almost complete.

The earliest stone industry is almost certainly the enigmatic Kartan Industry, through which Kangaroo Island, SA, is best known by prehistorians. Hawker Lagoon provides the first stratified sample of this industry and will help in answering questions about its age and cultural associations.

With Dr N Peterson, Australian National University, ACT, Ron Lampert completed a paper on an Aboriginal ochre quarry, and with Dr J P White, University of Sydney, NSW, and Mr J Kohen, Macquarie University, Sydney, NSW, he completed drafts for two chapters of the "Bicentennial History of Australia."

Dianne Losche prepared a paper "Utopian Visions and the Division of Labour in Abelam Society" for a conference in Basle, Switzerland during August 1984. She has also been working towards the publication of the following papers - Food and Gender: Hegemony and Vision in Papua New Guinea, and Through a Glass Darkly: History of Studies of Sexuality and Gender in Papua New Guinea.

IMPRESSIVE ACQUISITIONS The division's main collections are from Aboriginal Australia and the Pacific Islands, with smaller but important collections from South East Asia and other parts of the world. This reflects the acquisition policy which emphasises additions to the Australia, Pacific Islands and South East Asian sections.

The major acquisition was the collection of 94 central Australian paintings known as the "Papunya Permanent Collection". These paintings document the development of the now world-famous Papunya art and include early works by several artists who later achieved international fame.

Traditionally, this aspect of Papunya art was executed as ground drawings, and in the early 1970's the Papunya artists began to put their traditional decorative motifs onto canvas and board. This collection includes some of the first attempts in this new medium.

The policy of buying early Aboriginal artefacts from southeastern Australia continued, purchases being made from Sotheby's and other auctioneers.

Two collections of bark paintings, and other artefacts associated with the paintings' general theme, were received from Ramingining, NT, through Mr J Mundine. One is the Morning Star collection commissioned by the Museum last financial year; the other is the Honey collection, purchased after it was displayed at the Perspecta '83 Exhibition held in the Art Gallery of New South Wales. These collections portray the Morning Star song cycle as painted by artists from several different clans, and stories associated with the collection of honey as painted by artists from two moieties.

Mr J Magers made a major donation of over 200 Aboriginal and Pacific Islands' artefacts under the Federal Goverment's Tax Incentives for the Arts Scheme. This collection includes many items formerly in "Harry's Museum" at Warners Bay, NSW, which was disbanded years ago. While some artefacts are reasonably well documented, historical research on "Harry's Museum" may provide additional information.

FEW PACIFIC ACQUISITIONS Pacific area acquisitions were few because of space restrictions in the Pacific Store. Therefore, better documentation of existing collections and acquisition of a few well documented new artefacts was achieved. The main project was the Gulf of Papua Field Documentation Project begun last year.

Many artefacts in the collection have little information other than their area of origin. In some cases it is still possible to obtain additional information from older people about the venacular terms for the artefacts and the way they were made and used.

With the passing of this older generation, this information is in danger of being lost forever. The division, therefore, is identifying areas suitable for field visits and taking photographs of our artefacts to try to obtain additional information.

Dr James Rhoads was employed on a contract basis to document collections from the Orokolo region, Gulf Province, PNG. Mr S Eoe, Papua New Guinea National Museum and Art Gallery, worked with James Rhoads in the field. Cataloguing and documentation was carried out by Sue Thomsett and Penny Ikinger. Using photographs of artefacts from Orokolo in both museums' collections, James Rhoads and S Eoe collected information about the manufacture, use and maintenance of several hundred artefacts. This information greatly increases the value of the Orokolo collection for display and research. Seventy-eight artefacts were acquired during this project.

Acquisitions of Indonesian artefacts included a set of 30 line drawings on cloth, depicting a Balinese version of the Ramayana story as well as selected textiles, basketry and musical instruments.

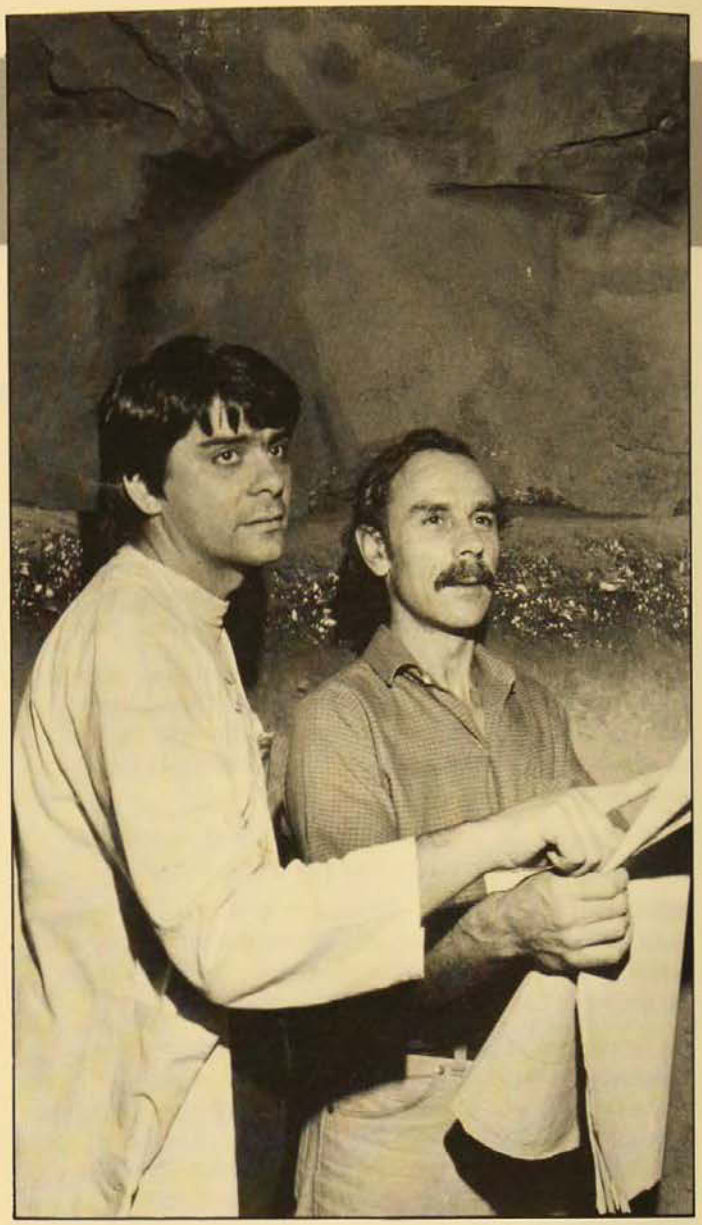
EXHIBITIONS INITIATED A temporary exhibition of contemporary Aboriginal culture was mounted to celebrate National Aborigines' Week, July 4-10 and remained open until August 1.

The division participated in the Rare and Curious Exhibition as part of International Museum Week with a suit of armour from Kiribati and a collection of artefacts from the rainforest region of North Queensland.

VISITING FELLOWSHIPS Prof Michael Pietrusewsky, Department of Anthropology, University of Hawaii, USA, spent three months with the division studying human skeletal material from the Pacific and South East Asia. His wide-ranging comparative study, using metrical and non-metrical data, aims to examine the biological relationships of the peoples of these regions.

NINE GRANTS TO UNIVERSITY STUDENTS The Australian Museum Trust made nine research grants to post-graduate scholars pursuing anthropological topics. The grants assist with fieldwork, radio carbon dating, and photography amongst other expenses.

The scheme's success can be judged by the high quality reports and theses received by the Museum which include: Mr R D Miller's thesis based on archaeological investigations at Bull Cave, near Minto, NSW, which adds to our knowledge of Aboriginal life in the Sydney district; Ms J McDonald's thesis describes her research on Aboriginal rock engravings of animal tracks in western New South Wales from which she concludes that the tracks can all be attributed to species of living marsupials except one (which conforms, at least in some respects, with the extinct giant kangaroo *Procoptodon*); Ms J A Webster's thesis based on the analysis of faunal remains from an Aboriginal rock shelter in the James Range, NT, raises important theoretical issues regarding the interpretation of faunal remains by archaeologists as well as commenting on the range of animals exploited by Aborigines within the region of the site.



Head of Anthropology Dr Jim Specht (right) and Phillip Gordon discuss plans for the new Aboriginal Gallery.
Photo: John Fields

SIGNIFICANT COMMUNITY INVOLVEMENT Zoe Wakelin-King spent six weeks as Drama Fellow at the University of Sydney, adapting a 19th century Indonesian shadow play for western theatre production.

Lissant Bolton continued as Associate Editor of the Pacific Arts Newsletter, which promotes information exchange.

Jim Specht continued on the National Commission for UNESCO, and as Vice-President of the Anthropological Society of New South Wales. He retired in September from the committee advising the Minister of Foreign Affairs on the Fund for the Preservation and Development of South Pacific Cultures, and was appointed to the 'Oceania' Publications Committee of the University of Sydney.

Ron Lampert retired as President of the Australian Archaeological Association in December. He continued to represent the Museum on the Council of the National Trust of Australia (NSW) and on the Aboriginal Sites Advisory Committee of the National Parks and Wildlife Service of New South Wales. He served on the Advisory Committee to the Heritage Council of New South Wales for the First Government House site and as Deputy Chairman of the Prehistory Advisory Committee of the Australian Insitute of Aboriginal Studies.

In May Ron Lampert was elected a Fellow of the Australian Academy of Humanities.

Dianne Losche was a lecturer with the School of Behavioural Sciences, Macquarie University, NSW, and guest lecturer at Sydney University's Anthropology Department.

CONTINUING EDUCATION Lissant Bolton continued her MA degree at the University of New South Wales. Geoff O'Donnell continued research towards his MA degree at Sydney University.

CONFERENCES Lissant Bolton and Phillip Gordon represented the Museum at the Fifth Conference of Museum Anthropologists in Darwin, NT. Ron Lampert attended the Biennial Conference of the Australian Institute of Aboriginal Studies, Canberra, ACT. The theme was "Aboriginal Arts in Contemporary Australia", and was designed to bring together leading Aboriginal artists, scholars and promoters.

DONATIONS The department gratefully acknowledges the receipt of donations from the following people: Mr L Dinning, R R Hastie, Ms H Jenken, H Webster, Mrs M Ford, Te Ariki Nui Taiparu Ko Te Riria V, Sir Neville Pixley, E Rodgers, Ms L Bolton, Ms F S Millington, Mr W E Roth, Mr R McKenzie, Mr V Gregg, Ms D Levitt, Mrs J Mathews, Mr J Mager.

MUSEUM STUDIES STUDENTS Students from the University of Sydney's Museum Studies Course studied the collections. Ms J Stuart examined the Melbourne Ward collection of convict artefacts from Port Arthur, Tasmania Ms L Oakes worked on the Hurley Gulf of Papua collection, and Ms N Wyatt-Spratt on north American baskets.

FUTURE PLANS The division plans to complete the UNESCO-sponsored inventory of Polynesian and Micronesian collections in Australia, and catalogue its New South Wales Aboriginal ethnographic collection.

The Aboriginal Gallery will be opened. A third scientific officer position will be filled to work on Aboriginal material culture.

The Pacific studies will initiate a review of the Sepik River collection from Papua New Guinea before a field documentation project begins in 1985-86.

VISITORS TO THE DIVISION OF ANTHROPOLOGY Mr J. Barker, Canada; Mrs E Glover, England; Mme J Aubrun and Mr A Saferis, France; Mr J Mangi, Mr S Eoe, Mr B Craig and Ms R Hill, Papua New Guinea; Mr K Jones, Mr D McCartie, New Zealand; Mrs P Rex, Niue; Dr C Kaufmann, Dr B and Mr G Hauser-Schaublin and Dr J Wassman, Switzerland; Mr D Newton, Prof D Billings, Dr G Laitman, Ms J Lethbridge, Prof F Nafziger, and Mr M Busse, USA; Mr K Huffman, Vanuatu; and Dr G Mackensen, Federal Republic of Germany.

An unusual coconut fibre and cane armour suit from the Kiribati Islands, featured in the Temporary exhibition "Rare and Curious Specimens".
Photo: John Fields

Division of Earth Sciences

The aims of the division are to maintain and expand comprehensive collections of Australian and overseas fossils, minerals, rocks and meteorites from all geological periods.

Divisional activities are focused on research and educational displays relating to fossils, minerals, rocks and meteorites. The division maintains very significant collections which serve both national and international scientists.

HIGHLIGHTS

Sydney University transfers much of its fossil collection to Museum

Preparations commence for new Mineral Gallery, particularly the purchase of a large amethyst geode and polished slice of petrified wood

Fossil treasure (*Thylacoleo*) returns to Museum

PALAEONTOLOGY

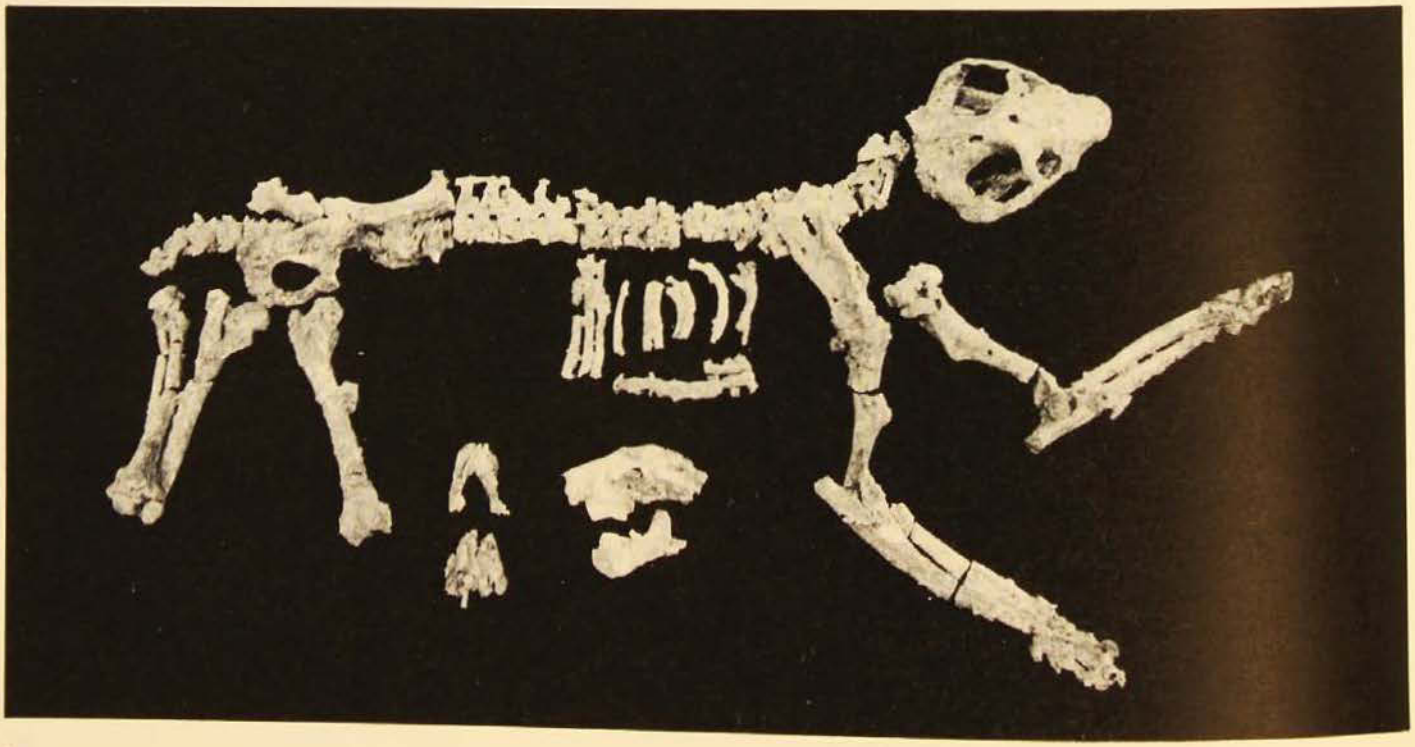
Activities in this area are concerned with the management of the Museum's fossil collections of animals and plants, and research.

FOCUS ON EARLY VERTEBRATES Research focused on the origins, evolution and distribution of early vertebrates (Ordovician, Silurian and Devonian) in Australia and their relationships with contemporaneous faunas on other continents; on Devonian marine faunas of eastern Australia; and on Palaeozoic and Mesozoic plants of eastern Australia.

DEVONIAN FISH FAUNA RESEARCH PROGRESSES Dr Alex Ritchie continued research work on Devonian fish faunas of Australia and Antarctica, particularly on the arthrodiran fish, *Groenlandaspis*. A paper on *Ainiktozoon*, an enigmatical organism from the Silurian of central Scotland, was completed and submitted to "Alcheringa", the Australasian palaeontological journal.

MARSUPIALS RECOVERY Mr Robert Jones took part in two field trips with the Museum of Victoria. In September he joined a party to Lake Callabonna, SA, led by Dr Tom Rich, to recover several skeletons of the extinct Pleistocene marsupials. They were supported by a contingent from the Royal Australian Electrical and Mechanical Engineers (RAEME) based near Wodonga, Vic. The team excavated several *Diprotodon* skeletons and Robert Jones recovered parts of one with well preserved front limbs for the Australian Museum collection.

The bones of the "flesh eating marsupial lion" *Thylacoleo carnifex* as they appeared on their return to the Museum after almost 18 years. Photo: Kate Lowe



Head of Earth Sciences Dr Alex Ritchie, Joan Hingley and Dr Lin Sutherland examine new fossil finds of *Diprotodon* .
Photo: Kate Lowe

In February, Robert Jones again joined the Museum of Victoria, this time to Dinosaur Cove, west of Cape Otway, Vic, to supervise one of several teams excavating an Early Cretaceous channel-fill deposit containing fossil reptile bones, mainly dinosaurs and turtles. He also took the opportunity to collect a substantial quantity of Early Cretaceous plant fossil material from the same area.

BIG EXPANSION OF COLLECTIONS The palaeontological collections of nearly 70,000 specimens includes a wide range of types and specimens figured in scientific literature.

During the year 1,500 specimens were registered, of which 1,250 were donated. The year's major event was the transferring by the Department of Geology and Geophysics, University of Sydney, NSW, of large parts of its palaeontological collections to the Museum. The first stage consisted of over 1,200 specimens of fossil plants, including some very fine Australian and overseas material.

Other important acquisitions included 240 specimens of Devonian brachiopods from Dr B Johnson and Dr Al Lenz, Macquarie University, NSW; 300 specimens of Devonian conodonts from Ms Ruth Mawson, Macquarie University; 150 specimens of Devonian marine invertebrates from Dr A Wright, University of Wollongong, NSW; Permian marine invertebrates from the Hunter Valley, NSW; Dr Ian Percival, Cretaceous marine invertebrates from Oodnadatta, SA, from Dr J D Hollis.

THE LION RETURNS Almost 18 years after its discovery near Moree, NSW, one of the Museum's fossil treasures finally came home. The only nearly complete skeleton of large, extinct marsupial carnivore, *Thylacoleo carnifex* the 'flesh-eating marsupial lion', discovered during roadworking operations in June 1966, returned in time to be one of the main attractions in the "Rare and Curious Specimens" exhibition which marked International Museum Week in May.

The skeleton, which has been studied and described by Dr Eileen Finch, Department of Zoology, University of Western Australia, is probably that of an adult female. Also at the Moree site parts were found of the skull and jaw of a half-grown cub and the crushed skull and jaws of a very young individual. The return of the skeleton, which was flown back from Perth free of charge by Ansett Airlines, received considerable publicity.

Alex Ritchie, as Honorary Treasurer of the Linnean Society of New South Wales, was involved in transferring the Society's library to the Museum. He also co-edited the fourteen papers of fossil fishes which resulted from the Early Vertebrate Symposium held in February. The Museum was a host and co-sponsor.

MINERALOGY & PETROLOGY

Activities are concerned with research and the management of the Museum's collection of minerals, rocks and meteorites. Research is mainly centred upon volcanic rocks, gemstones, and minerals of the Australasian region.

EASTERN AUSTRALIAN VOLCANISM This project highlighted three aspects of the volcanic belt which extends from northern Queensland to Tasmania. They were the underlying cause of the volcanism, the high pressure minerals and rocks brought up by the volcanoes, and the source of the gemstones found with the volcanic material.

The cause of the volcanism was studied by Dr Lin Sutherland, and ages of volcanoes were related to the formation and migration of the Australian plate by sea-floor spreading. A theory linking the big Australian volcanoes to the continent's movement over the old spreading of the Coral Sea was published in the November "Nature".

More information was presented to the Hot Spot Symposium at the September meeting of the International Union of Geodesy and Geophysics in Hamburg, Germany. A model was proposed for Australia's volcanism based on the formation of volcanic chains by plate movements over ghosts of old sea floor spreading zones.

In March important additional samples of high pressure rocks and minerals of the lower crust and mantle associated with eastern Australian volcanism were found in the New England region of New South Wales, Western Districts of Victoria, Carnarvon Gorge, and near Proston, Queensland. A joint survey of sites was carried out by Lin Sutherland and Dr J D Hollis, assisted by the Geological Survey of Queensland.

Gemstones under study include: sapphire, zircon, garnet, moonstone feldspar and diamond. Zircon is being studied in association with Dr R Caruba, University of Nice, France.

Mr Ross Pogson conducted a magnetic survey of a diamond prospect near Walcha, NSW, to provide details for an intensive study.

INTERNATIONAL COOPERATION During a visit to Europe Lin Sutherland visited a number of museums studying their mineral displays, laboratory facilities, curatorial programs and research projects. The institutions included: the natural history museums in Vienna, Austria; Budapest, Hungary; and Prague, Czechoslovakia.

On returning to Australia, he led a tour of Museum Society (TAMS) members to volcanoes of Java and Bali, Indonesia. Highlights included a visit to Krakatau Volcano on the centenary of its eruption and an inspection of the Geological Museum, Vulcanological Survey, Bandung, Java.

NEW MINERAL GALLERY WELL ADVANCED Work on this project has dominated staff and resources since its initiation in July, and has involved forming the concepts for each display unit, writing text and preparing specimens.

NEW STORAGE AREA COMMENCED Public Works have begun the renovation of the previous rock storage area. This involves the installation of two laboratories, compactus units and expansion into adjoining storage areas to rehouse the mineral collection.

TEMPORARY DISPLAYS INSTALLED A display for the wall cases in the Mineral Gallery was installed in September. It shows minerals from some famous Australian mines, new acquisitions and features work carried out by the Museum's mineralogists.

COMBINED MINERALOGICAL SOCIETIES SEMINAR Ms Joan Hingley with the Mineralogical Society of New South Wales organised a seminar on "Australian Gem Minerals" held at the Museum in June. The seminar was attended by members of Mineralogical Societies from South Australia, Victoria and New South Wales, professional mineralogists, gemmologists and interested individuals.

COMMUNITY INVOLVEMENT IMPORTANT A popular talk on "The hot spot trail following volcanoes from Sydney to Indonesia", was given by Lin Sutherland to the Lapidary Club of New South Wales in October. Scientific talks were given to the Royal Society of New South Wales in December, and the Mineralogical Society of New South Wales in February. A talk on Australian volcanoes was given to the Geology Department of the Jogjakarta University, Indonesia.

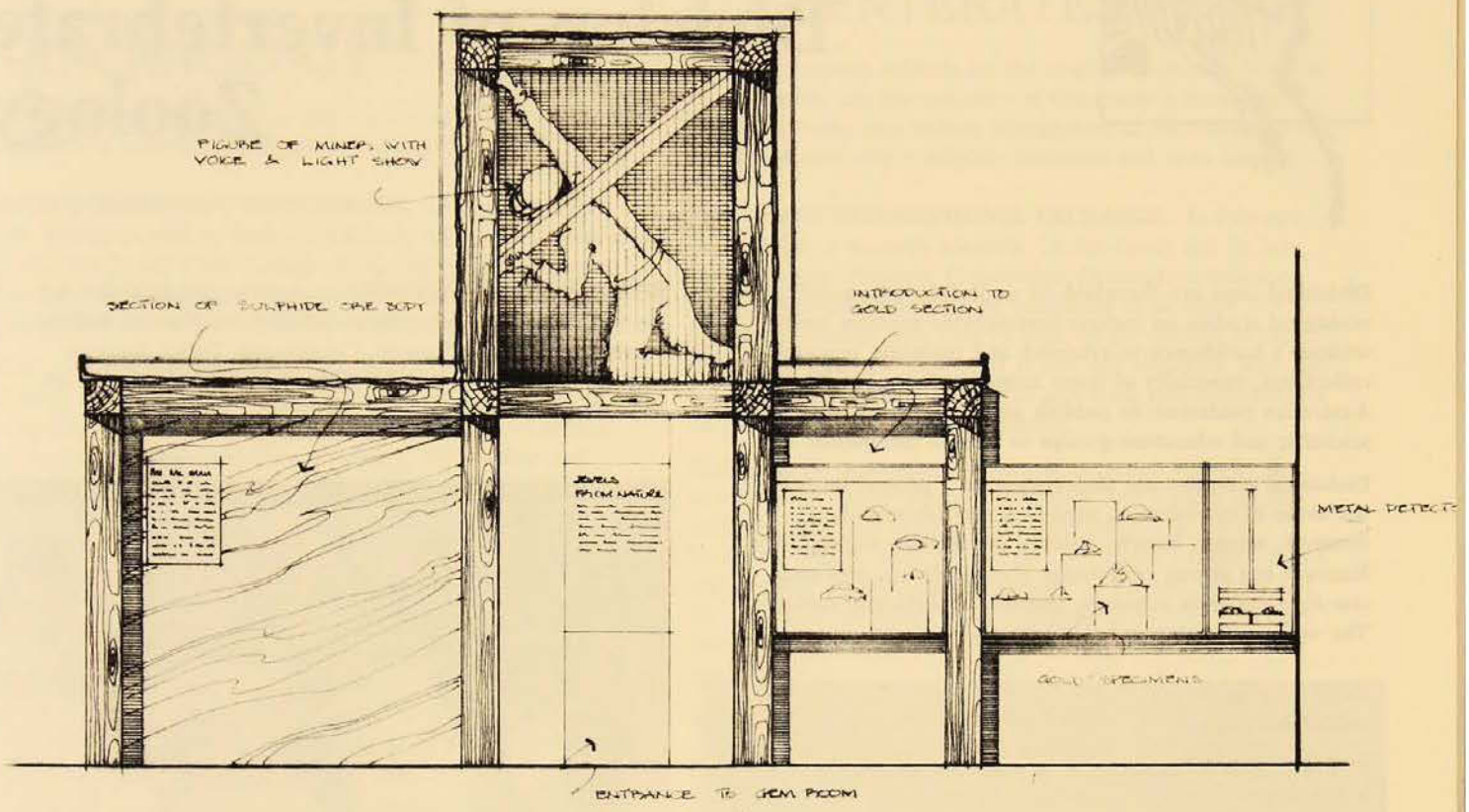
COLLECTIONS AND DONATIONS ENHANCED The George E Sansum collection comprising representative suites of minerals from overseas and Australian localities was donated by Miss Jane Campbell. A specimen of visible gold ore from Kalgoorlie was donated by the Kia Ora Gold Corp NL and various specimens were donated by Dr Kerry Rodgers; Dr John McAndrew, CSIRO; Mr Jack Pixley; Mr Geoff Goodwin; Mr Harvey Henley and Mr Albert Chapman. The Hon Neville Wran entrusted the Museum with the care of a Broken Hill cerussite presented to him during the Broken Hill Centenary.

A collection of Australian minerals was exchanged for Bulgarian minerals with the Bulgarian Academy of Science, National Natural History Museum. Two pieces of precious opal were loaned for a promotion of Australian opal in Geneva and Zurich and a quartz crystal group was used by Crystal Pools for an advertisement.

A large, attractive pyrite specimen was loaned to the Premier's Department for their display at the Royal Easter Show. Teaching specimens were loaned to the New South Wales Department of Education Correspondence School and the Nepean College of Advanced Education.

Suites of rocks and minerals were loaned to the University of Queensland; Sydney University; the Australian National University, Canberra, ACT; and the University of Nice, France for research purposes. The Mount Magnet meteorite was loaned to the Natural History Museum of Vienna for analysis.

Specimens purchased for the new Mineral Gallery included: gold-bearing tetradymite from Queensland, a rare large millerite, and two spectacular emerald crystals accompanied by a cut stone from the same material from Western Australia.



A sketch design by Jeff Freeman of Exhibitions, showing one of the concepts for the new Mineral Gallery, which is due to open in early 1985.

Additional purchases were a suite of agates and ornamentals from exhausted Australian localities and a range of coloured Australian sapphires. A large amethyst geode from Brazil and a slice of agatized wood from Arizona, each about one metre square, were acquired on our behalf by Museum Associate Mr Albert Chapman during his attendance at the Tucson Gem and Mineral Show, Arizona, USA.

FUTURE PLANS

These include the acquisiton of some recently discovered Antarctic meteorites to complete an area of the collection which has scant coverage, and the establishment of new laboratory facilities adjacent to the rehoused collections.

A Visiting Fellowship will be taken up by Prof W Griffin, Mineralogisk - Geolgisk Museum, Oslo, Norway in February-April 1985. He will study lower crustal rocks of eastern Australia, as revealed by xenolith assemblages from volcanic rocks. This will complement detailed research already being conducted by Lin Sutherland and the results will be written up jointly with the Museum.

VISITORS TO THE DIVISION OF EARTH SCIENCES

PALAEONTOLOGY Lars and Elizabeth Ramskold, Stockholm, Sweden; Mrs Mildred Fenton, New Jersey, USA; Dr Judd Case, California, USA; Dr Kerry Rodgers, Auckland, New Zealand; Dr Edgardo Romero, Buenos Aires, Argentina; Mr Liu Shi-fan and Mr Dong Shi-min, Beijing, Peoples' Republic of China; Dr Yoshikazu Hasegawa, Tokyo, Japan; Dr Ella Hoch, Copenhagen, Denmark; and Dr & Mrs Mike Williams, Colorado, USA; Dr Tony Thulborn, University of Queensland; Dr Peter Jell, Museum of Victoria; Miss Susan Turner, Queensland Museum; Prof & Mrs Brian Engel, University of Newcastle, NSW; Dr Pat Rich, Monash University, Vic; Dr Tom Rich, Museum of Victoria; Dr Gavin Young, Bureau of Mineral Resources, Canberra, ACT; and Prof K S W Campbell, Australian National University, Canberra, ACT.

MINERALOGY and PETROLOGY Dr Brian Mason, Smithsonian Institute, Washington, DC; Mr Alan Fleming, London; Dr S S Thigale, University of Poona, India; Dr David Watkinson, Carlton University, Canada; Dr Zdenek Johanne, BRGM, Orleans; Dr Tony Irving, University of Washington, Seattle, USA; Dr John Paris, New York; Mr Peter Tembey, CRA Ltd; Mr Brian Garner, Geological & Mining Museum, Sydney; Dr Erwin Slansky, Department of Mineral Resources, Sydney; Prof John Fielding, Armidale University, NSW; Dr Peter Wellman, Bureau of Mineral Resources, Canberra, ACT; Mr Brian England, Macquarie University, Sydney, NSW; Mr Lance Rayner, Sydney University; Dr Alan Pring, South Australian Museum; Dr John Taylor, Atomic Energy Commission, ACT.

Division of Invertebrate Zoology

Divisional aims are threefold: to undertake taxonomic and ecological studies on various invertebrate animals (animals without a backbone): to establish and maintain research collections, especially of those animals relating to the Australian continent; to publish and provide information to scientific and education groups as well as the public.

Divisional activities are undertaken on a project basis in the areas of crustaceans, molluscs, starfish and their relatives, worms, insects, spiders and marine ecology. The Museum has strong collections of crustaceans, molluscs, star fish and their relatives, sponges, insects and spiders. The worm collection is being improved.

HIGHLIGHTS

The successful International Polychaete (marine worms) Conference

International exchange of scientific officers from China and Denmark

SUCCESSFUL INTERNATIONAL CONFERENCE Following the tradition of Museum-sponsored international meetings, Division Chairman, Dr Pat Hutchings organised the first International Polychaete Conference. More than 90 delegates, representing over 20 countries, attended the July conference.

The Museum provided travel funds to four international scientists. Two visiting wormworkers received research funds, allowing them to attend the conference and study the collections. Travel funds were also obtained from the Australia-China Council, Foreign Affairs Dept, Canberra, ACT,; The Royal Society of London, UK; and the British Council, Sydney, NSW.

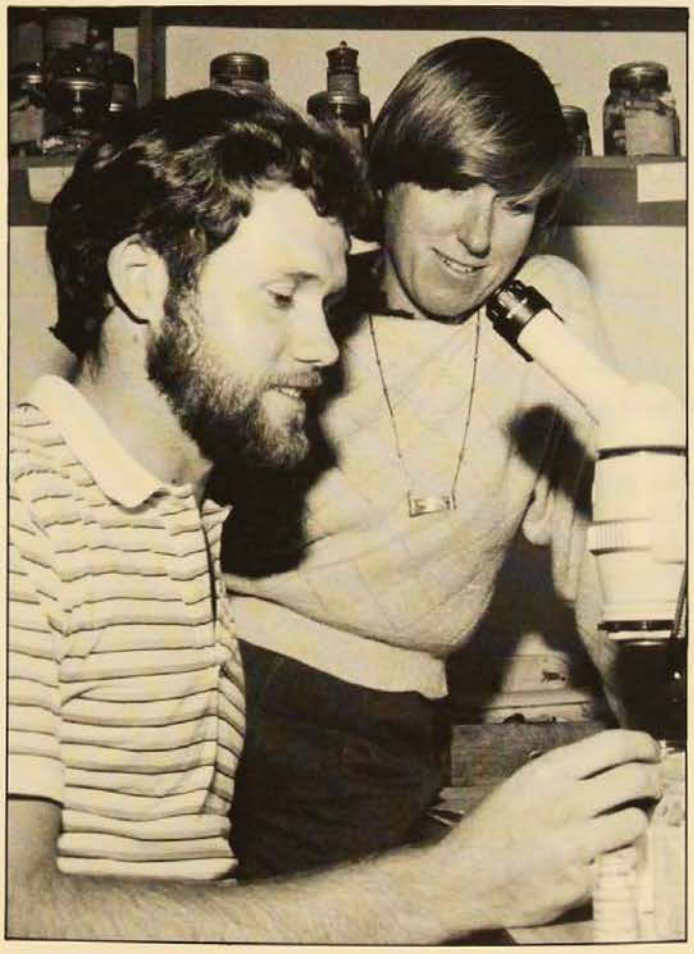
The meeting was a great success with four days of sessions including evening discussion groups, a field trip to mangrove and rocky shore habitats and CSIRO Fisheries, Cronulla, NSW, organised by the Co-Convenor of the Conference, Dr Sebastian Rainer.

The proceedings, a total of 33 papers, will be published during 1984-85 by the Linnean Society of New South Wales following editing by Pat Hutchings.

Pat Hutchings took 17 overseas delegates to the Museum's Lizard Island Research Station for a two week post-symposium field trip.

Her efforts have shown the need for such symposia and the second meeting will be held at Copenhagen in 1986.

INTERNATIONAL EXCHANGE Another divisional first was the exchange of scientific officers between the Museum and the University Zoological Museum, Copenhagen. Dr Jim Lowry is based in Copenhagen for most of 1984 and Dr Jean Just is acting as Scientific Officer at the Museum.



Head of Invertebrate Zoology Dr Pat Hutchings (right) talks to her research assistant, Chris Glasby regarding their joint research project. Photo: Kate Lowe

ARACHNOLOGY

Projects involve the collection and study of spiders as well as the collection of scorpions, ticks, millipedes and centipedes.

ACTIVE COMMUNITY INVOLVEMENT Lectures dealing with venomous spiders, their identification and habits were given to the New South Wales College of Nursing and the Sydney University Medical School. A public lecture was given during Museum Week, on interesting and unusual spiders.

Staff participated in Education Department activities for school children providing identification services and work experience programs. Two Discoverers, Miss J Smith and Miss J Lambert, worked in the department during January. Many public and scientific enquiries were answered during the year.

RESEARCH PROBLEMS AND SUCCESSES Work on the classification of funnel web spiders, using several techniques is in progress. These involve the study of both structural and chemical characteristics. Problems with interpretation of the chemical data has necessitated much repetition of earlier work.

A new electrolyte system was successfully tested. Use was made of classification programs of both Macquarie University, Sydney, NSW and CSIRO.

The classification of Australian Filistatidae was completed. These are small spiders commmonly found under bark. Separate work on Papua New Guinea material continues.

A joint project with Drs R Forster and N Platnick began on the relationships of the Hypochilomorphae, the most generalised group of 'true spiders' Araneomorphae. These spiders are widely dispersed but only in a few locations. Three Australian genera are being revised here, *Gradungula*, *Progradungula* and *Hickmania*.

Pit fall traps at Gordon, near Sydney, were collected. Other field work was limited to a short trip to Kiama, NSW, and the Brindabella Ranges, ACT.

COLLECTION STORAGE IMPROVED By reducing shelf spacing, 140 metres of new shelving was added in existing bays. There is little scope for further increase by this method.

More than 14,000 specimens have now been put on computer data sheets. It is hoped to begin transferring this data onto discs next year. Twenty-eight loans were sent out.

The death of Mr Ramon Mascord, early in July, marked the end of a remarkable career in natural history. He was Honorary Associate of the Australian Museum. His interest in spiders began almost thirty years ago. He amassed a remarkable collection of several thousand colour slides which forms a valuable reference resource for future workers. His dedication and enthusiasm will be missed.

FUTURE PLANS Staff intend to transfer the collection data onto computer disc storage and complete the funnel web project.

CRUSTACEA & COELENTERATES

The main research subjects are the amphipods (marine forms of beachhoppers) and the collection of this group is increasing rapidly. Activities also include management of the collections of lobsters, prawns, crabs, jellyfish, anemones and moss animals.

IMPORTANT INTERNATIONAL EXCHANGE In February, an exchange of research scientists, Dr Jim Lowry and Dr Jean Just, Zoological Museum, Copenhagen, Denmark, commenced. Having examined extensive type collections of all major European museums, Jim Lowry's work on the revision of the lysianassoid group of amphipods is now well advanced. Jean Just was able to study Museum material and make field collections of his study animals throughout Australia.

Studies on the Australian lysianassoid amphipod fauna by Jim Lowry and Ms Helen Stoddart continued, and a paper on the pachynid group was submitted for publication. Two other taxonomic projects were completed: Jim Lowry's studies on the tube dwelling amphipod genus *Cerapus* in Fiji and Samoa; and the ampeliscid amphipod project, in collaboration with Dr Gary Poore, the Museum of Victoria, Melbourne, were submitted for publication.

Studies on a little known, primitive group of barnacles (Ascothoracica) were initiated by Jim Lowry. These strange animals resemble bivalved molluscs and attach themselves to golden coral by way of a unique sleeve-hinge.

With the aid of an Australian Biological Resources Study (ABRS) grant, Helen Stoddart began compiling a check list for certain groups of the Australian crustacean fauna including the Cumacea, Mysidacea and Amphipoda. The work will be published as part of the "Zoological Catalogue of Australia".

Jean Just's work involved an amphipod group that makes its home in small, discarded mollusc shells. These microscopic animals (Siphonoecetinae) inhabit shallow sandy areas and are extemely abundant in Australian waters. While based here, he will examine material held at major institutions and conduct field work in most states to supplement our collections of this neglected group. Current studies have revealed about 15 new species.

FIELD TRIPS YIELD OVER 400 SAMPLES In December Jim Lowry, Helen Stoddart and Mr Roger Springthorpe collected over 400 samples of marine and intertidal invertebrates from six areas between Albany and Exmouth, WA. Few shallow water marine invertebrate collections have been made from this area and the samples are important additions to existing collections of coelenterates, sponges, worms, echinoderms and crustaceans. Financial assistance from the Australian Museum Trust permitted the employment of Mr Steven Keable to sort much of the collection. Some material is already under study by Jim Lowry and Jean Just.

RATIONALISATION OF COLLECTIONS Roger Springthorpe acted as collection manager: rationalisation of the Crustacea, Coelenterate, Echinoderm and Worm collections began.

The invertebrate collections expanded rapidly with the incorporation of large collections of fresh water Crustacea from eastern Australia (yabbies and water fleas); spider crabs; Antarctic amphipods and echinoderms; polychaete worms from the Hawkesbury River; crabs, shrimps and echinoderms from coastal Queensland; amphipods from Jervis Bay, NSW; and a large collection of marine invertebrates from Western Australia.

More than 3,000 specimen lots were registered and the division looks forward to acquiring additional storage space.

Two visiting specialists have identified large, previously unidentified, collections of worms. Dr Kristian Fauchald, Smithsonian Institution, Washington, DC, worked on polychaetes; Mr Ed Easton of the British Museum of Natural History, London, identified our terrestrial earth worm collection which was curated by Ms Annabel Chapman. Since the appointment of Ms Lexie Walker considerable inroads have been made in sorting and identifying much of the backlog of polychaete material.

Current crinoid (feather-star) research enabled revamping of this part of the collection by Ms Anne Hogget. The sponge collection, stored in alcohol, has been re-organised with the help of volunteers, Mrs Mary Rowe and Mr Hartley Broughton.

Re-organisation of the crustacean spirit collection continued and much assistance was given by volunteers, Ms Pauline Ross and Mr Steven Keable.

IMPORTANT EXCHANGES An exchange of polychaetes was made with Ms Judith Fournier, National Museum of Natural Sciences, Ottawa, Canada, and a representative collection of New South Wales esturine polychaetes was sent. Also, lobsters were exchanged with Dr Austin B Williams, National Museum of Natural History, Smithsonian Institution, Washington, DC. A donation of ascidian type material was made to the Queensland Museum and significant donations of crustacean type material from the sub-antarctic amphipod project were made to the British Museum, Natural History, London; the Smithsonian Institution, Washington, DC; and the National Museum of New Zealand, Wellington.

A total of 30 loans involving 12 major groups of crustaceans and coelenterates were sent to people in nine countries; several loans of echinoderms (sea stars) were sent overseas; and, as a result of the International Polychaete Conference, several small polychaete families were borrowed.

DONATION OF COMPUTER The computerisation of the crustacean collection was given a boost with the donation, by Triumph-Adler, of an Alphatronic Micro P2 computer. This will facilitate the input of the huge database available in the Crustacea registers and provide an efficient tool for collection management. Our volunteers, Miss Eileen Silk, Mrs Elsie Gavin and Mr Ralph Ord have helped compile data sheets for this long term project.

OTHER DONATIONS (Crustacea) Dr N L Bruce, Queensland Museum, Brisbane; Dr J Haig, Allan Hancock Foundation, Los Angeles, USA; Mr G J Morgan, Monash University, Melbourne, Vic; Ms M Lewis, National Museum of New Zealand, Wellington; NZ; Dr I Marsden and Dr G D Fenwick, University of Canterbury, Christchurch, NZ; Ms G Fenton, University of Tasmania, Hobart, Tas; Prof W D Williams, the University of Adelaide, SA; Dr G C B Poore, Museum of Victoria, Melbourne. (Coelenterata) Dr D O'Sullivan, Department of Science and Technology, Antarctic Division, Hobart, Tas. (Sponges) Mr J Hooper, Northern Territory Museum of Arts and Sciences, Darwin.

(Worms) Dr A Mackie, Heriot-Watt University, Scotland; Dr G Hartmann-Schroder, Zoologisches Institut und Zoologisches Museum, Hamburg, West Germany; Dr C Erseus, University of Goteborg, Sweden.

ECHINODERMS

Projects are concerned with the collection and study of starfish and their relatives, sponges and sea squirts.

ACTIVITIES FOCUS ON COAST Dr Frank Rowe has two major research projects underway; a study of the complete echinoderm fauna living around Australia's coasts and a detailed study of the echinoderms living along the coast lines of New South Wales, Lord Howe Island and Norfolk Island.

The study of the Australian echinoderms is a long-term project, aimed at understanding the correct identity, origin and distribution of these animals. Although the shallow-water species are well known, we don't know how many species occur on the deeper shelf waters around Australia.

Already a list of over 1,000 Australian species has been compiled by Frank Rowe. Considering that only about 6,000-7,000 species are known to live in the world's oceans, the Australian fauna is clearly very rich. Frank Rowe made a three-week visit to the Western Australian Museum, Perth, to inspect the echinoderm collections and gather distribution records to assist the project.

A major investigation of a group of feather-stars occurring in Australia and elsewhere was finished, with a number of new species being described. Fantastically colourful, feather-stars are often conspicuous on coral reefs.

The New South Wales, Lord Howe Island and Norfolk Island project continued and several manuscripts are being prepared which include the description of a brittle-star genus known only from southern Australian and New Zealand shores, a sea-cucumber species known only from New South Wales, and a survey of the echinoderms from Norfolk Island.

Other activities involved identifying collections of echinoderms from Marion Island in the southern Indian Ocean, and Davis Base, Antarctica. Specimens were added to the collection from these localities, for the first time.

FUTURE PLANS Frank Rowe plans to attend the Fifth International Echinoderms Conference in Galway, Ireland in September 1984, where he will present a paper and act as chairman for one of the conference sessions. Attendance at such conferences provides a valuable opportunity for specialists to exchange views and knowledge.

A three-week trip to Lord Howe Island is planned by Frank Rowe in order to gather echinoderms for his New South Wales, Lord Howe and Norfolk Island project.

ENTOMOLOGY

Projects involve the collection and study of insects.

MAJOR PROJECTS WELL ADVANCED Dr Courtenay Smithers' work on the Australian Psocoptera (bark lice) is at the point where a monograph can be started. It is anticipated that the fauna probably consists of at least 400 species. A large paper on the fauna of the Melanesian Island area is ready for publication. A program of regular collecting in the Mount Royal area has commenced. The objective is to obtain seasonal and ecological data in a wide range of habitats. The area chosen provides the opportunity to collect in rainforest areas, wet and dry sclerophyll, open country and altered farmland. Altitudinal variety is also available within a few square kilometres. Trapping as well as usual collecting methods will be used.

Description of the female of the rare alder fly *Austromerope poultoni* from Western Australia is complete. This species is related to primitive forms known only in South America and until recently was known from only a single male specimen collected in Western Australia.

Work started on sorting extensive collections of lacewings, mainly antlions, which have been collected by Mr and Mrs M Moulds. This material represents one of the biggest collections of Australian antlions.

MIGRATION The collection of migration data on selected species, especially the caper white butterfly, was intensified in order to fill gaps in information which became apparent during data analysis. Writing this work can now start.

BUTTERFLIES OF THE BARRIER REEF The collections which Mr John McLean has been making on Barrier Reef islands have been prepared and identified by Mr Barry Day and Ms Barbara Duckworth. Many of the islands had not previously been examined and distribution records from the collections fill many gaps in our knowledge of the butterflies' distribution on the islands.

WASP REVISION READY FOR PUBLICATION Mr Geoff Holloway's revision of the 230 genera of Australian icheumon wasps is ready for publication. This work is being done with Dr Ian Gould, British Museum (Natural History). Work is continuing on the distribution of the introduced European Wasp, *Vespula germanica.*

RESEARCH IMPORTANT FOR AGRICULTURE Dr David McAlpine's research concerns a very large and diverse group of flies called the Acalyptrate Diptera, which includes 44 families and over 2,000 species in the Australian region. A number are interesting because of their agricultural importance, unusual behaviour and ecology, or suitability for genetic study. Some examples are fruit flies, Eucalyptus gall flies, picture-winged flies and upside-down flies.

Exciting new collections continue to increase our knowledge of these insects. Many new species are being discovered in both Australia and Papua New Guinea.

The flies of the family Heleomyzidae, mainly inhabitants of the forested temperate areas of the world, have been the subject of special study by David McAlpine. None of the 16 Australian genera are found elsewhere but some show relationships with those of other southern temperate countries and may have evolved during the latter stages of the break-up of the ancient southern super continent, Gondwanaland. David McAlpine completed a revised classification of the family on a world basis, putting meaningful order into the system for the first time.

Mr K Khoo continued his study of flies of the little-known genus *Cyamops* (family Periscelididae). Having previously completed work on the Australian species, he has obtained the first known species from south-east Asia and New Zealand. This work was funded during 1983 by the Australian Research Grants Scheme.

COLLECTIONS EXPAND Some 20,000 additions to the collections have been made this year. The collections have been utilized by visiting scientists and an increasing number of students from tertiary institutions.

Along with routine additions to the Psocoptera, collections have been received from Dr L Watrous of the Field Museum, Chicago, USA. His collections from Australian leaf litter samples include a strange new wingless beetle-like insect.

Mr Owen Griffiths, during travels in South America and the Pacific islands, sent material of several genera not previously held in the collections.

An interesting small collection of butterflies was presented to the Museum by Mrs Cranwell, Killara, NSW. It included material of the introduced cabbage white butterfly collected in the early 1940s. These specimens are amongst the first few generations bred here after the arrival of the species from Europe.

Mr Barry Day worked on the collection of flies from the large family Tachinidae, much of which was sorted recently by Mr Bryan Cantrell, Department of Primary Industries, Brisbane, Qld.

A notable addition was a beetle collection from Mr and Mrs K Carnaby, WA, including a large number of type specimens of scarab beetles.

FIELDWORK RESULTS IN SIGNIFICANT FINDS Visits to Mount Wilson, near Sydney, NSW, for material of the rare scorpionfly *Tytthobittacus macalpinei* and the Upper Allyn River to collect Psocoptera (bark lice) were made. The immature stages of these bark lice have not yet been discovered. A survey of the Psocoptera of Barren Grounds Nature Reserve, resulted in more than 40 species being found.

David McAlpine and Barry Day carried out field study and collecting of Diptera in the Warrumbungle Ranges and the Putty district, NSW, and the Brindabella Ranges, ACT. They also visited the Australian National Insect Collection, Canberra, ACT, to study recent acquisitions of Diptera.

Geoff Holloway spent July in the mountain ranges of central Australia with the aid of a grant from the National Geographic Society, Washington, DC, USA. A six week visit to northwestern New South Wales with Prof and Mrs H F Howden occurred through July and August, with the aid of Canadian National Science Council Funds. Both of these areas have had little or no collecting accomplished previously and much of the results are being presented for publication or are in press.

GALLERY PROGRESSES Courtenay Smithers continued to supervise scientific aspects of the new Insect Gallery. Geoff Holloway is responsible for much of the scientific work which will be displayed in the new gallery.

CONTRIBUTIONS VALUED Mr & Mrs M Moulds have again contributed large numbers of specimens collected during their expeditions through Australia. Their material comes mainly from areas not visited by staff: it contains many new species and useful distribution data.

Mr D Scambler donated material of Psocoptera and other groups.

Mr T Woolley collected material of groups on which staff are actively working.

Mrs A Smithers has donated very large numbers of Psocoptera to the collections.

Mr C Chadwick and Mr Scambler continue to research in their fields of the insects of the burrawong plant (*Macrozamia*) and the taxonomy of the longicorn beetles respectively. The major part of their work is undertaken in the Museum.

Mr N Rodd is doing research in the taxonomy of the fossorial wasps (Sphecidae), the native bees (Apoidae) and continues to collect other wasps for the Museum in the area around Mount Tomah, NSW.

Mr and Mrs K Carnaby, in addition to sending large collections of Western Australian beetles and wasps, are undertaking work on the distribution of jewel beetles (Buprestidae) from that state.

SIGNIFICANT SERVICES PROVIDED TO THE COMMUNITY Staff assisted several government departments and universities with identification of insects.

Courtenay Smithers and David McAlpine both gave lectures at universities and to special interest groups.

A close liaison has developed between entomologists and students at the Newcastle College of Advanced Education, who again visited the Museum.

Geoff Holloway continued to serve as Treasurer of the Australian Entomological Society and as lecturer in Agricultural Entomology at the School of Rural Studies, Sydney Technical College, NSW.

FUTURE PLANS Research will continue on the Melanesian arcs Psocoptera (bark lice). A monograph of the Australian species and a world generic key will be prepared.

Further surveys of selected National Parks and nature reserves will be carried out and a revision of the economically important brown lacewings will be started. It is planned to conduct a survey into the species of a new field of little studied Australian flies.

MALACOLOGY

Malacology holds collections of molluscs (snails, slugs, bivalves, squid, etc) and brachiopods.

SNAIL RESEARCH Investigating the relationships of selected groups of snails, Dr Winston Ponder completed a comprehensive report on endemic invertebrates in South Australian artesian springs.

The research concentrated on studying the biology and taxonomy of small snails. They are interesting because there are several closely related species living together in each spring and because different springs have different species.

All the species are endemic to the springs and are grouped in two genera. A grant was obtained from the South Australian Government and Roxby Management Services to assist with this study which enabled Dr Robert Hershler from New York, USA, to participate for seven months. An Australian Research Grants Scheme (ARGS) grant assisted.

Additional research involved the completion of three papers on the higher classification of the 404 genera of small marine snails of the superfamily Rissoacea - one involving the naming of a new family based on specimens collected in Florida.

MAJOR REVIEW OF SEA SLUGS Dr Bill Rudman continued research into aspects of biology and taxonomy of nudibranch molluscs (sea-slugs). Nearing completion is the first major taxonomic revision for ninety years of the Chromodorididae, a large group of spectacularly coloured sea-slugs with over 350 species found in the tropical Indo-West Pacific region. This work was funded, until December, by a Marine Sciences and Technology (MST) research grant.

Another research project was studying the higher taxonomy of the aeolid nudibranchs. Different aspects of this project are being funded by research grants from Australian Biological Resources Study (ABRS) and ARGS.

Field work at Heron Island in June and Tasmania in March provided valuable material for present research projects and for the general nudibranch collections.

It is difficult to find amateurs with sufficient interest to gather material for the collections. For many years Miss Judith Hunter and Miss Helen Woodward have provided valuable specimens and in a recent paper Bill Rudman named two new species of nudibranch, *Chromodoris hunteri* and *Chromodoris woodwardi*, in recognition of this valuable assistance.

LOANS AND EXCHANGES In the year 56 loans, comprising 748 lots, totalling 4,603 specimens were sent out, thus continuing heavy usage by outside people and was indicative of the collections' scientific value.

FIELD WORK WIDESPREAD Mr Bruce Jenkins collected marine molluscs from Perth to Darwin as recipient of the 1982-83 Keith Sutherland Award. In October, he was able to participate in a CSIRO cruise on the north Western Australian shelf on the R V Soela, collecting marine molluscs. Mr I Lock collected in the Swain Reefs, as well as Saumarez and Wreck Reefs in the Coral Sea.

An ABRS funded project, jointly undertaken with the Queensland Museum, involved Mr Phil Coleman in the collection of terrestrial molluscs in rainforests of northern New South Wales. He also collected land snails in Sumatra, Sabah and the Philippines.

KEITH SUTHERLAND AWARD The Keith Sutherland Award assists promising research in mollusc biology. It commemorates the late Dr Keith L Sutherland, former Trustee

and President of the Australian Museum Trust.

This year the award was split between Miss Tonia Cochran, University of Melbourne, Vic, studying the early development of some south-eastern Australian chitons; and Miss Jane Moller, University of Adelaide, SA, studying early development of two Australian freshwater mussels.

Mr Charles Murray, a volunteer who had greatly assisted the compilation of a loose leaf record of all published information on Australian molluscs died during the year. Mr Murray's shell collection has since been donated to the Museum. A further loss was the retirement due to ill-health of long-term Associate Mr Tom Garrard who has published articles on various groups of molluscs since 1960.

VALUABLE DONATIONS IMPROVE COLLECTIONS The collections were enhanced by a number of valuable donations especially New Britain molluscs from Mr P Pechar; land and marine molluscs of Central and South America and the Caribbean collected by Mr O Griffiths; marine molluscs of the Red Sea and eastern Mediterranean collected by Mrs J Wise and Mrs H Kurutz; and the collection of Mr and Mrs B & L Dash.

Dr B Darvell continued to send valuable specimens and photographs of nudibranchs from Hong Kong. Messrs R King of North Queensland, G Sauerecker of Western Australia, I Hutton of Lord Howe Island and I Knight of Solomon Islands are also sending nudibranch specimens.

Donations were also made by: Ms J Carey; Mrs E Connell; Mr M Dunning; Dr J Faulkner; Mr K Graham; Mr R Houart; Miss J Hunter; Dr C Jenkins; Mr D Kellerman; Mr J Kerslake; Dr F B Michaelis; Mr L Moore; Mr A J Ostheimer; Mr S Palazzi; Dr G Packham; Mrs D Pearson; Mr B Picton; Dr C Pregenzer; Ms C van Raalt; Mr M Shea; Miss H Woodward; Ms J Woodhouse.

ACKNOWLEDGEMENTS University of Sydney Electron Microscope Unit; School of Biological Sciences, and School of Earth Sciences, Macquarie University, Sydney, NSW; New South Wales State Fisheries Department; Western Australian Museum; South Australian Museum; National Museum of Natural History, Smithsonian Institution, Washington DC, USA; Los Angeles County Museum, California, USA; National Museum of New Zealand; National Museum of Wales; Australian Marine Photographic Index; Taronga Park Zoo, Sydney, NSW; Roxby Management Services, SA; South Australian Department of Environment and Planning; CSIRO Divsion of Fisheries and Oceanography; Tasmanian Museum, Hobart.

MARINE ECOLOGY

Marine ecology provides information which will help authorities plan and manage marine and estuarine environments.

HAWKESBURY ESTUARY BENTHIC ECOLOGY PROJECT CONTINUES Benthic animals are aquatic species that live on or within the bottom sediments or reefs. They are widely used for baseline descriptions and monitoring because their limited mobility means they cannot easily escape disturbances or pollution. Hence the structure of the benthic community is widely considered to be the most reliable indication of environmental conditions.

Because estuarine communities vary so much in space (associated with changing salinity and sediments) and time (associated with seasons, floods and droughts) adequate description must encompass both aspects. As a result, sampling sites are distributed over the entire estuary (80km) with samples taken every season since summer 1976-77.

A grant from the Coastal Council of New South Wales and volunteers have greatly assisted with the time consuming sorting of samples. Seven years' data are now available for some sites and a paper has been accepted for publication following a presentation by Dr Jones at the Survey Methods for Nature Conservation Symposium in Adelaide, SA. A report on the benthic community and the potential effects of sandmining was also prepared for the Colo River Action Group, Lower Colo River, NSW, as part of their submission concerning sandmining.

BROOKLYN PROJECT CONCLUDES Maintenance dredging of the navigation channel at Brooklyn, on the Hawkesbury River, NSW, occurs periodically. The effects of this dredging and the disposal of spoil near Dangar Island, Hawkesbury River, were studied. This project is now complete and a manuscript has been submitted for publication.

LIZARD ISLAND BENTHIC ECOLOGY COMPLETED This project described the community structure of the lagoon floor invertebrate community and related this with sedimentary patterns. The project was concluded with the acceptance for publication of two manuscripts.

FUTURE PLANS All future work is subject to review but involves the continuation of Hawkesbury River sampling at a low level and the initiation of new projects. The latter may include the study of the effects of oil pollution and sand mining as well as life-history studies.

WORMS

Projects are concerned with the collection and study of marine worms.

MARINE WORMS PROJECTS WELL ADVANCED Pat Hutchings' two main research projects focus on the taxonomy of marine worms, polychaetes, and on the ecology and life habits of worms in coral reef environments.

Considerable progress has been made on the taxonomy of Australian Polychaetes. A major paper, with Ms Anna Murray, on the estuarine polychaete fauna of the Hawkesbury and other estuaries in New South Wales has been completed. This manuscript, which will appear in the Records of the Australian Museum, describes over 180 species and represents a major contribution to polychaete studies in eastern Australia.

Following this, Pat Hutchings has prepared an "Illustrated Guide to Estuarine Polychaetes" designed for high school pupils, university students and scientists. The guide includes a comprehensive introduction to polychaetes with notes on their life styles, feeding methods, sex lives, and information about collecting and preserving them.

Each species is fully described, illustrated and a detailed glossary is provided. If there is sufficient interest, more expansive guides covering other Australian regions will be prepared.

An ABRS grant to Pat Hutchings allowed a revision of terebellids from eastern Australia. Mr Chris Glasby is working with her on this project which is likely to take two years to complete. They are also finishing the final paper on South Australian polychaetes. Two papers in the series have already been published.

SIGNIFICANT SUPPORT FOR SURVEYS In January, Pat Hutchings received an ABRS grant in conjunction with Dr Sebastian Rainer, CSIRO Fisheries, Cronulla, NSW, to undertake a preliminary survey of the polychaetes from the Northwest Shelf. The grant is for a year and the study is well underway. Virtually nothing is known about the polychaetes in that area, and much of the fauna appears new.

Pat Hutchings continued her interest in estuarine ecology with a book on Australian mangroves, being prepared for Queensland University Press in conjunction with Dr Peter Saenger. This project is nearing completion.

A Marine Science and Technologies (MST) grant was given to Pat Hutchings to complete her studies of coral reefs' bioerosion. A novel experiment, measuring the rates of bioerosion in a variety of habitats around Lizard Island, is yielding encouraging preliminary results which were presented at the Great Barrier Reef Conference at Townsville, Qld, in August. Mr David Randall and Ms Liz Bamber have assisted with this project.

To complement this study, Mr Bill Kiene is undertaking parallel experiments in the southern Great Barrier Reef. He is enrolled for a PhD and is partially supervised by Pat Hutchings. He is supported by a grant awarded to Pat Hutchings by the Great Barrier Reef Marine Park Authority.

She is supervising Chris Glasby's completion of an MSc on the life history of an estuarine nereid polychaete worm, currently known only in the upper reaches of the Hawkesbury River. Another PhD student, Mr Russell Hanley of Museums and Gallery of the Northern Territory, Darwin, NT, is undertaking a generic revision of some Polynoids or scale worms and Pat Hutchings spent June in Darwin discussing his progress.

ACTIVE COMMUNITY INVOLVEMENT Seminars were given at Newcastle and Sydney Universities, NSW. These seminars help disseminate information on polychaete worms.

Pat Hutchings continued to identify large amounts of material from around Australia and the Antarctic, which is facilitating the generic revision of the Australian terebellids being done with Chris Glasby. She was also involved in reviewing handbooks on the Polychaete fauna of the Gulf of Mexico.

Pat Hutchings is Honorary Treasurer of The Ecological Society of Australia; Vice President of Coast and Wetlands; Councillor of The Australian Coral Reef Society and The Linnean Society of New South Wales. These societies are involved in areas related to her research activities.

FUTURE PLANS Pat Hutchings will continue her taxonomic studies of polychaete worms in eastern Australia and her investigation on the rates and causal agents of bioerosion on the Great Barrier Reef.

VISITORS TO THE DIVISION OF INVERTEBRATE ZOOLOGY Amongst the 50 distinguished scientists from overseas who attended the International Polychaete Conference were: Dr James A Blake, Battelle New England Marine Research Laboratory, USA; Dr Kristian Fauchald, Smithsonian Institute for Natural History, USA; Dr David George, British Museum of Natural History, UK; Dr Meredith Jones, Smithsonian Institute for Natural History, USA; Prof Jorgen B Kirkegaard, University of Copenhagen, Denmark; Prof Wyn Knight-Jones, University College of Swansea, UK; Mr T Ohwada, Ocean Research Institute, University of Tokyo, Japan; Prof Don Reish, California State University, USA; Prof Joe Simon, University of South Florida, USA; Dr Harry ten Hove, Rijksuniversiteit Utrecht, Holland. Many other scientists attending the Polychaete Conference took the opportunity of working on the collections. This led to an enormous number of loans being prepared which will lead to increased knowledge of Australia's polychaete fauna.

CRUSTACEA & COELENTERATES Ms Penny Berents, Australian National University, Canberra, worked on her doctoral thesis under the supervision of Jim Lowry. Others: Dr Gary Poore, Museum of Victoria; Dr Peter Davie, Queensland Museum; Dr Neil Bruce, Queensland Museum.

ECHINODERMS Dr Dave Meyer, University of Cincinnati, Ohio, USA; Prof P Bergquist, University of Auckland, New Zealand; Mr Wolfgang Zeidler, South Australian Museum; Mr John Hooper, Museums and Art Galleries of the Northern Territory; Bro Mark O'Loughlin, Treacy College, Melbourne, Vic; and Dr Avril Ayling, Daintree, Qld.

ENTOMOLOGY Dr Kazuko Gakeits, Tokyo, Japan; Dr J A G Coates, Shalbourne, UK; Dr D Bickel, Harvard University, USA; Dr E Schmidt Nielsen, Denmark; Dr L Masner, Ottawa, Canada; Dr J R Helfer, Mendocino, Calif, USA; Dr K Ueda, Kitakyushu,

Division of Vertebrate Zoology

The division conducts and promotes research on the taxonomy and ecology of vertebrate animals of Australia and the surrounding region; manages a permanent collection of vertebrate animals, primarily from Australia; and provides information on and identification of vertebrate animals to the public, various government and scientific organisations.

Divisional activity is focused on mammals, birds, reptiles and amphibians, fish and vertebrate ecology. Studies of the ecology and behaviour of Australian vertebrates and of the application of the principles of ecology to the problems of land management, were actively pursued. The Museum holds major collections of reptiles, amphibians, and fishes. Research in these areas is particularly strong.

HIGHLIGHTS
Four books published
"Zoological Catalogue of Australia" prepared
Major collections enlarged

MANY PUBLICATIONS ACCOMPLISHED Division staff were greatly involved in publication of major books dealing with scientific and popular aspects of natural history of vertebrates. Four books were published, one on fishes, two on reptiles and one on birds. Text of a second book on birds was submitted for publication.

In addition 17 chapters were completed for various books on the identification of vertebrates and for international scientific symposia.

Staff have been involved in preparation of the "Zoological Catalogue of Australia" for the Bureau of Fauna and Flora, Canberra, ACT. The first volume published covered Amphibians and Reptiles and was prepared by Dr Hal Cogger, Miss Elizabeth Cameron and Mrs Heather Cogger.

Work is progressing on a fish volume for the Catalogue and information is being provided to other workers on mammals. In addition staff published 38 scientific papers and three popular articles. Several new fishes, reptiles and birds were described.

RESEARCH IN WIDE VARIETY OF FIELDS Major research projects included ecological studies on the effects of fire and logging in state forests, ecology of honeyeater birds, ecology of larval fishes, taxonomy of birds, fishes and reptiles. Four research workers funded by grants and one research associate contributed significantly to research in the division.

COLLECTIONS EXPAND Acquisitions included major collections of birds, mammals, reptiles, amphibians and fishes from Australia, New Guinea, and other parts of the Pacific and Indian Oceans. The largest known specimen of the rare goblin shark was obtained.

HERPETOLOGY

Activities in this area are concerned with research on reptiles and amphibians and the management of collections of these.

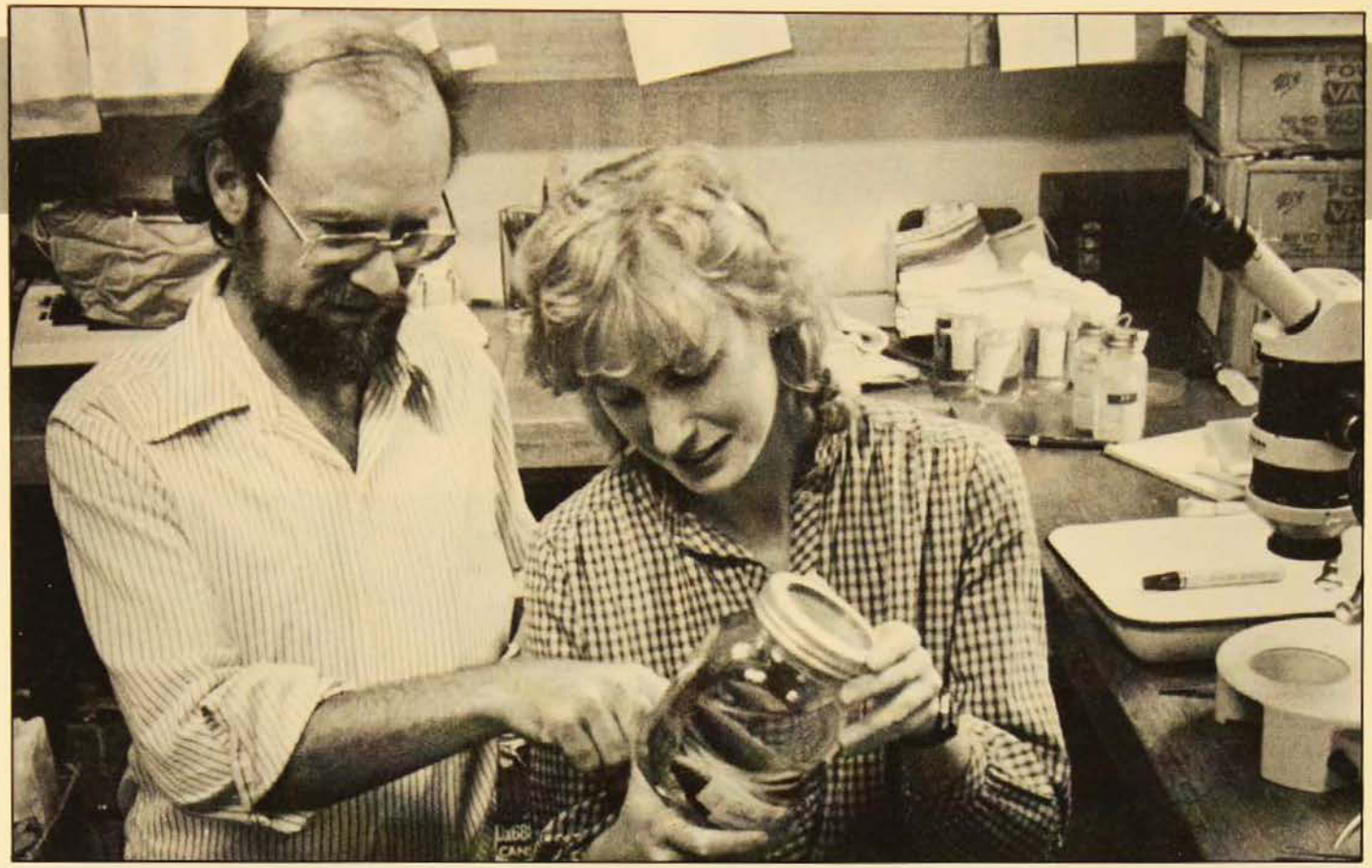
MAJOR WORKS PUBLISHED Hal Cogger continued his research on the classification of sea snakes. He saw the publication of two works of major world wide significance: "Zoological Catalogue of Australia. Vol. 1. Amphibia and Reptilia", Australian Government Publishing Service, Canberra, 1983 (in collaboration with Elizabeth Cameron and Heather Cogger); and the 3rd edition "Reptiles and Amphibians of Australia", A.H. & A.W. Reed, Sydney, 1983.

Hal Cogger was appointed to the International Planning Committee of the first World Congress of Herpetology. He continued his membership of the International Commission on Zoological Nomenclature, the Research Committee of the Zoological Parks Board of New South Wales, and his honorary consultancy to the Species Survival Commission of the International Union for the Conservation of Nature.

OVERSEAS STUDY CONCLUDED Dr Allen Greer recommenced work in December after 22 months study leave in America and Europe. In that time he accomplished a feasibility study for a major project on relationships within lizards and snakes and examined type specimens of scincid lizards.

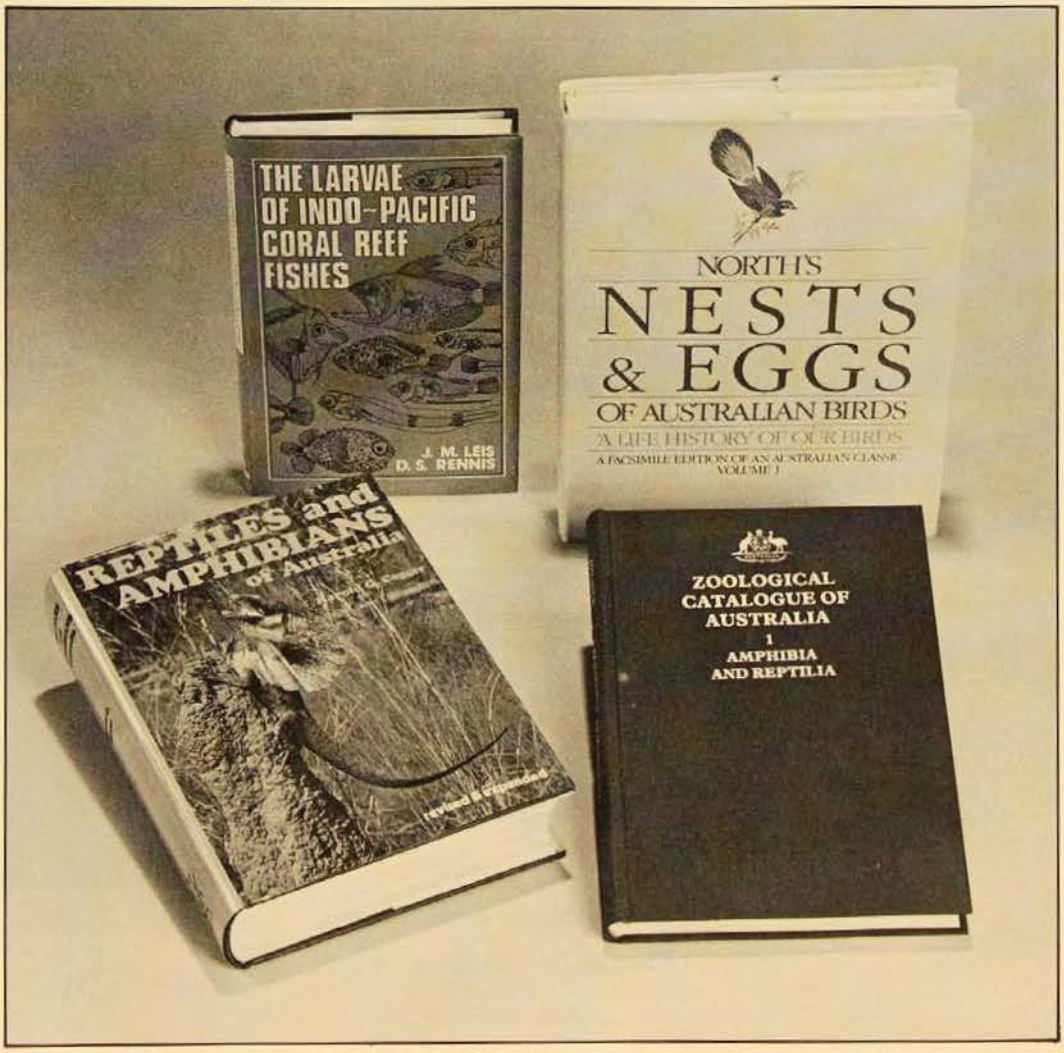
With Allen Greer's return, Dr Gregory Mengden completed his term as Visiting Scientific Officer in the department. Gregory Mengden is continuing his chromosomal and electrophoretic studies of the relationships of elapid snakes as an associate investigator under a joint Australian Research Grants Scheme grant with Hal Cogger and Dr R Shine of Sydney University, NSW.

Mr Ross Sadlier continued work on the herpetofauna of Arnhem Land, the lizards of New Caledonia, and the skinks of the *Egernia cunninghami* complex.



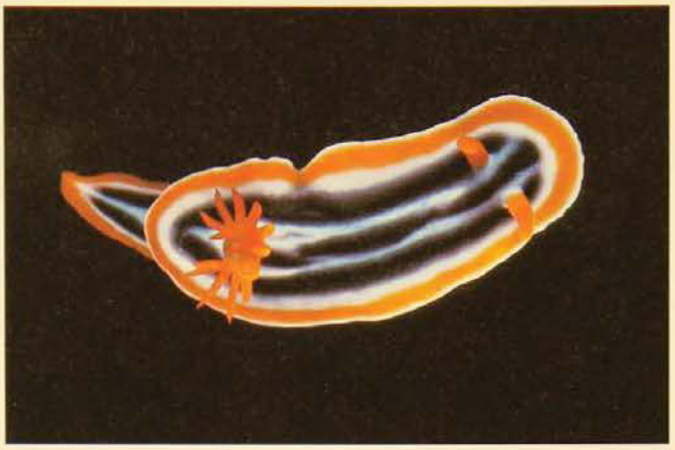
Head of Vertebrate Zoology Dr Doug Hoese examines fish with technical officer Sally Reader.
Photo: John Fields

One of the highlights of the year for the Division of Vertebrate Zoology was the publication of these four books. Photo: John Fields



Rarely seen . . .

Scientific research, of fundamental importance in the Museum, is not always a highly visible activity. Here we expose some of the hidden beauty which our marine scientists encounter in their work.



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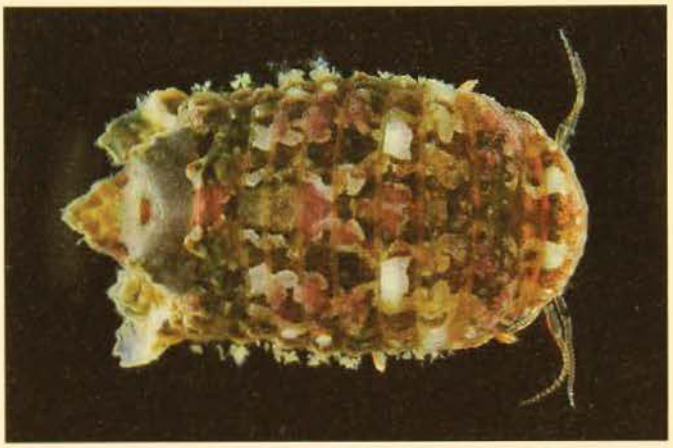

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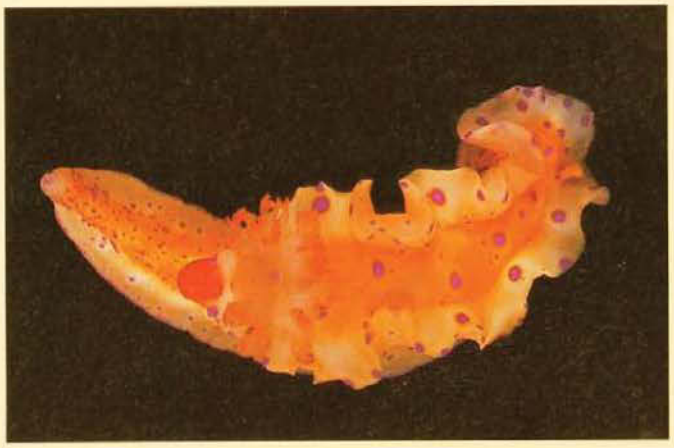

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1. *Paraleucothoe novaehollandiae*
AMPHIPOD
Photo: R. Springthorpe

2. *Chromodoris magnifica*
NUDIBRANCH
Photo: W. Rudman

3. *Flabellina sp.*
NUDIBRANCH
Photo: John Fields

4. Sphaeromatidae
MARINE SLATER
Photo: R. Springthorpe

5. Polynoidae
SCALE WORM
Photo: R. Springthorpe

6. *Ceratosoma brevicaudatum*
NUDIBRANCH
Photo: W. Rudman

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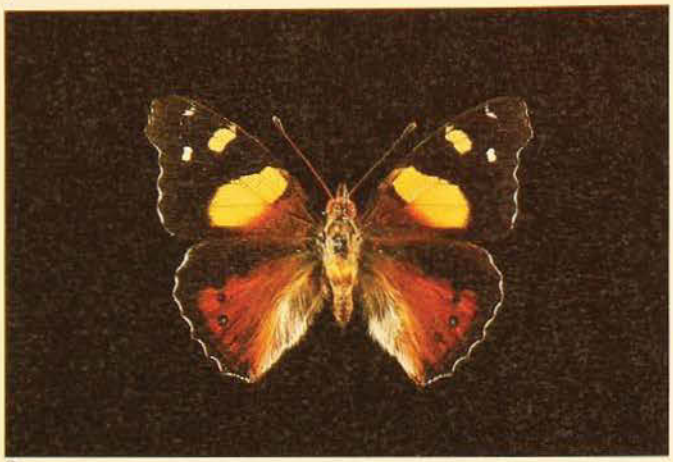

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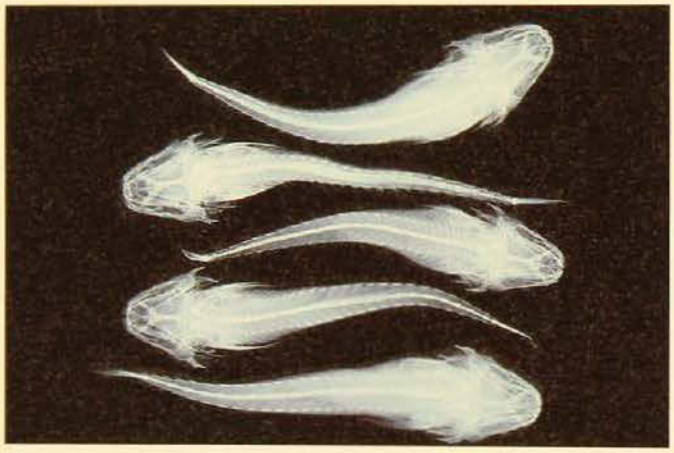

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7. *Nectria ocellata*
STARFISH
Photo: Lyle Vail

8. *Gonocephalus spinipes*
SOUTHERN ANGLE-HEADED DRAGON
Photo: John Fields

9. *Vanessa itea*
AUSTRALIAN ADMIRAL
Photo: Kate Lowe

10. *Phascolarctos Cinereus*
KOALA SKELETON
Photo: John Fields

11. *Hoplichthys Citrinus* X-ray
GHOST FLATHEAD
Photo: Kate Lowe

12. *Progradungula carriensis*
Photo: Mike Grey

Variety . . . **in colour, form and function. Symbols of the vast treasure of scientific expertise which helps the museum grow and develop.**

ICHTHYOLOGY

Ichthyology involves research and management of collections of fishes, especially those of Australia.

CATALOGUE NEARS COMPLETION Work on the Zoological Catalogue of Australian Fishes, for a projected two volume work in the Australian Biological Resources Study (ABRS) series, was a major portion of the research efforts of Drs John Paxton and Doug Hoese and Ms Jenny Gates. Some 3,300 Australian species of fishes will be covered, including newly recorded ones from Australian waters.

Doug Hoese, Dr Jeff Leis and John Paxton were invited to a conference on the larval characteristics of fishes and their use in the study of evolutionary relationships, held at La Jolla, California, USA. The resulting volume, to be published late 1984, will describe and figure the larvae, as well as summarize the current relationships of all major fish groups.

RARE SHARK FOUND A specimen of the rare *Mitsukurina owstonii*, the goblin shark, only living representative of its family, was trawled from water almost one kilometre deep off the New South Wales coast and brought to the Museum for study. Goblin sharks are known from only a few deepwater localities around the world and this is only the second Australian specimen to reach a Museum. At 212kg and 3.8m in length, it is the largest recorded specimen. The goblin shark became an overnight media star as the processes of description and measurement, casting for eventual display and dissection were filmed for television. A paper detailing the specimen has been submitted for publication.

JAPANESE SEA BASS IDENTIFIED Two specimens of *Lateolabrax japonicus*, previously known only from Japan to Hong Kong, were brought to the Museum for identification by New South Wales State Fisheries. The Japanese Sea Bass is commercially important in its native countries and it normally attains a length over a metre. With more than 100 years of commercial fishing around Sydney, and more recent fish surveys, it is unlikely this species had previously been overlooked. Rather its recent introduction was by ships' ballast water, the third such species of fish introduced to Australia in the last decade.

FISH RESEARCH COMPLETED A number of research projects were completed including a study of the osteology and evolutionary relationship of Rock Whiting (family Odacidae) by Dr M Gomon, Museum of Victoria, Melbourne, and John Paxton.

A number of individual chapters were written for multi-authored handbooks from the following regions: southern Australia dories (Bray), gobies and gudgeons (Hoese and Rennis), families of deepsea lantern and light fishes (Paxton), kelpfishes (Rennis and Hoese), South African gobies and gudgeons (Hoese), spiny puffers (Leis), whalefishes (Paxton and Bray), Western Indian Ocean spiny puffers (Leis), and the pineapple fishes (Paxton).

Current studies include Indo-Pacific gobies (Hoese), spiny puffers and lutjanoid larvae (Leis), spiny flatheads (McGrouther), whalefishes and Sydney Harbour fishes (Paxton) and gudgeons (Reader). Denise Rennis spent three weeks collecting research material in the Northern Territory.

LARVAL FISH GUIDE PUBLISHED Grant supported studies of larval fish taxonomy and ecology in the Northern Great Barrier Reef based at the Museum's Lizard Island Research Station continued, with the highlight being publication of the Museum-supported book on "The Larvae of Indo-Pacific Coral Reef Fishes" (Leis and Rennis, 1983).

One field trip was made to Lizard Island in November where studies began of the distributional ecology of fish larvae in the Coral Sea outside the ribbon reefs using the Museum's RV Sunbird.

Jeff Leis presented a paper on larval fish studies at the inaugural conference on the Great Barrier Reef at Townsville, Qld, during September, and returned to Townsville during April to study larval fish collections at the Australian Institute of Marine Science and James Cook University.

Several manuscripts are being prepared on ecological and taxonomic aspects of larval fish biology, and a number of papers were published during the year.

Mr Greg Stroud has been working in the Museum on studies of larval fishes from Lizard Island in conjunction with Drs F Talbot and B Goldman.

OVERSEAS VISITS FOCUS ON NORTH AMERICA Jeff Leis completed his trip to museums in Europe and USA examining spiny puffer fishes. John Paxton worked on deep-sea fishes in the USA. Doug Hoese spent a month on a fellowship at the Smithsonian Institution, Washington, DC, and worked on gobies and gudgeons in museums in Canada and USA.

FISH COLLECTION EXPANDED More than 2,280 lots of 7,800 specimens were added to the collection. The registered fish collection now totals approximately 350,000 specimens. Eighty-nine loans were sent out, consisting of 417 lots and some 2,600 specimens. There were 12 exchanges which included 64 lots and more than 650 specimens. Storage of a major part of the fish collection off site, at Rushcutters Bay, remains a serious problem.

FUTURE PLANS Crowding in the collection will necessitate moving more of the items to a warehouse. Acquisitions will also have to be kept low. Research will continue on systematics of adult and larval fishes. The checklist of fishes for the Zoological Catalogue of Australia will be completed.

ACKNOWLEDGMENTS Important collections of fishes were received from Dr G Allen, Western Australian Museum; Mr K Graham, New South Wales Fisheries; Dr R Hartwick, James Cook University, Qld; Dr W Ivanstoff, Macquarie University, Sydney, NSW; Ms P Kailola, Adelaide University, SA; Dr A Lewis, Fiji Fisheries, Suva, Fiji; Dr J Randall, Bishop Museum, Honolulu, USA; Dr R Vari, Smithsonian Institution, Washington, DC, USA; Dr D Williams, Australian Institute of Marine Science, Townsville, Qld: Mr J Young, CSIRO Fisheries, Hobart, Tas; Royal Ontario Museum, Toronto, Canada; and California Academy of Sciences, San Francisco, USA.

MAMMALOGY

Mammalogy is concerned with research on mammals and the management of collections of mammals from both Australia and overseas.

BENEFICIAL QUEENSLAND FIELDWORK Ms Linda Gibson spent three weeks during November in Diamantina Shire, Qld, collecting mammals from the very distinct habitats which dominate that southwest area of Queensland. The habitats include Mitchell grass plains, channel country, spinifex, iron stone plains, and sand hills. Fifty specimens were collected representing nine species which constitutes approximately 70 percent of the terrestrial mammal species known in that area.

RARE LIVE FIND A trip to Coffs Harbour, NSW, recorded sounds of a rare Pigmy Killer Whale which had been stranded on a beach near Grafton, NSW, and brought back to the Coffs Harbour Dolphinarium. This was the first time this species has been observed alive in Australia.

A COLLECTION FIRST The largest single collection in Australia of Papua New Guinea mammal specimens was received in March. There are approximately 300 specimens of possums, rodents, bats, cuscusses and macropods. Some species are the first to be represented in Australian collections.

Fieldwork in April, May and June greatly increased the number of specimens, especially amongst little known groups like bats and rodents. The collection and study is being done by zoologists from the School of Zoology, University of New South Wales, Sydney.

Some 50 specimens of bats from Queensland and the Northern Territory were received. Mr Harry Parnaby, a recipient of a Museum post-graduate grant, collected them and is now working part-time on the taxonomy of the bat genus *Nyctophilus*.

Specimens of bats were also received from the National Parks and Wildlife Service. They included five specimens of the rare Golden-tipped bat *Phoniscus papuensis*, a species only recently discovered in New South Wades.

Two rare cetacean specimens were obtained when, in January, a Pigmy Killer Whale *Feresa attenuata*, was the first adult to be collected in Australia and only the second specimen. Then in February, the Museum was notified of the stranding death of a Pigmy Sperm Whale and it was collected for preparation as a skeleton.

Two specimens of the rare Hairy-nosed Wombat, which had died due to the drought, were received from Dr Feville Forde in South Australia.

Some palearctic mammals were received from the University of Tel Aviv, Israel. This collection is part of an exchange program arranged after a request from the University for a platypus specimen.

Linda Gibson provided specimens and scientific assistance for the production of a temporary exhibit entitled "Rare and Curious Specimens" as part of International Museum Week.

The major part of the seal collection was moved to Rushcutters Bay storage in order to free cabinets. Further reorganisation involved building a large alcohol storage tank at ground level in the Museum.

VARIED COMMUNITY INVOLVEMENT The mammal collection data now on computer has been used extensively by many organisations and individuals and is undergoing final editing.

A grant of $1,000 to Dr Pat Woolley of La Trobe University, Melbourne, Vic, was used to partly fund a trapping program in Papua New Guinea and the subsequent donation of mammal specimens to the Museum.

The Department of Customs donated a number of articles seized by their officers including: elephant tusks, leopards skins and a large collection of sperm whale teeth. Identifications of mammal items for the Department greatly increased with 155 items dealt with this past year.

Mounted mammal specimens were made available to commercial organisations for promotion or film work. This included advice and assistance to two organisations working on documentaries about dingos.

Assistance was given to the Department of Archaeology, Sydney University, to help identify bones found on the site of the first Government House.

A NEW PRESENTATION METHOD INTRODUCED An increasing awareness of the value of skeletons in taxonomic work has prompted a greater emphasis on this type of preparation in the mammal collection. A new method involving the preparation of a normal study skin with the limbs present on only one side and the bones on the other side, prepared with the skeleton has been introduced.

COMMUNITY HELP Some specimens were donated and considerable other assistance was received from a number of individuals and organisations including Taronga Park Zoo, Sydney; NSW; New South Wales National Parks and Wildlife Service; Queensland National Parks and Wildlife Service; Department of Agriculture; New South Wales Forestry Commission; Coffs Harbour Dolphinarium, NSW; South Australia College of Advanced Education; University of New South Wales.

VALUABLE ASSISTANCE ACKNOWLEDGED Mr Hec Goodall, Director of the Coffs Harbour Dolphinarium, was made an Associate in March. For many years, he and his staff have provided valuable specimens of seals and cetaceans, assistance at animal strandings and have been a reliable source of information about their behaviour and biology in captivity.

SINGING OF HUMPBACK WHALES RECORDED Dr Bill Dawbin, a Research Associate, continued recording the sounds of Humpback Whales off the New South Wales coast. He was able to obtain three hours of recordings, the first of the southern population of these mammals. This work establishes for the first time that these whales sing in the middle of their migration between feeding and breeding areas.

Mr Mack Mahoney continued extensive use of the library and specimen records for his work on the "Mammal Volume of the Zoological Catalogue of Australia".

FUTURE PLANS It is hoped to encourage the maximum use of the collection by visiting scientists. This will ensure the exchange of current taxonomic information. The amount of skeletal material will be increased to broaden the form and manner of specimen preservation. Expansion is planned of the specimen exchange program with overseas institutions especially those offering mammals from South America and Asia. Special attention will be given to increasing the holdings of world bats.

ORNITHOLOGY

Activities are concerned with research on birds of Australia and the management of the bird collection.

OVER 800 SPECIMENS ADDED TO COLLECTION These included egg clutches from foreign species, and part of the recently acquired W D Burns Oological Collection. Particular attention was placed on obtaining species known to be rare or lacking in the alcoholic or skeletal collections of world museums.

Other major additions included a series of platycercine parrots from Ms J Ovenden as part of her postgraduate research on the relationships of rosellas; Northern Territory birds collected by the Office of the Supervising Scientist, Jabiru; and a collection of specimens from Christmas Island (Indian Ocean) from Mr A Stokes, Australian National Parks and Wildlife Service. The first representatives for the collection of Carpentarian Grasswren *Amytornis dorotheae*, one of the few Australian endemic species not previously represented, was obtained through exchange with another institution, as were specimens of Atlantic Petrel *Pterodroma incerta*, Red-billed Gull *Larus hartlaubi*, Laughing Gull *L pipixcan* and African Spotted Creeper *Salpornis spilonota*.

Taronga Park Zoo, Sydney, NSW, provided the first Cheer Pheasant *Catreus wallicus*. While several downy chicks of the Lord Howe Island Woodhen *Tricholimnas sylvestris* were obtained from the National Parks captive breeding program on that island.

The first specimen of Oriental Cuckoo *Cuculus saturatus* in over 70 years was donated by Mrs Robin Bigg. Mr David James brought in the collection's first Australian specimen of Streaked Shearwater *Calonectris leucomelas*. There were significant donations of frozen material from various government departments.

COMPUTER REGISTER OPERATING All entries in the current (O) ornithological register and all relevant specimens in the Palmer (P) register have been entered into the database. The database can now be accessed from a Museum-housed terminal, and this facilitated responding to outside enquiries, as well as enhancing the ability to extract information about the specimens.

Work on the database by a volunteer Mr Ian McAllan, has resulted in an abbreviated and corrected library list of current scientific names which will be used to screen all new entries or registrations. Mr Michael Allen began the transcription of the Mason brothers' New Guinea collection from the 'A' register. Information on the computerised registration system has been provided to overseas museums at their request.

The database has facilitated recognition of specific gaps in the collection and pinpointed specific goals for future collecting and exchanges. Several gaps in species representation were filled during the year, notably among Australian species. It is envisaged that the entire inventory will take several years to complete. The foreign collection has approximately 3,500 of the world's 9,000 species, and is the largest in Australia; it is considered one of the strengths of the Museum's ornithological collections.

WAREHOUSE EFFICIENCY INCREASED A major reorganisation of the Rushcutter's Bay warehouse increased space efficiency which permitted expansion of the egg collection and improved storage of the large study skins. The work was made possible with the help of volunteers and short-term funding.

IMPORTANT RESEARCH PROGRESSES Sections of the Zoological Catalogue of Australia - Aves, on native and introduced finches are being prepared by Mr Walter Boles. This checklist of Australian birds is planned to appear early in 1985.

Papers were published describing new birds from the department's field work in the Clarke Range, mid-east Queensland. A summary, including the biogeographical affinities of the rainforest avifauna, is in progress.

The preliminary list of ornithological types in the Museum was completed. A list of the Australian types was published in 1946 but a number of omissions and errors will be corrected in the new list which will incorporate southwest Pacific taxa held in the collection but never reported.

Projects at various stages of completion include: a study of the inside mouth patterns of nestling passerine birds with an analyis of their taxonomic value, altitudinal distribution of rainforest birds, and the juvenal plumage patterns of the Australo-Papuan robins. These will soon be submitted for publication.

FIELD STUDIES A combined trip with Mr Wayne Longmore, Queensland Museum; Mr Robert Baird, Monash University, Melbourne, Vic; and Ms Belinda Gillies, Museum of Victoria, Melbourne, to the rainforests of the Richmond Range in northeastern New South Wales was conducted in January. Specimens were divided among the four institutions acording to the needs of each. It is hoped that such joint ventures will continue, moving to a different State each year.

Mr Walter Boles attended the congress of the Royal Australasian Ornithologists' Union in Auckland, New Zealand. While there, he worked in the collection of the Auckland Museum and Institute, National Museum of New Zealand and Canterbury Museum. He also attended a workshop on non-destructive analysis of bird diets at Barren Grounds Bird Observatory and a conference on Australian Rainforests where he presented a paper on "The Avifauna of the Clarke Range Rainforests, Mid-east Queensland".

WRITING ACTIVITIES Walter Boles wrote the introduction to the facsimile reprint of A J North's "Nests and Eggs of Birds Breeding in Australia and Tasmania" (Oxford University Press), outlining the history and scientific value of the book. A J North was one of the first scientific officers at the Museum and this important work originally appeared as Australian Museum Special Catalogue No 1.

Walter Boles wrote two books for the general public - "Australia's Beautiful Birds and Their Young" (Australian Consolidated Press) and "Rainforest Birds of Australia" (Currawong Press; due late 1984). A radio script on "Kookaburras" for the Australian Broadcasting Corporation was completed and will be broadcast in late 1984 or early 1985.

COMMITTEE MEMBERSHIP Walter Boles represented the Museum on the Royal Australian Ornithologists' Union. He also serves as a vice-president of the Australian Bird Study Association, and until December was assistant editor to the Association's journal "Corella".

The close association between the department and the National Photographic Index of Australian Wildlife continues with Walter Boles a member of the photographic selection panel and a scientific advisor for the production of the Index's series of bird books. He will be writing the volume on the flycatchers and related birds.

PUBLIC LECTURES SERVE COMMUNITY During the year, Walter Boles addressed the New South Wales Field Ornithologists' Club, Illawarra Bird Observers' Club, Hunter Bird

Observers' Club, Oatley Flora and Fauna Conservation Society, Museum Discoverers' Club and The Australian Museum Society and provided interviews for several radio programs.

CONSULTATIONS BENEFICIAL The department continues to assist with peer group teaching, work experience students and holiday activity projects organised by the Education Section. Identification of birds for export and consultation with other governments departments continues. As well as the work on the database and re-organisation of storage areas, temporary assistance and volunteers helped with registration of parts of the collection and preparation of specimens.

FUTURE PLANS The completion of the database will enable us to begin re-organisation of the collections. This will make using specimen material much easier, and improve preservation. Much of this work will be performed in conjunction with the collection inventory. On behalf of the World Heritage Council, the staff will conduct an ornithological survey of the Willandra Lakes World Heritage Area in order to determine what value this area has for the preservation of the native bird life.

ACKNOWLEDGEMENTS A number of Australian institutions and overseas museums provided information and supplied specimens for study: New South Wales National Parks and Wildlife Service; Museum of Victoria; South Australian Museum; Queensland Museum; CSIRO Division of Wildlife and Rangelands Research; Macleay Museum; Western Australian Museum; Australian National Parks and Wildlife Service; American Museum of Natural History; New South Wales Department of Agriculture Veterinary Research Station, Wollongbar; Forestry Commission of New South Wales; Monash University; Taronga Zoological Park; University Museum of Zoology, Cambridge; British Museum (Natural History).

VERTEBRATE ECOLOGY

Activities include basic research into the ecology and behaviour of Australian animals with backbones and application of the principles of ecology to the problems of land management.

EFFECTS OF LOGGING AND FIRE MONITORED Research on the effects of logging and fire on the animals of the state forests in the Eden, NSW, district resumed. In cooperation 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. Harry Recher also continued the census of breeding bird populations on burnt and unburnt heaths on Impressa Moor in Nadgee, NSW.

The Commonwealth Community Employment Program support enabled the employment of an assistant for six months to sort and identify the insects and spiders gathered by the work in the Eden area. These studies, of ground dwelling spiders are being carried out with the cooperation of Mr Michael Gray from the Museum's department of Arachnology.

The State Government Youth Training Program and the State Youth Corp Program provided funds for several short-term assistants.

HONEYEATER ECOLOGY STUDIES CONTINUED Dr Graham Pyke 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 Ian Potter Foundation. Among the plants investigated were Christmas bell, Mountain Devil and Waratah. All are common flowers in the coastal heaths of New South Wales and require special management to ensure their conservation.

Harry Recher and Graham Pyke expanded studies on the movements of honeyeaters. This research is carried out in the Brisbane Water National Park near Pearl Beach, NSW. Birds are netted and banded in heathland. A pair of ten hectare grids were established in this area, and mapping of bird territories and censusing began in January.

The objectives are to determine how long individual birds remain in the area, whether they return to the same area each year and how far they move during the course of each 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 but the only pair found to travel a significant distance from the banding area were an Eastern Spinebill Honeyeater, seen in a backyard at Kirribilli, Sydney, NSW, and a New Holland Honeyeater found dead in a backyard at Somersby, 60km northwest of Sydney.

OVERSEAS VISITORS MAKE SIGNIFICANT CONTRIBUTION Prof R E MacMillan, visiting fellow from the Department of Ecology and Evolutionary Biology, University of California, Irvine, USA, worked with Harry Recher and Graham Pyke on Honeyeater ecology and was especially interested in the amount of energy the birds must obtain at different temperatures.

He also studied 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 energy requirements of honeyeaters could be measured immediately after capture.

Dr Yoram Yom-Tov visiting fellow from the Department of Zoology, Tel Aviv University, Israel, worked on reproductive rates of some Australian animals and their relationship to body size and to established zoogeographical theory.

Dr David Inouye from the Department of Zoology, University of Maryland, USA, worked on phenology and pollination biology of the alpine plants in Kosciusko National Park in collaboration with Graham Pyke.

FUTURE PLANS To continue research on the ecology and behaviour of Australian wildlife and apply the results to the conservation and management of natural landscapes.

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

VISITORS TO THE DIVISION OF VERTEBRATE ZOOLOGY

HERPETOLOGY Dr A Allison, Bishop Museum, Honolulu, USA, and Wau Ecology Institute, Papua New Guinea, collaborated on several problems in skink systematics; Dr A Bennett, University of California, Irvine, USA and Dr R Huey, University of Washington, USA, sought information on skink systematics; Mr D B Gill, Auckland Museum, NZ, discussed curatorial techniques and a possible exchange of specimens; Dr J Gibbons, University of the Pacific, Suva, Fiji; Mr T Annable, Riverina College of Advanced Education, NSW, examined pygopodids; Dr P Baverstock, South Australian Museum, SA, discussed problems in the systematics of scincid lizards and elapid snakes; Mr R Jenkins, Australian National Parks and Wildlife Service, Canberra, ACT, discussed sea snakes; Dr R Shine, Sydney University, NSW, (assisted by Mr R Lambeck and Mr C James) studied various aspects of the ecology and morphology of elapid snakes; Mr J Wombey, Division of Wildlife Research, CSIRO, discussed common problems concerning the herpetology of Arnhem Land.

ICHTHYOLOGY Mr D Coates, Fisheries, Department of Primary Industry, PNG; Dr J H Choat, Auckland University, NZ; Mr T Gloerfelt-Tarp, FAO Fisheries, Bali, Indonesia; Dr G Hardy, National Museum of New Zealand, Wellington; Dr A D Lewis, Ministry of Fisheries, Suva, Fiji; Dr G Nelson, American Museum of Natural History, New York, USA; Dr J E Randall, Bishop Museum, Honolulu, USA; Mr C Roberts, Victoria University, Wellington, NZ.

MAMMALOGY Dr George McKay Macquarie University, Sydney, NSW; Ms Joan Dixon, Museum of Victoria, Melbourne; Dr Mike Archer, Ms Sue Hand, Mr Cen Aplin, Dr Tim Flannery, University of New South Wales, Sydney; Dr Peter Shaughnesy, Institute of Biologocal Resources, CSIRO; Dr W Freedman, University of Western Australia; Dr Pat Woolley, La Trobe University, Melbourne, Vic; Dr Robert Herd, Department of Agriculture, Trangie, NSW; Dr Martin Denny and Prof Keith Lester, Westmead Hospital, Sydney, NSW; Dr Greg Gordon, National Parks and Wildlife Service, Qld; Dr Robert Brownell, US Fisheries and Wildlife Service, California, USA; Dr Robert Paterson, University of Queensland, Brisbane; Dr Gerry Eaqnes, Division of Wildlife, Papua New Guinea; Dr Phil Cowen, DSIR Wellington, New Zealand.

ORNITHOLOGY Dr R Raikow, University of Pittsburg, Penn, USA; Dr J A Keast, Queen's University, Kingston, Canada; Dr Y Yom-Tov, University of Te Aviv, Israel; Mr H Mochizuki, Ornithological Society of Japan, Japan; Mr S Nash, Royal Ontario Museum, Toronto, Canada; Dr B Gill, Auckland Museum and Institute, NZ. Many Australian visitors from other institutions and museums are regular visitors.

DIRECTOR'S RESEARCH LABORATORY

The laboratory conducts research on the larger crustacea: crabs, lobsters, and prawns. Spider crabs of the Indo-west Pacific are of special interest.

SPIDER CRAB STUDIES CONTINUE Dr Des Griffin and Mrs Helen Tranter have continued their studies on spider crabs (Majidae). As well as describing new species of crabs from the Indian Ocean and West Pacific, many others have been recorded from new localities.

Studies continued into the relationships within this group so that their distribution and evolution can be better understood. A taxonomic and zoogeographic study of the majid spider crabs of the Indo-West Pacific will be published in 1984.

DONATIONS Donations of many representative specimens of spider crabs were made to the Museum's Crustacea collection by the Zoological Museum, Amsterdam; and the Zoological Museum, University of Copenhagen.

FUTURE PLANS With publication of the major report on Indo-west Pacific spider crabs, studies on the evolution of these crustaceans throughout the world will continue. Studies on deep sea shrimps, lobsters and crabs will also continue.

SPECIAL REPORT

Dinosaurs

Dinosaurs fascinate everyone, their size and mystery account for much of that fascination. Any museum in the southern hemisphere, jumps at the chance to hold a dinosaurs exhibition.

Large exhibitions, or 'blockbusters', have become a feature of the museum scene over the past decade. In Australia they have been staged almost entirely in art museums. Whilst these exhibitions appear to overrun all other museum activities they also do two other things. They bring the museum much publicity, drawing large crowds of people, many of whom have not previously visited the museum. Secondly, they bring substantial money, which is used to fund the museum's seasonal activities.

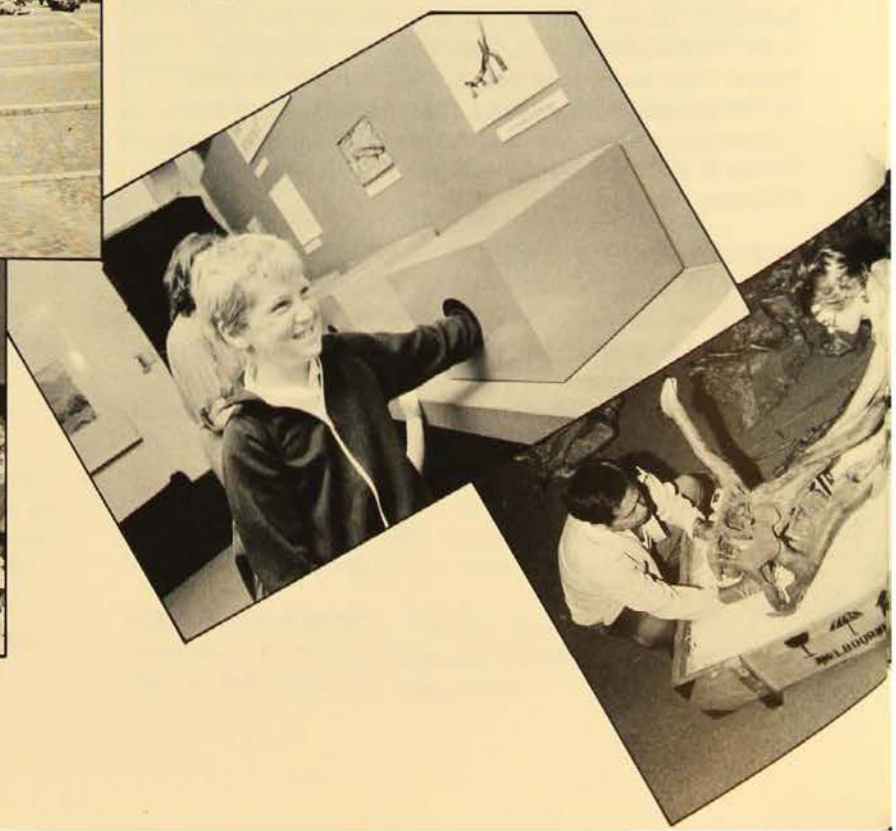
So, for the Australian Museum to stage a large exhibition of dinosaurs represented a challenging and unique opportunity.

Dinosaurs from China was one of the most spectacular exhibitions ever held in the Museum. It was mounted in the old Skeleton Gallery from August to November and presented together with the Museum's own dinosaur items.

The gallery was painted dark blue, new carpet was laid and special spotlighting installed to provide a dramatic presentation.

The Museum Shop was re-located in the Long Gallery for the duration of the exhibition and a completely new system for visitors' movements was devised to cater for people who paid specifically to see the exhibition.

Volunteers were extremely important. Two hundred volunteers, coordinated by Julie Sheerin from TAMS, were trained by the Education Officers to assist in all activities. The volunteer training course included a study of dinosaurs, the background of the exhibition the Museum, and how to handle public enquiries. Many of these volunteers have been involved in subsequent education programs. A Discovery Room was established so visitors could touch and examine a variety of exhibits, including live reptiles.



from China

Two hundred students every half-hour were escorted by an Education Officer from the video show through the exhibition, into the Hall of Fossils and to the Discovery Room. Each school group bought a catalogue and Dinosaur Pack which was used as preparatory material. Some 61,000 students, from pre-school to senior secondary level, visited the exhibition via this scheme.

Scientific staff were responsible for labelling all specimens, catalogue text, ensuring the accuracy of all printed material, and assessing the appropriateness of all merchandising material.

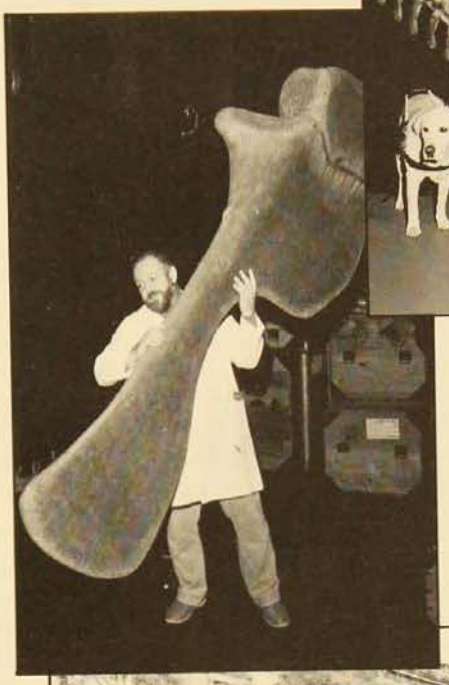
Palaeontology had to cope with a flood of dinosaur-related enquiries from the public and media. Many media interviews were done by scientific staff, who also escorted distinguished visitors through the exhibition, and advised on educational activities.

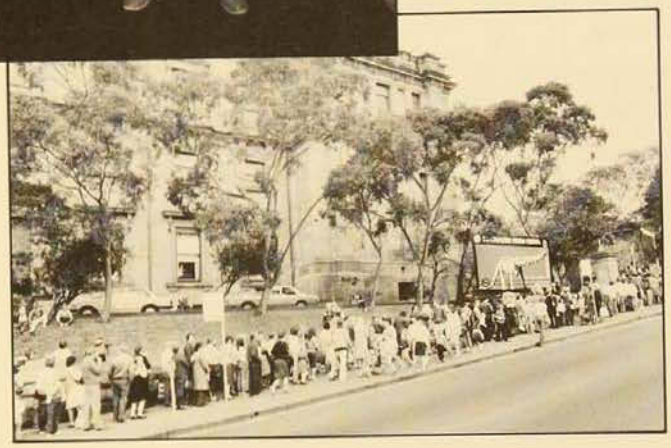
Because of its popularity, the exhibition was extended an additional two weeks. The exhibition was supported by advertising and publicity to ensure the number of visitors remained high throughout the duration.

Merchandising played an important part. A counter selling showbags, catalogues, education packs, T-shirts, models of dinosaurs, posters and postcards was located near the exhibition's exit.

More than 244,000 people visited the Dinosaurs from China while over 130,000 other people visited different Museum exhibitions during the same period.

The enthusiasm and expertise of the many people involved in the exhibition, along with the generous sponsorship by Esso Australia, resulted in a spectacular show unlike any other staged by the Museum. The exhibition's tour of Australia was organised by the Museum of Victoria with the cooperation of the Institute for Vertebrate Palaeontology and Palaeonanthropology, Academia Sinica, Beijing, People's Republic of China.





Interpretive Activities

Community Relations

The main aim of the Office of Community Relations is to increase local, national and international awareness of the Museum as a centre of scientific expertise, an educator, and a source of relevant and enjoyable experiences. Community Relations staff are also engaged in receiving and disseminating knowledge about natural environment and cultural heritage. The generation of revenue and other forms of community support where appropriate, are also seen as important.

In pursuit of these aims, the main activities are publication of "Australian Natural History" and the "Records of the Australian Museum"; management of the Museum Shop and marketing.

HIGHLIGHTS

The Dinosaurs from China Exhibition

Publication of "Prehistoric Animals of Australia".

Computerization of "Records of the Australian Museum" and production of the first supplements.

NEW BOOK RELEASED The first book ever published on the prehistoric fauna of this continent was released by the Museum to coincide with the Dinosaurs from China Exhibition.

"Prehistoric Animals of Australia", edited by Michael Archer and Susan Quirk, features the fine detailed drawings of artist Peter Schouten. These depict thirty of Australia's most fascinating prehistoric animals, together with descriptions by scientists from all over Australia and New Zealand.

GROWTH IN PUBLICATIONS The magazine "Australian Natural History" continued to provide credible and interesting information on a wide variety of appropriate subjects. With Vol 21 No 4, it increased to 48 pages, and the potential market was widened by extending distribution throughout Australia. A significant increase in new subscribers was achieved by means of a direct mail campaign. This offered with every new subscription a special discount on the "Complete Book of Australian Mammals", published by Angus and Robertson. It is gratifying to note that of all subscribers renewing with Vol 21, No 4, 73 percent did so for two years. This indicates the esteem in which "Australian Natural History", is held, and gives a solid base on which to build future issues.

NEW SUPPLEMENTS PRODUCED FOR RECORDS The new format of "Records of the Australian Museum" introduced by Dr Jim Lowry last year has received favourable comment from the scientific community. During the year, the last four parts of Vol 35 were published, as well as two new supplements. The supplements replace the former Memoirs and will similarly publish larger papers as the need arises. Work was completed on the mailing list. From Vol 36 an increasing number of papers will go directly to computer disc. This significantly reduces production time, costs and risk of errors. The backlog in unpublished papers was substantially reduced.

The bi-monthly brochure continued to be popular. It combines information on the activities of TAMS with interesting news and stories from the Museum. It is attractively presented using a two colour design based on the seasons. As well as being posted to all TAMS Members, and libraries within New South Wales, the brochure is available free to all Museum visitors.

A new brochure to attract tourists to the Museum was completed in time for distribution before Easter and the May School holidays. It is placed in approximately 250 outlets in the Sydney metropolitan area. Requests for it were received almost immediately from convention organisers and local tourist operators. A comprehensive market survey planned for the August 1984 holiday period will measure the brochure's impact on the numbers of tourist visitors. It is hoped to increase the number of tourists visiting the Museum to about 100,000 annually.

GALLERY BROCHURES PROGRAM STREAMLINED Community relations continued to provide an important service to visitors with the production of information brochures for each gallery. Existing brochures have been reviewed and older ones updated as they are due for reprinting. Substantial reductions in the unit cost have been made by monitoring usage and effecting economies-of-scale. The "Guide to the Exhibitions in the Museum" (incorporating information about the Museum as well as all gallery leaflets) sold steadily. It is being revised to accommodate changes such as the new Aboriginal Gallery.

COMPUTERIZATION OF ANNUAL REPORT Following the successful computerisation program for "Records of the Museum", this year's annual report has also been compiled on disc, and transferred direct to the typesetter. This has reduced the risk of errors and allowed for more efficient compilation of material.

INTEGRATED APPROACH TO MARKETING Effective advertising, publicity and public relations is fundamental to the Museum's ablity to achieve its aims. Activities have covered such diverse areas as major exhibition openings, temporary exhibitions, Sunday at the Museum, MOTR, TRAIN and other educational programs, the shop and ANH. Following the success of

Lisa Whaite and Stewart White (publicity)
Head of Community Relations Pamela Pearce with Lucy Hodgson (Records).
Working on ANH Christine Deacon with John McIntosh and Editor Rob Cameron.
Margaret Ingham, Rob Thorman and Tina Dee

the first TV advertisement last year, a second was produced and went to air over the Christmas holiday period. Emphasis is currently being placed on devising an effective and balanced marketing program, which will maximise the skills of both staff and outside consultants; and ensuring best use of available resources. Close attention is being paid to the application of resources and analysis of results of each program.

HIGH PRIORITY GIVEN TO PROJECT TEAMS
Community Relations staff have been greatly involved as members of project teans developing new galleries and exhibits. This entails being responsible for all publications, advertising and publicity related to the work of the team. Apart from the dinosaurs exhibition, Community Relations provided team members for the Aboriginal Gallery, Insect Gallery, Mineral Gallery and the temporary exhibition, Fire and the Australian Environment.

DINOSAUR EXHIBITION HELPS PUSH UP SHOP REVENUE
The Museum shop aims to provide visitors with a source of high quality goods which are educationally relevant and/or a tasteful reminder of their visit. The shop is an important source of revenue to the Trust.

Trading during the first half of the year was affected by unusual circumstances. On the one hand, sales were substantially increased because of the many visitors during the Dinosaur from China Exhibition. On the other hand, serious disruption was caused by physically moving the shop to make way for the exhibition. Because of the high traffic levels it was also difficult to maintain stock and perform other routine functions.

With the appointment of a new manager in January, fresh attention has been given to achieving optimum stock levels and increasing profitability. Work commenced on the first planning stages of a complete new shop with careful analysis of the current site and requirements. The new shop is designed to maximise retail selling space while presenting an image and style which appropriately represents the Museum. Preliminary discussions were also held on the computerisation of the shop's sales transactions.

FUTURE PLANS With a substantially new team in place, Commmunity Relations is looking forward to achievements in several key areas.

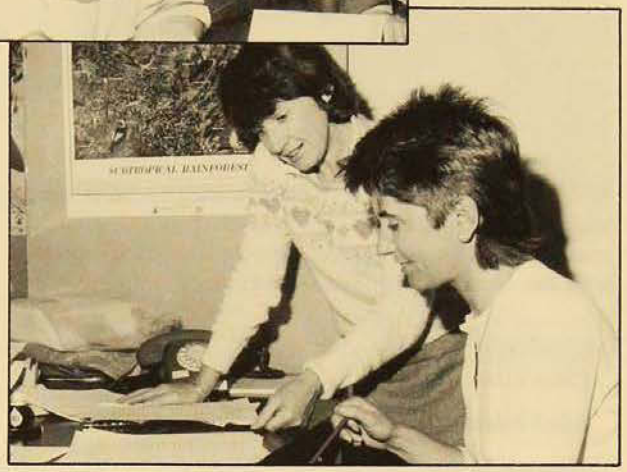
Plans for "Australian Natural History" include a drive to increase subscriptions, as well as newsagent sales and revenue from advertising. It is hoped to widen the magazine's audience, while still maintaining the high level of credibility and standard of production.

As well as increasing the number of tourists visiting the Museum other important marketing objectives will be to increase public attendances on weekday afternoons, and to substantially increase the number of school children visiting in school classes.

Completion of the new shop in September 1984, will greatly improve both the quality and quantity of display and merchandising areas. Staff hope to develop the best natural history shop in Australia. Work will continue on the computerisation and special attention will be given to building up mail order sales.

A highlight of the year will be the opening of the new gallery Aboriginal Australia.

Photos: Kate Lowe



The shop team Manager Max Dingle with assistants Patricia Sharpe and Matt Zanotto.

Education Section

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

ACTIVITIES

Class Visits

Adult Education

Museum Train

Museum on the Road

Museum in a Box

Wandervan

School Holiday Programs

Sunday at the Museum

HIGHLIGHTS

Production of a variety of Teachers Ideas Packs

Museum Train viewed by over 44,500 people

Museum on the Road viewed by over 110,000 people

CLASS VISITS REMAIN POPULAR Education officers taught 697 classes comprising 20,900 children during the 30 school weeks when the dinosaur exhibition was not showing in 1983-84. The practice of involving children in more practical activities, teaching smaller class sizes, providing focus lessons, and involving volunteers to assist in the Education Centre and galleries were continued. In addition, some 61,000 students visited the Dinosaurs from China Exhibition under the supervision of Education staff.

Production of new activity sheets and Teachers Ideas Packs were given high priority. The packs are being progressively redesigned to provide an attractive and valuable resource for teachers. Caltex Oil (Australia) Pty Ltd gave money to improve the quality of presentation of the class visit TIPS. The "Education News", produced each term, was redesigned and additional copies sent to schools.

Five sessions of peer teaching (children teaching each other) were held, two were with disabled groups. At the orientation session, children learned to use objects in teaching, visited the scientific departments of their interest and used galleries to obtain information on their topic. Ms Robyn Lilienthal, Consultant in Education for talented children, helped this program.

Many handicapped schools have taken the opportunity this year to visit the Museum informally, or have booked lessons with the Education Centre.

The Trust made funds available to employ a writer and a designer to produce materials for teachers who bring classes to the Museum by themselves. This year 997 of these unaided or 'self guided' groups, or 1,655 classes visited the Museum in the 30 school weeks in which the dinosaur exhibition was not showing. For the last four years, the number of unaided groups average around 1,500 over the 40 school weeks of the year. The fall this year is due to the Dinosaurs from China Exhibition. The materials will be made available during the 1984-85 year. Strategies will be developed to increase the number of self guided visits.

During Children's Week in October, youngsters from the Manly-Warringah School for Crippled Children talked to people in the Discovery Room about their studies of dinosaurs. An exhibition of prize-winning entries in the United Nations' Junior Media Peace Prize was held in January.

WORK EXPERIENCE WELL RECEIVED Secondary school students continue to show a keen interest in the Museum as a place to gain work experience. Eighty-two students were placed during the year, with almost every Museum department assisting at least one of these students.

VOLUNTEERS There are presently 25 volunteers working in the section, eight involved with school groups, 13 involved with holiday programs, and eight provide valuable clerical assistance.

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, Sydney, NSW. Two students from the Institute of Early Childhood Studies, Waverly, NSW, spent their practise teaching period with the section.

ADULT EDUCATION FOCUSES ON BUSHLAND A course on 'Ecology of Sydney's Bushland' was run in association with the Workers' Educational Association. Special programs and lectures were provided for migrant, adult student, senior citizen and community groups. Senior Citizens Week attracted 30 elderly people to a guided tour of the Lord Howe Island Art Exhibition at the Museum.

MUSEUM TRAIN The newly-designed train commenced its second tour of New South Wales country centres travelling to Broken Hill and visiting several towns on the western line. This

Officer-in-charge of Education Pat McDonald (centre) discusses new Teachers Ideas Packs with Jeanette McLeod and Glen Hunt. Photo: Kate Lowe

was followed in Third Term 1983 by a tour of the Northern Tablelands (Tenterfield to Quirindi), and in First Term 1984, the Southern Tablelands. Second Term 1984 commenced at Gunnedah, and from there continued to Tamworth and into the Hunter Valley.

The first year of operation of the new exhibition was well received with a total of 44,557 visitors, comprising 22,349 school children and 20,208 general public. An additional intensive publicity campaign, commencing First Term 1984, included sponsorship from radio stations, competitions by newspapers, new posters and letter box drops. The number of people visiting the train increased significantly as a result of this campaign.

Sponsorship by the Commonwealth Banking Corporation of Australia continued, with assistance being received from each branch of the bank in visited towns. Additional sponsorship was received from radio stations 2LF, 2MO and 2TM who carried out intensive advertising campaigns on our behalf. The tour is assisted by the New South Wales State Rail Authority.

MUSEUM ON THE ROAD These travelling exhibitions comprise panels and showcases transported in a truck and set up in libraries, civic centres and shopping malls. During the latter half of 1983 the exhibitions 'Mammals an Australia' and 'Papua New Guinea - the Abelam People' were on display in libraries, civic centres and shopping malls in Sydney suburbs. At the same time, the other two exhibitions 'Life in the Sea' and 'Arid Australia' were taken to country areas, mainly south of Sydney.

In early 1984, 'Mammals in Australia' and 'Life in the Sea' travelled to the north coast while 'Arid Australia' and 'Papua New Guinea visited venues in both inner and outer suburbs.

Teachers brought 40,000 children to Museum on the Road exhibitions, and there were an estimated 71,000 people viewing the exhibitions independently.

MUSEUM IN A BOX Formerly referred to as the School Loan Case Service, Museum in a Box continued to expand with nine new cases on 'Insects' completed by Mr Huw White and five cases on 'The Maori of New Zealand' prepared by Mr Roger Inder. There are now 124 cases with specimens, pictures, notes and so on which can get right into the school room and into the hands of children. Miss Marisa Zarmarian was employed to prepare additional notes and resource materials. During the year 941 loans were made to schools and institutions throughout the state. As from First Term 1984, the booking system was transferred to word processor. New guidelines were introduced giving increased emphasis to loans for disadvantaged schools and new borrowers. John Fairfax & Sons Ltd agreed to continue to cover the costs of printing brochures. Some 300,000 children were reached through this program.

WANDERVAN The Wandervan visited a total of 6,236 individuals in 165 centres for the handicapped and disadvantaged, including: schools for physically and mentally handicapped children; remand centres; rehabilitation units; homes for the elderly and destitute; and, for the first time, hospital maternity wards, a school for the autistic and centres for homeless adults. Some hospitals and migrant hostels received several visits due to their high turnover of residents.

A total of 15 schools, hospitals and adult activity centres in country areas were visited in three field trips. Additional activities include: talks to Rotary and other service clubs, particularly Sydney University's Open Day; a regular segment on the children's TV program Romper Room; and attendance at a number of charity events for handicapped people.

After six years service the Toyota Hiace was replaced with a Mazda E 1600. Artwork was designed for the exterior to create a very colourful image. Sydney City Council continued to support the Wandervan until June. Publicity was gained in a number of newspapers and television stations including the Daily Telegraph, Sydney Morning Herald and Channel Seven.

SPECIAL ACTIVITIES FOR SCHOOL HOLIDAYS During January, a Discovery Room was set up on the theme of "The Beach and the Bush". For the May holidays, the theme was "Rare and Curious". This fitted with other Museum activities

planned to coincide with International Museum Week.

Two courses were held for high school students. In January, 30 students attended a Sydney bushland course which included talks by scientific staff, a bushwalk and an evening spotlighting trip. In May, 25 students attended a course on Australian birds. This included talks by scientific staff, a day at the zoo and two days in the field studying birds under the supervision of Dr Harry Recher.

A week long course on classification was held for 25 senior secondary students in January and activities included lectures, field trips and practical sessions. The course was run in association with Taronga Zoo, Sydney, NSW, and the Royal Botanic Gardens, Sydney, NSW.

The Discoverer's Club continues to interest children. In order to join, they must complete a set of 'Walkabouts' which take them on tours of the galleries while answering questions. Members have attended day outings, holiday courses and some have worked an scientific departments. Ten students became Discoverers during the year.

SUNDAY AT THE MUSEUM Family activities were held in July and recommenced monthly in April with activities to celebrate Heritage Week; and themes of 'Rare & Curious' as well as 'Moving On' (methods of locomotion) were popular.

PREPARATION OF SPECIMENS Developing interactive displays used in class lessons, holiday activities and the Dinosaurs from China Discovery Room, involved the preparation and repair of some 170 specimens. Maintenance of eight live exhibits including a crocodile and a blue-ringed octopus, and maintenance of audio-visual equipment was carried out.

PROGRAM EVALUATIONS The new Museum Train education program was appraised by questionnaire and teachers' satisfaction increased significantly over the earlier program. The Wandervan program continues to be very highly regarded.

An investigation by market research consultants, Neill, Riley & Associates, into the Education Centres' publicity material for teachers will assist future developments in the area. The same consultants are evaluating the Museum on the Road program.

Education officers chaired or were members of project teams for the following exhibitions: Dinosaurs from China, 'Rare & Curious' (Miss Patricia McDonald); Mineral Gallery (Dr Glenn Hunt); 'Insects and other Terrestrial Invertebrates' (Ms Janette McLeod); 'Australian Aboriginal Gallery' (Mrs Carolyn Davey); 'Fire' (Ms Sarah Main).

STAFF CONTRIBUTE TO COMMUNITY Patricia McDonald attended the Bi-ennial Conference of the Museum Education Association of Australia (MEAA) in Canberra, in August, 1983. She gave a paper at the Seminar for Small Museums, organised by the Museums Association of Australia (NSW Branch) in May. Sarah Main and Ms Toni O'Neill also attended the MEAA Conference in Canberra; Sarah Main attended the Conference of Museum Anthropologists in Darwin in July and Toni O'Neill attended the conference on Endangered Species in May. Glenn Hunt attended the Museums Association of Australia Annual Conference at Melbourne in October.

Patricia McDonald attended the 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 NSW Cultural Grants Advisory Council; Education Committee of the National Trust of Australia (NSW) (Deputy Chairman); Vice-President Australian National Committee for ICOM; Museum Education Association of Australia. She was also Women's Liaison Officer.

Glenn Hunt continued as Secretary of the New South Wales Council of Heritage Organisations and also served as President of the Museum Social Club. Janette McLeod was Secretary of the Museums Association of Australia (NSW Branch) until August 1983, and is a member of the Conference Committee for the Australian Association of Environmental Education. Carolyn Davey is the Deputy Spokeswoman for the Museum. Toni O'Neill is a member of the Project Reef-Ed team developing Great Barrier Reef teaching materials.

Conferences and professional activities provide essential background knowledge and understanding of educational developments and increase our capacity to implement our aims.

FUTURE PLANS The main areas of activity will be implementation of the 'self guided' visits program and development of further Teachers Ideas Packs.

ACKNOWLEDGEMENTS OF COOPERATION

Ms Debbie Barber. Senior Education Officer. Taronga Zoo
Geological and Mining Museum
Ms Robyn Lilienthal. New South Wales Department of Education
National Parks and Wildlife Service
New South Wales Department of Education
Royal Botanic Gardens
State Rail Authority of New South Wales

DONATIONS

TIME-LIFE International (Australia) Pty Ltd

VISITORS TO EDUCATION Professor Zhou Ming Chen, Acadamia Sinica, Institute of Vertebrate Palaeontology and Palaeoanthropology, Beijing, Republic of China; Ms Judy Hoyle, Taranaki Museum, New Zealand; Mr John Christie, National Museum of New Zealand; Mr Steve Waterman, Museum of Transport and Technology, Auckland, New Zealand; Dr Tan Wee Hin, Singapore Science Centre.

Mr Bill Cuttance (right) on behalf of the Commonwealth Banking Corporation presents a cheque for $25,000 to Dr Des Griffin, Director of the Museum. The cheque is part of the bank's ongoing sponsorship of the Museum train.
Photo: John Fields

Exhibitions

The department's aims are to provide visitors with effective interpretation of scientific knowledge by maintaining high standards of exhibitions and by providing pleasant, modern facilities in other public areas.

HIGHLIGHTS

The Dinosaurs from China Exhibition

Three major temporary exhibitions staged

Two semi-permanent galleries near completion

VARIETY OFFERED IN TEMPORARY EXHIBITIONS During December and January the Baldwin Spencer Photographic exhibition loaned by the Museum of Victoria went on display in the Long Gallery.

Baldwin Spencer was an Englishman who came to Australia in 1887 to become foundation Professor of Biology at the University of Melbourne. In 1894 he first went to Central Australia as zoologist and photographer with the Horn Expedition and it was during this journey that his interest in the Aboriginal people was aroused. Spencer went back to the Northern Territory many times between 1894 and 1926, resulting in six major published works about the Aboriginies. In 1901 he was the first man to take movie films of the Aborigines and he and his party also shot nearly 2,000 still photos during their travels. Spencer kept copious notes and brought back to Melbourne some 3,500 Aboriginal artefacts.

Spencer's photos show the Aboriginal people in almost every aspect of life - for example, food-gathering, tool-making and ceremonies - and also include superb individual and group portraits. Many were photographed in traditional Aboriginal camps whilst others were taken in European settlements. Spencer's fondness for the Aboriginal people is evident in his photographs, particularly in those of the Aranda whom he regarded especially as 'old friends'.

During February and March the annual display of paintings of Lord Howe Island was held in the Long Gallery. The Hon Paul Landa opened the exhibition of works by the selected artist Peter Fennel.

As part of International Museum Week activities, a variety of rare and unusual objects were exhibited. These items were mostly selected from the Museum's scientific collections and normally rarely seen by the public.

MAMMAL GALLERY'S LIVE DISPLAY In July the gallery was enhanced by the addition of a specially constructed live display. This display features the seldom seen Duskey Hopping-mouse.

TWO SEMI-PERMANENT GALLERIES READY SOON The Aboriginal Gallery is expected to be completed in March 1985 and the Insect Gallery is scheduled for opening in January 1985.

Designs for the new Mineral Gallery were approved and production is now underway. Expected to open in late 1985, this gallery will take visitors on a mineral safari across the main gem areas of Australia. It will feature gold, precious gems and volcano exhibits. Extensive uses of audio-visual effects and special lighting are planned to make this exhibition one of the most dramatic and advanced of its kind.

DESIGN UNIT ACTIVE Important productions by this unit during the year included 12 new designs for teachers' packs, a complete range of new Museum letterheads and eye-catching paintwork designs for the Museum on the Road truck and the Wandervan.

LONG GALLERY RENEWED An overdue refurbishing of the Long Gallery was achieved which included new carpet, the removal of unwanted light fittings and a completely new colour scheme.

FUTURE PLANS Planning has begun on the development of a special project for the bicentenery year.

Two new major galleries are planned to be developed simultaneously. The subjects are biological evolution and cultural evolution. A third new gallery entitled Australian Reptiles is to be initiated.

Meanwhile, the next travelling exhibition will be 'Aboriginal Australia' for which planning will start in late 1984.

Priority will be given to repainting and refurbishing public areas and upgrading public toilets.

Chief of Exhibitions Rob Joyner (crouched) Tim Ralph, (left) and Jim Hood (top right) prepare one of the displays for the new insect gallery. Photo: Kate Lowe

George Hangay (back left) and Orest Keywan (back) being filmed by a TV camera crew preparing the largest known specimen of a rare Gobelin Shark.
Photo: John Fields

Service Activities

Administration

The aims of the division are to provide efficient and effective support services in terms of accounting and computing information, staffing, photography, building security and maintenance.

HIGHLIGHTS

Use of the new computer to streamline accounting and staffing functions

The establishment of a Front-of-House training course

Restoration of stonework on the College Street facade of the main building

Completion of the book on the New Guinea photographs of Captain Frank Hurley and finalization of archival work on the Hurley photographic collection

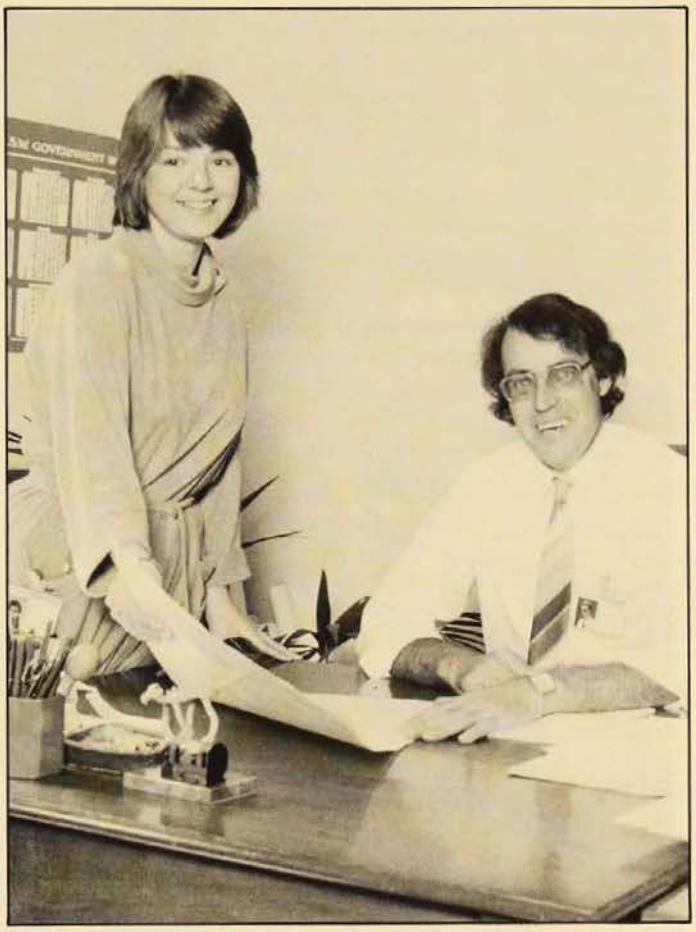
ACCOUNTS SECTION

The section is responsible for general accounting support, handling the Museum's investment portfolio and the provision of management information. The Museum is committed to the adoption of up-to-date financial management procedures and systems to enable proper monitoring of the flow of funds during a particular period; accountability for expenditures; and reporting both internally and externally, in a manner which will indicate how resources have been used.

NEW COMPUTER INSTALLED A Burroughs B20 Microcomputer system was purchased and installed. The Museum has three B20 work stations networked to a 20mb Winchester disc memory. Work stations are located in the Accounts Section, Staff Section and Secretary's Office. The Burroughs Budgetary Accounting System and Easy Debtors Software are used for accounting.

A Burroughs "Multiplan" spreadsheet is used by management to develop cash flow models and do statistical analysis relating to all the Museum's revenue. It is also used to monitor key financial areas. Additional staff were hired under the government's Community Employment Scheme (CES) to assist in this task.

The software being utilised has not, to our knowledge, been used elsewhere in the Public Service and some difficulties have been encountered. These problems are being overcome with the assistance of a software consultancy service - Computer Management Services Pty Ltd. The Museum intends to change to the software currently being developed by the NSW Public Service Board and Treasury as soon as this is available.



Secretary to the Museum Geoff McKenzie discussing new computerised personnel lists with staff officer Vicki Lee. Photo: Kate Lowe

STAFF FLUCTUATED Additional temporary staff were hired on two occasions for lengthy periods. Severe disruptions occurred when three permanent members went on maternity leave and another transferred. At one stage, there was only one permanent staff member in the section and he had only been at the Museum for six months.

Despite this, the section was able to meet its responsibilities.

FUTURE PLANS The section looks forward to 1984-85 when all systems are fully computerised.

BUILDING WORKS

Buildings used by the Museum are critically important. The main site has been developed in an ad hoc fashion since 1846. Space for collection is inadequate, staff are cramped, public spaces are of a quality which would not be accepted by any art museums in Australia, and no suitable space exists for travelling exhibitions. Because of the nature and age of the buildings, a high annual maintenance and restoration program is necessary.

The Museum currently leases premises at Rushcutters Bay, for storage purposes, and is in the course of leasing additional premises for staff and storage.

MAJOR PROJECTS UNDERWAY Building construction and maintenance works are primarily done and funded by the Department of Public Works (PWD).

Major works during the year included: the renovation of the south wing ground floor gallery for the new Aboriginal Exhibition; reorganisation of offices within Education and Exhibitions departments and the commencement of the redevelopment of the Batten Store stage 3; and the William Street lift extension to the Coffee Shop. These last two projects are being carried out under contract with PWD funds.

Landscaping and the provision of adequate lighting of the William Street frontage, finally commenced in June and when completed will result in a more attractive, pleasant and more easily maintained area.

Contractors under PWD direction completed stone work restoration of the College Street facade of the building south of the main entrance area. Completion of this work has highlighted the deplorable condition of the stonework on the section of the building on College St., north of the main entrance.

A high priority is placed on the completion of this project and the PWD has been requested to provide funds for this purpose.

NEW BUILDING POSSIBLE The Premier confirmed at the opening of the Dinosaurs from China Exhibition, that funds would be provided for a new building. It is proposed to fill the courtyard area between the southern wing and the William Street wing to provide space for storage of Anthropological collections, (especially the Pacific collections;) major space for important touring exhibitions; relocation of the Library and the Education Section; and to provide space to overcome critical overcrowding.

Accountant Neville Legg (standing left) with Minh Ton (seated) and John Harty (standing right) discuss financial details at one of the three new Burroughs terminals.
Photo: Kate Lowe

The proposal is now being discussed with the Government Architect's Branch.

LEASING OF ADDITIONAL PREMISES Approval in principal has been given for the leasing of additional premises to overcome a shortage of space for staff and storage. A recommendation has been made to the Premier's Department that premises near the Museum be leased.

PHOTOGRAPHY SECTION

The section provides documentary and creative photographic services and technical advice to the Museum and other organisations.

OVER 100,000 IMAGES AVAILABLE Photographs taken from our archives or those taken on assignment are made available for publication, education, display and scientific purposes.

More than 100,000 black and white negatives and tens of thousands of colour film images constitute the present collection, which dates back to the 19th century. Because this collection is growing constantly, maintenance and registration is an important function of the section.

During the year Museum photographers documented:

the stranding of a Pigmy Sperm Whale (*Kogia breviceps*) on Garie Beach, Royal National Park, Sydney, NSW;

the five day TAMS trip to Curicudgy, 20km north of Kandos, NSW, demonstrating preparatory techniques in the wild, and included rock and tree moulding for the Aboriginal Gallery;

the first film taken in the Museum of an American corn snake (*Elaphe guttata*) hatching;

the three day, four-wheel drive course sponsored by the Museum in February-March;

photographing in the wild for various ornithological publications and for the National Photographic Index of Australian Wildlife.

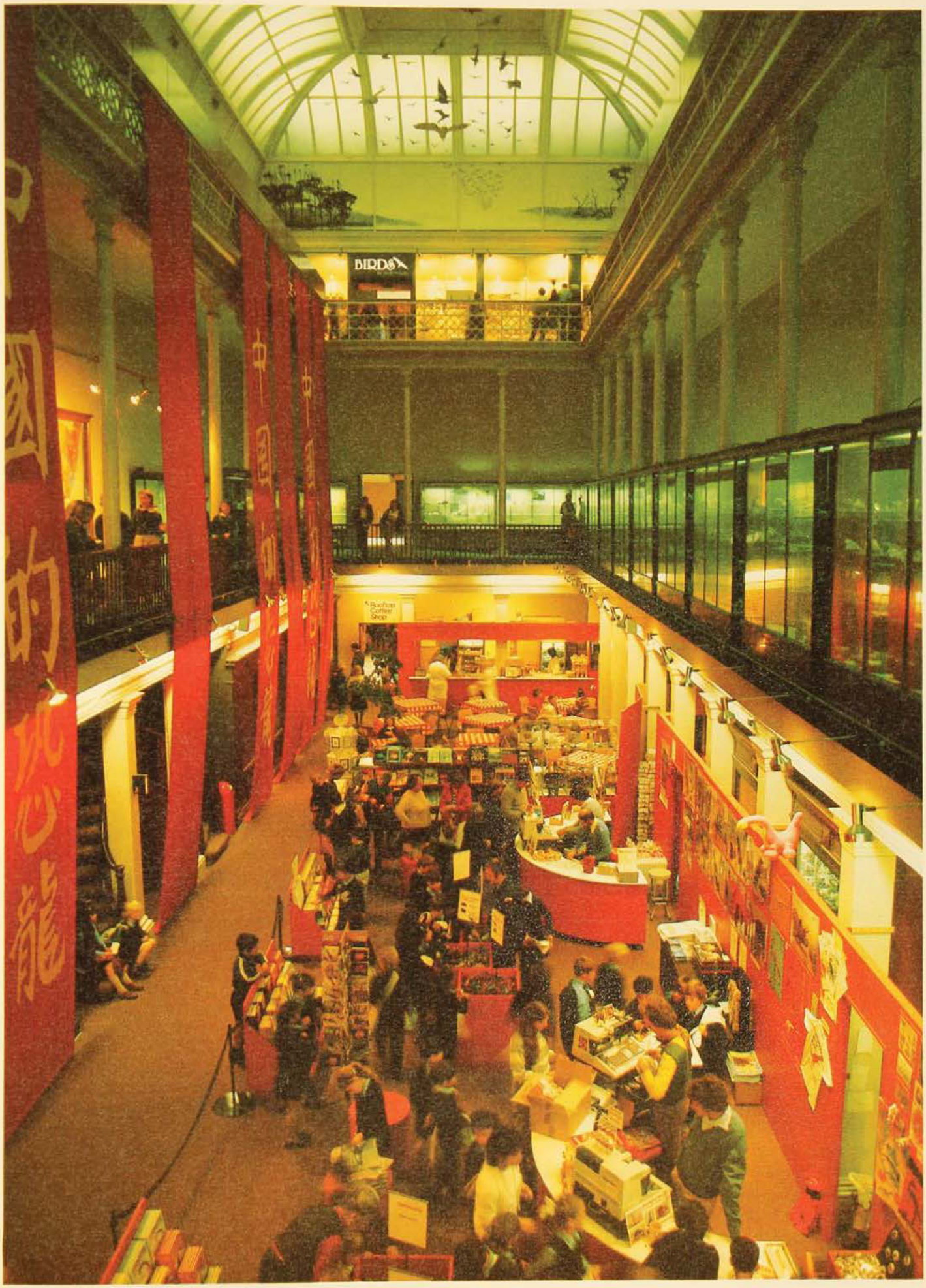
THE HURLEY COLLECTION BOOK FINISHED Captain Frank Hurley's photographic career began with advertising photography, and took an unusual turn when he was selected by Douglas Mawson as the photographer on his Antarctic voyage - responsible for both still and movie photography.

In subsequent years Frank Hurley made another trip to the Antarctic, was a war photographer and joined the Smith brothers in Queensland for the last leg of their England to Australia flight.

In 1920 Frank Hurley made the first of several trips to Papua. During his 1926-27 expedition to New Guinea over 1,000 glass plate negatives were taken. In 1927 he sold most of these to the Australian Museum, stating he had no further use for them. The collection has now been upgraded to archival standards due to special funding. Mr Darby Price, who actually did the printing for Frank Hurley in the early days, worked on the project. As a result it is hoped that in the future we will be able to work on other valuable collections of archival material held in the section.

A bonus in having conserved Frank Hurley's negatives was confirmation that the collection contained 95 'Finlay Colour' black and white original negatives made in the Torres Strait area. These negatives represent early 1900's new colour technology.

A publication on Frank Hurley's work, by Dr Jim Specht and Mr John Fields, will be published during August 1984 by Robert Brown and Associates.



Activities in the "Long Gallery" during the Dinosaurs from China Exhibition. On the ground floor the temporary Museum Shop; above on the mezzanines, the mineral and bird galleries.
Photo John Fields

Rare books from the rare book section and the Mel Ward collection in the Museum library, pictured with one of the new DECmate word processing terminals. While preserving the past for future generations, the museum is moving rapidly into the future.
Photo: Photography Section

The Wandervan, supported by the Sydney City Council, visits people in centres for the handicapped and disadvantaged, who have difficulty coming to the Museum. Artwork designed by Exhibitions created a very colourful image when the old van was replaced with a new Mazda E1600.
Photo: Kate Lowe

New Teachers Ideas packs, designed by Exhibitions staff, for use by the Museum's Education Department for class visits and Museum on the Road.
Photo: John Fields

Equal Employment Opportunity (EEO)

The Equal Employment Opportunity Management Plan is now being implemented. This plan outlines specific objectives and strategies relating to staff management, selection and recruitment, staff development, and grievance resolution. These aim at eliminating discrimination in employment on the grounds of sex, race, marital status, physical or intellectual impairment and promotes EEO for women and members of racial minorities.

Progress in the past year has included the employment of 11 Aborigines under two different employment schemes, the establishment of an Aboriginal Liaison Officer, the re-establishment of the Grievance Committee, up-dating the Staff Induction Program as well as several staff training and development courses. This progress highlights the management's commitment to EEO and it is anticipated that these trends will continue in the next year.

MUSEUM SPOKESWOMAN ELECTED Support was given to the activities of Ms Linda Gibson, the elected spokeswoman for the Museum. This appointment is for a period of one year and exists to advise and assist women in the organisation. Activities in the past year included the attendance at monthly meetings of the Premier's Department spokeswoman, a two day training workshop held in August, and the annual seminar held in September, 1983. Subjects dealt with in the Museum include grievance issues, maternity and leave-without-pay provisions, induction procedures, discrimination, staff transfers and increment reports.

Database Management

The section is creating computerised catalogues of the Museum's collections, as well as providing computing services.

HIGHLIGHTS

Database of Herpetology collection's 110,000 specimens completed

DATABASES EXPAND The main areas of attention were the vertebrate groups and the Australian aboriginal artefact collection. The database for the Herpetology collection is the most advanced, now containing information for the entire collection of 110,000 specimens. The bird database, containing all "0" register specimens, has been installed on a Britton-Lee Database Computer for a trial period. Experience indicated this machine is a substantial advance on previous generation hardware and software.

The mammals database contains data for 14,000 specimens, and is now available on microfiche in geographical sequence.

Data entry continued for the fish collection, with about two thirds of the collection now in machine stored form.

A microcomputer was purchased to enable data to be entered in-house and verified during entry. A number of programs have been written for this machine, but several technical difficulties remain before this approach is completely satisfactory.

A major advance has been made with the Australian aboriginal artefact data, which was entered into a microcomputer. With the intended purchase of a larger disc for the machine, this database will soon be fully operational.

FUTURE PLANS Work on completing the databases for mammals, birds and fish will continue, but the first priority is to transfer the databases from the CSIRO CYBER 76 to a new computer, because the CYBER 76 will soon be removed. Evaluation of possible new machines is underway.

Library

The various collections held in the Museum's Library are unique in Australia and a major natural history literature resources. The aims are to maintain the present collection in good order, acquire new material, and ensure the best use of all Library facilities.

The Library endeavours to make the collection available for the scientific and educational activities of many organisations and individuals.

HIGHLIGHTS

The Publications Exchange Project completed
Binding program begins
In-house computer search capability installed

This year has seen an expanded budget which allowed increased purchasing of new publications.

Sorting of the Mel Ward and Linnean Society collections progressed slowly and much of these collections is held in the Rushcutters Bay storage area. Cataloguing the Linnean Society collection, which is mostly serials, is yet to commence due to a backlog of new serials cataloguing.

The Publication Exchange Project was virtually completed by Ms Jenny Gates and involved the creation of a database listing organisations with which the Library has exchange agreements. The Library receives approximately 2,700 serial titles in exchange for the Australian Museum Records or Australian Natural History.

MORE BINDING MONEY Due to recommendations made by the Public Service Board Efficiency Audit in 1981, the Library received $55,000 specifically for binding. This, together with the assistance of twelve young people through the Community Employment Scheme and temporary assistance, allowed a significant amount of binding to be achieved. The Government Printing Office and a commercial bindery were used.

COMPUTER LITERATURE SEARCHING AVAILABLE In-house facilities became available with DIALOG registration which enables computer searching of overseas bibliographical data bases. Library staff have done special training in order to operate this facility.

SPACE & EQUIPMENT RESTRICTIVE Lack of space continued to present problems especially with regard to day-to-day work; housing and access to the collection and service to the public.

Shelving and catalogue cabinets have reached their limit and a reassessment is necessary in the coming year.

LIBRARIAN POSITION UPGRADED In March the position of Librarian was upgraded to Senior Librarian Grade I, following recommendations made by the 1981 PSB Efficiency Audit. The Senior Librarian, Ms Gwen Baker took ten months leave and Ms Jan Harrison was seconded from the National Parks and Wildlife Service Library to act as Senior Librarian.

As a member of a Council of Nature Conservation Ministers ad hoc Working Group, Jan Harrison attended a meeeting in Canberra concerned with establishing an Australian bibliographic database of environment, conservation and wildlife information and research data. Staff also participated in two-day Government Special Libraries Group tour to three Canberra libraries.

During the year Ms Carol Cantrell was responsible for the inter-library loans and Ms A. McConochie was responsible for monograph cataloguing.

LIBRARY TOUR FOR TAMS MEMBERS A special tour was arranged for TAMS members, which included a history of the Library, explanations of the various functions and services, and a display of some of the rare book collection. A printed guide to the Library was prepared for this occasion.

STATISTICS		1983-84	1982-83
ACQUISITIONS	Monographs acquired	787	550
	Monographs cat'd	701	600
	New Serials cat'd	94	
LOANS	Staff loans	1,279	2,051
	Staff ILL requests	869	608
	External ILL fulfilled	1,031	759*
	External ILL unfulfilled	471	-
BINDING	Volumes bound (monogs & serials)	3,337	1,049
VISTORS	Visitor usage (No. of individual visits by the public)	303	262

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

FUTURE PLANS In the coming year, space considerations will become critical, necessitating further reassessment of both the facilities and the collection holdings. The binding program is expected to continue at the same rate as this year. However, the Mel Ward and Linnean Society projects will depend upon the availability of adequate staff.

VISITING LIBRARIANS Ms Evelyn Woodbury, Librarian, Museum of Australia, Canberra, ACT; Ms Marianne Anthony, Librarian, South Australia Museum, Adelaide, SA; and Ms Audrey Meenan, Acquisitions Librarian, British Museum (Natural History), London, UK.

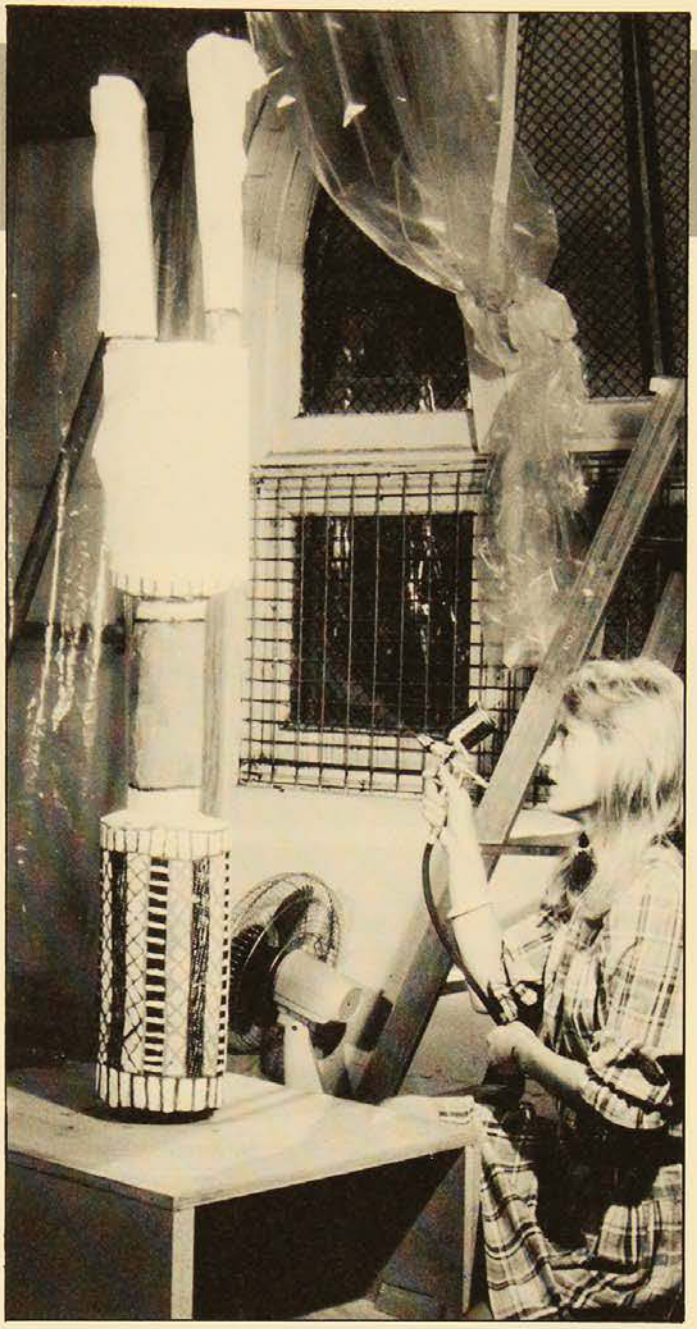
techniques for preserving painted wood have been successfully adapted for treatment of aboriginal painted artefacts.

She represented Australia at the 1983 General Assembly of the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) in Rome and is a member of the International Council of Museums (ICOM) Committee for Conservation Working Group on Ethnographic Materials.

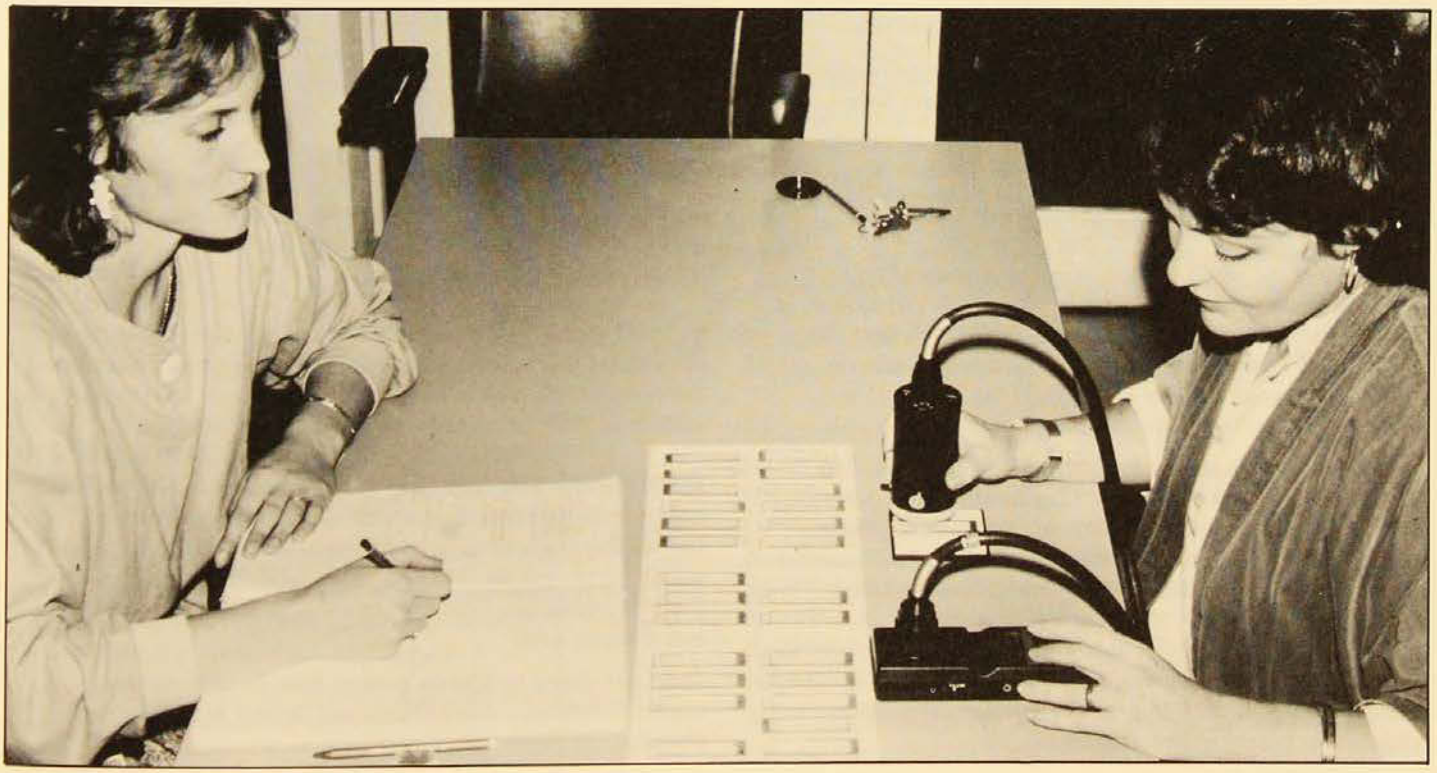
Miss Karen Coote was seconded to the Northern Territories Museums and Art Galleries to help organise the new conservation department. She also visited Maningrida advising the museum on storage and display.

Mr David Horton-James, Karen Coote, Mrs Sue Gatenby, Miss Kay Soderlund and Miss Anne Gaulton attended the Institute for the Conservation of Cultural Material (ICCM) Conference, "Conservation - the Art, the Craft and the Science", in Brisbane. David Horton-James presented a paper entitled "Computer Environmental Monitoring at the Australian Museum". Karen Coote presented a paper on the "Conservation of the Travelling Abelam Exhibition".

FUTURE PLANS Plans are to complete the research project on accelerated ageing, develop test procedures for evaluating conservation display materials, complete conservation work for the Aboriginal Gallery, improve working and materials storage facilities, improve information storage and retrieval of research conservation data, and review fumigation procedures.



Sue Gatenby at work on one of the Pukamani poles for the new Aboriginal Gallery (the spray is non-toxic).
Photo: John Fields



Sue Walston (right) Head of Materials Conservation, with Sue Gatenby checking colour changes in polymers after controlled ageing.
Photo: Ann Gaulton

Special Programs

Lizard Island Research Station

The aim of the research station is to support scientific research into all aspects of the biology, geology, oceanography, hydrology and ecology of the Great Barrier Reef.

The station provides for up to 15 researchers at any one time, and is now one of the best research facilities on the Great Barrier Reef.

HIGHLIGHTS

New laboratory block completed
Initiation of Doctoral Fellowships

The new laboratory block, which contains offices for the Director and Secretary, a library-seminar room, an instrument room and a radio-isotope room, eases congestion which developed in the old laboratory block.

Built at a cost of $125,000 of besser bricks, it can withstand the worst cyclone conditions. An air-conditioning system was installed to fully service the new building, the dry laboratory, and the dark room in the old laboratory block. The increased efficiency of this system, together with a new main power switchboard, designed by the Director and fabricated by the New South Wales Department of Public Works, means that, average power requirements can be met by the 12KVA generator.

Funds for the new laboratory were provided principally from the Japan Foundation, initiated by Suntory Limited and Esso Australia and the James N Kirby Foundation.

R V SUNBIRD PROVES WORTH The research vessel is proving a great asset in both supporting research and servicing the station's fuel and cargo needs.

Highlights of the vessel's activity were the support of Dr Leis' plankton studies in northern Barrier Reef waters and offshore in the Coral Sea; and a team from James Cook University, Qld, to the reefs off Townsville to study the annual reproduction of corals which spawn on only one night of the year and the subsequent dispersal of the coral planulae.

Installation of hydraulics was completed with assistance from KFV Fisheries. The two winches, rams to control the A-Frame, and anchor winch are now operational. An auxillary generator was installed to provide 240 volt power to run a compressor for filling Scuba tanks. A larger deep freeze unit was installed.

VARIED RESEARCH A wide diversity of research projects ranging from the study of feeding behaviour of feather stars to the chemistry of deposition of oolites (calcium carbonate chrystals) in lagoon sediments occurred.

Highlights included an 11-day workshop on polychaetes led by Dr Pat Hutchings with 15 overseas biologists.

Dr Ross Robertson, Smithsonian Institution Tropical Research Laboratory in Panama, spent several months examining effects that Crown of Thorns starfish have on the community structure of coral reef fishes.

Dave Bellwood completed his three-year PhD fieldwork program on habitat partitioning in parrot fish in relation to their jaw structure, dentition, feeding behaviour, and juvenile settlement requirements.

A team from James Cook University, Qld, led by Bette Willis, were on location in November with loads of coral specimens in the aquaria to record and film (on the station's video system) the annual spawning of corals. They were making synchronous observations with other teams on board R V SUNBIRD, on R V SIRIUS and at Orpheus Island. Evidence is now being gathered which indicates that many of the reef's corals spawn on only one night of the year - about 4 or 5 nights after the full moon in November - and that this occurs on the same night along the entire barrier reef. Some corals in inshore locations, where the water warms earlier, may spawn after the October full moon.

TWO $12,000 FELLOWSHIPS AWARDED A scheme to assist doctoral research students to undertake field-oriented projects on the barrier reef were started with funds raised from a number of benefactors including the Ian Potter Foundation and Carlton and United Breweries, Cairns, Qld.

Two $12,000 fellowships were awarded. One went to Mr John Chisholm, James Cook University, to study the ecology and productivity of coralline algae; the other to Mr Roland Pitcher of Griffith University, NSW, to study factors influencing the recruitment of coral reef fish.

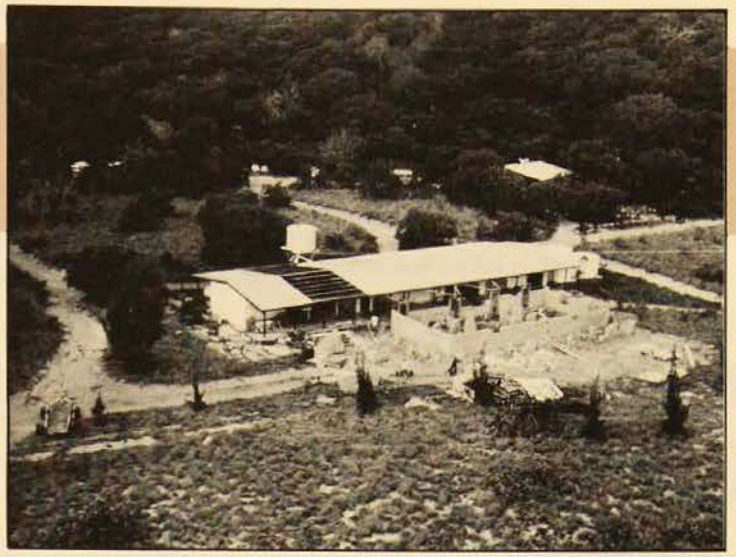
FUTURE PLANS Most objectives laid out in the 1981 master plan have now been met. Tasks remaining are to expand the workshop for servicing the station's machinery, and to add a washroom. Work will commence on these in 1984-85.

VISITORS TO THE STATION The number of scientists fell slightly from the previous year with a total of 99 scientists visiting, five of whom came more than once. Average occupancy was 49 people per day. (Approximately four researchers per day). Forty-six researchers were from overseas institutions, and doing post-graduate work.

The Trust visited in April to conduct their monthly meeting, inspect the station's developments and farewell the retiring President, Dr Baker.

Another notable visitor was Dick Smith who spent the night at the station during his around-Australia trip. He donated funds for an uninterruptible power supply for the laboratory.

Some 21 reprints or articles have been received covering research done at Lizard Island bringing the total to 135.



Construction of the new laboratory block which was finished during the year at Lizard Island.
Photo: Barry Goldman

National Photographic Index of Australian Wildlife

The aim of the Index is to assemble and maintain an expanding collection of well-documented colour photographs illustrating the appearance, development and behaviour of Australian mammals, birds, reptiles and frogs.

HIGHLIGHTS

"The Australian Museum Complete Book of Australian Mammals" published

Important work on books about Water Birds of Australia, Sea Birds and Waders finalised

Index expanded to include reptiles and frogs

COMMUNITY ACCESS The resource is available for use by biologists, authors and publishers. Scientific staff conduct research in mammalogy and ornithology, contribute to professional societies, and provide information to the public on mammals and birds.

MAMMALS BOOK COMPLETED Publication of "The Australian Museum Complete Book of Australian Mammals" was a major accomplishment.

Illustrated with the best photographs from the National Photographic Index of Australian Wildlife, this 530-page work is the most comprehensive and authoritative book yet to have been produced on the mammals of Australia.

The text is written for the general reader, with a separate column of body measurements and other data provided for zoologists. Castlemaine Tooheys generously donated $50,000 toward the Index's costs in producing the book.

The book has been enthusiastically received, with more than 30,000 copies sold within six months.

Mr Ronald Strahan, the editor-in-chief, worked on the book for four years and received the silver Whitley Medal of the Royal Zoological Society of New South Wales for 'the best book on the natural history of Australian animals published in 1983'. The Association of Australian Book Publishers awarded the book a commendation for design.

COMMITTEE OF MANAGEMENT RESPONSIBILITIES
The Committee, under the chairmanship of Mr John Broinowski CMG FCA, met five times during the year to determine the general policy of the Index and supervise its finances.

NEW EDITOR ANNOUNCED In February, Mr Terence Lindsey became editor of the Index's bird books.

COMMUNITY INVOLVEMENT SIGNIFICANT The Executive Officer, Ronald Strahan, gave the inaugural Charles Darwin lecture in the Northern Territory Art Gallery and Museum, Darwin, during September; the opening address in the symposium on Possums and Gliders held by the Australian Mammal Society at the University of New England, NSW, during November; and the opening address in the conference on endangered Australian species held by the Total Environment Centre at the University of Sydney, NSW, during May.

Mrs M Gordon and Ms D Greig were jointly responsible for increasing Bird collection transparencies by obtaining nearly 1,400

new photographs. Mrs Heather Lawrence worked extensively on the last stages of "The Complete Book of Mammals" and "Water Birds" manuscripts.

VOLUNTEERS Messrs E L Carthew and J de S Disney continued their meticulous sorting and cataloguing of black-and-white bird photographs from six notable photographers of the early 1800s. They have so far catalogued about 2,000 of the 3,000 prints, glass negatives and lantern slides.

NEW BOOKS The text of "The Water Birds of Australia" was sent to publisher Angus and Robertson in April for publication in December 1984. It will be on general sale about February 1985.

Work began on books about "Sea Birds" and "Waders" for publication, respectively, in July and October 1985. The remaining six volumes in the series are expected to be published by the end of 1987.

Two new publications, "Australian Reptile List 1984" and "Australian Frog List 1984" were published in June. Acquisition of a word processor in May facilitated the last stages of "Water Bird" text production.

COLLECTIONS EXPANDED The older section of the Bird collection consists of 175mm x 120mm colour prints housed in 30 steel filing cabinets at the Rushcutters Bay annex. The corresponding internegatives are housed in the Museum's Photography Section. A duplicate set of prints is held by the National Library in Canberra.

A second collection of 35mm colour bird transparencies is housed at Rushcutters Bay and is now larger than the print collection. Originally, transparencies were classified in the category 'XT' (good quality but surplus to the requirements of the print collection) and 'T' (of lesser quality but of technical/scientific interest). All recent accessions are in the 'XT' category.

The main section of the Mammal collection consists of 125mm x 105mm transparencies, one copy for general use and a second copy for storage. This is supplemented by 35mm transparencies designated 'SX' (high quality but surplus to the main collection) and 'S' (of lesser quality but of scientific interest).

The state of the collections at June is shown in the following table.

BIRD COLLECTION
(As at the end of Stage 45)

	1982-83	1983-84	Totals
Submissions	712	1833	23877
Acceptances: Prints	11	9	4940
'XT'	555	1372	3081
'T'	—	—	2297
Species added during year	1	1	
Number of species represented	754	755	

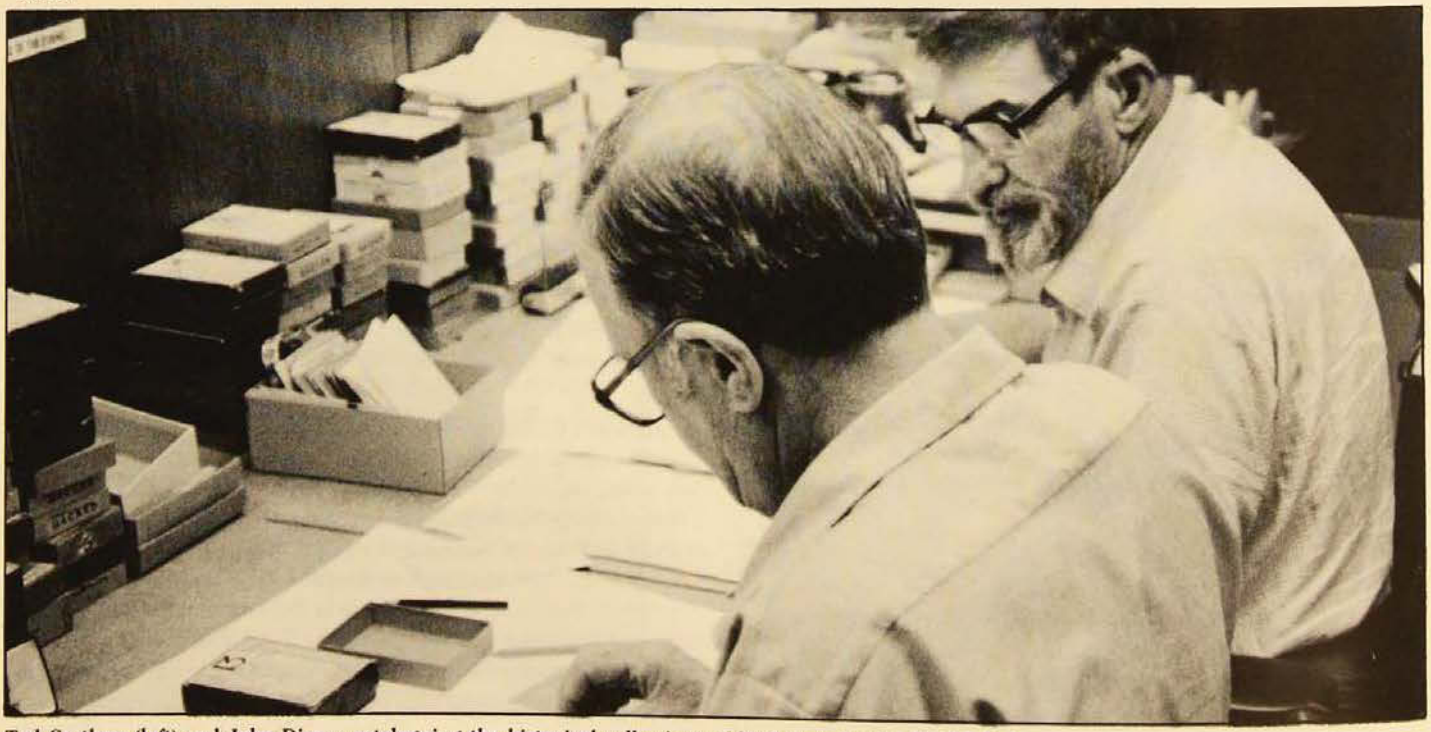
MAMMAL COLLECTION
(As at the end of Stage 15)

	1982-83	1983-84	Totals
Submissions	753	270	5595
Acceptances: Main	157	23	1039
'SX'	426	110	1628
'S'	—	—	303
Species added during year	9	2	
Number of species represented	257	259	

DONATIONS Under the Taxation Incentives for the Arts Scheme, Mr and Mrs Wells donated ten mammal photographs; Mr R Whitford, ten mammal photographs; and Mr M Frauca, 16 mammal and bird photographs.

FUTURE PLANS Over the next few years, the Index will greatly increase its frog and reptile collections, and expand its collection of bird photographs to meet the needs of its books on Australian birds.

The Australian Mammal Society has approved a proposal that the Index becomes a repository for photographs of the skulls and teeth of Australian mammals, so this collection is likely to grow into an archive of value to mammalian taxonomists.



Ted Carthew (left) and John Disney cataloguing the historical collections of bird photographs for the Index.
Photo: John Fields

The Australian Museum Society (TAMS)

The Society's aims are to develop and maintain contacts between the Museum and the community by promoting a greater understanding of Museum activities, and financially assist the Museum as requested by the Trust.

Activities during the year were totally dominated by the Society's role in organizing the Dinosaurs from China Exhibition.

HIGHLIGHTS

The Dinosaurs from China Exhibition

Award winning stand at the Royal Easter Show

A 'Cracker Tour to Krakatau'

MEMBERSHIP INCREASED Membership increased slightly with increased public awareness. This was generated both by our stand at the Royal Easter Show and by the dinosaur exhibition.

Three people were specially recognised for their outstanding service to TAMS. Mr Norm Ireland, Mrs Teddie Ireland, and Ms Carol Serventy now join Sir Harold Wyndham as Honorary Life Members.

Our activities expanded in both quantity and variety, apart from the dinosaurs exhibition, and included: the 'TAMS Tour to Krakatau', led by Dr Lin Sutherland; the 'Preparators' Bush Workshop'; a Franklin River Rafting Expedition led by Dr Ron Lampert; and a Kangaroo Island Tour. Greater emphasis was given to special behind-the-scenes viewings. These activities once again demonstrated the excellent cooperation between TAMS and Museum staff.

COFFEE SHOP RELOCATED Severe overcrowding during peak visits resulted in the coffee shop's relocation to the large and attractive area on the rooftop. It was decided, following advice from a market research survey, to enhance the variety of food available and provide a light lunch for visitors and staff. Prices are within the family budget of the average Museum visitor. New colour schemes were provided by the Exhibition Department and the refurbished area has proven to be very popular.

THE MUSEUM AS A VENUE On behalf of the Museum, TAMS continued to hire out, on a very selective basis, galleries and other areas within the Museum for private use.

HUNDREDS HELP Quite apart from the dinosaur exhibition, TAMS maintained its regular placement of volunteers under the supervision of Mrs Herti Verge. All volunteers are listed at the back of this report.

FUTURE PLANS A tour of China will soon be led by Museum palaeontologist, Dr Alex Ritchie. An ornithological seminar/workshop will be convened by Dr Harry Recher. Other exciting tours are being planned.

AUSTRALIAN MUSEUM SOCIETY SPONSOR AND BENEFACTOR MEMBERS

Mr A G Blofeld
Dr M Filipic
Mr S Martin
Mr H Mitterer
Readers Digest Services Pty Ltd
Miss J Rooke
Mrs I Scandrett
Mr W S Tatlow
Mr P Wallman
Mr & Mrs K J Winsbury

Executive secretary of The Australian Museum Society, Susan Bridie (left) with Secretary Wendy Wilkins.
Photo: Kate Lowe

Museum Finances

HIGHLIGHTS Receipts from all sources during the year amounted to $7,734,082, comprising income from granting agencies, the private sector, Museum trading operations, other projects and State Government funds. Receipts for the year amounted to a 22% increase 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 65% of the total funds available to the Museum. This is an increase of 6% in outside funding over the previous year.

The State Government allocation to the Museum, including salary supplements received during the year, increased by 11% 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 of $200,000 while the statutory endowment allocation was increase by 12% to $140,000.

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, catologues, artefacts, replicas, films, hire of parts of the Museum bulildings for public and private functions; donations and interest on investments.

The importance of this income cannot be over emphasised as it provides that degree of financial independence enabling the Museum to undertake those projects not otherwise possible -the Dinosaurs from China Exhibition, for example.

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

TRUST GENERAL ACCOUNT Receipts of the Trust General Account amounted to $1,310,218, an increase of 44% over the previous year. These funds are the separate income of the Trust of which the major items contributing to the total are Museum Shop, 31%; "Australian Natural History" Magazine, 9% Interest on Investments, 4%; Statutory Endowment, 11%; and Special Subsidy, 15%.

The following increases occurred in respect of the main income items in comparison with the previous financial year: Museum Shop, 55% "Australian Natural History" Magazine, 12% and Interest on Investments, 21%.

Payments relating to the major classifications/functions as a percentage of the total payments were, Collection Acquisition and Documentation, 8%; Shop 34%; "Australian Natural History" Magazine, 13%; Exhibitions, 10%.

A lower level of payments (compared to budget) occurred in relation to exhibitions and some special programs.

TRUST GRANT ACCOUNT Income of the Trust Grant Account amounted to $1,056,858 an increase of 56% over the previous year. The main sources of income were, corporate sponsorship for specific projects - $200,000; (19% of total grant income); Marine Science and Technologies Grants, $48,109 (5%); Australian Research Grants Scheme $50,529 (5%); and Australian Biological Resources Study $50,715 (5%); National Employment Strategy for Aboriginals $58,622 (6%); and National Photographic Index $151,365 (14%).

Payments from this account of $982,167 increased by 12% compared with the previous year.

Payments relating to the major classification/functions were, Scientific Research $250,175 (26% of total grant payments); Lizard Island (Scientific Research), $178,353 (18%); Exhibitions, $377,132 (38%); National Photographic Index, $176,577 (18%).

DINOSAURS FROM CHINA Special mention must be made of this exhibition which proved to be one of the most successful undertaking of this type ever held. Over a thirteen week period, more than a quarter of a million people attended the exhibition resulting in a net surplus of $266,579 being returned to the Trust. Total receipts of $759,113 were generated through admission fees (65%), souvenir merchandising (31%), and Corporate sponsorship (4%). Exhibition expenses of $492,534 covered a wide range of items - exhibition establishment and construction (41%), advertising (12%), merchandising (23%),printing (3%), staff (18%), services (2%) and miscellaneous items (1%).

SUMMARY OF ACCUMULATED FUNDS

TRUST GENERAL ACCOUNT During the financial year 1983/84, this account returned a surplus of $274,207 which, when added to the accumulated surplus as at 1/7/83, resulted in an accumulated surplus of $434,173 as at 30 June 1984.

It should be noted that this surplus reflects under-expenditure in some items, particularly exhibition programs, for which commitments of expenditure will have to be met in the 1984/85 financial year.

The result for 1983/84 is nevertheless, a substantial improvement on previous years.

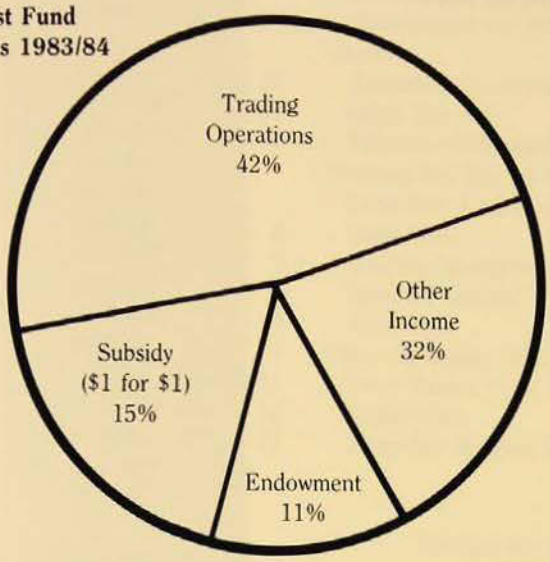
TRUST GRANT ACCOUNT A surplus of $74,701 was achieved for 1983/84 in respect of the Grant Account. This surplus when added to the accumulated deficit as at 1/7/83 has resulted in an accumulated surplus of $49,127 in this account as at 30 June 1984.

At year end, major deficits were being carried in the Lizard Island and Museum Train projects. A major cause of these deficits being maintained is the State Government ceiling of $200,000 on the Special Subsidy of Museum Programs. This has resulted in the Museum not being able to fully realise potential benefits from corporate and other sponsors.

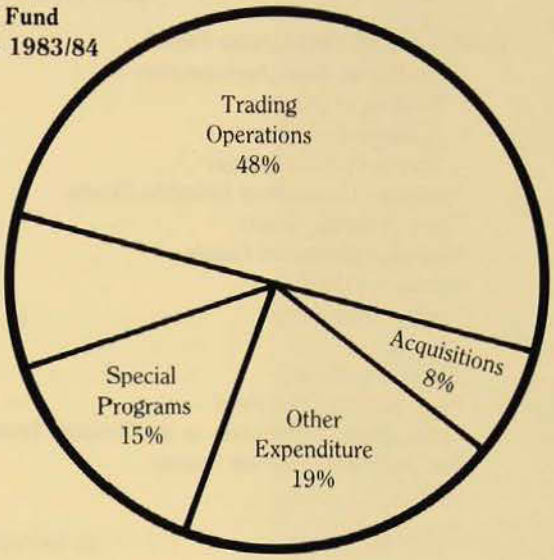
The deficits in these accounts are expected to be reduced in the 1984/85 financial year. In particular, major capital works on Lizard Island have been completed and continuing corporate sponsorship of the Museum Train is expected in early July 1984.

COMBINED RESERVES (TRUST GENERAL AND GRANT ACCOUNTS) As at 30 June 1984, the combined reserves of the Trust Accounts stood at $483,300, a substantial increase of $260% over the previous year. Undoubtedly the biggest contributor to this result has been the successful Dinosaurs from China Exhibition.

Trust Fund Receipts 1983/84



Trust Fund Payments 1983/84



AUSTRALIAN MUSEUM TRUST
STATEMENT OF FINANCIAL POSITION
AS AT 30 JUNE 1984

1983 $	Notes		1984 $	Increase % (-)
		Funds Held -		
159,966		Trust General Account	434,173	171
(25,574)		Trust Grant Account	49,127	+
14,582		Peter Rankin Trust Fund	15,273	5
9,743		Coffee Shop	8,049	(17)
12,787		Australian Museum Society	28,741	125
$171,504			$535,363	212
		Represented By -		
128,100	1	Investments	508,374	297
–	9	Accrued Income	62,894	*
43,404	2	Cash at Bank, etc	–	(100)
171,504			571,268	233
		Less - Creditors and		
–	10	Accrued Expenses	6,500	*
–	2	Cash at Bank, etc (Overdrawn)	29,405	*
–			35,905	*
$171,504			$535,363	212

\+ Deficiency in previous year - not applicable
* Nil in previous year - not calculable

K K Klugman, **PRESIDENT OF THE TRUST**

C L McKenzie, AASA, CPA **SECRETARY TO THE MUSEUM**

Date

Date

AUDITOR-GENERAL'S CERTIFICATE

The accounts of the Australian Museum Trust for the year ended 30 June, 1984 have been audited in accordance with Section 34 of the Public Finance and Audit Act, 1983.

In my opinion, the Statements of Financial Position, Changes in Financial Position and Financial Operations, read in conjunction with the notes thereto, comply with Section 41(4) of the Act and exhibit a true and fair view of the financial position at 30 June, 1984 and transactions for the year then ended.

SYDNEY,
10 October, 1984

J O'DONNEL, LL B FASA CPA
AUDITOR-GENERAL OF NEW SOUTH WALES

AUSTRALIAN MUSEUM TRUST
STATEMENT OF SOURCE AND APPLICATION OF FUNDS
CHANGES IN FINANCIAL POSITION
FOR THE YEAR ENDED 30 JUNE 1984

	1984 $
FUNDS WERE OBTAINED FROM -	
Consolidated Fund Appropriation -	
Working expenses	5,006,550
Statutory Endowment	140,000
Special Projects Subsidy	200,000
Australian Government Scientific Grants	218,740
Other Scientific Grants	345,918
Education/Exhibition Grants	492,200
Dinosaur Exhibition	266,579
Trading Operations	734,751
Interest	52,650
Special Programs	11,002
Peter Rankin Trust Fund	590
Coffee Shop Contribution to the Museum Trust	8,000
The Australian Museum Society	158,629
Other	98,473
	$7,734,082
FUNDS WERE APPLIED TO -	
Administration Activities	1,618,599
Educational Activities	419,050
Exhibition Activities	1,438,694
Scientific Research Activities	3,065,280
Trading Operation Activities	677,925
The Australian Museum Society	150,675
	$7,370,223
Increase in Monetary Assets	363,859
	$7,734,082

AUSTRALIAN MUSEUM TRUST
FINANCIAL OPERATION
FOR THE YEAR ENDED 30 JUNE 1984

1983 $	Notes		1984 $	Increase % (-)
		Revenue		
		Consolidated Fund -		
4,498,356		Appropriation for Working Expenses	5,006,550	11
		Grants -		
241,565	15	Australian Government	218,740	(9)
255,119	15	Other Scientific	345,918	36
182,788	15	Education/Exhibitions	492,200	169
		Trustees Accounts -		
125,000		Statutory Endowment	140,000	12
200,000		Special Projects	200,000	–
		Dinosaur Exhibition	266,579	•
471,310	3	Trading Operations	544,904	16
8,827	4	Special Programs	11,002	25
106,975	5	Other Income	147,733	38
3,232	11	Peter Rankin Trust Fund	2,666	(18)
84,410	12	Coffee Shop	199,161	136
159,862	13	Australian Museum Society	158,629	(1)
6,337,444			7,734,082	22
80,860				
		Expenses for Year Exceeded Revenue by		•
$6,418,304			$7,734,082	21

(Financial Operation) 1983 $		EXPENSES -	1984 %	Increase %(-)
		Working Expenses met from Consolidated Fund -		
3,538,819		Salaries and Associated Staff Costs	3,775,751	7
959,537	6	Maintenance and Working Expenses	1,230,799	28
		Grants -		
300,866	15	Australian Government	186,203	(38)
328,493	15	Other Scientific	418,822	28
246,417	15	Education/Exhibition	377,132	53
		Trustees and Special Accounts -		
67,948		Collection Acquisitions	87,176	28
102,313	8	Exhibitions	101,773	(1)
378,440	3	Trading Operations	493,070	30
107,104	4	Special Programs	153,268	43
5,600	14	Audit Fees	12,500	123
142,009	7	Other Operating Costs	196,224	38
906	11	Peter Rankin Trust Fund	1,975	118
67,016	12	Coffee Shop	184,855	176
172,836	13	Australian Museum Society	150,675	(13)
6,418,304			7,370,223	15
		Revenue for Year exceeded expenses by	363,859	*
$6,418,304			$7,734,082	21

*Nil in previous year - not calculable

ACCUMULATED FUNDS

Balance 1 July 1983 $		Additions (deductions) for year 1983/84 $	Balance 30 June 1984 $	Increase % (-)
159,966	Trust General Account	274,207	434,173	171
(25,574)	Trust Grant Account	74,701	49,127	+
14,582	Peter Rankin Trust Fund	691	15,273	5
9,743	Coffee Shop	(1,694)	8,049	(17)
12,787	The Australian Museum Society	15,954	28,741	125
$171,504		$363,859	$535,363	212

+ Deficiency in previous year - not applicable

ACCOUNTING POLICY

A. The accounts have been prepared on a modified accrual basis: i.e. income earned but not received and expenses incurred but not paid at 30th June, 1984 (where the amounts are material) are included in the Statement of Financial Operations and are shown as "Debtors" and "Creditors" in the Statement of Financial Position. In the previous year only those amounts actually received and paid during the year were brought to account. The exception to this is the Consolidated Fund which apart from its salary component, operates strictly on a cash basis.

B. For 1983/84 monies provided from Consolidated Fund and the funds of trustees and Special Accounts have been combined. In prior years, transactions on the Consolidated Fund, Trustees Funds, Peter Rankin Memorial Fund, Museum Shop and The Australian Museum Society were shown on separate statements. Figures for 1982/83 have been recast to allow comparison.

C. General Operating expenses of the Museum are met from Consolidated Fund.

D. The cost of employers superannuation contributions and payroll tax are met directly by the Treasurer and are not included in the Trust accounts.

E. Statement of changes in financial position shows the Source and Application of Funds - Salaries are easily categorised within activities as is the case with grant, sponsorship and other expenditure falling directly within an activity. However, other expenditure, because of its nature, has been allocated to activities on the basis most appropriate for the specific expenditure item, i.e., rent, has been allocated to activities on the basis of the usage of rented premises.

The Statement is provided as a guide to the manner in which funds are applied within the Organisation

F. The cost and current values of the following assets are not reflected in the accounts:
- land and building;
- plant and equipment, fixtures, fittings and furniture; and
- the Trust's collection of exhibits etc.

For insurance purposes, plant and equipment is valued at $650,000. The value of the Trust's collections, based on a 1981 valuation, stands at $76 million. No current valuation exists for land and buildings.

G. No allowance has been made within the accounts for depreciation of any buildings or other assets.

H. Long service leave and annual leave are paid by the Consolidated Fund when taken.

AUSTRALIAN MUSEUM TRUST
NOTES TO AND FORMING PART OF THE ACCOUNTS

1. Investments of the Australian Museum at 30 June comprised:

1983 $		1984 $
115,000	St George Building Society	-
10,000	Primary Industries Bank of Aust	10,000
3,100	National Australia Bank	1,086
-	Australian Savings Bonds	203,000
-	Capel Court Securities	294,288
$128,100		$508,374
	These Investments are held on behalf of:	
100,000	Trust Accounts	450,000
13,100	Peter Rankin Account	13,000
5,000	Coffee Shop	7,575
10,000	The Australian Museum Society	37,799
$128,100		$508,374

2. Cash at Bank, including cash advances, as at 30 June comprised:

1983 $		1984 $
34,392	Trustees Accounts	(23,094)
1,482	Peter Rankin Trust Fund	2,273
4,743	Coffee Shop	474
2,787	The Australian Museum Society	(9,058)
$43,404		($29,405)

3. Revenue and Expenses from Trading Operations for the year ended 30 June were:

1983 Revenue	1983 Expenses		1984 Revenue	1984 Expenses
105,358	124,987	"Australian Natural History"	118,475	139,097
10,494	3,972	Film Sales	6,662	-
79,732	59,502	Mineral Sales	1,636	1,181
1,700	800	Records and Memoirs of the Museum	4,440	-
265,669	188,601	Museum Shop	412,360	351,801
8,357	578	Other Trading	1,331	991
$471,310	$378,440		$544,904	$493,070

4. Revenue and Expenses on Special Programs for the year ended 30 June were:

1983 Revenue $	1983 Expense $		1984 Revenue $	1984 Expense $
1,885	10,483	Sunday at the Museum	850	3,432
3,409	-	Museum as a Venue	4,305	-
-	2,171	Education Programs	-	27,773
3,533	6,152	Conferences	5,847	9,169
-	3,493	Honoraria	-	1,439
-	11,801	Minor Grants and Research Grants	-	6,051
-	7,148	Scientific Assistance	-	16,536
		Contributions to -		
-	20,000	Lizard Island Research Station	-	30,000
-	2,515	Visiting Curator	-	28,260
-	42,341	Special Project Distribution	-	29,008
-	1,000	K L Sutherland Award	-	1,600
$8,827	$107,104		$11,002	$153,268

5. Other Income comprised:

1983 $		1984 $
-	Recoupment of Exhibition Expenses	23,167
21,603	Donations	11,140
40,586	Interest	49,260
9,750	Minor Grants	39
-	Transfer of Bird Gallery Sponsorship	22,848
35,036	Miscellaneous	41,279
$106,975		$147,733

6. Maintenance and working expenses met from Consolidated Funds comprised:

1983 $		1984 $
3,955	Meals	4,766
92,013	Rent and Rates	143,797
2,659	Maintenance	3,268
43,310	Travel	63,294
45,211	Motor Vehicle Running Costs	63,144
6,771	Freight and Cartage	16,259
92,015	Advertising	120,000
41,931	Books	51,771
60,752	Postal and Telephone	78,303
15,025	Fees for Services Rendered	34,927
95,563	Gas and Electricity	113,787
191,659	Stores	200,195
166,939	Printing	202,229
978	Laundry	1,526
33,183	Other Insurance	33,258
168	Minor Items	476
67,405	Major Plant and Equipment and other equipment for storage for Museum specimens	99,799
$959,537		$1,230,799

7. Other Operating Costs comprised:

1983 $		1984 $
	Advertising	34,606
2,743	Computer Fees	28,779
15,491	Entertainment	23,140
8,374	Printing	22,607
15,528	Travelling Expenses	17,378
673	Video Film Purchases	6,458
6,250	Visitors Survey	13,425
-	Trustee Travel	5,631
92,950	Miscellaneous	44,200
$142,009		$196,224

8. Expenses on Exhibitions comprised:

1983 $		1984 $
4,413	Aboriginal Gallery	48,125
7,090	Insect Gallery	18,244
876	Mineral Gallery	5,642
-	Temporary Exhibitions	9,944
1,345	College Street Foyer Refurbushing	6,108
13,123	Maintenance of Galleries	13,710
75,466	Other Exhibitions	-
$102,313		$101,773

9. Accrued Income at 30 June, 1984 comprised:

	$
Australian Government Grants	49,148
Interest from Investments	13,746
	$62,894

10. Creditors and Accrued Expenses.

Audit Fee for 1983/84	$6,500

11. Peter Rankin Trust Fund

The Peter Rankin Trust Fund for Herpetology is a fund which seeks to provide small grants-in-aid to young Australian herpetologists. The Fund makes awards annually to a total of approximately $1,000. Contributions to the invested capital of the Fund are continually being sought by the Committee overseeing the Fund.

1983 $		1984 $
	REVENUE	
1,419	Donations	530
1,813	Interest	2,076
-	Other	60
$3,232		$2,666
	EXPENSES	
906	Scholarships	1,971
-	Bank Charges	4
$906		$1,975

12. Coffee Shop

During the year the Coffee Shop was moved to the 6th floor (William Street Wing).

1983 $		1984 $
	REVENUE	
83,757	Sales Revenue	197,847
361	Interest	1,3114
292	Miscellaneous	-
$84,410		$199,161
	EXPENSES	
45,052	Purchase of Stock	98,190
19,089	Salaries	69,105
-	Durables	3,705
2,875	Sundries	4,527
-	Repairs and Maintenance	1,387
-	New Shop Refurbishing	7,941
$67,016		$184,855

13. The Australian Museum Society

The Society was established for the purpose of fostering public interest in natural history in the work carried out by the Museum.

1983 $		1984 $
	REVENUE	
33,024	Membership Subsciptions	32,329
23,371	Merchandising	15,437
6,285	Venues	11,245
90,336	Functions	86,980
6,846	Other	12,638
$159,862	TOTAL	$158,629
	EXPENSES	
37,447	Salaries and Honoraria	37,878
15,604	Office Supplies	13,336
317	Merchandise	7,339
96,399	Functions	75,461
23,069	Other	16,661
$172,836	TOTAL	$150,675

14. Audit Fee

1983 $		1984 $
5,600	Audit Fee for 1981/82 paid 1982/83	
-	Audit Fee for 1982/83 paid 1983/84	6,000
-	Audit Fee for 1983/84 included in accrued expenses	6,500
$5,600		$12,500

15. Receipts from major granting organisations and expenses incurred against those amounts, for the year ended 30 June, 1984 were:

1983 Receipts $	1983 Payments $		1984 Receipts $	1984 Payments $
		AUSTRALIAN GOVERNMENT		
50,421	58,944	Aust Biological Res Study	50,715	23,317
92,810	80,151	Aust Marine Science and Technologies Advisory Council	45,741	78,637
69,653	67,824	Aust. Research Grants Committee	50,529	38,718
16,681	45,344	National Employment Strategy for Aboriginals	58,622	36,007
12,000	48,603	Other	13,133	9,524
241,565	300,866		218,740	186,203
		OTHER SCIENTIFIC		
176,889	255,804	Lizard Island Research Station	125,188	178,353
48,739	50,473	National Photographic Index of Aust Wildlife	151,365	176,557
29,491	22,216	Other	69,365	63,912
255,119	328,493		345,918	418,822
		EDUCATION/EXHIBITION		
54,200	87,694	Education Programs	26,557	5,601
128,588	158,723	Exhibition programs	465,643	371,531
182,788	246,417		492,200	377,132

MUSEUM SHOP TRADING ACCOUNT
FOR THE YEAR ENDED 30 JUNE 1984

			$
Sales			412,360
Less	Cost of Goods Sold -		
	Opening Stock 1/7/83 (at cost)	106,623	
	Add: Purchases	316,552	
		423,175	
	Less: Closing stock 30/6/84 (at cost)	110,273	312,902
			99,458
Less:	Operating Costs -		
	Part time wages		35,249
Surplus			$64,209

Salaries totalling $41,026 for a shop manager and two sales persons who are within the permanent staff establishment and those salaries, which are met from Consolidated Funds, are not included in the operating costs.

COFFEE SHOP TRADING ACCOUNT
FOR THE YEAR ENDED 30 JUNE 1984

			$
Sales			197,847
Less:	Cost of Goods Sold		
	Opening Stock 1/7/83	410	
	Add: Purchases	98,190	
		98,600	
	Less: Closing Stock 30/6/84	1,762	96,838
	Gross Profit		101,009
Add:	Other Income - Interest		1,314
	TOTAL INCOME		102,323
Less:	Operating Costs		
	Salaries	69,105	
	Durables	3,705	
	Sundry	4,527	
	Repairs and Maintenance	1,387	
		78,724	
	Refurbishing Costs	7,941	86,665
Surplus			$15,658

ACCUMULATED FUNDS - COFFEE SHOP TRADING ACCOUNT

1983 $			1984 $
7,149		Balance as at 1 July	9,743
84,410	**Add:**	Surplus for the year	15,658
91,559			25,401
81,816	**Less:**	Distribution (Note i)	16,000
9,743		Balance as at 30 June (Note ii)	9,401

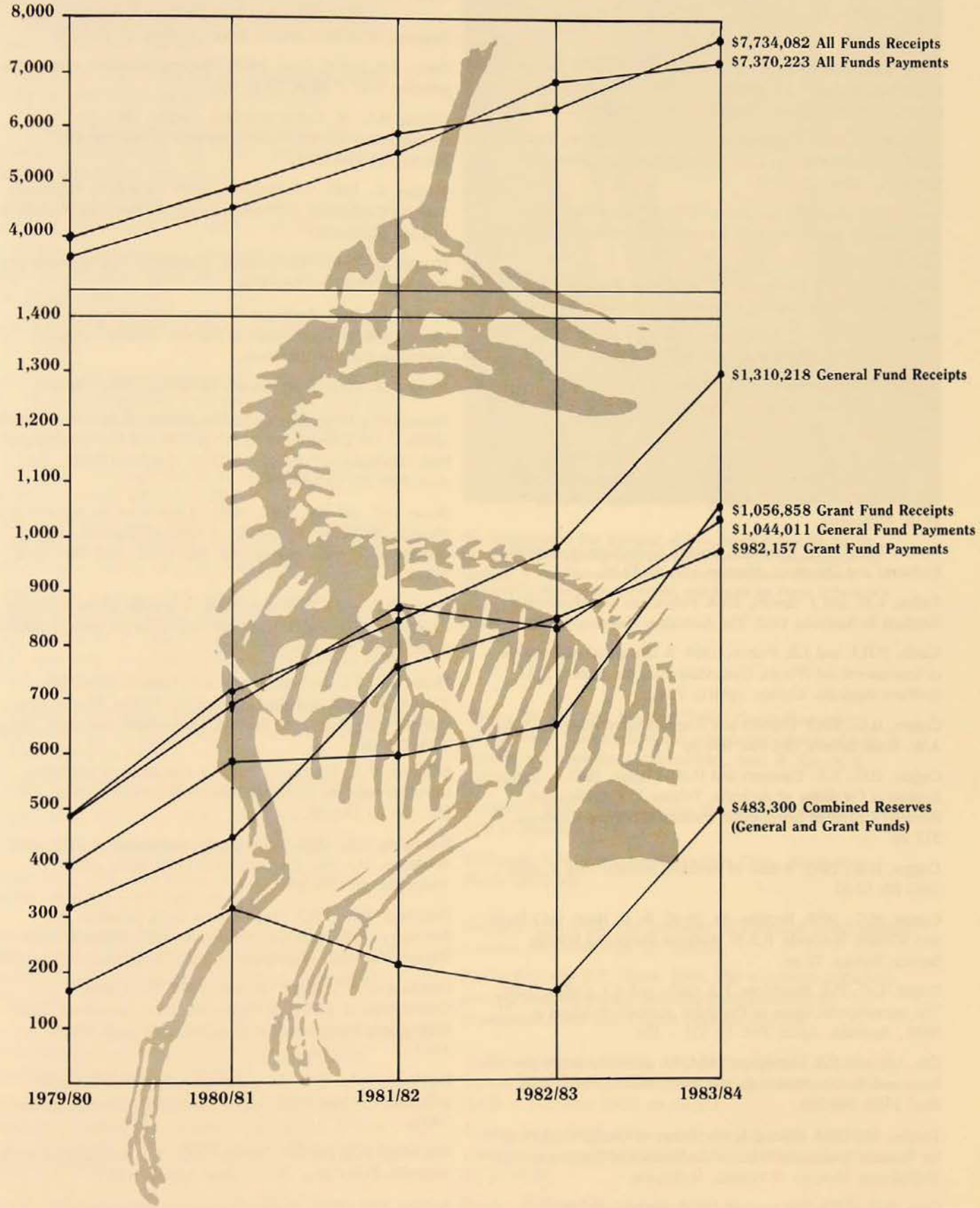
Notes

(i) Surplus funds are distributed on a 50/50 basis, between the Museum and The Australian Museum Society.

(ii) The valuation of stock on hand is not included in the Auditor-General's report. Hence, the reconciliation between this figure and the closing balance is as follows:

	Opening Stock (1/7/83)	$410
Less:	Closing Stock (30/6/84)	$1,762
Add:	Balance	(1,352)
		9,401
		$8,049

Australian Museum
Receipts and Payments/Combined Reserves



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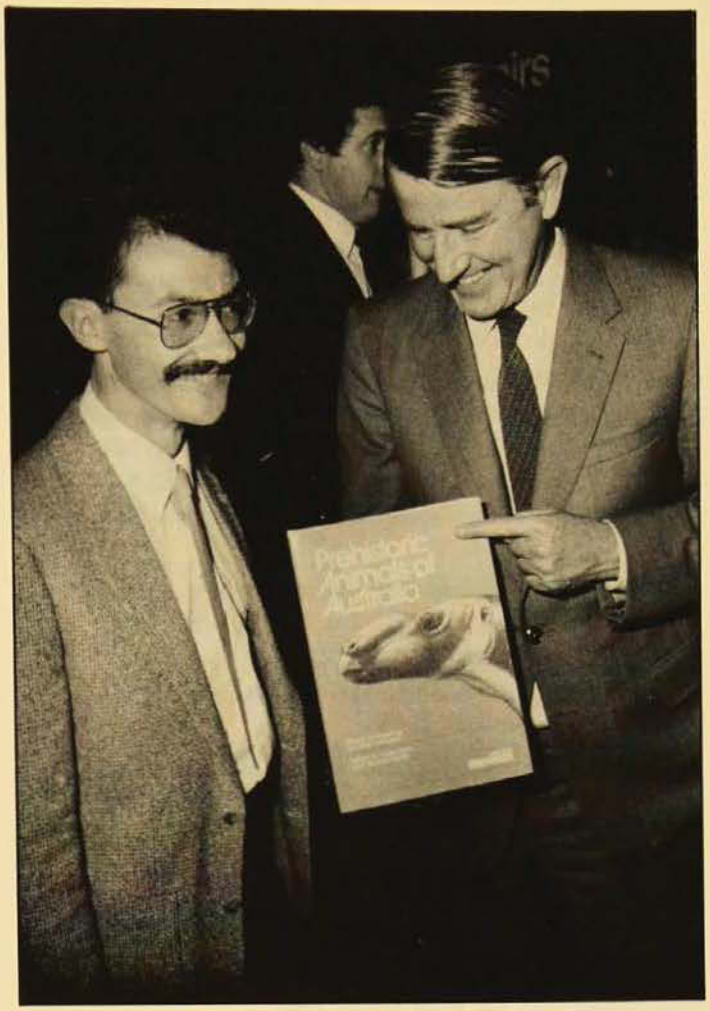

The Honourable, The Premier of New South Wales Mr Neville Wran, QC MP, chatting with the artist Mr Peter Schouten at the opening of the Dinosaurs from China Exhibition. The book 'Prehistoric Animals of Australia', was based on Peter Schouten's drawings.
Photo: John Fields

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Staff

DIRECTOR - D J G Griffin, MSc, PhD
DEPUTY DIRECTOR - H G Cogger, MSc, PhD

SCIENTIFIC ACTIVITIES

DIVISION OF ANTHROPOLOGY

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SENIOR RESEARCH SCIENTIST — R J Lampert, PhD, FAHA
SCIENTIFIC OFFICERS — D Losche, MA, M Phil, PhD, (part time) B Meehan, MA, PhD, (on contract from 11/83); J Rhoads, BA, PhD, (on contract from 10/83)
TECHNICAL OFFICERS (SCIENTIFIC) — L M Bolton, BA(Hons), Dip Mus Studies, P. Gordon, K Khan BA(Hons) Dip Anthrop, JP (half time); S Thomsett, BA(Hons), Dip Mus Studies (WPP from Oct 1983); Z Wakelin-King, BA(Hons), half time); G O'Donnell, BA(Hons)
TECHNICAL ASSISTANT — N Goodsell, BA
DIVISIONAL TYPIST — S Young
TEMPORARY ASSISTANTS — P Ikinger, BA (1/7/83-18/11/83, 16/1/84-30/6/84); M Lore,(SYC Scheme, 23/3/84-4/5/84); A Mattea, (student vacation temp. scheme, 23/1/84-17/2/84); F Duncan, M Thiedman BA (21/2/84) C Youden BA (WPP)
Aboriginal trainees (WPP) 3 months each N Slabb, P Close, N Gillon, M George, W Stanley, V Simon, M Harrison.

DIVISION OF EARTH SCIENCES

HEAD, DIVISION OF EARTH SCIENCES,
SENIOR RESEARCH SCIENTIST - A Ritchie, BSc, PhD

PALAEONTOLOGY

SENIOR RESEARCH SCIENTIST - A Ritchie, BSc, PhD
TECHNICAL OFFICER (SCIENTIFIC) - R K Jones, MSc
ASSISTANT - D Jones (to 8/8/83)

MINERALOGY AND PETROLOGY

SENIOR RESEARCH SCIENTIST - F L Sutherland, MSc, PhD
TECHNICAL OFFICER (SCIENTIFIC) - J E Hingley, BApp, Sc FGAA
TECHNICAL OFFICERS - R E Pogson BAppSc (Hons) - J Hollis, MSc PhD (to 25/11/83)
PART TIME STAFF - E Hepburn; M Gerber

DIVISION OF INVERTEBRATE ZOOLOGY

HEAD DIVISION OF INVERTEBRATE ZOOLOGY, SENIOR RESEARCH SCIENTIST - P A Hutchings, BSc (Spec Hons), PhD

ARACHNOLOGY

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TECHNICAL ASSISTANT - C A Horseman

CRUSTACEA AND COELENTERATES

SCIENTIFIC OFFICER - J K Lowry, MA, PhD
RESEARCH ASSISTANT - H E Stoddart, BSc (Hons)
TECHNICAL OFFICER (SCIENTIFIC) - R T Springthorpe, BSc

ECHINODERMS

SCIENTIFIC OFFICER- F W E Rowe, BSc (Hons), PhD, MIBiol, FLS
TECHNICAL OFFICER (SCIENTIFIC) - A Hoggett, BSc (Hons)

ENTOMOLOGY

SCIENTIFIC OFFICER - C N Smithers, MSc, PhD
SENIOR RESEARCH SCIENTIST - D K McAlpine, MSc, PhD, DIC
RESEARCH ASSISTANTS - K C Khoo, BSc (Hons) (1/7/83 to 10/12/83 and 2/3/84 to 23/3/84); M R Robinson, BAppScBiol (part time)
TECHNICAL OFFICER (SCIENTIFIC) - G A Holloway, BSc
ASSISTANTS - B J Day; B Duckworth

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PRINCIPAL RESEARCH SCIENTIST - W F Ponder, MSc, PhD
SENIOR RESEARCH SCIENTIST - W B Rudman, MSc, PhD
TECHNICAL OFFICERS (SCIENTIFIC) - I W Loch; B Jenkins (from 1/7/83)
TECHNICAL ASSISTANTS - P H Colman; L Mennes
RESEARCH ASSISTANTS - G J Avern, BSc DipEd; J Hall, BA, BSc(Hons) (to 26/8/83); D Winn, BSc (from 29/8/83); J Gillespie, BSc (from 29/8/83)

MARINE ECOLOGY

SCIENTIFIC OFFICER - A R Jones, MSc, PhD
TECHNICAL OFFICERS (SCIENTIFIC) - A Murray, BSc - G Serkowski
TEMPORARY STAFF - C Glasby, D Roberts, S Carter, P Harrison, C Kelly, G Skilleter

WORMS

SENIOR RESEARCH SCIENTIST - P A Hutchings, BSc (Spec Hons), PhD
TECHNICAL OFFICERS — L Bamber, BSc (from 2/4/84); G Serkowski, (25/7/83 to 16/8/83); L Walker, BSc (from 23/1/84);
RESEARCH ASSISTANTS
C Glasby, BSc (from 23/1/84); D Randal, BSc (to 18/5/83); J Van der Valde, BSc, (9/4/84 to 1/6/84); A Chapman, BSc, 24/8/83 to 16/3/84, part time from 4/84)
ASSISTANT — P Van der Made, (part time from 9/83)

DIRECTOR'S RESEARCH LABORATORY

RESEARCH ASSISTANT - H Tranter, BSc

DIVISION OF VERTEBRATE ZOOLOGY

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DEPUTY DIRECTOR'S RESEARCH LABORATORY
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J R Paxton, MSc. PhD
RESEARCH FELLOWS — J M Leis, BSc, PhD; G Stroud, BSc (Hons) (from 16/1/84)
TECHNICAL OFFICERS (SCIENTIFIC) — D Blake, MSc (to 1/10/83); D Brown, BA (on leave after 23/8/83); S Carter, BSc (from 23/8/83); M McGrouther, BSc (Hons); L Hodgson, BSc (Hons) (from 12/12/83); S Reader, BSc; D Rennis, MSc (on leave from 15/1/83)
RESEARCH ASSISTANT — J Gates, BA (from 1/1/84)

MAMMALOGY
TECHNICAL OFFICER (SCIENTIFIC) - L M Gibson
TECHNICAL ASSISTANT - D Jones

ORNITHOLOGY
TECHNICAL OFFICER (SCIENTIFIC) - W E Boles, BSE
ASSISTANT - D Jones (half-time from 8/8/83)

VERTEBRATE ECOLOGY
PRINCIPAL RESEARCH SCIENTIST - H F Recher, BSc, PhD
TECHNICAL OFFICER (SCIENTIFIC) - G Gowing, BSc (Hons)
SCIENTIFIC OFFICER - G Pyke, BSc (Hons), PhD
RESEARCH ASSISTANTS - D Bushells, BSc
T Armstrong, B Appl Sci M Brouwer, BSc

INTERPRETIVE ACTIVITIES
COMMUNITY RELATIONS
HEAD - P Pearce, Teach Cert., AAIM (from 21/11/83)
EDITOR - R Hughes, BSc (to 15/3/84); R Cameron (from 16/4/84)
PUBLICATIONS OFFICER - V Richmond, BSc (on leave); C Deacon, BSc (from 6/3/84)
PUBLICITY OFFICER - S White (to 3/8/83); L Whaite, BA (Comm), MPRIA (from 4/6/84)
ASSISTANT EDITOR (RECORDS) - A D Bishop, BSc (Hons) (to 10/1/84); L Hodgson, BSc (Hons) (from 12/3/84)
CIRCULATIONS OFFICER - J McIntosh
SHOP MANAGER - J Harty (to 11/11/84); M Dingle (from 16/1/84)
SHOP ASSISTANTS - M Zanotto (from 18/8/83); S Curry (to 8/6/84) P Sharpe (from 29/5/84)
SECRETARY - M Sindel (to 1/3/84); M Ingham (from 18/6/84)
TEMPORARY ASSISTANTS - J Mare; C Headford; T Dee; R Thorman

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EDUCATION OFFICER-IN-CHARGE - P M McDonald, BEM, BSc, MEd, FMAA
EDUCATION OFFICERS - C S Davey, BA, DipEd; Z Harkness (part time); G S Hunt, BSc, DipEd, PhD; J McLeod, BA, DipEd, DipSpecEd; S O Main, BA, DipEd; A L O'Neill,BAppSc, CertEd N J Pallin, BA (Hons), DipEd part time (from 27/3/84) M Zarmarian (14/11/83 to 20/2/84); A Skates, BA, DipTeach (from 9/4/84 to 15/6/84)
EDUCATION OFFICER (Special Project) - A Saunders, BA, DipEd
EDUCATION OFFICERS (Museum Train) - J M Bdevins, BSc, DipEd (to 6/4/83); S H Montgomery, BSc, Agr.
PREPARATORS - R C Inder; D B Millar; H White, DipIndDes (to 26/8/83)
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TYPIST/ASSISTANT - L Sullivan
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DESIGNERS - D Deklerk, Dip Art; G Ferguson, Dip Art (App Art); E Gillan, Dip Art (Graphic) (to 28/9/83); K Gregg; A Richards, Dip Visual Art (from 14/5/83); S Robinson, ASTC, Dip Design (Painting) (to 28/12/83)
MUSEUM ASSISTANTS - B Betts (from 22/5/84); M Brammer, Dip Art (Creative) (from 7/5/84); V Duncan (to 10/5/84); S Morris, Dip Art (Painting); A Pitman (from 7/5/84); J Powell, Dip Art (Interior); L Sattler.

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PREPARATORS - A Bowman (from 4/6/84); A Carpenter; M Dingley; S Gauntlett; B Horn; J Hood; O Keywan; T Lang; R Lossin; H Magor; E McLeod; R Moloney; T Ralph; M Robinson; (from7/6/84); R Scott-Child.

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TELEPHONIST - A Sommer
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CLERKS - E Hart (to 23/9/83); H Wass (from 26/9/83 to 28/10/83); J Brennan (from 31/10/83 to 2/12/83); F Cauchi (from 28/11/83); R Norris (from 3/1/84)
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ASSISTANT - F Burns

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July 83 - June 84

As well as the hundreds of volunteers who helped during the Dinosaurs from China Exhibition, the following people volunteered their services during the year. Much valuable work could not have been achieved without their assistance.

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Mineralogy and Petrology
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L Hopwood
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Crustacea and Coelenterates
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E Gavin
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R Ord
S Keable
P Ross

Echinoderms
H Broughton
M Rowe
B Marshall

Entomology
N Drydale
N Lavidis
B Lowmer
M Moore
W Calov

Malacology
S Bull
P Burton
M Christie
G Clark
G Davis
M Fletcher
H Hanneman
P Howarth
N Ireland
T Ireland
A Leroi
M Melville
E McCloughan
D Pearson
D Steggles
H Steggles
G Thornley
J Wise
J Woodhouse
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D Roberts
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A Farnham
M Roy
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A Meza
P McDonald
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M Wilson
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H Hines
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P Rowland
D Larkins
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H King

Vertebrate Ecology
M Brouwer
T Armstrong
D Denehy
L Albertson
S Smith
K Wesley
J Recher
J Recher
M Recher
B Ponsford
K Deleuca
R Wheeler
G Wallis
C Keily
K Brown
M Forney
C Murphy
D Secombe
A Chapman
G Osborne
R Hawkins
K Blofield
A Saleme
M Doyle
P Hickey
L Degail
M Thredman
L Majoor
S Freunal
J Capel
A Farnham

Community Relations
D Mordin
E Hepburn
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J O'Donnell
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A Sharpe
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E Fotiadis
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Photography
B Pulsford
A Pitman
R Gurnani-Smith

Library
W Setiawan
E Herchlev

Materials Conservation
N Turner
H Joynes
P Hinman
M Dunn
B Helm
L Fleischman
H Mole
L Hennessey
A Walsh

Photographic Index
E L Carthew
H J de S. Disney

TAMS Volunteers
H Verge, Volunteer Co-ordinator
J Cox, Membership Secretary
M Jones

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