

1959  
(SECOND SESSION)

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PARLIAMENT OF NEW SOUTH WALES

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REPORT OF THE TRUSTEES  
OF THE  
AUSTRALIAN MUSEUM  
FOR THE  
Year ended 30th June, 1959

BY COMMAND

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Frank W. Hill

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# ANNUAL REPORT

## OF THE TRUSTEES OF THE AUSTRALIAN MUSEUM

### For the Year ended 30th June, 1959

To His Excellency The Governor:

The Trustees of the Australian Museum have the honour to submit to Your Excellency their 105th Annual Report for the year ending 30th June, 1959.

During December, Mr. H. B. Mathews resigned from the Presidency of the Board of Trustees and Mr. Wallace C. Wurth, C.M.G., LL.B., was elected to the position in his stead. Mr. Mathews died on January 21st, and at their meeting on February 27th the Trustees asked that their deep appreciation of his long and valued services to the Museum be recorded. Mr. Mathews had been associated with the Museum since 1926, when, as Surveyor-General, he became an Official Trustee. In 1938 he was made an Elective Trustee and in 1946 Crown Trustee. He was elected President in 1945 and acted in that capacity continuously until December, 1958.

Mr. Frank B. Spencer, who had been an Elective Trustee since 1939, became Crown Trustee in April, and Mr. E. A. J. Hyde was elected in the following month to fill the vacancy on the Board.

The Trustees during the year have given consideration to the functions of their two Committees, the Finance and House Committee and the Scientific and Publication Committee, as set out in the By-laws (1944, No. 73) of the Australian Museum Act, 1902-1936. They have recommended that, instead of there being two separate Committees, there be instead a Joint Standing Committee with at least seven members, which shall meet monthly and assume the functions of both existing Committees.

#### THE NEW WING

In very many of our Annual Reports, extending over the past half century, we have drawn attention to the pressing need for additional accommodation for the Museum. In our previous Report we were able to announce that we had taken all the preliminary steps which were necessary for our building plans to be put into effect directly funds became available. It was, therefore, with the greatest satisfaction that we learnt early in the year that funds had been allocated and, in October, that a contract for the sub-basement and basement floors had been let to the firm of Moran and Pope, of Parramatta, for the sum of £115,750.

Excavations commenced in December, and by the end of June the concrete framework of both storeys had been completed. These two storeys will provide storage and laboratory accommodation and will result in the freeing for storage purposes of many rooms now used as offices, for which purposes they have been quite unsuitable.

It is our earnest hope that when the two floors now in course of construction have been built, it may prove possible for work to continue uninterrupted on the remaining upper storeys. With this in mind, we have asked the Public Works Department to arrange for the preparation of the necessary working drawings.

#### DEVELOPMENTS

Although the commencement of building operations has been by far the most notable event during the year, there have been several others which have marked the continued and progressive development of the Museum. Of these, special mention should be made of the re-opening of the Lecture Theatre. This took place on November 10th, when the Hon. R. J. Heffron, Deputy Premier and Minister for Education, unveiled a commemorative plaque and declared the Theatre named "The Hallstrom Theatre". In his speech Mr. Heffron expressed the gratitude and appreciation of the Trustees to Sir Edward Hallstrom for his magnificent gift, which made possible the re-conditioning of the Lecture Theatre.

Following the ceremony the guests inspected new exhibits and were entertained by the Trustees at supper in the Bird Gallery.

There have been no major changes in the public galleries during the year, as most of the time of the staffs of the Departments of Preparation and of Art and Design has been occupied in preparing two exhibits as part of the Museum's commemoration of the centenary of the publication of Charles Darwin's book, "The Origin of Species".

These two exhibits portray the relationships with each other of all groups of vertebrate and invertebrate animals, respectively. The former, which is being constructed in wrought iron, will stand at the head of the stairs leading from the entrance hall, and is expected to be finished during December, 1959. The latter, which is the most ambitious and complex display ever prepared at the Museum, was opened to the public on July 31st.



Other ways in which the Museum has commemorated this centenary have been the preparation of a poster entitled "Life Through the Ages", which, it is hoped will be circulated to schools, and of a special Darwin exhibit. This exhibit, as well as giving information about Darwin's life and work, showed a Galapagos Tortoise, letters written by both Darwin and Alfred Russel Wallace and some personal relics which had belonged to Darwin. The letters and relics were kindly lent to the Museum by the Linnean Society of New South Wales and by Professor E. Ford, O.B.E.

The practice of installing temporary exhibits of special interest in the entrance hall has been continued. Three such exhibits have been of Broken Hill minerals, Australian and New Guinea "Echidnas" and venomous spiders. One of the "Echidnas" was a magnificent specimen from New Guinea which had been presented to the Museum by Sir Edward Hallstrom.

### STAFF MATTERS

Mr. A. Musgrave, Curator of the Department of Entomology, died, following a heart attack, on 4th June. His death came as a severe shock, since he had been at work as usual on the previous day. Mr. Musgrave, who would have reached the age of retirement in 1960, joined the staff of the Museum as a cadet in 1910 and was appointed Curator in 1920. He did much to enhance the value and usefulness of the insect collections and, in particular, will be remembered for his notable bibliographical work. At the time of his death he had almost completed a Bibliography of Australian Arachnida and also the second part of his Bibliography of Australian Entomology. It is hoped that it will be found possible to publish both these works in the future.

As well as losing by death the valuable services of a member of the staff, the Trustees have also lost those of an Honorary Zoologist, Mr. C. F. Laseron, who died on June 27th. Mr. Laseron had for many years been a regular visitor to the Mollusc Department, and the Museum benefited considerably from his research work and the collections he had presented.

Miss P. McDonald, Education Officer, who has been granted leave of absence for 12 months to study teaching methods in overseas museums, left Sydney during December. Mr. J. Kirkpatrick, who has been appointed Assistant Education Officer, commenced duty during September.

Mr. H. G. Cogger was appointed Assistant Curator of Reptiles and Amphibians on March 1st, and Mr. S. Ross Cadet Preparator on February 9th. The following have resigned or retired during the year: Miss M. Fraser (Editorial Assistant), Miss P. Goodwin (Museum Assistant), Miss J. Paul (Clerical Officer), Mr. J. Stevens, Mr. C. James and Mr. P. Dove (Attendants). They have been replaced by Mr. P. Collis (Editorial Assistant), Miss R. Wilkinson (Museum Assistant), Mrs. M. Whitelegg (Clerical Officer) and Mr. T. Winner (Gardener/Attendant).

Mr. F. McLaughlin, who had been in charge of the Museum Office for three years, was transferred to the Head Office of the Department of Education in 1959, and has been replaced by Mr. L. Stomfal.

Previously there have been two categories of Honorary Museum Staff, of which the first were known as "Honorary Zoologists", "Honorary Ornithologists", etc., and the second as "Honorary Correspondents", both being elected for life. At a meeting of the Trustees held in July it was decided that those helping the Museum in an honorary capacity would be appointed for a period of five years only, and that the title of "Honorary Correspondent" would be replaced by "Honorary Associate".

During September, Mr. E. Troughton, Dr. A. Racek and Mr. C. F. Laseron were elected Honorary Zoologists, and Mr. L. Thomas, Mr. O. le M. Knight and Miss I. Bennett, Honorary Associates of the Museum.

A report on the Recruitment and Retention of Scientific Staff, which had been prepared by the Director and adopted by the Scientific and Publications Committee, as amended, was noted by the Board of Trustees and at their request was forwarded to the Public Service Board.

### RESEARCH

As well as continuing with the preparation of a monograph on a group of insects (leafhoppers) as represented in Australia and New Zealand, the Director has studied and described some interesting sucking bugs (Peloridiidae) collected on Lord Howe Island.

The Deputy Director, Mr. H. O. Fletcher, has studied Devonian fossils collected in this State.

Mr. McNeill has continued with his work on the Decapoda collected by the British Great Barrier Reef Expedition.

Mr. McCarthy has made studies of rock engravings in north-western Australia and, in collaboration with Professor N. W. G. Macintosh, of the archaeology of Mootwingee, New South Wales.

Mr. Chalmers has undertaken X-ray diffraction studies with numerous samples of Prospect minerals, and, in collaboration with Dr. J. W. Lovering, has made an examination of glass from Hughenden which had been supposed to be of natural and meteoritic origin.

The late Mr. Musgrave continued with the preparation of the bibliographies of Australian Arachnida and Myriapoda, Australian and Pacific Islands entomology and a Catalogue of Australian spiders.



Miss Pope has done further work with barnacles and, in collaboration with Miss I. Bennett, has prepared for publication a paper on inter-tidal zonation in Tasmania.

Dr. Keast has continued with his investigations of speciation and zoogeographical problems in birds and reptiles and of the adaptive modification of birds to their seasonal cycles.

Dr. McMichael, as well as working on helecoid land snails from New Guinea, has studied a rare shell-less freshwater gastropod, *Acochlidium*, related to nudibranchs.

Mr. Marlow has investigated the reproduction and development of the Yellow-footed Marsupial Mouse (*Antechinus flavipes*).

Mr. McAlpine has made a study of the Dipterous family Hecomyzidae and of some other families of flies.

Mr. Cogger has completed a Guide to the Frogs of New South Wales, and has studied the Australian representatives of the lizard family Agamidae and some ecological problems associated with lizards in the genus *Egernia*.

### FIELD WORK

During March the Director spent 10 days on Lord Howe Island. The purpose of his visit was to search for an insect of exceptional interest which was known to occur there, as a single immature specimen had been found on the island some 30 years ago.

The insect belongs to a group of primitive sucking bugs (Peloriidae) which have also been recorded from Chile, New Zealand, Tasmania, Southern Victoria and the Macpherson Ranges in southern Queensland. The search was successful and representatives of two new species were discovered on the summit of Mt. Gower.

Mr. Fletcher, in company with officers of the Geological Survey, spent three weeks examining fossil outcrops in the West Darling Districts and a short period in the neighbourhood of Cooma, collecting Upper Silurian brachiopods and Ordovician graptolites.

Mr. McCarthy spent July and August in Western Australia, studying rock-engravings at Port Hedland and elsewhere. His visit was made possible by a grant received from the Wenner-Gren Foundation for Anthropological Research in New York. During November he spent a week assisting with the excavations of two rock shelters at Glen Davis, both of which yielded Bondaian culture material of particular interest. Mr. McCarthy also made several short excursions for the purpose of examining rock paintings.

During September Dr. Keast and Dr. McMichael travelled to the MacDonnell Ranges in Central Australia for research and collecting purposes. They were accompanied on the expedition by Mr. A. Newsome, Biologist to the Northern Territory Administration.

Dr. Keast, accompanied by Mr. Mackay, who is in charge of the Preparation Section, also made several visits to western New South Wales in connection with his studies of the effect of rainfall on the times of breeding of birds. The opportunity was taken of collecting numerous lizards and burrowing frogs.

Mr. Chalmers, accompanied by Mr. O. le M. Knight, an Honorary Associate of the Museum, who generously provided the transport, spent three weeks in the New England district, New South Wales, collecting minerals at several old mining localities.

During April Mr. Marlow, accompanied by Mr. Mackay and by Mr. G. B. Sharman, of the University of Adelaide, went to South Australia to collect material of the Hairy-nosed Wombat. These animals, though still fairly plentiful in parts of South Australia, are very possibly extinct in this State.

Although not strictly in the category of field work, other travelling by members of the staff on Museum business has included the attendance of the Director, Mr. Chalmers, Dr. Keast and Dr. McMichael at the meeting of the Australian and New Zealand Association for the Advancement of Science, which was held in Adelaide during August, and the attendance of the Director at the meeting of the UNESCO Museums Committee, which was held at the National Museum of Victoria in April. The Director also attended the Interstate Fauna Conference in Sydney during November.

Mr. Mackay spent periods at both the South Australian and National Museums studying techniques of museum preparation.

### PUBLICATIONS

Outstanding among the Museum's publications during the year was "Exploring Between Tidemarks", by Elizabeth C. Pope and Patricia M. McDonald. This 45-page booklet, containing 50 illustrations, has had a particularly good sale to schools and students.

A fifth edition of "Australian Aboriginal Decorative Art" and a third edition of "New South Wales Aboriginal Place Names and Euphonious Words, with their Meanings" both by F. D. McCarthy, Curator of Anthropology, were published.

Vol. xii of "The Australian Museum Magazine" was completed with Nos. 11 and 12, the latter being a special New Guinea issue. The Index to Vol. xii was published. In Nos. 1 and 2 of Vol. xiii, which were also published, improvements in layout and general appearance and new headline and body types were incorporated. The Trustees express their thanks to outside contributors to the magazine.



Efforts to increase the magazine's circulation, especially among the schools, have had encouraging results and the number of copies printed has been increased from 2,250 to 2,400.

Six parts of the Records of the Australian Museum—Nos. 10, 11, 12, 13, 14 of Vol. xxiv and No. 1 of Vol. xxv were published during the year. Nos. 2 and 3 of Vol. xxv and the Index to Vol. xxiv are with the printers.

Four new leaflets on natural history subjects have been published, and four existing leaflets revised and reprinted. Four new and 12 revised leaflets are at the press. The Museum now has 56 leaflets available to the public, all but two of which are free.

Eight thousand folders giving information about Museum publications and containing subscription forms for the magazine have been printed for distribution to likely purchasers.

As well as the articles they have contributed to the Museum Magazine, the following scientific papers by members of the staff were published during the year:—

Evans, J. W., Insect Distribution and Continental Drift, *Continental Drift—A Symposium* p. 134. Hobart, 1958. Fletcher, H. O., The Permian Gastropods of New South Wales, *Rec. Aust. Mus.* 24 (10): 1958. Keast, J. A., The Influence of Ecology on Variation in the Mistletoe Bird, *Emu* 58: 195. Seasonal Movements and Geographic Variations in Australian Wood-Swallows, *Emu* 58: 207. Intraspecific Variation in Australian Finches, *Emu* 58: 219. The Genus *Psophodes* Vigors and Horsfield and its significance in demonstrating a possible pathway for the origin of Eyrean species from Bassian ones., *Emu* 58: 247. Geographic Variation in the Weebill, *Smicrornis brevirostris*, a sedentary species with a continuous range, *Aust. J. Zool.* 6: 152. Variation and speciation in the Australian Campephagidae, *Aust. J. Zool.* 6: 248. McCarthy, F. D., Cave Art of the Conjola District, *Rec. Aust. Mus.* 24 (13), 1959. Records of the Rock Engravings of the Sydney District Pt. 2., Cumberland County, *Rec. Aust. Mus.* 24 (14), 1959. The Role of Australian Museums in Anthropology, *Mankind*, 5: 262, 1958. McMichael D. F., the Nature and Origin of the New Zealand Fresh-Water Mussel Fauna, *Trans. Roy. Soc. N.Z.* 85: 427. A New Tree Snail from North Queensland, *J. Malacological Soc. Aust.* 2: 41. Marine Mollusca of Eastern Australia, the Genus *Cymbiolacca* Iredale, *Aust. Zool.* 12: 374, (with I. D. Hiscock) A Monograph of the Freshwater Mussels of the Australian Region *Aust. J. Marine and Freshwater Res.* 9: 372. McAlpine, D. K., A Key to the Australian Families of Acalyptrate Diptera, *Rec. Aust. Mus.* 14 (12): 183. Marlow, B. J. A Survey of the Marsupials of New South Wales, *C.S.I.R.O. Wildlife Research* 3: 71, 1958. Whitley, G. P., Ichthyological Snippets, *Aust. Zoologist* 12: 310, 1959; (with Joyce Allan) The Sea-horse and its Relatives, Georgian House, Melbourne, 1958.

## LECTURES

The Lecture Theatre was closed for alterations during the whole of the winter of 1958, consequently no Popular Science Lectures were given. The series was resumed in 1959, and the Director gave a lecture in May on "The Life and Work of Charles Darwin" and Mr. M. Meggit M.A., of the Department of Anthropology of the University of Sydney, one in June on "Native Society in the New Guinea Highlands".

As usual, many lectures to outside organisations were given during the year by several members of the staff.

## INQUIRIES

Very numerous inquiries from members of the public and from scientific workers were received during the year. These dealt with a wide variety of matters and indicate that the Museum is being increasingly referred to as a centre of information. As well as the many hundreds received direct by Curators, approximately 700 addressed to "The Museum" were channelled through the Public Relations Officer. This is nearly double the number received in the previous year.

Because of the death of a child from a Funnel-web Spider bite, requests for the identification of spiders were particularly numerous during the summer months. A special exhibit showing the characteristics of the Funnel-web Spider was installed in the front hall and an appeal was made through the press asking inquirers to refer to this rather than submit specimens to the Museum. This was because it was found impossible to cope with the very large number of specimens received.

The Main Roads Board was given advice on the treatment of marine growths in culvert drains near the foreshore. Information on stinging marine organisms and on the edibility of various sea animals was given to many inquirers. Interest in the "farming" of earthworms continues, as indicated by the numerous requests for information on this subject which have been received. One query, from the United States, sought information on the possibility of obtaining a supply of giant Australian earthworms for breeding purposes.

As well as many requests for identification received from the State Department of Agriculture, information has been sought by such Departments in other States. For example, the Vermin Control Officer in Perth inquired concerning the role of finches as pests of crops.

Assistance has been given the Film Division of the Department of the Interior in connection with the preparation for the Department of Education of a film on "Camouflage and the Nesting of Birds."



An increased number of requests for information on building stones has been received both from architects and engineers.

### CO-OPERATION

Once more the Trustees have pleasure in acknowledging the assistance given to the Museum in many directions, both by scientific workers and members of the general public. Particular thanks are due to Sir Edward Hallstrom, not only for his gifts of valuable material to the collections, but also for his ever-ready desire to assist the Museum in any way when called upon.

Thanks are also due to Miss Joyce Allan and Mr. T. Iredale, both of whom are former members of the staff and now Honorary Zoologists and who continue to assist in the Shell Department.

Mr. L. Thomas has continued with his work on Bryozoa, and help has been given by amateur naturalists with the shell, frog, lizard and snake study collections. Mr. O. le M. Knight (Honorary Associate) has been of assistance to the Museum in many directions, in particular by providing transport for a field excursion undertaken by the Curator of Minerals.

Co-operation of another kind also merits mention. During the year a Sub-committee of the Trustees, comprising Professor Elkin, Mr. Vickery and Mr. Kenny, met with the Director to inquire into Museum insurance cover and presented a report to the Trustees. Committees of members of the Museum staff have investigated library and storage needs and fire precautions and in all instances have presented useful and helpful reports.

Many gifts to the Museum collection are mentioned in the various departmental reports, but there are three, in particular, which require special notice. Mr. C. T. Brady, New York, has presented a mounted photo exhibit entitled "The Native Art of the North-west Coast of America"; Mr. Justice Myers has presented a considerable quantity of coloured transparencies of natural history subjects, and a Trustee, Mr. O. G. Vickery, has once more made a gift which has made possible the purchase of educational films.

Although the Museum, for administrative purposes, is attached to the Department of Education, and one of its two Education Officers is seconded from the Department, it was considered that increased use might be made of Museum facilities by schools and that it would prove helpful to the Museum if a Liaison Officer with the Department were appointed. Following an approach to the Director-General of Education, Mr. J. Buggie was appointed to the position.

There are very few museums in country centres in New South Wales, and the Australian Museum is always anxious to encourage their development. A few years ago a display exhibit was presented to the Lismore Museum, and during the past year a gift of aboriginal material and of mounted bird specimens has been made by the Trustees to the Armidale Museum.

### MUSEUM BUILDINGS AND GROUNDS

Considerable progress has been made during the year with the renewing of copper sheeting on the South Wing roof. The three lantern lights have been covered and work is proceeding with the gutters, sumps and flat roofs. The rate of progress is slow because of the nature of the work and because it must be kept covered and water-tight during all operations. The Public Works Department is to be commended on the excellence of its work in both instances. It is expected that this work will occupy most of the next financial year.

The roof of the wing facing College Street has given no trouble during the year, but some leaks have developed in the glass roof and iron roofs of the northern wing.

An inspector from the Public Works Department has measured the glass roof over the Invertebrate Gallery following a request that the glass be replaced with copper. This matter is still under consideration.

During the year the interior of the Office Block has been painted.

The lighting programme has progressed considerably during the year. Fluorescent lighting has been installed in all workshops and offices of the South Wing, the Spirit House, the Library, including the basement library and publications room, and in the Invertebrate Tree. This work has been carried out by the Public Works Department.

The Lecture Theatre, which has been re-conditioned through the generosity of Sir Edward Hallstrom, has also received special attention with regard to lighting and is now very satisfactorily illuminated.

Requests have been made for the lighting of the main stairways, the Vertebrate Tree, the Upper Bird Gallery and the Coin Cabinets. The obliteration of natural light in the galleries has begun with the covering of the lantern lights of the South Wing. This has shown the benefit of controlled lighting, and further steps have been taken to exclude all natural light from the Bird and Fish Galleries. Details of this work are with the Government Architect's Department.

During the renovations of the Lecture Theatre considerable improvements were carried out. The floor was raised five feet, acoustic materials were fitted to a great part of the walls and projection box, natural light was excluded and new seating for 55 persons was installed.



Carbon dioxide fire extinguishers have been distributed throughout the Museum, with the exception of galleries, timber rack and lift room, where a more appropriate type is available.

An inspection of the Museum building has been made in order to estimate the cost of installing a system of thermostatically controlled fire alarms.

### VISITORS AND ATTENDANCES

During the year 323,625 people visited the Museum. Scientific visitors who have come to study the collections or consult with Curators, and who are always particularly welcome, have been numerous. A departure has been marked by an American Fulbright Fellow, Mr. D. Francois, M.Sc., having chosen to spend the whole of his year's period of overseas study at the Museum investigating the crayfish fauna of New South Wales. It is hoped that when proper laboratory accommodation becomes available in the new building many visiting scientists will be able to take advantage of the facilities offered and will spend extended periods of study here, since their influence is almost invariably stimulating and generally beneficial.

Extended periods of study have also been spent at the Museum by Dr. R. Bolin, of Stanford University, and Mr. J. Vigeland, of Oslo Museum, Norway. Professor M. R. Sarkar, of Dacca University, Pakistan, spent six weeks at the Museum during August and September studying museum methods and organisation, and Mr. C. Soury, of the University of New England, spent a fortnight in the Preparators' Workshop during May gaining experience in techniques.

Other scientific visitors have included the following: Dr. P. O. Pesson (University of Lund); Dr. R. Brunneschweiler (Timor); Dr. R. A. Stirton and Mr. R. Tedford (University of California); Professor A. H. Voisey (University of New England); Professor B. Kessel (University of Alaska); Dr. T. Gillyard (American Museum of Natural History); Professor M. Britten (Sacramento State College); Professor D. Farmer (Washington State College); Dr. L. Grinnell (Cornell University); Professor A. J. Marshall (Honorary Zoologist, St. Bartholomews Hospital); Professor C. D. Michener (University of Kansas); Mr. E. F. Riek (C.S.I.R.O., Canberra); Mr. B. Wood (New Zealand Geological Survey); Dr. H. Nininger (Arizona Meteorite Museum); Dr. J. MacAndrew (C.S.I.R.O.); Mr. V. Van Deusen (American Museum of Natural History); Dr. I. D. Hiscock (University of Queensland); Miss Virginia Orr (Philadelphia Academy of Science); Dr. G. F. Mees (Western Australian Museum); Dr. Hans Fischer (Museum fur Volkerkunde, Hamburg); Professor Ruggles Gates; Dr. A. Spoehr (Director, Bernice P. Bishop Museum, Hawaii); Monsieur Barbey (Museum d'Ethnographie, Geneva).

### FINANCE

Expenditure from Consolidated Revenue for the year (excluding Statutory Endowment of £1,000) was £69,331 3s. 9d., compared with £64,483 12s. 8d. last year. Net expenditure from Trustees' Account Funds (including Statutory Endowment) was £7,869 7s. 4d., compared with £5,089 4s. 2d., for 1957-58.

The cash balance in the Trustees' Account at 30th June, 1959, was £1,941 12s. 2d. Trustees' Invested Funds at 30th June, 1959, were: Commonwealth Inscribed Stock £1,750; Commonwealth Special Bonds £3,500; Sydney County Council £1,000; Metropolitan Water, Sewerage and Drainage Board Inscribed Stock £2,500; Commonwealth Savings Bank £360 8s.

A statement of Receipts and Expenditure for the year is contained in Appendix A.

### DEPARTMENTAL REPORTS

**Fossils** (H. O. Fletcher, M.Sc., Curator).

Registrations for the year comprised 928 specimens.

*Transferred* from the Mining Museum or presented by the Geological Survey of New South Wales: a collection of plant remains, including well preserved specimens of many species from Triassic and Jurassic rocks in the Grafton, Lismore and Nymboida districts; a series of rare lepidodendroid stems from Upper Devonian rocks at Callo Point, 11 miles south of Bermagui; a collection of brachiopods from Mingary Mountain, near Tumut; graptolites of Ordovician age from near Bermagui; brachiopods and trilobite remains from rocks of Upper Silurian age near Illabo.

*Presented*: a series of perfectly preserved specimens of *Amphelissa isisensis* Eth., a rare gastropod, from Middle Devonian rocks at the Isis River (Mr. C. J. Ivin); a large collection of Upper Devonian and Permian fossils (Mr. W. Nicholls); nine Type specimens of species of Glossopteris from the Upper Coal Measures, Permian, at Belmont (Dr. A. B. Walkom); a perfect specimen of *Brookvalia parvisquamata* Wade from Middle Triassic rocks at Brookvale and a series of the rarer fishes from Jurassic rocks at Talbragar (Dr. R. T. Wade); the Holotype of *Sphaerexochus mirus*, an Upper Silurian trilobite, from Yass (Geology Department, University of Sydney).

*Collected*: A large collection of Lower Devonian fossils, mainly brachiopods and pelecypods, from a number of localities in the Cobar district; linguloid genera, new to Australia, from Upper Devonian rocks of the Gnalt Formation in the Mootwingee Ranges; Upper Silurian brachiopods and Upper Ordovician graptolites from the Cooma district.



During the year the cataloguing of the invertebrate collection of fossils proceeded. The complete collection of Tertiary gastropods has been sorted, catalogued and indexed. Work is proceeding on the sorting of the already catalogued brachiopod collection, and a start has been made on cataloguing the collection of Tertiary pelecypods.

Assistance given to scientific workers has included the preparation of latex moulds and photographs of specimens of an Upper Devonian fish, *Bothriolepis*, from near Canowindra, for Dr. E. S. Hills, University of Melbourne. Photographs of the type material of *Cimoliosaurus*, from White Cliffs, were sent to Dr. Pesson, University of Lund, Sweden.

Specimens were forwarded on loan to Mr. G. M. Philip, University of Melbourne; Dr. K. Campbell, New England University, Armidale; Dr. K. Glenister, University of Western Australia; Mr. J. M. Dickins, Bureau of Mineral Resources, Canberra; and Mr. B. Engel, Newcastle University College.

Specimens of fish from the Triassic rocks of New South Wales were presented to the British Museum (Natural History).

Five specimens of *Maccoyella recurvata* Waterhouse, from Upper Jurassic or Lower Cretaceous rocks at Kahikatea, New Zealand, were received on exchange from New Zealand Geological Survey.

Dr. P. Coleman, University of Sydney, has returned a large collection of Permian brachiopods. The material, which formed the basis of a research paper, now includes a number of Type specimens.

Mrs. Kathleen Sherrard identified graptolite material, and her reports were forwarded to the Government Geologist. She has also prepared a paper on pelecypods, which were lent to her, from Upper Silurian rocks at Yass.

The Curator, who continues to act as Honorary Palaeontologist to the Geological Survey of New South Wales, has reported on fossil collections submitted by officers of that department.

Approximately 150 inquiries were dealt with, including the identification of a large number of fossils.

#### **Crustacea, Coelenterata and Other Groups (F. A. McNeill, Curator).**

During the year a total of 607 specimens has been entered in the Department's registers, card catalogued and incorporated in the reference study collection.

Acquisitions during the year included a number of valuable collections, among them many species not previously represented. Those meriting special note are as follows: species of Portunidae, including Type specimens which formed the basis of several published reports on the family by W. Stephenson, University of Queensland; the entire material of Decapoda-Brachyura on which Mr. W. Patton, Fulbright Scholar, University of Queensland, has written a paper dealing with Crustacean association with living coral growths, among them some genera and species new to the Australian fauna; a series of troglitic decapod shrimps (the first record from Australia), collected by Mr. A. Snell in freshwater wells, North-west Cape, Western Australia, and forwarded for critical examination and report to Dr. L. B. Holthuis, Leyden Museum, Netherlands; examples of the rare, worm-like *Phoronis* and its host anemone, *Cerianthus*, collected in Port Jackson by an aqualung diver, Dr. P. Groves; named species of Alcyonaria reported on in the results of the Percy Sladen Trust Expedition to the Abrolhos Islands, received from the effects of the late Professor W. J. Dakin.

The large balance of named freshwater crayfish (Parastacidae) previously presented by Mr. E. F. Riek has been registered, catalogued and stored in the reference collection.

All of the spirit-preserved reference study collections have been checked twice during the year.

An exchange of freshwater crayfish (Parastacidae), instituted by Mr. D. Francois (Fulbright Scholar) and Mr. E. F. Riek during a visit to the National Museum, Melbourne, has added to the already extensive representation of the family by the addition of a number of species not previously included in the collection.

Loan material of the family Portunidae (Swimming Crabs) has been returned by Professor W. Stephenson, University of Queensland, after examination and report.

A collection of invertebrates was named for the Biology Department of the University of New South Wales.

At the request of the National Museum, Melbourne, a critical identification was made of an extensive collection of Decapod Crustacea, in connection with a survey of the bottom fauna of Port Phillip.

Identification of a number of unusual shore-line Decapoda from the Brisbane River has been made for Mrs. B. Snelling, University of Queensland, in connection with a study of local ecology.

A number of representatives of the Branchiopoda has been presented to the School of Zoology, University of Sydney, for use as teaching material.

Dr. P. Heegaard, University of Indonesia, has returned a large loan collection of parasitic Copepoda on which he has based a report to be submitted for publication in the Records of the Australian Museum.

A total of 181 inquiries of both a general and technical nature have been answered during the year.



Mr. L. Thomas, Associate of the Museum, has worked in the Department on the revision of the named and unnamed reference study material of Bryozoa and Scleractinian corals. His voluntary work has greatly enriched the value of the collections.

#### Worms and Echinoderms (Elizabeth C. Pope, M.Sc., Curator).

Besides specimens presented by members of the public and collected by the Curator, the following notable specimens have been added to the collections: Flatworms described by Dr. Libbie Hyman in the Records of the Australian Museum, including seven Holotypes with four genera new to the collection; the Holotype and a Paratype of *Trichostrongylus trepaniformis* (Mr. Sommerville, C.S.I.R.O.); two fine specimens of *Bonellia* from near Manly, N.S.W., the first specimens from temperate seas in the collection (Mr. E. de Villa); several flatworms with their eggstrings and colour notes of living specimens (Mr. A. Healy); a large collection of nereid worms from Western Australia (Mrs. P. Mather); a series of Microslides of 18 species of Haemogogarines and Trypanosomes, including three Types and 15 Cotypes (sent by Miss M. Angel from the collection of the late Professor T. Harvey Johnston); a collection of stalked barnacles from Macquarie Island (lodged for safe keeping by the A.N.A.R.E. authorities); a live *Heteralepas* sp. taken by skin divers of the Underwater Research Group four miles off Sydney in 210 feet; a collection of 15 genera of sponges taken by skin-diving off Fairlight (Mr. E. de Villa); some rarer Queensland echinoderms from near Heron Island, the most notable of which was the sea star *Anacthaster brevispina*, which is a first record for Australian waters (Sydney University Biological Society, per Miss I. Bennett). Other notable specimens providing records considerably extending known ranges are the Sea Urchin *Diadema setosa*, from Middle Harbour, Sydney, and *Salmacis* (Mr. A. Healy and Mr. A. N. Sinclair, respectively), and eight tropical species of sea-stars from Heron Island, Queensland, and eight brittle stars, including the comparatively rare *Opiathrum pictum* (Mr. K. Gillett).

Loans of material were made to Dr. S. Edmonds of South Australia (*Pseudobonellia*), Dr. H. B. Fell, of New Zealand (*Goniocidaris turbaria*), and Dr. A. A. Racek of the New South Wales State Fisheries (Freshwater sponges).

Specimens were named for Dr. E. P. Hodkin of Perth (Cirripedes from Mauritius); for Mr. K. Gillett (Echinodermata), and for Miss Macpherson of the National Museum of Victoria (cirripedes and annelids). In addition, many routine identifications were made for members of the public. The Ascidian collection has been re-spirited. The large barnacle collection has been sorted, identified and labelled, and data recorded in a card catalogue. Thousands of specimens were involved in this work, and about one-third of the collection still remains to be worked.

#### Fishes (G. P. Whitley, Curator).

Eight hundred and fifty-nine specimens were registered from every State of the Commonwealth, Lord Howe Island, New Guinea, New Caledonia, the New Hebrides, Philippines, New Zealand and the Mediterranean. The Heron Island (Queensland) collection from Mr. R. Slack Smith, referred to in last year's report, has been registered and identified, and new species therein described. Other noteworthy accessions were: Regular batches of small or larval fishes from Collaroy, New South Wales (Mr. P. Colman), useful for life-history studies; freshwater fishes from New South Wales (Fisheries Branch, Chief Secretary's Department), New Guinea (Mr. N. Blood) and coastal Northern Territory fishes (Mr. C. W. Holman). A further collection of New Caledonian fishes from Dr. R. Catala has still to be identified and registered. Interesting fishes have been received from Dr. A. Racek's prawn trawl surveys in deep water.

Little progress has been made in distributing the arrears of accumulated specimens in the Spirit House, where the installation of fluorescent lighting has resulted in improved working conditions. Tanks have been checked and replenished and the collections are in good order. Fish skeletons, previously cared for by the Curator of Mammals, have been transferred to the Department of Fishes.

The new fish gallery is open to the public and, although there is still much work to be done to complete the exhibits, steady progress has been maintained.

Many hundreds of inquiries and a large volume of correspondence have been dealt with for official and public inquirers, both local and overseas. Information on food fishes has been supplied to the Customs and the Health Departments. The University of New England inquired about fishes in the Greek classics.

A named series of Queensland fishes was sent to Mr. K. de Witte and 13 specimens of myctophidae were presented to Professor R. Bolin. A small series of unusual fishes was sent to the Smithsonian Institution by way of exchange. Sharks were lent to Mr. J. Garrick, Victoria University College, Wellington, New Zealand; stargazers to Dr. G. F. Mees, Perth, and collections of *Parapercis* spp. from Australia and the Pacific Islands and some hatchet fishes (*Polyipnus*) were sent to the United States National Museum for study by Mr. G. Cantwell and Professor L. P. Schultz, respectively. A paratype of a Goby, lent to Professor J. L. B. Smith, Grahamstown, South Africa, was safely returned.

After the death of the one-time Museum Librarian, W. A. Rainbow, his manuscript notes on our history were returned to the Museum. These have been roughly sorted chronologically. They cover the history of the institution from the earliest days to about the 1860's, but are incomplete as regards later periods. The material is being checked and brought up-to-date as opportunity offers. Fresh research has been undertaken at the Mitchell Library and Royal Australian Historical Society as well as at the Museum.



**Molluscs** (D. F. McMichael, B.Sc., M.A., Ph.D., Curator; Helen Anderson, Assistant).

Acquisitions continued at a steady rate, and have included a fine series of marine molluscs from the Tin Can Bay area, central Queensland, presented by T. Nielsen and T. Garrard. Mr. P. Colman collected a series of marine molluscs from north Queensland, and others have been presented by Mesdames Kerslake, Bowman and Mortensen, Messrs. Rippingale, Healey and Bates and Dr. Racek. Land shells were presented by Mr. Wassell, Mr. Price and Mr. Milne, and collections were made by the Curator and Dr. Keast in the Macdonnell Ranges, Central Australia, which added good series to the collection of a number of little-known species. Additional New Guinea material has been received from Mr. Kroschell, Mr. Simon Thomas, Mrs. Kleckham and others.

This has again been a year of intense curatorial activity. Work has centred around re-boxing the collection of marine shells, sorting and arranging the land mollusca, and, in the last few months, the transfer of the marine gastropods to new cabinets. A number of groups has been given complete revisionary treatment, including the Hadridae among the land snails, the Cypraeidae (which have been completely rearranged by Miss Anderson) and the Conidae (which have been sorted and arranged by Mrs. Kerslake). The work of re-arrangement has been aided greatly by the voluntary help given by Mrs. J. Kerslake, Mr. P. Colman, Mr. M. Burrows and Mr. T. Garrard. The spirit house revision has continued, Miss H. Anderson having completed most of the re-spiriting, but much sorting and identification remain to be done.

Miss Joyce Allan, Honorary Zoologist, has almost completed her preparation of a list of the types of marine Gastropods and Cephalopods, and the Curator has continued with the preparation of a list of bivalves and land snails. This work is handicapped because numerous Types are still being located in the collection, and the identification of many of them involves detailed research.

As usual, much time has been spent on inquiries, mostly identification of shells for the public, and requests for information from other scientists. The former have resulted in the acquisition of much useful material, and assistance has been given by Mr. Iredale, Miss Allan and Mrs. Kerslake.

Further new equipment for the department has included new cabinets, a new Reichert microscope, and a hot-water service installed at the sink.

Lectures to honour students at Sydney University on Systematics and Evolution were given in July. The Marine Shell Study Groups continued to meet monthly in the Museum, and much useful work was accomplished.

**Birds and Reptiles** (J. A. Keast, M.A., Ph.D., Curator; H. G. Cogger, B.Sc., Assistant Curator).

One hundred and eight species and 442 reptile and amphibian specimens were added to the collections during the year. These included some collected by staff members in western New South Wales, Central Australia and South Australia.

The collections remain in good order. The bird collections, which are currently dispersed in many different parts of the building, will be brought together in the new wing. Work is currently being carried out (with the part-time assistance of a selected group of amateur herpetologists) to re-organise the reptile-frog research collections. The work involves the examination of each specimen, revision of the card catalogue (noting present condition of specimens), renewal of alcohol and the re-allocation of shelf space.

Draft plans have been drawn up for a small introductory exhibit on Australian lizards. A more extensive one on dangerous snakes and snake venom will be arranged shortly.

The general correspondence for the year involved answering about 750 letters. A large proportion of these was associated with answering specific queries, such as the identification of snake and lizard specimens; descriptions of birds, feathers, eggs and nests; inquiries relating to animal photography; information on food of popular cage-birds in the wild; the colouring of budgerigahs and the keeping of tadpoles, frogs and lizards. Many letters were received from school teachers for specialized information on different subjects.

Various overseas zoologists planning to work in Australia sought and received information on where to collect various animals and how to go about obtaining permits. These included Professor Eberhard Curio, of Starnberg, Germany; Eugene Schuhmacher and Thomas Schelkopf, of Munich, Germany (who subsequently visited the Department) and Professors B. Kessel and R. Root, University of Alaska.

Many overseas requests have been received for zoological research material. Following the publication of the Curator's paper on finches, Professor Charles Sibley, Cornell University, asked for egg-whites from all Australian species of finches for chemical precipitation tests (using paper chromatographs), having shown egg-whites to be excellent indicators of specific and generic relationships. As the work promised to throw light on a very puzzling group, the Museum agreed to circularise amateur ornithologists and aviculturists in an endeavour to obtain the eggs, extract the albumen and air-freight it to the United States. Some 20 persons and organisations were contacted, and the material is now starting to come to the Museum. Dr. Walter Bock, Harvard University, sought spirit specimens of Australian Cracticidae, Grallinidae, Ptilonorhynchidae and New Guinea Paradisidae. Some 30 of these have now been obtained and will shortly be forwarded. The material is needed for skeletal and muscle studies. Other requests fulfilled were for specimens of a Brush Turkey and Scrub-bird, from K. Kobayashi, Kobe, Japan, who is currently preparing a book on the birds of the world. Endeavours are also being made to get spirit material for Dr. Philip S.



Humphrey and Dillon S. Ripley, of Yale University. Surplus bird specimens that had no data were supplied, for teaching purposes, to Dr. Charles H. Rogers for the Princeton University Museum, and Professor R. Emlen, University of Wisconsin.

Material has been lent to various overseas museums, including the Museum of Comparative Zoology, Harvard; the British Museum; Senckenberg Museum, Frankfurt, Germany; the National Museum, Melbourne; the South Australian Museum, and the Western Australian Museum.

#### **Mammals** (B. J. Marlow, B.Sc., Curator).

Forty specimens were registered during the year, of which 19 were presented and 21 collected. Among the latter were six hairy-nosed wombats (*Lasiorhinus latifrons*), which were formerly poorly represented in the collection.

The re-organisation of the spirit collection of mammals has been completed. This involved the re-bottling and re-labelling of all spirit mammal specimens. The collection has been re-arranged so that any spirit specimen can be found immediately. In connection with this work the card index system has been revised to conform with modern trends in mammalian taxonomy.

Preliminary work has been carried out on the complete re-organisation of the collection of skins and skulls. It is anticipated that this work will take two or three years, and it is hoped that when complete it will be possible to find any specimen in the collection promptly.

A complete re-organization of the display of mammals is planned, and plans have been submitted and discussed with the Officer in Charge of the Exhibitions Department. Much useful material has been obtained from both local and overseas whaling companies which, it is hoped, will be incorporated in a display on Whales and Whaling.

Studies on the reproduction and development of the yellow-footed marsupial mouse (*Antechinus flavipes*) have been continued, and four litters of young were bred in captivity at the Museum during September, 1958.

About 300 inquiries from the public have been answered during the year.

In addition, liaison has been effected with other scientific institutions. A series of seal skulls has been lent to Miss King, at the British Museum, and a series of rock-wallaby skins to Dr. D. Ride, of the Western Australian Museum. Identifications have been made for Mr. A. Newsome, of the Animal Industry Division of the Northern Territory Administration, among which was a bat (*Rhinonycteris aurantius*) which may represent an undescribed sub-species.

#### **Insects and Arachnids** (A. Musgrave, Curator until 4th June, 1959; D. K. McAlpine, M.Sc., Assistant Curator; Patricia M. Goodwin Assistant till March, 1959, Romilla Wilkinson subsequently).

The Department received a severe setback by the death of the Curator, Mr. Musgrave, on 4th June, 1959.

About 3,000 specimens have been added to the collections. These include specimens collected by the Assistant Curator and others presented by Mr. A. Snell, of Bunbury; Mr. G. H. Hardy, of Katoomba, and Mr. C. Deuquet, of Oatley.

A new Leitz stereoscopic microscope has been acquired for the department.

The Curator spent much time sorting and determining specimens of Arachnida. Several collections have been lent to Australian and overseas research workers. The Assistant Curator has sorted many specimens of Coleoptera, Hymenoptera, Neuroptera and Diptera, identified them where possible and incorporated them in the collections. Specimens in the Order Mecoptera and in the Dipterous families Platystomatidae and Trypetidae have been rearranged in accordance with recent publications on these groups.

#### **Anthropology and Numismatics** (F. D. McCarthy, Dip. Anthropol., Curator).

A total of 2,300 specimens in 41 acquisitions has been received.

Gifts of Australian material comprised four old sacred boards, collected at Mt. Weld Station, Western Australia (Miss S. le Brun, presented by Professor A. P. Elkin); seven Queensland weapons (Mrs. Cornford); a Central Australian spearthrower (Dr. D. F. McMichael); 13 Queensland and western New South Wales weapons and bags (the late Mr. E. J. Bryce); a widow's cap made of Kopi clay, Menindee, New South Wales (Miss G. Scobie). Ninety potsherds from various sites were received from the United States National Museum as part of the collection made by the American-Australian Arnhem Land Expedition in 1948.

Gifts of stone implements included 179 from western New South Wales (Mr. O. Le M. Knight); 14 grindstones from the Broken Hill district (Mr. D. Francois); 14 implements of various kinds from Parro river, New South Wales (Mr. M. Spencer); a heavily incised cylindro-conical stone from Marra Station, Darling River, New South Wales (Rev. K. Leeders); trimmed flakes (Messrs. P. Coleman and R. Mackay); ground-edge axes (Mrs. A. Crossley and Messrs. R. Farrow, G. A. Kopsch and R. Sawkins). The Curator collected approximately 800 implements at Glen Davis and Cordeaux Dam and in western New South Wales.



Among gifts of Pacific islands material there have been some rare and unusual specimens not previously represented in the collection. These included 23 specimens from the May River and Telefomin areas in New Guinea (Mr. P. Conroy) and two carved canoe prows (Mrs. Nolan). Collections of various objects from the different islands of Melanesia included 15 from Mrs. Cornford, 17 from Mrs. Weedon, 27 from Professor and Mrs. P. D. F. Murray, 79 from Mr. F. W. R. Godden and 62 from the London Missionary Society. Mr. King presented five old carved spears from Fiji, Mr. E. L. G. Troughton a fine old example of a girl's head carved in wood from the Solomons and a bowl from Trevanion Island, and Mr. S. Kellner a shield and harpoon shaft of types not represented in our collection. A collection of 785 specimens from Australia and the Pacific islands was also received from the Department of Anthropology of the University of Sydney.

An unusual acquisition was a gift of 13 specimens from Tibet (Mr. E. C. Jewell), which included a copper and brass trumpet 6 ft. long (of which we had sought a specimen for many years for our collection of musical instruments), copper utensils, mats and clothing. By exchange the Museum received two African carved wooden human figures from the Museum d'Ethnographie de Geneve.

From the collection of human skeletal material which has been transferred from the Mammal Department, 39 Aboriginal skulls were made available to the Department of Anatomy, University of Sydney, which is undertaking a comprehensive study of the cranial characteristics of the Aborigines who inhabited the coast of New South Wales.

Photographs of a collection of Torres Strait masks and other specimens have been supplied to Dr. D. Fraser, Institute of Fine Arts, Columbia University. A cast of an Aboriginal figure was presented to the Queen Victoria Museum, Launceston, Tasmania.

Plans have been made, in consultation with the Art Department, for the re-arrangement of the northern wall of the Australian Aboriginal Gallery.

Interest in the protection of Aboriginal relics in New South Wales has continued. A report was prepared on the situation in New South Wales for the National Parks and Reserves Committee of the Australian Academy of Sciences, and meetings of the Historic Buildings Committee of the Cumberland County Council were attended, at which the matter was discussed in relation to the County of Cumberland.

A report on the need for museums in Australia to obtain fully representative New Guinea collections was submitted for consideration by the Unesco Museums Committee.

#### **Minerals and Rocks** (R. O. Chaimers, A.S.T.C., Curator; Miss J. Harvey, Technical Assistant).

The number of minerals at June 30th was 40,498, an increase of 364. Donations include gold with stibnite from Yarrambat, near Melbourne (Mrs. L. Reid); uranium minerals from Elsharana, Northern Territory (Brian Harvey); a representative collection, mainly uranium minerals, from Rum Jungle, Northern Territory (Territory Enterprises Co. Ltd.); zircon from Strangways Range, Central Australia (D. Boeners); bauxite from Weipa, Cape York and Arnhem Land (Consolidated Zinc Pty. Ltd., per M. A. Mawby, Vice-Chairman of Directors); Queensland precious opal (Professor and Mrs. P. D. F. Murray); common opal from Lightning Ridge (O. le M. Knight) and Delungra, New South Wales (D. M. Wade).

A number of species hitherto unrepresented in the collection and a suite of Canadian minerals were obtained by exchange.

A large number of minerals was collected in the New England district by the Curator. Many were from localities hitherto unrepresented in the collection. These include a comprehensive suite of manganese minerals from Danglemah; cassiterite, topaz, emerald, fluorite and arsenopyrite from the Emerald Mine, Emmaville, and vicinity; cassiterite, fluorite and arsenopyrite from some of the lodes of the Gulf District; topaz, cassiterite, fluorite and arsenopyrite from various old mines in the Torrington-Silent Grove-Binghi districts.

The number of rocks is 8,036, an increase of 177. More than 100 of these are from classical French, German and Austrian localities, and they came to light when the old storage sheds were cleared prior to their demolition. Also included are meteorites received from the U.S. National Museum in exchange; metallic meteoritic spheroids, rock flour and impactite from the Arizona meteorite crater, presented by H. H. Nininger; rocks from various New England localities, collected by the Curator.

It is intended to try and fill gaps in the collection. To this end a list of unrepresented species and a list of duplicate Australian specimens available in our collection for exchange have been prepared for despatch to overseas institutions.

Small teaching collections have been given to the University of Sydney, the University of New South Wales and the School of Pacific Administration. Five small teaching collections were given to schools.

Small portions of rare opaque minerals were given to the University of New South Wales for making polished sections, and one of each is to be returned. Various small portions of ultrabasic, basic rocks and meteorites have been given to J. F. Lovering for research purposes. A specimen of a rare carbonite-apatite mineral francolite, was given to the Dental School in connection with x-ray examination of the structure of dental enamel. Specimens of sulphide minerals from Cobar and vicinity were lent to E. O. Rayner, of the Geological Survey of New South Wales. Original models and casts of the relief model of the Sydney and Blue Mountains district were lent to the Department of Geology, Sydney University. A small collection of gem minerals was lent for display at the presentation of Diplomas of the Gemmological Association. A large collection of our best specimens of gem minerals was displayed at the Jewellery Exhibition in the Town Hall in September.



Exchanges were negotiated with Dr. H. Froberg, Canada, Mr. Ben Clement, United States, the United States National Museum and Messrs. A. E. Gardner, A. H. Chapman and R. W. S. Doo.

A "Guide to the Mineral Gallery" is being prepared, and in connection with this explanatory gallery labels have been written and installed, thereby increasing the educational value of the collection.

Approximately 260 inquiries have been dealt with, many of them involving the identification of rocks, minerals and gemstones.

Assistance was given to Professor J. Jaeger, of the Australian National University, in obtaining suitable rocks from which cores could be cut to form an abstract design on a plaque in the School of Physical Sciences. This involved visits to stoneyards and discussions with the artists and the architect involved in the project.

The specific gravities of chalcopyrite specimens from various New South Wales localities were determined on the Berman Balance for E. O. Rayner, Geological Survey of New South Wales. Thin sections of rocks were examined and reported on for the Joint Coal Board. On some six occasions numerous hand specimens of rocks have been identified for J. B. Johnson, an Officer of the C.S.I.R.O. Soils Division. Advice was given to N. A. H. Simmons, Queensland Geological Survey, on the method of investigation of a meteorite recently discovered in the Gladstone district and thought to be the Gladstone No. 2. Uranium specimens were identified for the Museum of Applied Arts and Sciences. Two conferences were attended at the request of the architects of the Commonwealth Department of Works and Housing on suitable natural stones to be used both on the exterior and the interior of the proposed new block of Commonwealth Offices in Sydney.

**School Services** (Miss P. M. McDonald, B.Sc., Dip.Ed., Education Officer; J. Kirkpatrick, B.A., Dip.Ed., Assistant Education Officer).

Ten thousand six hundred and fifty children attended classes given in the Museum by the Education Officers. These came in 281 class visits; 21 classes came regularly once a month. In addition to these, individual teachers conducted many of their own inspections. Over the January and May school vacation 3,908 people attended the children's films. At the tertiary level of education the usual visits were made to the Museum by students from Balmain and Sydney Teachers' Colleges for explanation of the school services, and by the New South Wales Kindergarten Training College for talks on "Keeping Animals in the Classroom".

Marked improvement has occurred during the year in teaching facilities. An unreliable film projector and dingy theatre have both been remedied. The Hallstrom Theatre has all modern teaching conveniences, and a new projector awaits installation. The progressive revision of gallery exhibits has made the Museum more interesting to children.

School classes continued to be served by the loan of specimens and photographs, and the 51 loans made double last year's figure. This Museum service is limited, not by demand but by the supply of specimens and the staff with the time to organise it. All animal specimens have now been labelled and 208 birds catalogued. Thanks are specially due to Mr. L. Thomas who, in a voluntary capacity, identified the corals. Generous gifts of colour slides were made by Mr. Justice Myers and Mr. L. Jones, and a good collection of local butterflies and moths was received from Mr. N. Whitman.

Nine hundred and twenty-one letters were answered. To keep correspondence within bounds pamphlets continued to be supplied at the request of teachers for reference in schools.

In September Mr. J. F. Kirkpatrick was seconded from the Department of Education as Assistant Education Officer. The Education Officer, Miss P. M. McDonald, went on a year's leave in December, having been awarded a bursary by the British Council to study museum educational services in Europe.

**Editorial Assistant and Public Relations Officer** (Mr. P. F. Collis).

Miss M. Fraser retired from this position in October, and was succeeded by Mr. P. F. Collis.

Publications sub-edited and inquiries from the public which have been dealt with are mentioned elsewhere in this report.

The Museum received much publicity during the year. The Director gave a broadcast on the A.B.C. on the re-organisation of the Museum; the A.B.C. made a telecast on funnel-web spiders brought to the Museum by members of the public, and station 2SM did a broadcast on some of the new exhibits. Extracts from the Magazine were published in the Sydney Morning Herald and the Daily Telegraph, and photographs from "Exploring Between Tidemarks" and "Australian Aboriginal Rock Art" were published in the Sydney Morning Herald's book-review pages. Newspaper publicity was given to the Museum's new buildings, the official opening of the re-designed Hallstrom Lecture Theatre, the special Darwin exhibit, the public lecture series and other Museum activities. In addition, Press publicity was received in the form of news items about unusual specimens brought to the Museum and comments by Curators on natural history items in the news.

The Magazine and "Exploring Between Tidemarks" received valuable free Australia-wide advertising in teachers' journals through Wrigley's (A/asia) Pty. Ltd. and that company's advertising agents, J. Walter Thompson (Aust.) Pty. Ltd. Thanks are expressed to both of these firms.

The "shop" just inside the main entrance continued to sell Museum publications, folders of natural history pictures and pictures of Birds of Paradise. Prints of Aboriginal bark paintings were added to the items on sale.



**Library** (Miss M. G. E. Davies, B.Sc., L.A.A., Librarian).

During the year 259 bound volumes were added to the Library, of which 113 were presented or received on exchange. One hundred and sixty were books or parts of series and 99 were bound volumes of periodicals. Ninety-five volumes were bound for the Library by the Government Printer, 78 of which were new bindings and the rest repairs.

Some back numbers of periodicals and parts of series were ordered during the year, and inquiries were made about the cost of back numbers and continuations of periodicals, subscriptions of which had lapsed during the second World War.

Approximately 500 loans were made to the libraries of C.S.I.R.O. Divisions, Museums, Universities, Government Departments and other bodies throughout Australia and New Zealand. There were numerous requests for microfilms and photocopies of material in the Museum Library, especially from New Zealand and Tasmania. Visiting scientists and research workers from other States and overseas made use of the Library; there were also inquiries from members of the general public.

In July 1958 Miss E. McElhone, from the Cataloguing Department of the Public Library of New South Wales, was seconded to the Museum to assist in the re-cataloguing of the Library. During the year approximately 700 periodicals and books have been classified and re-catalogued, 1,200 old cards removed from the catalogue and 1,750 new cards inserted. The Universal Decimal Classification, abridged English edition, is being used for classification purposes. The catalogue is being transformed into a dictionary catalogue—that is, one in which all card entries, whether author, title or subject, are arranged in one alphabet.

In April 1958 a Library Committee, consisting of the Librarian, Dr. D. F. McMichael and the late Mr. A. Musgrave, was established. Its terms of reference were to survey the holdings of the Library as regards their completeness, usefulness and need of binding, and to consider reference book requirements and the organisation of storage and display. To date, the Committee has surveyed the current periodicals taken by the Library and made recommendations as to the binding required and the usefulness or otherwise of the holdings. There is a very large backlog of volumes needing binding and volumes requiring repair or rebinding. Recommendations were also made for the future re-organisation of storage and display.

Fluorescent lighting has been installed in the Library and has improved working conditions, especially in the basement storage rooms.

#### **Departments of Preparation and Art and Design.**

During May certain changes were made in the organisation of these Departments. A new position of Museum Photographer and Visual Aids Officer was created and filled by Mr. H. D. Hughes, who previously had been in charge of the Department of Preparation. Another new position, Officer in Charge of the Exhibitions Department, was filled by Mr. J. Beeman, who continues to be in charge of the Museum's Art and Design Section. Mr. R. D. Mackay was appointed Officer in Charge of the Preparation Section.

The Officer in Charge of the Exhibitions Department is responsible for co-ordinating the work of both sections so far as gallery display is concerned. Particulars of staffing arrangements following the re-organisation are given below, but, for the sake of convenience, the reports of the several departments are, for this year's activities, incorporated together.

*Exhibitions Department:* J. Beeman, Officer in Charge.

*Preparation Section:* R. D. Mackay, Officer in Charge; R. Witchard and K. Gregg, Assistant Preparators; S. Ross, Cadet Preparator.

*Art and Design Section:* J. Beeman, Officer in Charge; B. Bertram and D. Rae, Assistant Artists; L. Chambers, Ticket Writer.

*Museum Photographer and Visual Aids Officer:* H. D. Hughes, A.R.P.S.

The major undertaking for the year has been the preparation and preservation of specimens and models for the "Invertebrate Tree", as well as some sections of the design of special parts. Detailed work resulted in the completion of 36 wet-boxes, 16 dry-boxes, 40 models, 20 casts and three miniature working models lit by ultra-violet light.

The original plans called for the embedding in solid plastic of preserved specimens which could not be effectively displayed in glass jars. Further investigation resulted in the development of special plastic sheet boxes. These boxes, referred to as wet and dry boxes, displayed the specimens in either a dry environment (for insects, etc.) or in a formalin solution. The boxes are sealed and have expedited this part of the work. This same procedure has since been used in other exhibits. It can be used in other gallery work and could replace glass exhibition jars throughout the Museum galleries.

The "Vertebrate Tree" has reached an advanced stage. The metal work has now been completed, and the frame installed. The three remaining progress stages are lighting, construction of a sheet of fibre glass, and final installation. In connection with this project, Mr. Beeman, Mr. Bertram and Mr. Rae attended a welding course at Sydney Technical College.



Although main emphasis has been on the work reported above, progress has been made with the Fish Gallery. Two exhibits, "Fish Outline History" and "What is a Fish", have been completed and another seven exhibit installations have been commenced. A mock-up model on small scale has been prepared to solve problems connected with perspective in full-scale exhibits. Work is proceeding with the moulding of fish preparatory to making casts for the Gallery.

Apart from some labelling, work on the Australian Bird exhibits is completed. The upper Bird Gallery has been panelled ready for painting and a check list made for the lay-out of the exhibits.

The Arachnid exhibit has been delayed due to the unavailability of suitable specimens, but diagrams of the construction of a spider web have been engraved in sheet plastic and available specimens have been preserved and sealed in wet-boxes. A temporary display of spiders has been arranged in the back of this case, using old material and other material from a special Funnel-web Spider exhibit.

Investigations have been made of new and improved methods of plastic casting. A simple, quick and effective method of preparation of bird and mammal skins has been devised.

A number of inquiries were received on taxidermy, plastic, casting techniques and photography. Representatives of various firms were interviewed to gain information on their products in relation to the Department's work.

During the year a seven-minute colour film, "The Black Swan", was completed. To date, 24 copies have been sold and an offer for television rights has been received from the Australian Broadcasting Commission. The position in regard to the rapidly expanding collections of 35 mm. colour slides has been investigated, and new storage and cataloguing procedures have been recommended. The necessary register and cards have been ordered and the scheme put into practice.

An exhibition of official Museum photographs was held in the Kodak Gallery, Sydney, from February 9th to 27th. The exhibition was held in association with Kodak (Australasia) Pty. Ltd., who prepared the prints, and it is at present touring Australia.

Following the modernisation of the Lecture Theatre and the alterations to the projection box, modifications to the existing projection equipment were necessary.

New equipment acquired during the year has included a Universal wood-working machine; a surface-smoothing and disc sanding machine; a portable spray unit; a rifle with spotlight and a telescopic sight; a small dental drill; a 16 mm. cine projector; a Leitz 2 x 2 (35 mm.) slide projector; a flashlight unit for incandescent flash bulbs and electric exposure meters (one for field and one for studio use).

Designs and working lists have been completed for all the Fish Gallery exhibits, and work has commenced on several of these displays. Designs have also been prepared for the five introductory exhibits for the Mammal Gallery and for a whaling exhibit.

A considerable quantity of cork lettering is used in most new exhibits and has to be imported from England. Although the Museum is a State Government Institution and the lettering is used for education purposes, the Trustees have in the past been called upon to pay heavy customs duty. During the year an approach was made to the Tariff Policy Section of the Department of Trade at Canberra, requesting that the Museum be allowed to import the lettering, which is not available in Australia, duty free.

The Common Seal of the Trustees of the Australian Museum was herewith affixed by Order of the Board this twenty-fifth day of September, 1959.

(sgd.) WALLACE C. WURTH, President.

(sgd.) J. W. EVANS, Director.



## Appendix A

**THE AUSTRALIAN MUSEUM—SUMMARISED STATEMENT OF RECEIPTS AND  
PAYMENTS FOR THE YEAR ENDED 30th JUNE, 1959**

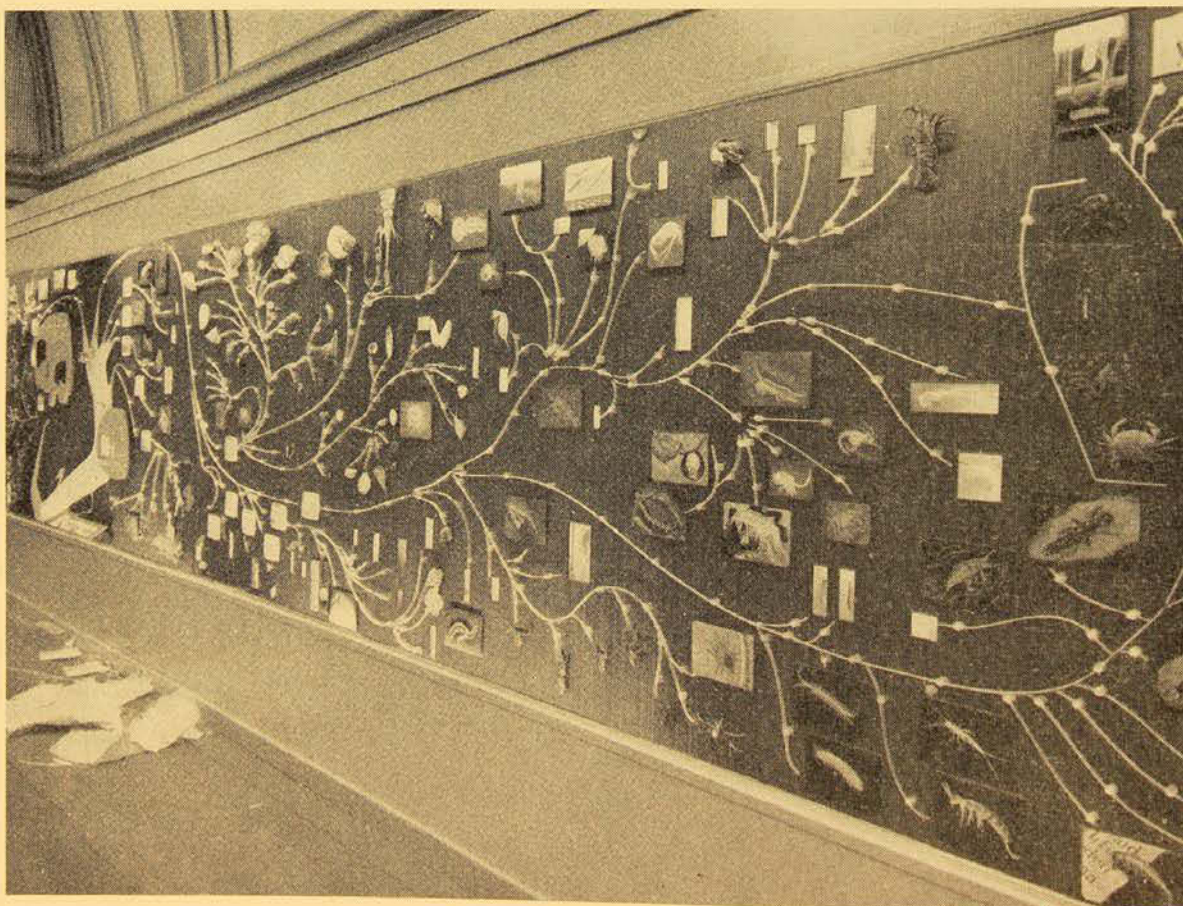
R E C E I P T S								£	s.	d.	£	s.	d.
Appropriation Account—													
Treasury Appropriations .. .. .											69,331	3	9
Trustees' Account—													
Statutory Endowment .. .. .								1,000	0	0			
Grant towards Museum Requirements .. .. .								2,000	0	0			
Museum Publications—Sales and Subscriptions .. .. .								2,538	9	10			
Museum Shop Sales .. .. .								116	12	0			
Donation by Sir Edward Hallstrom .. .. .								3,553	7	4			
Other Donations .. .. .								268	4	3			
Interest .. .. .								306	5	7			
Advertising .. .. .								50	14	0			
Postage Receipts .. .. .								172	16	3			
Sale of Films—"Black Swan" .. .. .								440	0	0			
Proceeds, Sale of Shell Cabinet .. .. .								3	10	0			
Proceeds, Sale of Waste Paper .. .. .								5	1	3			
Miscellaneous Receipts .. .. .								18	15	10			
											10,473	16	4
Balance as at 1st July, 1958—													
Cash at Bank and in hand .. .. .								2,347	5	10			
Investments .. .. .								6,100	5	4			
											8,477	11	2
											88,252	11	3
P A Y M E N T S													
Appropriation Account—								61,761	13	8			
Salaries, etc. .. .. .								1	1	0			
Tea Money .. .. .								51	11	9			
Insurance of Buildings .. .. .								650	0	0			
Travelling and Subsistence Expenses .. .. .								90	4	1			
Freight, Cartage and Packing .. .. .								1,404	3	1			
Books, Periodicals and Papers .. .. .								45	3	0			
Fees, Commissions, etc. .. .. .								49	19	10			
Laundry Expenses .. .. .								249	19	6			
Postal and Telegraphic .. .. .								527	7	10			
Other Insurances .. .. .								2,500	0	0			
Stores, Plant and Equipment .. .. .								2,000	0	0			
Grant towards Museum requirements .. .. .											69,331	3	9
Trustees' Account—								2,239	16	10			
Museum Publications—Cost .. .. .								78	4	2			
Stock for Museum Shop .. .. .								1,152	17	7			
Stores, Plant and Equipment .. .. .								178	1	11			
Production of Film "Black Swan" .. .. .								62	10	0			
Purchase of Films .. .. .								169	12	0			
Postage Receipts paid to Treasury .. .. .								3,553	7	4			
Alterations to Hallstrom Theatre .. .. .								251	11	9			
Travelling Expenses .. .. .								51	12	0			
Customs Charges .. .. .								108	2	7			
Entertainment .. .. .								23	11	2			
Miscellaneous Expenditure .. .. .											7,869	7	4
Balance as at 30th June, 1959—								1,941	12	2			
Cash at Bank and in hand .. .. .								9,110	8	0			
Investments .. .. .											11,052	0	2
											88,252	11	3

J. W. EVANS, Director.



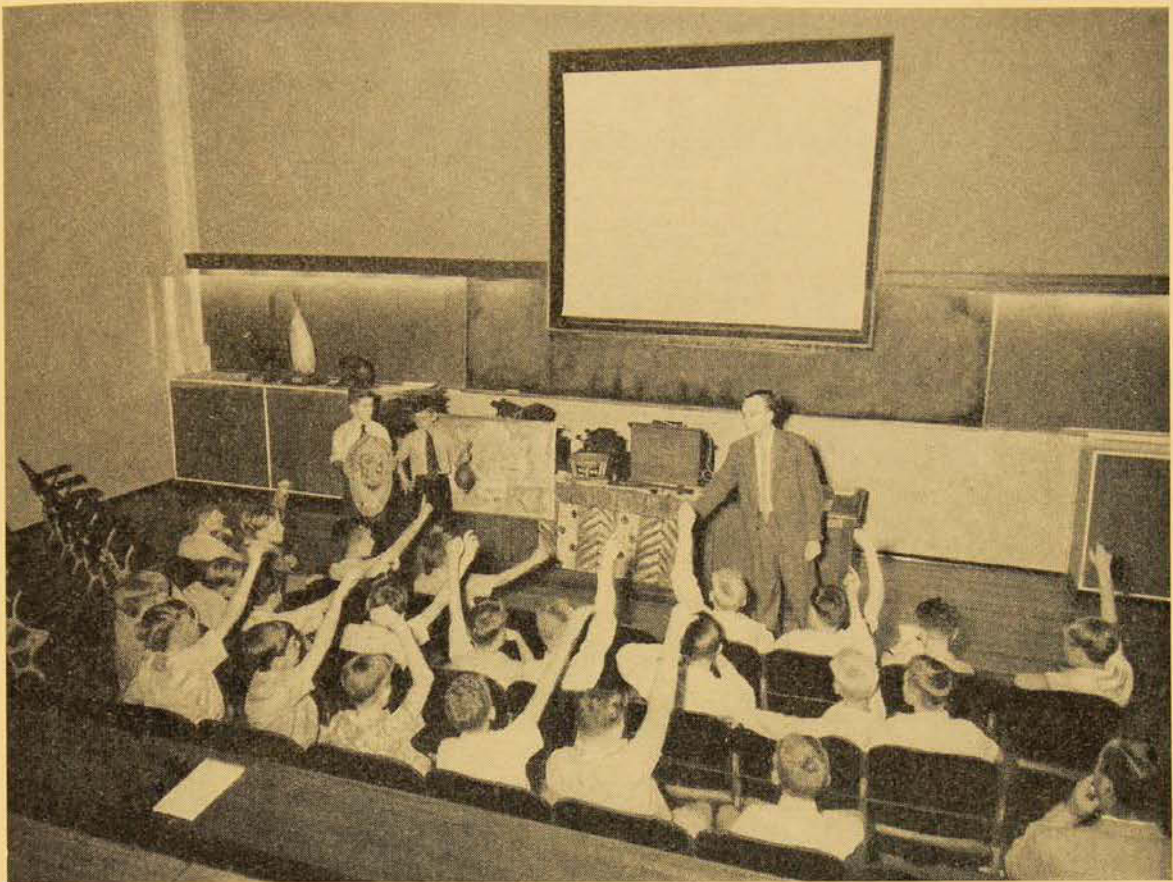


The new wing under construction



The "Invertebrate Tree"





The Hallstrom Theatre



A preparators' workshop