

1951.

PARLIAMENT OF NEW SOUTH WALES.

REPORT
OF THE
TRUSTEES
OF THE
AUSTRALIAN MUSEUM
FOR THE YEAR ENDED 30th JUNE, 1950.



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ANNUAL REPORT

OF THE TRUSTEES OF THE AUSTRALIAN MUSEUM

FOR THE YEAR ENDED 30TH JUNE, 1950.

To His Excellency the Governor,—

The Trustees of the Australian Museum have the honour to submit to Your Excellency their ninety-sixth Annual Report for the year ending 30th June, 1950.

1. Trustees.

In December, 1949, Mr. H. B. Mathews was unanimously elected President for the year 1950.

The Trustees suffered the loss, by death, of one Elective Trustee (Professor W. J. Dakin) during the year.

Professor W. J. Dakin, who died on 2nd April, 1950, was formerly Professor of Zoology in the University of Sydney, and had been an Elective Trustee of the Museum since 1931. He was a member, and for some time Chairman, of the Scientific and Publications Committee of the Trustees and always took a keen interest in the zoological work of the Museum as well as in the welfare of the institution.

The Trustees also suffered a severe loss in the death on 12th November, 1949, of Mr. E. H. Swift, Auditor-General, who had been an Official Trustee since 1942. Mr. Swift had shown an interest in the affairs of the Museum before he became a Trustee, and during the period for which he held office he rendered valuable service to the institution.

The vacancies in the office of Elective Trustee resulting from the deaths of Mr. John Spence (who died on 26th June, 1949) and Professor Dakin were filled by the election of Mr. G. A. Johnson and Professor P. D. F. Murray, M.A., D.Sc.

The list of Trustees at 30th June, 1950, is shown in Appendix "A."

2. Staff.

Mr. E. Le G. Troughton, Curator of Mammals, was abroad for about six months on extended leave and took the opportunity of visiting a number of Museums and of attending the International Technical Conference on the Protection of Nature and the Scientific Conference on the Conservation and Utilization of Resources, both held at Lake Success in August, 1949. He was also appointed a member of the Standing Committee on Distribution of Terrestrial Faunas in the Inner Pacific, set up by the Pacific Science Association.

At the request of the Fisheries Division of the Commonwealth Scientific and Industrial Research Organization, the services of Mr. G. P. Whitley, Curator of Fishes, were made available for a period of two and a half months to take charge of a fisheries survey in the Timor Sea.

The services of Mr. W. A. Rainbow, Librarian, who was due to enter on leave early in June, 1950, prior to retirement, were retained for one year.

The retirement of Mr. W. Barnes, Assistant Preparator, who was first appointed to the Museum staff in 1907, took effect on 31st January, 1950.

Mr. G. Binsted, Assistant Preparator, resigned on 23rd March, 1950.

Mr. J. R. McIver, Cadet Preparator, resigned on 9th November, 1949.

To fill vacancies in the Department of Preparation, Messrs. J. Beeman, N. Camps and K. Mayfield were appointed Cadet Preparators.

In view of difficulties in keeping the Museum grounds in order and in providing relief night attendance, representations were made for the appointment of a cleaner-attendant. Such an appointment was approved and the arrangement has been found to work very satisfactorily.

Two of the Science Trainees, Messrs. J. A. Keast and J. F. Lovering, completed the third year of the Science Course at the University of Sydney, and both were permitted by the University authorities to proceed with the fourth year course with the object of qualifying for their degree with Honours.

3. Field Work.

The Director accompanied Mr. A. R. Penfold, Director of the Museum of Technology and Applied Science, on a visit of inspection of the Bathurst Museum in order to discuss the steps necessary for modernization of the display in that Museum.

The Director and Mr. H. O. Fletcher inspected a quarry at Mudgee where fossil plants of Silurian age had been reported to occur, but the rocks proved to be of marine origin.

In the course of Mr. Whitley's fishery survey in the Timor Sea extensive collections were made. Some of the specimens have been received at the Museum from Fisheries Division of C.S.I.R.O., and others are expected at a later date.

Messrs. H. O. Fletcher and R. O. Chalmers, accompanied by two of the Science Trainees, visited Cox's River, near Megalong, and also explored a new locality for fossil plants at Duncan's Pass where they collected unusually good specimens of *Gangamopteris*.

Messrs. H. O. Fletcher and H. D. Hughes visited Ulladulla and the Hunter River district to obtain material for a film dealing with Australian Permian fossils.

4. Gallery Exhibits.

One case in the Mammal Gallery was reconstructed and fluorescent lighting was installed in it. Arrangements were made for the complete rebuilding of the cases in the northern end of the Mammal Gallery in order to improve and modernize the display, as well as to make the cases suitable for the installation of fluorescent lighting.

Arrangements were also completed to have fluorescent lighting installed in the Australian section of the Ethnology Gallery and in the Mineral Gallery.

5. Library.

During the year 283 volumes were added to the Library, apart from the usual additions of unbound serials. Exchanges which had been suspended owing to disturbed conditions continued to resume and some new ones were entered into.

The extent of the resources of this library may be gauged by the increasing demands made upon it by other research institutions, not only in this State, but also throughout the Commonwealth and the Dominion of New Zealand. Help is also extended to individual research workers who visit the library and to many others, including the press, publishers, students and commercial artists.

Some slight progress was made with bookbinding but much remains to be overtaken.

As in past years assistance has been rendered in editing and the preparation of material for publication.

6. Publications.

During the year, Volume IX, Parts 11 and 12, and Volume X, Part 1, of the "Australian Museum Magazine" were issued, and Volume X, Part 2, was almost ready for distribution at the end of June.

Two articles in the Magazine on "Spiders Harmful to Man" were issued separately as a leaflet, and have proved to be popular.

Volume XXII, No. 3, of the "Records" was issued in January. It contained seven papers, dealing with a variety of subjects.

A further edition of "New South Wales Aboriginal Place Names and Euphonious Words, with their Meanings" was issued.

7. Lectures.

The Popular Science Lectures were continued and the attendances showed that they were appreciated. In the early part of the year it was necessary to cancel three lectures of the 1949 series on account of restrictions on the use of lighting.

Only four lectures to school children were given. The attendances at lectures were as follows:—

Nine Popular Science Lectures	940
Four School Lectures	679

A change was made in the conditions under which lectures were delivered to school children. The scheme in operation up till 1949 provided for one lecture a fortnight during the school year, and the number of children attending these lectures often approached three hundred. Consequent on the appointment of an Education Officer it was felt that greater benefit would be derived from lectures to comparatively small classes, followed in each case by a class visit to an appropriate section of the Museum, under the supervision of the Education Officer. With the approval of the Department of Education a scheme along these lines was brought into operation during the first half of 1950, and it is working satisfactorily.

8. Buildings and Equipment.

Further trouble was experienced with the growth of mould on portions of the reserve collections stored in the basement. Various experiments were tried to overcome this, but they were only partially successful.

In May, 1950, the Trustees were informed that the Minister for Building Materials had approved the erection of storage accommodation at an estimated cost of £50,000. This accommodation will comprise two floors extending from the eastern wall of the northern wing, along the William-street frontage, and will form the first section of the extensions to the Museum which have been envisaged by the Trustees for many years. When completed, this extended storage accommodation should solve the difficulties which have been encountered in the satisfactory preservation of the collections which have been housed in the basement and in the temporary galvanised iron sheds for many years.

The reconstruction of the College-street entrance to the building was completed, and repairs were carried out to the stonework in the basement.

During the unusually wet year, a considerable amount of water at times found its way through the roof over the bird gallery, entering the exhibit cases and doing considerable damage to the collection of birds on display and stored beneath the cases. Attention was given to the roof and steps taken to prevent a recurrence of this difficulty.

The Department of Public Works let a contract for the installation of a lift, and the contractor made good progress up to 30th June, 1950.

9. Finance.

Expenditure from Consolidated Revenue for the year (excluding Statutory Endowment of £1,000) was £28,417 17s. 7d., compared with £26,452 last year. Net expenditure from Trustees' Account Funds (including Statutory Endowment) was £1,358 6s. 9d., compared with £3,090 17s. 6d. for 1948-49.

The cash balance in the Trustees' Account at 30th June, 1950, was £502 10s. 10d. Trustees' invested funds at 30th June, 1950, were Commonwealth Inscribed Stock, £5,350; Commonwealth Savings Bank, £814 11s. 5d.

Statement of Receipts and Expenditure for the year is contained in Appendix "B."

10. Public Attendances.

Statistics of Attendances for the years 1945-46 to 1949-50 are as follows:—

	Week-days.	Sundays.	Total.
1945-46	160,584	67,922	228,506
1946-47	120,194	54,801	174,995
1947-48	126,082	61,745	197,827
1948-49	151,181	67,091	218,272
1949-50	151,211	70,890	222,101

11. Publicity.

The specimens available to various firms for use in special window display were in constant demand, and this service helps to bring the Museum to the notice of large numbers of the general public.

A small exhibit of birds was prepared and displayed at the Royal Agricultural Show of 1950.

A series of freshwater and marine material was lent for an exhibition held by the Aquarium Society of New South Wales.

12. Vickery Stamp Collection.

The cabinets for the Vickery Stamp Collection were completed and the collection arranged ready for exhibition to the public.

13. Unesco Travelling Exhibit.

In co-operation with the Commonwealth Office of Education plans were prepared for a proposed exhibit illustrating the life of the Australian Aboriginal. This comprehensive exhibit is to consist of a series of twenty-two specially prepared cases intended for exhibition overseas under the sponsorship of Unesco. The first sample case has been completed and is the subject of discussions regarding possible improvement before the construction of the whole series is commenced.

14. Philippines Museum.

The Museum at Manila, P.I., lost the whole of its collections and equipment during the war, and applied to Unesco for assistance in replacing the losses. This application was submitted by the Commonwealth Office of Education to the National Co-operating Body for Museums which, in turn, asked for assistance from the Australian museums. The Trustees agreed to assist by making some material available from the duplicate collections. Other museums in Australia are co-operating, and all the material will be assembled at the Australian Museum for transport to Manila.

15. Country Museums.

Assistance was given with the natural history exhibits in the museums at Goulburn and Bathurst.

16. The Collections and Scientific Work.

The collections have been kept in good order. The year was again an unusually wet one, and some trouble was experienced as a result of the growth of mould on some of the stored collections. The bird specimens in the galleries, which were damaged by water, received attention and the damage was repaired. The unusually warm weather in September and October, 1949, resulted in an outbreak of museum beetle—a common museum pest—in the galleries, necessitating treatment and fumigation of the exhibit cases and treatment of the mammal room with cyanide.

The collection of carved ivories presented to the Trustees last year by Miss E. Hill was unpacked for exhibition, but Miss Hill suggested that they were more in keeping with the collections of the Museum of Technology and Applied Science, and she asked the Trustees whether they would agree to the transfer of the collection to that institution. This the Trustees agreed to, and the collection was handed to the Trustees of the Museum of Technology and Applied Science.

Exchanges were carried out with a number of institutions overseas, including the Pitt Rivers Museum, Oxford, the Sarawak Museum, the Archaeological Institute of Japan, the South African Museum, the School of Tropical and Preventive Medicine, Loma Linda, California, and Dartmouth College Museum, U.S.A. The specimens received from these exchanges add to the value of our collections for display as well as for reference and research.

Purchases of specimens included a series of minerals from the collection of the late J. C. Wiburd, a New Caledonia Ceremonial Axe from the estate of the late A. J. Vogan, and wooden face masks from the Sepik River, New Guinea.

A small collection of minerals was presented to the Newcastle Technical College for teaching purposes.

Inquiries on natural history matters from the general public and from Government Departments, both State and Federal, were, as usual, very numerous and preparation of replies occupied much of the time of the scientific staff.

Various members delivered lectures to societies and institutions interested in Natural History, and contributed news broadcasts on subjects of topical interest.

Members of the scientific staff continued to contribute articles for the "Australian Museum Magazine" and some of them have also prepared appropriate sections of "Australian Science Abstracts" published by the Australian National Research Council.

Birds and Reptiles (J. E. Kinghorn, Curator; J. A. Keast, Science Trainee).

No outstanding collections were added during the year, but several interesting specimens of rare snakes were received from the Forrest River Mission, North-west Australia.

Quite a large number of unnamed specimens of reptiles in the old collections were identified, catalogued and added to the general reference series. Several genera and species of both birds and reptiles were examined for overseas workers, and a good deal of assistance was given to Australian students of Ornithology and Herpetology.

Further information was received from Dr. Krefl concerning the type of an Australian snake in the Gothenburg Museum, Germany, and it is hoped that sufficient material is now on hand to enable the work to be completed.

Assistance and advice was given to the Department of Trade and Customs in the identification of imported birds and feathers; to the Chief Secretary's Department in matters concerning the Birds and Animal Protection Act; and to the Department of Agriculture when evidence was desired on the economic value of certain birds.

Zoology students were provided with duplicate material for study, and a special dissection of an American toad was made for the zoology class at the S.C.E.G.G.S.

Overseas visitors during the year included Mr. Plath, Curator of the Chicago Zoo, who spent a good deal of time examining Australian birds in the reference collection.

Mammals and Skeletons (E. Le G. Troughton, Curator).

Important acquisitions for the year included a second specimen of the unique Fringe-tailed Water-Rat (*Crossomys*) of New Guinea, from Mr. E. J. L. Hallstrom; specimens of platypus, koala, a series of tree-kangaroos (*Dendrolagus*), an Curang-utan and a Gibbon from Taronga Park Trust; a small collection from Mr. Lawrence Jones, of Port Moresby, including the first Museum specimen of a species of marsupial-mouse, a series of indigenous rats, and a fruit-bat; three species of small bats from Dr. D. Macdonald, of the Dental Service of North-west Queensland.

Assistance provided for various departments and institutions included: Reports on the use of bandicoots in the preparation of anti-tick serum, on rabbits for research in regard to control methods, and on the proposal for farming chinchillas in Australia (for the Chief Secretary's Department); on the control of *Hydromys* (Water-Rat) and other indigenous rats and on the elimination of small bats from premises (for the Department of Public Health); on the control of bandicoots (for the Department of Agriculture); on the useful activities of bandicoots in consuming earl-grubs in the cane fields (for the Colonial Sugar Refining Co. Ltd.); and on the supposed defoliation of eucalypts by grey possums (*Trichosurus*), actually attributable to scarabaeid beetles (for the Division of Entomology, C.S.I.R.O., and the Forestry and Timber Bureau, Canberra). Assistance was also given to representatives of several companies engaged in production of educational nature films, especially in regard to preparation and accuracy of the film scripts.

The collection of human crania was made available for study by Mr. John Heath, orthodontist, of Melbourne; a series of fifteen crania was supplied for radiographing and research by Miss B. Brassington; a set of selected crania was also supplied for the exhibition associated with the forthcoming Dental Congress in Sydney. An interesting series of marsupial crania was obtained from specimens otherwise unsuitable for preservation; the skull and skeleton of a bird, and the axial skeleton of a rare fish (*Acanthocybium*) from Papua were also preserved.

Preparations were made for the rearrangement of the marsupial section at the northern end of the mammal gallery and some consideration given to rearrangements in the skeleton gallery.

Fishes (G. P. Whitley, Curator).

Acquisitions included cotypes of *Paraphya semivestita* (from Mr. I. S. R. Munro) and the only known Australian specimen of *Lepidocybium*; collections of fishes from Dr. Catala, New Caledonia, and series from Laloki River, Papua (L. Jones) and New Zealand (A. M. Rapson), rarities from the Sydney Fish Markets (J. C. Woore), tropical sharks and fishes from the C.S.I.R.O. Division of Fisheries; eggs laid in captivity by a 11½-year-old Port Jackson Shark (Taronga Zoological Park); and many miscellaneous donations from India, Papua, Western Australia, Northern Territory, Queensland, New South Wales, Tasmania, New Zealand, Lord Howe Island and Canton Islands. Some Californian shore fishes were received by exchange from Dr. B. Halstead.

All the year's accessions have been registered, catalogued and stored. About ten moulds or casts of fishes made by the preparators await completion for the gallery. Old skins of Gummy Shark and Sergeant Baker fish were replaced by modern casts in the exhibited collections.

A collection of Plectognathi is still on loan to Mr. Fraser-Brunner at the British Museum (Natural History) and several Soles and Tongue Soles to Dr. Paul Chabanaud of

Paris. Specimens were lent for the Aquarium Society's Exhibition at Sydney Town Hall. Some larval fishes are on loan to Mr. I. S. R. Munro, Cronulla. A collection of poisonous and venomous fishes was sent, by way of exchange, to Dr. B. Halstead, Loma Linda, California. Two cotypes of *Rouleina eucla* were lent to Professor A. E. Parr, American Museum of Natural History, New York. A selection of Chatham Islands fishes was identified for the Dominion Museum, Wellington, New Zealand and Arnhem Land duplicates were returned to Dr. D. Thomson, Melbourne. Some tropical fishes were given to Mr. M. Ward's Museum at Medlow Bath.

Descriptions and figures of new or rare fishes were prepared when opportunity offered and work proceeded on "Fishes of Australia" and on contributions towards the "Australian Encyclopedia."

Mr. Whitley delivered the Froggatt Memorial Lecture, on "Northern Territory Fishes" to the Naturalists' Society of New South Wales.

Very numerous inquiries have been answered including some on mammals and mollusca during the absence of the curators of those departments. Visitors included Dr. R. Catala, Noumea; Major H. M. Whittell, O.B.E., Bridgetown, Western Australia; Dr. J. D. F. Hardenberg, Java, and delegates to the Indo-Pacific Fisheries Conference, Cronulla.

The Crown won its Court case against persons who had wrongly labelled Barracouta as Australian Salmon; identification of numerous tins of fish at this Museum for the Health Department preceded the launching of the prosecution.

Information prepared for persons and institutions included the following: Data on Antarctic *Nototheria* (Dr. O. Nybelin, Göteborg, Sweden); Biometrics and other data on sharks (Officers of the C.S.I.R.O. Division of Fisheries); Advice on trade names of Australian and imported fishes (Commonwealth Fisheries Office); Murray Cod (Chief Secretary's Department); Information and identifications concerning various fishes (Superintendent of Fisheries, Sydney); Identifications of and notes on Queensland fishes (Department of Harbours and Marine, Brisbane); South African fishes (Professor J. L. B. Smith, Grahamstown); Pipefishes (Dr. E. Herald, San Francisco); Deaths from stonefish venom (Dr. H. Flecker, Cairns); Shark attacks (Dr. V. M. Coppleson).

Preliminary arrangements were made for recording at this Museum the authentic maximum sizes of fishes for an organization of sporting fishermen.

Mr. Whitley completed the following papers: "Studies in Ichthyology, No. 14" (*Rec. Austr. Mus.*); "Mammals" (*Australian Fisheries*, 1950, p. 42); "Development of a Port Jackson Shark" and "Some Rare Australian Fishes" (*Proc. Roy. Zool. Soc., N.S.W.*).

Insects and Arachnids. (A. Musgrave, Curator; K. C. McKeown, Assistant-Curator; Nancy B. Adams, Assistant).

The number of inquiries concerning insects and spiders showed a considerable increase, many of them dealing with species which the inquirers thought to be harmful to man.

The recent discovery of the presence of the Argentine ant (*Iridomyrmex humilis*) in Sydney suburbs resulted in a large number of requests for information.

Visitors to the Department included Miss L. E. Cheesman (British Museum), Dr. N. L. H. Krauss (Hawaii), Mr. F. C. Whitehouse (Vancouver), Dr. Montgomery (Purdue University, U.S.A.). Officers of the Division of Entomology, C.S.I.R.O., paid many visits to study specimens and literature.

Revisionary work proceeded on the cabinet collections of Australian Noctuidae and certain families of Diptera, and the Australian Membracidae were brought up to date. Work was continued on Australian Cerambycidae, the biology of Australian Mantispidae and on the food of Australian birds. Work on the bibliographies of Australian and Pacific Islands Insects and on Australian Arachnida was advanced. A list of vernacular names of insects was prepared at the request of the Division of Entomology, C.S.I.R.O.

The types of Ephemeroptera recently described by Miss Janet Harker were presented by her to the Museum.

Mr. Musgrave assisted a Phenological Committee appointed by the Linnean Society of New South Wales, in the preparation of a list of insects likely to serve as seasonal indicators. This Committee was appointed in response to a request for assistance by the Meteorological Bureau.

Shells.—(Joyce Allan, Curator; D. F. McMichael, Science Trainee).

Much of the work of the Department has been the identification and classification of collections of shells for the general public and for various institutions. On account of the very wet season an unusually large proportion of the material received for identification has consisted of representatives of the land fauna, inquirers having in mind the possibility of the snails being destructive to crops and garden plants. Dr.

N. L. H. Krauss, of Hawaii, spent some time studying carnivorous species of land snails likely to prove of use in combating the African snail which has become established in Hawaii and is a threat to cultivated crops. Living specimens of the Australian carnivorous snail, *Strangesta*, and of the introduced species *Helicella cellaris* were obtained and despatched to Hawaii for experimental work.

Rearrangement of the collections was proceeded with, and the routine work consequent on the transfer of the collections from the basement to the conchologist's rooms was advanced. A considerable amount of assistance was received from Mr. C. F. McLauchlan in connection with land snails and from Mrs. L. Woolcott in identification of common shells, etc.

Minute shell fragments from caves in North Australia were identified for Dr. N. W. G. McIntosh, of the University of Sydney, and the distribution, ecology and classification of species of a number of Australian families were checked for Dr. L. Nicol of the Smithsonian Institution.

Investigation of planktonic cephalopods and of Opisthobranchia was continued as opportunity offered.

Crustacea and other Invertebrate Groups.—(F. A. McNeill, Curator; Elizabeth C. Pope, M.Sc., Assistant-Curator; D. F. McMichael, Science Trainee).

Comparatively few specimens were received during the year, the most notable being a giant jelly fish, *Cyanea capillata*, presented by the Sydney Water Police, some Coelenterates from Western Australia presented by Miss D. Choules, and a collection of invertebrates made along the Victorian coast between Wilson's Promontory and Portland.

The collection of freshwater Crayfish (Parastacidae), received last year from Mr. E. F. Riek, was checked and catalogued; a complete check was made of the Crustacea reference collection; the collection of Ascidia was completely reorganized, as a result of the work on the group carried out by Miss P. Kott of the Fisheries Division of C.S.I.R.O., and the collection was catalogued for the first time; a collection of Nematode worms, named and described by Professor T. Harvey Johnston, was registered and catalogued; and collections of Echinoderms and polychaete worms, which had been affected by mould were cleaned and revised. In order to accommodate the Ascidian collection it was necessary to move the collection of Bryozoa and most of the jellyfish and anemones and these collections were reconditioned as they were moved.

The collection of parasitic Copepoda was sent to Dr. Heegaard, of Copenhagen, for examination and report. The residual material of tow-netted Copepoda from the Australasian Antarctic Expedition, 1911-1914, was sent to Dr. W. Vervoort of Leiden for examination and arrangements were made for the material originally sent to Dr. G. S. Brady, which had been found to be in the Hancock Museum, Newcastle-on-Tyne, to be sent to Dr. Vervoort for examination before being returned to the Australian Museum.

Assistance rendered to institutions and individuals included: Data on a number of Crustacea (to Mrs. L. M. Willings, of Fisheries Division, C.S.I.R.O.); naming a collection of local shore invertebrates (for Dr. D. Hill, Balmain Teachers' College); providing names for a number of invertebrates figuring in a report on the Mt. Kosciuszko area (for an officer of the Department of Conservation); preparation of a list of vernacular names of some Australian invertebrates; data on marine stinging organisms (for Pix Newspaper); identification and growth rate of calcareous worm tubes clogging intake pipes of electric turbines (for the Chief Chemist of Bunnerong Power House); identifications of specimens of various groups for Dr. R. Catala (Noumea), Mr. Stubbings (British Museum), Dr. Serene (Indo-China), Miss D. Choules (Perth), and Mr. F. Lee Rogers (Philadelphia); and replies to numerous inquiries on earthworms and their work.

Further research was carried out on the Decapod material of the British Great Barrier Reef Expedition and forty-five named species were prepared for return to the British Museum. Satisfactory progress was made with work on the barnacles of Western Australia. Field trips were made to study the intertidal ecology of portion of the Victorian coast, as a supplement to work on the New South Wales coast. Short reports were prepared on Commercial Possibilities of Coral Reef Detritus and on the Commercial Exploitation of the Green Turtle (*Chelone mydas*).

Minerals and Rocks.—(R. O. Chalmers, A.S.T.C., Curator; J. F. Lovering, Science Trainee; Frida Sachs, Assistant).

During the year ninety-four mineral specimens and 206 rocks were added to the registered collections. They included three choice gold specimens from Western Australia, four etched meteorites obtained from the U.S. National Museum, and a number of polished slabs of building stones.

In co-operation with the Museum of Technology and Applied Science, Mr. Chalmers continued work in preparation of a new and revised edition of "The Building Stones of New South Wales." An exhibit of building stones was installed in the gallery.

The collection of meteorites was checked with a view to the preparation of complete data for inclusion in an International Catalogue of Meteorites which is being compiled by a Committee in the United States.

Collections for teaching purposes were sent to New England University College, Newcastle Technical College, and two High Schools.

Routine work of checking the mineral collection proceeded.

Short field-trips were made to the Oberon-Rockley district, to Megalong Valley and Cox's River and to Mudgee. Some progress was made in the analysis of the Forest Vale meteorite, but this was made difficult by interruptions and restrictions in gas and electricity supplies.

Fossils.—(H. O. Fletcher, Curator).

Registrations during the year numbered 258 specimens and included a large series of well preserved specimens of *Gangamopteris* from the Upper Coal Measures at Duncan's Pass, near Narrow Neck, Katoomba; Tertiary leaves from Whyalla, near Lismore; an interesting undescribed and almost complete trilobite from Ordovician rocks at the Belubula River (presented by Mr. L. C. Wooldridge); a series of marine fossils from Permian rocks near Yerranderie (presented by the Geological Survey of New South Wales) including an important specimen of *Vertebraria australis* McCoy, from the Upper Coal Measures of the Burrigorang Valley.

With the provision of new rack work it is now possible to store the collection in zoological order and with each group arranged stratigraphically. A start has been made in this regard and each specimen is being checked as far as its identification, locality and any other information is concerned. The list of type material is also being kept up to date.

The vertebrate collection of fossils is now housed in its entirety in the iron-shed. The specimens have been thoroughly checked, catalogued and indexed. A list of the type specimens is being prepared.

During the year well preserved specimens of Tertiary plants from Dalton and Gunning were placed on exhibition in the gallery.

Specimens were lent for research purposes to the University of Queensland, the Bureau of Mineral Resources, The University of Western Australia, The University of Melbourne, The University of Sydney, Mr. E. Riek of the C.S.I.R.O., Canberra, and Dr. R. T. Wade.

Mr. Riek has prepared a number of research papers on Museum specimens of Permian and Triassic insect remains and one paper on the Triassic Mecoptera from Brookvale, N.S.W., was published in the "Records."

Mr. O. Le M. Knight, Honorary Correspondent of the Museum, prepared a paper entitled the "Fossil Insect Beds of Belmont, N.S.W.," which was published in the "Records."

Photographic prints of Tertiary plants figured by Baron Ettlinghausen (Mem. Geol. Sur. of N.S.W., Pal. No. 2), were prepared and forwarded to Dr. O. H. Selling of the Naturhistoriska Riksmuseum, Stockholm, Sweden, to assist in his researches.

Many inquiries on various aspects of palaeontology were attended to during the year and a considerable amount of fossil material was identified. A number of reports on palaeontological matters were prepared for the Geological Survey of New South Wales.

During the year the photography was completed for an educational colour 16 mm. film on the "Permian Fossils of the Hunter Valley."

Collecting was carried out in the Upper Coal Measures at Duncan's Pass, near Katoomba. Two visits to the Hunter Valley and a brief visit to Ulladulla were made in the preparation of the film on fossils. The Brookvale quarry was visited on two occasions and specimens were obtained from the quarrymen.

In company with the Director an investigation was made of a brick-pit at Mudgee from which supposed Silurian plant remains had been collected. It was found that the shales were of marine origin and that the locality did not warrant further attention.

Research was confined to a preliminary examination of certain Permian groups. One paper entitled "Trilobites from the Silurian of New South Wales" was published in the "Records."

Anthropology.—(F. D. McCarthy, Curator; G. C. Heyde, A.S.T.C., F.R.N.S., Hon. Numismatist).

A total of 1,978 specimens was received. Among the donations received were 501 stone implements from Bellambi (chiefly) and Lake Illawarra on the South Coast of New South Wales, from Mr. O. B. Pryor; 411 stone implements from Anna Beach, near Port Stevens, N.S.W., from Mr. F. A. Davidson; stone implements from various parts of South Australia from

Mr. H. M. Cooper; a *Bulga*-knife from Mr. Murphy at Koolewong; a dentated blade from Mr. J. W. T. Armstrong from the Bogan River; a ground-edge chisel from Cudal from Mr. A. Macdonald; two cylindro-conical stones from the Paroo River from Mr. J. Alexander; ground-edge axes and knapped implements from Mrs. D. Makin, Mrs. J. H. Lockyer, and Messrs. J. Sykes, H. G. Hammond, G. H. McNaught, G. H. Knowles, and C. E. Chadwick; a fine series of bone spear points from Palm Beach, presented by Mr. F. A. Davidson; a small series of Tasmanian trimmed flakes from Mr. G. Campbell-Smith; several fine palaeoliths from England from Dr. J. P. Findlay; 14 aboriginal weapons, more than sixty years old, collected on Birambil and Willandra stations on the Lachlan River, N.S.W., from Mr. W. Sutt, junior; two left-handed boomerangs, Walpri tribe, Northern Territory, from Mr. W. E. Harney (Honorary Collector); a Turbo-shell fish-hook from Merimbula, N.S.W., being one of only three specimens now in our collection from the coast of New South Wales; seven fine old Fijian weapons more than sixty years old from Mr. Skennar, and nine other specimens from Sigatoka, Fiji, from Miss L. Whittingham; a bow and set of arrows from Telfolmin, an inaccessible locality in the interior of New Guinea, from Mr. D. Clifton-Bassett; a fine Parang in sheath from Borneo from Miss Dolbey; a splendid mixed collection of sixteen specimens, which includes Pacific Island material and a fine series of five western Apache Indian baskets from Arizona, U.S.A., from Mrs. Jolley; mats from Fiji and Tonga from Mrs. M. Freestone and Mrs. Wicks; a sledge used by the Scott Antarctic Expedition of 1910 from Captain Hurley.

By exchange we received some very interesting and valuable comparative material comprising forty-one Palaeolithic stone implements from the Department of Geology of the British Museum and twenty-nine stone implements representing the Neolithic period in Japan, from the Archaeological Institute of Japan.

The various card catalogues of literature, specimens, vendors, and data were maintained, and the cataloguing of Australian material in the gallery and the smaller specimens in two units of the steel cabinets is now in hand.

Mr. C. P. Mountford, from Adelaide, photographed the whole of our collection of bark paintings. Information recorded by Mr. McCarthy and Mr. F. M. Setzler, consisting of brief explanations of about seventy bark paintings, was sent to Mr. Mountford and to the United States National Museum (which possesses half of this series).

Dr. Leonhard Adam noted and photographed a number of our Melanesian carvings for his projected work on primitive art to be published in the Penguin series, and also for use in his lectures at the University of Melbourne.

Much of the research work done was in connection with data recorded during the Australian and American Arnhem Land Expedition in 1948. The draft of a paper entitled "The Time-Factor in the Economic Life of Arnhem Land Tribes, with Notes on Their Ethnology," was prepared and sent to Miss M. Macarthur, M.Sc., joint-author, who is in London. A second report, dealing with the extensive series of cave paintings recorded on Groote and Chasm Islands, is in hand. These two reports are for inclusion in the first volume of the scientific results of the Expedition. The draft of a third report, dealing with the "Archaeology of Arnhem Land," was sent to F. M. Setzler, A.B., Head Curator of Anthropology at the United States National Museum, who is collaborating in this report and who has material to add to it. A short paper, entitled "A Unique Hafted Adze from Australia," by F. M. Setzler and F. D. McCarthy, appeared in the *Journal of the Washington Academy of Sciences*, Vol. 40, No. 1, January, 1950.

A paper entitled "Stone Implements from Tandandjal, Northern Territory of Australia," dealing with specimens excavated by Dr. N. W. G. Macintosh, was prepared for publication in *Oceania*. A paper entitled "Some New and Unusual Stone Implements from Australia and New Guinea," was prepared for the "Records," and in it are described two previously unrecorded types of Australian implements. Additional notes were made on a collection of stone implements collected by Mr. R. Lindsay Black, of Leeton, and on others in our collection, for incorporation in a paper dealing with the implements of an extensive region in far western New South Wales.

A small group of rock engravings, in danger of being destroyed by quarrying operations, was recorded at Dee Why.

A number of Groote Eylandt bark paintings, and of Millingimbi baskets and ritual objects, collected by the Australian and American Arnhem Land Expedition, were exhibited in the gallery.

Minor alterations were recommended in a draft of proposed legislation for the Protection of Aboriginal Relics in New South Wales which had been submitted to the Hon. the Premier by the Anthropological Society of New South Wales.

Numerous inquiries continue to be made about aboriginal art, particularly concerning designs for commercial application. Among the inquirers were Messrs. Nicholas (artist), Molony (architect), Mansell (artist, whose panels are installed in the Riverina Express), Meloeco Bros. (for advice regarding designs suitable for the decoration of a Railway Ticket Office at Central Station), the Rural Bank of New South Wales (and others) for designs suitable for 1950 Christmas cards.

In the Numismatics section a small number of accessions was received, none being of unusual interest or value. The numerous inquiries received were chiefly for identification and valuation of coins.

Department of Preparation—(J. Kingsley, Preparator-in-Charge).

During the year fifty-two mammal skins and twenty bird skins were prepared, forty-seven birds mounted, and twenty-seven skulls and sixty-four disarticulated bones prepared. Photographic work included preparation of 175 negatives, 1,022 prints and 195 lantern slides, and mounting of 1,249 photographs. Moulds and casts in plaster, metal, and plastics, totalling 103, were prepared. The provision of accessories for the Black Cockatoo Habitat Group involved the making of large numbers of grasses, leaves, sprigs, etc., for the foreground, a total of 4,239 items being prepared.

The outbreak of Museum beetle in the galleries involved a considerable amount of work in fumigating and in preparing more suitable containers for naphthalene in the gallery cases. The flooding of exhibit cases as a result of blockages in roof drains occurred on several occasions and the drying and necessary repair of bird and mammal specimens was a work of some magnitude.

Education Officer—(Mrs. B. A. Graham, B.Sc., Dip.Ed.).

During visits of school classes, 2,187 children attended and received the benefit of some instruction by the Education Officer. The number was greater during the second half of the year than the first half, and it is likely that there will be a progressive increase as the scheme for dealing with the children develops. Formerly it was the practice for children to come to the Museum for lectures at which the attendance sometimes reached about 300. Now the children come in limited numbers, one class at a time, and are given a lesson on a topic planned in relation to their school studies, followed by a supervised visit to the appropriate part of the Museum galleries. Under this scheme the children receive much more individual attention and it is felt that they will benefit to a much greater degree than formerly. The lessons are illustrated by films, film-strips, lantern slides and specimens, and the children are given question sheets dealing with the subject of the particular lesson. The answers to all the questions can be obtained from observation of the specimens and labels in the gallery, and the completed sheet forms a record of the visit to the Museum.

The response to this scheme has been encouraging and visits have been made by classes from a wide range of schools—primary and secondary, departmental and non-departmental. In the light of the experience of other countries in this form of Museum participation in school education it seems certain that the number of school classes visiting the Museum will increase rapidly.

In these initial stages special efforts have been made to bring the Museum activities to the notice of students at the Teachers' Colleges. When these students complete their training and enter upon teaching, they will carry a knowledge of the available Museum facilities to a wide range of State schools.

Accessions for the year 1949-1950 totalled:—

Vertebrata	365
Invertebrata	1,333
Geological	535
Ethnological	2,280
Miscellaneous	442
	<hr/>
	4,955

Papers and articles published during the year totalled:—

Records of the Australian Museum	7
Australian Museum Magazine	19
Other Publications	7

The Common Seal of the Museum was hereunto affixed by Order of the Board this 27th day of October, 1950.

H. B. MATHEWS, President.
A. B. WALKOM, Director.

Appendix A.

TRUSTEES OF THE AUSTRALIAN MUSEUM AT 30th JUNE, 1950.

<i>Crown Trustee</i>	H. B. MATHEWS, B.A.
<i>Statutory</i>	THE HON. THE CHIEF JUSTICE. THE HON. THE COLONIAL SECRETARY. THE HON. THE ATTORNEY-GENERAL. THE HON. THE COLONIAL TREASURER. THE AUDITOR-GENERAL. THE PRESIDENT OF THE MEDICAL BOARD.
<i>Appointed</i>	THE HON. THE PRESIDENT OF THE LEGISLATIVE COUNCIL. THE CROWN SOLICITOR. THE SURVEYOR-GENERAL AND CHIEF SURVEYOR. THE HON. THE MINISTER FOR WORKS. THE HON. THE MINISTER FOR EDUCATION.
<i>Elective</i>	PROFESSOR A. N. ST. G. BURKITT, M.B., B.Sc. FRANK B. SPENCER. O. G. VICKERY, B.E., M.I.E. (AUST.). WALLACE C. WURTH, C.M.G., LL.B. PROFESSOR A. P. ELKIN, M.A., Ph.D. F. McDOWELL. R. J. NOBLE, M.Sc., B.Sc. (AGR.), Ph.D. E. J. KENNY, MAUST. I.M.M. F. L. S. BELL, M.A., F.R.A.I. FRANK W. HILL. G. A. JOHNSON. PROFESSOR P. D. F. MURRAY, M.A., D.Sc.

Appendix B.

THE AUSTRALIAN MUSEUM.

SUMMARISED STATEMENT OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 30th JUNE, 1950.

<i>Receipts</i>			<i>Payments.</i>		
	£	s. d.		£	s. d.
<i>Appropriation Account—</i>					
To Treasury Appropriations	28,417	17 7	By Salaries, etc.	24,874	6 9
			Superannuation Contributions	1,475	0 0
			Worker's Compensation Insurance ...	89	2 6
			Insurance on Departmental Property ..	290	16 2
			Maintenance, Repairs, Alterations, etc.	14	18 6
			Travelling and Subsistence Expenses ..	153	18 6
			Freight, Cartage and Packing	51	9 2
			Books, Periodicals and Papers	448	7 3
			Fees, Commissions, etc.	50	0 0
			Laundry Expenses	25	9 0
			Postal, Telegraphic and Telephonic ...	100	6 5
			Stores, Provisions, Minor Plant, etc....	834	5 6
			Sundries	9	17 10
				28,417	17 7
<i>Trustees' Account—</i>					
To Statutory Endowment	1,000	0 0	By Printing and Publishing—Magazines ..	498	2 10
Sales of Publications	636	1 3	Purchase of Specimens	83	15 0
Donation towards Steel-built Cabinets ..	240	0 0	Gallery Reconstruction	85	12 11
Other Donations	34	0 5	Steelbuilt Cabinets	470	0 0
Interest	173	2 8	Stamp Frames	53	18 2
Postage Receipts	29	19 2	Repairs to Truck	23	12 5
Lighting Receipts	2	0 0	Stores and Services	38	12 1
Miscellaneous Receipts	5	17 11	Black Cockatoo Group	59	1 10
	2,121	1 5	Publication Sales paid to Treasury ...	33	11 3
			Postage Receipts paid to Treasury ...	29	11 0
			Freight and Cartage Receipts paid to Treasury	3	12 2
			Lighting Receipts paid to Public Works Dept.....	2	0 0
			Miscellaneous Expenses	3	17 1
				1,385	6 9
<i>Balances as at 1st July, 1949—</i>			<i>Balances as at 30th June, 1950—</i>		
Cash at Bank and in Hand	518	1 4	Cash at Bank and on Hand	502	10 10
Investments	5,413	6 3	Investments	6,164	11 5
	5,931	7 7		6,667	2 3
	£36,470	6 7		£36,470	6 7