

THE EXHIBITS

In their first *Annual Report*, the trustees recorded that 'In September last year 1853, application was made to this board on the part of the Commissioners for the Paris Exhibition, for the use of the Great Hall of the Museum in which to display the productions of the Colony prior to the transmission of them to Paris'. As no fewer than fifteen of the commissioners were also members of the twenty-three man Board of Trustees, the application was readily granted. Notwithstanding their expressed anxiety to complete the hall's furnishings, the trustees ordered works at the Museum to be suspended entirely in order to mount the display. Formally opened on 14 November 1854 by the governor-general, Sir Charles FitzRoy, this was the first major exhibition to be held in the Museum.

Broadly classified into four departments—Mineral Products, Animal Products, Vegetable Products, and Arts and Manufactures—the exhibition included hundreds of items such as a working model of an apparatus 'for extracting Tallow from Sheep and Horned Cattle by Steam', a model of Darlinghurst Gaol, a partial set of artificial teeth, and a model of Surveyor-General Sir Thomas Mitchell's invention, the 'Boomerang Propellor'.

In his address at the opening ceremony, Sir Alfred Stephen remarked that

The exhibition . . . has the merit of being, with very few exceptions . . . one of Colonial productions exclusively. We have, indeed, by permission of the Trustees of the Museum, placed in the hall casts — the gift of Sir Charles Nicholson to the Colony — of some of those noble statues the triumphs of ancient Art, which grace the galleries of Florence and of Rome. There stands here also a modern work (the statue of the great Circumnavigator,) which the colony cannot claim, left with us by a sculptor of no mean reputation. But the presence of these, not otherwise inappropriate, may be excused . . . The carvings along the gallery of the Great Hall, and its light and well constructed railing, rivalling in excellence of workmanship the cornice and pillars beneath, are all Colonial.²

Natural history specimens were included in the Animal Products department of the exhibition, and a *Collection of Shells, Stuffed Birds and other Specimens of Australian Natural History* were the main contribution of the trustees of the Museum. The Rev W. B. Clarke, a trustee, was awarded a silver medal for his geological collection, and the curator of the Museum, W. S. Wall, received one for 'services'.

Following the removal of the exhibition to Paris and a vote of £3000 in 1855, work was recommenced on the Great Hall, enabling the trustees to report, in 1856, 'considerable progress during the past year in carrying on the works necessary for the display to the public of the rapidly increasing collections contained within the walls of the Institution.'³

Large glass cases were constructed at each end of the hall and the spaces between the pilasters were glazed, casement style, to form an almost continuous showcase around the hall. This arrangement neutralised the colonnaded spaciousness of the room, reducing its length and breadth by some five to six metres, and set off to their least advantage the subsequently encased exhibits. Such aesthetic considerations, however, were of small concern to the committeemen and trustees who had spent almost eight years in efforts to open the building. Their labour was rewarded when 'the Museum was thrown open for public inspection on 24th May, 1857 and upwards of ten thousand persons availed themselves of the opportunity offered of visiting the Museum during the first week of its opening'.⁴ By the end of 1858, the Museum had been opened daily, Sundays excepted, from noon to four o'clock during the winter months and noon to five o'clock in summer and had received nearly 18 000 visitors.

Sunday opening was achieved in 1878 after some violent opposition from religious

sections of the community. Subsequently, the Museum maintained a fairly regular schedule of opening times. Closures other than those at Easter and Christmas have been rare and, with one notable exception, of short duration. In 1918, the prevalence of pneumonic influenza led to a closure from 28 January to 3 March.

From the time of its inception, the space needs of the Australian Museum were the yardstick against which all other considerations had to be measured. The requirement for additional showcases to contain the rapidly increasing number of exhibits overrode the niceties of their design and arrangement and, ultimately, of the arrangement of their contents. Sheer quantity, rather than quality, of specimens was the criterion by which the importance and reputation of a museum could be judged. Nevertheless, the incredible amount of material that poured into the Museum during the nineteenth century provided a wide range of specimens and artifacts from which to select the finest examples for displays set up in recent times.

Even when Mr Holmes politely showed his visitors around in 1830, we can safely assume that they were confronted by a diverse assemblage of items lacking in systematic presentation. Although not much is known of what constituted the collection at that time, Museum registers compiled for later years reveal an intriguing miscellany of items. Together with the more mundane wonders of nature were displayed its freaks and monsters, as well as esoteric additions from alien cultures.

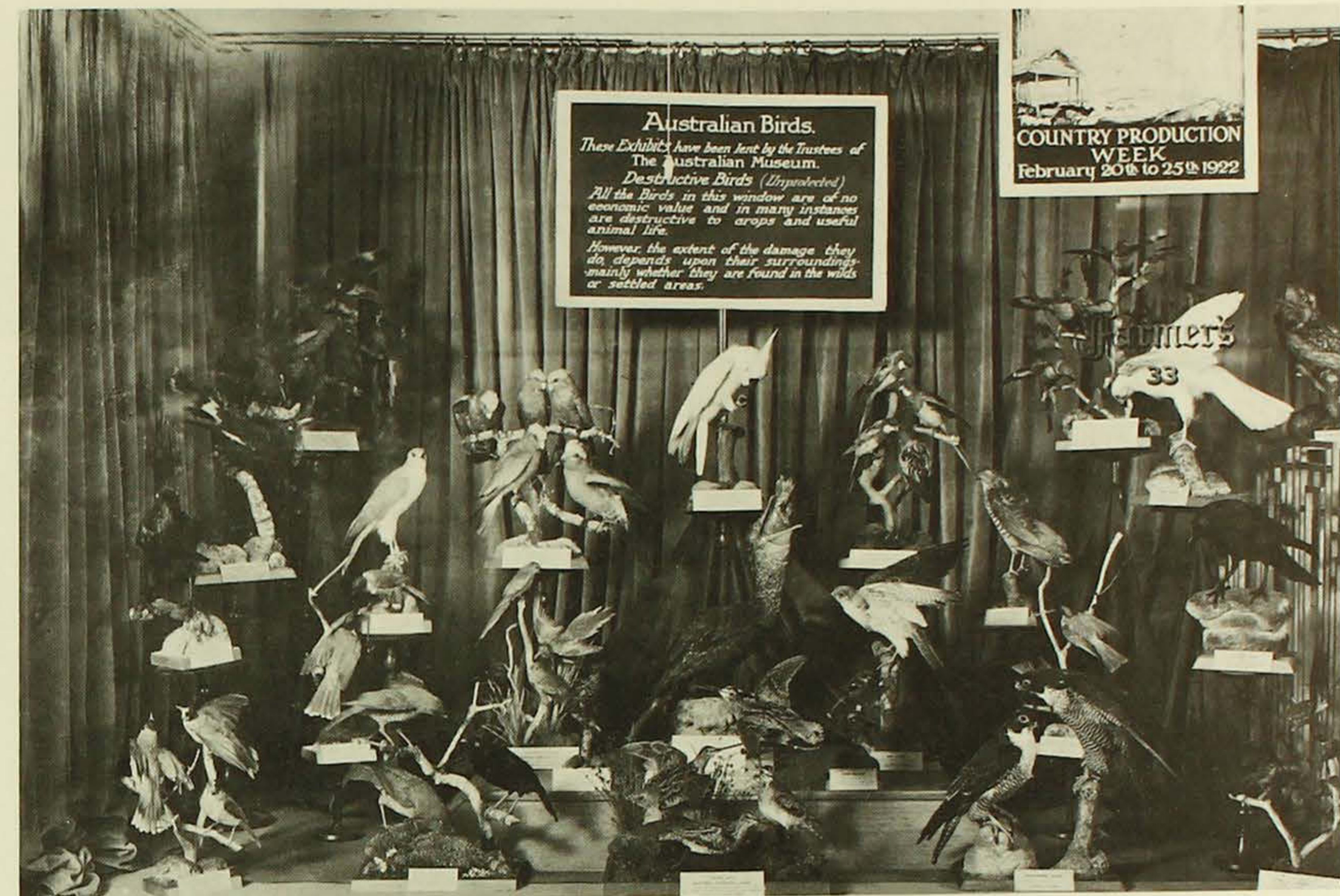
The state of the Museum's specimens was criticised early in the day. Writing to the *Sydney Gazette* of 17 April 1841 under the *nom de plume* 'Aliquis', one correspondent expressed his disillusionment:

When in town some months ago, I entered for the first time the portals of the Australian Museum, and was much disappointed when I saw the miserable state of preservation in which the specimens of Natural History are kept. On the one hand stood the skins of quadrupeds and reptiles in rags, and covered with numerous traces of insect destruction; on the other birds, under which lay heaps of dust, with the eggs and membranes of insects that had been, and still are, preying on the most beautiful specimens of the Natural historian's care; while the wet preparations in spirits of wine formed no less objects of regret from their neglected state, evaporation of the spirit having taken place, the preparation partly uncovered seemed in a rapid state of decay, while what remained of spirit had lost nearly all its preservative power . . .

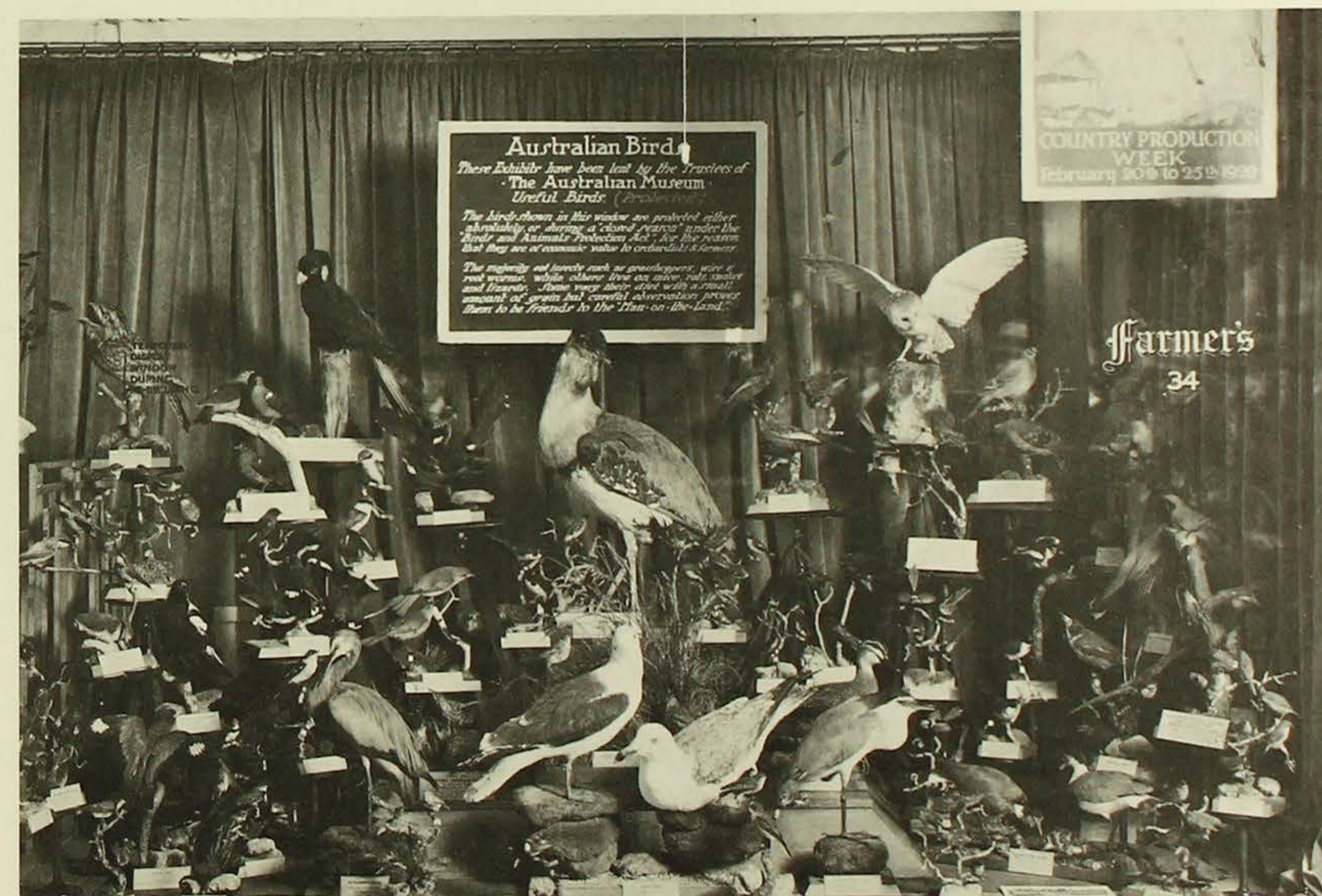
Since that time, museum techniques—particularly the preparation of natural history specimens for exhibition—have increasingly been the province of highly trained specialists. Foremost of such techniques in popular fancy is the gentle art of 'stuffing'. In its present-day context, this is a somewhat loose term for the range of methods known collectively as taxidermy. Early stuffing methods were primitive. Skins were simply sewn up and tightly filled with hay or straw, the finished product being about as lifelike as a rag doll.

In 1909, a group of African lions was purchased by the Museum from Wards Natural History Establishment in America. These magnificent mounts were the first examples of so-called 'sculpture-taxidermy' to be displayed in the Museum. A practical understanding of animal anatomy and movement, a sculptor's hand to fashion the detailed model from which a manikin can be cast, and an artist's eye to ensure a balanced composition, are all needed to reproduce, in static facsimile, the dynamic grace of a living animal.

Use of this technique was encouraged in 1938, when Frank Tose, chief of exhibits at the California Academy of Sciences, visited the Museum to supervise the construction of a red kangaroo, a rock wallaby, and a koala group, each with a scenic background. Under his instruction, a dog and a wallaby were made by Joseph



Display of 'destructive' birds set up in a show window of Farmer's Emporium, 1922.



Display of 'useful' birds set up in a show window of Farmer's Emporium, 1922.



Kingsley, then assistant articulator. In the Australian Museum, the technique is seldom applied to animals other than mammals. Fish, amphibians and reptile specimens are usually prepared by casting or freeze-drying. Sculpture-taxidermy would be wasted on most birds since the subtleties of body shape invariably disappear beneath plumage. In most instances, feathers can be arranged so as to disguise all but the grossest disfigurements caused by incompetent bird stuffers.

The insect infestations that plagued early taxidermists were eventually controlled by treating skins with arsenical preparations. These compounds first appeared in 1770 and their apparent efficacy makes it difficult to believe they were not used in the Australian Museum prior to 1841. Arsenical soaps were abandoned by the Museum in the early 1950s and replaced by the less dangerous borax. Used both as a preservative and as a preliminary drying agent, borax powder could be applied during skinning to soak up excess fluids and to assist taxidermists in handling otherwise slippery tissues.

In 1966 the Museum acquired several penguin specimens from Antarctica. Rolf Lossin, an experienced preparator who, mistrusting the vaunted efficacy of borax, had quietly reintroduced arsenical soap some time previously, used both substances to treat the skins. Some duplicates, including a superb Emperor Penguin, were mounted and set aside, sealed from dust in polythene bags. Within months the duplicates had disintegrated: *Dermestes* beetles had laughed both arsenic and borax to scorn.

Used together, borax and variants of the two-centuries old arsenical formula are usually adequate. The penguin episode, though exceptional, provided a timely warning against complacency and the search for an ultimate preservative continues.

During the nineteenth century and the first half of the twentieth, many specimens, especially those of fishes, amphibians and reptiles, were 'pickled' in alcohol and exhibited, alongside the dried material, in glass-stoppered bottles. A particular disadvantage was the loss of colour suffered by specimens kept in preserving fluids, particularly those containing alcohol. Pigments lost by the specimens are invariably taken up by the liquid so that, for reasonable viewing of a bottle's contents, periodic replacement of the preservative is essential. This requires access to the bottle by means of a wide ground-glass stopper which invariably permits evaporation, with consequent danger of damage to the specimen. The identification of some specimens becomes difficult

Hall of Fossils

Above: Miniature diorama, showing completed background painting and mock-up of foreground.

Below: Same diorama with foreground completed.

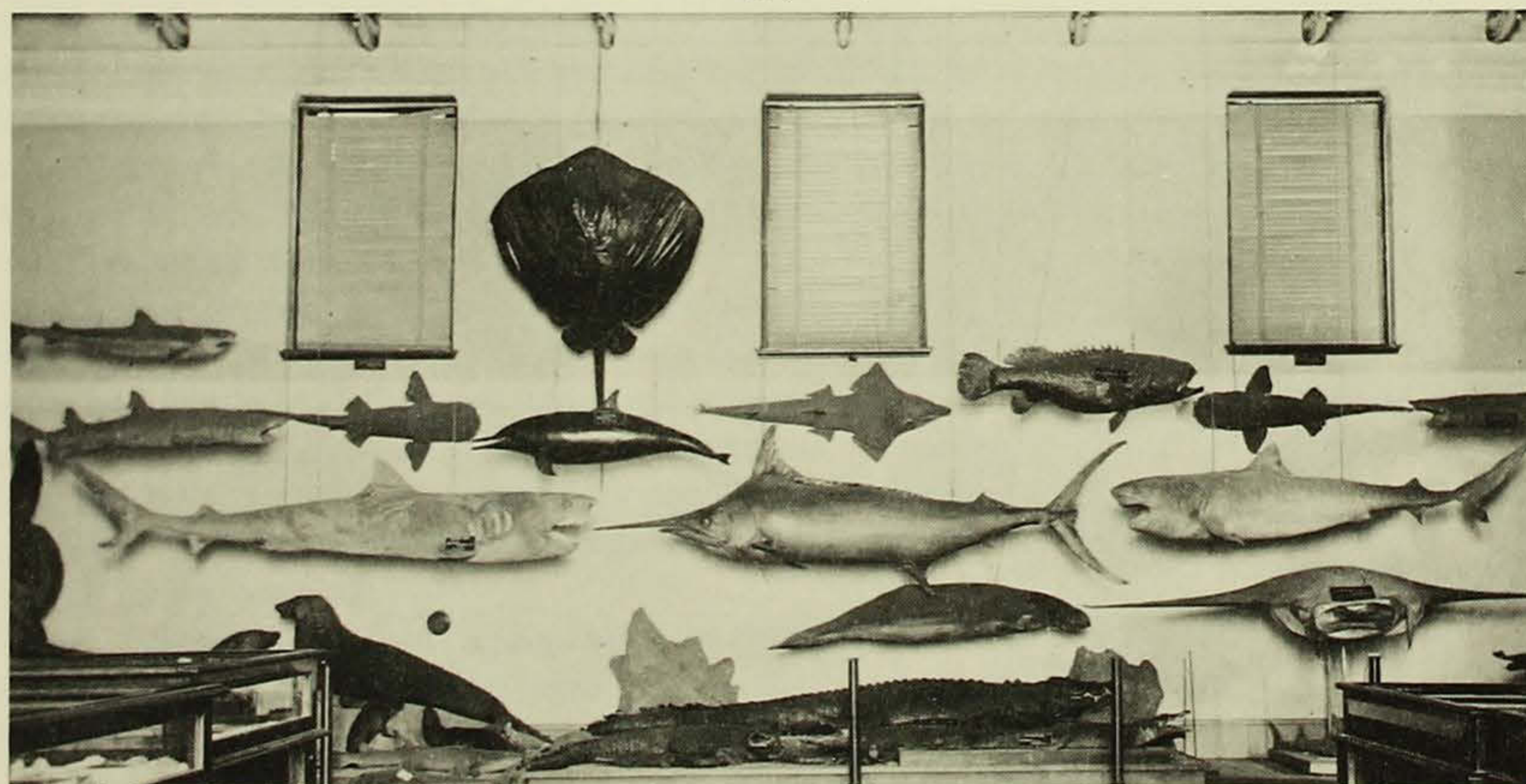
where colour is a distinguishing characteristic. Thus, the decidedly black Funnel-web Spider *Atrax robustus* is bleached to an innocuous pale-brown colour within a short time of its submersion in an alcohol-based medium. Regular replacement of the specimen is the only means of ensuring its recognition. Wet specimens, as they are called, now play a relatively minor role in display and are confined to specialised exhibits or to situations where no other form of presentation is suitable.

Some of these problems were alleviated in the late 1950s when Howard Hughes at that time officer in charge of the Museum's Department of Preparation introduced the technique of mounting specimens in 'wet-boxes' made from clear acrylic sheet. Properly made, wet-boxes are attractive to look at; their rectilinear shape offers greater flexibility of arrangement than was possible with the old 'pickle-bottles; their contents keep indefinitely without the need for topping-up; and colour-loss from specimens can be reduced by refined preservation techniques. One of the Museum's largest single-subject showcases *These are Invertebrates*, had thirty-six wet-boxes.

By 1890, the Museum's collection of skeletons had been brought together in the lower floor of the southern portion of the College Street wing. The *Guide to the contents of the Australian Museum*, published in 1890, shows two adjoining Osteological Halls, both crammed with showcases. This situation could have been relieved in 1895 when five large table-cases of fossil remains were removed from the end hall but, in true museum style, most of the space thus gained was promptly forfeited to the 'exhibition of skeletons of two small whales, of a crocodile prepared to show the dermal scutes in relation to the endoskeleton, and of table cases assigned to reptile skeletons'.⁵ The status quo was completely restored in May 1897, when the skeleton of an Asiatic Elephant, 'Jumbo', late attraction of the Sydney Zoo, was put on display.

In April 1910, the new south wing was officially opened and the osteological collection 'removed from the crowded areas in the Main Hall and displayed in the larger of the two new rooms',⁶ where it has since remained. A photograph of the newly installed Osteological Gallery shows a broad, spacious hall well-suited, within the limitations imposed by its architecture, to its functions as an exhibition area. Parallel ranks of showcases, marching along its walls with the rigid precision of a military funeral, did little to enhance its appearance but the gallery offered a rare commodity—space sufficient to gain an uninterrupted view of the exhibits.

This was not to last. In the following year, five whale skeletons were slung from



Opposite: Fish Gallery (including some mammals and a reptile) in the central hall of the first floor of the west wing, about 1875.

Left: Production of miniature metal foliage by an acid-etch process.

Below: 4 Miniature metal foliage assembled.



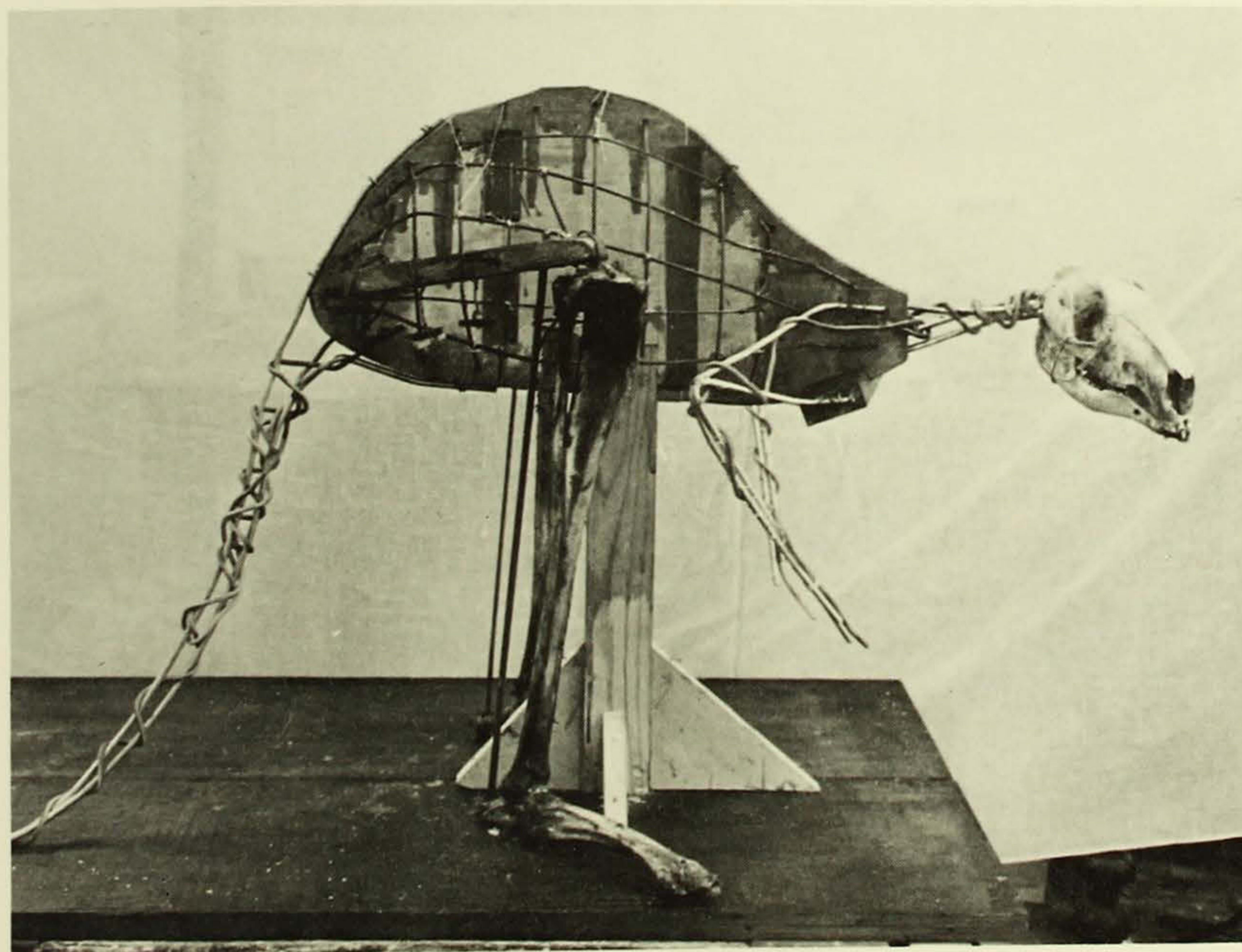
the ceiling. These were followed, in succeeding years, by further acquisitions of specimens and by the steady encroachment of showcases and exhibits from adjacent areas. Chronic overcrowding continued to be a problem until the appointment of Evans as director in 1954 led to a new and rational display policy.

Although all of the skeletons displayed in the Skeleton Gallery are genuine, a number of those in the Hall of Fossils are not: many are casts, models or reproductions. Casting is by no means confined to fossils, though these constitute some of the earliest specimens acquired by the Australian Museum. More often than not, fossil replicas are serial reproductions by which museums can acquire accurate reproductions of newly discovered or rare fossil specimens in the same way that art lovers can acquire superb prints from the paintings of old masters. *Archaeopteryx*, for example, is known only from a few specimens all found in Europe. Nevertheless, excellent facsimiles of this fascinating link between reptiles and birds may be seen in every country that boasts a natural history institution.

Because casts of fossils reveal only external features, they provide no means for scientific evaluation of the specimens they represent. Authenticity can only be determined by those who have direct access to the original, but experts may be fooled. In 1912, fragments of a skull, including half a jawbone, were unearthed from a shallow gravel-pit in Sussex. Optimistically named *Eoanthropus dawsoni* (Dawson's dawn-man) by Sir Arthur Smith Woodward, but generally referred to as the Piltdown skull, the specimen attracted widespread interest and was the subject of archaeological specu-

The sculpture-taxidermy technique

1 A rough model of a red kangaroo is made in wire and mesh, incorporating the skull and (in this case) the hind limb bones.



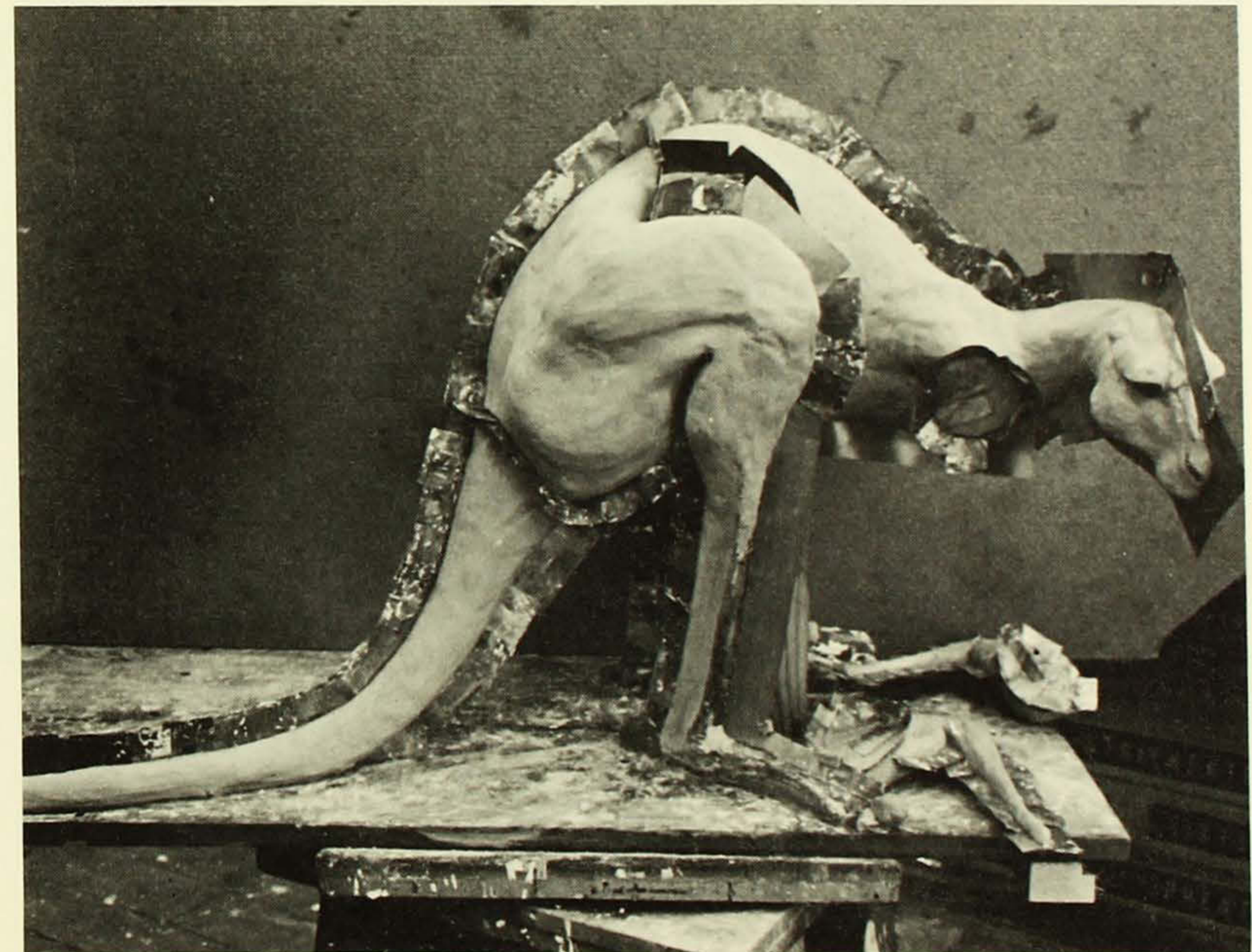
lation that continued for decades. During this time, its authenticity came to be more or less universally accepted. In 1953, however, researchers produced unassailable evidence that the supposed fossil was an elaborate hoax.

In museums all over the world, casts of the reconstructed skull that had been on display for years vanished overnight, as red-faced curators surreptitiously removed them from their showcases. At the same time, the Australian Museum's own Piltdown replica, together with an ingenuously authoritative label, was quietly filling its 'correct' chronological niche in a poorly designed exhibit on human evolution that was set up in 1939. By an incredible oversight, news of the hoax failed to provoke the requisite action and the discredited facsimile remained on view to misinform visitors until 1970, when its virtually forgotten existence was brought to the attention of an embarrassed Museum staff and it was hastily taken off display.

Many rare or valuable specimens are represented by replicas. The soundness of this policy was demonstrated several years ago when a number of beautifully cut, crystal replicas of gemstones were stolen from the Mineral Gallery. They were returned from Canada, intact and undamaged, some months later, accompanied by a terse ironic note from the thief. Sometimes, the original specimens no longer exist. The Museum possesses an impressive display collection of casts and models taken from famous Australian gold nuggets. These remain as permanent historical records of specimens long since rendered into ingots or currency of a more portable kind.

Similarly, meteorites, whose size or external appearance would otherwise make

2 Based on the wire framework, the body of the kangaroo is carefully modelled in clay, ready for moulding: metal foil is used to separate pieces of the mould. In this case, the forelimbs have been removed for separate casting.

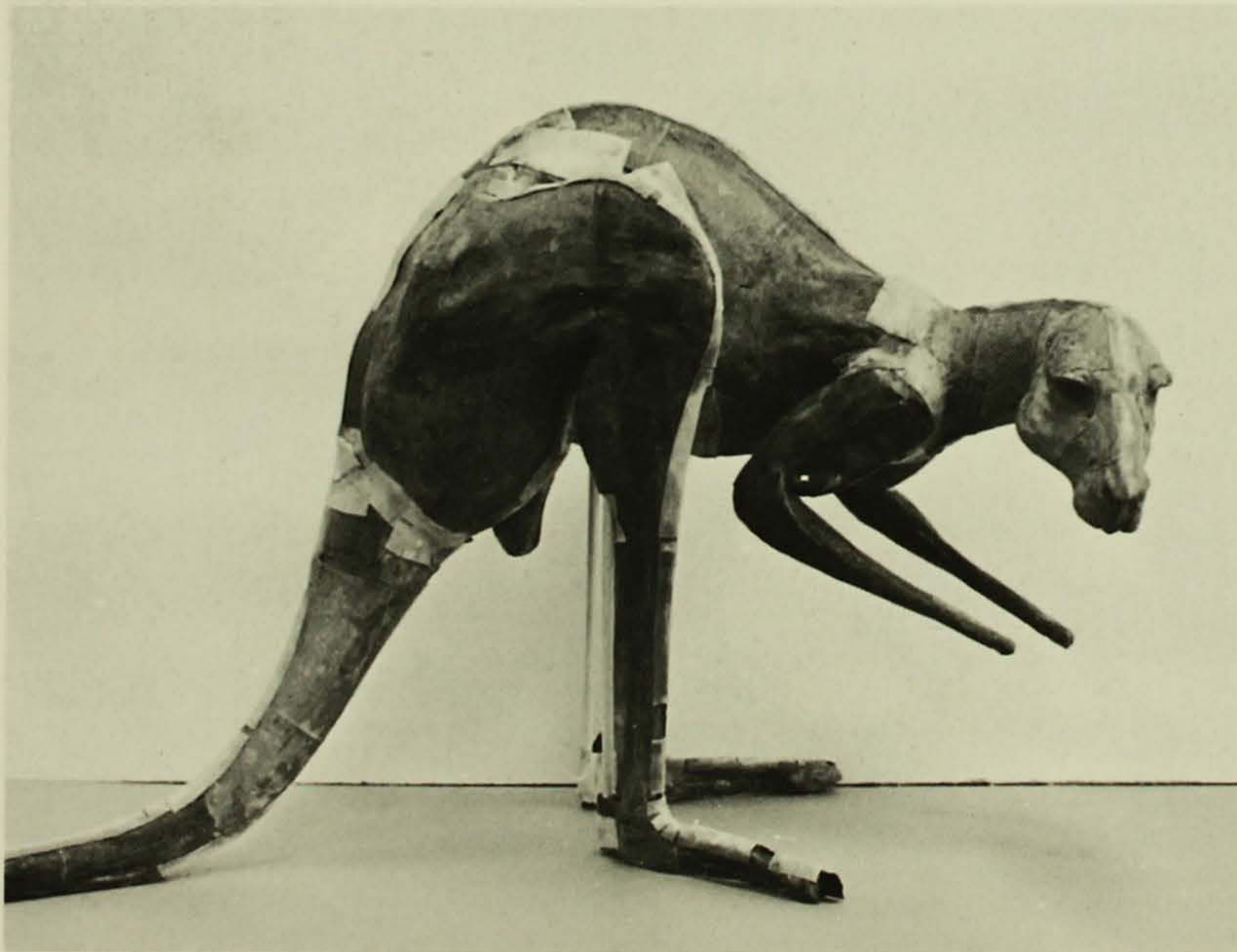


them ideal as display specimens, are often moulded and cast before the originals are cut up for scientific analysis or evaluation. Like fossils, these may also be produced serially for presentation to, or exchange with, other institutions.

The system of sending local material to overseas museums on an exchange basis came into operation very early in the Australian Museum's history and the British Museum derived considerable benefit from the arrangement. Indeed, the early correspondence, minutes and reports of the committee and trustees suggests that the Australian Museum functioned as a colonial clearing house for a wealth of specimens destined for London and from which the Museum itself might skim off the rejects in lieu of payment for services rendered. This is not a true picture of the situation, but a long time was to elapse before the balance of the exchanges approached a state of equilibrium. The situation was progressively relieved by changing attitudes, of responsibility towards the custody of the Museum's meagre collections of irreplaceable material and by the advent and development of casting techniques.

The Australian Museum's collection of fossils, augmented by a steady trickle of cast specimens from institutions overseas, received a sizeable boost in 1859: 'the trustees have to announce the arrival, in Port Jackson, of five large cases, containing the whole of the casts prepared by the British Museum, of the fossil remains of extinct animals in the National collection'.⁷ Most of these were displayed. Later additions, many of them replicas, increased the numbers and, by 1883, these formed a major collection of European and American fossils arranged in stratigraphic sequence in table cases

3 The manikin is cast in lightweight fibre/cellulose composition and is ready to receive glass eyes and skin.



around the mezzanine floor of the Long Gallery. By 1890, casts that were too large to be exhibited in showcases were featured as open exhibits set up on pedestals and tables in the Central Hall of the then College Street wing. These included the skulls of nine members of the elephant family. The most conspicuous cast of them all, taken from actual remains in the British Museum, was that of a giant sloth, *Megatherium*, which was set up in 1871 and now stands just within the entrance to the Hall of Fossils.

Joseph Kingsley was very much interested in the technical and display trends of American museums and, having gained a grant from the Carnegie Corporation of New York, left for a year in America in June 1940. He visited a number of museums and attended a class for preparators conducted by Frank Tose at the California Academy of Sciences.

During Kingsley's absence, the newly appointed director, Dr Walkom, reorganised the taxidermists and articulators into a single Department of Preparation under the control of the mineralogist, T. Hodge-Smith. Direct scientific control of the department ended in June 1945 with the death of Hodge-Smith, whose place was filled by the former articulator, Charles Clutton. Following on Clutton's death, two and a half years later, Kingsley assumed charge of the department.

Kingsley maintained regular correspondence with American institutions in an endeavour to keep pace with overseas developments in preparation techniques and the rapidly expanding field of plastics technology. He undertook numerous experiments with thermo-setting plastics and, by 1948, the plastics that had been either

4 Two very lifelike mounts produced by Rolf Lossin, using the sculpture-taxidermy technique. They are seen against a photographic mural.



investigated or put into use included latex, urea formaldehyde, phenolic resins (bakelite), acrylic resins, PVC and PVA. The acquisition of an hydraulic heat press at this time contributed to the versatility of the materials used. Thermo-setting plastics were cast in metal moulds that could withstand the heat and pressure (up to ten tonnes) exerted by the press. A fine example of the combined use of techniques for a single exhibit is an enlarged model of the marine bluebottle *Physalia* which was made in 1955 and is still on display.

In the early 1950s prevailing fashions dented, and finally penetrated, the conservatism of the Museum. So-called 'fashion-colours' began to appear, almost simultaneously with their release to the fashion-conscious public, on the backgrounds of many showcases. The layout of exhibits, formerly as much under the control of Museum scientists as the specimens themselves, began to reflect the influence of designers.

The instigator of these changes was Dr J. W. Evans, who was appointed director in November 1954. The preparation staff at that time numbered eight: the officer-in-charge, Joseph Kingsley; three assistant preparators, Howard Hughes, Roy Mackay and John Beeman; and four cadet preparators. The combined talents of this group covered a broad range of skills. In addition to their specific lines of interest, most had some basic training in taxidermy and were familiar with the processes of articulation, casting and moulding, and various aspects of preservation. As participants in collecting expeditions, they were required to have a knowledge of firearms and some acquaintance with trapping procedures; expertise in field skinning and preservation techniques; bushcraft, camp management and organisation; and the collection of birds, reptiles, mammals, insects, archaeological material, minerals or fossils.

Modelling and sculpturing, technical-model making, photography, design and layout, scientific illustration, painting, cast-colouring, woodworking, metalworking, grinding, polishing, spray-painting and numerous other skills all come within the province of this department. A preparator was—and still is—a professional jack-of-all-trades and sometimes master of several. Outside the Museum, no appropriately comprehensive training course was available and a cadetship, the equivalent of an apprenticeship, if begun at the age of sixteen, was a seven-year term that led into a further six years as an assistant preparator.

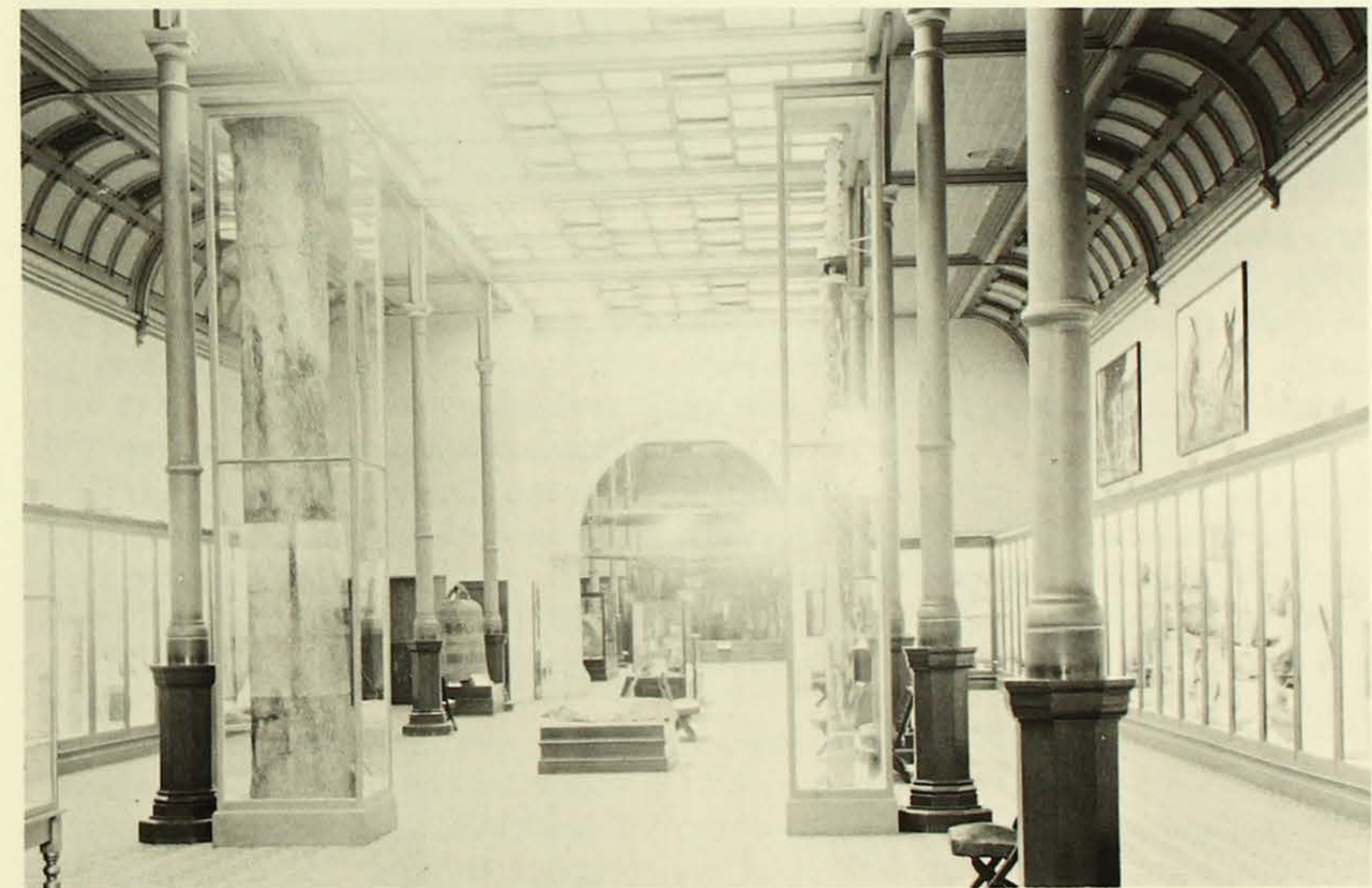
Beyond the mainstream of its more creative activities, the Department of Preparation was responsible for exhibit maintenance and repairs, showcase lighting, attention to the collections, fumigation procedures and so forth. Traditionally, the staff also catered to the day-to-day requirements of scientific staff, a diversion of labour to which Evans objected and which he overcame by recruitment of scientific assistants.

Joseph Kingsley retired in August 1955 after forty-three years with the Museum, and was replaced by Howard Hughes as officer-in-charge. The earlier loss of two cadet preparators was offset later in the year by the appointments of Ray Witchard and Kingsley Gregg. A new post, that of cadet artist, was filled by Brian Bertram, and the resignation of a part-time ticketwriter freed this position for a full-time employee.

After Kingsley left, Evans lost little time in organising his future display team. His first move was to separate art from the activities of the Preparation Department by creating a new Department of Design and Art. This came into existence in April 1956, and comprised an officer-in-charge, John Beeman, the cadet artist, Brian Bertram, and the ticketwriter, Lois Chambers. The new department's principal function was to prepare designs for new gallery exhibits and Evans directed that, in future,



The upper studio of the Art Section of the Exhibitions Department, 1976. Clockwise, from left foreground: A. Burrows, J. Raffin, E. Juska, D. Rae, M. Kolotas, L. Clapton, S. Robinson, K. Gregg.



The Aboriginal Gallery, about 1956. Dazzling midday sun through the skylight (since sealed) made a blaze of light and reflections.



Aboriginal Gallery, as reorganised 1969-70. With the skylight covered, internal lighting could be used to illuminate and draw attention to the exhibits.

Beeman was to be consulted on all matters relating to Museum displays. Thus, for the first time in its history, responsibility for the design of displays was taken from the scientific staff and given to a group of qualified designers. Exhibit content—the specimens and the information associated with these—remained under the scientists' control.

In keeping with Evans' belief that the Museum should be a repository for material that was intrinsically Australian or from Pacific regions, foreign animals were culled from the galleries and placed in storage. Except for the large Vickery Stamp Collection (still held by the Museum under the terms of a bequest), stamps, coins, and medals, the Cook relics and other items of mainly technological or historical significance were transferred to more appropriate institutions over the next ten years.

In its internal arrangements and fittings the Museum at this time looked like a government institution, with walls painted 'institution-cream' above and 'institution-brown' below. Most of the showcases were Victorian in style if not age, and black. A portion of the main Entrance Hall was enclosed in dark cedar panelling to make a suitably gloomy and impressive vestibule, complete with turnstiles and a glassed-in sentry box. Notices screwed firmly to walls and showcases greeted visitors with such traditional exhortations as *Do Not Handle Exhibits*, *Do Not Touch* and *Keep Hands Off the Glass*. Others contained ancient and yellowing extracts from obscure By-Laws, drawn up *By Order* with dire warnings that transgressors would be dealt with, 'to the utmost rigour of the Law'.

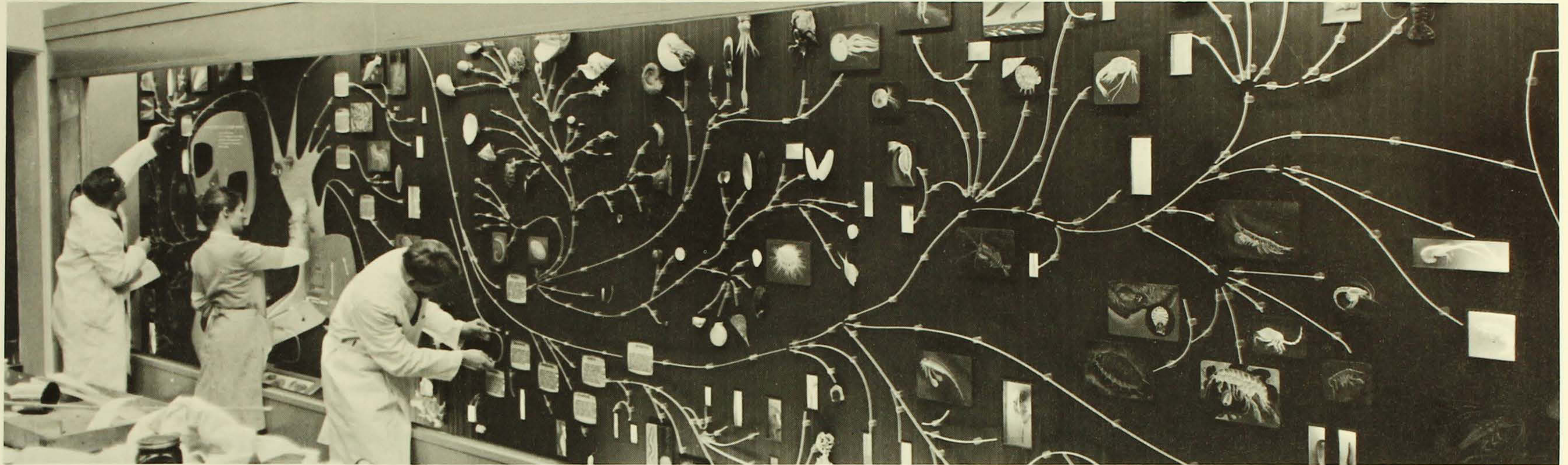
Evans wanted visitors to feel welcome in the Museum, not awestruck. He saw no point in maintaining a cathedral hush and he was not averse to high-spirited children. Many of the notices were removed altogether and others, more colourfully presented and more gently worded, replaced the remainder. The grim *Regulations* disappeared and were replaced by a large curved panel facing the entrance that explained the aims and functions of the Museum and was headed, in letters fifteen centimetres high, 'welcome'.

As funds allowed, new showcases were built, old showcases were repainted (in any colour but black), windows were progressively blanked-out and showcase lighting was installed. The skylights were eventually covered over by a new roof, and the panelled entry into the Main Hall was removed, producing an atmosphere of airy spaciousness.

In exercising their new freedom, Beeman and his colleagues had to feel their way towards sketchily defined goals, using whatever tools came their way. Looking back, it is easy to be critical of their achievements but their early changes were brought about on a severely limited budget. As late as 1957, Evans was able to authorise an expenditure of only £10 per showcase.

Showcase design remained the responsibility of the artificers, the intricacies of showcase construction being regarded as beyond the capacity of artists and designers. The results were invariably sound in principle and workmanship, but were uncompromisingly utilitarian and ugly.

The first major area to receive cosmetic treatment was the Bird Gallery which, in 1956, occupied most of the first floor of the College Street wing and was furnished with tall black showcases arranged in bays and crammed to bursting point. Within eighteen months, renovations to the gallery had changed it almost beyond recognition. Glass shelves were eliminated; specimens were reduced to about a fifth of their former numbers; and displays of such aspects of bird biology as nest-building, migration, camouflage, ecology and mechanics of flight were set up.



Constructing the invertebrate 'tree', 1959.

Evans was keen to achieve similar transformations in all of the display galleries. For several years he kept the display staff moving from one area to another in a grand series of overlapping priorities, some of which were not completed during his term of office. Before the Bird Gallery was finished, work on the new Fish Gallery was started.

In May 1959, Beeman was appointed officer-in-charge of the new Exhibitions Department, the two former departments becoming sections of this. Having been appointed to the new position of Museum photographer and visual aids officer, Howard Hughes was replaced by Roy Mackay as officer-in-charge of the Preparation Section. Beeman filled a dual role as head of the new department and officer-in-charge of the Art and Design Section, which was enlarged by the addition of a second assistant artist, David Rae, who had been appointed to the Preparation Department a year previously, and by a second ticketwriter.

Progress on the new Fish Gallery was slow and erratic. Considerable time was spent in acquiring and preparing new specimens, and staff were frequently transferred for long periods to other projects. Consequently, several of the exhibits in the Fish Gallery were still incomplete when Evans retired in January 1966.

Less time was spent on the redesigned Australian Mammals Gallery. Begun shortly after the Fish Gallery had been started, it was finished by mid-1963. Half of the specimens were mounts that had been cleaned up and put aside when the old mammal displays were dismantled. These were augmented with new specimens, including two superbly mounted kangaroos prepared by Rolf Lossin and an excellent series of scaled-down mammal models prepared by the two assistant artists Bertram and Rae.

As with the Bird Gallery, some of the format of the new mammal exhibits closely resembled that of exhibits in the British Museum. But these were among the last of the more blatantly 'borrowed' displays. The two 'trees' of animal relationships, installed in 1959, had already demonstrated that the art section could function autonomously. Respectively titled *These Are Invertebrates* and *Animals With Backbones*, both were visually dramatic and contained elements that were to be embodied in later, more attractive gallery exhibitions. *These Are Invertebrates* was installed, complete with specimens, in a long showcase, whereas *Animals With Backbones* was prepared in the form of a large self-illuminated diagram. Both were 'text-book' displays aimed more at teaching than entertainment. They were successful, and until dismantled in 1979 were in constant use by school classes.

The Aboriginal Gallery's new panel displays and the new exhibits set up in the Bird, Fish and Mammal galleries also incorporated a little of this text-book approach, but they were all fundamentally displays of *specimens*—modernised and more informative versions of the old glass-shelf displays—rather than displays of *concepts*. The 'trees', on the other hand, did not need specimens: their purpose was to put forward ideas.

These Are Invertebrates, which used specimens, models and small oil paintings of microscopic animals to add substance to its presentation, was in fact a statement on the theory of invertebrate relationships, expressed in three dimensions and enclosed in a glass case. The same statements could have been made, though not nearly as effectively, with simple diagrams on flat panels taking up a tenth of the space. *Animals With Backbones*, which showed the inter-relationships of the main groups of vertebrates and the sequence of their evolutionary development against a geological time-scale, was a giant example of the diagrammatic approach.

The trees were noteworthy in another respect. *These Are Invertebrates* utilised some noisy electro-mechanical gadgetry to enliven its presentation, and a continuous-loop tape-deck carrying a recorded message was installed in *Animals With Backbones*. Neither was very successful; the sequence of coloured lights that flashed along the branches of the invertebrate tree was meaningless to most people, and the message-repeater, which explained what the huge, wrought-iron diagram was all about, had to be removed after repeated breakdowns.

These were not the first of such abandoned experiments. A complicated stop-start, flashing light and turntable arrangement had been installed in the Bird Gallery to depict the wing-strokes of bird flight. Constant failure of the mechanism ensured its early removal and it was replaced by a group of static bird models. In another attempt to add life to an exhibit, a large cam-operated switching unit was installed in a showcase at the end of the Fish Gallery to provide the exhibit with a play of blue, green and white lights, simulating an undersea environment. The effect was interesting but unconvincing. The experiment was terminated mainly because of the noise.

Provisional planning for the development of a completely new Hall of Fossils began in 1961. Working in collaboration with the palaeontologist Fletcher, Bertram produced a full set of construction drawings and specifications detailed to the last screw. Construction of the showcases and fittings was completed by early 1964. Bertram also designed most of the individual displays and constructed several of the twelve miniature dioramas, illustrating various geological periods, that were a feature of the gallery.

The Hall of Fossils possessed no architectural ornamentation. Its organisation was inflexible, the island-cases occupying fixed positions. The gallery was a self-contained environment, complete in its unitary arrangement and, at the time of its opening, complete and up-to-date in the composition of its specimens and information. For the first time in the Museum's history an entire exhibition gallery had been designed around its subject matter.

An unusual feature of the new wing was the complete absence of windows on any of the floors intended for gallery installations. In a short article published in 1962, Evans wrote:

There has been much comment on the lack of windows in four of the floors of the new building. The reason for this lack is that most effective museum display is achieved with the aid of artificial light and, over the past few years, as light has been installed in an ever-increasing number of exhibits so have the windows in the old building been progressively obscured.⁸

It is interesting that eighty-four years earlier, the trustees had seriously considered opening the Museum at night but had abandoned the idea because artificial lighting was thought to be 'injurious to specimens, if not destructive'.⁹ Since the publication of Evans' article and the Museum's subsequent conversion to artificial illumination in all of its display areas, the destructive potential of light—whether of natural or artificial origin—has come to be more fully appreciated.

While Brian Bertram was flexing his creative muscles with designs for the Hall of Fossils, his colleague David Rae was involved with the main Entrance Hall and the southern half of the College Street wing. In September 1967, exactly ten months after the Hall of Fossils was opened, the newly remodelled southern section of the College Street wing had its own official opening. The new gallery comprised a group of composite exhibits relating to Australia's nearest neighbours. It included displays

The vertebrate 'tree', constructed in 1959.



on Antarctica, New Guinea and the Pacific regions and featured a giant-sized, wrought-iron wall-map illustrating the distribution of the major races of *Peoples of the Pacific*. Although its basic layout was far less complicated, this gallery reflected some of the characteristics of the Hall of Fossils in its curving panels, angled showcases and open displays and in the use of pale, clear-finished timberwork and aluminium-framed glazing.

While work was still under way on the College Street wing, Rae was preparing designs and working drawings for a new gallery on the third floor of the new east wing. This combined the more attractive elements of traditional arrangements with open displays and formal, virtually all-glass, showcases to create a simple but pleasantly spacious and welcoming exhibition environment. Originally planned as a Hall of Changing Exhibitions, with a flexible lighting system and movable modular showcases, the new gallery was officially opened in July 1968 with a splendid exhibition of Melanesian artifacts selected for their artistic merit rather than ethnological significance. So far, no changes have been made in the Hall of Changing Exhibitions, better known as the Melanesian Gallery.

Early in 1970, John Beeman resigned and was succeeded by Bertram with the shorter title of chief, Exhibitions Department. In the same month the Art and Design Section, which was previously accommodated in the new wing, was moved into the basement of the recently completed Spirit Block. The new quarters incorporated an art studio, dark room, silk-screen processing room and an office for the new chief. A metal workshop (since converted into a second art studio), spray-painting booth and a maceration room (containing a sterilising unit) were set up in the sub-basement of the same building.

The Exhibitions Department by then comprised twelve people. The Preparation Section was made up of three preparators, two assistant preparators and one cadet, while the Art and Design Section included one exhibition officer, two production assistants, one ticketwriter and one typist. With the forward planning then envisaged for the Museum's exhibitions and exhibition galleries, Bertram saw the need to expand the department's staff and further streamline its activities. Much of his time was now taken up by administration, leaving Rae as the only effective exhibition officer.

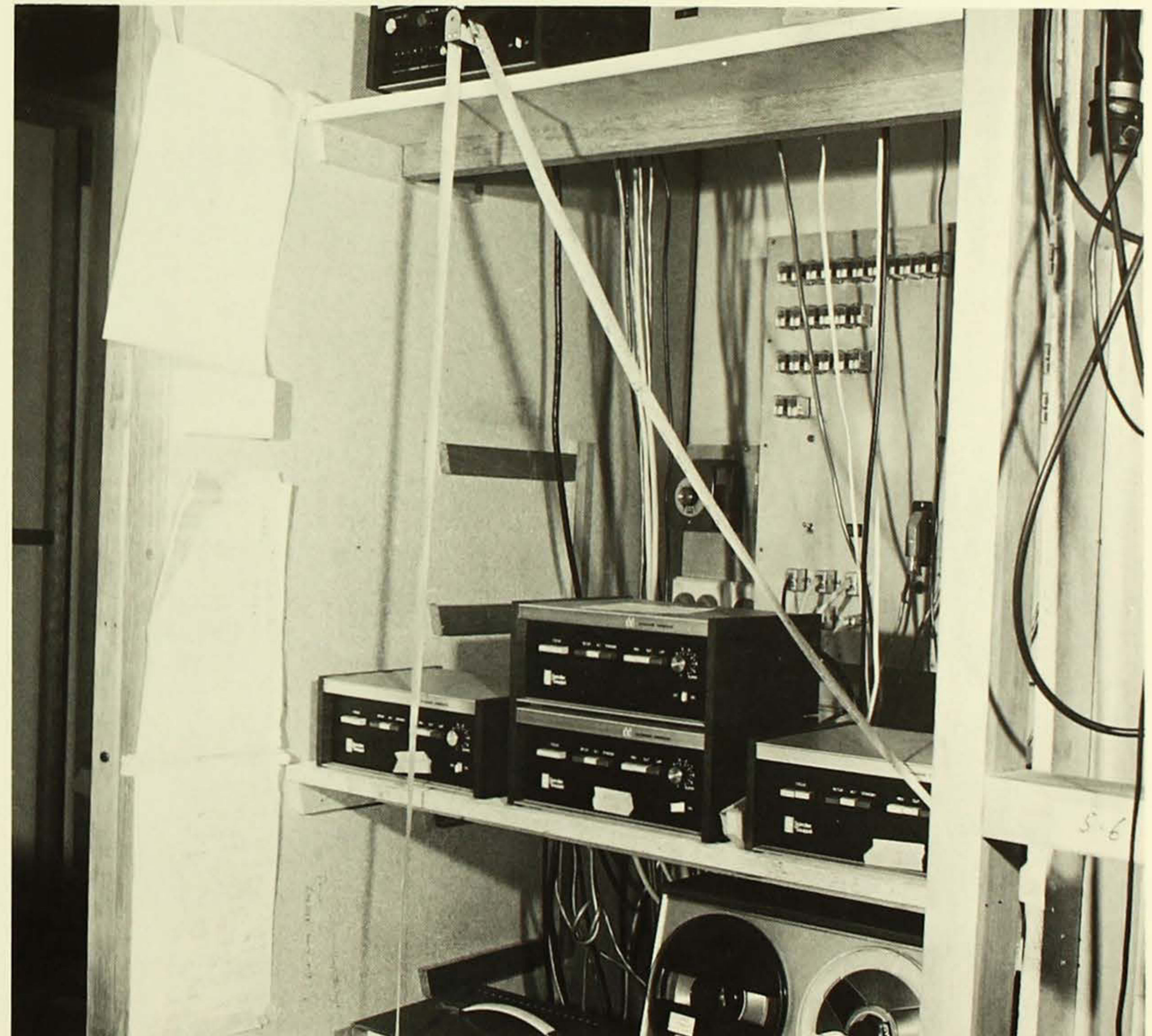
Kingsley Gregg who, accompanied by Rolf Lossin, had spent the first three and a half months of 1969 in Port Moresby designing and supervising the construction of new showcases and exhibits for the Papua-New Guinea Public Museum and Art Gallery, was transferred from the Preparation Section and appointed as an artist in January 1971. A second exhibition officer, Jeff Freeman, was appointed in January 1972 and a second artist in July of the same year. Some of the administrative burden was removed from Bertram's shoulders in June 1971 when a chief preparator was appointed to the Preparation Section. Since that time, the Exhibitions Department has been further rationalised by its incorporation of the formerly separate Artificers' Section.

The Hall of Life, designed by David Rae, was officially opened on 4 December 1974. Plans for a Hall of Biology were considered as early as 1967 and the first formal announcement of the project appeared in 1969:

Audio-visuals control centre, Hall of Life, prior to final installation. Punched-tape reader (top left), triggered by sonic impulses from magnetic tape deck (lower right), controls lighting and sound-systems in three areas and operates twelve eighty-slide projectors. In permanent installation, a continuous-loop magnetic cartridge unit replaces reel-to-reel deck shown here.



Bertram (in front) and Gregg working on a model of the Hall of Fossils. This was the first gallery in the Museum to be planned and constructed as a totality.





Right: Hall of Fossils. Silk-screening a text directly onto the background of an exhibit.

The next major display of a permanent nature in the Australian Museum will be the Hall of Life, a new hall to occupy a complete floor of the new east wing facing William Street. This display will emphasise how living things function; how they reproduce, how they develop, how they regulate their numbers, and how they affect and are affected by their environment. These, the facts of life, are not displayed elsewhere in the Museum's halls and yet they are an area where exciting new advances in understanding are being made.¹⁰

In its basic layout, the new hall showed few advances over the arrangements in the major exhibition areas already discussed but it incorporated several innovations. Like the Hall of Fossils, the composite Antarctica—New Guinea—Pacific Peoples exhibits and the Melanesian Gallery, it utilised a balanced and attractive arrangement of open, showcase and panel-type displays. Its major impact, however, lay in its use of strong colours, one of which predominated in the fully-carpeted floor, and in a high content of audio-visual presentation. It was also remarkable in being almost devoid of specimens.

The substitution of audio-visuals and visitor-operated displays for static specimens is increasing in areas of Museum exhibition where emphasis is placed on educational content. Thus, pre-recorded colour television presentations will feature in a new Marine Hall, the first stage of which is due for completion late in 1978. This exhibition, designed by Jeff Freeman, will also utilise a number of animated displays to present aspects of marine biology and geophysics.

An Arid Australia Gallery, intended as a long-term (about ten years) temporary exhibition, was opened in mid-1977. The most innovative and visually exciting of all the Museum galleries, it was designed by Bertram on a very low budget. Packing-



Right: Building the Lord Howe Island diorama. Preparators are about to apply plaster of Paris to bronze fly-wire formers to create rocks in the foreground.

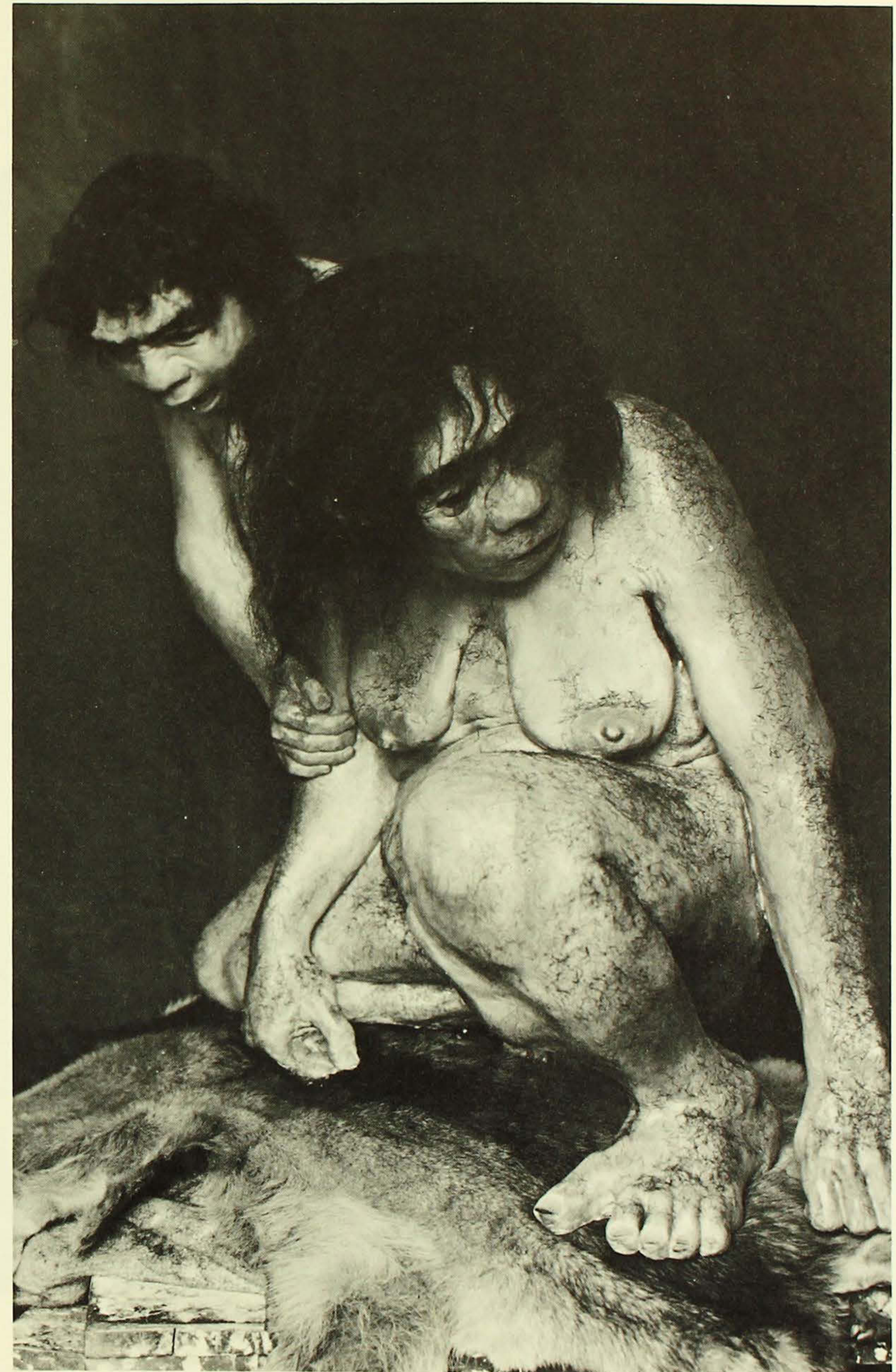
case plywoods and glass doors from old dismantled showcases were used in most of its construction. Bertram looked upon his project as 'experimental':

The exhibition was designed, in part, to explore economies in construction, labour, time and costs, the validity of a comparatively short life expectancy, and the significance of these to acceptance of the exhibition by the public.

The gallery presents many aspects of Australian deserts and desert life, both large and small, shown without much in the way of connections or linkages.

At any time people may be observed fondling the kangaroos, admiring a spider's web, watching a widescreen presentation of desert scenery, discovering how Warburton cooked camels' feet, learning about the significance of poikilothermy in a desert situation, or sampling the other exhibits with a resultant cumulative impression.¹¹

From this time onwards, visitors to the Australian Museum may expect to find its galleries in a condition of permanent flux; even the most solid and expensive displays are referred to as 'semi-permanent'.



Model of Neanderthal mother and child by Bertram, about 1962.



James Cases, preparator working on the model of a museum curator of Victorian times. Set in a replica of an ornithologist's workroom and surrounded by contemporary artifacts, this exhibit was well received by visitors.