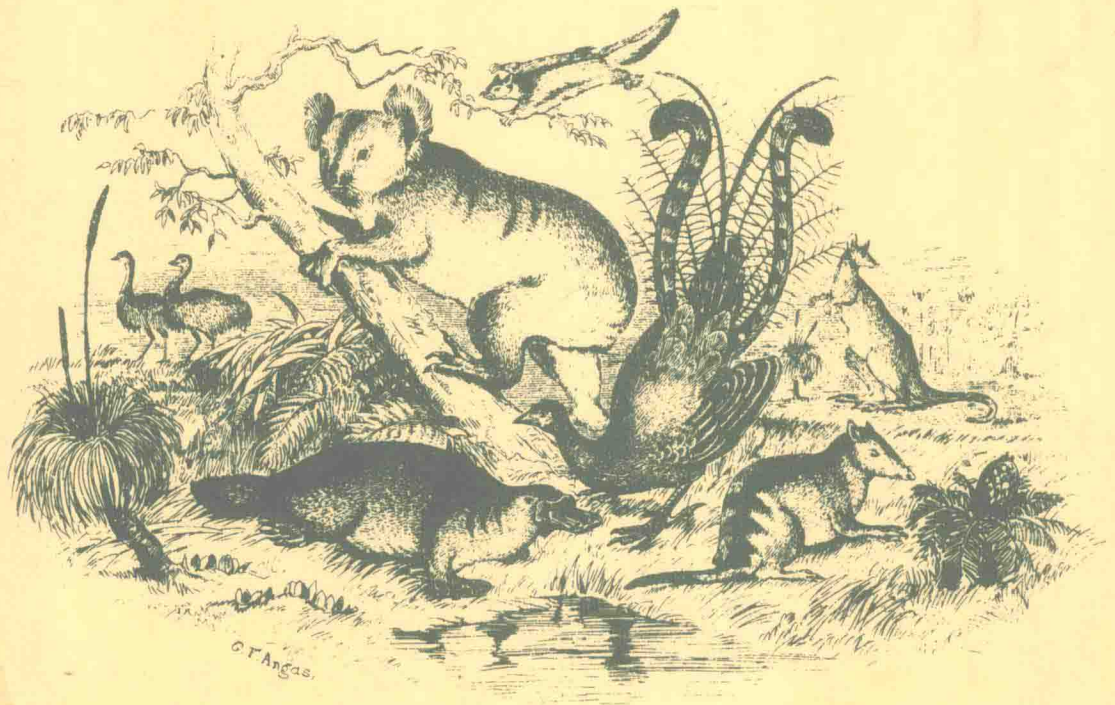


AUSTRALIA'S ANIMALS DISCOVERED



Peter Stanbury
and
Graeme Phipps

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Peter Stanbury and Graeme Phipps
The Macleay Museum, The University of Sydney



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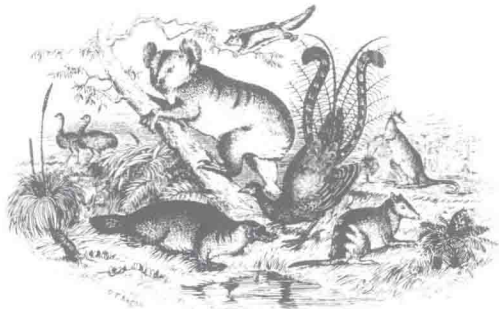
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AUSTRALIAN MUSEUM

This is to Certify that the Bearer Mr. George Masters Assistant Curator of the Australian Museum, has been commissioned by the Trustees thereof, to proceed to Western Australia, for the purpose of collecting Specimens of Natural History.

*Dated at Sydney New South Wales
this 5th day of September 1868.*



E. Dias Thomson.

*Crown Trustee
and Chairman of the Board.*



*Grand Agent
Curator and Secretary*

*Signature of the Bearer
George Masters, Assistant Curator*

An engraved letter of introduction from the Trustees of the Australian Museum issued to an authorised collector in 1868. The collector, George Masters, was later to become the first curator of The Macleay Museum.

Preface

For more than 40 000 years the Australian Aboriginals have observed the ways of the continent's animals. Their legends of the Dreamtime often told the story of how animals came into being or acquired certain characteristics. The legends were passed from generation to generation, and the oral tradition reinforced by paintings or rock engravings.

European philosophers of the Middle Ages were quite familiar with the concept of a spherical earth, which included for many a mythical *Terra Australis Incognita* – an unknown land to the south. One of the earliest maps to show any close resemblance to the Australian coastline was the French Dieppe map, an ornamental map drawn for King Henry VIII between 1530 and 1550; it is thought that its origin was the pilots' charts of Portuguese mariners.

The northern and western coasts of Australia were mapped by the Dutch between 1616 and 1627, and called 'New Holland' – with the unknown part beyond New Guinea being known as 'Terra Australis'. Abel Tasman in 1642 discovered Tasmania, and named it Van Diemen's Land, after the Governor-General of the Dutch East Indies. It retained this name officially until 1855 when it was renamed 'Tasmania', which had been in common usage since 1823.

In 1768 Captain James Cook was sent in the *Endeavour* to observe the transit of Venus from Tahiti, and to enquire into the southern continent. He mapped the east coast and named it 'New South Wales'. When the commission was given to Captain Arthur Phillip on 2 April 1787 as 'Captain-General and Governor-in-Chief of New South Wales', his area of jurisdiction extended from Cape York in the north to the southern extremity of the continent, and inland to 135°E. All land to the west was still named New Holland, which in official circles was sometimes taken to be this western part, and at other times to be the entire continent, but it faded from use in the 1820s in favour of 'Australia'.

The first European accounts of Australian animals and flora were by sailors; then by frequently ill-equipped and under-nourished explorers, by settlers preoccupied with tending a crop, and by convicts on the run. They had no time to study the habits of the animals they saw and often came to the wrong conclusions. Later, when scientific studies had been completed in museums and as more reports came in, the names and relationships of animals were then changed. It is because of this that names in early reports do not always agree with those in use today.

Research for a book like this starts simply. To trace the first sighting, the first description and the first illustration, is a matter of tracking down references in books. For example, the current scientific name of the frilled lizard is *Chlamydosaurus kingi* Gray. This tells us that the animal was first described scientifically by someone called Gray; but where? One place worth looking was in the *Catalogue of Lizards in the British Museum (Natural History)* compiled by G. A. Boulenger, and published in three volumes between 1893 and 1896. These technical works mentioned that the description was by Gray, in *King's Voy. Austr. ii*.

p. 424. Looking through all the 'King's' in a library catalogue, we found a book by Phillip Parker King: *Narrative of a Survey of the Intertropical and Western Coasts of Australia Between the Years 1818 and 1822 . . . 'With an Appendix containing Various Subjects Relating to Hydrography and Natural History'*. This two-volume work was published in 1827. The known range of the frilled lizard is in the area of the title of this book; and the 'ii' in the *Catalogue of Lizards* reference suggests the second volume of a series. The book was obtained from the Rare Book Library in the Fisher Library at the University of Sydney, and contains an appendix written by John Edward Gray of the British Museum, in which he described the new animal.

It was usual for explorers to send all material of a scientific nature to institutions such as the British Museum of Natural History for classification and description; but in many cases these descriptions are entirely in Latin. This time it was not, luckily, and a clue was given in the scientific description about who supplied the new species. The first part of the work is a 'narrative' or 'journal'; and on looking up the pages for the period the expedition was in the locality where the collection was made, it was found that on 8 October 1820 at Careening Bay, north-western Australia, King recorded that 'Mr. Cunningham found a very curious species of lizard'.

Allan Cunningham was a botanist on the expedition, collecting plants for 'His Majesty's Botanical Gardens at Kew', and his journal report – also fortunately in the same book – contains remarks about the first sighting.

The frilled lizard is a simple example. Much detective work is needed in some circumstances. But it is enjoyable doing such research from primary sources, especially when a pattern begins to emerge.

It is also while researching such sources that details about the personalities of the people emerge. What, for example, was a man like William Dampier doing in Australian waters? Many people do not know that he was a pirate and his reasons for being in the East Indies originally were unlikely to be to admire the natural attributes of the area. He wrote a book about his travels, *New Voyage Round the World* published in 1697; the book prompted the British Admiralty to hire him, an ex-buccaneer with no leadership experience, to conduct an expedition of discovery to the vast area south and south-east of the Dutch East Indies, of which nothing was then known. They purchased a rotten ship, the *Roebuck*, and equipped the expedition as cheaply as possible, with an inferior crew and without officers of quality to make up for Dampier's deficiencies. The episodes of the expedition make fascinating reading.

And what were many well-educated people doing in what was then the end of the world? Whatever their reasons, we can only be glad that such characters came and recorded the details of their travels.

Sir Joseph Banks has been called by some people 'the father of Australia'. This very wealthy man accompanied Cook on the *Endeavour* expedition. One must admire Cook for keeping such a diverse array of personalities together and working in reasonable harmony on board ship. To Banks, matters scientific had complete precedent over any other consideration (apart from his own comfort): for the second expedition of Cook's, the collier *Resolution* was converted by the addition of a superstructure giving an extra deck and a great 'cabin' so that Banks and his entourage could work in style. These alterations cost between £6 000 and £14 000, depending on whose reports are to be believed. But the superstructure made the ship so unseaworthy that it had to be removed; the letters between Banks and the Admiralty concerning the matter show that Banks eventually declined to go on the expedition. Yet he retained a great interest in the continent, and it was he who suggested that Botany Bay be used as the site for a penal colony.

In 1786 Lord Sydney authorised the despatch of an expedition to form a settlement in Botany Bay, and the First Fleet of eleven ships carrying convicts, officials and marines sailed in 1787, finally settling in the adjacent harbour of Port Jackson on 26 January 1788.

From the early days of the colony almost until his death, Joseph Banks was sent plants, parts of plants, and animals – almost anything of a botanical or zoological nature was deemed to be of interest to him. He also arranged for collectors to go to New Holland, and some very able people were sent. (He also sent people considered too much of a nuisance at home.) Looking back, it seems there was never a dull moment in early Sydney Town; one can almost feel the Governor wince at the despatches received, accompanying yet another person from the mother country.

The species chosen for inclusion in this book are all vertebrate animals: mammals, birds, fish, lizards and snakes. While there are invertebrates unique to Australia, we chose the larger, better-known animals because they trace the story of the early settlement and the development of Australian zoology. The spiny anteater, for example, was beautifully illustrated by William Bligh – better known as a great navigator and survivor of the mutiny on the *Bounty*, and as a Governor of the colony. Most of the raw material of this book was first published in Europe: John Gould and his wife began *The Birds of Australia* in England but decided they must visit Australia to complete their work. Upon their return to England, Gould finished one of the greatest expositions of the fauna of any country.

We hope that the readers of our book become absorbed, as we did, with the fascinating coincidences of Australian history, the colonial days, the explorers, the pioneer zoologists, and early discoveries of Australia's unique animals.

Peter Stanbury
Graeme Phipps
1980

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Alan Davies, our photographer, proof-reader, bibliographer and constructive critic, helped so much with this book that without him it is doubtful it would have been completed. We are also grateful to our colleagues at the Macleay Museum, Lydia Bushell and Judy Leon, who helped mount the exhibition 'Australia's Animals: Who Discovered Them?', which gave us the idea for this book. Jack Mahoney, Department of Geology and Geophysics, University of Sydney, discussed the literature of Australian mammals with us and gave us much moral support.

The following libraries, institutions and individuals allowed us to look at their collections and use selected items. We thankfully record their assistance: The Australian Museum; Associate Professor D. F. Branagan; The British Museum (Natural History); Mr J. K. Clegg; William Collins Pty Ltd; Fisher Library, University of Sydney; Mitchell Library, State Library of New South Wales; The Museum of Applied Arts and Sciences; National Library, Canberra; and Mr C. J. Percival.



This stylised illustration appeared in *A History of the Earth and Animated Nature* by the poet Oliver Goldsmith.⁴¹ The edition we viewed was published around 1840, but the first edition was produced in 1774. Note the triplets in the pouch of one of the kangaroos. Kangaroos have four teats, so it is possible, though extremely rare, to have three young. The animals pictured were captioned: '1. Lord

Derby's Kangaroo. 2. Aröe Kangaroo. 3. Parry's Kangaroo. 4. Woolly Kangaroo. 5. Brush Tailed Kangaroo. 6. Rat-tailed *Hypsiprymnus*. 7. Rabbit-eared *Perameles* [this is, in fact, a rabbit-eared bandicoot].'

The word 'kangaroo' is now used only for the largest macropods. Smaller macropods are called wallaroos, then wallabies, potoroos, and finally rat-kangaroos.

Mammals

The astonishment that early European settlers and naturalists must have experienced when discovering what amounted to a 'lost world' of animals can only be imagined today. When the first explorers sent home specimens of the mammals, it was thought at first that some kind of taxidermist's practical joke was being played, until it was realised that the southern continent was an attic-full of mammals superseded in other countries. And not merely superseded – for these primitive mammals had continued to evolve to fit the environment.

The mammals of the world are divided into three major groups, and Australia and the nearby islands are the only places in the world where these three groups occur together. Geographically isolated, the peculiarly Australian monotremes (the platypus and the spiny anteater) and marsupials (kangaroos, possums and others) developed to look different from their ancestors.

The monotremes are the only living representatives of a primitive group of reptile-like mammals long extinct elsewhere. They show many reptilian features: they lay eggs; their digestive and reproductive tubes open into a common chamber (monotreme means 'one opening'); their front limbs are held out in reptilian fashion from the body, rather than under it (as in a dog, for example); and the control of body temperature is poor compared to that of a dog or a human being.

The marsupials represent another evolutionary progression towards the complexity of sophisticated mammals. The young are born alive but in such an embryonic condition that they must continue their development in the pouch. Although this reproductive system might appear slow and ponderous, a device called 'delayed implantation' – by which fertilised eggs can be held in a state of arrested development, awaiting the vacation of the pouch by a previous baby, or cessation of drought conditions – means that marsupial reproduction has remarkable compensations for its apparent inefficiency.

The marsupials regarded as nearest the ancestral stock are the carnivorous ones, including the thylacine, the Tasmanian devil and the native cats. Thylacines were hunted into extinction by Europeans in Tasmania; and possibly by the Aborigines and their dingoes on the mainland. The Tasmanian devil, however, is still common in Tasmania, and seems to be one of the few marsupials to contend successfully with the activities of the European. It is equivalent ecologically to the hyaena of Africa and Asia – both animals are scavengers with jaws for crushing bone.

Bandicoots belong to a group intermediate between the carnivorous marsupials and the herbivorous kangaroo-wombat-possum group. Wombats have traditionally been grouped with the possums, but it is probable that they are more closely related to the koala. Kangaroos, wallabies, potoroos, bettongs and other similar animals are grouped in the family *Macropodidae*. The largest members of the family, the red and grey kangaroos, may grow to a height of 2 metres; the smallest rat kangaroos are less than 250 mm high. More than fifty species of macropod live in Australia and New Guinea.

The dugong, dingo and flying fox and the native rats are examples of the third major group of mammals, the eutherians – the mammals that evolved and displaced the monotremes and marsupials in almost all parts of the world except Australia. The more primitive monotremes and marsupials survived because the Australian continent became isolated by sea early in mammalian evolution. More than fifty per cent of the Australian mammal fauna is in fact eutherian, but the Australian representatives are immigrants; either they arrived by their own efforts or they were brought to the continent. The dugong swam, flying foxes (bats) flew, and the Aboriginals brought the dingo some 10 000 years ago. No-one knows when the first rodents arrived, possibly on log rafts, but it was geologically quite late. These early rodents radiated, to give the vast array of native rats and mice ranging from the desert-dwelling *Notomys* to the otter-like water rats.

The Aboriginals themselves are thought to have arrived more than 40 000 years ago and were the first people to see Australia's unique fauna. They saw not only what the first white settlers saw, but also the disappearance of the megafauna – wombat-like animals the size of a rhinoceros, kangaroos eight times the mass of today's wallabies, and a carnivorous lion-sized marsupial.

Platypus

Ornithorhynchus anatinus

The unique platypus is found only in Australia. Like the spiny anteater, it is a mammal but shows some characteristics of more ancient animals.

When the first skin reached Europe, it was thought to be a hoax; and although in the nineteenth century it was suspected to lay eggs, final proof was not obtained until 1884. The female lays two eggs in a nesting hutch and curls around them until they hatch. Neither the platypus nor the spiny anteater has nipples, so the milk exudes from many pores which the young suck or lick. The young remain in the nest for about four months; they are then weaned and feed on aquatic insects, frogs, small fish and earthworms.

The platypus breathes air but can stay under water for about five minutes. Its beak is soft, flexible and sensitive – quite unlike the stiff appearance of museum exhibits. The male has a poisonous spur on its hind foot; the venom can kill a rabbit in ninety seconds.

It is a shy and solitary creature, found only in the eastern mainland and Tasmania.

An early European illustration of a platypus was published in Thomas Bewick's *General History of Quadrupeds*¹³ only three years after its discovery, under the title of 'an amphibious animal'.

First sighting and capture November 1797

The Kangaroo, the Dog, the Opossum, the Flying Squirrel, the Kangaroo Rat, a spotted Rat, the common Rat, and the large Fox-bat (if entitled to a place in this society), made up the whole catalogue of animals that were known at this time, with the exception which must now be made of an amphibious animal, of the mole species, one of which had been lately found on the banks of a lake near the Hawkesbury. In size it was considerably larger than the land mole. The eyes were very small. The forelegs, which were shorter than the hind, were observed, at the feet, to be provided with four claws, and a membrane, or web, that spread considerably beyond them, while the feet of the hind legs were furnished, not only with this membrane or web, but with four long and sharp claws, that projected as much beyond the web, as the web projected beyond the claws of the fore feet. The tail of this animal was thick, short, and very fat; but the most extraordinary circumstance observed in its structure was, its having, instead of the mouth of an animal, the upper and lower mandibles of a duck. By these it was enabled to supply itself with food, like that bird, in muddy places, or on the banks of the lakes, in which its webbed feet enabled it to swim; while on shore its long and sharp claws were employed in burrowing; nature thus providing for it in its double or amphibious character. These little animals had been frequently noticed rising to the surface of the water, and blowing like the turtle.

Hawkesbury River, N.S.W. David Collins²⁸

