

# Highlights of the Museum of Zoology



# Highlights on the Blue Route



## 1 Ray-finned Fishes

The ray-finned fishes are the most diverse group of backboned animals alive today. From the air-breathing *Polypterus* with its bony scales to the inflated porcupine fish covered in spines; fish that hear by picking up sounds with the swim bladder and transferring them to the ear along a series of bones to the electrosense of mormyrids; the long fins of flying fish helping them to glide above the ocean surface to the amazing camouflage of the leafy seadragon... the range of adaptations seen in these animals is extraordinary.



## 2 The origin of limbs

The work of Prof Jenny Clack (1947-2020) and her team here at the Museum has revolutionised our understanding of the origin of limbs in vertebrates. Her work on the Devonian tetrapods *Acanthostega* and *Ichthyostega* showed that they had eight fingers and seven toes respectively on their paddle-like limbs. These animals also had functional gills and other features that suggest that they were aquatic. More recent work on early Carboniferous sites is shedding light on early vertebrate life on land.



## 3 Leatherback Turtle, *Dermochelys coriacea*

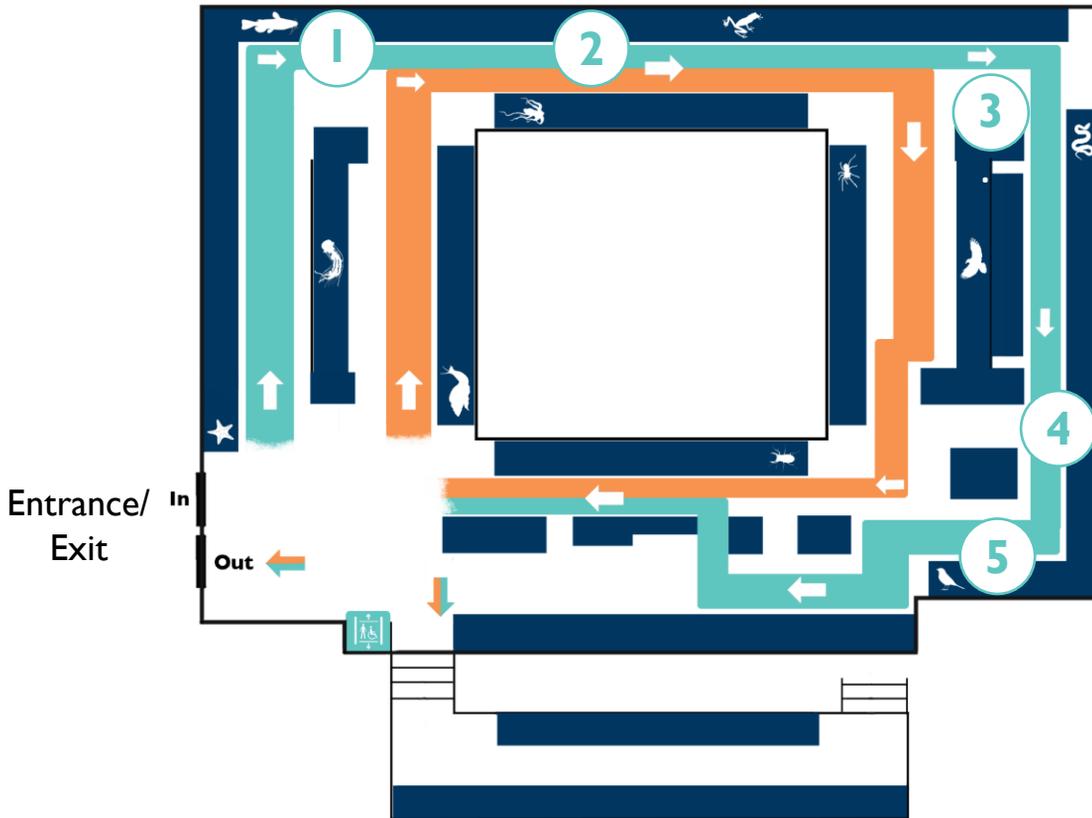
Leatherbacks are the largest living turtles. They have a wide geographical range, but their numbers are falling. Eggs are laid on tropical beaches, and hatchlings must fend for themselves against many perils. Only around one in a thousand leatherback hatchlings reach adulthood. With such a low survival rate, the harvesting of turtle eggs has had a devastating impact on leatherback populations.



## 4 Nile Crocodile, *Crocodylus niloticus*

This skeleton was collected by Dr Hugh Cott (1900-1987). Although best known for his work on animal camouflage, Cott was also a founder member of the IUCN Crocodile Specialist Group. When this group formed in 1971, most species were threatened by the trade in crocodile skin. Legal protection of the Nile Crocodile has led to increases in their numbers in some areas.

# Upper Gallery



## Upper Gallery specimens:

- 1 Ray-finned Fishes
- 2 Research into the origin of limbs
- 3 Leatherback Turtle, *Dermochelys coriacea*
- 4 Nile Crocodile, *Crocodylus niloticus*
- 5 Birds of Paradise

## Lower Gallery specimens:

- 6 Skeleton of the racehorse *Polymelus*
- 7 Pangolins
- 8 British birds in the Discovery Space
- 9 Beaver, *Castor fiber*
- 10 Platypus, *Ornithorhynchus anatinus*

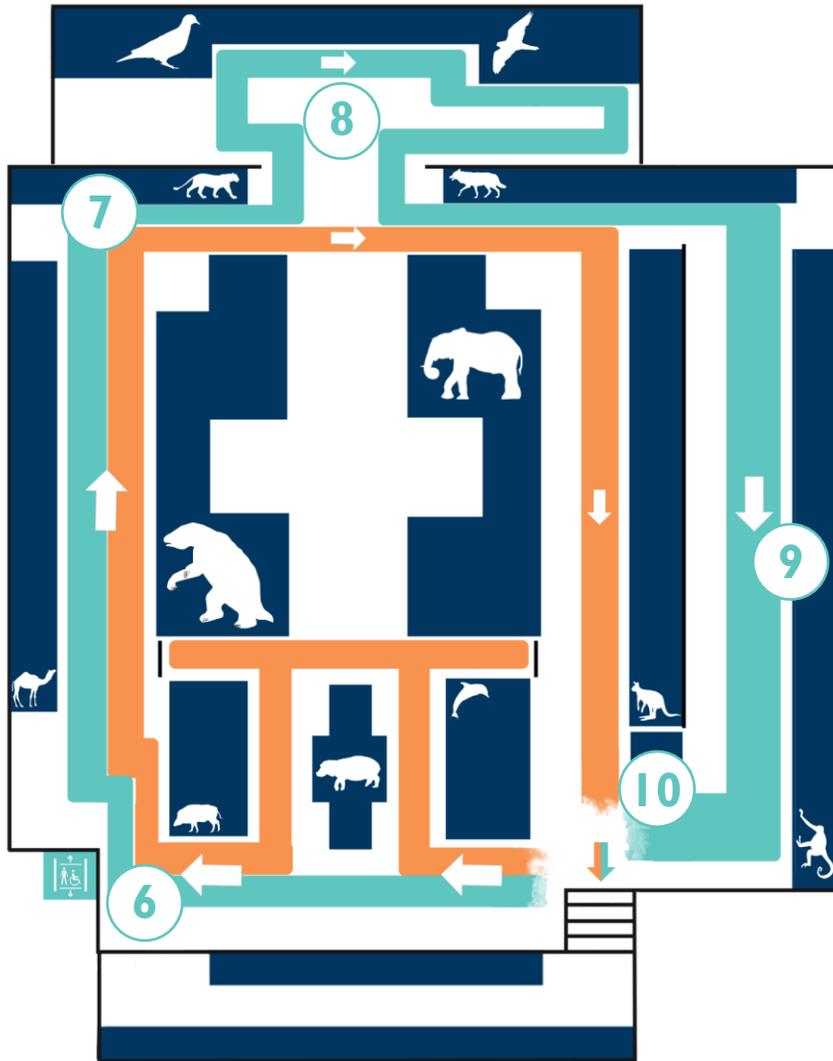


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### 5 Birds of Paradise

Male birds of paradise are noted for their extravagant plumages, which they present to females in dance-like displays. During the 19<sup>th</sup> century, it became fashionable to use plumes from birds of paradise and other birds to decorate ladies' hats. It was this trade in feathers that prompted a group of women led by Emily Williamson to found the Society for the Protection of Birds in 1889. In 1904 it was granted its royal charter and became the RSPB, a leading wildlife conservation charity today.

## Lower Gallery



Other highlights on the blue route include: origin of jaws in vertebrates; lizards and snakes; seashore dioramas; Malayan tapir; big cats; leopard seal; rodents and primates.



**6 Skeleton of the racehorse Polymelus**  
This is the skeleton of the thoroughbred racehorse Polymelus (1902-1924), a stallion that sired many leading racehorses of the early 20<sup>th</sup> century. It has long legs, ending in a single toe on each foot, ideal for moving at speed. This is not the only horse skeleton on display. Beyond the red deer is the skeleton of an endangered Przewalski's horse from central Asia. Considered by some to be the only true wild horse alive today, genetic evidence suggests that today's population may actually have descended from domesticated horses.



**7 Pangolins**  
Also known as scaly anteaters, pangolins share many features with the anteaters of South America. Neither has any teeth, and the cheek bone is greatly reduced. Both use a long sticky tongue to feed. All eight species of pangolin are threatened with extinction, with three classified as critically endangered on the IUCN red list. Conservationists are working against the illegal trade in pangolin scales that has made them the most trafficked animal in the world.



**8 British Birds in the Discovery Space**  
The Discovery Space of the Museum was designed to showcase the Museum's collection of British birds. These displays explore different habitat types across the UK. Central to the space is the Wicken Fen display. Managed by the National Trust, Wicken Fen is a remnant of undrained fenland, a wetland habitat that used to cover a much greater area of Cambridgeshire. It is rich in diversity, providing a home for over 9000 species, from kingfishers and bitterns to dragonflies, butterflies and more.



**9 European Beaver, *Castor fiber***  
Beavers are nature's architects, building dams to make ponds of still, deep water. Here they build lodges to live in, protected from predators by the surrounding water. This skeleton was found in Burwell Fen, a local site that has also yielded fossil deer, aurochs (the extinct ancestor of domestic cattle) and boar. Beavers were hunted to extinction in Britain 500 years ago. Today beavers are being reintroduced at a number of sites in the UK. The wetlands they create are important for biodiversity and reduce the risk of flooding.



**10 Platypus, *Ornithorhynchus anatinus***  
The platypus is an egg-laying mammal from Australia. It has a number of unusual features. The bill-like snout contains electrosensors that pick up the electrical signals created by animals when they move. This helps them to find their prey underwater. Platypuses have webbed feet and a flattened tail to help with swimming. Males have a venomous spur on the hindfeet, perhaps for defence or in competition for mates.

# Highlights on the Orange Route



## 1 **Dodo, *Raphus cucullatus***

Europeans first discovered the dodo in 1598. In less than 100 years, by 1690, it was extinct. Found only on the island of Mauritius, it was flightless and nested on the ground, easy prey for hunters and introduced predators. This dodo skeleton is made of bones from many individual birds collected in the Mare aux Songes swamp. The Museum has a large collection of dodo bones, sent to Alfred Newton, Professor of Zoology (1866-1907) by his brother Edward Newton, a colonial administrator in Mauritius.



## 2 **Sunburst Star Turban, *Astraea heliotropium***

This shell was collected in Cook's Strait, New Zealand on Captain Cook's second circumnavigation of the globe (1772-1775). If you were to turn it over, you would see that the structure called the operculum is still in place. This covers the opening of the shell, and is thought to be a defence against predators. That it is still in place suggests that this specimen was collected from the ocean when still alive, rather than having been washed up on shore.



## 3 **Coral Reefs**

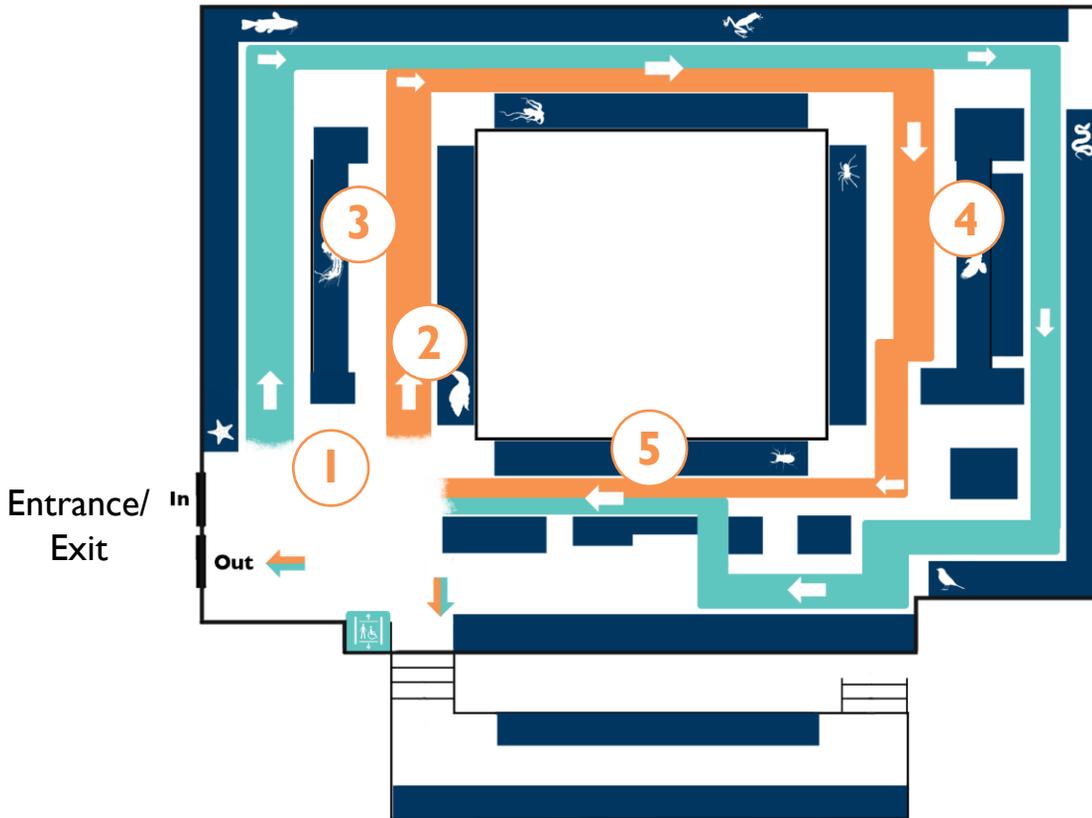
John Stanley Gardiner, Professor of Zoology (1909-1937), was a pioneer in the study of coral growth and feeding. The Museum houses many specimens he collected. Gardiner made important contributions to the way we classify corals, and to our understanding of the role of the single-celled, photosynthetic organisms called zooxanthellae that live in their tissues. It is the loss of these colourful zooxanthellae as ocean temperatures rise that leads to coral bleaching.



## 4 **Rodrigues Solitaire, *Pezophaps solitaria***

The extinction of the dodo is well known, but what about its close relative from the nearby island of Rodrigues? The solitaire was another flightless member of the pigeon family. It was first described in the late 17<sup>th</sup> century, and was extinct by the late 18<sup>th</sup> century. As for the dodo around 100 years before, it was people, hunting and introducing predators to Rodrigues, that caused this species to die out.

# Upper Gallery



## Upper Gallery specimens:

- 1 Dodo, *Raphus cucullatus*
- 2 Sunburst Star Turban, *Astraea heliotropium*
- 3 Coral Reefs
- 4 Rodrigues Solitaire, *Pezophaps solitaria*
- 5 Insect Collection

## Lower Gallery specimens:

- 6 Collections of Charles Darwin
- 7 Okapi, *Okapia johnstoni*
- 8 Hydrothermal Vent Chimney
- 9 Asian Elephant, *Elephas maximus*
- 10 Thylacine, *Thylacinus cynocephalus*

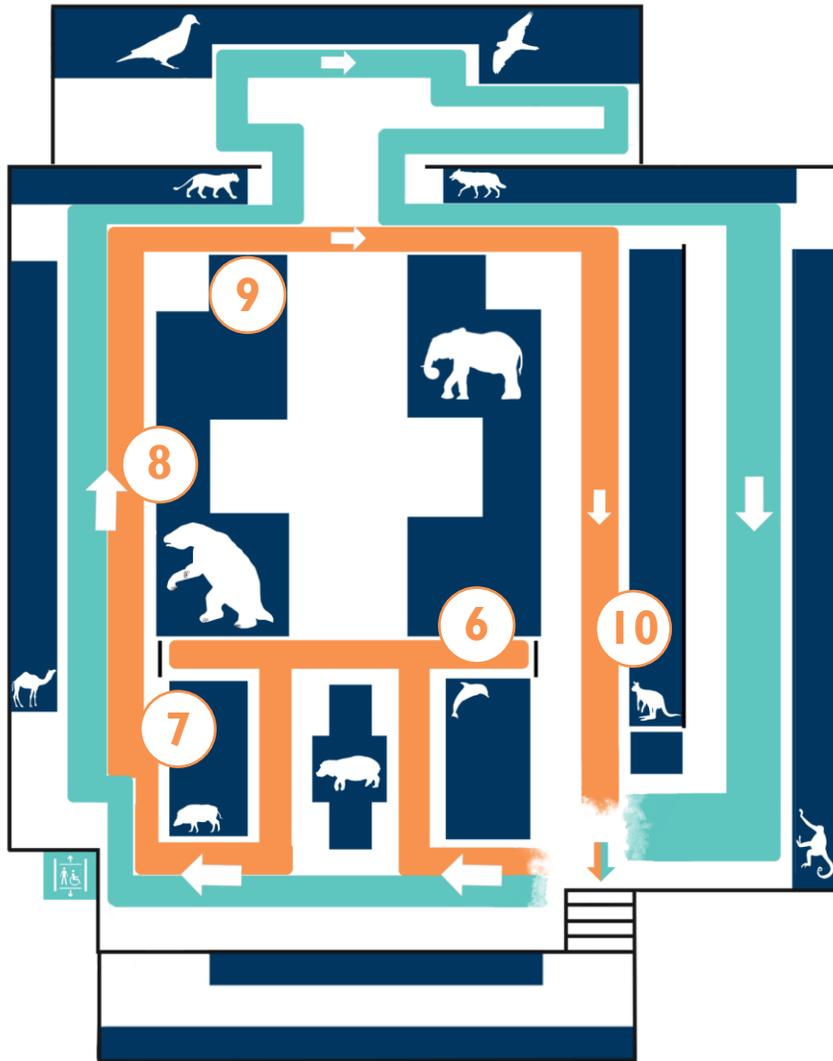


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## 5 Insect Collection

The Museum houses an extensive collection of insects, from tiny flies to huge moths. Only a tiny fraction of this collection is on display. The data held alongside these specimens is used to understand insect populations past and present. For example, historical data on local insects is providing insights into the impact of habitat change in the fens. Current fieldwork in Southeast Asia explores the effects of oil palm plantations on insect biodiversity, and ways to manage these ecosystems more sustainably.

## Lower Gallery



Other highlights on the orange route include: spiders and scorpions, hippo, giraffe, giant ground sloth, white rhinoceros, kakapo, Hawaiian honeycreepers, giant anteater, marsupials.



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### 6 The collections of Charles Darwin

Charles Darwin studied at Cambridge from 1828-1831. He made important connections during his time here, and it was John Stevens Henslow, Professor of Botany, who put his name forward to join the *H.M.S Beagle* in 1831. The Museum holds collections from several stages in Darwin's career, from the beetles he collected as an undergraduate student, to the octopus and fish specimens from the *Beagle* voyage, and the barnacle slides he made as part of the research for his four-volume work on these animals.



## 7 Okapi, *Okapia johnstoni*

Okapis are found in the rainforests of the Congo river. This specimen is a female okapi, the males having short, bony 'horns' called ossicones similar to those in their giraffe relatives. Also like giraffes, okapis have a long, mobile tongue for stripping leaves from trees and shrubs. Okapis were first described by western science in 1901 – quite late for such a large animal. They are rare and elusive, and it took until 2008 for a photograph of an okapi to be taken in the wild.



## 8 Hydrothermal Vent Chimney

The deep ocean is one of the great unexplored areas of the Earth. On display here is material collected at a depth of 2400m from the East Scotia Ridge of the Southern Ocean. Here hydrothermal vents expel chemical-rich waters heated to 400°C. Bacteria use the chemicals in the water as plants use light to create sugars. This supports a whole ecosystem including stalked barnacles, yeti crabs, snails, sea spiders and more, forming an area densely packed with unique species, teeming with life on an otherwise almost deserted sea floor.



## 9 Asian Elephant, *Elephas maximus*

This elephant was described as a 'proscribed rogue elephant (bull) that had done much damage to life and property' when it was collected in 1881. The skeleton shows that the bones of the left forelimb are rough and deformed. It had suffered an injury and infection, which may explain the animal's aggression. More recently, in 1967, this skeleton was borrowed by Stanley Kubrick's production company, Hawk Films Ltd, for use in 2001: A Space Odyssey, where the skull appears in the extended opening sequence of the film.



## 10 Thylacine, *Thylacinus cynocephalus*

Although it may look like a dog, the thylacine was a marsupial, and as such more closely related to kangaroos, koalas and opossums. The thylacine was a carnivore that was once widespread across Australia. It became confined to Tasmania, and is now extinct. The last known thylacine died in captivity in 1936, just two months after the species had been granted protected status.