

# The displays of the central aisle

As you walk into the Museum for the first time, you are struck by the sight of two large dinosaurs towering over you. The *Iguanodon* and *Tyrannosaurus rex* have greeted thousands of visitors over the years and provide a spectacular introduction to the Museum, but they are not the only wonders to be found here.

Each case exhibits treasures from the collections, and illustrates some of the most famous features of the Museum: its connection with *Alice*, the dodo, and the celebrated Oxfordshire dinosaurs.



A cast of the skeleton of an adult *Tyrannosaurus rex* looms over the central aisle of the main court. The skeleton was found in the 65 million year old Hell Creek Formation of Harding County, South Dakota. The fibreglass cast was brought into the Museum in several pieces and assembled 'flatpack' style in the building.

## What is 'Learning more'?

'Learning more' presents a series of articles about the Museum and its collections. It is designed for older students, teachers, researchers, and anyone who wants to find out more about particular aspects of the Museum's work and its history.

This article introduces the displays of the central aisle of the Museum and can be considered a brief summary of its collections and most famous features.

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## The redesign of the central aisle

For many years the central aisle of the Museum languished as a home to ageing temporary displays. In the run up to 2000 things began to change, and it was proposed that this area should be dedicated to showing off the collections, introducing visitors to the scale of the Museum's holdings, and outlining the most famous features of the building. To reflect the historical nature of the collections it was important that the displays retained the feel of the Victorian era, but with an updated and accessible outlook.



The *Iguanodon* skeleton of the central aisle at its reopening in 2000.

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## The real Alice

Charles Dodgson, better known as Lewis Carroll, was a regular visitor to the Museum. The specimens he saw there inspired the famous *Alice* books, and some can still be seen on display today.



Alice Liddell  
*The real Alice*

On a sunny afternoon in 1862, an Oxford don led a rowing expedition up the Thames. He was Charles Lutwidge Dodgson, and the party included Alice Liddell, aged 10. During the afternoon Dodgson spun out a series of fantastic yarns incorporating friends and familiar places in Oxford.



...the rabbit actually took a watch out of his pocket...

The white rabbit and others (left), and the lesser flamingo (right).



The specimens in the *Alice* case all feature in Dodgson's books.

Alice Liddell's father was Dean of Christ Church, where Dodgson was a Fellow, and had been a keen supporter of the project to build a natural history museum in the city. Dodgson was a regular visitor to the Museum and often brought Alice and her sisters to see the exhibits. He began to incorporate the creatures from the displays into the tales he told his young friends. He was persuaded to write down his stories, and the result, published in 1865 under the name of Lewis Carroll, became the world favourite *Alice's Adventures in Wonderland* and *Through the Looking Glass* (1871).



The name 'Lewis Carroll' may sound very different to Charles Lutwidge Dodgson, but it can be traced quite logically to its root: Carolus is the Latin for Charles and Lewis = Ludovic = Lutwidge.

## The Oxford dodo

Dead as a dodo! The remains of the dodo at Oxford are one of the greatest treasures of the Museum.

The story of the dodo is one of the most famous examples of extinction. It lived on the island of Mauritius in the Indian Ocean and was discovered by Europeans in 1598. By 1680 the flightless bird was extinct.



The dodo is the most famous of all the creatures to have become extinct in historical times. It was immortalised in *Alice's Adventures in Wonderland*, and was a favourite for Dodgson who had a stammer: Do-do-dodgson.

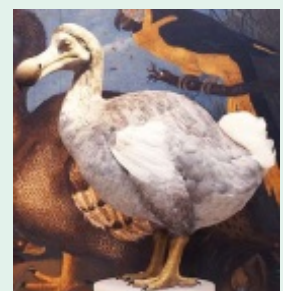
Some live dodos were brought to Europe, and one of the birds, acquired by John Tradescant, was exhibited in his London museum. His collections came to Oxford where now only the mummified head and left foot remain.



The Oxford dodo  
The mummified head of the Oxford dodo, together with the bones of its skull and foot.

### *The slimline dodo*

A few dodos were brought alive to Europe in the early 1600s. Given the wrong food, they became obese and so artists depicted them as slow and comically clumsy (left). Modern research, however, shows them to have been rather 'slim-line' (right).





## Belonging to Professor Buckland

Dean William Buckland founded the scientific teaching of geology in Oxford, and brought together what would become the core of the Museums geological collections.

Buckland was a man of enormous energy, being both a member of the clergy and a brilliant scientist. His account of *Megalosaurus* bones from Stonesfield in Oxfordshire was the first scientific description of a dinosaur.



### *Past meets present*

The specimens in this display were collected by Buckland himself. The skull of the cave hyaena that is pictured in the hands of Buckland in the above painting is currently on display in the main court.



The skull of the cave hyaena, in the hands of Buckland (left), and on display in the main court (right).

The display highlights the importance of the historical content of a museum collection. It focuses on some of the most interesting specimens in the geology collections at Oxford that Buckland himself had discovered. Included are skulls of a woolly rhinoceros and a cave hyaena, ancient coprolites (fossilised faeces), ammonites, fossil plants, and an interesting array of curios.

This rather ghoulish specimen is a bird. It has literally been turned to stone, together with its nest and eggs. They were petrified in the mineral rich waters of the Matlock Springs, in Derbyshire.



## On the trail of the Oxfordshire dinosaurs

In 1997, dozens of dinosaur trackways were discovered at Ardley, near Oxford. The footprints were cleaned, measured, mapped, and cast to form a permanent record of the discovery on the lawn outside the Museum.



In the spring of 1997, a Birmingham schoolteacher contacted the University after learning of the presence of dinosaur footprints in the quarries at Ardley. Staff of the Museum were sent to measure and describe the site, and cast the better trackways.



### Surveying the site

One of the technicians from the Museum casts her eye over the massive *Cetiosaurus* footprints at Ardley. All of the footprints were carefully cleaned and mapped; the best were cast in the field and brought back to the Museum.

The Ardley site is made up of a Jurassic limestone that formed some 168 million years ago. The area around Ardley was then a region of mudflats and lagoons with a shallow sea extending north and west, into what are now the Cotswolds. The footprint bed thus records a brief event in the history of Oxfordshire.

### *Footprints from the past*

Between 30 and 40 trackways are present at Ardley, some up to 200 metres long. The trackways can be linked to the skeletal remains of two types of dinosaur known from the Jurassic: *Megalosaurus* and *Cetiosaurus*.

Installing the footprints on the Museum lawn

A 60 metre long trackway, made up of casts of the footprints of the giant carnivorous dinosaur *Megalosaurus* is displayed on the lawn in front of the Museum.



## Megalosaurus:

the first dinosaur

*Megalosaurus* was the first dinosaur ever to be described

scientifically. It was the work of William Buckland, Oxford's first Reader in Geology. The bones came from nearby Stonesfield.



The first described dinosaur from anywhere in the world, was found in Oxfordshire. It was a 9 metre long carnivore that stood on its hind legs; now called *Megalosaurus bucklandi*, or 'Buckland's giant-lizard'.

The jaw of *Megalosaurus*

First described by Buckland in a publication of 1824 (left), and currently on display (above).



When Buckland collected the bones that are now on display, he was unsure of their significance. When the great French comparative anatomist Georges Cuvier visited Oxford, he realised that the Stonesfield bones belonged to a giant animal resembling a lizard. Following Cuvier's visit, Buckland started describing the fossils in earnest, and he published an account of them in 1824.

### Misconceptions

The first published record of a dinosaur bone was in Dr Robert Plot's 1677 book *The Natural History of Oxfordshire*.

Recognisable today as part of a single thigh bone of *Megalosaurus*, Plot wondered if it could have come from an elephant brought to Britain by the Romans, but concluded it was the petrified bone of a giant.



An early reconstruction of *Megalosaurus* on display (above), and in gardens at Sydenham in Kent (right); we now know it as a bipedal dinosaur, similar to *Tyrannosaurus rex*.



## Camptosaurus:

the Cumnor dinosaur

The skeleton of this herbivorous dinosaur was found in 153 million year old Kimmeridge Clay at Cumnor Hurst, near Oxford, in 1879.



*Camptosaurus prestwichii*

The unique skeleton of *Camptosaurus* was discovered in 1879 by workmen in a brickpit on Cumnor Hurst, 2.5 miles south west of Oxford. The name comes from the Greek *kamptos* meaning 'flexible', and *sauros*, 'lizard'; its 'flexibility' came from the incomplete fusion of its vertebrae and skull, and suggests it could have been a juvenile.



Vertebrae of *Camptosaurus*

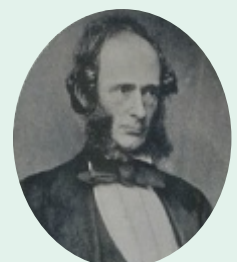
A lithograph from the original description of this dinosaur showing its vertebrae; the fact that they weren't fused gave it its name of 'flexible lizard'.

The Oxford specimen is the most complete member of the genus known from Europe, and is the earliest known representative of the large-bodied, usually quadrupedal, herbivorous dinosaurs later represented by the iguanodontids.

### Discovering Camptosaurus

The skeleton of *Camptosaurus* was found in the 153 million year old Kimmeridge Clay. The bones were dug out and cast aside, until a workman took a bag of them to George Rolleston, the Professor of Anatomy and Physiology at Oxford. Recognising their importance, he secured them for the University.

Joseph Prestwich  
Professor of Geology at  
Oxford, who announced the  
discovery of the dinosaur  
that bears his name.





## *Cetiosaurus*:

the Oxford brontosaurus

*Cetiosaurus* was a 27 metre long herbivorous dinosaur with a long neck and tail, and four massive legs. The Museum houses limb bones and vertebrae of this giant, which were collected in the 1860s near Oxford.

*Cetiosaurus* was a sauropod dinosaur; it had four massive walking legs, a long, slender neck with a tiny head and an equally long, slender tail. Dinosaurs like *Cetiosaurus* were once thought to have lived in water, but now it is believed that they lived on land, browsing on low vegetation. Footprints made by *Cetiosaurus* are found at Ardley (see page 3).

### *Cetiosaurus* at the Museum

The bones of *Cetiosaurus* have been on display since their discovery in the 1800s (left) and today (right).



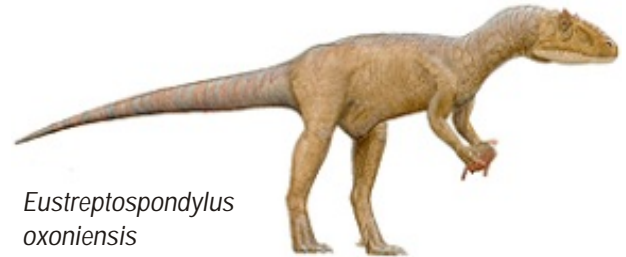
### *Discovering a dinosaur*

Most of the specimens on display were found in the 1860s by Mr Chapman, a watchmaker who 'discovered and rescued the monster *Cetiosaurus* at [Enslow Bridge]. He was on a botanising expedition with his son, and had just got off the train as the first fragment was disclosed by the pickaxe. He found the foreman, stopped the digging, and telegraphed to John Phillips, Professor of Geology and the first Curator of the University Museum, who super-intended the removal of the enormous bones to the Museum. The credit went to Phillips, no one remembered Chapman'.

Bones of *Cetiosaurus* have also been found at Woodstock a few miles north east of Oxford as recently as the 1980s.

## *Eustreptospondylus*

The skeleton on display is the most complete example of its kind anywhere in Europe, and was found just up the road from the Museum.



*Eustreptospondylus oxoniensis*

The skeleton of *Eustreptospondylus* is the most complete specimen of a Jurassic carnosaur in all of Europe. Carnosaurs were a group of heavily built, bipedal, predatory, carnivorous and carrion feeding dinosaurs with reduced fore-limbs, large heads on short necks and sharp cutting teeth.

### *Installing the display*

Fitting together the bones of a dinosaur skeleton can be a bit like doing a jigsaw - you know you have the bones in the right place when they fit together perfectly! For the first time *Eustreptospondylus* has been mounted in a life-like pose, walking as it would done, on its two hind legs.

Also displayed is the life-size reconstruction of an adult that figured prominently in the BBC series *Walking with Dinosaurs*.

Fitting together the *Eustreptospondylus* jigsaw.



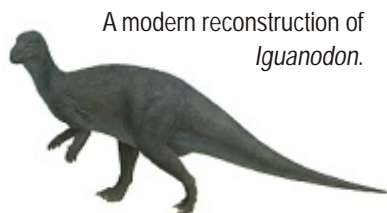
*Eustreptospondylus* was discovered in 1871 by workmen at a long-vanished brickpit in Summertown, just one and a half miles from the Museum, and was acquired by James Parker, an Oxford bookseller, publisher and amateur geologist. The brickpit was the source of some of the bricks used in the construction of the Museum.

## Iguanodon

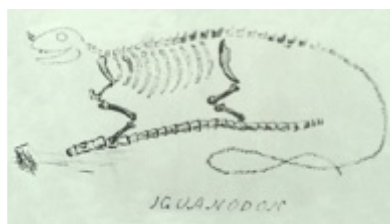
As you enter the Museum you are greeted by the sight of a cast of a huge

*Iguanodon* skeleton towering over the court. This display tracks the history of the first discoveries of the *Iguanodon*.

In the early 1820s Gideon Mantell, a Sussex country doctor and avid fossil collector, acquired a series of unusual fossil teeth, but was unable to identify them. After seeing the teeth the famous French anatomist, Cuvier, suggested they might have belonged to some giant plant-eating reptile.



A modern reconstruction of *Iguanodon*.



Mantell found a bone spike and assumed it was a rhinoceros-like horn that rested on *Iguanodon*'s nose (left); in fact it was the dinosaur's thumb.

During a visit to the Hunterian Museum in London, Mantell was shown a skeleton of an iguana, a large South American lizard. So striking were the similarities between the teeth of the lizard and his fossils, that he was certain he had discovered a gigantic extinct reptile. He named it *Iguanodon*, from the word *iguana*, and the ancient Greek *odous* meaning 'tooth'.

### The skeleton in the court

The skeleton in the court is a cast of one of the herd of 31 individuals found Belgium in 1878. The skeleton the animal with its tail resting on the ground, but if you look at it closely, you can see that its tail would actually have had to been broken to stand in this way.

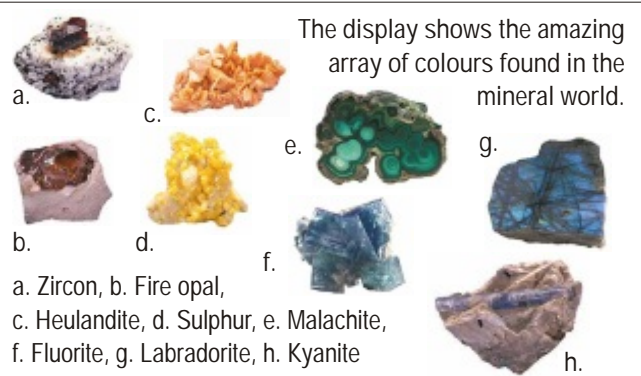


## Minerals

The Oxford mineral collections are among the oldest and finest in the country. This introductory display exhibits only a tiny fraction of the collection that comprise over 30,000 specimens.

Minerals are everywhere, making up all the rocks of the Earth's crust. There are over 4,000 different minerals, each a natural inorganic chemical element or compound with a unique combination of chemical composition and crystal structure.

Azurite



The display shows the amazing array of colours found in the mineral world.

a.

c.

e.

g.

b.

d.

f.

h.

a. Zircon, b. Fire opal, c. Heulandite, d. Sulphur, e. Malachite, f. Fluorite, g. Labradorite, h. Kyanite

The minerals in the Museum's collection come from mines and quarries, road-cuttings and other places where rocks are exposed. Long ago they were studied for their supposed healing properties by medical students. Today they are an invaluable resource for research by geologists, mineralogists, and other scientists throughout the University.

### Minerals in our world

The mineral kingdom is valuable to us all in our everyday lives. Some minerals are strikingly beautiful - the prettiest, most durable and rarest may be cut as gemstones. Others are the raw materials for making everything from toothpaste and washing powder to computers and aeroplanes. Our civilization depends on the exploitation of minerals.

a. Cassiterite, b. Goethite, c. Bauxite, d. Galena, sources of tin, iron, aluminium and lead.





## Insects

Seventy five per cent of all animal species are insects, and one or more of these species goes extinct every day. The Oxford collections are among the top ten worldwide, and date from the early eighteenth century.

Love them or hate them, insects are by far the most successful animals on Earth; they individually outnumber humans billions to one, and scientists discover thousands of new species each year.

Morpho butterfly



Orange-tipped butterfly

Grasshopper



Hawk moth



Rhinoceros beetle



A few of the specimens on display in the Museum.

### *The good and the bad*

Most of us notice insects only when we are bitten or stung, but we could not manage without them. They are a vital food source for birds, fish and other animals, they are important pollinators and excellent recyclers; they make honey, wax and silk. But insects can harm humans too: they can eat up to a fifth of the world's crops each year, and carry diseases including malaria.

### *Jewels in the crown*

The entomological collections are of great scientific importance, containing thousands of historically significant specimens. Among them are the oldest surviving pinned insect, and the tsetse fly collected in Africa by David Livingstone.



The tsetse fly  
*Glossina morsitans*

Important historic specimens include the tsetse fly collected in Central Africa by David Livingstone.

## Biodiversity

The zoological collections of the University originated in the seventeenth century. They include specimens of great scientific and historical value. This display celebrates biodiversity, and illustrates how vulnerable life on the planet is to human influences.

Living things have evolved into millions of different forms, producing the variety of life we call biodiversity. There are probably somewhere between 5 and 12 million living species, but only about 1.7 million have been described.

Australian bee-eater



Brain coral

Hermit crab



Blue swimmer crab



Scallop shell

Nautilus



About 97% of living things are invertebrates - animals without backbones. Besides the birds, mammals, reptiles, amphibians and fish, the collections contain most of the Museum's non-insect invertebrates including crustaceans, molluscs, sponges and corals.

Systematics, the classification of the natural world, is essential for the study and conservation of biodiversity. To describe its breadth, scientists divide living things into groups; traditionally these have been the five kingdoms, animals, plants, fungi, bacteria, and other single-celled organisms. Everything in this display is from the animal kingdom.

### *The stars of the collection*

The collections held in the Museum are a vital resource for scientists studying evolution, systematics and the diversity of life. They include the original specimen of the white rhinoceros, and crabs collected by Charles Darwin on the voyage of *The Beagle*, and of course, the dodo.