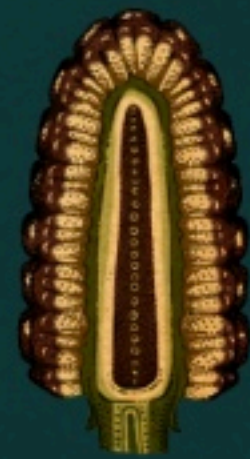




Welcome to the Museum
ADMIT ALL

The Story of Life

Curated by KATIE SCOTT



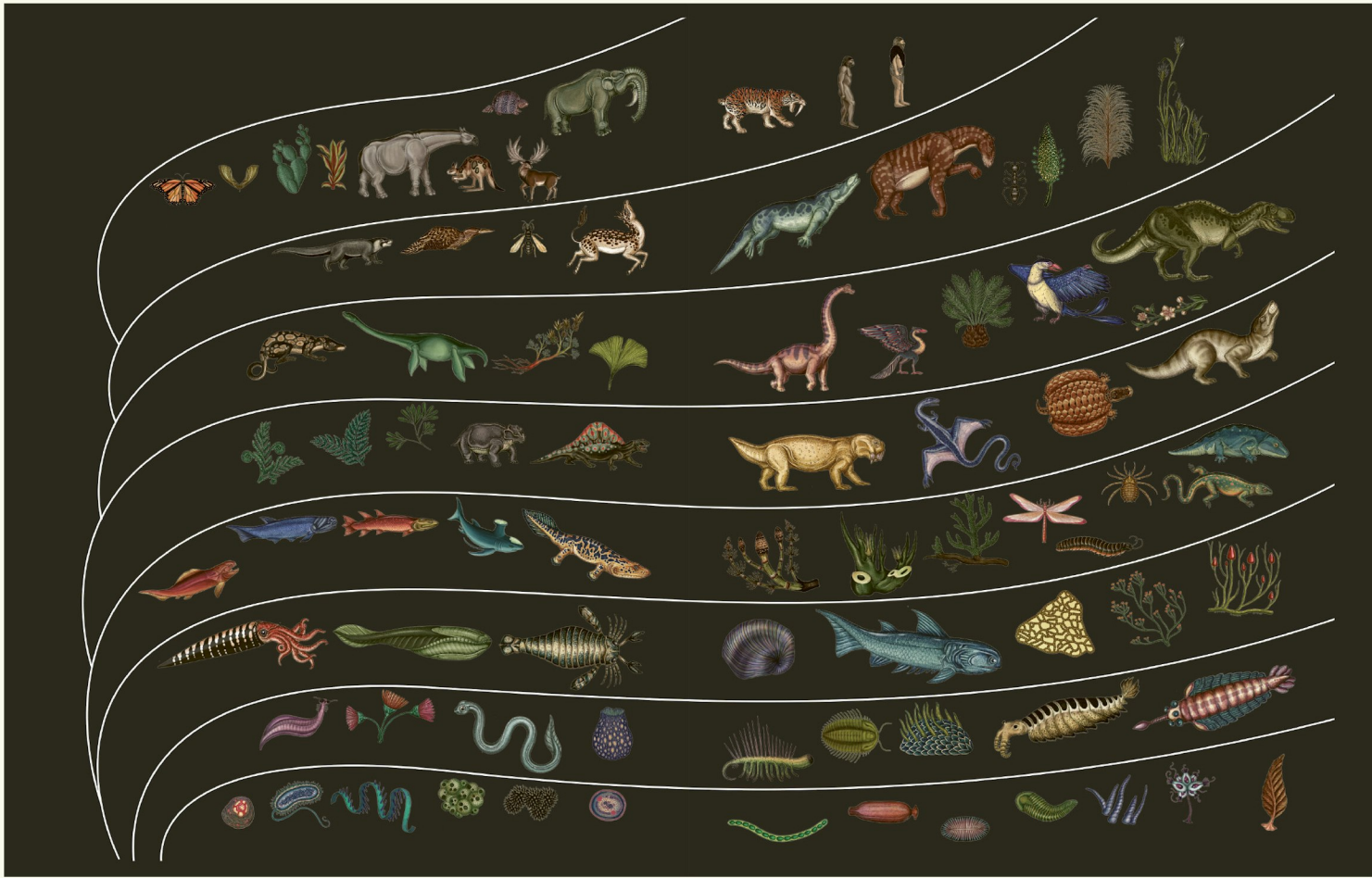
Evolution



Evolution is the scientific theory of how living things gradually change and develop over time to form new species. This process is largely driven by natural selection, whereby the organisms best suited to survive in their environment pass on their traits to the next generation.

The theory of evolution by natural selection was first developed by Charles Darwin and Alfred Russel Wallace in the mid-nineteenth century. It was based upon the observation that individuals within the same species show a wide range of physical traits, some of which are better suited to their environment than others. Individuals with a better chance of survival are more likely to reproduce, so they will pass their genes, and their traits, on to the next generation.

We now know that the theory of evolution links all life on Earth back to a single common ancestor in a process of change which is still taking place today ...





THE STORY OF LIFE

Gallery 1

Precambrian



*Precambrian Period;
Cyanobacteria;
Multicellular Animals*

Precambrian Period: First Life

The Precambrian is the name given to the first time period on Earth. During the billions of years of the Precambrian, the Earth formed and cooled. Volcanoes belched out gases, rocks formed from volcanic lava and the oceans condensed from atmospheric vapour. It is thought that life first appeared in these mineral rich waters as simple chemicals spewed through vents in the Earth's crust under the oceans, and reacted with one another to form more complex compounds.

Some of these molecules then combined and developed the ability to copy themselves, using the complex chemicals DNA, RNA and proteins – the building blocks of life. The next step was the protection of these chemicals with a membrane to form the first simple organisms.

The very earliest of these were single-celled organisms called prokaryotes – cells that do not have a nucleus (control centre) or any other subunits. Instead, all of their component chemicals float together, protected by the cell wall. It is thought that all life on Earth evolved from one such single cell, referred to as the Last Universal Common Ancestor (LUCA). This probably lived around 3.8 billion years ago.

Key to plate

1: RNA (ribonucleic acid)
Length: Less than 0.001 micrometres
RNA is present in all living cells and takes the form of a chain of molecules.

2: Prokaryote
Length: 0.1 – 5.0 micrometres
The cell's tail-like flagellum enables it to move. The cell wall is lined with frondlike pili.

**3: LUCA
Last Universal Common Ancestor**
The cell that links all life on Earth

