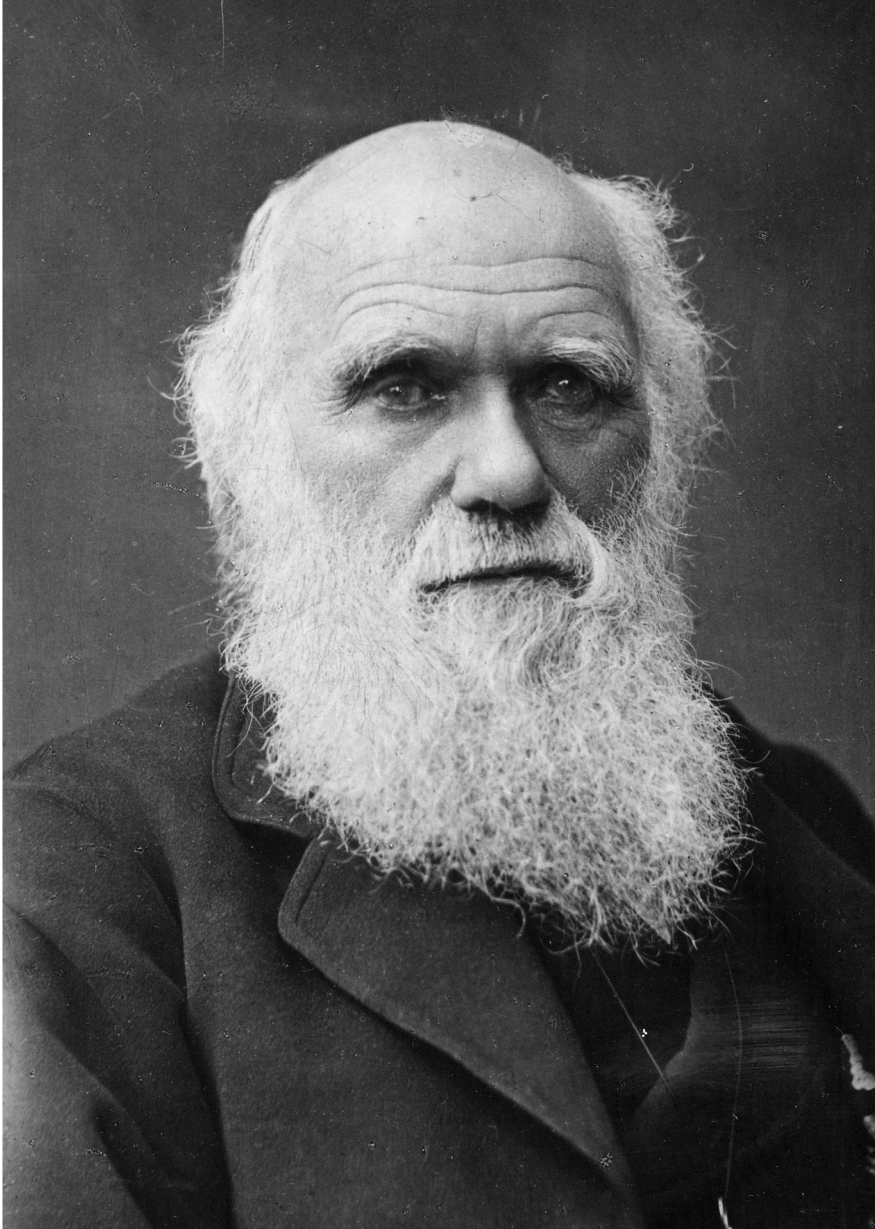


Charles Darwin



Charles Darwin and his Theory of Natural Selection

- Charles Robert Darwin was born on 12 February 1809 in Shrewsbury, Shropshire
- After starting medical training in Edinburgh and a theology degree at Cambridge, both of which he decided were not for him, in December 1831 Darwin set sail on HMS Beagle as a scientist for a voyage around the world that lasted 5 years
- He described many amazing new plants and animals that he saw during the voyage
- He read Charles Lyell's 'Principles of Geology' on the voyage which suggested that the fossils found in rocks were actually evidence of animals that had lived many thousands or millions of years ago
- He was aware that other scientists (Carl Linnaeus, The Comte de Buffon, Georges-Louis Leclerc and Chevalier de Lamarck) who had recognised and suggested theories for the diversity of life had not been believed (and de Buffon was forced to publicly withdraw his ideas), so Darwin spent many years thinking about what he had seen and how he could explain it and give evidence
- He asked himself questions such as: why were there so many different types of plants and animals, and why were there similar, but not identical plants/creatures in different places?
- He also wondered why some creatures and plants had become extinct (after observing many fossils)
- He concluded that:
 - all animals and plants changed, by chance
 - some of these changed organisms were better suited to their environment than others and therefore they survived better
 - they passed these features/characteristics to their offspring
- He thought that over a very long time many changes resulted in a new species
- Because environments changed he thought that some species became extinct because they could no longer survive in their changed surroundings
- Darwin called this process 'Natural Selection'
- Darwin and Alfred Wallace made a joint announcement of their similar ideas in 1858
- After 20 years of thinking Darwin finally published his ideas in a book called 'On the Origin of Species' in 1859
- He decided natural selection needs 3 things to work:
 - variation – all individuals within a species have different features/ characteristics, and they do not all survive to adulthood
 - competition – all the individuals compete for food, shelter, etc. within their environment and the slight variations give some a better chance of survival
 - inheritance – because they are more successful, some variations occur more often than others, and over many generations a noticeable change or adaptation can be seen, resulting in a new species
- There was outrage when his book was published: a debate held at Oxford University Museum a few months later had the biologist Thomas Huxley agreeing with the theory and Bishop Samuel Wilberforce speaking against it (as the theory did not agree with creation as described in the Bible). The meeting ended in uproar!
- Darwin died on 19 April 1882