

## Darwin at the Museum

Charles Darwin is probably the most famous biologist of all time. *The Origin of Species*, published in 1859, challenged the prevailing world view of God's divine creation of the Earth and its inhabitants, and laid the foundations for modern biology. The Museum has a collection of Darwin's crustaceans that he amassed on his voyage on *The Beagle*, and this article gives a summary of his life, work, and his association with the Museum.

### Darwin's early life

Charles Darwin was born in 1809. He grew up with an interest in natural history and this interest continued as he began his medical studies in Edinburgh. Primitive surgery, disease, and sight of blood repelled Darwin and he never completed



his degree. In 1828, at his father's insistence, he went to Christ's College, Cambridge to study theology. He graduated in 1831. During his time at Cambridge he regularly discussed the natural world with the botanist John Henslow, the geologist Adam Sedgwick and others. It was Henslow who recommended Darwin for the post of naturalist and captain's companion on board HMS *Beagle*.

#### What is 'Learning more'?

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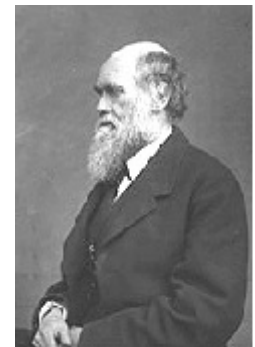
This article gives a brief introduction to the life and work of Charles Darwin, and describes his collections that are held in the zoology collections of the Museum.

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### Darwin's work

During the famous round-the-world voyage of *The Beagle* between 1831 and 1836, Darwin observed and recorded the rich variety of plant and animal life that he encountered. While visiting the Galapagos Islands in 1835, he found significant evidence for his ideas on variation, and the birds and tortoises he observed there became the subjects of some of his most famous studies.

Back in England in 1836, Darwin tried to solve the questions raised by these observations, and the great mystery of how new species arose. He realised that parents passed on characters to their offspring, that there was variation between individuals within populations of a species, and that limited resources were available to support populations. He concluded that new species arose as a result of what he termed natural selection acting on these variable populations.



Darwin's work sparked great controversy and debate, and he was often depicted in comics as a monkey or ape (left); in his later years (right) he suffered from an unexplained illness.

Darwin continued to work on his theories for 20 years, and in 1859 he published his famous and controversial book *On the Origin of Species by Means of Natural Selection*. This sparked a furious debate between scientists and theologians, most notably the one between Thomas Huxley and Samuel Wilberforce that took place in Oxford in 1860 at the newly opened University Museum. Darwin died at home in 1882 after suffering an extended illness and was buried at Westminster Abbey. The Archbishop was indisposed.

## Darwin's collection at the Museum

Darwin not only made ecological and geological observations during the voyage of *The Beagle*, but also amassed a vast collection of specimens. On his return to England these were entrusted to various scientists for study, with the Crustacea being sent to Thomas Bell.

These specimens were never properly described and remained in Bell's cabinets for many years. In 1862 much of the Bell collection was purchased by J. O. Westwood, the first Hope Professor of Zoology, on behalf of the University Museum. Over the years, this material was transferred to the zoology collections, with the last transfer taking place in 1975.

Darwin's collection chiefly comprises crustaceans, but also a few other invertebrates (such as insects, sea spiders, millipedes, spiders, etc.). Some of this material is stored dry and some preserved in spirit, although it is clear from Darwin's notebooks that originally everything was stored in spirit. Many of the surviving specimens have either numbered labels attached to them in handwriting that has been ascribed to Covington, Darwin's servant on *The Beagle*, or numbered metal tags. These numbers

correspond with those listed in the 'Catalogue for specimens in Spirit of Wine' - a chronological listing of specimens collected throughout the voyage.

All the crustaceans listed in this catalogue are marked in pencil with the letter 'C', presumably to allow a separate list to be copied out. In total, 230 specimen lots are marked as crustaceans in the catalogue, however, only 110 can be traced in the zoological collections today; further specimens can be tentatively linked to Darwin through more circumstantial evidence.

The Darwin database, found in the zoology pages of the Museum's website, holds details of the dry material in the Darwin collection. For details of the spirit preserved material see Chancellor et al. (1988). The existing dry material, which can be positively attributed to Darwin, consists of 40 taxa (39 decapods and 1 stomatopod), collected from fifteen locations spanning the voyage of *The Beagle*.

### References

Chancellor, G., A. diMauro, R. Ingle & G. King (1988). Charles Darwin's Beagle collections in the Oxford University Museum. *Archives of Natural History*, 15: 197-231.



The voyage of *The Beagle*

Between 1831 and 1836 Charles Darwin travelled around the world on *The Beagle*. He acted as the ship's naturalist, amassing a vast collection of plants and animals. The red dots on the map indicate the places where Darwin found the crabs now held in the Museum's zoological collections. Darwin's skill at cataloguing his collections is evident, as many of the specimens are associated with diary entries noting the environment in which they lived, details of their colour and markings, and other relevant information.

### *The database and specimens*

After initial neglect Darwin's collection of dry crustaceans was transferred to the zoological collections. The last of it was moved in 1975. Since then, each specimen has been re-housed separately in conservation grade material. All original labels were retained, and the specimens have been kept as close to their original appearance as possible.



Original storage

This photograph shows Darwin's dry collection in its original storage; since it was taken, the collection has been rehoused.

The Museum has electronically catalogued Darwin's collection which is now available as a searchable database. It is fully illustrated and contains Darwin's original diary entries. It is available to browse on the Museum's website, linking from the zoological collections' pages. Further information about Darwin's holdings can be found by contacting the Museum.



Rehoused and databased

This photograph shows specimen 14538, *Grapsus grapsus*, in its new storage; Darwin's diary entry for this specimen states: August 1834 Valparaiso; crab, above dark "Cochi. R." Legs "Hyacinth & tile R front pincers purplish".



*Dilocarcinus (Dilocarcinus) pagei cristatus*

Darwin's diary entry: June 1833 Maldonado; Crab, caught in dry hole in one of the low islands of the R. Parana, above Rosario



*Petrolisthes tuberculatus (Guerin-Meneville)*

Darwin's diary entry: November & December 1834; Archipelago of Chiloe; Crabs in the greatest numbers under stones



*Petrolisthes sp.*

Darwin's diary entry: August 1835 Lima; Decapod Notapod



*Mithrax sp.*

Darwin's diary entry: March 1834 Tierra del Fuego; Crust. Bracy. & Macro. Hab: east end of Beagle Channel