

AN EXHIBITION OF RARE BOOKS,  
MANUSCRIPTS, IMAGES AND  
SCIENTIFIC SPECIMENS

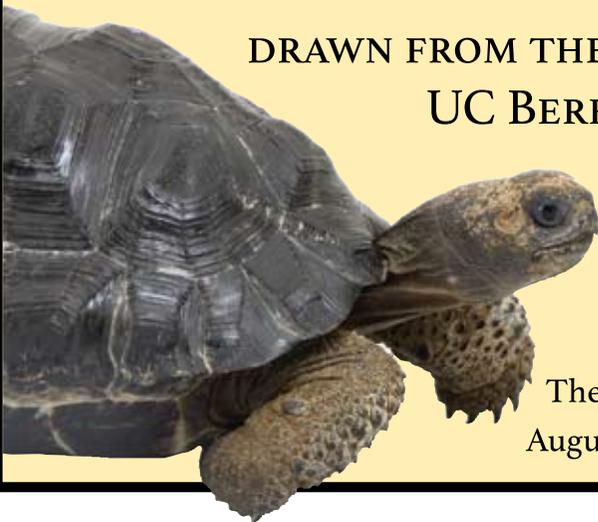


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**DARWIN**  
*and the*  
**EVOLUTION**  
*of a*  
**T H E O R Y**

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DRAWN FROM THE COLLECTIONS OF  
UC BERKELEY'S LIBRARIES  
AND MUSEUMS



The Bancroft Library Gallery  
August 13 – December 23, 2009

Exhibition sponsored by the Friends of The Bancroft Library

# DARWIN *and the* EVOLUTION *of a* THEORY

*An exhibition of rare books, manuscripts, images and scientific specimens  
drawn from the collections of UC Berkeley's libraries and museums*

THE BANCROFT LIBRARY GALLERY

August 13–December 23, 2009

UC Berkeley has one of the most magnificent library collections, and the greatest natural history museums, of any university in the world. So it seemed only fitting to honor the greatest biologist of all time, Charles Darwin, with an exhibition of rare books and images from Bancroft and other UC libraries. These are complemented by a selection of artifacts and natural history specimens from the Museum of Paleontology, the Museum of Vertebrate Zoology, the University and Jepson Herbaria, the Essig Museum of Entomology, and the Hearst Museum of Anthropology.

The occasion for honoring Darwin, of course, is the 200th anniversary of his birth on February 12, 1809, and the 150th anniversary of his great work, *On the Origin of Species by Means of Natural Selection*, published on November 24, 1859, in London by John Murray. But this exhibition is not just about the *Origin*. It also encompasses the books that influenced Darwin in developing his great ideas, including the narratives of great explorers, the natural histories of Britain and elsewhere, and the treatises on geology and classification. It also celebrates the voyage of *H.M.S. Beagle* not only with published accounts from the voyage, but with specimens of plants, animals, and fossils just like those that Darwin collected—topped off with a scale-model of the vessel herself.

The following checklist includes the books, images, specimens and artifacts, and selected excerpts of the text that comprise the exhibition.

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*Curator for Rare Books and Literary Manuscripts*

David Farrell

*Curator for History of Science and Technology*

Kevin Padian

*Professor of Paleontology*

## EXHIBITION SPONSOR

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*The curators gratefully acknowledge the following individuals whose assistance made the exhibition possible.*

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*University and Jepson Herbaria*

Ira Nowinski, Kwei U

Exhibition Design  
Gordon Chun Design

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## THE COMPLETE WORKS OF CHARLES DARWIN

The exhibition features the University Libraries' unique collection of Charles Darwin's published books, including an extremely rare copy of his first appearance in print and all titles that appeared in England and America during his lifetime. It is drawn primarily from the Kofoed Collection in the Bioscience and Natural Resources Library, with additions from The Bancroft Library.

### OF SPECIAL INTEREST IN THE EXHIBITION

#### Charles Darwin (1809–1882)

*The foundations of The origin of species, a sketch written in 1842. Edited by Francis Darwin.*

Cambridge, Printed at the University Press, 1909.

First printing of the original abstract containing the ideas Darwin more fully developed in *The Origin of Species*.

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#### Charles Darwin (1809–1882) and Alfred Russel Wallace (1823–1913)

*On the tendency of species to form varieties; and on the perpetuation of varieties and species by natural means of selection. . . . Communicated by Sir Charles Lyell and J. D. Hooker.*

London, Longman, Brown, 1858.

Darwin had been working on his theory of evolution by natural selection for years when he discovered that Wallace had recently developed similar ideas, which they co-published here for the first time.

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*Order of the Proceedings at the Darwin Celebration held at Cambridge June 22–June 24, 1909, with a sketch of Darwin's life.*

Cambridge, Printed at the University press, 1909.

Official program of the Darwin centennial in Cambridge, England.

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### All English and American Editions and Printings of Darwin's Books Published during his Lifetime

*The structure and distribution of coral reefs; being the first part of the geology of the voyage of the Beagle, under the command of Capt. FitzRoy, R.N. during the years 1832 to 1836.*

London, Smith, Elder and Co., 1842.

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*A monograph on the fossil Lepadidae, or, pedunculated Cirripedes of Great Britain; together with A monograph on the Fossil Balanidae and Verrucidae of Great Britain.*

London, Printed for the Palaeontographical Society, 1851, 1854.

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*On the origin of species by means of natural selection, or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1859.

First English edition. The entire edition of 1250 copies sold out the day of publication, and Darwin immediately began preparing a revised edition, which appeared first in America.

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*On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life.*

New York, D. Appleton, 1860.

First American edition. First appearance of the revision of the first English edition; similar to, if not quite the same as the second English edition, which appeared in the same year.

BIOSCIENCE LIBRARY

*On the origin of species by means of natural selection, or The preservation of favoured races in the struggle for life.*

New York, D. Appleton, 1860.

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*On the origin of species by means of natural selection, or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1860.

Second English edition.

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*On the origin of species by means of natural selection, or The preservation of favoured races in the struggle for life.*

New York, D. Appleton and Company, 1860.

Second American edition.

BIOSCIENCE LIBRARY

*On the origin of species by means of natural selection; or, The preservation of favoured races in the struggle for life.*

New York, D. Appleton and Company, 1861.

A new edition, revised and augmented by the author.

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*On the origin of species by means of natural selection, or The preservation of favoured races in the struggle for life.*

London, John Murray, 1861.

Third edition, with additions and corrections.

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*On the origin of species by means of natural selection, or The preservation of favoured races in the struggle for life.*

London, John Murray, 1866.

Fourth edition, with additions and corrections

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*The movements and habits of climbing plants.*  
London, Academic Press for the Linnean Society, 1867.

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*The variation of animals and plants under domestication.*

London, John Murray, 1868.

BIOSCIENCE LIBRARY

*On the origin of species by means of natural selection; or the preservation of favoured races in the struggle for life.*

London, John Murray, 1869.

Fifth edition, with additions and corrections.

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*The descent of man, and selection in relation to sex.*  
New York, D. Appleton and company, 1871.

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*On the origin of species by means of natural selection, or The preservation of favored races in the struggle for life.*

New York, D. Appleton, 1871.

Fifth edition, with additions and corrections

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*The expression of the emotions in man and animals.*

London, John Murray, 1872.

BIOSCIENCE LIBRARY

*On the origin of species by means of natural selection, or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1872.

Sixth edition, with additions and corrections

BIOSCIENCE LIBRARY

*On the origin of species by means of natural selection, or, The preservation of favored races in the struggle for life.*

New York, Appleton, 1872

Fifth edition, with additions and corrections

BIOSCIENCE LIBRARY

*The origin of species by means of natural selection, or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1873.

Sixth edition, with additions and corrections.

First appearance of the variant title.  
Presentation Copy: *John Price / From the author*

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*Insectivorous plants.*

London, John Murray, 1875.

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*The movements and habits of climbing plants.*  
London, John Murray, 1875.

BIOSCIENCE LIBRARY

*The origin of species by means of natural selection, or The preservation of favoured races in the struggle for life.*

London, John Murray, 1875.

Sixth edition, with additions and corrections

BIOSCIENCE LIBRARY

*The effects of cross and self fertilisation in the vegetable kingdom.*

London, John Murray, 1876.

BIOSCIENCE LIBRARY

*The origin of species by means of natural selection, or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1876.

Sixth edition, with additions and corrections to 1872

BIOSCIENCE LIBRARY

*The different forms of flowers on plants of the same species.*

London, John Murray, 1877.

BIOSCIENCE LIBRARY

*The origin of species by means of natural selection, or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1878.

Sixth edition, with additions and corrections to 1872.

BIOSCIENCE LIBRARY

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## Charles Atwood Kofoid

Professor of Zoology at UC Berkeley for more than twenty-five years and member of the National Academy of Sciences, Kofoid (1865–1947) amassed a prodigious library which he gave to the University in 1947. Many languages and subjects are represented, with special strength in the history of science and medicine. The Darwin collection, numbering 530 volumes and housed in the Bioscience and Natural Resources Library, is featured in the exhibition.



Photograph by Hegel, 1946

*The origin of species by means of natural selection, or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1880

Sixth edition, with additions and corrections to 1872

BIOSCIENCE LIBRARY

*The power of movement in plants. Assisted by Francis Darwin.*

London, John Murray, 1880.

Presentation copy to Mr. Rattan, to whom reference is made in the text:

*From the author with best compliments.*

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*The formation of vegetable mould, through the action of worms, with observations on their habits.*

London, John Murray, 1881.

BIOSCIENCE LIBRARY

*On the origin of species by means of natural selection or, The preservation of favoured races in the struggle for life.*

London, John Murray, 1882.

Sixth edition, with additions and corrections to 1872.

BIOSCIENCE LIBRARY

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## The Voyage of H.M.S. Beagle

The *Beagle* was used by the Royal Navy for three scientific voyages. The most important of these—and one of the most famous voyages in history—was the second, an around-the-world expedition from December 1831 to October 1836. The *Beagle* was commanded by Captain Robert FitzRoy and included Charles Darwin, a 22-year-old amateur scientist. His collection of scientific specimens and recorded observations from the voyage formed the basis for his theory of evolution.

### Model of H.M.S. Beagle

Built by Lloyd McCaffery, 1995.  
9 in. × 5 in. × ¾ in.; constructed of basswood, holly, degama, apple, and boxwood.

Waterline model based on drawings in the National Maritime Museum of England and a painting by John Russell Chancellor (1925–).

COURTESY OF A PRIVATE COLLECTOR (CLASS OF 1965)

### FitzRoy's Map of the Voyage, 1831–1836

The map appeared in the Appendix to FitzRoy's *Narrative of the Surveying Voyages . . .* London, 1839. Original approximately 18 in. × 7 in.

### Charles Darwin, 1809–1882

[*Extracts from letters addressed to Professor Henslow . . .*].

Cambridge, Printed for the Cambridge Philosophical Society, 1835.

Darwin's very rare first appearance in print, distributed by J. S. Henslow (1796–1861), Darwin's botany professor at Cambridge, to his colleagues in the Cambridge Philosophical Society. This copy belonged to Thomas Webster (1810–1875), Cambridge physicist and a Fellow of the Society.

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### Charles Darwin, 1809–1882

*The Journal of a Voyage in H.M.S. Beagle.*

[Guilford, Eng.], Genesis Publications in association with Australia & New Zealand Book Co., Ltd., 1979.

Facsimile of Darwin's original manuscript journal.

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Robert FitzRoy

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## The Captain as Scientist

Captain Robert FitzRoy (1805–1865) of the *Beagle* is often portrayed as an unstable archconservative religious bigot, but the truth is far more complex. At 26 he had already commanded several voyages, and he commanded the *Beagle* on the South American station from 1828 to 1846.

FitzRoy intended for the expedition to excel in the collection of data and specimens. He was a first-rate scientist himself, a pioneer of meteorology in Europe, and he wrote much of the scientific reporting from the voyage.

### Robert FitzRoy, 1805–1865, et al.

*Narrative of the surveying voyages of His Majesty's ships Adventure and Beagle, between the years 1826 and 1836, describing their examination of the southern shores of South America, and the Beagle's circumnavigation of the globe.*

London, Henry Colburn, 1839–1840.

VOLUME I: *Proceedings of the First Expedition, 1826–1830, under the command of Captain P. Parker King*

VOLUME II: *Proceedings of the Second Expedition, 1831–1836, under the command of Captain Robert Fitz-Roy*

APPENDIX TO VOLUME II

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## Gaucha Gear from the Pampas and Patagonia, Argentina

These modern objects (all collected in the 1920's) are similar to items Darwin would have seen in use by the gauchos of South America during his extensive shore excursions.

*Tobacco pouch*, ostrich neck skin

*Spurs*, silver, Chilean manufacture but used in Argentina

*Bola*, used for hunting and managing cattle and horses in drives

*Drinking cup*, cow horn engraved with floral and circular designs; perforated at each end

COURTESY OF THE PHOEBE APPERSON HEARST MUSEUM OF ANTHROPOLOGY

## Charles Darwin, 1809–1882

*Journal of researches into the geology and natural history of the various countries visited by H. M. S. Beagle, under the command of Captain FitzRoy, R. N., from 1832 to 1836.*

London, H. Colburn, 1839.

Official title of Darwin's diary from the voyage.

BIOSCIENCE LIBRARY

## Insect Specimens from South America

These modern specimens collected in diverse localities are closely related to those Darwin himself observed and described.

*Acrididae*, large grasshopper, Ecuador

*Hippoboscidae*, fly, Louisiana

*Reduvius*, assassin bug, Chile

*Staphylinidae*, rove beetles, California and Chile

*Tabanidae*, horse flies, Florida, Costa Rica, Chile

*Scarabeoidae*, stag beetles, India, Arizona, Chile

*Carabidae*, ground beetles, Texas, Mexico

*Harpalinae*, ground beetle, Oklahoma

*Carabidae*, tiger beetles, New Mexico, Mississippi

*Carabidae*, 12 colorful ground beetles, Chile

*Hydrophilidae*, water scavenger beetle, Costa Rica

*Cicadidae*, cicada, Costa Rica

*Gryllidae*, cricket, Mexico

*Chrysomelidae*, leaf beetles, Brazil

*Lampyridae*, fireflies, Colombia, Chile

*Cerambycidae*, long-horned beetle, Hawaii

*Agrias beatifica*, *agrias amydon*, *morpho Menelaus*, *doxocopa seraphina*, butterflies, South America (chiefly Brazil)

*Morpho caternarius*, *morpho melenaus*, butterflies, South America (chiefly Brazil)

*Papilionidae*, swallowtail butterflies, Asia

*Colias Eurydice* (*Pieridae*), dogface butterfly, California state insect

COURTESY OF THE ESSIG MUSEUM OF ENTOMOLOGY

## Fossil Specimens

These fossil mammals collected in South America by crews from the UC Museum of Paleontology are of the same kinds of animals and from the same regions that Darwin visited.

*Mylodon*, giant ground sloth femur, Colombia, Lujanian (3 to 1.2 million years old), 1951

*Huilatherium* (*Toxodon*), partial jaw, Colombia, Friasian (16.3 to 15.5 million years old), 1945

*Glyptodontidae*, partial carapace or tessellated armor of the tail, Colombia, Friasian (16.3 to 15.5 million years old), 1950

COURTESY OF THE MUSEUM OF PALEONTOLOGY

## Charles Darwin, 1809–1882, ed.

*The Zoology of the voyage of H.M.S. Beagle, under the command of Captain Fitzroy, R.N., during the years 1832 to 1836. Published with the approval of the Lords Commissioners of Her Majesty's Treasury.*

London, Published by Smith, Elder and Co., 1839–1843.

VOLUME I: Mammals by Richard Owen

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## Natural Selection

Charles Darwin caricature by "Coide" (James Tissot, 1836–1902)

London, *Vanity Fair*, September 30, 1871

## A Great Med'cine-Man among the Inqui-ring Redskins

Thomas Henry Huxley caricature by "Ape" (Carlo Pellegrini, 1839–1889)

London, *Vanity Fair*, January 28, 1871

Huxley (1825–1895) was a pre-eminent Victorian anatomist, biologist, and paleontologist and such a strong supporter of Darwin that he gained the title of "Darwin's bulldog."

## Not a Brawler

Samuel Wilberforce caricature by "Ape" (Carlo Pellegrini, 1839–1889)

London, *Vanity Fair*, July 24, 1869

Wilberforce (1805–1873), Bishop of Oxford, was strongly opposed to Darwin's ideas. In 1860 Huxley and Wilberforce debated Darwin's newly published *On the Origin of Species* at the British Association for the Advancement of Science meeting at Oxford. Wilberforce was coached by Richard Owen; Huxley represented the ideas of Darwin, who typically declined to attend.

COURTESY OF A PRIVATE INDIVIDUAL

## Richard Owen

Owen (1804–1892), Britain's pre-eminent paleontologist of the day, is best remembered for his outspoken opposition to Darwin's theory of evolution. He was also the driving force behind the establishment of the British Museum of Natural History in 1881.

COURTESY OF A PRIVATE INDIVIDUAL

## Plant Specimens

*Chaetomorpha darwinii*, seaweed, New Zealand, 1894

*Solanum tuberosum*, wild potato, Chile, 1975

*Fuchsia magellanica* Lam, fuchsia, Chile, 1980

*Ulex europaeus*, gorse, South Australia, 1957

*Gunneraceae*, gunnera ("giant rhubarb"), Brazil

*Gunneraceae chilensis*, gunnera, Chile

*Macrocystis pyrifera*, bladder kelp, California

COURTESY UNIVERSITY AND JEPSON HERBARIA

## The Galapagos Islands

The Islas Galápagos (Islands of the Tortoises) form the Galápagos Province of Ecuador, located about 600 miles off the west coast of South America. Darwin arrived aboard the *Beagle* September 15, 1835, and visited Chatham, Charles, Albemarle, and James islands before departing a little more than a month later on October 20. Later, Darwin realized that the discovery of the distribution of birds and tortoises on the islands would "undermine the stability of Species."

## David Porter, 1780–1843

*A Voyage in the South Seas in the years 1812, 1813, and 1814, with particular details of the Gallipagos and Washington Islands*

London, Sir R. Phillips, 1823.

ILLUSTRATION: Map of the Gallapagos Islands, ca. 1823

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## Carapaces and Plastrons of the Galapagos tortoise, *Geochelone elephantopus*, Isla Santa Cruz, 1965

The adult and juvenile carapaces (shells) and plastrons (breastplates) of two Galapagos tortoises. Galapagos tortoises are the largest turtles on earth today, though not of all time.

COURTESY OF THE MUSEUM OF VERTEBRATE ZOOLOGY

## Galapagos Tortoises

*Male tortoise*, Espanola Island, 2002

Photographs by Ira Nowinski  
Courtesy of the Photographer



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## Galapagos Finches and Mocking Birds

Not the most distinctive of the Islands' birds, finches are the most famous. Different species came from different islands, where they had independently evolved beak shapes that were adapted to particular foods.

*Certhidea olivacea olivacea*, Warbler finch

*Geospiza scandens intermedia*, Cactus finch, Santa Cruz Island

*Geospiza fortis*, Medium ground finch

*Geospiza magnirostris*, Large ground finch

*Camarhynchus crassirostris*, Vegetarian finch

*Nesomimus trifasciatus melanotis*, San Cristobal mockingbird

*Nesomimus trifasciatus macdonaldi*, Hood mockingbird

COURTESY OF THE MUSEUM OF VERTEBRATE ZOOLOGY.

**Daphne Major Island**, Galapagos Islands, 2002

Photograph by Ira Nowinski

Darwin did not visit Daphne Major on his voyage, but it has an abundance of finches and since the 1970s it has been the site of a major project to study natural selection.

COURTESY OF THE PHOTOGRAPHER

**Charles Darwin, 1809–1882, ed.**

*The Zoology of the voyage of H.M.S. Beagle, under the command of Captain Fitzroy, R.N., during the years 1832 to 1836. Published with the approval of the Lords Commissioners of Her Majesty's Treasury.*

London, Published by Smith, Elder and Co., 1839–1843.

VOLUME II: Birds by John Gould

The exquisite hand-colored aquatint illustrations are by John Gould, ornithologist and illustrator at the Zoological Society of London, where Darwin deposited specimens he collected on the voyage.

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## The Romance of Travel: Inspiration from Natural History

The books and journals of explorers not only satisfied vicariously their readers' wanderlust, they also communicated a treasure trove of natural history lore. Darwin, like other young naturalists, was an avid reader of this literature, and his well-born circumstances gave him unusually good access to it.

**John James Audubon, 1785–1851.**

*The viviparous quadrupeds of North America, Vol. III, with book of plates.*

New York, J.J. Audubon, 1846–53.

The jaguar pictured here was native to South and Central America and migrated north when the two continents joined three million years ago. The jaguar's range stretches south to Paraguay and northern Argentina, where Darwin traveled.

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**Alexander von Humboldt, 1769–1859**

*Personal Narrative of a Journey to the Equinoctial Regions of the New Continent.*

London, Longman, Hurst, Rees, Orme, and Brown, 1822.

Darwin was particularly inspired by von Humboldt's account of his expedition to the New World (1799–1804).

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**Sir John Franklin, 1786–1847**

*Narrative of a Journey to the Shores of the Polar Sea.*

London, John Murray, 1823.

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**Hugh Murray, 1779–1846**

*The Encyclopedia of Geography.*

Philadelphia, Lea and Blanchard, 1840.

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## The Most Influential Book in Britain

T.R. Malthus's *Essay on Population*, as it is popularly called, used social theory and demographic projections to argue against excessive charity to the poor. His work was also key to the development of ideas about horticulture, timber, and animal husbandry—and eventually to the theory of natural selection.

**Thomas Malthus, 1766–1834**

*Essay on the Principle of Population.*

London, J. Johnson, 1803.

BANCROFT LIBRARY

*The Encyclopaedia britannica; or, Dictionary of arts, sciences, and general literature.*

Boston: Little, Brown, & Co., 1853–1860.

Contains Malthus's article "Population," a standard entry for several editions.

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## A Seamless Web of Religion and Science

Two centuries ago at universities such as Oxford and Cambridge, one did not major in zoology, botany, or geology. The sciences were encompassed by two approaches. "Natural philosophy" studied the workings of nature, much as any scientific discipline would do today. "Natural theology" sought to understand and glorify God by studying his creation.

**William Paley, 1743–1805**

*Paley's Natural theology, with illustrative notes. . . .*

London, C. Knight, 1836.

William Paley (1743–1805) was the most influential religious writer of the late 18th and early 19th centuries in England.

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**James Paxton, 1786–1860**

*Illustrations of Paley's Natural Theology*

Boston, Hilliard, Gray, Little, and Wilkins, 1827

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**William Paley, 1743–1805**

*A view of the evidences of Christianity.*

London, Printed for R. Faulder, 1796.

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## Darwin and Religion

Like many people, Darwin's views on religion and theology changed over his lifetime, but it is perhaps most accurate to characterize him as a Deist, like nearly all of our country's founding fathers. He believed that a "creative intelligence" had fostered the universe and set up its natural laws, but he did not personify this creator or believe in its later intervention in natural phenomena.

Gradually, through the latter part of his life, Darwin recognized that his religious convictions were leaving him. At that time he described himself as an agnostic; he was never an atheist.

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## Darwin's Autobiographies

Darwin's personal account of his life appeared in three forms. In his old age he composed a manuscript narrative of 121 pages, enlarging on it in subsequent years until at his death it stood at 188 pages total. This was published as the "autobiographical chapter" that appeared in the *Life and Letters* edited by Darwin's son Francis in 1887, with sensitive material removed. These omissions were finally restored in the 1958 edition edited by Darwin's grand-daughter.

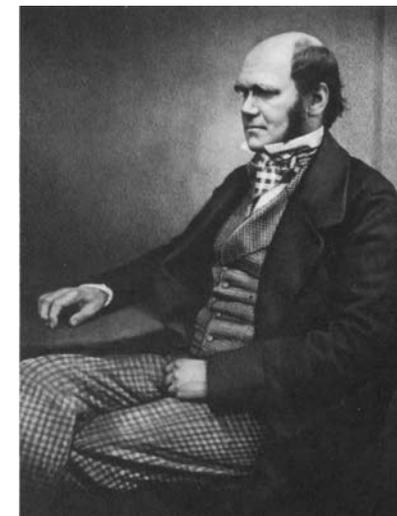


## Charles Robert Darwin (1809–1882)

- 1809** 12 February. Born in Shrewsbury, England, the son of Robert Waring Darwin and Susannah, née Wedgwood.
- 1817–1825**  
Attends day school in Shrewsbury (1817–1818) and later (1818–1825) Samuel Butler's boarding school.
- 1825–1827**  
Darwin's father enrolls him and his older brother Erasmus in the medical curriculum at the University of Edinburgh.
- 1828** Matriculates at Christ's College, University of Cambridge, reading for an ordinary degree and intending to pursue a theological degree (not completed).
- 1831** Passes his BA examinations on 22 January without honors and remains at Cambridge for a further two terms to fulfill residence requirement. In August he returns to Shrewsbury from Wales to find a letter from his botany professor, J.S. Henslow, inviting him to join the *Beagle* voyage. Darwin's father objects, but his uncle, Josiah Wedgwood II, persuades him otherwise. Meets Captain Robert FitzRoy (1805–65) and makes preparations for the voyage. After two false starts, the ship leaves Plymouth on 27 December.
- 1831–1836**  
On board *HMS Beagle* from 27 December 1831 until 4 October 1836. On arriving home, Darwin's sister remarks that the shape of his head has completely changed. Moves to London in December, where he stays until moving in 1842 to Down House in Downe, Kent, where he lives for the rest of his life with his family.
- 1837** Begins publication of *The Zoology of the Voyage of the Beagle* (1838–43). In July opens his first notebook on the transmutation of species.
- 1838** Finishes a paper on the geology of Glen Roy in Scotland. On 28 September he reads 'for amusement' T. R. Malthus *Essay on the Principle of Population* (1798). 'Here, then, I had at last got a theory by which to work' (*Autobiography*). On 11 November proposes marriage to his cousin Emma Wedgwood (1808–96).
- 1839** Marries Emma Wedgwood on 29 January. Publishes *Journal of Researches*, later known as *Voyage of the Beagle*. Elected a Fellow of the Royal Society. First child, a son William, is born. He and Emma eventually have ten children, seven of whom reach adulthood.
- 1842** Publishes *The structure and distribution of coral reefs*.
- 1844** Expands a preliminary sketch on "natural selection" into a longer essay. Writes a memorandum to Emma Darwin requesting that this essay should be published if he should die unexpectedly, giving the names of several friends who would serve as possible editors. Publishes *Geological Observations on the Volcanic Islands visited during the Voyage of HMS Beagle*.
- 1846** Publishes *Geological Observations on South America*. October begins work on barnacles, which became four slim volumes on the taxonomy of living and fossil forms (1851–1854).
- 1856** On Charles Lyell's advice begins writing up his views for a projected big book called 'Natural Selection'.
- 1858** In June receives a letter from Alfred Russel Wallace, who is collecting specimens in Indonesia. Wallace encloses an essay on species and varieties that mirrors Darwin's own theory of natural selection. 'I never saw a more striking coincidence. . . . If Wallace had my MS sketch written out in 1842 he could not have made a better short abstract!' Extracts from Darwin and Wallace's writings presented by Charles Lyell and Joseph Hooker at the Linnean Society of London on 1 July. Neither Darwin nor Wallace attend. Papers published in *Journal of the Proceedings of the Linnean Society of London*. Darwin begins an 'abstract' of his views for publication.



Darwin, 1840



Darwin, 1860

- 1859** *On the Origin of Species by means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* (the 'abstract') is published in London on 24 November by John Murray.
- 1862** Publishes *On the Various Contrivances by which British and foreign Orchids are fertilised by Insects, and On the Good Effects of Intercrossing*. Meets Alfred Russel Wallace on his return from Indonesia.
- 1865** Publishes *On the Movements and Habits of Climbing Plants*.
- 1868** Publishes *The Variation of Animals and Plants Under Domestication*.
- 1871** Publishes *The Descent of Man, and Selection in relation to Sex*. Engages in dispute with St George Mivart, adds a new chapter to sixth edition of *Origin of Species* to rebut Mivart's claims.
- 1872** Publishes 6th edition of *Origin*. Publishes *The Expression of the Emotions in Man and Animals*.
- 1875** Publishes *Insectivorous Plants*.
- 1876** During the summer begins to write an autobiographical memoir for his children and future grandchildren. 'I know that it would have interested me greatly to have read even so short and dull a sketch of the mind of my grandfather written by himself, and what he thought and did, and how he worked.' This memoir published in edited form in Francis Darwin's *Life and Letters of Charles Darwin* (1887). Publishes *The Effects of Cross and Self Fertilisation in the Vegetable Kingdom*.
- 1877** Publishes *The Different Forms of Flowers on Plants of the same Species*.
- 1880** Publishes *The Power of Movement in Plants . . . Assisted by Francis Darwin*.
- 1881** Publishes *The Formation of Vegetable Mould through the Action of Worms, with observations on their Habits*.
- 1882** Dies 19 April, aged seventy-three. Buried in Westminster Abbey, 26 April.

Adapted from a chronology by Janet Browne & John van Wyhe

Back cover: Charles Darwin at age 72. Photograph by Elliott and Fry

