Charles Darwin: Geologist and Biologist

Geology 230
Fossils and Evolution
West Virginia University
ONE OF THE MOST FAMOUS BOOKS OF SCIENCE.

ON

THE ORIGIN OF SPECIES

BY MEANS OF NATURAL SELECTION,

OR THE

PRESERVATION OF FAVOURED RACES IN THE STRUGGLE FOR LIFE.

BY CHARLES DARWIN, M.A.,

FELLOW OF THE ROYAL, GEOLOGICAL, LINNEAN, ETC., SOCIETIES;
AUTHOR OF ‘JOURNAL OF RESEARCHES DURING H. M. S. BEAGLE’S VOYAGE ROUND THE WORLD.’

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1859.

Title page of the first edition of The Origin
The only illustration in Darwin’s book
Darwin’s home, Down House, in England
Darwin’s study at his home Down House
Voyage of HMS Beagle, 1831-1836
Charles Darwin in 1837, age 28, after voyage of the Beagle
Charles Darwin,
age 60
Darwin in 1879, age 70.
Darwin is buried in Westminster Abbey

CHARLES ROBERT DARWIN
BORN 12 FEBRUARY 1809
DIED 19 APRIL 1882
Near the Natural History Museum, London.
Darwin is popular in British culture.
PRINCIPLES
OF
GEOLGY,
BEING
AN ATTEMPT TO EXPLAIN THE FORMER CHANGES
OF THE EARTH'S SURFACE,
BY REFERENCE TO CAUSES NOW IN OPERATION.

BY
CHARLES LYELe, Esq., F.R.S.
F.R.S. TO THE GEOL. SOC., &c.

IN TWO VOLUMES.
Vol. I.

LONDON:
JOHN MURRAY, ALBEMARLE-STREET.
MCCCXX.
Captain Robert FitzRoy of the HMS Beagle, late 20’s. Rose to rank of Vice-Admiral.
The Voyage of the Beagle

Voyage of HMS Beagle, 1831-1836
Megatherium, a large and extinct mammal Darwin collected in South America
Earthquake damage in Conception, Chile, Feb. 1835. Sketched by Lt. Wickham of the Beagle.
Geologic sketch of the Andes Mountains by Charles Darwin
The Galapagos Islands. Darwin visited in October 1835
Darwin’s sketches of island volcanoes and atolls in the Atlantic, Pacific, and Indian oceans.
Darwin served as Secretary of the Geological Society of London, 1838
Alfred Russell Wallace, co-discoverer of natural selection, 1856. Worked in Malaysia.
Darwin’s “abstract” Wallace’s discovery spurred Darwin to write.
Erasmus Darwin: Proposed an evolutionary theory similar to Lamarck’s. Undoubtedly influenced grandson Charles.
T.H. Huxley, comparative anatomist, Royal School of Mines. Darwin’s “Bulldog”
The Galapagos Islands: a natural laboratory for studying natural selection.
Biologists are still studying natural selection in the Galapagos Islands.
Extinct volcano where the Grants studied "The Beak of the Finch"
Darwin’s finches: 13 different species evolved from a single ancestor from South America.
The beaks of Darwin’s finches are adapted to the variety of food types available on the different islands in the Galapagos Islands.
The beaks of Darwin’s finches are adapted to the variety of food types available on the different islands in the Galapagos Islands.
Type specimens of finches collected by Darwin in the Galapagos Islands
Darwin Bay on Tower Island
Masked booby nesting grounds on Tower Island
Mockingbirds with no fear of humans
Sitting with a masked booby
Fratricide among masked boobies. Every living adult killed its sibling. What is the evolutionary advantage?
Masked booby and blue-foot booby rookeries
A blue-footed booby
Let’s do the booby dance!
Mating ritual and bonding
Red-footed boobies roost in trees
Equatorial penguins in the Galapagos
This flightless cormorant shows adaptations similar to penguins.
Sea lion mother and pup
Sea lions only fear sharks
Marine iguanas, the only ones in the world
A male marine iguana
Godzilla lives!
The land iguana, the living relative of the marine iguanas.
A giant tortoise
A tortoise at the Darwin Research Station
Hanging out at the local water hole
Jaws!
We took pictures until the “cows came home.”
Yours truly in the Galapagos Islands, 1996, Fernandina Volcano
Hope this lecture hasn’t left you feeling “crabby”!