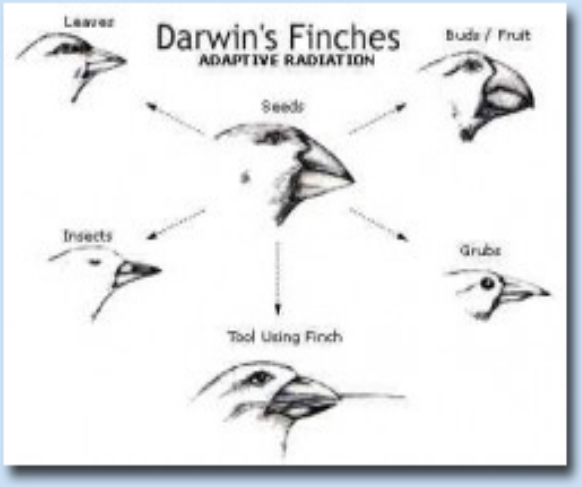
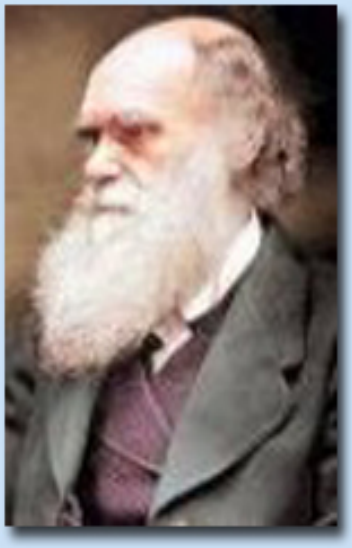
Charles Darwin (1809-1882)
1835: the 26-year-old Charles Darwin sailed into the Galápagos Islands onboard the HMS Beagle
1859: he published On the Origin of Species
February 12th 2009: bicentennial birthday of Charles Darwin



Darwin studied finches and came to understand how the finches' beak size must have changed over the generations to accommodate differences in the size of seeds or insects consumed on the various islands.

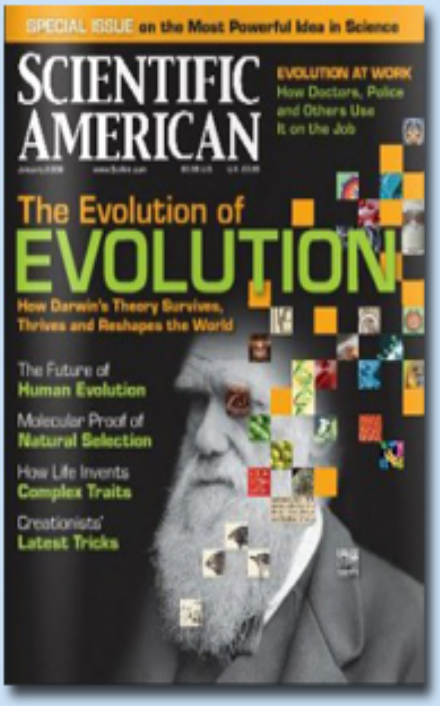
The theory of evolution ties together disparate biological facts into a single unifying framework. Naturalists had theorized about evolution for centuries before him, but Darwin's insight was revolutionary.



CHARLES DARWIN and natural selection


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.,
LONDON:
JOHN MURRAY, ALBEMARLE STREET.

His insight was not that a simple mechanism, natural selection, made evolution possible. Rather it was that in organisms whose environment changed nonrandomly and whose reproductive success in that environment depended on inherited traits, evolution became inevitable.



The idea of natural selection is very simple. Some kinds of organisms survive better in certain conditions than others do; such organisms leave more progeny and so become more common with time. The environment thus "selects" those organisms best adapted to present conditions. If environmental conditions change, organisms that happen to possess the most adaptive characteristics for those new conditions will come to predominate. In spite of this simplicity, the theory of natural selection has suffered a long and tortuous history. Darwin's claim that species evolve was rapidly accepted by biologists, but his separate claim that natural selection drives most of the change was not.

Abridged and simplified from Scientific American 300, 6 (2009)

Web resources:
http://www.scientificamerican.com/report/darwin/
http://www.scientificamerican.com/article/darwins-living-legacy/
http://sandwalk.blogspot.it/2008/12/scientific-american-evolution-of.html
http://issuu.com/samuelsantos52/docs/scientific_american_2009_01_vol_300