

Chapter 14.1

Evolution: A History and a Process

Theory - well-tested explanation that makes sense of a great variety of scientific observations.

Evolution - all of the changes that have transformed life over an immense time.

Adaptation - an inherited characteristic that improves an organism's ability to survive and reproduce in a particular environment.

People and Evolution:

Nicolaus Copernicus (1543)

- The Earth is not the center of the universe

Galileo (1632)

- endorsed the Copernican system in his book *Dialogue Concerning the Two Chief World Systems*

Georges Buffon (Mid 1700s)

- Earth may be older than a few thousand years.
- Observed fossils and living animals were similar but not exactly alike.

James Hutton (1788)

- Uniformitarianism (what happens now happened in the past)

Jean Baptiste Lamarck (Early 1800s)

- Explained evolution as a process of adaptation.
- *Inheritance of acquired characteristics*

Charles Lyell (1830)

- *The Principles of Geology* Darwin had this book on the HMS Beagle

Charles Darwin (1831)

- HMS Beagle five year trip around the world
- Observed that species change as they adapt to their changing environment.
- Galapagos Islands
- *The Origin of Species* (1859)
 - A. Descent with modifications
 - B. Natural selection