

*** Early Scientists Proposed Ideas about Evolution.**

Evolution – the process of biological change by which descendants come to differ from their ancestors

Charles Darwin is given much credit for this idea, but it had been discussed for more than 100 years before Darwin proposed his theory of how evolution works.

Today evolution is a central theme in all fields of biology.

Carolus Linnaeus – Swedish botanist – in the 1700's developed a classification system for all types of organisms based upon their similarities

Georges Buffon – French naturalist - in the 1700's proposed that species shared common ancestors instead of arising separately – also rejected the idea that the Earth was only 6000 years old, he thought it was much older

Erasmus Darwin – English doctor and poet – mid 1700's – Charles Darwin's grandfather – proposed that all living things were descended from a common ancestor and that more complex forms of life arose from less complex forms

Jean-Baptiste Lamarck – French naturalist – 1809 – proposed that all organisms evolved toward perfection and complexity – He didn't think species become extinct, but evolved into different forms – also proposed that changes in the environment caused an organism's behavior to change, leading to greater use or disuse of a structure or organ, these changes would be passed on to offspring

- This idea is known as the inheritance of acquired characteristics

***Theories of Geologic Change Set the Stage for Darwin's Theory.**

Fossils – traces of organisms that existed in the past

Catastrophism – theory developed in the early 1800's by Georges Cuvier - states that natural disasters such as floods and volcanic eruptions have happened often during Earth's long history and these events have changed landforms and have caused species to become extinct.

Gradualism – theory proposed by James Hutton in the late 1700's – states that changes observed in landforms resulted from slow changes over a long period of time

(Today the term is often used to mean the gradual change of species through evolution.)

****Uniformitarianism** – theory proposed by Charles Lyell in the 1830's – states that the geologic processes that shape Earth are uniform through time