

The Development of Evolutionary Theory

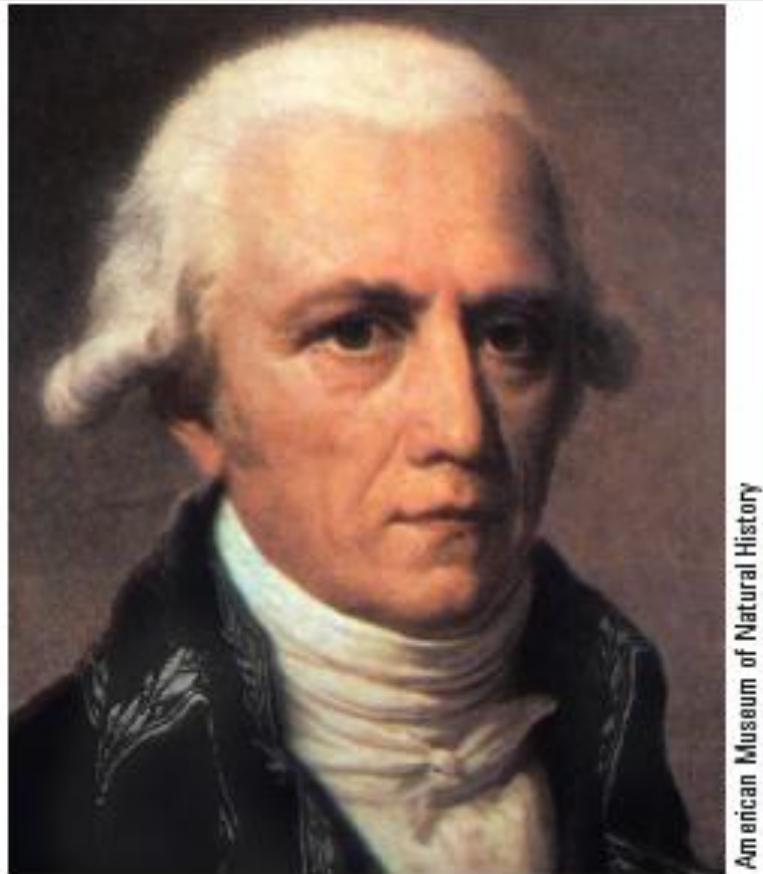
Evolution

- A change in the genetic structure of a population.
- Also refers to the appearance of a new species.
- Often controversial, some religious views hold that evolutionary statements run counter to biblical teachings.

Binomial Nomenclature

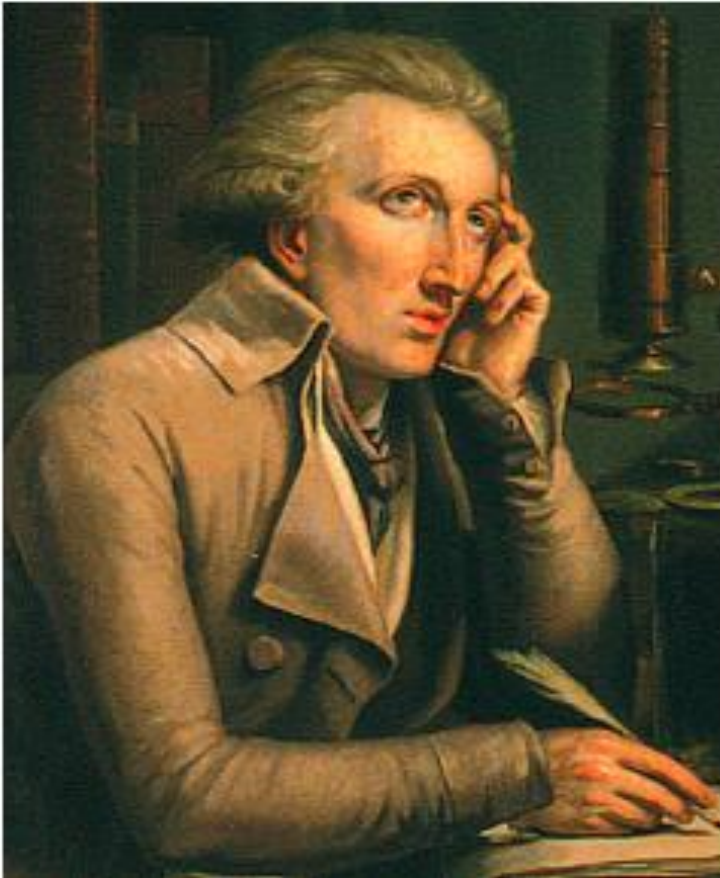
- In taxonomy, the convention established by Carolus Linnaeus whereby genus and species names are used to refer to species.
-  For example, *Homo sapiens* refers to human beings.
- Taxonomy is the branch of science concerned with the rules of classifying organisms on the basis of evolutionary relationships.

Lamarck



- John Baptiste Lamack was the first scientist to produce an explanation for the evolutionary process.
- He believed that species change was influenced by environmental change.

Cuvier



Mathieu-Ignace van Brée

- Georges Cuvier introduced the concept of extinction and the theory of catastrophism.

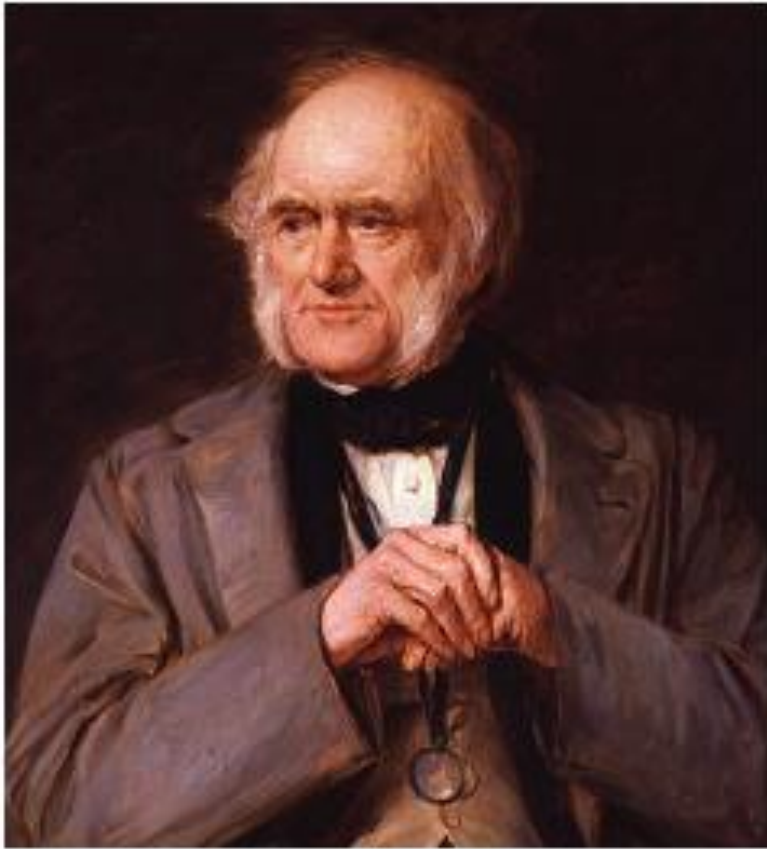
Thomas Malthus



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- Thomas Malthus wrote about the relationship between food supply and population increase.
- His essay on the Principle of Population led both Darwin and Wallace to the principle of natural selection.

Charles Lyell



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- Charles Lyell developed the theory of uniformitarianism.

Catastrophism

- The view that the earth's geological landscape is the result of violent cataclysmic events.
- Cuvier promoted this view, especially in opposition to Lamarck.

Uniformitarianism

- The theory that the earth's features are the result of long term processes that continue to operate in the present as they did in the past.
- Elaborated on by Lyell, this theory opposed catastrophism and contributed strongly to the concept of immense geological time.

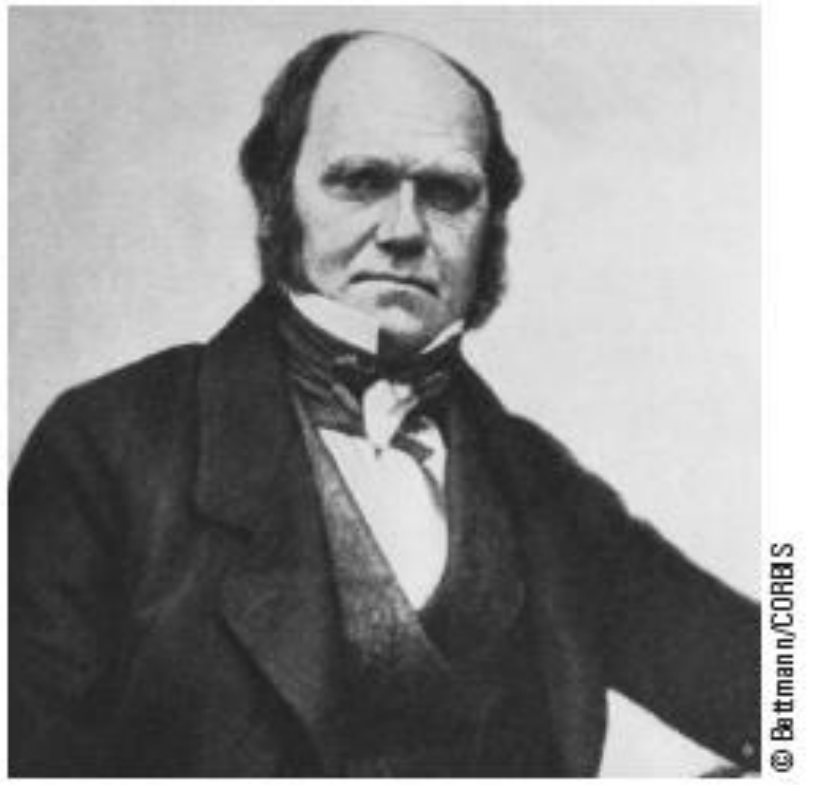
Mary Anning



The Natural History Museum, London

- Discovered the first complete fossil of Ichthyosaurus, a large fishlike marine reptile.
- She became known as one of the world's leading "fossilists" and contributed to the understanding of the evolution of marine life over 200 million years ago.

Charles Darwin



- Charles Darwin, photographed 5 years before the publication of Origin of Species.

Natural Selection in Action



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- Variation in the peppered moth.
- (a) The dark form is more visible on the light, lichen-covered tree.
- (b) On trees darkened by pollution, the lighter form is more visible.