

## Theory of evolution 19<sup>th</sup> century

Despite the development of science, scientists haven't had a sufficient answer, which has led some of them to resort to the imagination. One such theory is that of the physicist and chemist "Svante August Arrhenius" (1859-1927) (Nobel Prize in Chemistry 1903).

Microscopic living beings have always existed in space, and each time they rest on a planet they are transformed into different living beings by the effect of development factors, but this theory can be refuted after the discovery that the cosmic radiation that fills space does not allow living organisms to survive.

### A. Darwin:

**1. His birth:** Charles Robert Darwin was born in England (1809-1882), the grandson of the famous physician Erasmus Darwin.

**2. His studies:** as a child, he collected minerals and shells, but showed little interest in his studies. His father wanted him to become a doctor, so Charles began (in 1825) to study medicine at Edinburgh University. The courses bored him, and after 2 years he stopped studying. In 1827, he changed course and began studying theology at Cambridge (again on his father's advice) with a view to becoming a priest, but he preferred natural history.

**3. His journey:** Darwin is 21 years old. A scientific expedition was organized aboard a ship called the Beagle. Darwin embarked as a naturalist, even though he did not yet have all his diplomas.

Darwin's circumnavigation of the globe aboard the Beagle lasted five years: he left on December 27, 1831, and didn't return until October 2, 1836. During the voyage, Charles Darwin studied the geology of the islands and continents he visited, but above all he collected specimens and fossils of the species he encountered. He also studied Charles Lyell's principles of geology. In 1832, in Uruguay (Montevideo), he found fossils of large armadillos and observed that the species had diminished in size (the first hypothesis of evolution?). It was mainly in the Galapagos Islands, in 1835, that these observations led him to develop the outline of his theory.

He notes that the same species found on several islands presents notable differences. The case of the finches is an example of these evolutions depending on the place, the beak is adapted to different kinds of food.

**4. His return to England:** on his return, Charles Darwin studied all the specimens he had brought back, compared them and began to develop his theory of evolution. And after 20 years of study (on October 24, 1859) he published his book (The Origin of Species by Natural Selection).

**B. Definition of the theory of evolution:** after studying the observations made, Darwin noted a resemblance between extinct and living animals and wrote a notebook on the transmutation of species.

**1. The Ancients:** Darwin wasn't the first to assume that life had a single origin.

- In the 6th century, Thales stated that "seawater is the origin of all kinds of life".
- In the 4th century, Aristotle proposed that "life began as a plant and evolved into animal plants, then into animals and finally into human beings".
- In the 18th century, the French scientist Lamarck, following his observations of animals and their classification, noted that "the manifestations of life evolve progressively from type to type", and that "the change in the different forms of life is directly caused by environmental constraints". He gave an example (the giraffe feeds on tree leaves, which is why its cost was long and it produced young with a long cost, so the qualities acquired are inherited, which is refutable).

## **2. The theory of evolution by natural selection :**

Evolution takes place through natural selection, with the animals best adapted to their environment surviving. These are the ones most likely to reproduce, and thus pass on their genes.

An animal with a genetic anomaly, such as more hair than its fellow creatures, will have a better chance of surviving in a colder place.

**3. The role of man:** man has directly or indirectly changed the genetic properties of living beings, before the theory of evolution or genetics and its par, the transfer of their habitats.