Theory of evolution

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The theory of evolution represents an idea that was first fronted by Charles Darwin, a leading scientist of his era. The theory, which has come to clash with major religious philosophies that dominate the world today focuses on the issue of natural selection. Gennaro, a philosopher of science together with others define the theory as life on the planet earth came from a single ancestor millions of years ago. The current life as we know it today is, therefore, the culmination of millions of years of evolution where the offspring of different subjects had a variety of modification that allowed them to adapt.

Charles Darwin used a wide range of sources and ideas to come up with this theory. This involved the study of the genes of different organisms, paleontology which looked at the history of fossilized flora and fauna and even geology, focusing on how the earth has changed over the millennia. The purpose of this theory is to show that there exists a definitive connection between all the organisms that exist on the planet at the moment. A simple way of putting this theory is that survival would only be ensured for the fittest organisms. The term fittest, in this case, refers to those that were able to reproduce or to survive certain conditions of their environment.

Charles Darwin's evolution concept is one that is highly applied to the advancement of biology today to the enormous body of evidence supporting it. Evolution in itself means a change in the development of individual species of organisms from generation to generation over time. According to Darwin, any species which has any profitable characteristic among its complex relations with other organisms or the forces of nature within its environment will preserve the characteristic and transfer them to its offspring's. The organisms with desirable features were described to have the ability to live long, and the transfer of the species to the younger generation results in the increase in the features of such an organism in the environment. In contrary to this, Darwin illustrates that the organisms which had undesirable features could not survive and therefore dies at the pre-mature age and their generation is depleted. He referred to this process like natural selection, where nature selects the best organisms and gets rid of the undesirable organisms.

Darwin illustrated that as the organisms are brought into the world, they must struggle with other plants such as in the search for food and the physical environment where they are. Plants and animals give rise to many organisms , but few organisms survive to maturity due to various restrictions in the environment. Climate plays the largest role in the struggle for existence among organisms. However, other factors such as predators also play part in the struggle for existence in an individual , in this case, the number of predators must be few compared to the number of organisms being consumed so as ensure that they are not wiped out.

In Darwin's view, this change is attributed to his postulates of natural selection and survival for the fittest. While proposing the idea of natural selection, Darwin came up with four components; variation, genetics, differential survival, and reproduction and change over time. In the first element, Charles Darwin argued that there has to be a variation for natural selection to occur in a population. This change takes place in the genetic makeup of organisms. It is the genes that code for differences or similarities in characteristics among individuals in a species. The second component of Darwinian's natural selection process underscores inheritance. These genetic variations have to be passed onto offsprings from generation to generation. This implies that genetic variation should not just be in DNA but in the genetic material of the germ cells to ensure that the traits are passed from parent to offspring. The insects with red DNA survive the insecticide and can reproduce giving rise to offsprings with similar genetic material. The third component of differential survival and reproduction means that only those individuals in a species that can survive the calamities posed by the environment will reproduce and pass their traits onto their offsprings.

The process of evolution is designed to add genetic mutations that are helpful to an organism while doing away with the bad ones. The theory offers a realistic understanding of how the world has come to host a staggeringly large number of organisms belonging to different species. This has become the hallmark of modern biology as it seeks to explain the origin of species on the planet and how each of them has become so different from the other. Thus evolution can be deemed both a fact and theory as seen in the discussion above.