EVOLUTION

EVOLUTION OF LIFE FORMS - A THEORY

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INTRODUCTION

Evolution refers to the biological process that explains the development of different kinds of living organisms from other living organisms during the earth's history.

THE EVOLUTION OF LIFE FORMS A THEORY

- According to conventional religious literature, many people believe that the earth was created about 4000 years ago
- However, many of these ideas were strongly challenged in the 19th-century after the age of enlightenment
- After one of his sea voyages, Charles Darwin, a 19th-century geologist, naturalist and biologist, concluded that many species of animals share similarities with other species and with life forms that existed millions of years ago
- Many life forms are being discovered every year, but many life forms have also gone extinct. People began to notice the gradual evolution of all life forms on earth
- Darwin believed that certain characteristics encourage the possibility of survival. These characteristics are climate, food, physical characteristics, etc. Darwin believed that those animals that can survive these rough natural conditions are destined to outbreed those less likely to survive
- The theory born out of this conclusion was called social Darwinism. According to social Darwinism, the strongest or fittest individuals are more likely to survive against the weak. Darwin believed that those individuals or species of a fitter or stronger animal are selected by nature to procreate more

- In his book 'On the Origin of Species,' Charles Darwin developed the idea of natural selection. Many people possess traits that are more well-suited for an environment than others. The people who carry these adaptive traits are more likely to survive and reproduce in their favorable climate. Over time these adaptive traits will become more popular as people reproduce
- Natural selection can lead to the rise of new and different species and is one of the natural processes that explain the evolution and the diversity of life on earth

EVOLUTION OF DIFFERENT LIFE FORMS

Evolution of different life forms are described as below-

- Convergent evolution- Convergent evolution refers to evolution in which unrelated and different species can evolve similar kinds of traits. For example, mosquitos, eagles and bats have wings and none of these is closely related to each other. It is assumed that since each of these unrelated species was able to develop wings, then that suggests the importance of flying for survival and reproduction. Features or limbs that have independently evolved are called analogous structures
- Divergent evolution- When a trait or characteristic held by a common ancestor evolves into different variations, then that type of evolution is called divergent evolution. For example, whales, cheetahs and humans share a similar bone pattern for their forelimbs. While each of these animals uses these forelimbs to perform different functionalities, they have the same anatomical structure. These structures are called homologous structures

Divergent evolution leads to speciation. During evolution, speciation is the process of the formation of new and distinct species. Speciation can occur in four ways- allopatric speciation, peripatric speciation, parapatric speciation and sympatric speciation.

Isolated subpopulations produced different evolutionary outcomes during allopatric speciation due to genetic drift and natural selection. In peripatric speciation, divergent evolution takes place in a small subpopulation that has become isolated from the majority.

- Parallel evolution refers to the evolution of different species that have similar ancestors and develop the same characteristics over time. This kind of evolution also refers to the

evolution of two unrelated species that develop similar traits over time due to environmental factors

- Coevolution- Coevolution refers to the evolution that takes place between pairs of interacting species. Interacting species that have exerted certain pressures on each other have seen reciprocal evolutionary change between them. For example, certain prey animals have become faster against species that are their predators Evolution of life forms on earth been dependent on

The evolution of life forms on earth has been dependent on and influenced by the evolution of the physical earth itself, along with extraterrestrial phenomena like bolide bombardment. The term 'bolide' refers to the large crater-like extraterrestrial body that enters the atmosphere.

EVOLUTION OF MAN

- Archeologists have found the fossils of man-like primates that could have worked the earth around 15 million years ago. These primates are called 'Dryopithecus' and 'Ramapithecus,' and it is believed that they were hairy and walked like gorillas and chimpanzees
- Another archeological expedition discovered fossils of a man-like creature. After the research, it was determined that these fossils belonged to a primate that walked this earth 3-4 million years ago. While these primates were no taller than 4 feet, they were walking completely upright
- Another primate called 'Australopithecines' walked upright and hunted animals with stone weapons. The 'Australopithecines' walked in East Africa around 2 million years ago and ate mostly fruits
- During the discovery of the 'Australopithecines,' the fossils of another human-like primate were discovered. They were called the 'Homo Habilis', and they had smaller brain capacities
- The Neanderthal had a brain capacity of 1400cc. The Neanderthal lived in east and central Asia around 100,000 years ago
- Between 75,000 and 10,000 years ago, the modern homo sapiens migrated and developed into different races
- Prehistoric cave paintings played an important role in mapping out the culture of the Homo sapiens; they were instrumental in gathering information about their rituals, what they ate,

and society at large. While cave paintings started to develop some 18,000 years ago, agriculture started to develop 10,000 years ago, and language evolved along with the modern Homo sapiens

CONCLUSION

According to conventional religious literature, all of the living organisms we see before we were created. They believe that the diversity of the living forms on earth has been the same since creation and will remain the same in the future.

In 'Evolution of life forms a theory,' we have covered the topic of the evolution of different life forms, adaptive radiation, types of evolution, and the evolution of man.