

Lamarckism (Lamarck's Theory)

The first attempt to explain the mechanism of evolution was made by Jean Baptiste de Lamarck (1744-1829) a French Biologist. His views were published in (1809) in "Philosophie Zoologique". Lamarck considered that the environment and use & disuse of organs play an important part for orderly & progressive evolution. His theory is known as Theory of Acquired Characters or Lamarckism, and can be considered under three heads:

- (I) Environmental effects.
 - (II) Effect of use & disuse of organs.
 - (III) Inheritance of acquired characters.
- (I) Environmental effect:- Lamarck believed that due to changing environments, the mode of life also changes, it results in certain physical needs which are responsible for formation & modification of organs. Various environmental factors such as soil, water, food, temperature, light, etc cause a change in the physical needs, which act directly on the plants & indirectly on the animals.
- (II) Effect of use & disuse of organs:- Under the changes of physical needs, the use & disuse of organs affect the body. If the organs are used frequently & continuously, they are strengthened, developed, & enlarged. On the other hand, if not used, they weaken & result in disappearance. Such the use & disuse of organs affect the organs resulting in to modification. The long necked Giraffes evolved from short-necked animals. The continuous use of neck by its ancestors to catch high located leaves of the desert plants caused its neck elongated.

The second example illustrated was that of Snake. The crawling & passing of snakes through narrow space, resulted in the loss of limbs. Other examples are modification of wings in birds, flightless wings in ostrich, & various vestigial organs found in the body of man & other animals. Thus use & disuse of organs play an important role in modification of organs.

(iii) Inheritance of Acquired Characters : -

The favourable characters, which are gained by the individual, due to use or disuse of organs are transmitted to the offspring / progeny. Such changes in the structure during the life time of an individual are known as 'Acquired Characters'. Lamarck explained the example of Giraffe. The horse like ancestors of Giraffe happened to live in arid climate with scarcity of food on the ground. The animals tried to have the leaves of the plants and in this effort the neck and fore-limbs lengthened. This character was acquired in the life time of Giraffe and was passed on from generation to generations.