Organic Evolution

More and more creation of organism by gradual changes from low categories animal to higher animal is called organic evolution. There are several evidence regarding organic evolution.

1. Homologous organ : Organ which are seen different due to use in various function but its structure and embryonic development are similar. Ex – Flipper of whale, feather of bat, forelimb of horse, Paw of cat, and hands of human

2. Analogous organ : Organ which looks similar due to be use in similar function but their internal structure and embryonic development ar fferen Ex – Feather of butterfly, bats and birds all looks similar but th ir terna stru ture and origin are different.

3. Vestigial organ : These are organs which appear func onless in an organism but functional in their ancestor. For examp vermifo m appendix of large intestine and nictitating membrane of human Ve miform appendix is functional in herbivorous mammal even now.

4. Fossils – Fossils are the remains f a ient pla t or animal which provide evidences for evolution. Example–Archaeopte y

5. Archaeopteryx : It is a fo look e bird but bear a number of features found in reptiles. So, it is c nnecti g link etween aves and reptile.

Theories of evolution

1. Carolus Linna us (1707 – 1778) contribution to classification provide an evolutionary relation hip amo g the organism. He was also supported an idea that no pecie is new Each and every species originates from some pre-existing species

2. Je n Bap st Lamarck (1744 – 1829) tried to explain the evolutionary process in his bo k Philosophic zoologique. The theory proposed by Lamark is known as th ory of inheritance of acquired characters. According to this theory use and disuse of an organ lead to acquiring change in the features of that organ. These ch nges are also inherited to offspring. The favourable changes after long period of time result in evolution of new species. But Lamarckism was very strongly criticised by August Weismann.

3. Charles Robert Darwin (1809 – 1882) explain the evolutionary principle in his book 'The origin of species'. The theory proposed by him is popularly known

as 'Theory of natural selection' or Darwinism. Darwin explained that despite having the enormous potential of fertility, the population of organism remains within a limit. It is due to struggle between members of same species and different species for food, space and mate. Struggle eliminates the unfit individual. The fit organism possess some variations which are favourable and they can leave the progeny to continue the favourable variation. The variation when accumalated for long time give rise to origin of new species with progress in genetics, the sources of variation were explained and Darwin's theory was modified. Now the most excepted theory of evolution is Modem synthetic theory, in which origin of species is based on the interaction of genetic variation nd natural selection.