

Life span of some animals

1. Shortest life span – May fly – one day
2. Longest life span – Sequoia Red wood tree – 3000 – 4000 years
3. Peal life span is 2000 – 3000 years

Homologous organs

Same origin but different function

1. Pentadactyle limb of vertebrates – Limb of frog, Man, Wing of bat, Flippers of Whale, Wing of bat.
2. Insect mouthparts
3. Thorn of Bougainvillea and Tendril of Passiflora (Passion flower)

Analogous organs

Different origin but same function

1. Wing of insect and bird
2. Fin of fish and Flipper of whale.
3. Octopus eye and vertebrate eye.
4. Leaves and Cladode (Ruscus)
5. Tuberous root and potato

Connecting Links

Organism showing characters of two different groups.

1. Euglena – Plants and Animals
2. Peripatus – Arthropoda and Annelida.
3. Lung fish – Fishes and Amphibia.
4. Egg laying mammals – Reptiles and Mammals

Vestigial organs

Organs which are non functional but once functional in the ancestors

1. Tail bone Coccyx
2. Canine and wisdom teeth
3. Plica semilunaris (nictitating membrane)
4. Auricular muscles – ear pinna muscles
5. Caecum and Vermiform appendix.
6. Vestigial Pelvic girdle of Green land Whale.
7. Reduced pelvic girdle and limbs of Python and Boa
8. Splint bones of Horse
9. 90 Vestigial organs are present in man
10. Atavism – Reversion – Reappearance of ancestral characters. Egs. Hairy Body, additional mammae, power to move ear pinna, large canines.
11. Recapitulation law was put forwarded by Von Baer. It was later called “ Biogenetic law of Haeckel.
12. Igneous rocks Rocks formed by the solidification of hot earth.
13. Magma Molten rock below the earth.
14. Shale Fine grained laminated rock.
15. Metamorphic rock Marble, Granite.

16. Coprolite Fossils of foecal pellets.
17. Impressions Archaeopteryx.
18. Fossil parks of India Fossil forest (MP), Rajmahal Hill (Bihar)
Old coal forming forest (Orissa) National fossil park
(Thiruvakkarai Tamil nadu).
75. Missing links Archaeopteryx lithographica (Lizard bird)
19. Eohippus First horse It is called " Dawn Horse " .
20. Mesohippus Intermediate horse. It was a ruminating horse.
21. Equus Modern horse.
22. Discontinuous distribution – It is the distribution of animals here and there in the earth.
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| Alligator | South America, East America and China. |
| Peripatus | Nepal, Burma, Sri Lanka. |
| Ratitae birds | Australia, Newzealand |
| Opposum | America |
| Kiwi | Newzealand |
| Kangaroo | Australia |

LIVING FOSSILS – Primitive animals showing no trace of evolution.

Echidna, Platypus, Sphenodon, Limulus (King crab), Peripatus, Neopilina (Segmented molluscs).

Industrial melanism A phenomenon in which the body colour of the Peppered moth *Biston betularia* (light coloured) changed in to dark and the new species *Biston carbonaria* evolved. It is an example of natural selection occurred in England folloing Industrial revolution.

Retrogressive evolution. It is exhibited by Tapeworm and Wingless insects.

Divergent evolution – It is called Adaptive radiation. Placental mammals, Homologous organs etc are examples of divergent evolution.

Parallel evolution - Running habit of deer and horse. Burrowing habit of Placental mole and Marsupial mole.

Microevolution – Example is Industrial melanism.

Monophyletic origin – Origin from a common ancestor. Example is origin of vertebrates from Ostracoderms.

Polyphyletic origin – Origin from different forms.

Leonardo da Vinci – Father of Palaentology.

Giovanni Avduina – Constructed Geological time scale in 1760.

Latimaria – Oldest living fish. Caught on Dec. 1938 from the east cost of South Africa. Belongs to the group Crossopterygia. It is considered as the ancestor of land vertebrates.

Zoogeography – It is the study of the distribution of animals.

Buffon – Father of Evolution.

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