

# Evidences of Evolution

10+2

Evolutionary Biology

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## EVIDENCES OF EVOLUTION

Evidence that evolution of life forms has occurred on earth has come from many quarters.

**Paleontological evidence:** Fossils are remains of hard parts of life-forms found in rocks. Rocks form sediments and a cross-section of earth's crust indicates the arrangement of sediments one over the other during the long history of earth. Different-aged rock sediments contain fossils of different life-forms who probably died during the formation of the particular sediment. Some of them appear similar to modern organisms.

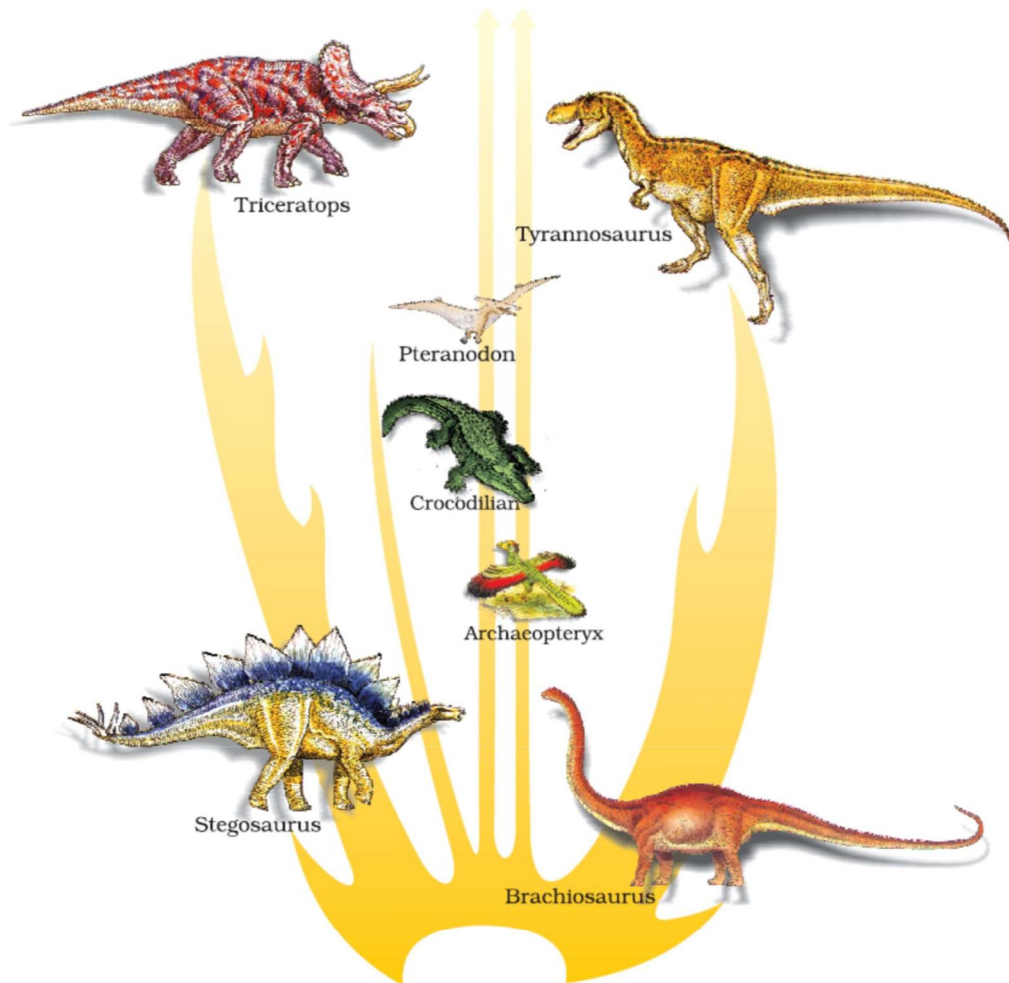


Figure 2 Family tree of Dinosaurs

They represent extinct organisms (e.g., Dinosaurs). Study of fossils in different sedimentary layers indicates the geological period in which they existed. The study showed that life-forms varied over time and certain life forms are restricted to certain geological time-spans. Hence, new forms of life have arisen at different times in the history of earth. All this is called paleontological evidence.

#### Evidences from Comparative anatomy and morphology:

It shows similarities and differences among organisms of today and those that existed years ago. Such similarities can be interpreted to understand whether common ancestors were shared or not. For example, whales, bats, cheetah and human (all mammals) share similarities in the pattern of bones of forelimbs.

These forelimbs perform different functions in these animals, they have similar anatomical structure - all of them have humerus, radius, ulna, carpals, metacarpals and phalanges in their forelimbs. Hence, the same structure developed along different directions due to adaptations to different needs.

This is divergent evolution and these structures are homologous.

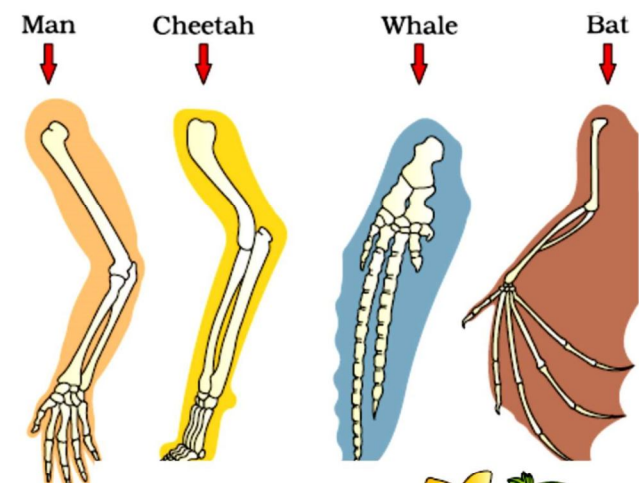


Figure 3 H

