



Evidence of Evolution

Section 15.2

Support for Evolution

- Darwin wrote a book called *The Origin of Species*
 - Provided evidence that evolution has occurred
 - Natural selection was part of the theory of evolution
 - Natural selection and evolution are NOT the same thing!

Support for Evolution

- The theory of evolution states:
 - All organisms on Earth have descended from a common ancestor
- The fossil record shows ancient species that are similar to current species
 - Armadillo and Glyptodont
 - Horseshoe crab - unchanged



Support for Evolution

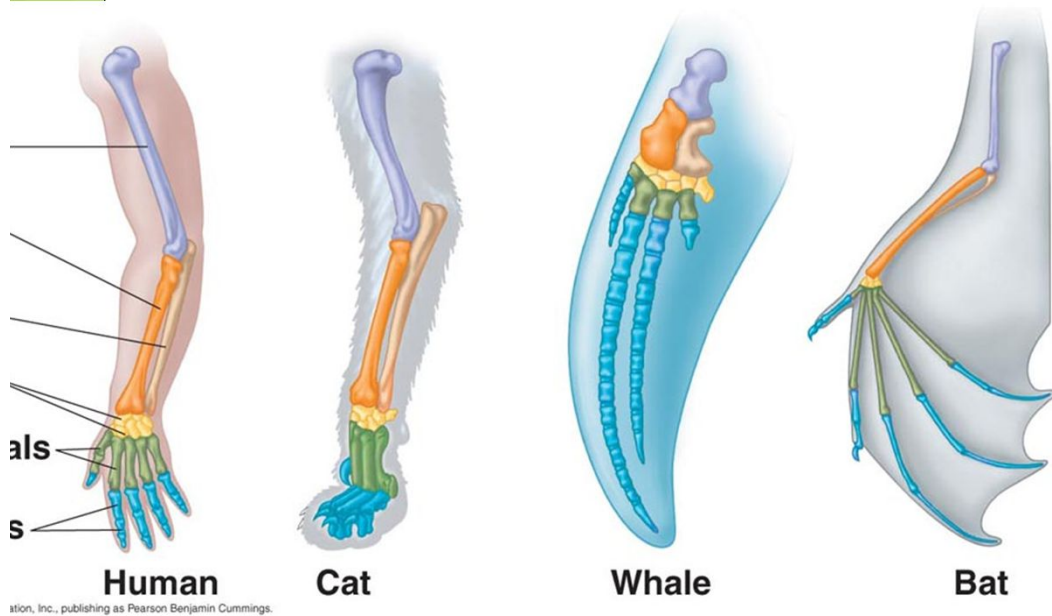
- Many fossils show intermediate traits
 - Features shared by different species
 - Example:
 - Dinosaur bones that show feathers from modern birds AND teeth similar to reptiles
 - Archaeopteryx



Support for Evolution

- Fossils show scientists two different types of traits:
 - 1) **derived traits**
 - Newly evolved features
 - Ex: feathers that are not on fossils of common ancestors
 - 2) **ancestral traits**
 - Features that do appear on ancestors
 - Ex: teeth and tails

Comparative Anatomy



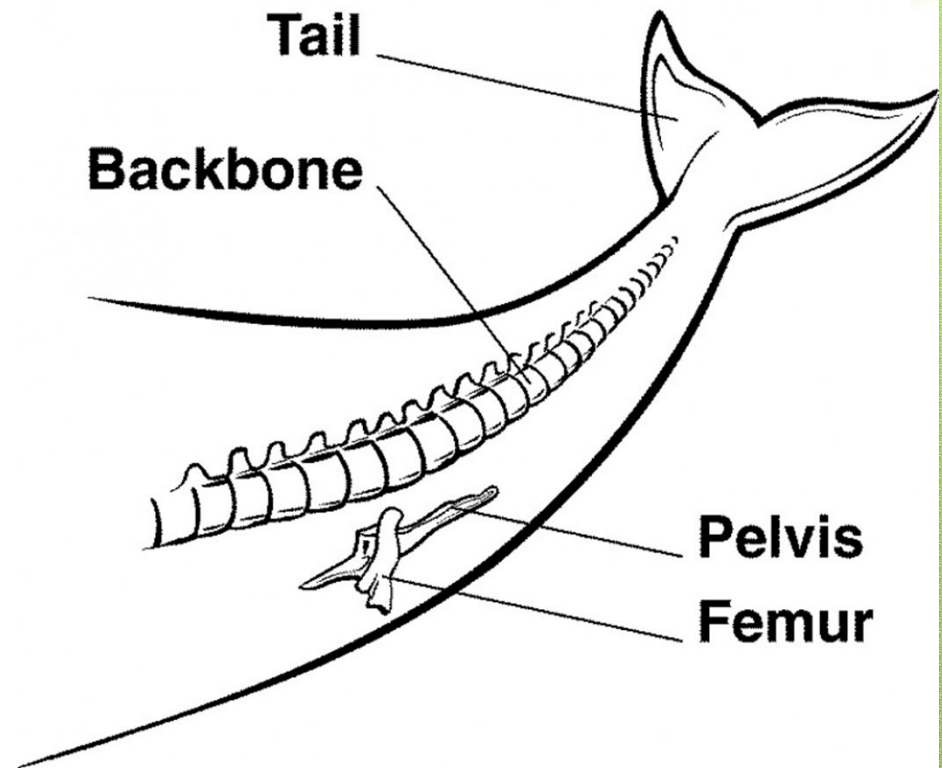
tion, Inc., publishing as Pearson Benjamin Cummings.

- **Homologous Structures**
 - anatomically similar structures
 - Inherited from a common ancestor
 - Ex: limbs and wings

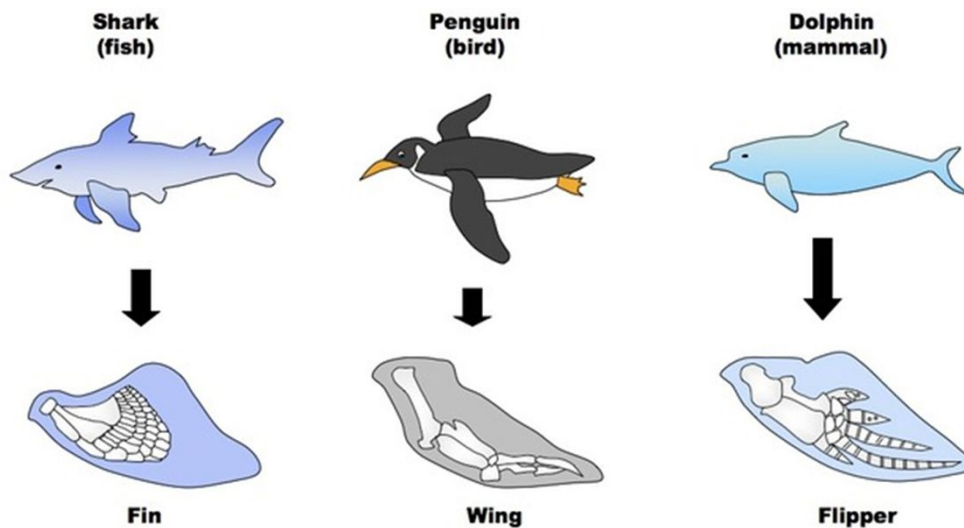
Comparative Anatomy

- **Vestigial Structures**

- A functioning structure in one species is less functional in a closely related species
- Ex: wings in kiwi birds



Comparative Anatomy



○ Analogous Structures

- Similar in construction and purpose
- Not from a common ancestor
- Ex: wings on eagles vs beetles