

The Galapagos mockingbirds differ only slightly in size, shape, and coloration.

Nesomimus macdonaldi



Nesomimus melanotis



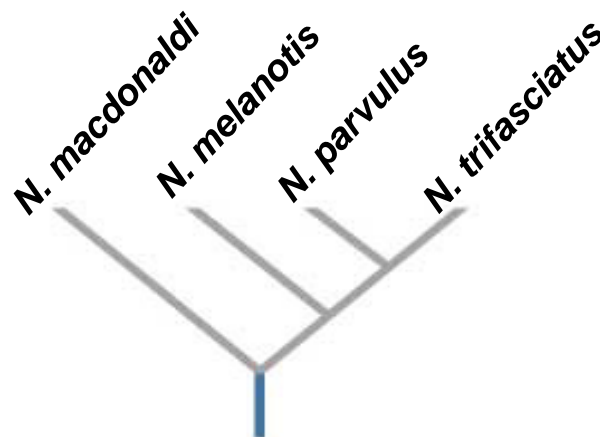
Nesomimus parvulus



Nesomimus trifasciatus



Darwin reasoned that they are similar because they share a common ancestor.

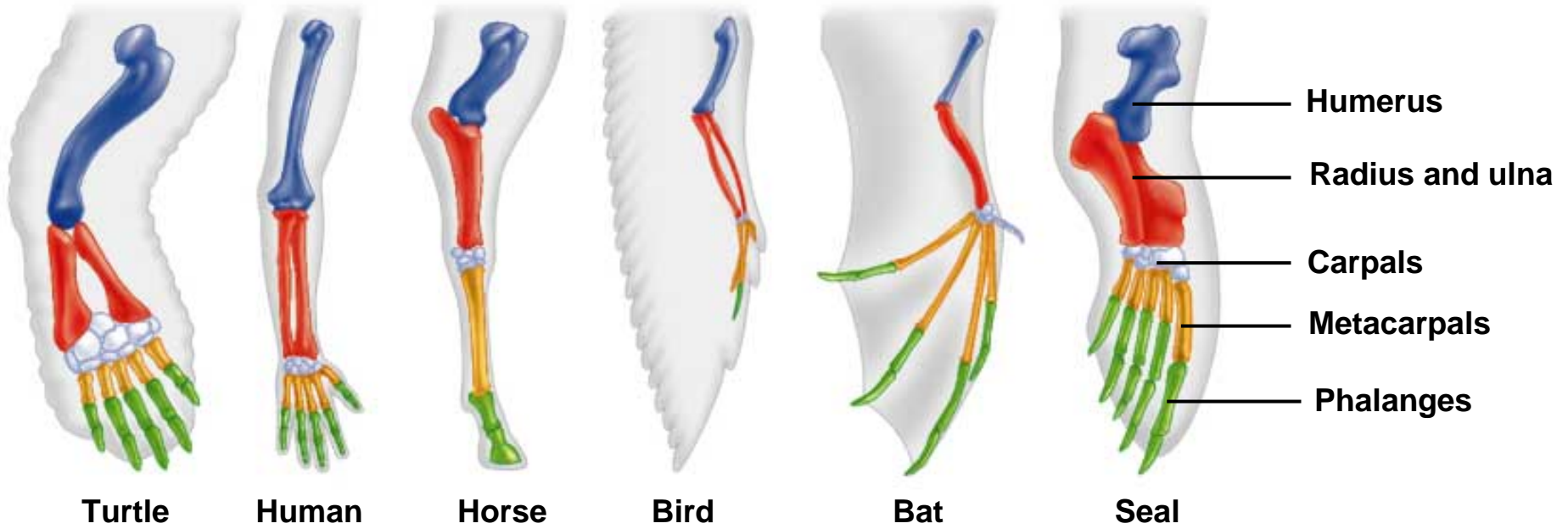


Evidence for Evolution

■ Evidence that Species are Related

- Geographic proximity of similar but distinct species.
- Homologies: structural, developmental, and genetic.

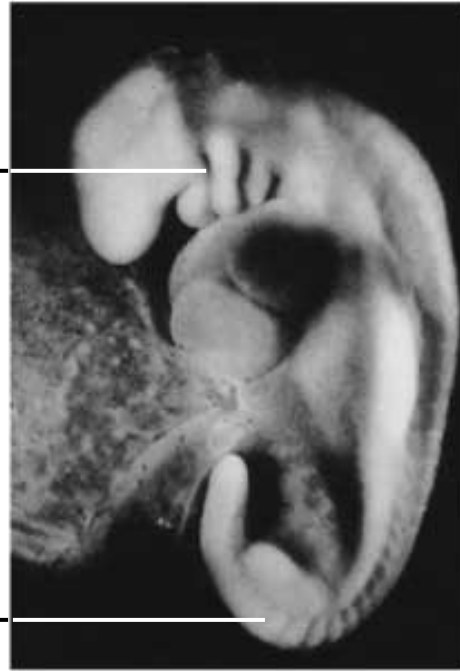
Structural homology



Developmental homology



Chick



Human

Both the chick and the human have gill pouches and tails

Genetic homology

LQRNRTSFT**QEQIE**ALEKEFERTHYPDVFARERLA**AKIDL**PEARIQVWFSNRRRAKWRREE **Gene:**
LQRNRTSFT**NDQIDS**LEKEFERTHYPDVFARERLA**GKIGL**PEARIQVWFSNRRRAKWRREE ***Aniridia* (Human)**
***eyeless* (Fruit fly)**

Present-day sloth



Fossil sloth



Evidence for Evolution

- Evidence that Species Change over Time:
 - Law of succession
 - Evidence of extinctions in the fossil record
 - Vestigial traits

Human coccyx



**Capuchin monkey tail
(used for balance, locomotion)**



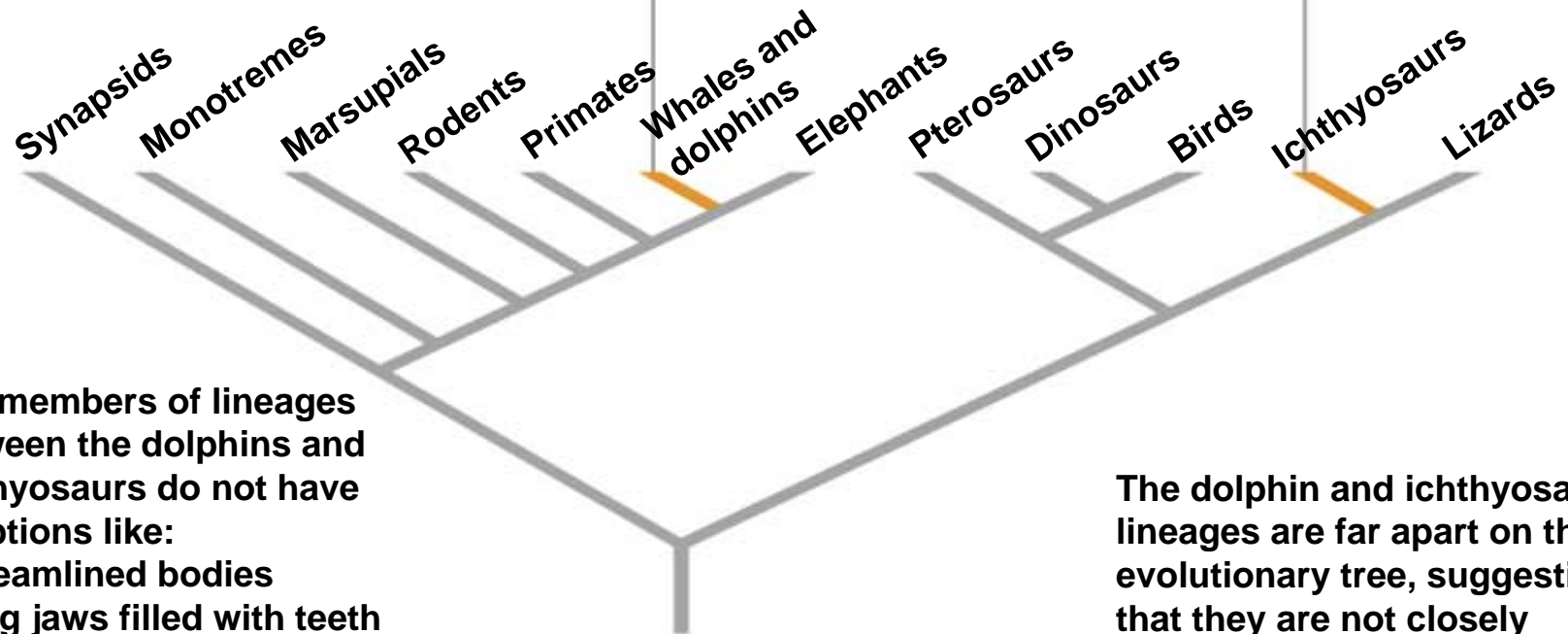
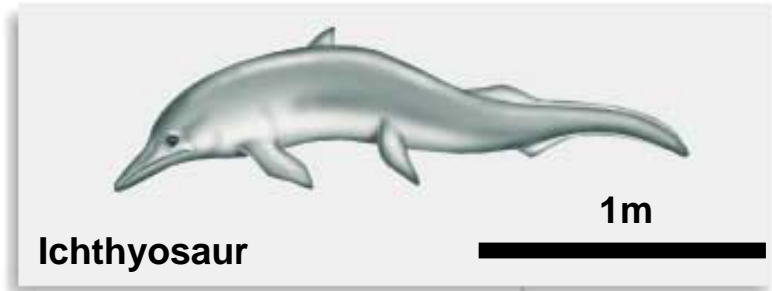
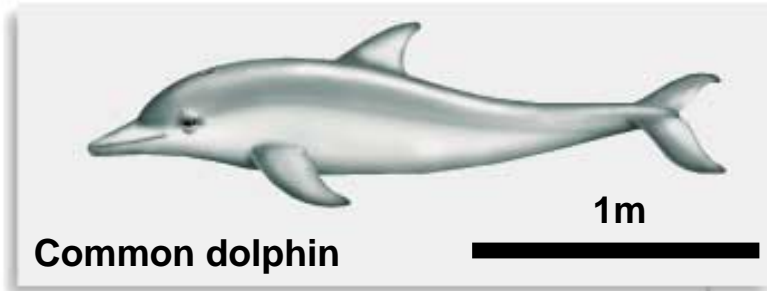
Human goosebumps



**Erect hair on chimp
(insulation, emotional display)**



Analogy: When similarities result from convergent evolution



The members of lineages between the dolphins and ichthyosaurs do not have adaptations like:

- streamlined bodies
- long jaws filled with teeth
- fins and flippers

The dolphin and ichthyosaur lineages are far apart on the evolutionary tree, suggesting that they are not closely related

Homology: When similarities are inherited from a common ancestor

