

EVOLUTION

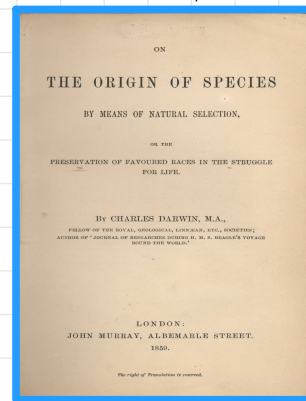
- Charles Darwin

- Earth was very old
- ancestors current species with variation in traits
- populations will produce more offspring than the environment can support

- certain traits = Survival

- published Origin of Species.
 - descent with modification
 - natural selection

Credit: Wikipedia



Natural Selection

- 1) individuals don't evolve: populations evolve
- 2) may amplify or diminish traits but acquired characteristics can't be passed down
- 3) evolutionary is not goal-directed

- natural selection in action

- Camouflage
- characteristics that fit the environment
- editing process

C

chameleon

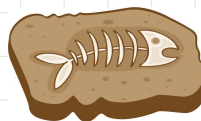


Credit: National Geographic

Evidence of Evolution

1) fossil record

- fossils appear within sedimentary rock
- organisms evolved in historical sequence



2) comparative anatomy

- comparison of bone structures

- homologous structures

- different functions but are structurally similar

- analogous structures

- similar function but no common ancestry

3) comparative embryology

- comparison of early age of development
- reveals homologies not visible in adult organisms

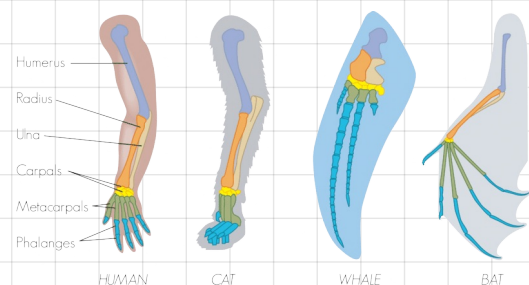
- vestigial structures

- remnants of features that were present in the past but not now

4) molecular biology

- reveals evolutionary relationships by comparing DNA + amino acid sequence

- 1) all life forms related
- 2) all life has DNA
- 3) humans & bacteria share genes from distant ancestor



Comparative Embryology

