





PHIL 101
Winter 2008
**Self, World,
 & God**

EVOLUTION

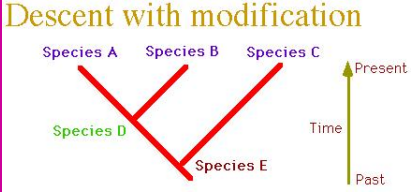


- Technical terms
- Biological change
- History of biological change
- Descent with modification
- Common descent
- Vertical evolution
- Horizontal evolution


DESCENT WITH MODIFICATION



Descent with modification



EVIDENCE FOR DESCENT WITH MODIFICATION



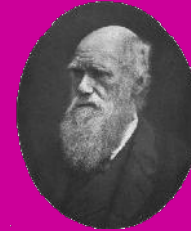
- Inference to the best explanation
- Johnson's "recipe"
- Schematizing
- Evidence in Darwin's time
- Power of Darwin's presentation
- General acceptance of this part

EXPANDED AGE OF THE EARTH



- Biblical calculation
- Tens of thousands of years
- Geological time
- Uniformatism
- Darwin's arguments
- 4.6 billion years

CASE FOR COMMON DESCENT



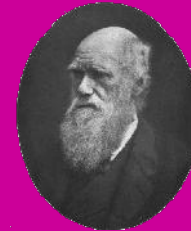
e_1 . Expanded age of the earth.

DATA FROM THE FOSSIL RECORD



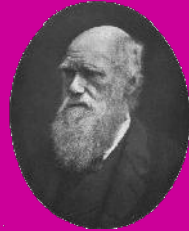
- Fossil record
- Cuts both ways
- Darwin on difficulties of fossils
- Clear evidence of change

CASE FOR COMMON DESCENT



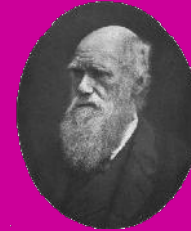
e_1 . Expanded age of the earth.
 e_2 . Fossil record.

Scala Naturae



- Natural system problem
- Linnaeus
- Biological categorization
- Where does the order come from?
- Why is it hieratical?

CASE FOR COMMON DESCENT



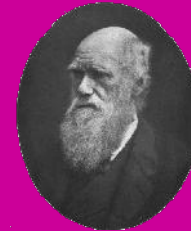
- e_1 . Expanded age of the earth.
- e_2 . Fossil record.
- e_3 . *Scala Naturae*

GEOGRAPHICAL DISTRIBUTION



- Biogeography
- First line of *Origin of Species*
- Why the patterns between species and geography?
- The Galapagos

CASE FOR COMMON DESCENT



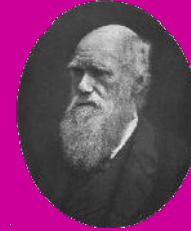
- e_1 . Expanded age of the earth.
- e_2 . Fossil record.
- e_3 . *Scala Naturae*
- e_4 . Patterns of geographical distribution.

MORPHOLOGY



- Etymology
- Study of form
- Examples:
 - Tetrapod structure
 - Structural similarity in birds
 - Forelimbs of mammals
 - Vestigial organs

CASE FOR COMMON DESCENT



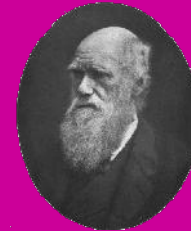
- e_1 . Expanded age of the earth.
- e_2 . Fossil record.
- e_3 . *Scala Naturae*
- e_4 . Patterns of geographical distribution.
- e_5 . Morphological considerations

EMBRYOLOGY



- Ontology
- Links to *Scala Naturae*
- Chickens, fish, humans
- Human embryological development

CASE FOR COMMON DESCENT



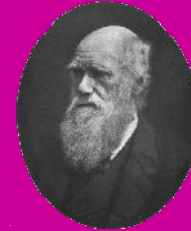
- e_1 . Expanded age of the earth.
- e_2 . Fossil record.
- e_3 . *Scala Naturae*
- e_4 . Patterns of geographical distribution.
- e_5 . Morphological considerations
- e_6 . Embryological development

CASE FOR COMMON DESCENT



- e₁. Expanded age of the earth.
- e₂. Fossil record.
- e₃. *Scala Naturae*
- e₄. Patterns of geographical distribution.
- e₅. Morphological considerations
- e₆. Embryological development
- =====
- t₀. Descent with modification

ALTERNATIVE EXPLANATIONS



- t₀. Descent with modification
- t₁. Lamarkean evolution
- t₂. Special creation
- t₃. Something as yet undiscovered

RANK ORDER



- Darwin's ranking
- Darwin's contemporaries' ranking
- Contemporary ranking
- Your own ranking
 - Doesn't have to deny God
 - What your intellectual conscience tell you - not your heart?