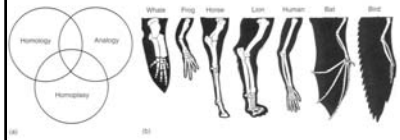
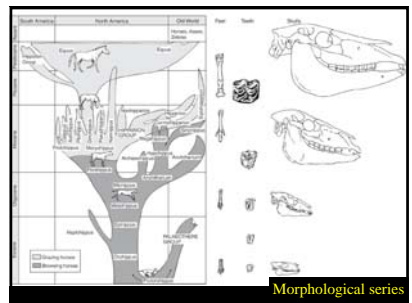
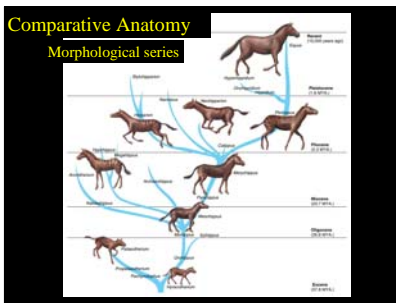
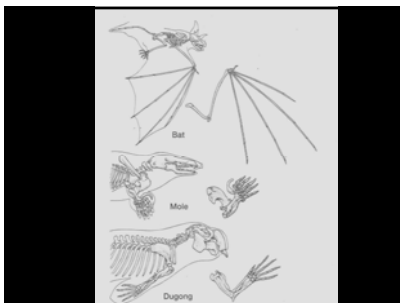
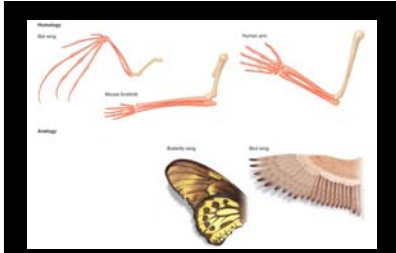


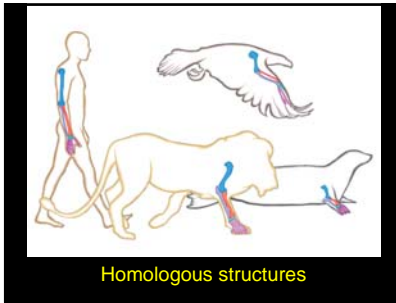
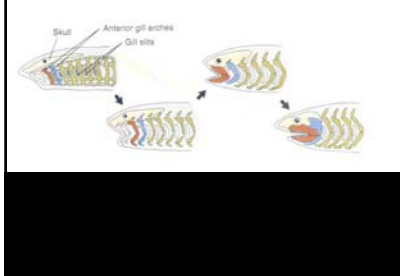
Comparative Anatomy



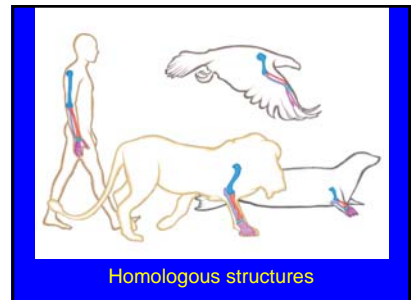
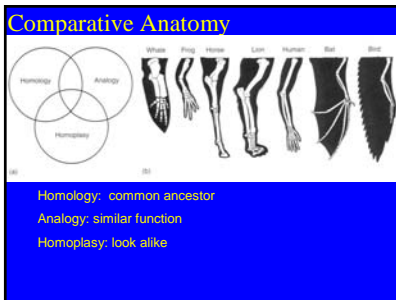
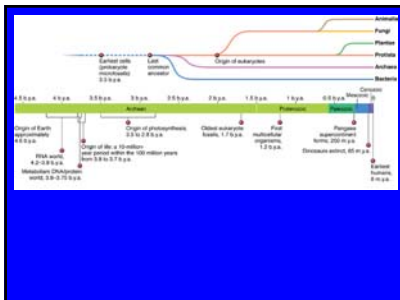
Homology: common ancestor
 Analogy: similar function
 Homoplasy: look alike



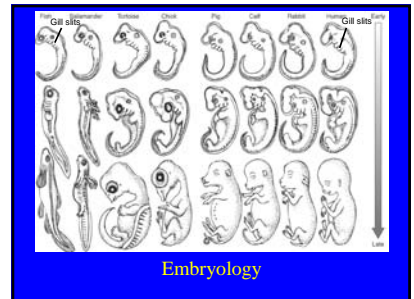
Morphological series

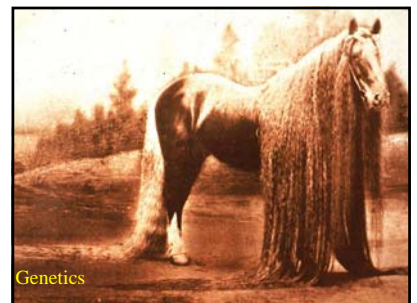
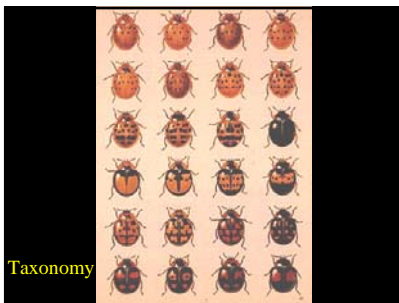
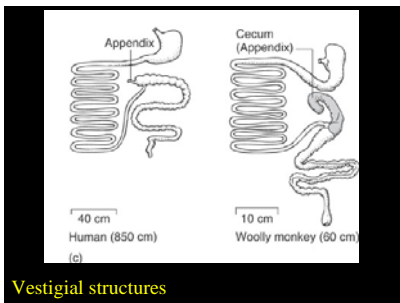
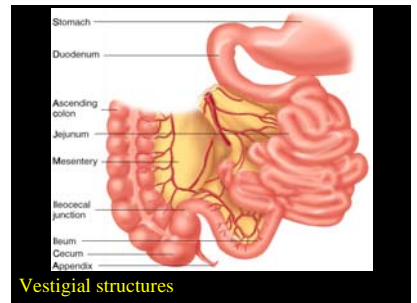
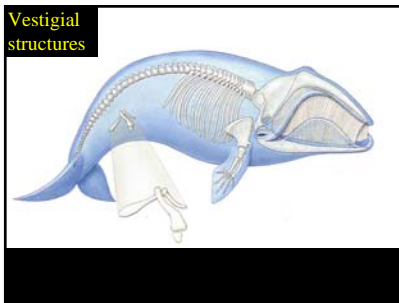
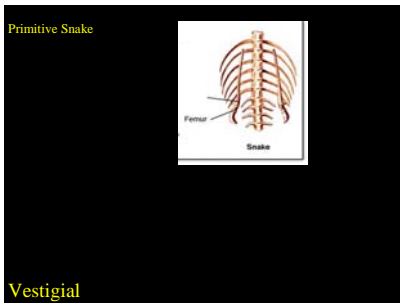
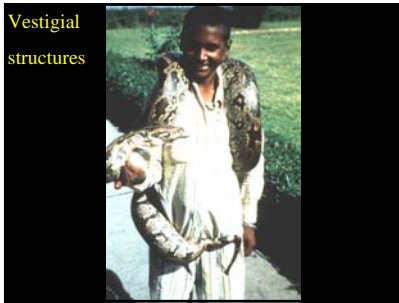
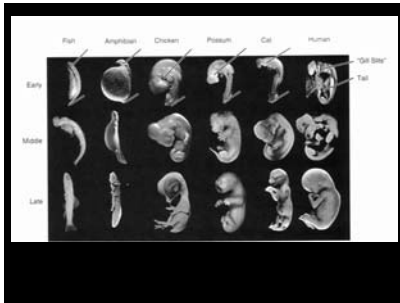


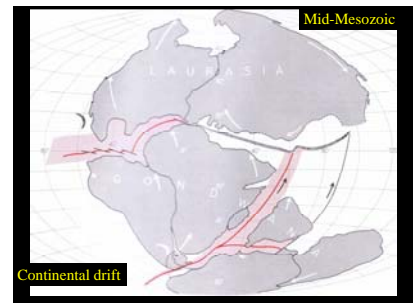
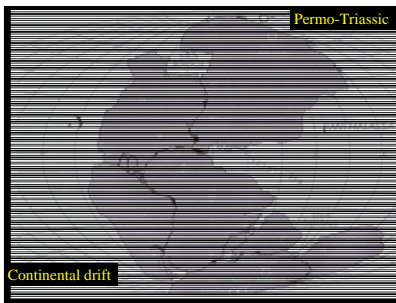
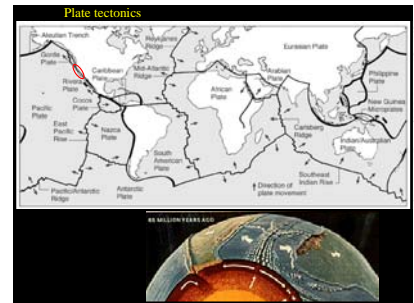
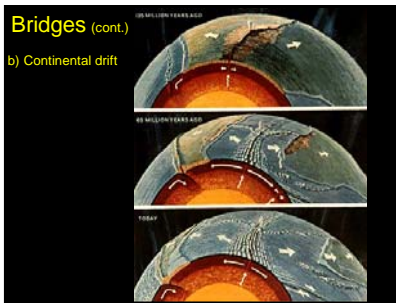
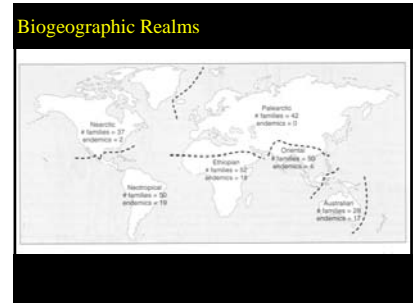
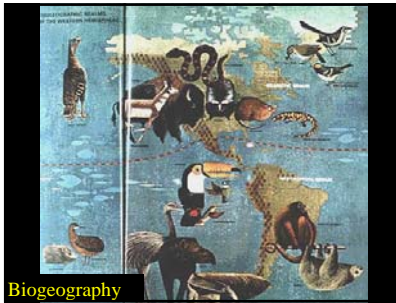
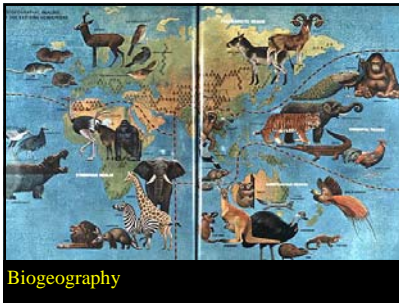
Paleontology

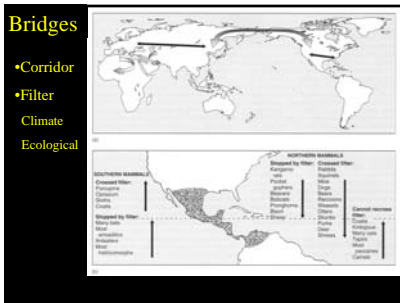
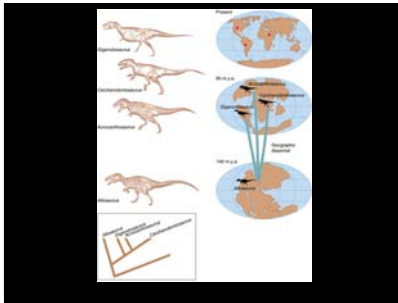
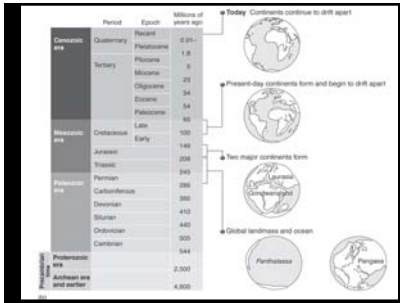
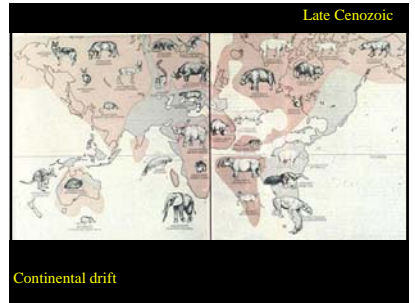
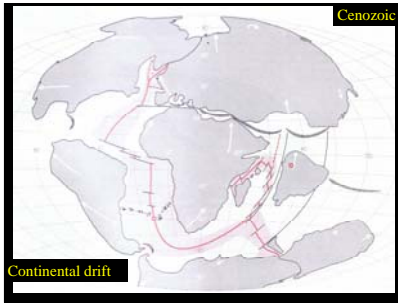
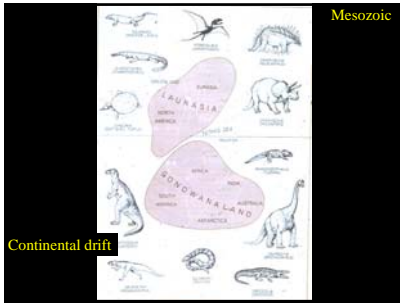


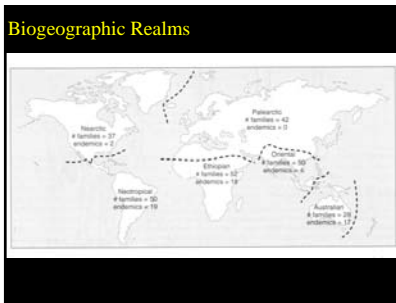
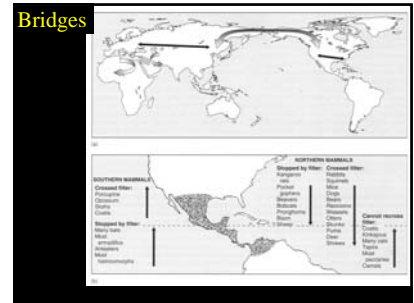
Comparative Anatomy











Centers of Origin

Species occurring in each of these biogeographic realms are not globally distributed but usually are predominant in one region—their subsequent diversification.

	PALEARCTIC (Old World)	NEARCTIC (New World)	NEOTROPIC (New World)
Icthyofauna	0	96	43
Columbidae (pigeons, doves)	290	40	13
Phalconidae (falcons, etc.)	163	11	0
Trochilidae (hummingbirds)	0	18	319
Artibeonidae	0	23	2

0 = no members are now included in the genus.

Biogeographic Events

Significance of Biogeographic Patterns

- 1) Biogeographic Realms
- 2) Centers of Origin

BIOGEOGRAPHIC REALMS

Order	Placental Mammals	Marsupial Mammals
Primate	Human	Wallaby
Carnivora	Canine	Quoll
Ungulate	Deer	Wombat
Canine	Jackal	Quoll
Ungulate	Deer	Wombat
Ungulate	Deer	Wombat
Ungulate	Deer	Wombat
Ungulate	Deer	Wombat
Ungulate	Deer	Wombat
Ungulate	Deer	Wombat

Placentals (left column) vs. Marsupials (pouched) (right column)

FACT (of Evolution)

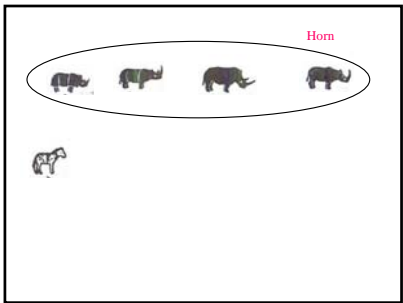
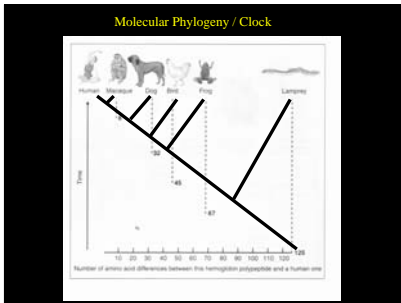
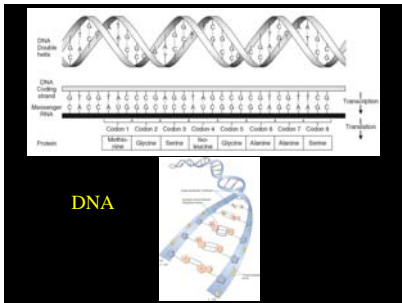
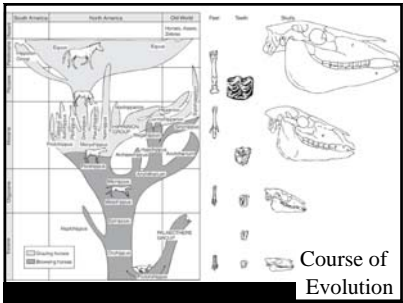
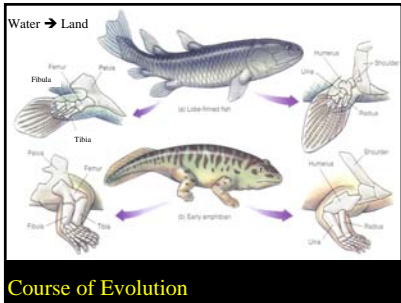
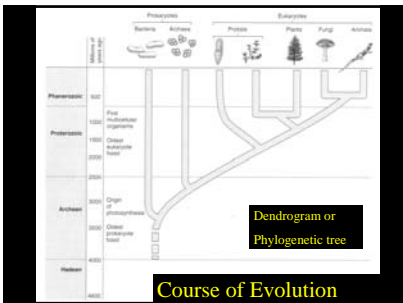
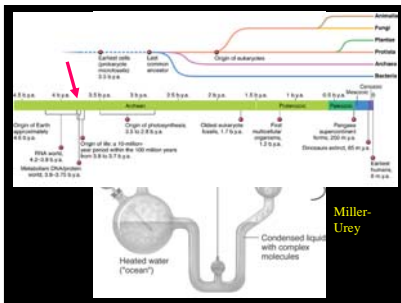
Centers of Origin

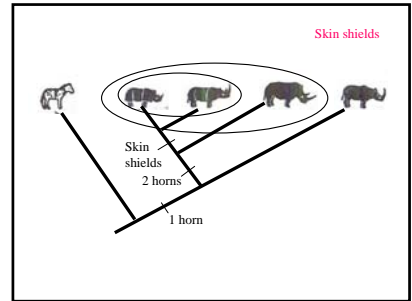
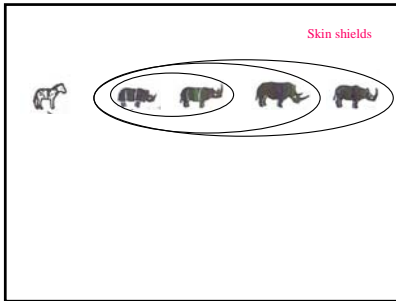
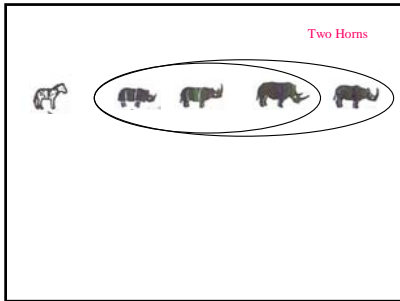
- 1) Restriction to a local area
- 2) Evidence that evolution, in fact, occurred

EVIDENCE OF ORGANIC EVOLUTION (cont.)

B) Course of Evolution

- 1) Origin of Life
- 2) Phylogeny





EVIDENCE OF ORGANIC EVOLUTION (cont.)

C) Mechanism of Evolution

- 1) Darwin
 - geometric increase
 - competition
 - struggle for existence
 - descent with modification
- 2) Mendel
- 3) neo-Darwinism

Heredity, DNA

Population biol. $\xrightarrow{\hspace{1cm}}$ neo-darwinism

Natural Selection

EVIDENCE OF ORGANIC EVOLUTION (cont.)

C) Mechanism of Evolution

- 1) Darwin
 - geometric increase
 - competition
 - struggle for existence
 - descent with modification
- 2) Mendel
- 3) neo-Darwinism

Heredity, DNA

Population biol. $\xrightarrow{\hspace{1cm}}$ neo-darwinism

Natural Selection

Scientific Theories

- 1) Celestial Motion
 - Copernicus
 - Newton
 - Einstein
- 2) Evolutionary Theory