

Patterns of Evolution

1-Coevolution: a continuous adaptation of 2 species to each other, involves symbiosis of very different species
tortoises on Galapagos Islands evolved w/wood cactus
these tortoises have flared shell allowing neck to reach up to eat soft cacti stems

parasites coevolve w/hosts

most successful parasite/host relationship is one where parasite does not fatally harm host

host evolves defenses but parasite evolves too

tapeworm has lost digestive system, has evolved special hooks to hang on inside digest sys

has evolved special outer covering so digestive enzymes of host don't digest parasite

coevolution is discussed in text p. 806

2-Reproductive isolation

members of same species interbreed w/each other
to produce fertile offspring

if something happens to split pop in 2, so there are 2
separate breeding populations that never interact nor
interbreed, we now have reproductive isolation
this can lead to a new species if some other things occur

- a. behavioral isolation: the 2 pops capable of interbreed
develop differences in courtship rituals or other behav
ex-eastern & western meadowlarks
ranges of 2 overlap, but they have different songs
- b. geographic isolation: if barrier arises in territory of pop of
interbreeding species so that pop is divided in 2
and members cannot cross barrier, they may develop
changes over time which could lead to new species
ex-Abert's & Kaibab squirrels
- c. temporal isolation: 2 pop develop different breeding
times
ex-3 species of orchids: each species has flowers that
only last one day and they bloom on different days
as a pattern of evolution, isolation helps to explain
how species can diverge from ancestral
population

reproductive isolation in text p. 489

3-Adaptive Radiation: multiple branchings of a family tree that come from one source
the many populations we see now radiate out from the original like spokes on a bicycle wheel
one ancestral species can give rise to many species as they spread out to many distinctive environments

ex-Darwin's finches

adaptive radiation in text p. 524

4- Convergent Evolution: when different species have evolved similar characteristics due to adapting to similar environments

ex-penguins & dolphins, dolphins & fish

convergent evolution in text p. 464

5-gradualism: when evolution occurs in steady & constant changes

covered in text p. 502

6-punctuated equilibrium: when change happens relatively fast, usually after rapid environmental change

ex. dinosaurs died out, mammal diversity exploded

covered in text p. 502

Adaptations: a trait that we see in an organism that enhances its survival & reproduction in its environment

ex. -camouflage: blending in to environment
insects, polar bear, arctic hare, arctic fox
covered in text p. 460

-warning coloration: organisms that are brightly colored so they seem to advertise their presence they are usually poisonous
bees, poison arrow dart frogs
covered in text p. 20-23

-mimicry: organisms that evolve to resemble plants or other organisms and they get a benefit from this resemblance
praying mantis, walking stick
monarch butterfly & viceroy (mimic)
covered in text p. 20-23