

11.6 Patterns in Evolution

► Speciation often occurs in patterns.

- A pattern of **punctuated equilibrium** exists in the fossil record.
 - bursts of evolutionary activity (speciation) are followed by long periods of stability (little evolutionary change)
 - theory proposed by Eldredge and Gould in 1972
 - revised Darwin's idea that species arose through gradual transformations

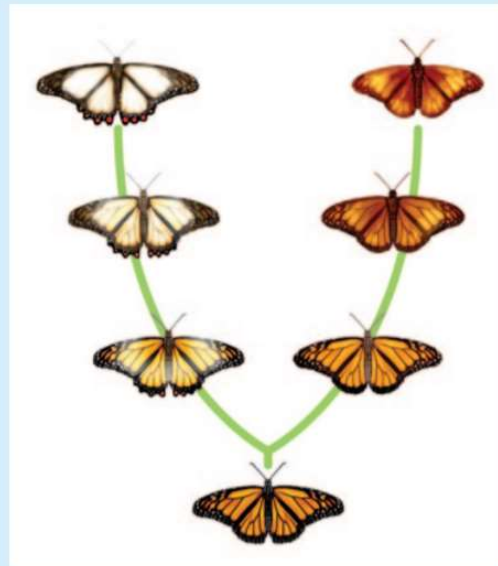
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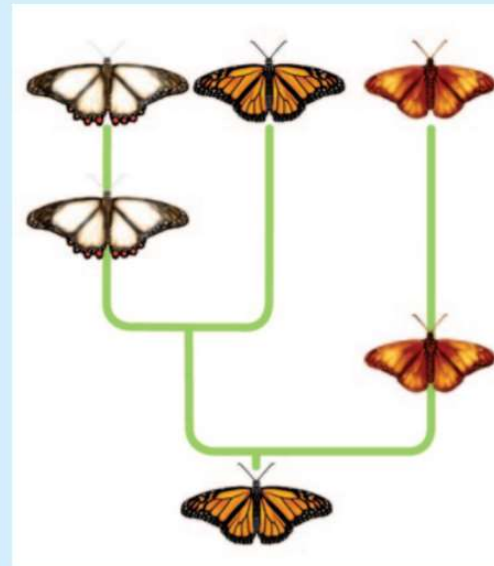
- A pattern of **evolutionary gradualism** exists in the fossil record.
 - evolutionary changes are thought to occur over long periods of time

FIGURE 6.6 Evolutionary Gradualism and Punctuated Equilibrium

The concept that species evolve slowly, over long periods of time, is known as evolutionary gradualism.



Punctuated equilibrium proposes that species show little evolutionary change for millions of years, followed by periods of rapid speciation.



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- Many species evolve from one species during **adaptive radiation**.
 - ancestral species diversifies into many descendent species
 - descendent species usually adapted to wide range of environments

