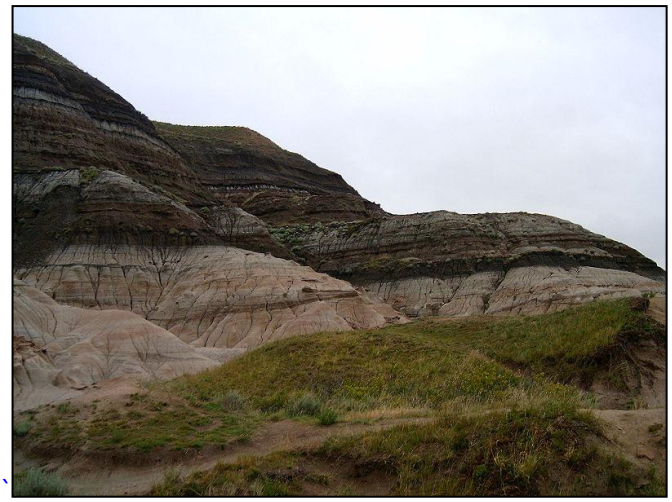
Michael Abbate
G203
April 26th, 2010

Geological Time (continued)

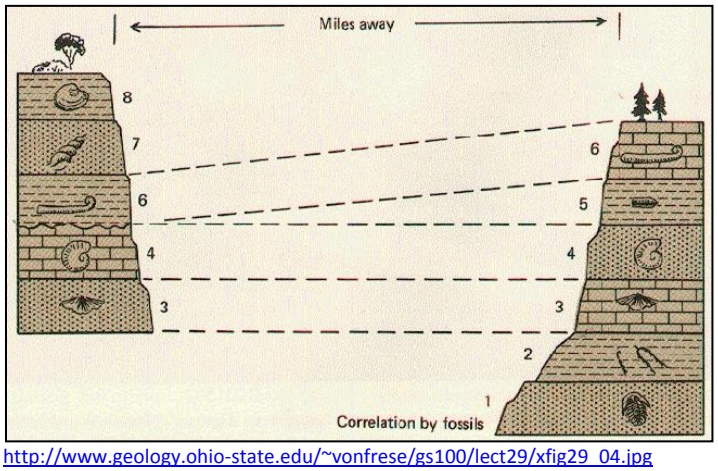
Correlation: A process in which geologists look at similarities between rock units to determine their equivalence in age.

- Correlation Processes:
  - Noting the similarities *and* position of rock units in a sequence
  - Key-beds: a distinguishable rock layer that occurs at two or more locations
    - They "record a geological event of short duration that affected a widespread area." (text)
  - K-T Boundary Layer: a distinctive clay layer found between rocks of the cretaceous and tertiary (worldwide)



http://en.wikipedia.org/wiki/File:KT_boundary_054.jpg

- Fossils: particularly index fossils

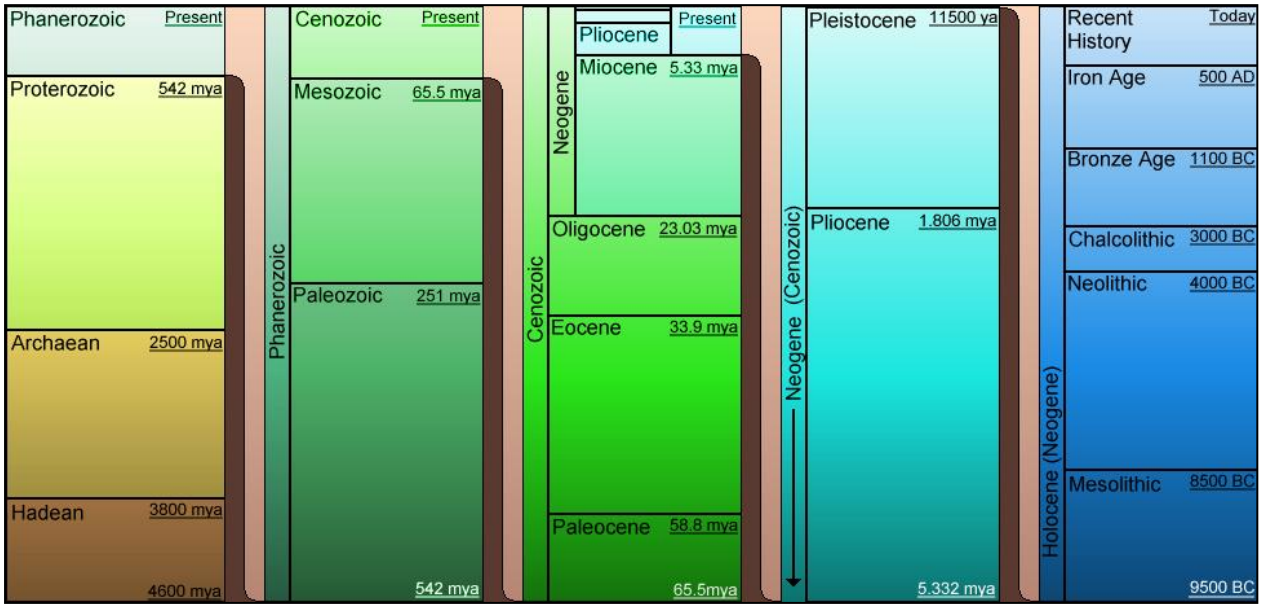


http://www.geology.ohio-state.edu/~vonfrese/gs100/lect29/xfig29_04.jpg

- You can use overlapping rock strata to build a complete picture of deposition time, even if the location doesn't have a complete geologic record.

- The geologic column (geologic time scale) was constructed by determining the relative ages of stratigraphic columns from around the world.

- Numerically dating our geologic column was done in order to find the absolute age of rock units.



http://upload.wikimedia.org/wikipedia/en/7/72/Geological_Time_Scale.png

Absolute Ages

Radiometric Ages === does more than tell us which rock came before/after another.

- Determines how long ago – in years – a rock formed or event occurred

- Radioactive Decay: the spontaneous transformation of an unstable isotope of one element to a stable isotope of another
    - The atoms of certain chemical elements exist as isotopes
    - Radioactive isotopes are unstable, and will emit energy as their protons and neutrons rearrange to a more stable configuration.

- This decay occurs at a constant rate
    - Age is determined by measuring "the amount of radioactive parent, and comparing that amount to the amount of daughter produced," (text)