Ch. 12 "Earth History: A brief summary"

I. Origin of earth
   A. ______________ - planets formed at same time from some gases
   B. formation of solar system (Fig. 11.2)
      1. 
      2. gas was mostly H/He
      3. cloud contracted and heated
      4. 
      5. hot sun developed in center
      6. elements condensed and collided to form clumps (proto-planets)
      7. eventually enough mass collided to form planets
      8. inner planets too small to hold H/He
      9. outer planets held H/He
         a) 
         b) iron and nickel heaviest elements sank to earth's core

II. Earth's atmosphere evolves
   A. 
   B. atmospheric development
      1. 
      2. as earth cooled, an enduring atmosphere formed
      3. crust solidified releasing gases (outgassing)
      4. 
      5. water vapor condensed as earth cooled further
      6. rains fell, evaporating initially on hot sfc.
      7. earth cooled below 100°C, b/c evaporation
      8. rains now filled lowlands
      9. carbon dioxide dissolved into oceans and out of atmosphere
         a) nitrogen rich atmosphere remained
         b) volcanoes don't release oxygen, where did oxygen come from???
         c) 
         d) 
         e) animals breathe oxygen and exhale carbon dioxide
         f) earth's oxygen developed slowly

III. 
   A. 
      1. knowledge of period is sketchy
      2. knowledge comes from plate tectonics, erosion, and deposition
      3. it's like a long book with many missing chapters
   B. Precambrian rocks
1. abundance of iron

C. Precambrian fossils
   1. __________________ - layered mounds of calcium carbonate deposited by algae

IV. early Paleozoic history
   1. Cambrian, Ordovician, Silurian periods
   2. earth looked like Fig. 11.8
   3. no life in N. America
   4. no Rockies/Appalachians

B. early Paleozoic life
   1. Age of invertebrates (Fig. 11.9)
   2. 1st organisms with hard parts (shells)
   3. 
   4. 1st fishes at end of Ordovician
   5. 1st land plants during Silurian

C. late Paleozoic history
   1. Devonian, Mississippian, Pennsylvanian, and Permian periods
   2. formation of Pangaea (Fig. 11.11)
   3. Appalachians formed

D. late Paleozoic life
   1. age of fishes early, then age of amphibians late
   2. fishes dominant
   3. 1st insect fossils
   4. amphibians became abundant in Mississippian
   5. large coal swamps developed
   6. first reptiles during Pennsylvanian
   7. extinction of trilobites and many other marine animals at end of era (Fig. 11.13)

V. Mesozoic history
   1. 
   2. Pangaea began to break up (Fig. 11.11)
   3. huge brontosaurus fossils found
   4. coastal ranges of CA formed
   5. Rockies formed toward end of era

B. Mesozoic life
   1. Age of reptiles
   2. dinosaurs become dominant early
   3. first birds during Jurassic period
   4. first flowering plants, end of Jurassic
   5. extinction of dinosaurs and other species at end of era
VI.

A. Cenozoic North America
   1. smallest time frame of 3 eras
   2. divided into 2 periods: Tertiary, Quarternary
      a) further divided into 7 epochs
   3. Appalachians eroded to low levels
   4. Rockies finished building
   5. high volcanic activity in west
   6. end of Cenozoic similar to today's landscape
   7. ice age occurred in Pleistocene epoch

B. Cenozoic life
   1. age of mammals
   2. dinosaurs were now extinct
   3. humans develop at end of Pleistocene epoch