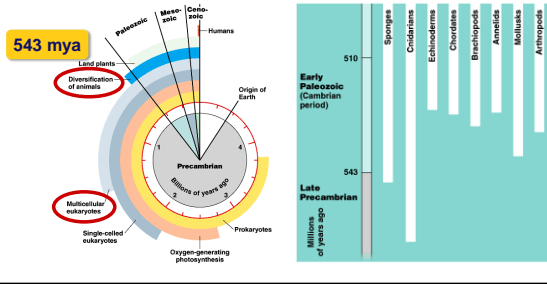


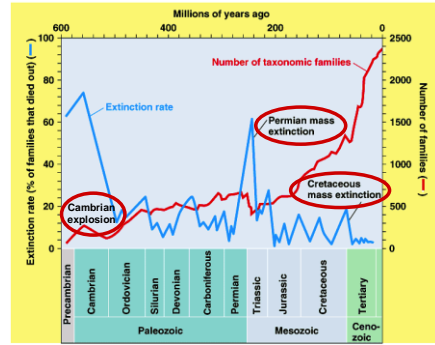
## Cambrian Explosion

### Diversification of Animals

- within 10–20 million years most of the major phyla of animals appear in fossil record



## Diversity of life & periods of mass extinction



## Cretaceous Extinction

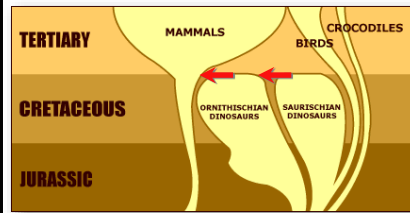
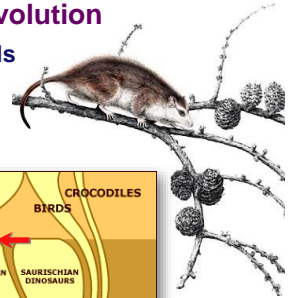


The Chicxulub impact crater in the Caribbean Sea near the Yucatan Peninsula of Mexico indicates an asteroid or comet struck the earth and changed conditions 65 million years ago



## Early Mammal Evolution

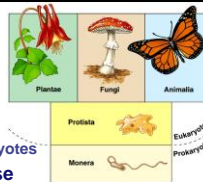
- 125 mya mammals began to radiate out & fill niches



## Classifying Life

### Molecular data challenges 5 Kingdoms

- Monera was too diverse
  - 2 distinct lineages of prokaryotes
- Protists are still too diverse
  - not yet sorted out



(a) The five-kingdom system



(b) The three-domain system



(c) How many kingdoms?

## 3 Domain System

### Domains = "Super" Kingdoms

- Bacteria**
- Archaea**
  - extremophiles = live in extreme environments
    - methanogens
    - halogens
    - thermophiles
- Eukarya**
  - eukaryotes
    - protists
    - fungi
    - plants
    - animals

