

- 3 middle ear ossicles
 - Most other tetrapods have just one
 - Excellent fossil series showing evolution of jaw bone elements into additional ear ossicles
- Drift concept proposed in 1912 by Alfred Wegener; only finally accepted in 1960s and '70s.
- "Recent" (only 250 million years ago) continental drift is our interest, for radiation of organisms.
- Fig. 26.20

Origin of mammals

- Mammals arose in the early Mesozoic (around 210 my ago)
 - early mammals small, rat-sized
 - mammals remained small until adaptive radiation after K-T extinction event at end of Mesozoic

Some key features of mammals

- Endothermic
- Mammary glands
- Hair (and layer of subcutaneous fat)
- complex dentition
- 3 middle ear ossicles
 - Most other tetrapods have just one
 - Excellent fossil series showing evolution of jaw bone elements into additional ear ossicles

3 extant lineages of mammals

METATHURIANS

1. Monotremes: mammals that lay eggs
2. Marsupials: placental* mammals that bear live young but nurture them in a pouch (marsupium)

EUTHERIANS

3. Eutherians: placental* mammals that bear well developed live young

* Placenta

