

# Stages of Primate Evolution

## 1. Eocene (55-34 mya)

- a. First true primates: like modern strepsirhines in appearance
- b. Lemuriform (Adapids) and Tarsiiform (Omomyids)
- c. Europe and North America (beginning to separate in early Eocene)
- d. Primate traits that appear in these early strepsirhines:
  1. nails on at least some digits
  2. grasping hands and feet with opposable thumbs and big toes
  2. post-orbital bar (eyes facing mostly forward) and stereoscopic vision
  3. shorter snout & smaller olfactory bulbs (reduced emphasis on olfaction)
  4. larger brains than most other mammals
- e. Other features
  1. small, 500g - 3 kg, rat to rabbit size

## 2. Oligocene (34-22.5 mya)

- a. Origin of haplorhines (anthropoids)
- b. Example: *Aegyptopithecus*
- c. Africa (Egypt)
- d. Primate traits that appear in these early haplorhines (anthropoids)
  1. post-orbital plate (filled in with bone between bar and skull)
  2. expanded brain, large visual cortex, small olfactory bulbs
  3. most had 2-1-2-3 dental formula (same as all catarrhines)
  4. sexual dimorphism in body & canine size; implies complex social behavior
- e. Other features:
  1. generalized arboreal quadrupeds
  2. larger body size than Eocene primates, 1-15 kg, rat to cocker spaniel size

## 3. Miocene (22.5-5 mya)

- a. Origin and radiation of hominoids
- b. Examples: *Proconsul*, *Sivapithecus*
  1. *Sivapithecus* ancestral to orangs
  2. ancestor of modern African apes and humans unknown
- c. Africa, Asia, Europe - widely distributed
- d. Primate traits that appear in these early hominoids
  1. even larger, more complex brains
- e. Other features
  1. generalized skeletons, mostly arboreal quadrupeds
  2. generalized dentitions (mostly frugivorous to folivorous),
  3. huge body size range, 5-65 kg, housecat to gorilla
- f. first Old World monkeys appear 15 mya in Kenya

## 4. Pliocene (5-1.8 mya), Pleistocene (1.8 mya-10,000 ya) and Holocene (10,000 ya to present)

- a. monkeys numerous
- b. apes decline in number
- c. hominids appear