Suborder Haplorrhini

Suborders split ~63 MYA

Differences:

**Strepsirrhini**
- Name means curved nose
- Retain enzyme that manufacture vitamin C
- Don’t have a post-orbital plate
- Have a rhinarium, the wet & naked surface around nostrils

**Haplorrhini**
- Name means simple-nosed
- Lost enzyme that manufactures vitamin C
- Have a post-orbital plate
- Upper lip not directly connected to nose or gum
Suborder Haplorrhini

- 58 MYA the infraorder Tarsiiformes (Tarsiers) branched from other haplorrhines

- 40 MYA the remaining clade (Simiiformes) split into two groups:
  - **Platyrrhini** (the New World monkeys)
    - Open nostrils far apart, no ischial callosities, some prehensile tail
  - **Catarrhini** (the Old World monkeys & apes)
    - Narrow nostrils close together, some have ischial callosities, no prehensile tail

- 25 MYA Old World monkeys split from apes
Family Tarsiidae (tarsiers)

- 1 genus, 7 species
- SE Asian islands (tropical forests)
- Long hind limbs (elongated tarsus bone), tail, & digits used for leaping
- Huge eyes, lack reflecting tissue in retinas
- Nails & toe pads, 2\textsuperscript{nd} & 3\textsuperscript{rd} toes of hind feet have claws for grooming
- Dental: 2/1, 1/1, 3/3, 3/3
- Nocturnal, eat insects & small vertebrates
- Sleep & forage independently or in family groups
Family Cebidae
(marmosets, tamarins, & other New World monkeys)

- 6 genera, 56 species
- Central & South America (tropical forests)
- Many have manes, moustaches, etc.
- Variable diets
- Most live in groups
- Dental: 2/2, 1/1, 3/3, 2-3/2-3
Family Cebidae (marmosets- e.g., *Callithrix*)

- Claws on digits, except nail on big toe
- Tail is not prehensile, no opposable thumb
- Long lower incisors for scraping tree gum/resins, triangular upper molars
- Diurnal, arboreal, & omnivorous
- Mostly monogamous & polyandrous mating systems, bear twins
- High degree of cooperative care of young, some food sharing
Family Cebidae (tamarins- e.g., Saguinus)

• Claws on digits, except nail on big toe
• Tail is not prehensile, no opposable thumb
• Lower canines are longer than incisors
• Diurnal, arboreal, omnivorous
• Mostly polyandrous mating systems, only dominant female mates
• Typically twins are born
• Fathers do most parental care
Family Cebidae (squirrel monkeys- e.g., *Saimiri*)

- Possess nails instead of claws
- Largest brain to body mass ratio of primates
- Tail not prehensile, used for balance rather than climbing
- Diurnal, arboreal, omnivorous
- Live in large (up to 300) female-dominated groups
- Mostly promiscuous mating systems
- Usually give birth to single young rather than twins
- Parental care by mother
Family Cebidae (capuchins e.g., *Cebus*)

- Possess nails instead of claws, opposable hallux, but not thumb
- Long, prehensile ring-tail
- Diurnal, arboreal, omnivorous
- Highly social, live in groups of 10-30, spend a lot of time grooming
- Mostly polygamous mating systems
- Usually give birth to single young rather than twins
- Parental care by mother
- Live ~35 years in the wild
Family Aotidae (night/owl monkeys, *Aotus*)

- 1 genus, 8 species
- Central & South America (high elevation forests)
- Dense, woolly pelage, tail is not prehensile
- Sac under chin inflates during vocalizations
- Only nocturnal New World monkey, no color vision
- Omnivorous diets
- Monogamous, live in family groups, both parents raise young
Family Pitheciidae (titi monkeys, sakis, & uakaris)

- 4 genera, 40 species
- South American rain forests
- Most have large canine teeth separated from incisors by diastema, incisors angled forward
- Diurnal, social, spend a lot of time grooming
- Use vocalizations to communicate & defend territories
- Eat mostly large, hard fruits
- Monogamous or promiscuous mating
Family Atelidae (spider, wooly, & howler monkeys)

- 5 genera, 24 species
- Central & South American rain forests
- Largest New World monkeys (5.5-15 kg)
- Arboreal with prehensile tails
- Diurnal, frugivorous, live in social groups
- Polygamous mating, dominant males may monopolize groups of females
- Single offspring cared for by mother
Family Cercopithecidae (Old World monkeys)

- 21 genera, 132 species
- Southern Europe into NW Africa, sub-Saharan Africa, central & SE Asia
- Variety of habitats, terrestrial & arboreal
- Medium to large (1.5 – 50 kg)
- Non-prehensile tails (can be vestigial), flat nails, nostrils facing downward
- Diurnal, omnivorous, dental formula: 2/2, 1/1, 2/2, 3/3
- Typically give birth to single offspring
- Most live in matrilineal troops, group size is variable
Family Cercopithecidae (baboons- e.g., Papio)

- Long rostrum, close-set eyes, cheek pouches, & ischial callosities
- Terrestrial- open savannah & woodlands
- Mostly vegetarian, but some insects & small vertebrates
- Live in hierarchical troops of 5-250
- Mating is promiscuous or polygamous
- Typically give birth to single offspring, most parental care by mother
- Males sometimes use offspring as a buffer against male aggression
- 30-40 year lifespan
Family Cercopithecidae (macaques- e.g., Macaca)

- Short rostrum, ischial callosities, no cheek pouches
- Terrestrial & arboreal- Grasslands & woodlands
- Mostly vegetarian, but some insects & small vertebrates
- Live in matriarchal troops
- Troops have “culture” & accents
- Mating is promiscuous or polygamous
- Typically give birth to single offspring, most parental care by mother
Family Cercopithecidae (colobus, langurs, & leaf monkeys- e.g., *Presbytis*)

- Poorly developed/absent brow ridge, no cheek pouches or ischial callosities, reduced thumb
- Sacculated stomach, enlarged salivary glands, sharp high-crested molars- most efficient folivore of all primates
- Arboreal- tropical forests
- Lives in matriarchal troops with both male & female hierarchies
- Mostly polygynous mating, single offspring born
- Parental care mainly by mother, but with assistance from father
Family Hylobatidae (gibbons, *Hylobates*)

- 4 genera, 14 species
- SE Asia- Tropical forests
- Brachiators- long arms, wrist composed of ball & socket, no tail, no cheek pouches, opposable thumb & toe
- Arboreal, diurnal, mostly vegetarian
- Monogamous, live in family groups
- Males & females sing duets- some species have enlarged throat sacs
- Most suffer bone fractures in lifetime
- Most species threatened/endangered
Family Hominidae (great apes)

- 4 genera, 7 species
- Equatorial Africa, Borneo, & Sumatra
- Large, robust bodies- 480-270 kg
- Dental: 2/2, 1/1, 2/2, 3/3
- Opposable thumb & toe, digits have nails, no tail, no ischial callosities
- Sexually dimorphic
- Diurnal, omnivorous with a preference for fruit
- Single offspring born helpless, adolescence lasts for years
- Complex social behavior
Family Hominidae (*Pongo*)

- Sumatra & Borneo - rainforests
- Largest arboreal animal - 33-110 kg
- Lack a hip joint ligament - flexible legs
- Adult males have cheek flaps that signify dominance to other males & readiness to mate
- Mostly frugivorous & arboreal, make nests in trees
- Relatively solitary - males & females come together only to mate
- Lifespan is about 50 years
- 2 species - both endangered
Family Hominidae (*Gorilla*)

- Central Africa - tropical forests
- Largest living primate - 100-200 kg
- Terrestrial - walk on knuckles, can climb trees (but don’t often), cannot swim
- Mostly herbivorous, rarely drink water
- Sleep in nests on ground or in tree
- Live in groups of 5-30 led by silverback males
- Lifespan is 30-50 years
- 2 species - both endangered
Family Hominidae (*Pan*)

- West & Central Africa - Savannah & tropical forests
- Up to 70 kg, bonobo is shorter/thinner with longer limbs
- Can walk upright or on knuckles, also can swing through trees
- Polyandrous mating behavior
- Lifespan of about 40 years
- Chimp is omnivorous, troop hunting led by alpha male, aggressive behavior
- Bonobo is mostly frugivorous, matriarchal troops, sexually-receptive & nonviolent behavior