

Last time...

- What are monkey grade primates?
- When and where do they first appear in the fossil record?
- What features are found in the earliest representatives that identify them as monkeys?

Questions from last class?

- Where do we find primates in the Oligocene?
- Of the Oligocene primates...
 - Who is the potential ancestor of the Catarrhines?
 - Who is the potential ancestor to the NWM?
 - How did the NWM get to South America?
 - Who is the potential ancestor to the OWM?

Taxonomy

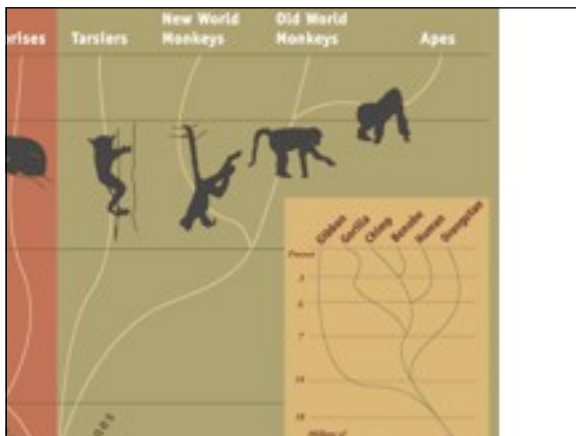
- How are monkeys classified?
 - Order? Suborder? Infraorder?
- What are the two groups of monkeys?
 - How do their classifications differ?
 - How do their characteristics differ?
- Of the Simiiformes, which two groups are most closely related?

New World Monkeys

- What are the potential evolutionary sources of the New World Monkeys?
- What is their classification?
- What features distinguish them from other primates and in particular from the Old World monkeys?
- What different kinds of monkeys are New World Monkeys?
- How do Callitrichidae differ from the rest of the Ceboidea?

Old World Monkeys

- What are the potential evolutionary sources of the Old World Monkeys?
- What is their classification?
- What features distinguish them from other primates and in particular from the New World monkeys?
- What different kinds of monkeys are Old World Monkeys?
- How do Cercopithecoinae and Colobinae, the two divisions, differ from one another?



Modern Apes



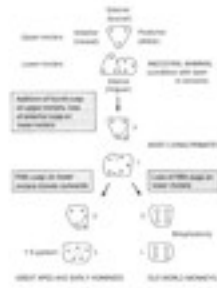
Living Primates



Figure 5.5 Taxonomy of the Haplorhines to the Family Level

Ape Grade Characteristics

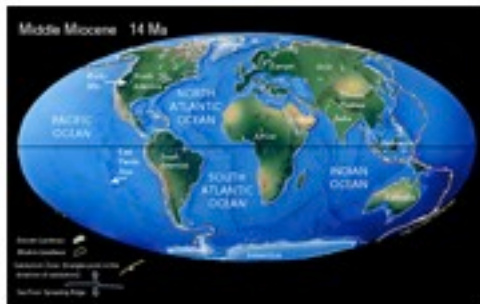
- No tail
- Y-5 Molars
- larger body
- larger brain
- greater social complexity
- shoulder joint adaptations



Miocene 3.5-5 mya

- Ape grade
- Over 30 genera and 100 species of ape - compared with 6 today
- Africa and Eurasia

Miocene continents



Quadrupedal Primate

Like quadrupedal primates, *Platanistis* has a narrow and deep thorax and a very flexible lumbar region. It also has an ankle structure similar to anthropoids and some gibbons, and is built for specialized vertical climbing and pushing of the ground with its feet.

Like quadrupedal primates, *Platanistis* has a tail with the same spine, which is supported by the lumbar vertebrae of the tail with the same spine, which is supported by the lumbar vertebrae.

Unlike other subfamily gibbons, *Platanistis* was an arboreal quadruped.

The bones of the hand and wrist are very different from those of other primates.

Morotopithecus

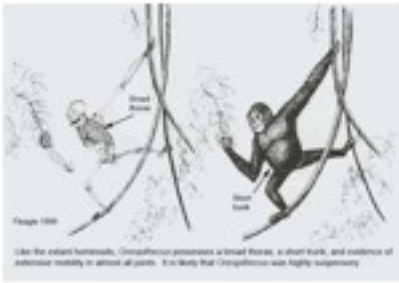
Dryopithecus

The skull was found in the same site as the other fossils, and was found in the same site as the other fossils. The teeth are very different from those of other primates.

Oreopithecus

The skull was found in the same site as the other fossils, and was found in the same site as the other fossils. The teeth are very different from those of other primates.

The teeth are in small fragments, the other fossils are in a group of fossils that is often associated with specialized forms of life.



Pierolapithecus



Reconstruction of Pierolapithecus





Gigantopithecus





Superfamily: Hominoidea

- Gibbons, Gorillas, Orangutan, Chimpanzee, Human
- Greater encephalization, larger body, brachiation, social complexity, lack of tail

Family: Hylobatidae - Gibbons



Hylobatidae Distribution



Gibbon



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White handed gibbon



30

Gibbon



31

Siamang



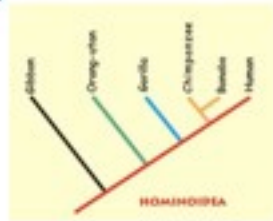
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Siamang



The Great Apes

- Families: Pongidae and Hominidae
- Who goes in which?



Typical Taxonomy

- Pongidae: Orangutan, Gorilla, Chimp, Bonobo
- Hominidae: Humans
- DOES NOT MATCH UNDERSTANDING OF PHYLOGENY

Modern Taxonomy

- Pongidae = Orangutans
- Hominidae = Gorillas, Chimpanzee, Bonobo, Human
 - Subfamily Gorillinae = gorillas
 - Subfamily Paninae = chimpanzee, bonobo
 - Subfamily Homininae = humans + ancestors

Orangutan



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Orangutan Distribution



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Orangutan

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Orangutan



40

Orangutan



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African Ape Distribution



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Gorilla



43

Gorilla



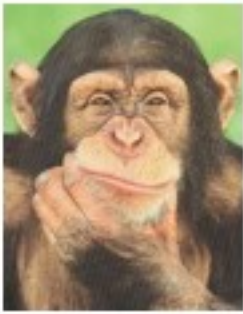
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Gorilla



45

Chimpanzee



46



Chimpanzee



47

Chimpanzee



Chimp/Bonobo Tool Use



50

Bonobo



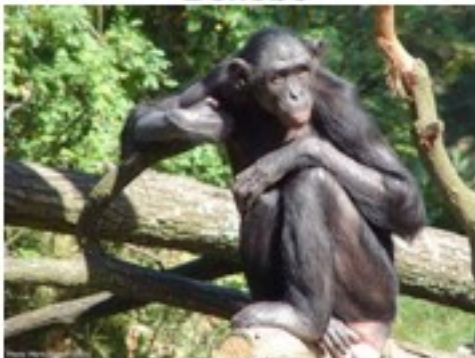
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Bonobo



51

Bonobo



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