

Primate Characteristics

- What characteristics define primates?
- What are they an adaptation for?
- What was the likely early primate adaptation?

Traits of Primates

- Emphasis on vision
 - binocular or stereoscopic vision
 - forward facing eyes
 - postorbital bar or post orbital closure

Limbs and locomotion

- Erect posture
- retention of clavicle
- Grasping hands with opposability
- Nails instead of claws

Diet

- Generalized dentition
- Tendency towards omnivory

Senses, brain and behavior

- emphasis on vision
- decreased snout and olfactory areas
- larger and more complex brain
- longer gestation, infancy, life span
- more k-selected (tend towards single offspring)
- greater dependency on learned behavior
- more social

Primate trends

- Arboreal adaptations
- Dietary plasticity
- Behavioral complexity



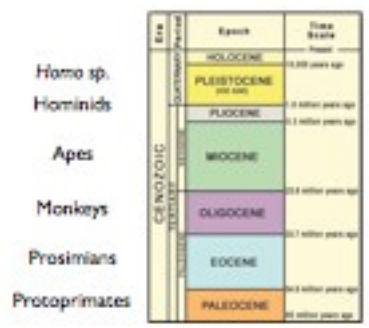
Primate Evolution and Diversity

- Primates arose as part of the Tertiary mammalian radiation after the dinosaurs went extinct.
- First clear primates identifiable in the fossil record by 50 mya.
- Today about 350 species of primates (compared to, say, 2277 species of Rodentia or 260 species of Carnivora)



Figure 5.2 Geographic Distribution of the Living Primates





Paleocene



Distribution of the primates at the end of the Cretaceous

Paleocene

- Infraorder: Plasiadapiformes
- proto-primates
- teeth like primates, otherwise not really
 - no post-orbital bar
 - claws

Tree Shrew



Plesiadapis



Purgatorius



Eocene

- First true primates
- Prosimian "grade"
- Strepsirrhine characteristics

Eocene continents



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Strepsirhines

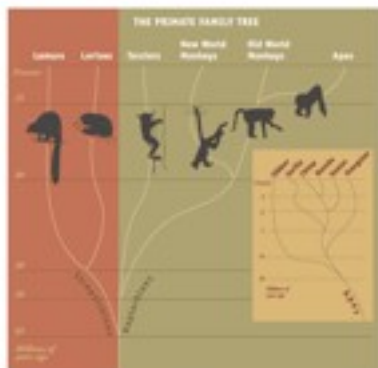
- Lemurs, lorises and galagos
- often used interchangeably with Prosimian (difference is placement of the tarsier)

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Strepsirhines

- reliance on olfaction
- often nocturnal (lorises and galagos)
- lack of complex social behavior
- tooth combs
- some claws

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<http://www.laits.utexas.edu/shapiro/index.html>

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Strepsirhini

- Lemuroidea
 - lemurs and the aye-aye
- Lorisioidea
 - lorises and galagos

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Strepsirhine Distribution



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Mouse lemur

Lemurs:

- ONLY on Madagascar
- from really small (<5 inches) to moderate (about 2 feet)



Madagascar



Mongoose Lemur

Lemurs:

- both nocturnal and diurnal
- both arboreal and terrestrial



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Fat-tailed Dwarf Lemur



Red Ruffed Lemur



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Black and White Ruffed Lemur



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Golden Bamboo Lemur



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Ring-Tailed Lemur

Lemurs:

- both quadrupedal and vertical clingers and leapers (VCL)



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Vertical Clinging and Leaping



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Indri

- Lemurs
- scent mark
- diurnal lemurs tend to have more complex social relationships

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Aye-aye



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Aye-Aye



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Aye-Aye hand



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Loris

Lorises - Asian and African
(Potto)
Galagos - African

- nocturnal
- scent mark
- solitary
- claw
- tapeta lucetum



Slow loris



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Pygmy Loris



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Potto



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Galago

- nocturnal
- VCL
- rat to cat size



Lesser bushbaby

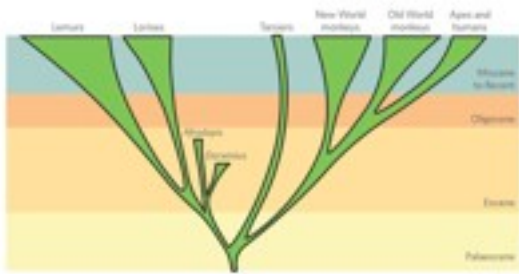


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IDA



Ida and the Family Tree

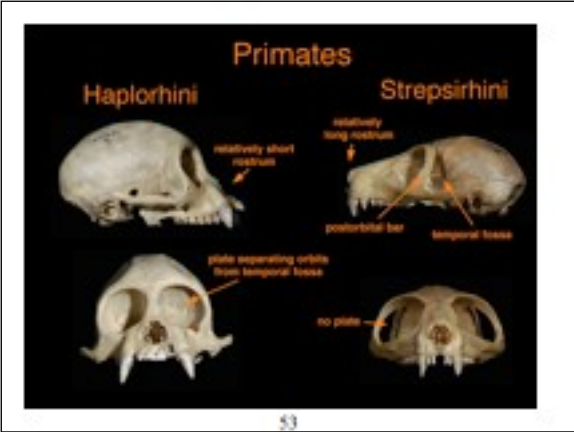


Primate Suborders

- Haplorhini vs. Strepsirhini
- Anthropoid vs. Prosimian
- What are the differences between these two ways of dividing the primates?

Traditional vs. Modern Taxonomy













Tarsier

- nocturnal
- no rhinarium
- grooming claw
- carnivorous
- monogamous pairs
- no tooth comb

Tarsier Skull