

# PRIMATES

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# Primates

-By Anthro World 

- A primate is any member of the biological order Primates, the group that contains all the species commonly related to the lemurs, monkeys, and apes, with the latter category including humans.
- Primates are found all over the world.
- **Non-human primates** occur mostly in **Central and South America, Africa, and southern Asia**. few species exist as far north in the Americas as **southern Mexico**, and as far north in Asia as **northern Japan**.
- Two main groupings: **prosimians, Anthropoids**.

# What are primates?

Members of the order Primates show a remarkable range of size and adaptive diversity.

***The smallest primate: Madame Berthe's mouse lemur, weighs approximately 35 grams.***

***Most robust: Gorilla (*Gorilla gorilla*), weighs approximately 140 to 180 kg.***

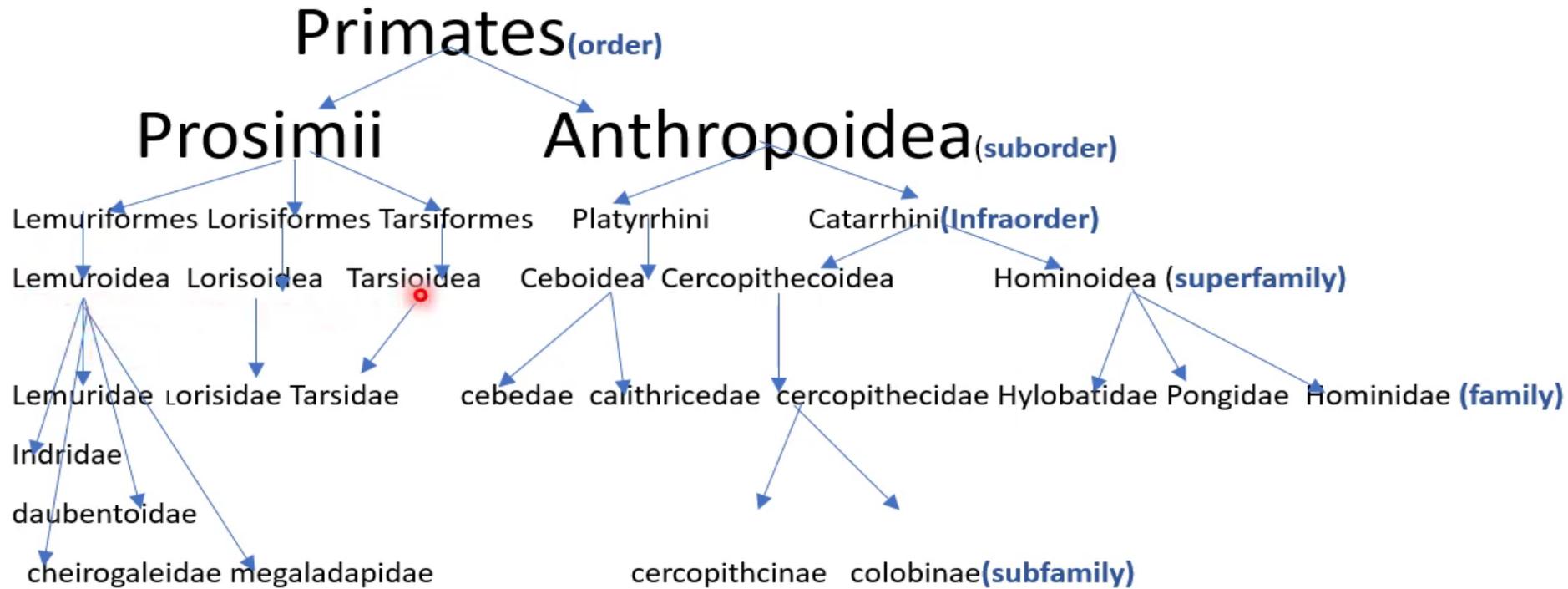
# Definition of primates?

Le Gros Clark in 1959 defined Primates as:

- 1. Preservation of generalised limb structure with primitive pentadactyly.***
- 2. Enhancement of free mobility of the digits, especially of the pollux and hallux (both used for grasping).***
- 3. Replacement of sharp, compressed claws by flat nails; development of very sensitive tactile pads on the digits.***
- 4. Progressive shortening of the snout.***

# Extant (Living) Primates

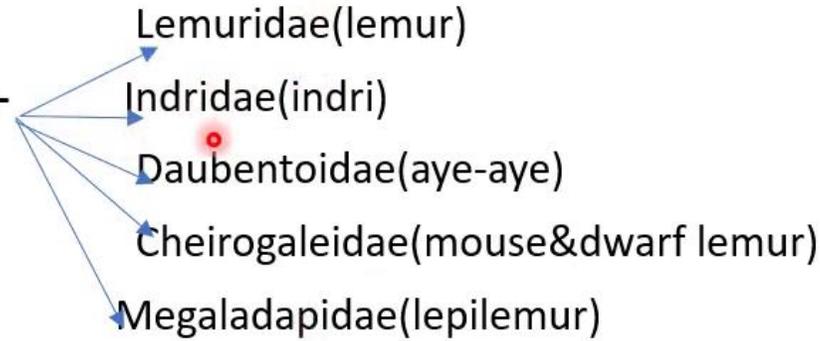
## • Classification---



# 1. Lemuroidea-

- **Classification—**

Primates-Prosimmi-Lemuriformes-**Lemuroidea-**



- **Distribution—** Tropical forests of Africa, islands of Madagascar, Indonesian islands and Philippines.

- **Characteristics-**

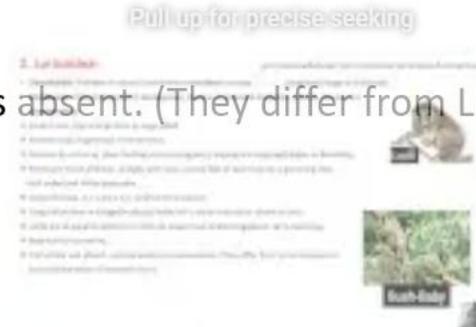
- ❖ Small animals of size of mouse or cat
- ❖ Body coated with furry covering
- ❖ Large bushy tails(not prehensile but help in balancing), lemur use reserve food of tail.
- ❖ Arboreal, some are terrestrial
- ❖ Insectivorous or Frugivorous
- ❖ Mostly Diurnal, some nocturnal
- ❖ Prehensile hands and feet, all digits with nails,second digit of each foot has a grooming claw.
- ❖ Dental formula -2.1.3.3/2.1.3.3(exception Lepilemur-0.1.3.3/2.1.3.3)
- ❖ They live in groups of about 60 members.
- ❖ Mouse lemurs(smallest primates with body and tail length less than 27cm), Indri(largest living lemur,60-70- cm, long limbed, rudimentary tail)



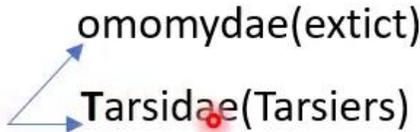
## 2. Lorisioidea-

Lorinae (slow & slender Loris, Nycticebus, Arctocebus, Perodicticus)

- **Classification-** Primates-Prosimii-Lorisiformes-**Lorisioidea**-Lorisidae → Galaginae (Galago or Bushbaby)
- **Distribution-** Tropical Africa (not in Madagascar), South and southeast Asia (India, Sri Lanka, Burma etc.)
- **Characteristics-**
  - ❖ Small in size, that of large mice to large rabbit
  - ❖ Insectivorous, frugivorous or herbivorous
  - ❖ Arboreal & nocturnal, slow climbing and creeping (loris), leaping and hopping (Galagos or Bushbaby)
  - ❖ Prehensile hands and feet, all digits with nails, second digit of each foot has a grooming claw, both pollex and hallux opposable.
  - ❖ Dental formula -2.1.3.3/2.1.3.3, toothcomb is present.
  - ❖ Long tail present in Galago (Bushbaby) while tail is either reduced or absent in Loris.
  - ❖ Limbs are of equal length (loris), hindlimbs longer than forelimbs (galagos), tail is balancing.
  - ❖ Body has furry covering.
  - ❖ Post orbital wall absent, external auditory meatus absent. (They differ from Lemurs because of less pneumatization of tympanic floor).



### 3. Tarsioidea-

- **Classification-** Primates-Prosimi-Tarsiformes-**Tarsioidea** 
- **Distribution-** Islands of East Indian archipelago(Philippines, Sumatra, Java, Borneo etc.)
- **Characteristics-**
  - ❖ Tarsiers regarded as living representative of prosimians from which anthropoids bifurcated.
  - ❖ Because of certain characteristics of their bony orbits they are close to anthropoids and also due to dry nose characteristics, they are placed among haplorrhines (with anthropoids).
  - ❖ Tiny animals with furry covering on their body.(large eyes with long hindlimbs,
  - ❖ pads at the tips of fingers give them frog like appearance).
  - ❖ Arboreal and Nocturnal, vertical Leaping, clinging and climbing, hopping movement.
  - ❖ Insectivorous, frugivorous, omnivorous
  - ❖ They can rotate their head for 180°, therefore can look backward without moving their body.
  - ❖ Prehensile hands and feet, all digits with nails, second and third digit of each foot has a grooming claw.
  - ❖ Very long tail(balancing tail helps in moving, hopping, sitting) and long hindlimbs, tibia and fibula fused at lower ends, **tarsus bone of foot is elongated**, can walk on all four limbs.
  - ❖ Large eye orbits , fully forward, post orbital wall present, nostrils widely separated, foramen magnum in front side of base of skull.
  - ❖ Dental formula -2.1.3.3/2.1.3.3, toothcomb is absent.(lower incisors do not form toothcomb like in other prosimians).



Tarsier

# Extant or Living Anthropoids

## 1. Ceboidea-

### • Classification

Primates-Anthrooidea-Platyrrhini-**Ceboidea**

→ **Cebidae**(Capuchin monkey, Squirrel monkey, Owl monkey, Spider monkey, Wooley & Howler monkey, Titis, Goeldis monkey, Sakis, Uakaris etc.)

→ **Calithricidae**(Marmosets, Pygmy marmosets, Tamarins, Golden lion Tamarins etc.)

• **Distribution-** Forest regions of South and Central America (that's why called new world monkeys)

### • Characteristics-

- ❖ Characterised by nose with wide nasal septum(platyrrhines)
- ❖ Mostly arboreal, live in highest branches of trees.
- ❖ Leaping and quadrupedal locomotion.
- ❖ Both diurnal and nocturnal
- ❖ Small to Large in size(wooley and howler—largest monkey, Pygmy marmosets—smallest)
- ❖ Frugivorous, herbivorous(mostly depends on fruits, leaves and nuts)
- ❖ Tail mostly prehensile(not prehensile in case of squirrel monkey, sakis,uakaris etc.),
- ❖ Thumb non-opposable in calithricidae, opposable in Cebidae. All digits with flat nails in cebidae.
- ❖ Wooley fur covered body in case of wooley and spider monkey, marmosets.
- ❖ Dental formula- Cebidae(2.1.3.3), calithricidae(2.1.3.2)---third molar absent.
- ❖ Cheek pouch absent, ischial callosity present in calithricidae, absent in Cebidae.



Squirrel Monkey



Owl Monkey



Spider Monkey



Saki



MARMOSETS



Howler Monkey

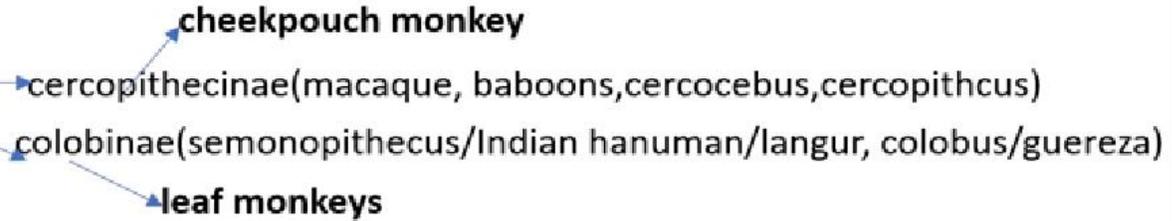


Tamarin

# 2. Cercopithcoidea-

## • Classification

Primates-Anthrooidea-Catarrhini-Cercopithecoidea-Cercopithecidae



• **Distribution-** Tropical Africa, south and southeast asia(India, China, Japan, Pakistan etc.)----(that's why called old world monkeys).

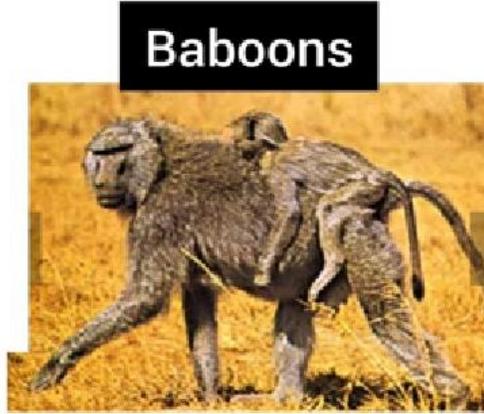
Cercopithecus and cercocebus(mangabeys)—Africa, Baboons(papio)—Africa, Arabian peninsula, Macaque and langurs-India, Pakistan, china, Japan,) Guereza(colobus)—Africa)

### • Characteristics-

- ❖ Characterised by nose with narrow nasal septum(catarrhin
- ❖ Both arboreal and terrestrial.
- ❖ Brachiation and quadrupedal locomotion
- ❖ Both frugivorous and omnivorous.
- ❖ Diurnal in habit
- ❖ Usually live in socially well-organised groups
- ❖ Sexual dimorphism present
- ❖ Dental formula- 2.1.2.3/2.1.2.3
- ❖ Tail long, not prehensile, thumb and big toe opposable.
- ❖ Cheek pouch and ischial callosity present in cercopithecinae(absent in colobinae)
- ❖ Cercopithecines are called cheek pouch monkeys while colobines as leaf monkeys(a bacteri of cellulose of leaf)
- ❖ Guerezas are brachiators with four elongated fingers and reduced thumb.



Macaque



Baboons



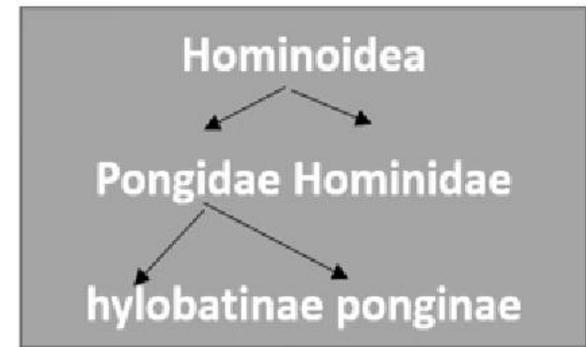
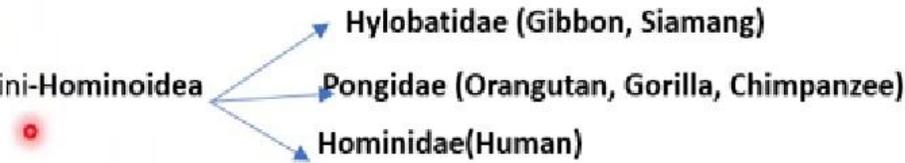
Grey Langur

which help in breakdown

# 3. Hominoidea-

## • Classification

Primates-Anthrooidea-Catarrhini-Hominoidea



## Distribution-

1. Hylobatidae (lesser apes)- **Gibbon**--SE Asia, NE India, Myanmar, **Siamang**---Sumatra
2. Pongidae (great apes)- **Orangutan**---Islands of Sumatra and Borneo, **Gorilla**--- West Central Africa, **Pan/Chimpanzee**-- Tropical forests of Africa
3. Hominidae- Humans--All around world

## Characteristics-

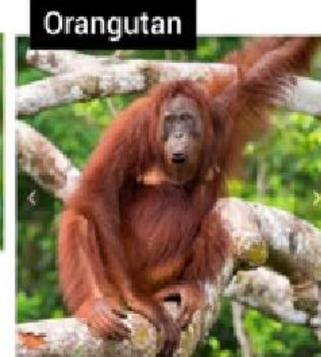
- ❖ Mostly Arboreal. Also live terrestrial life
- ❖ Brachiation, quadrupedal and upright locomotion (Forelimbs are longer than hindlimbs, absence of tail).
- ❖ Live in small family groups of two to four.
- ❖ Mostly Vegetarian diet. Gibbon also eat birds, insects etc.
- ❖ Dental formula- 2.1.2.3/2.1.2.3
- ❖ Gibbons are smallest apes(50 kg wt, 1 mt ht) and are true brachiators. Their upper extremities are extraordinary long. Most of time they live on tress(arboreal).No sexual dimorphism.
- ❖ Orangutan look like an old man. They are large in size(adult male 77kg), lethargic, and gentle. Their body is coated with reddish hair. Sexual dimorphism is present, male is larger than females with large and sharp tusk-like canines.
- ❖ Gorillas are largest apes and largest of all primates(adult male 1.8 mt tall, 200kg wt), they build their nest on trees for sleeping, but mostly they are terrestrial and walk on their four limbs. They are also brachiators. Gorillas look ferocious and aggressive while they do chest beating, but actually they are vey gentle and peaceful. Live in groups of 5-30. pure vegetarian. They are knuckle walker. Young males are silver backed.
- ❖ Chimpanzees are smaller than gorillas. More active and noisy. They can use tool, hunt and can throw sticks and stones as weapons. They also eat ants, fish, meat etc. They live in gps of 4 to 50 members. Their skull is smaller than gorilla. Supraorbital ridges are continuous. Quadrupedal locomotion, rarely bipedal, also brachiate. They make communication calls with loud hoots(pant hoots).
- ❖ Human- Bipedal locomotion, erect posture with hindlimbs longer than forelimbs. Omnivorous diet. Human has power of articulated speech. Life span is longer. Hair density reduced except on scalp. Tactile hair absent. Great toe non-opposable. No sexual dimorphism in teeth.



Gibbon



Siamang



Orangutan



Gorilla



Chimpanzee



Human