

A close-up photograph of a golden monkey, possibly a howler monkey, sitting on a thick, light-colored tree branch. The monkey has long, shaggy golden-brown fur and a lighter face. It is looking directly at the camera with a neutral expression. The background is a soft, out-of-focus warm tone, suggesting a natural habitat.

NONHUMAN PRIMATES

By : Iman Memarian

✓ TAXONOMY

✓ *Rhesus* BREEDING & REPRODUCTION

✓ *Rhesus* ANATOMIC & PHYSIOLOGIC FEATURES

✓ *Rhesus* BEHAVIOR

✓ *Rhesus* HUSBANDRY



TAXONOMY

- ▶ Nomenclature and classification of nonhuman primate are subject to periodic change.
- ▶ Differentiated by:
 - ❖ Unique biologic characteristics
 - ❖ Environmental requirements
 - ❖ Nutritional requirements
 - ❖ Disease susceptibility

TAXONOMY

- ▶ Smallest monkey weighing less than 100 g
- ▶ Largest ape weighing more than 200 kg



TAXONOMY



Prosimians

Tarsioidea

Anthropoidea



Prosimians

- ▶ Resemble squirrels or rats more than true monkeys.
- ▶ Natural diet:
 - ❖ Insects
 - ❖ Fruit
 - ❖ Some are carnivorous
- ▶ Prosimian species include :
 - All species of lemurs



1. lemurs

Lesser mouse lemur
Microcebus murinus

Varecia variegata rubbra

Ruffed lemur

Varecia variegata variegata

ARKive

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Prosimians



Indriids

Aye-ayes

Daubentonia madagascariensis

Lorises

Galagos

Galaco senegalensis

Anthropoidea

(Simian primates)

- ▶ No single anatomic feature distinguishes simian primates from other animals.
- ▶ Anthropoidea is divided into five supra families:
 - I. New World (NW) monkeys
 - II. Old World (OW) monkeys
 - III. Lesser apes
 - IV. Great apes
 - V. Humans



MONKEY PHYSICAL CHARACTERISTICS

NEW WORLD VS. OLD WORLD



Prehensile tails are present in some species

No Prehensile tails

No ischial callosities

Ischial callosities are present in some species

Broad-nosed

Narrow-nosed

Require vitamin D₃

Do not Require vitamin D₃

Do not have cheek pouches

cheek pouches are present in some species

Do not have opposable thumbs

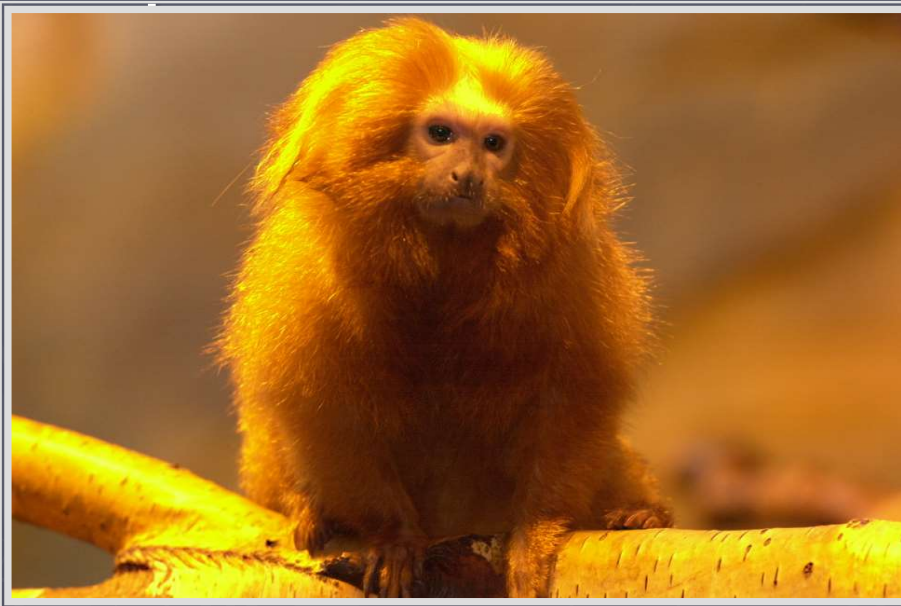
opposable thumbs are present in all species

Have three premolar teeth on each side

Have two premolar teeth on each side

I. NEW WORLD PRIMATES (FAMILY – CALLITRICHIDAE)

► Marmosets and tamarins



- Soft silky hair
- Long nonprehensile tails

I. NEW WORLD PRIMATES (FAMILY – CALLITRICHIDAE)

► Representative species

Common marmosets

Callithrix jacchus

Golden lion tamarins

Leontopithecus rosalia

Cotton-top tamarins

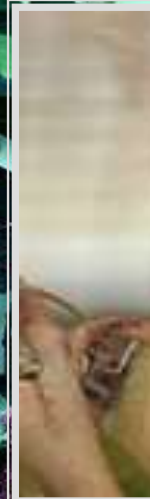
Sanguinus oedipus



II. NEW WORLD PRIMATES (FAMILY – CEBIDAE)

1. Squirrel monkeys, *Saimiri sciureus*

- Short, dense haircoats
- Varying in color (orange to gray)
- Dark, round muzzle
- White hairless patches around their eyes
- Long prehensile tails
- Weight 500-1000 gr



II. NEW WORLD PRIMATES (FAMILY – CEBIDAE)

2. Owl monkeys, *Aotus trivirgatus*

- Only nocturnal anthropoid primate
- Short, dense haircoats
- Varying in color (gray to red)
- Small dark muzzle
- Large owl-like eyes
- White crescents of hair around each eye
- Long nonprehensile tails
- Weigh : 900 – 1200 gr



II. NEW WORLD PRIMATES (FAMILY – CEBIDAE)

3. Cebus spp.



4. Ateles spp.





III. OLD WORLD MONKEYS (FAMILY – CERCOPITHECIDAE)

1. Rhesus monkeys , *Macaca mulatta*



III. OLD WORLD MONKEYS (FAMILY – CERCOPITHECIDAE)

3. Baboons

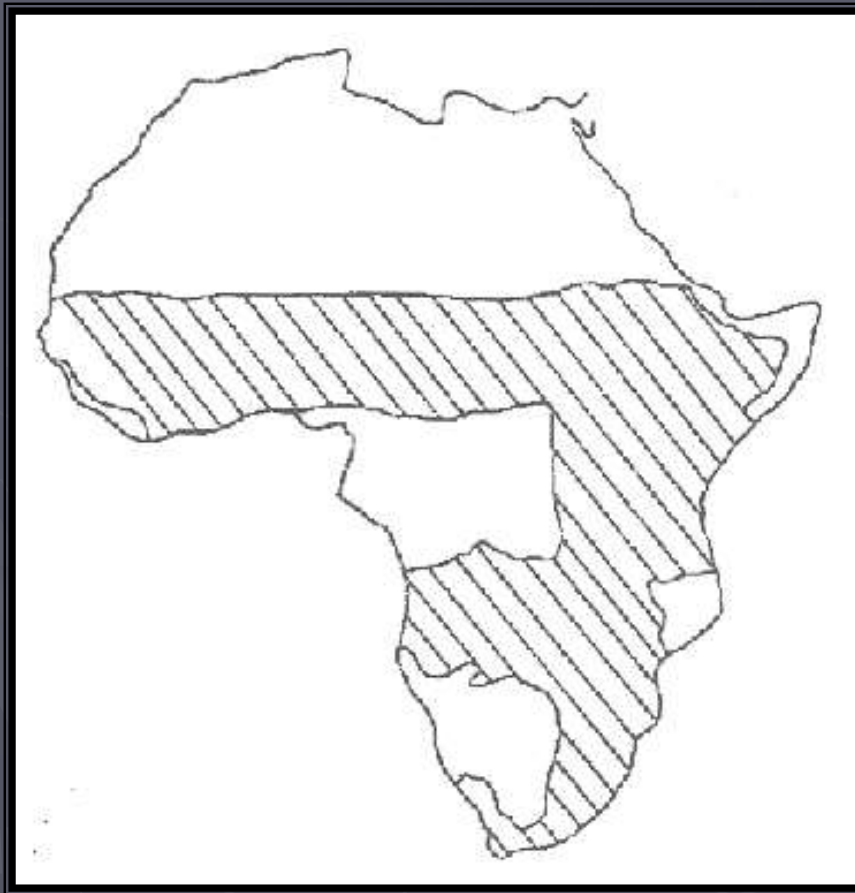
✓ Olive baboon *Papio anubis*



✓ Yellow baboon *Papio cynocephalus*

III. OLD WORLD MONKEYS (FAMILY – CERCOPITHECIDAE)

4. African green monkeys, *Cercapithecus aethiops*



IV. LESSER APES (FAMILY-HYLOBATIDAE)

1. Gibbons, *Hylobates spp.*



V. GREAT APES (FAMILY-PONGIDAE)

1. Chimpanzee, *Pan troglodytes*
2. Orangutans, *Pongo pygmaeus*





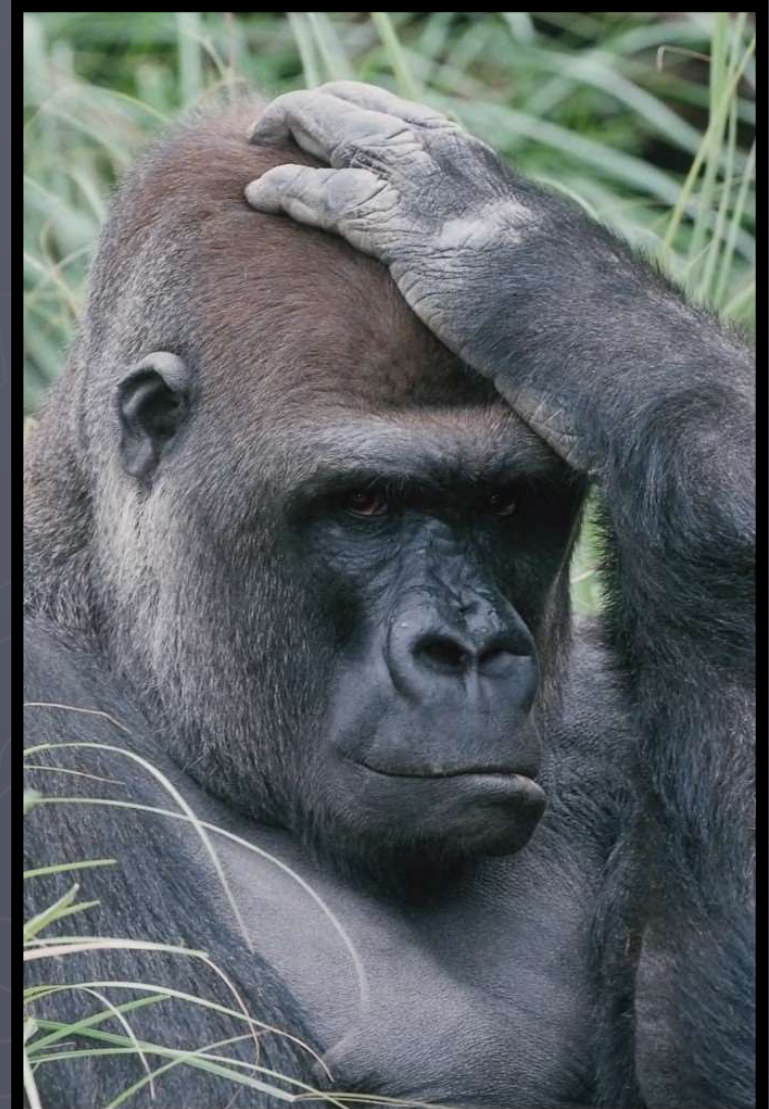
V. GREAT APES (FAMILY-PONGIDAE)

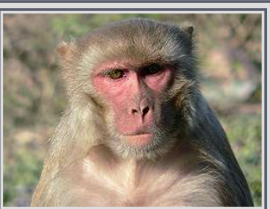
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THE GORILLA

Gorilla gorilla



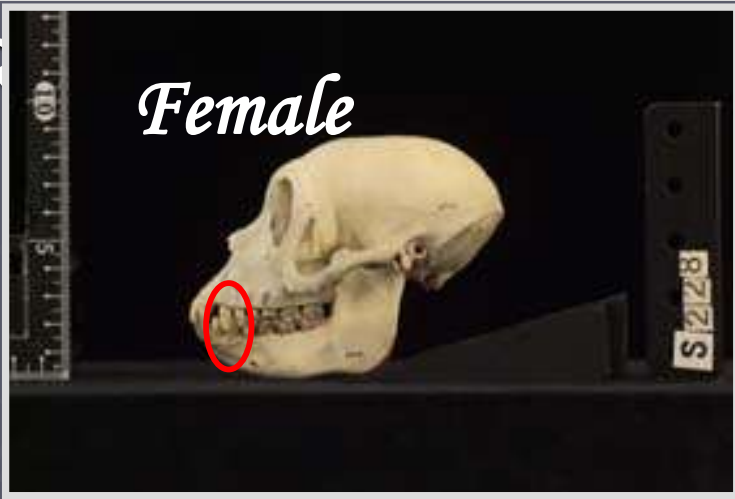


Rhesus



R

Female



Male



hair coats

- Medium-length tails

- Moderate sexual dimorphism

- ❖ Males weighing 6-11 kg
- ❖ females weighing 4-9kg





Rhesus

- ▶ One of the more **aggressive** macaque
- ▶ Found across wide range (Afghanistan to China)
- ▶ Sex ratio: 1 : 1
- ▶ In the wild, rhesus live in **multi-male troops** whose size varies with habitat
- ▶ Many rhesus in captivity are housed in large groups in corrals





Rhesus

► Male breeding age:

- ❖ Spermatogenesis at 3 years
- ❖ Sexually mature at 3-3.5 years
- ❖ However, breeding begins at 4 years



► Female breeding age:

- ❖ First sexual skin swelling at about 26 months
- ❖ Give birth at 3 to 4 years of age
- ❖ Duration of oestrous cycle averages 28 d
- ❖ Overt menstrual bleeding lasts 3d
- ❖ Ovulation occurs 10-16d after the first day of vaginal bleeding



Rhesus

► Seasonality:

- Seasonal breeder
- Births occurring from March to June (mainly in April and May)

❖ Interbirth intervals are close to one year on average... .

► Longevity:

- Lifespan in captivity (20-30 years)



Rhesus

► Gestation:

- ❖ Averages 166d (148-172d)

► Pregnancy diagnosis:

- ❖ **Palpation**, after 60d
- ❖ **Radiography**, later stages of pregnancy
- ❖ **Ulterasonography**, 16-18d
 - ✓ fetal heart observed, 21-25d
- ❖ Test for detecting pregnancy from a small sample of urine, is available.





Rhesus

► Birth:

- ❖ Occurs during the **night** or **early morning**
- ❖ Female may **vocalize** and **be restless** during labour and usually adopts a **squatting position**
- ❖ Female eat the placenta and cleaned the baby by the daylight
- ❖ **Duration of labour:**
 - ✓ Varies with parity and presentation of the fetus
 - ✓ Multiparous female within 30min
 - ✓ Primipara may take 1 to 3h
- ❖ Mother assists by pulling on the infants head
- ❖ Rectal palpation & Vaginoscopic examination





Rhesus

► Litter size:

- ❖ Usually one

► Adult diet:

- ❖ In the wild
 - ✓ Largely **herbivorous**, feeding on
 - ✓ **Insects** and other **invertebrates**

► Milk:

- ❖ Dry matter 12.2%
- ❖ Fat 3.9%
- ❖ Protein 2.1%
- ❖ Carbohydrate 5.9%
- ❖ Ash 0.26%





Rhesus

► LACTATION AND WEANING:

- ❖ Begin tasting **solid foods** at about **2w** of age
- ❖ By **10 to 11m** lactation draws to an end





Rhesus

► PHYSICAL DEVELOPMENT:

- ❖ The **testis are in the scrotum** at birth but reascend into the inguinal canal shortly afterwards
- ❖ Return permanently to the scrotum at about 3.3 years
- ❖ **Deciduous** lower and upper **central incisors** completed in the **fourth week**
- ❖ Lower and upper **lateral incisors** erupted at **8 to 10w**
- ❖ **First molars** were fully erupted **12w** after birth
- ❖ **Ossification** of the **hand** and **wrist** can give the most accurate estimation of age



Rhesus



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Take care

