

Class Mammalia

- Subclass Prototheria- extinct mammals with unique skull structure
- Subclass Theria- Living mammals distinguished by skull
 - Infraclass Ornithodelphia- Monotremes
 - Infraclass Metatheria- Marsupials
 - Infraclass Eutheria- Placentals

Order Monotremata

- Oviparous or egg laying mammals
- Only 3 in existence
- Duck-billed platypus and two species of spiny anteaters called echidna.
- Not completely endothermic (their body temperature is lower and fluctuates more than other mammals)
- Mammary without nipples
- Edentulous as adults
- Limbs modified for swimming or digging
- Australia and New Guinea



Monotremata

Duck-billed platypus



Spiny anteater



Echidna (Spiny Anteater)

Tachyglossus aculeatus

- "Echidna" derives from the Latin word for "viper"
 - Tongue protrudes like a snake
- Nocturnal
- Terrestrial and burrowing
- Females normally lay only one egg



Duck-Billed Platypus

Ornithorhynchus anatinus

- Only member of the mammal family Ornithorhynchidae
- Greek platys meaning broad and pous meaning foot
- Several reptilian characteristics: same opening for reproduction and eliminating waste products, the ability to lay eggs
- The world's only venomous furred animal
 - Spur on hind foot
 - Females loose after one year
- Bill contains an electro-receptor system



Infraclass Metatheria (Marsupials)

- Old classification placed all marsupials in a single order
- More recent classifications have recognized the diversity and radiation of Marsupials
- Marsupials now separated into seven orders
- Range, North America, Central America, South America, Australia, New Guinea, adjacent islands

Subclass Theria
Infraclass Metatheria (Marsupialia)

Order Didelphimorphia	Opossums
Order Paucituberculata	Rat Opossums
Order Microbiotheria	Monito del monte
Order Dasyuromorphia	Thylacines, numbats, dasyures
Order Peramelemorphia	Bandicoots
Order Notoryctemorphia	Marsupial mole
Order Diprotodontia	Koalas, wombats, kangaroos, etc ⁸

250 species of marsupial species
exist in Australia, New Guinea,
Tasmania, And the Americas



Tasmanian
Devil

Marsupials

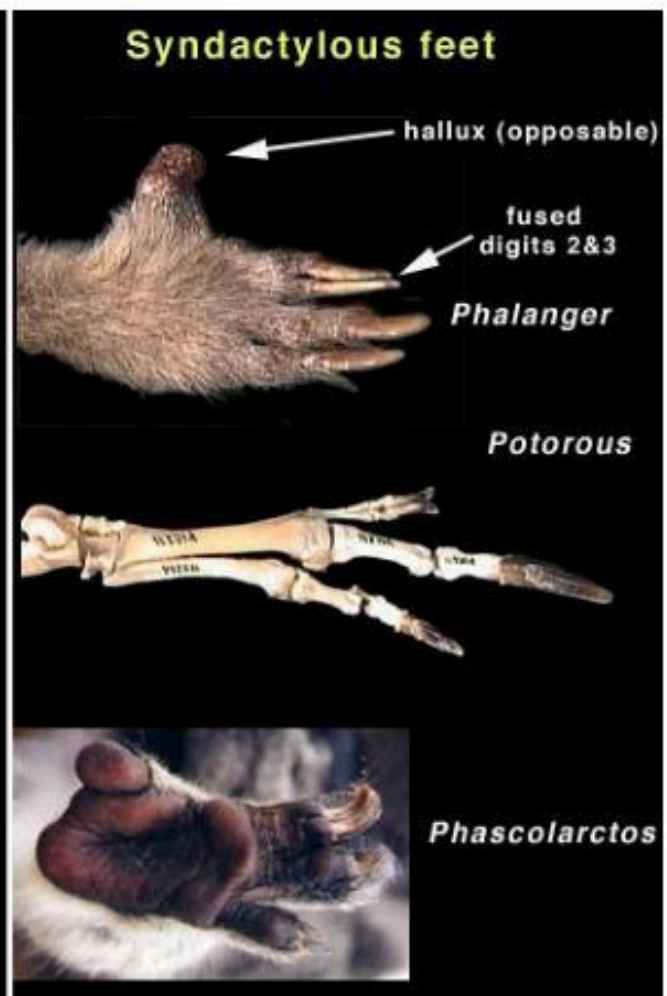
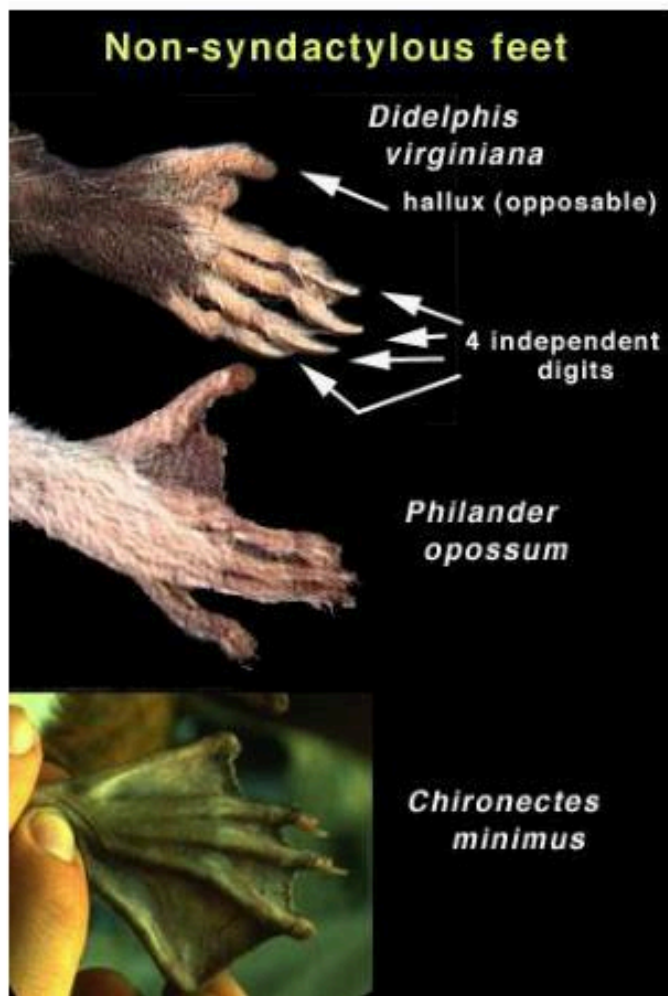
- Give birth to tiny immature young that crawl to a pouch on the mothers belly immediately after they are born.
 - Marsupium- Fold of skin protecting nipples



They attach themselves to milk secreting nipples nursing until they are mature enough to survive outside the pouch.



Syndactyly



American Marsupial

Order Didelphimorphia- Opossum



Order Paucituberculata

- Rat Opossums



Order Microbiotheria- Monito del Monte



Order Dasyuromorphia

- Thylacine



- Numbat



Dasyure



Order Peramelemorphia- Bandicoots



Order Notoryctemorphia- Marsupial Moles



Order Diprotodontia

Wombats



Kangaroos



Placental Mammals



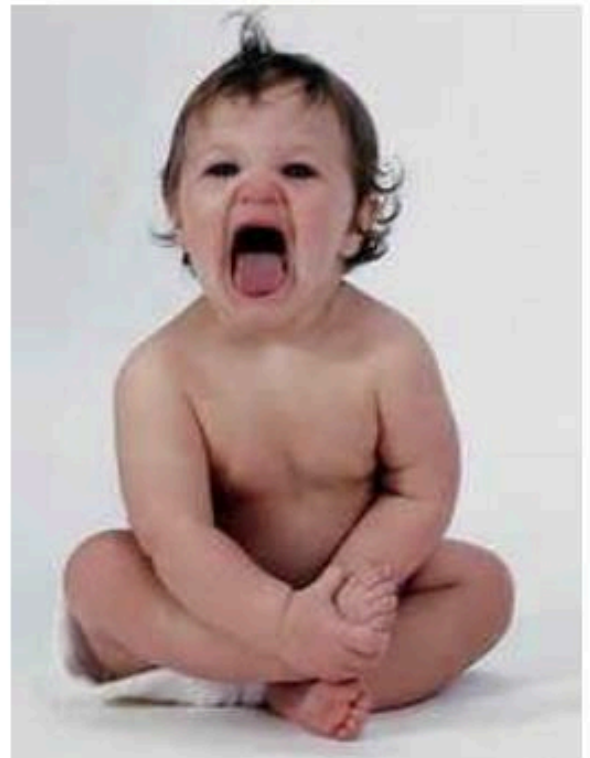
Characteristics of Placentals

- 95% of all mammals
- Carry unborn young in the uterus until young can survive in the wild.
- Oxygen and nutrients are transferred from mother's blood to baby's blood



Placental Characteristics

- The placenta is a membrane providing nutrients and waste & gas exchange between the mother and developing young
- Gestation period-is the time which mammals develop in mother's uterus



Mammals are a diverse group living on land and in water. Some mammals can fly!

Malaysian Fruit Bat



Order Insectivora

- Consists of 400 species
- Includes shrews and moles



Mole

Shrew



Order Rodentia

- Largest mammalian order having over 2,400 species.
- On every continent except for Antarctica
- Includes squirrels, marmots, chipmunks, gophers, muskrats, mice, rats, and porcupines.

Chipmunk





Porcupine



Marmot



Squirrel

Only two incisors in each jaw,
grow as long as rodent lives, and
used for gnawing

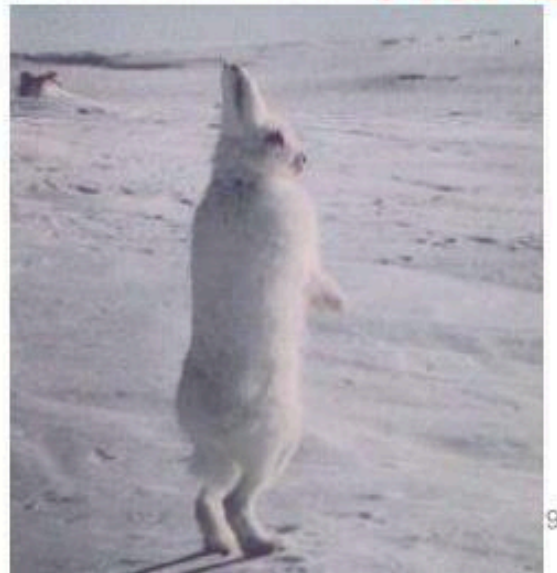


Order Lagomorpha

- Includes rabbits, hares, and small mountain mammals called pikas.
 - Found worldwide
 - Warrens- families of rabbits
- Hare**



Pika



Order Edentata/Xenarthra

- Made up of 30 living species including anteaters, armadillos, and sloths.
- The name edentate means "without teeth"
- Those with teeth have single root with teeth and no enamel





Sloths



Anteater

Chiroptera

- Made up of over 900 species of bats
- Live throughout the world except in polar environments



- A bat's wing is modified front limb which skin membrane between extremely long finger bones
- Bats use thumbs for climbing, walking, or grasping



Order Chiroptera

- Bats that use echolocation have small eyes and large ears.
- Feed on insects and have teeth specialized for such diets



- Some feed on fruit and flower nectar and do not use echolocation.
- These bats are sometimes called flying foxes, have large eyes and keen sense of smell.

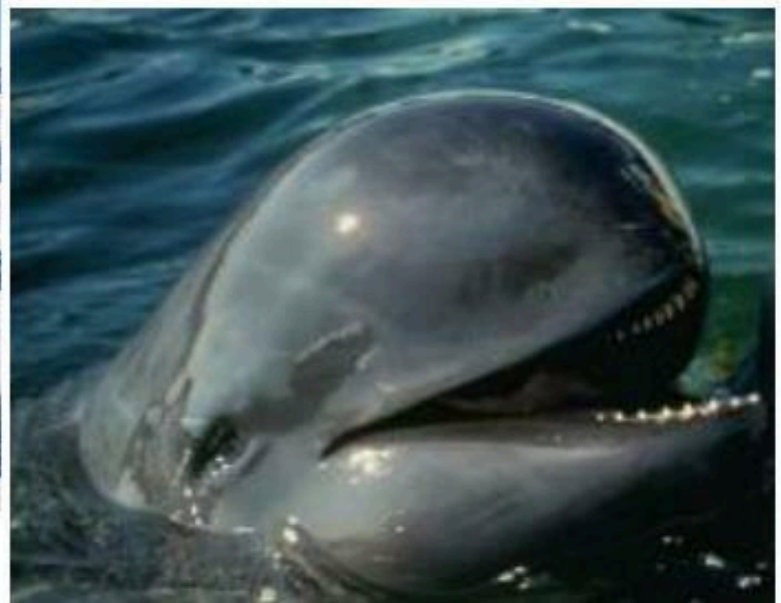


Orders Cetacea and Sirenia

- 90 species of whales, dolphins, and porpoises are distributed worldwide.
- Cetaceans have fishlike bodies with forelimbs modified as flippers.



- Cetaceans divided into two groups which are toothed whales and baleen whales.
- Toothed whales include beaked whales, sperm whales, beluga whales, narwhals, killer whales, dolphins and porpoises.
- Blue whales largest animal in world ~ 100 tons



- Have over 100 teeth
- Prey on fish, squid, seals and whales



The Order Sirenia is made up of four species of manatees and dugongs.



Order Carnivora

- 250 living species in carnivoria are distributed worldwide
- Most of the species mainly eat meat, which explains the name.
- About 34 species: Canids, felids, bears, raccoons, minks, sea lions, seals, walruses, and otters



- Some members of this order such as bears feed extensively on plant material as well as meat, so they are called omnivores.
- Carnivores generally have long canine teeth, strong jaws, clawed toes.
- Highly developed sense of smell and a large braincase



Suborder Pinnipedia

- Pinnipedia are water dwelling carnivores and have streamlined bodies
- Sea lions (ear flaps), seals (no ear flaps) and walruses (elongated canines)



Orders Artiodactyla and Perissodactyla

- Ungulates-hoofed mammals
- These two classes are herbivores.
 - Mostly grazers/browsers
- Ruminants- four chambered stomach
- The first three chambers are for storage (rumen), use cellulase (digestive enzyme) to aid in breakdown of cellulose
 - "Chewing the cud"
 - Regurgitate, chew again, and undergoes double digestion.



Order Artiodactyla

- Ungulates with an even amount of toes
- Pigs, hippos, camels, antelope, deer, sheep, giraffes, cattle



Order Perissodactyla

- Ungulates with an odd number of toes
- Horses, rhinos, zebras, and tapirs

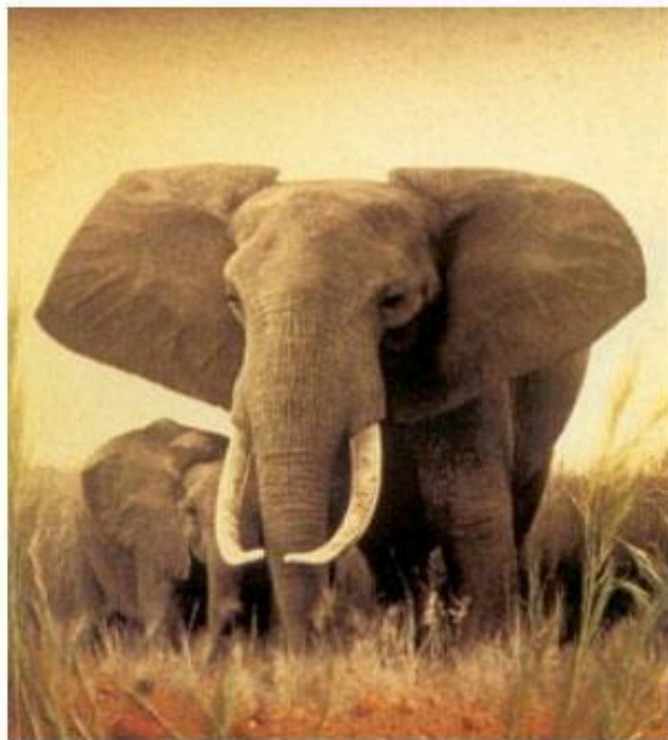


Order Proboscidea

- Characterized by a boneless nose or proboscis
- Elephants are the largest land dwellers alive today, weighing more than 6 tons.
 - African (largest land mammal) and Indian/Asian species

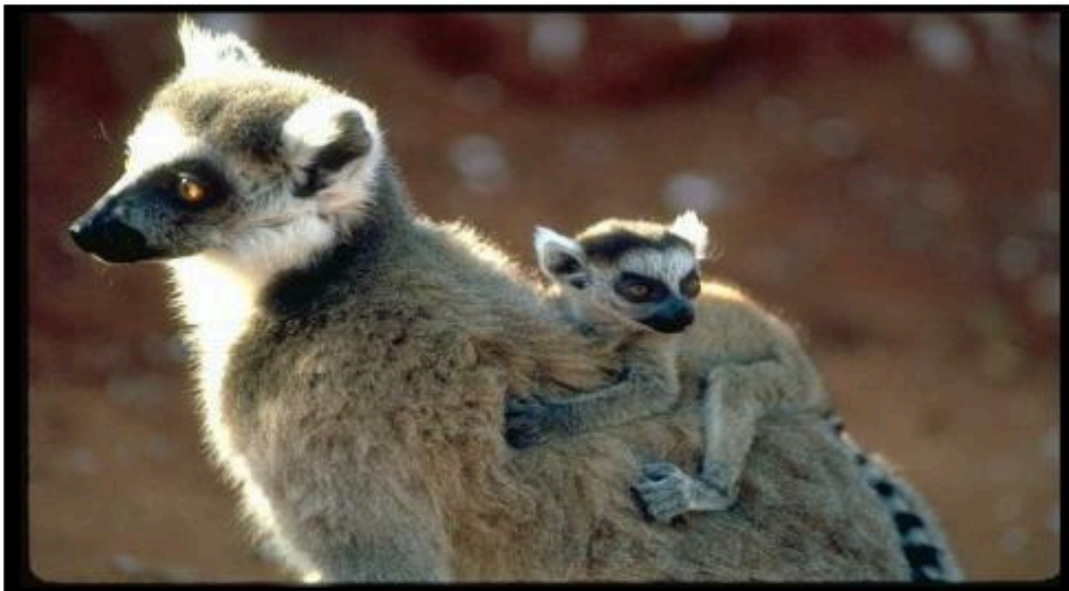


It has modified incisors, called tusks, for digging up roots and stripping bark from branches.



Order Primates

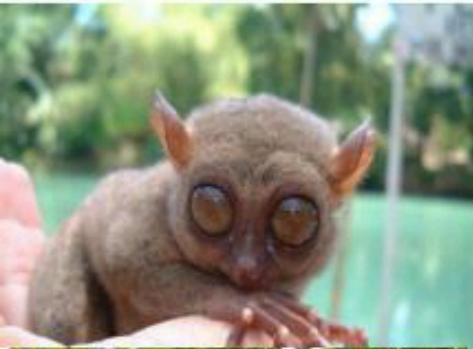
- 200 living species of primates classified as prosimians.
- Including lemurs, tarsiers, monkeys, gibbons, and great apes



- Omnivorous diets
- Unspecialized teeth
- Grasping digits with free-moving limbs
- Finger and toenails
- A complex brain has enabled anthropoids to develop behaviors and to live in highly organized social groups.
 - Ex: Troop- chimpanzee groups



Order Primates



Order Primates Most Intelligent Animals

