

Classification of mammals

- Mammals are of different types they are classified into three subclass based on their reproduction. They are
- Eutheria
- Metatheria
- Prototheria.

Prototheria

- Prototheria consists of egg laying animals and are also known as monotremes. This subclass consists of six species all in one order.
- Monotremata (platypus and echidna)

Metatheria

- Mammals that belong to this subclass also give birth to their young ones but the young ones are born immature. So they migrate into their mother pouch and stay there till they are mature. Metatheria subclass contains seven orders with 250 species. Marsupials and kangaroo are the best example for this subclass.
- Didelphimorphia (New World opossums)
- Paucituberculata (South American rat opossums)
- Microbiotheria (colocolo)
- Dasyuromorphia (dasyurids, thylacines)
- Peramelemorphia (bandicoots)
- Notoryctemorphia (marsupial moles)
- Diprotodontia (kangaroos, koalas, wombats, possums)

Eutheria

- Mammals that give birth to their young ones directly belong to the subclass Eutheria. The young ones form as an embryo in the mother stomach and grow there for a certain period of time. This subclass consists of 19 orders.
- Insectivora (moles, shrews)
- Dermoptera (flying lemurs)
- Chiroptera (bats)
- Cetacea (whales)
- Carnivora (cats, bears, dogs, otters, seals, sea lions)
- Tubulidentata (aardvarks)

- Proboscidea (elephants)
- Hyracoidea (hyraxes)
- Primates (monkeys, lemurs, bush babies, aye-eyes)
- Xenarthra or Edentata (armadillos, anteaters, sloths)
- Pholidota (pangolins)
- Lagomorpha (rabbits, hares, pikas)
- Rodentia (mice, rats, squirrels, porcupines, beavers, voles, hamsters)
- Sirenia (manatees, dugongs)
- Perissodactyla (horses, donkeys, zebras, rhinoceroses, tapirs)
- Artiodactyla (pronghorns, deer, camels, gnus, goats, giraffes, hippopotami, pigs, peccaries, chevrotains, musk-deer, cows)
- Scandentia (tree shrews)
- Macroscelidea (Elephant Shrews)

Features of subclass Prototheria

- External pinnae are absent.
- In the young stage teeth are present and in the adults horny plates are formed.
- Mammary glands are present and teats are absent.
- Body is covered by hairs.
- Corpus callosum is absent in brain.
- Cochlea is simple and is not coiled.
- In the males the testis is abdominal hence scrotal sacs are absent. Seminal vesicles and prostate are absent.
- Ureters open into the cloaca.
- Females are egg laying. Hence prototherians are called egg laying Mammals.
- They are called unfinished mammals as they possess several reptilian characters.
- They are also considered to be living fossils

Eg. *Tachyglossus* (Echidna or spiny ant eater)

- The echidna was named after a monster in Greek mythology!
- Spines and hair on dorsal side ventral side spines are absent
- The echidna can dig incredibly well due to its long claws, meaning that echidna are able to escape danger by digging straight down.
- The echidna is a small mammal and the echidna has a long rostrum that acts as both the mouth and nose of the echidna.
- Eyes are small, pinnae are inconspicuous and tail is absent

- The hindlimb the second digit has toilet claw to clean spines
- The male has a spur in the hindlimb which is like a scent gland to mark territory
- The echidna has no teeth and the echidna feeds by tearing soft logs apart and then using its long, sticky tongue to feed on the ants and termites that inhabit the log.
- The echidna lays eggs that have a soft shell and are kept in the pouch of the female echidna until the eggs hatch in a couple of weeks.
- The young echidna remains in the pouch of the female echidna for around 50 weeks, when the baby echidna has grown spikes.
- The mother echidna then transfers the young echidna to a nursery burrow and returns every few days to feed the baby until it is around seven months old.



Sub class Metatheria

- Marsupium is present in females. Marsupial bone is present.
- Mammary glands are developed.
- Corpus callosum is poorly developed.
- Vagina and uterus and the penis are double.
- Placenta is absent.
- Viviparous.

- The term marsupium means a pouch. Marsupials give birth to a relatively undeveloped young, which often resides in the pouch with the mother for a certain time after birth. This also implies that they have a relatively short gestation.
- Marsupials have different ecological niches, ranging from moles to insects eaters to plant eaters.
- They first evolved in South America some 100 million years ago when Australia, South America and Antarctica were joined together.
- Gradually, these three continents separated and the marsupials got isolated. They freely evolved in isolation.
- Most Marsupials are nocturnal and they have a good sense of smell and hearing

Example Macropus

1. With the exception of tree kangaroos (genus *Dendrolagus*), all members of the kangaroo family (Macropodidae) rely on long, powerful hind legs and feet for hopping and leaping, their predominant forms of locomotion.
2. Their long tails, thickened at the base, are used for balancing.
3. This feature is most obvious in the large kangaroos, which use the tail as a third leg when standing still.

