

Origin & Evolution of Mammals

Introduction:-

⇒ ~~Chief~~ Chief glory of reptiles lies in the fact that they gave rise to 2-gos. of Modern Vertebrates :-

- ⇒ Feathered birds in one line.
- ⇒ Hairy mammals on the other.

⇒ Nothing is more certain than the fact that "Mammals have descended from reptiles during Triassic period to avoid themselves from direct conflict & competition w the ruling "Reptiles".

⇒ Earliest mammals were very small & insignificant. Mammals like reptiles:-

⇒ Some therapsid skulls were w heavy mammalian features as follows:-

- ⇒ Lower jaw articulated w a biced quadrate.
- ⇒ Pre & Post frontals +2.
- ⇒ Heterodont teeth.
- ⇒ zygomatic hard bony Palate. ~~Mammals~~
- ⇒ Such mammals were k/a "mammals like reptiles". EX - Cotylosomes, Dimetrodon, Varanosaurus.

Mesozoic primitive Mammals :-

⇒ Represented by fossils

- ⇒ The s - orders are :-
- a) Docodonta
 - b) Tricodonta
 - c) Symmetrodonta
 - d) Pantotheria
 - e) Multituberculata.

order a) Docodonta

- ⇒ Docodonts from teeth.
- ⇒ appeared in upper Jurassic of North America.

⇒ Expanded upper molars & 2-cusp.
EX - Docodon.

Order - (b) - Tricodonta :-

- ⇒ Partial Skulls
- ⇒ Teeth & Palates +rt.
- ⇒ Molars & 3-cusps in one line.
- ⇒ Brain larger than reptiles.
- ⇒ Division betw thoracic & lumbe vertebrae in Mammals.

EX Tricodon of Jurassic age.

Order - (c) Symmetrodonta :-

- ⇒ Jurassic animals.
- ⇒ 3-cusped molars arranged in symmetrical triangle.
- ⇒ Carnivorous. EX - Symmetrodon.

Order - (d) Pantotheria:

- ⇒ 3-tubercles on teeth
- ⇒ Long slender jaws.
- ⇒ In Amphitherian, there were 4-incisors, 4-canine, 4PMs & 7Ms.

Order - (e) Multituberculata :-

- ⇒ Multituberculates were long lasting Mesozoic mammals.
- ⇒ Jurassic to Eocene.
- ⇒ Herbivores.
- ⇒ Rodent like chisel incisors.
- ⇒ Diastema +rt.
- ⇒ Teeth & rows of cusps

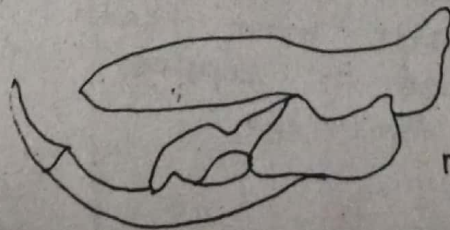


Fig - skull of multituberculata mammals.

Establishment of primitive characters

⇒ Now there are little doubt following characters were established during evolution of mammals:-

- ⇒ Hairy skin.
- ⇒ Double occipital condyl
- ⇒ Single hard palate
- ⇒ Large brain case
- ⇒ increased intelligence.
- ⇒ Double headed ribs.
- ⇒ fused bones of pelvic girdle
- ⇒ Reduced toe bones.
- ⇒ Constant body temp.
- ⇒ Limited growth.
- ⇒ True copulatory organs.
(Penis & vagina)
- ⇒ Definite placentation except Prototherians.

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