

## PG TRB – ZOOLOGY

### Unit IX - Evaluation of Horse

- Horses are odd – toed hooped mammals belonging to the order *perissodactyla*.
- Straight line evolution (**Eimer and Naegeli** in 1897) – ex orthogenesis.
- Eocene period (Cenozoic era).
- History recorded in North America.
- Evolution of Horse – 58 Million years ago.

#### Evolutionary Trends:

- Increase in body size, length of limbs, and length of neck.
- Length of pre orbital region.
- Increase length & size III digit.
- Complexity of brain.
- Moralization of premolars.
- High crowns in premolars, & molars.
- Formation of diastema.
- Enlargement of hoof on the middle digit.
- Development of springing mechanism.
- Straightening & stiffening of back.

#### 1. Eohippus (or) Hyracotherium

- It horse (Dawn horse)
- North America
- Cenozoic era
- Hyracotherium
- Height 10” (0.4 m)– size of fox
- Fore limbs 4digits splint
- Hind limbs – 3

#### 2. Orohippus – Mountain Horse

- Eocene horse.
- Slightly taller than eohippus 30”in size.
- Splint bones disappeared both limbs.
- It was browser.

### 3. Epihippus

- 3<sup>rd</sup> Eocene horse
- End of Eocene.
- Little larger than orohippus.
- Last pre molar – molar like.

### 4. mesohippus

- Oligocene horse
- Intermediate horse
- Sheep size 18-24" (0.6m)
- All legs 3 digits. 4<sup>th</sup> digit splint.

### 5. Miohippus

- Ist 3limb horse. Ancestor for modern horses.
- Direct ancestor for modern horses.
- A side line gave rise to Anchitherium.
- Anchitherium gave rise to hyponhippus.

### 6. Parahippus

- Desended from Miohippus.
- Pre orbital region was much elongated.
- Premolar – Molar – like.
- Dentition – hypsodont ex- high – crowned.
- Three toes in the legs.
- Human like incisors.
- Canine teeth no.

### 7. Merychippus

- First grazer (Ruminant horse) size (1.0m).
- Hypsodont ex -high crowned
- Extinct proto horse
- Cerebral hemispheres more complex.
- Spring mechanism.
- The legs contained 3 toes.

### 8. Hipparion

- Pliocene horse.
- Side line from parahippus .
- 3 toed grazer.
- Height 40”.
- It gave rise to stylohipparion.

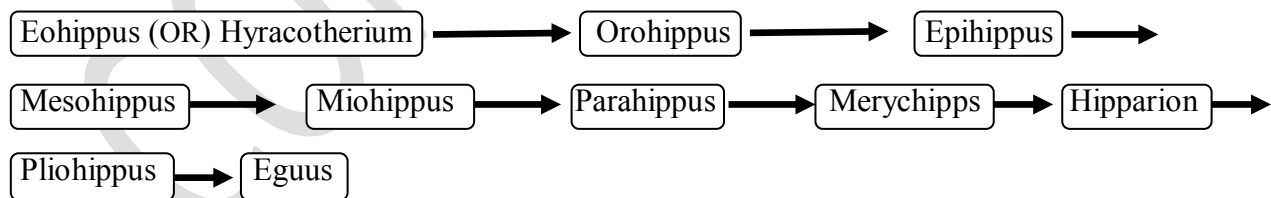
### 9. Pliohippus

- Pleistocene horse size in (1.25m).
- Descended from merychippus.
- Main line of evolution .
- It was the first one toed horse.
- side toes much reduced.

### 10. Equus

- Modern horse size in (1.6m).
- It descended from pliohippus .
- Transition from pliohippus to equus .
- Height – 40” – 60”.
- Middle toe enlarged well developed hoof.
- Cerebral hemispheres are much folded.

*Correct sequence of horse evolution.*



*S.VIGNESHRAJ M.Sc.,M.Ed.,M.Phil.,  
Nanguram TRB. Nagapattinam.*