

Class Aves

Birds (**class Aves** or clade Avialae) are feathered, winged, two-legged, warm-blooded, egg-laying vertebrates. Modern birds are characterised by feathers, a beak with no teeth, the laying of hard-shelled eggs, a high metabolic rate, a four-chambered heart, and a lightweight but strong skeleton.

Genus – Archaeopteryx (Late Jurassic, ~150 MYA)

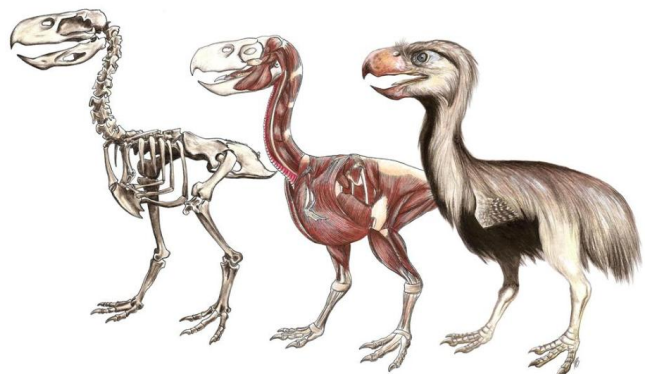
- Transitional from dinosaur to bird
- First fossil to display traditional reptile characteristics (teeth, clawed fingers, tail) and also flight feathered wings characteristic of modern birds
- Similar in size to a raven



Class Aves

Genus Titanis (Terror Bird)

Pliocene-Pleistocene (5 to 2 mya) 8', 300 pound carnivorous bird
Closely resembles
Theropod dinosaurs
But lacks front feet
Ran down prey (30 mph)
could not fly (wings too small for its weight)



Class Aves

Genus Ichthyornis * meaning "fish bird"

- Late Cretaceous toothed sea-bird
- Historically important, first "bird" with preserved teeth

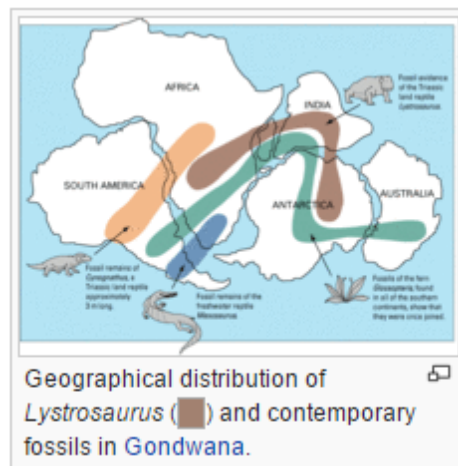
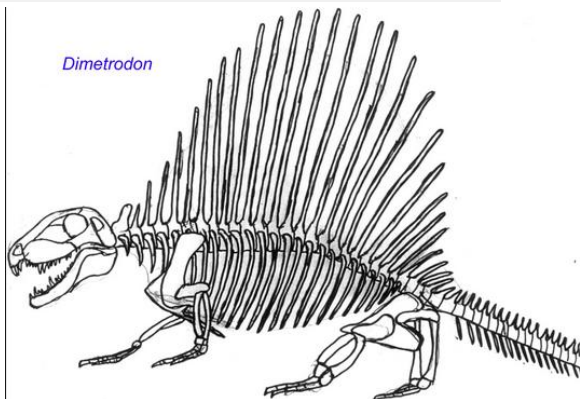
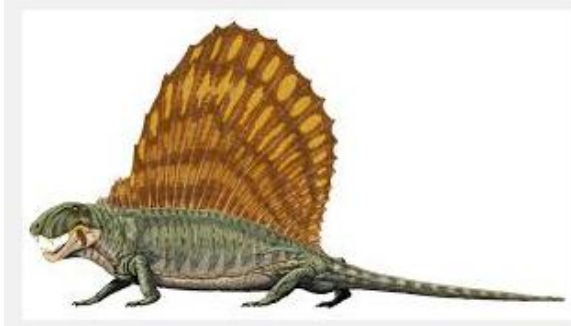


Mammal-like “Reptiles”

Clade Synapsia

Genus – *Dimetrodon*
(*pelycosaurs*)

- Predated dinosaurs
 - More akin to mammals in skeletal structure but not mammals
 - Early Permian (290-270 MYA)
 - Quadrupedal, top Permian predator
 - Characterized by “sail” coming off their vertebrae
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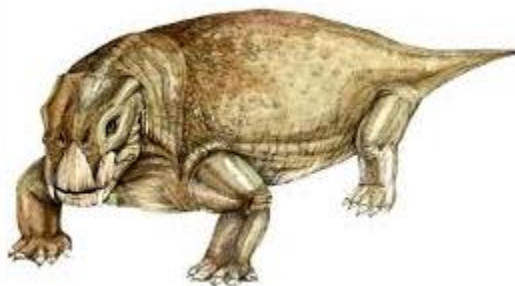
Clade Synapsia

Order Therapsidas

Genus – *Lystrosaurus*
(*therapsids*)

Late Permian-Triassic (255-240 MYA)

- Herbivorous, pig-sized
 - Survived the Permian extinction, only to become extinct soon after
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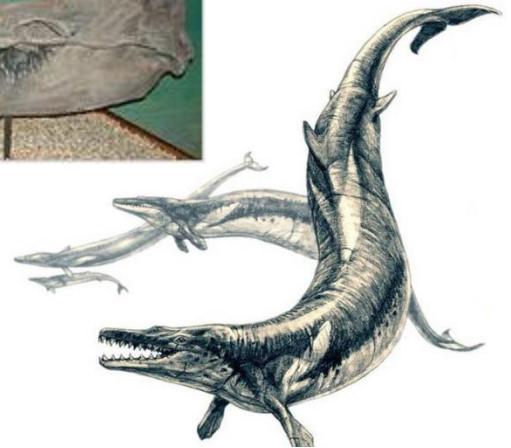


Mammals (pg. 1 of 4)

Class Mammalia

Genus *Basilosaurus*

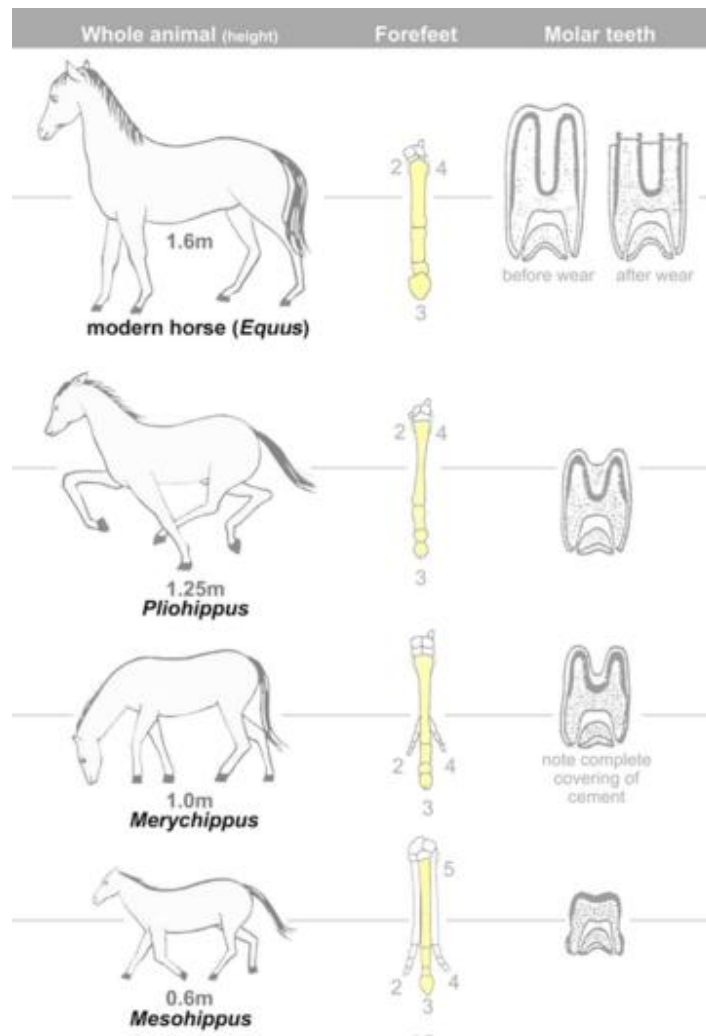
- Early marine mammal (whale)
 - 40-34 MYA (Eocene)
 - Saurus in the name is “wrong”
 - 12-20m long
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~~Class Mammalia~~

Genus *Equus*

- Modern Horses
 - First species were dog-size ~50 MYA
 - Oligocene and Miocene species were larger, today's size just 4 MYA
 - Grass and sedge eating herbivores
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Class Mammalia

Genus *Australopithecus* (hominin) *

- Ancestor Genus *Homo*
- 4.5 – 2.0 mya
- Advanced brain and hand motion capability

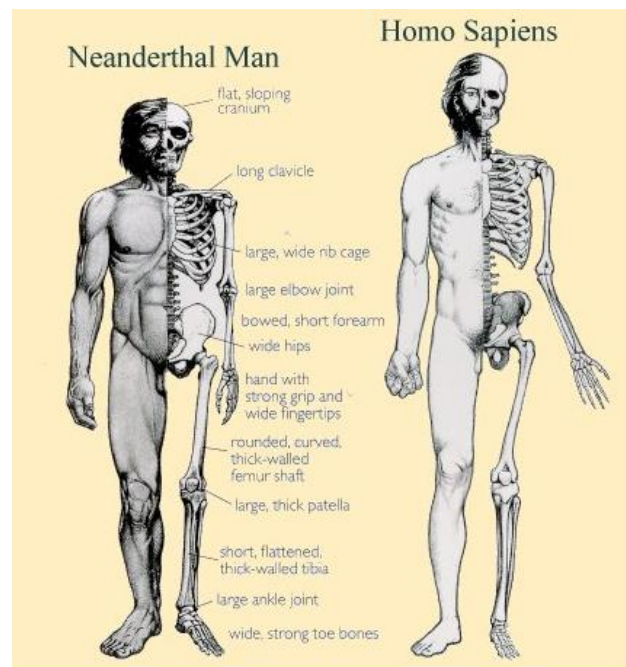


Mammals (pg. 2 of 4)

Class Mammalia

Genus *Homo* – Species *neanderthalensis*

- Extinct species of our Genus
- 0.3 to 0.03 MYA (3000,000 to 30,000 years)
- Extinction in Europe can be related to extreme cold period



Class Mammalia

Genus *Homo* – Species *sapiens*

- Also 5,000 years after Homo sapiens appeared
- Genus Homo is 2.4 MY old



Class Mammalia

Genus *Mammut* (*Mastodon*)

- North and Central America
- Pliocene-Pleistocene (5.3 to 0.1 MYA)
- Extinction by climate change combined with hunters



Mammals (pg. 3 of 4)

Class Mammalia

Genus *Mammuthus* (Mammoth)

- More global than Mastodon
- Also 5 MY, but til 4,500 yrs. ago

Wooly Mammoth: *Mammuthus primigenus*



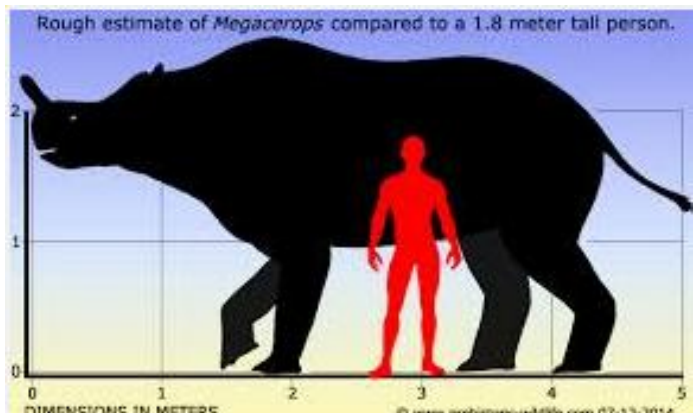
Mammoth

Mastodon

Class Mammalia

Genus *Megacerops*

- Extinct rhinoceras-like browser related to horses
- Large horns, larger than modern rhino, about elephant sized
- 38-34 MY in Late Eocene Epoch
- North American genus

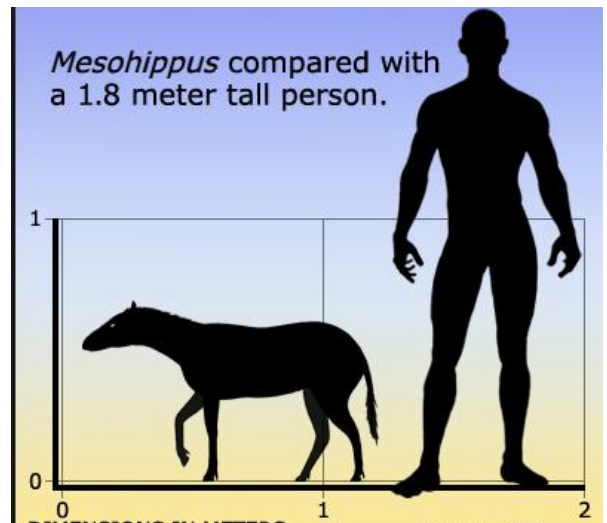


Mammals (pg. 4 of 4)

Class Mammalia

Genus *Meshippus*

- Ancestor to modern horse (*Equus*) -- see #82
- Eocene-Oligocene (30-40 MY)



Class Mammalia

Genus *Smilodon*

- saber-toothed tiger
- N. and S. America
- 2.5 MY until 10,000 years ago
- La Brea Tar pits (look it up!)

