

# EUMANIRAPTORA



**Troodontidae**

Increase in number of teeth;  
Leaf-shaped teeth in some; Reduced arms; Elongate legs; Most have forwards-pointing pubis



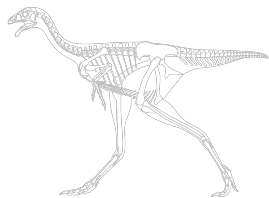
**Dromaeosauridae**

Enlarged prongs in caudal vertebrae; Enlarged sickle claw

**Deinonychosauria**

Sickle claw on extremely retractable pedal digit II

Fusion of the distal tarsals to proximal ends of metatarsals



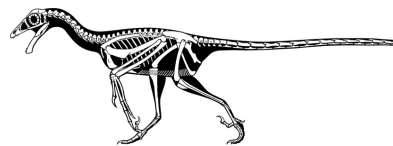
**Oviraptorosauria**

Scapula unfused to coracoid; Humerus longer than scapula; Ulna longer than femur; 25 or fewer caudals

Pennaraptora

## EUMANIRAPTORA

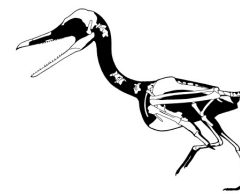
VERY long arms & hands, tail very mobile near base; retractable pedal digit II; distally-placed backwards-facing pedal digit I; backwards-facing pubis; long leg feathers; ?Limited flight?



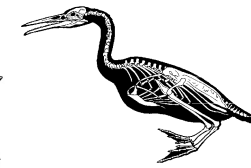
*Jeholornis*



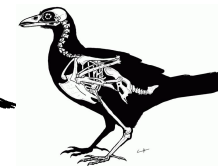
Enantiornithes



Ichthyornithes



**Hesperornithes**



**Aves**

Toothless beak;  
Fused mandibles

Ornithurae

Carinatae

Manual unguals lost;  
Keel sternum; Fused pelves & sacrum

**Euornithes**

Tail fan; Short pygostyle;  
Fused premaxillae; Predentary; Tarsometatarsus



Yanornithiformes

Confuciusornithidae

Toothless beak

**Ornithothoraces**

Carpometacarpus; Alula; Increased sternum size; Separation of scapula & coracoid; Backwards-facing pedal digit I; ?Active powered flight?

Pygostylia



**Archaeopteryx**

Caudal count greatly reduced; Pygostyle; Tibiotarsus

Anchiornithidae

**Avialae**

Naris posterior to premaxillary teeth;  
Fewer than 20 dentary teeth; Mandibular fenestra lost