

Classifications of Living Reptiles:

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Living Reptiles are divided in to following Subclass:

1. Anapsida:

2. Diapsida:

Skull has two temporal vacuities. It includes three living orders.**Order 1.** Rhynchocephalia e.g., Sphenodon (Tuatara)—a living fossil.**Order 2. Squamata It includes two suborders:**(i) Suborder Lacertilia (Sauria) (ii) Suborder Ophidia **Order 3.** Crocodilia

Classification

- Kingdom Animalia
- Phylum Chordata
 - Subphylum Vertebrata
- Class Reptilia
 - There are more than 7,000 living and several extinct species
- Five sub classes- Temporal fossae
 - Anapsida
 - Euryapsida
 - Parapsida
 - Synapsida and
 - Diapsida

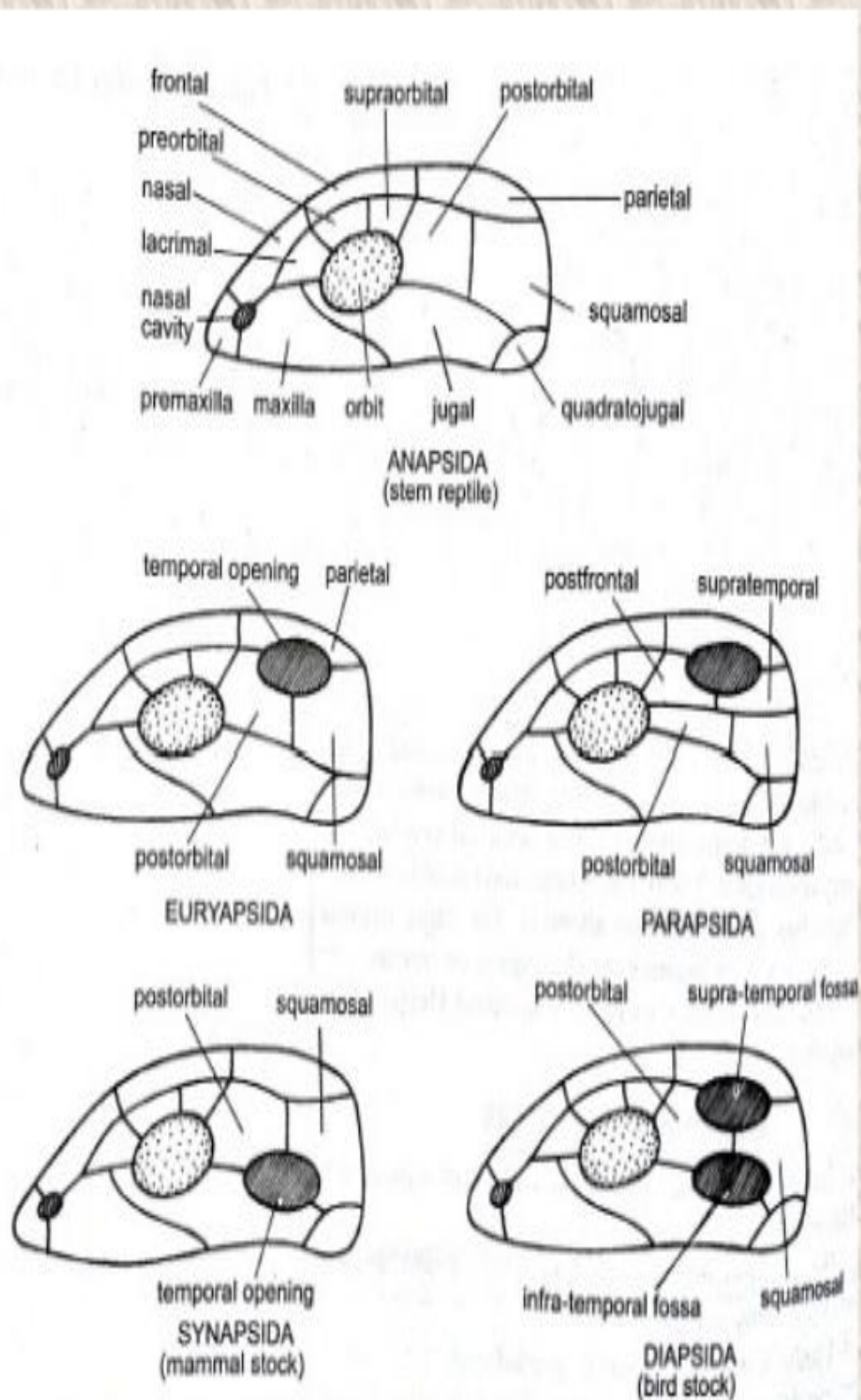
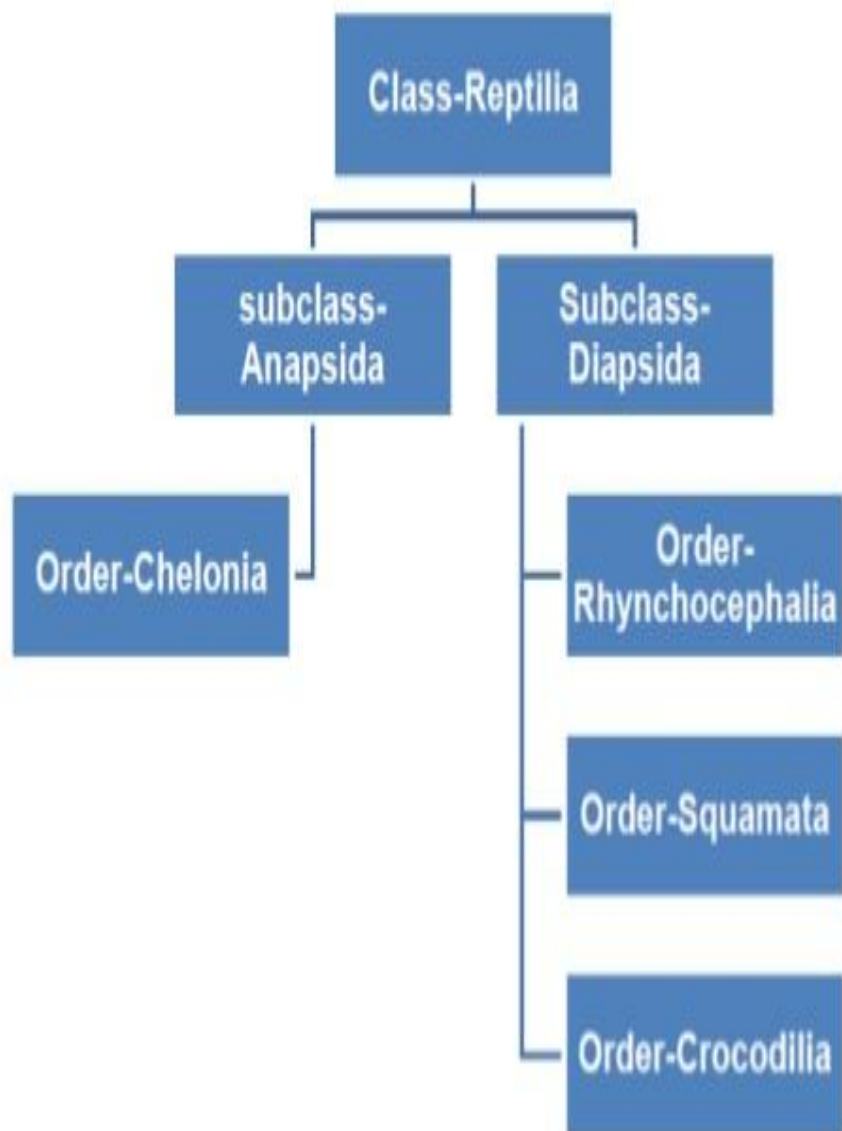


Fig. 24.1. Five types of skulls in lateral view in five subclasses of reptiles.

Classification of only living reptiles



Sub class: Anapsida

- Temporal fossae absent
- Temporal region is completely bony
- Two orders:
 - 1. Cotylosauria
 - 2. Chelonia

Sub- order – 2 Ophidia

- Limbs and griddles absent, vestigial hind limbs and pelvic girdle in boa, python etc.
- Eye lids fixed. Nictitating membranes absent.
- Auditory openings and tympanum lost.
- Maxillae, palatines and pterygoids movable helping in biting mechanism.
- Mouth can be widely separated.
- Sternum, episternum and urinary bladder usually absent.
- Tongue slender, bifid and extensible.
- Ex - Python, Boa, Naja, Bungarus, Vipera etc.

Order: Cotylosauria

- Extinct
- Stem reptiles
- Pelvic girdle plate like
- Resembles Labyrinthodont Amphibians
- Eg: *Seymouria*

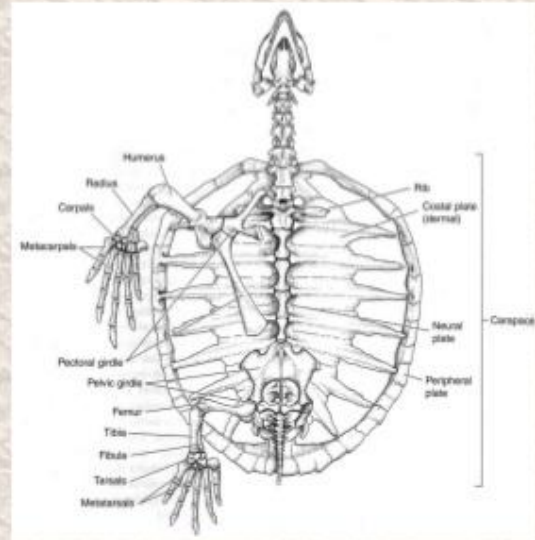
Order: Chelonia/Testudinata

- Turtles , Terrapins and Tortoises
 - Body- short, broad
 - Limbs paddle like with claws
 - Shell consists of fused boney plates
 - Carapace (Dorsal, top)
 - Plastron (Ventral, lower) Head & Tail -retracted into the shell
 - Anapsid skull
 - Jaws- edentate & covered by horny sheath
 - Most species ribs and spine fused to inner surface of carapace
 - Pelvic and Pectoral girdles lie within the ribs
 - Sharp beak instead of teeth



Order: Chelonia

- Ductus Botallii- connects systemic and pulmonary arches
- Males- single penis, longitudinal cloacal aperture
- Variety of habitats, longest life span
- Eg: *Testudo*, *Chelonian mydas*, *Dermochelys*, *Trionyx*



Sub class4: Diapsida

- Skull with two temporal openings on either side separated by the bar of postorbital and squamosal bones.
- This sub- class includes 2 super orders.
- **Super order 1. Lepidosauria(Scaly lizards)**
- **Super order 2. Archosauria(Ruling reptiles)**

Order1: Rhynchocephalia

- Ancient order inhabit few small islands of New Zealand
- Body small, elongated, lizard-like
- Limbs pentadactylous, clawed and burrowing.
- Skin covered by granular scales and a mid-dorsal row of spines.
- Spiny crest that runs down the animal's back



Order1: Rhynchocephalia

- Vertebrae amphicoelous or biconcave.
- Numerous abdominal ribs present.
- Teeth acrodont.
- Parietal foramen-non functional median eye
- Cloacal aperture transverse/
- No copulatory organs in male.
- Tolerate cool temp, burrow during day and hunt at night
- Example - **Sphenodon punctatum** or tuatara lizard

Order2: Squamata

- Lizards and Snakes



Order2: Squamata

- Body small to medium, elongated and advanced.
- Limbs, clawed, absent in snakes and few lizards.
- Body covered by horny epidermal scales, shields and spines.
- Vertebrae procoelous.
- Ribs single headed.
- Teeth acrodent or pleurodent.
- Upper jaw is loosely joined to the skull
- Paired Jacobson's organ

Order2: Squamata

- Cloacal aperture is transverse
- Male with eversible double copulatory organs (hemi-penes)
- This order includes two sub-orders.
- Sub order – 1 Lacertilia
- Sub order – 2 Ophidia

Suborder – 1 – Lacertilia

- Commonly known as lizards.
- Limbs and girdles usually well-developed.
- Eyelids movable. Nictitating membranes present.
- Ear openings and tympanum present.
- Maxillae, palatines and pterygoids fixed.
- Mouth non-expansile.
- Sternum, episternum and urinary bladder usually present.
- Tongue rarely notched or extensile.
- Eg: ***Hemidactylus, Calotes, Uromastix Varanus, Chamaeleon. Draco.***

Sub- order – 2 Ophidia

- Limbs and girdles absent, vestigial hind limbs and pelvic girdle in boa, python etc.
- Eye lids fixed. Nictitating membranes absent.
- Auditory openings and tympanum lost.
- Maxillae, palatines and pterygoids movable helping in biting mechanism.
- Mouth can be widely separated.
- Sternum, episternum and urinary bladder usually absent.
- Tongue slender, bifid and extensible.
- Ex - Python, Boa, Naja, Bungarus, Vipera etc.

Order 3 – Crocodilia (Loricata)

- Body large-sized, carnivorous and aquatic reptiles.
- Limbs short but powerful, clawed and webbed.
- Tail long, strong & laterally compressed.
- Body surface-horny epidermal scales/bony plates/scutes.
- Teeth thecodont, numerous.
- Abdominal ribs present (gastralia).
- Cloacal aperture-longitudinal
- Heart completely 4 chambered.
- Male with a median, erectile, grooved penis.
- Ex – Crocodylus, Alligator, Gavialis etc.