



## Reptilia

- **Amniota**

- Eggs which survive on land and nourish embryos with membranes

- **Two major lineages**

- Sauropsida
  - Synapsida
  - Diverged by Carboniferous or earlier

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- **Sauropsida**

- Birds, dinosaurs, modern reptiles and Mesozoic reptiles

- **Two groups:**

- Parareptilia
  - Eureptilia

- **Synapsids**

- Monophyletic
  - **Therapsids**, modern mammals and extinct forms

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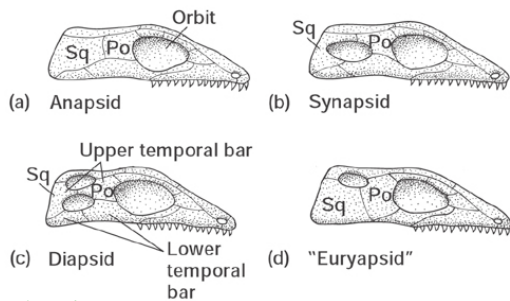
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**Amniote skull types. These used to be used in classification, but no longer. Now, they are functional types only.**

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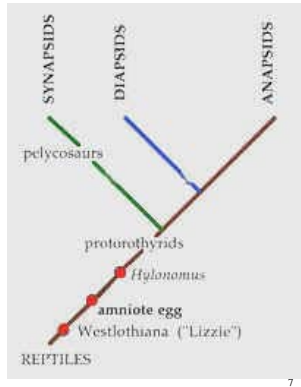
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Old classification scheme, based on the numbers and position of skull openings.




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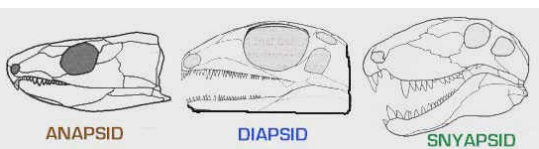
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- Traditional means of dividing groups by skull opening pattern
- No longer used phylogenetically

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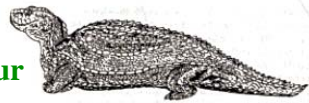
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• **Stem amniotes, diadectomorphs**

- Late Carboniferous
- Related to Seymouriomorphs and amphibia
- Perhaps belong with anthracosaurs and other late non-amniotes
- Also called Cotylosauria

Cotylosaur




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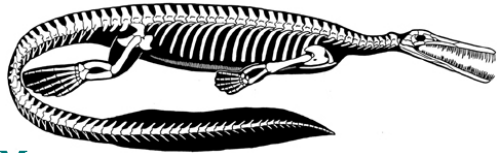
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**•Mesosaurs**

- Specialized aquatic forms
- Not closely related to other aquatic sauropsida
- Permian forms
- Skulls lack fenestrae
- Long snouts and thin, sharp teeth indicate feeding habits

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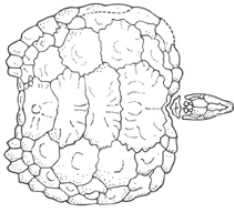
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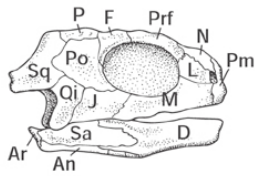
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**Parareptilia**



(a) *Proganochelys*



(b)

**Testudines and extinct groups such as parieosaurs**

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- Ear drum supported by squamosal bone and retroarticular process
- Unique foot-ankle articulation
- **Testudines** already had carapaces and plastrons
  - Appeared in the Triassic
  - Two modern orders that differ in neck retraction mechanisms
  - Cryptodire – vertical folding of neck
  - Pleurodire – side-folding neck (South American forms)

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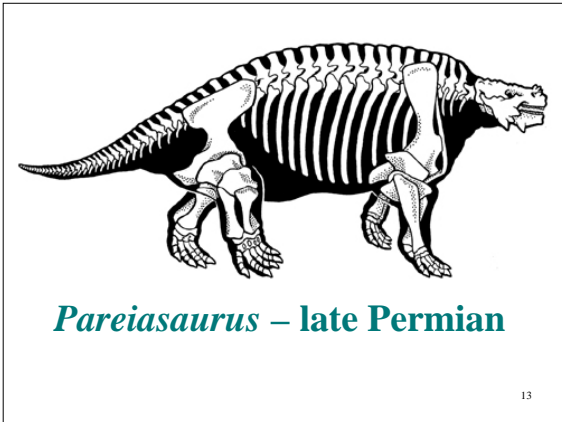
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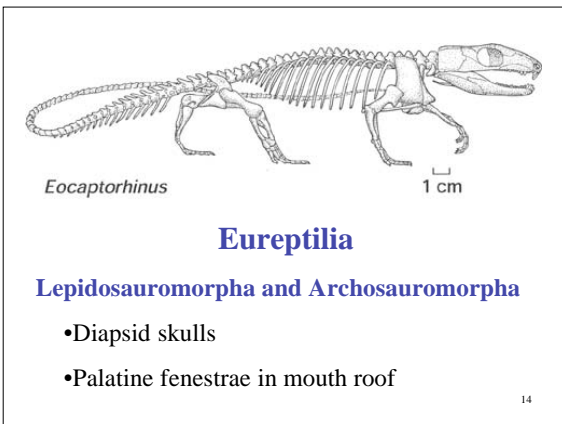
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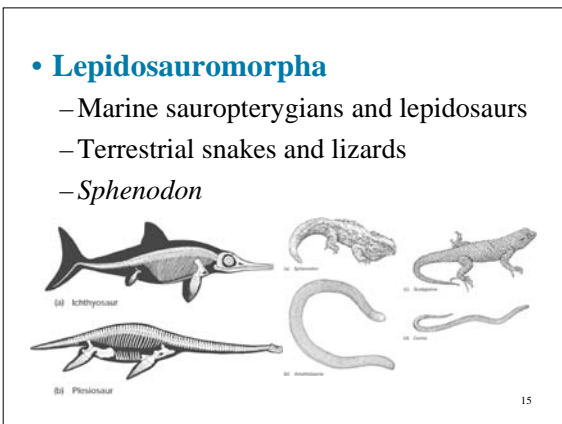
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**Lepidosaurs** that gave rise to modern forms are the **Eosuchians**

- Many have reduced temporal bars and therefore have increased jaw mobility

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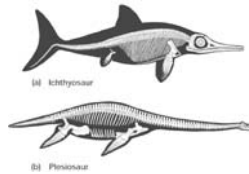
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### Archosauromorpha

- **Dinosaurs and birds**
- **Ichthyopterygia – ichthyosaurs**

- Large
- Marine
- Convergent with other marine forms
- Porpoise-like bodies but tail went side to side
- Sleek shaped bodies
- Predators



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- **Sauropterygia** – Mesozoic aquatic diapsids
  - Triassic Nothosaurs
  - Jurassic and Cretaceous Plesiosaurs

- **Anapsids-**

- Contains Captorhinids that gave rise to later groups
- Similar to modern reptiles
- Well-ossified skeletons
- Small teeth probably ate insects –TASTY!!

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- No temporal openings
- Appeared in Carboniferous
- Extinct at end of Triassic
- Left descendants

- **Archosauromorpha**

- Crocodylians
- Pterosaurs
- Dinosaurs

- Often became bipedal

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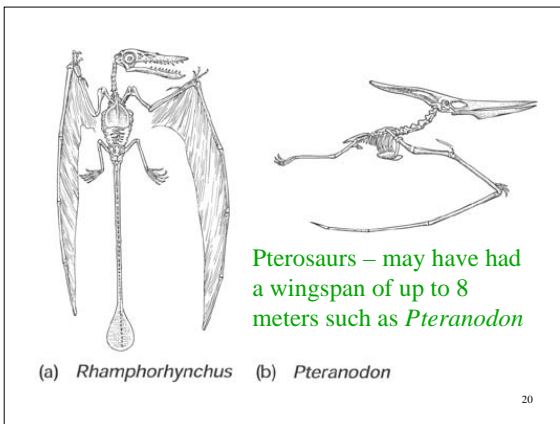
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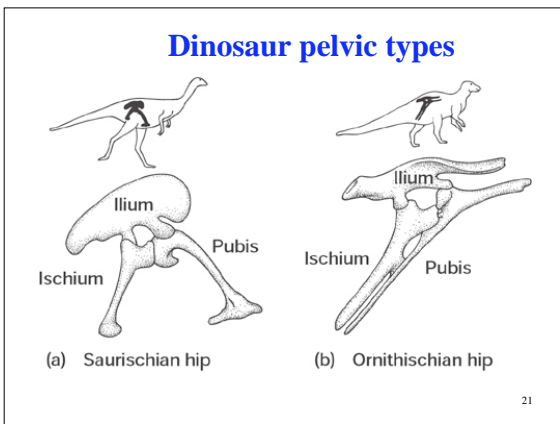
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