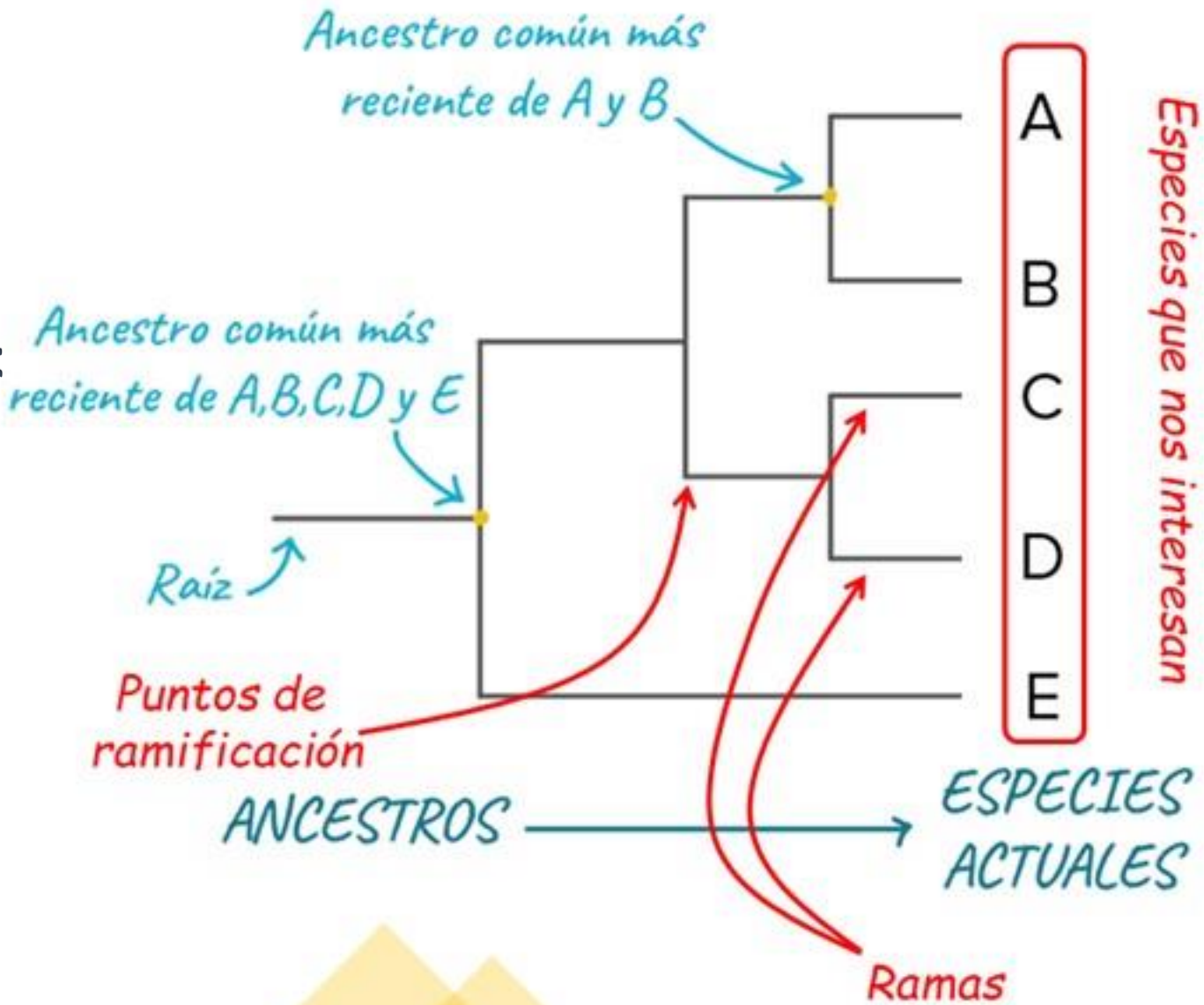


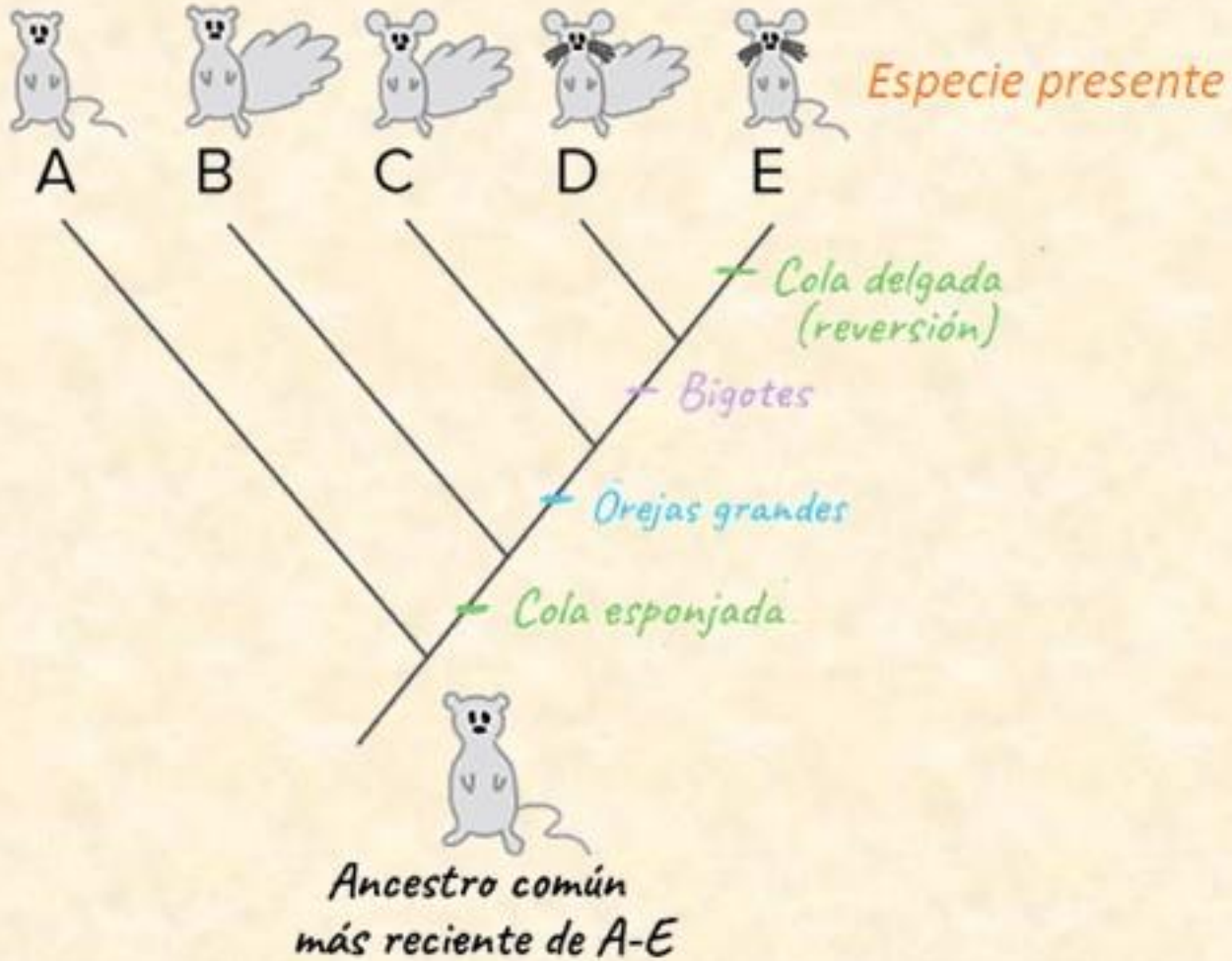


Filogenia de Vertebrados

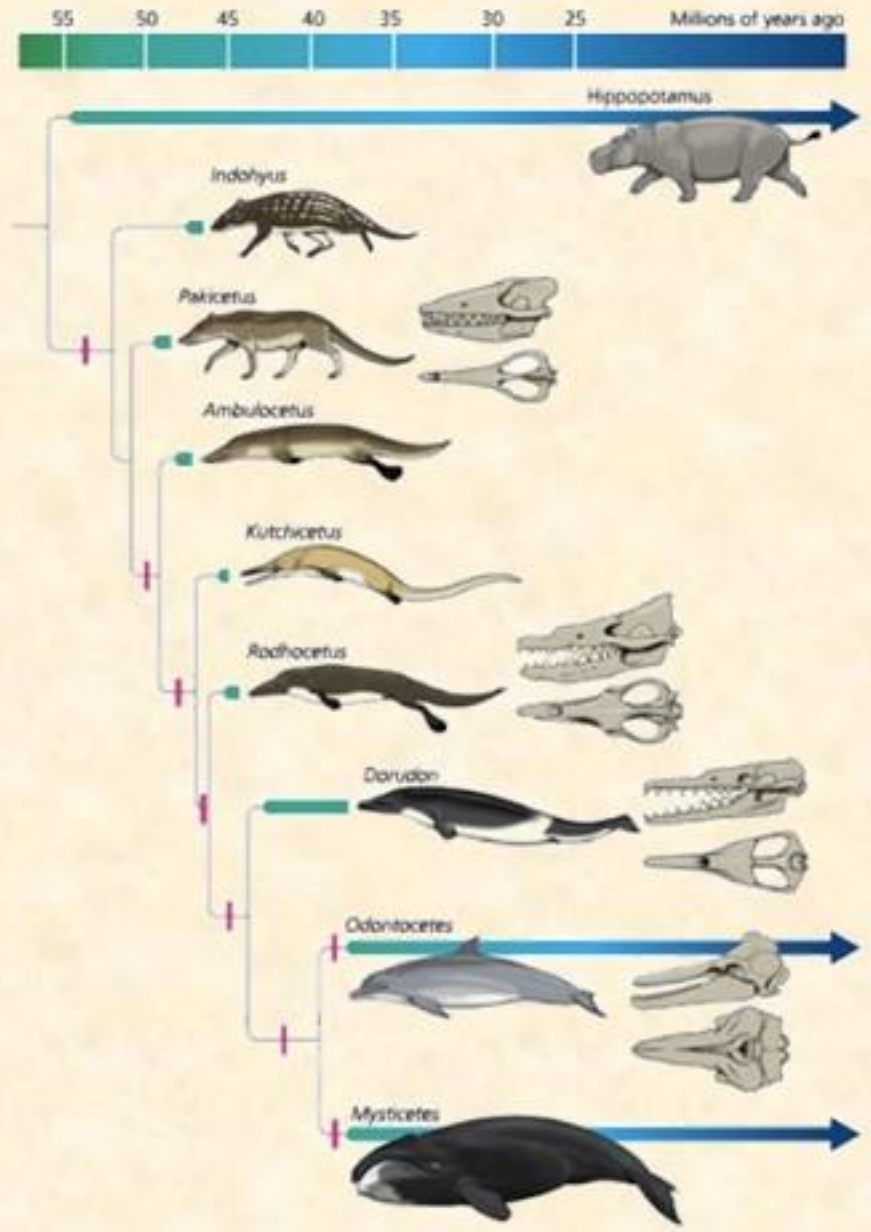
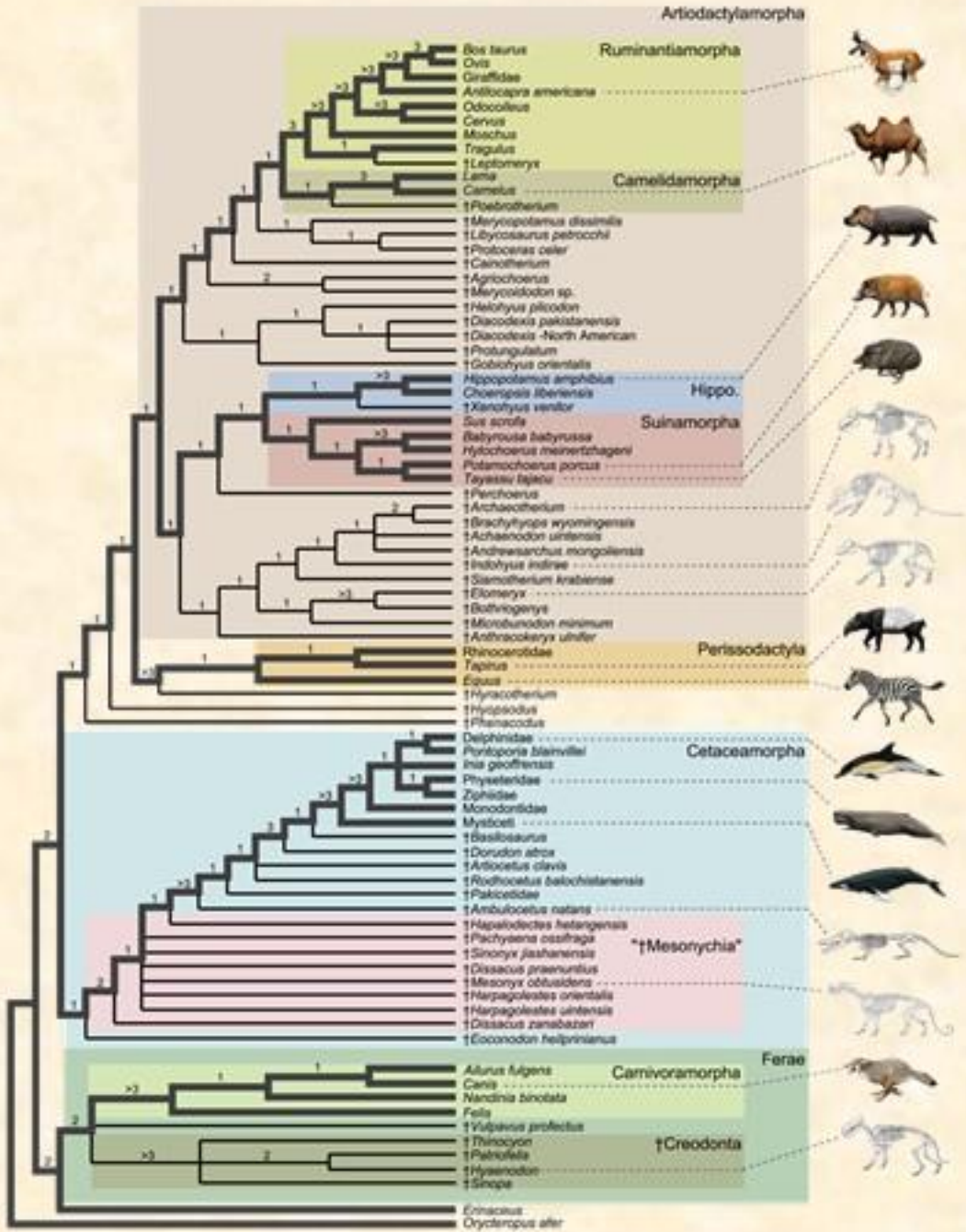


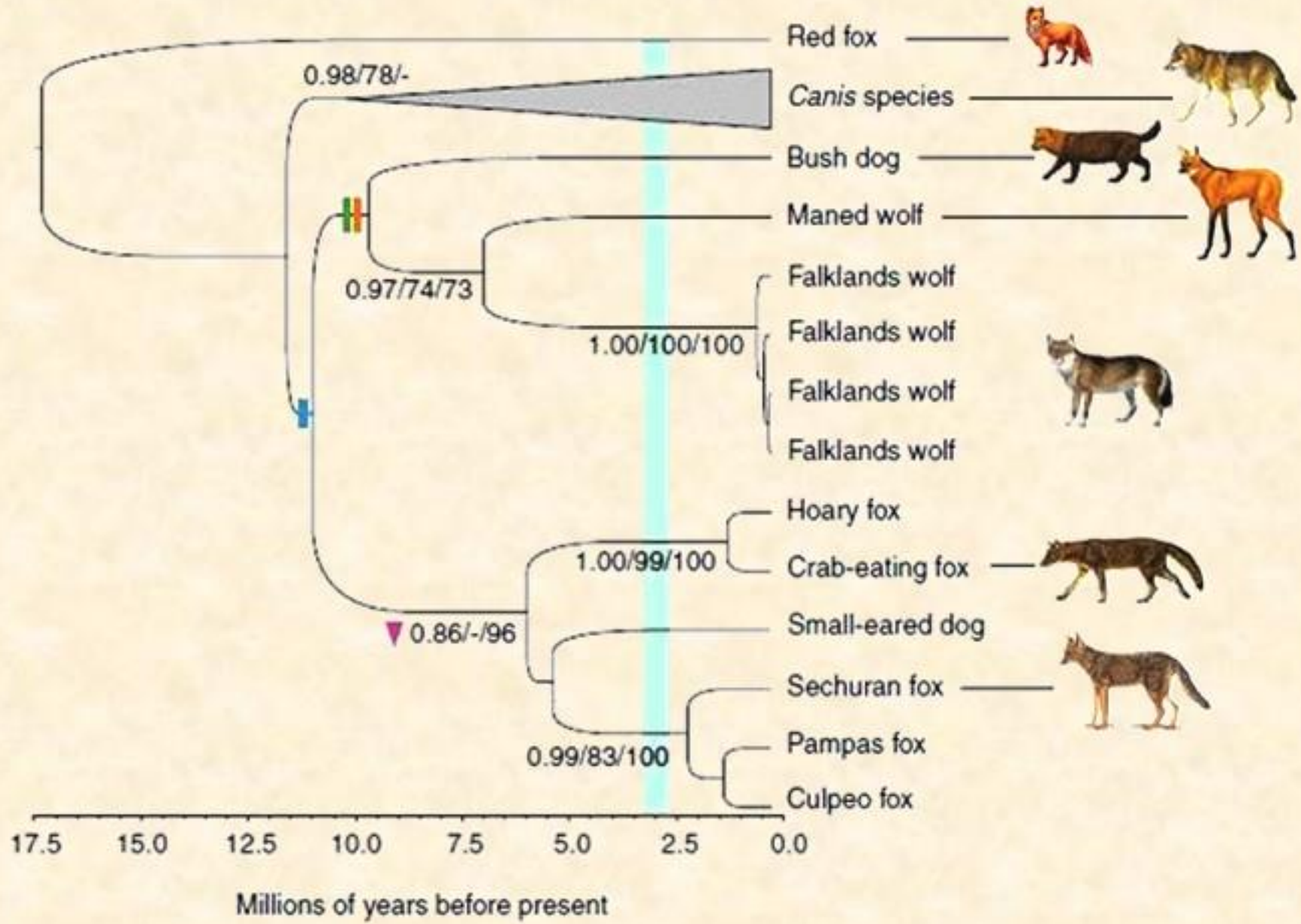
La filogenia es la relación de parentesco entre especies o taxones en general

La idea de **filogenia** se emplea en el contexto de la **biología** para aludir al **origen y la evolución** de las especies. El concepto también puede hacer referencia a la rama de esta ciencia que se centra en los vínculos de **parentesco** que existen entre los diversos conjuntos de **seres vivos**.



Estos datos permiten crear los **árboles filogenéticos**, que detallan las **relaciones evolutivas** entre aquellas especies que tienen un antepasado en común. Los **arboles filogenéticos**, a su vez, permiten desarrollar la clasificación filogenética que establece la **cercanía** evolutiva entre las especies.





Escalas de tiempo Geológico

| ERA | PERÍODO | ÉPOCA | EDAD ABSOLUTA millones de años |
|------------------------|-------------|-------------|--------------------------------|
| CENOZOICA | Cuaternario | Holoceno | 0,01 |
| | | Pleistoceno | 1,8 |
| | Terciario | Plioceno | 5,0 |
| | | Mioceno | 22,5 |
| | | Oligoceno | 37 |
| | | Eoceno | 55 |
| | | Paleoceno | 65 |
| | | | |
| MESOZOICA (Secundaria) | Cretácico | 141 | |
| | Jurásico | 195 | |
| | Triásico | 230 | |
| PALEOZOICA (Primaria) | Pérmico | 280 | |
| | Carbonífero | 345 | |
| | Devónico | 395 | |
| | Silúrico | 435 | |
| | Ordovícico | 500 | |
| | Cámbrico | 570 | |
| | | | 570 |
| PRECÁMBRICO | | 4 600 | |

Ordovícico

Silúrico



Carbonífero



Pérmico

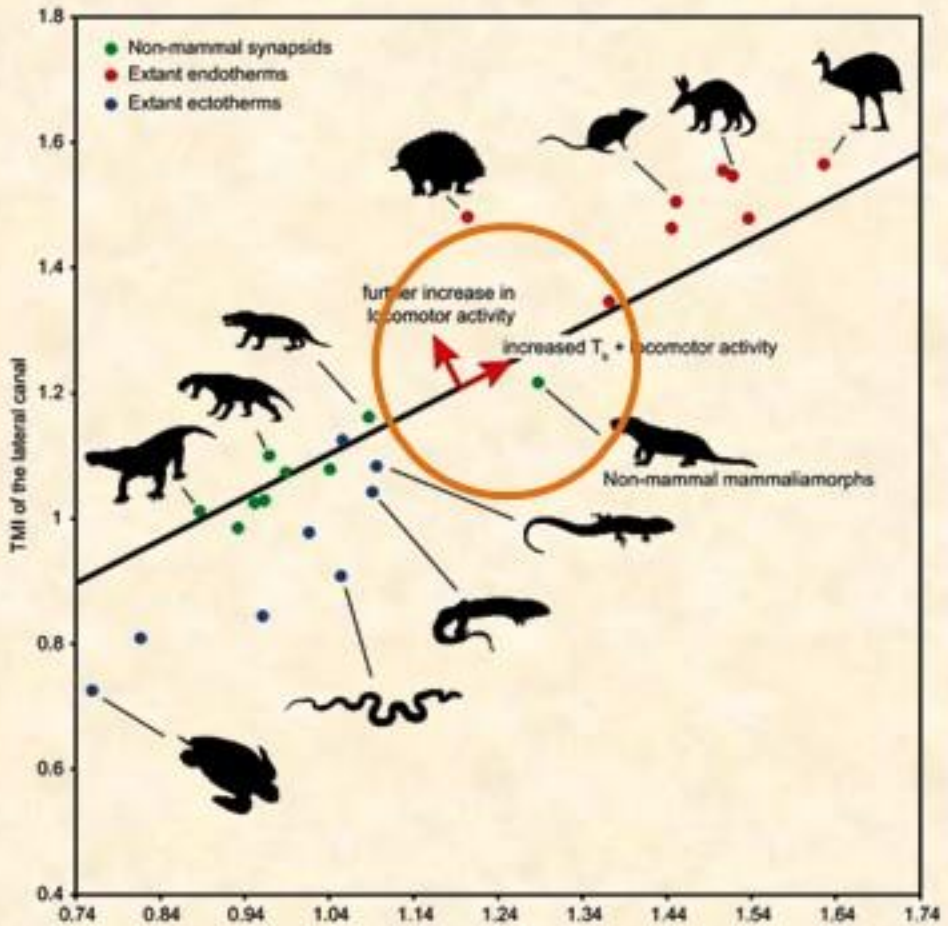


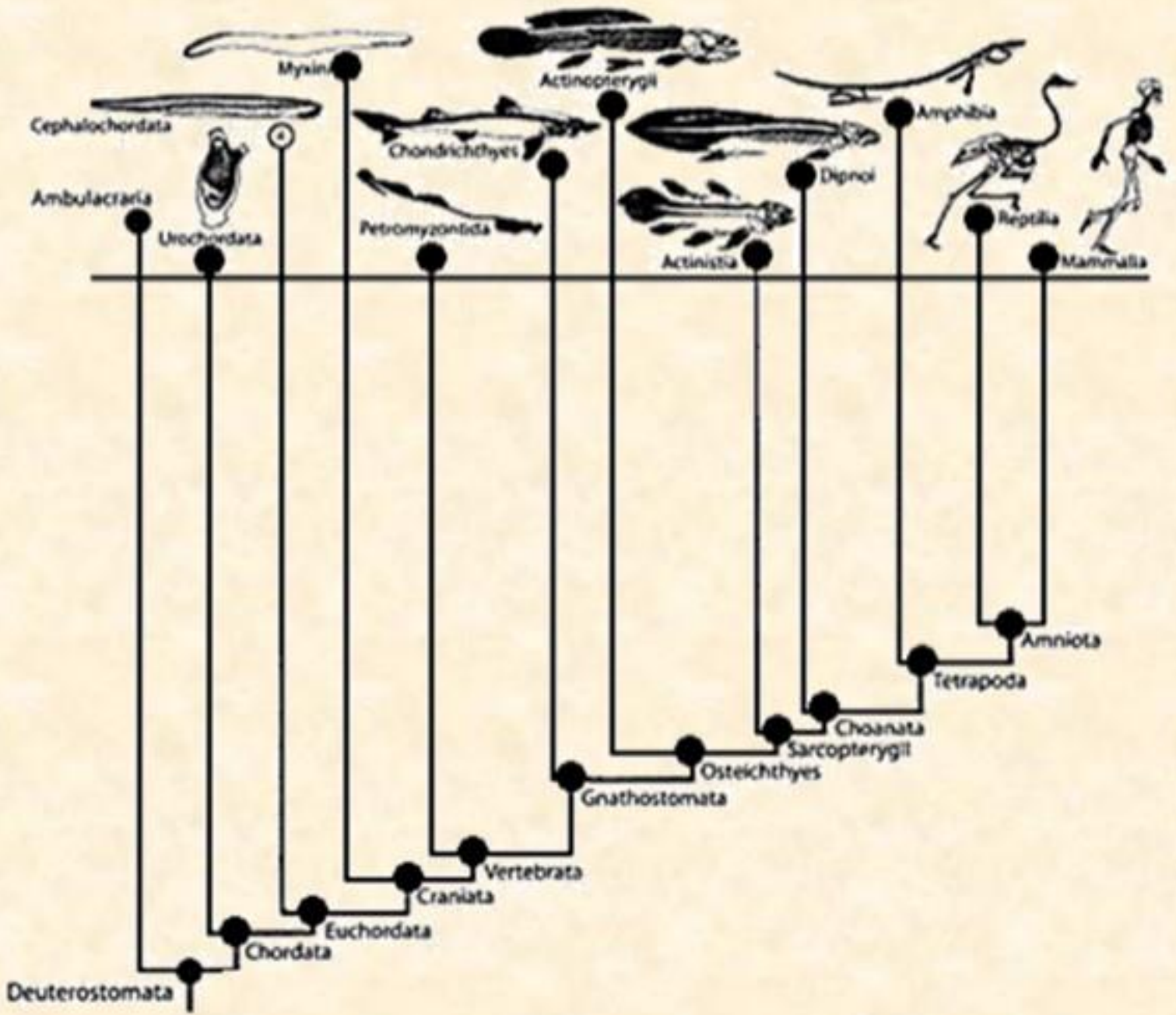
Triásico

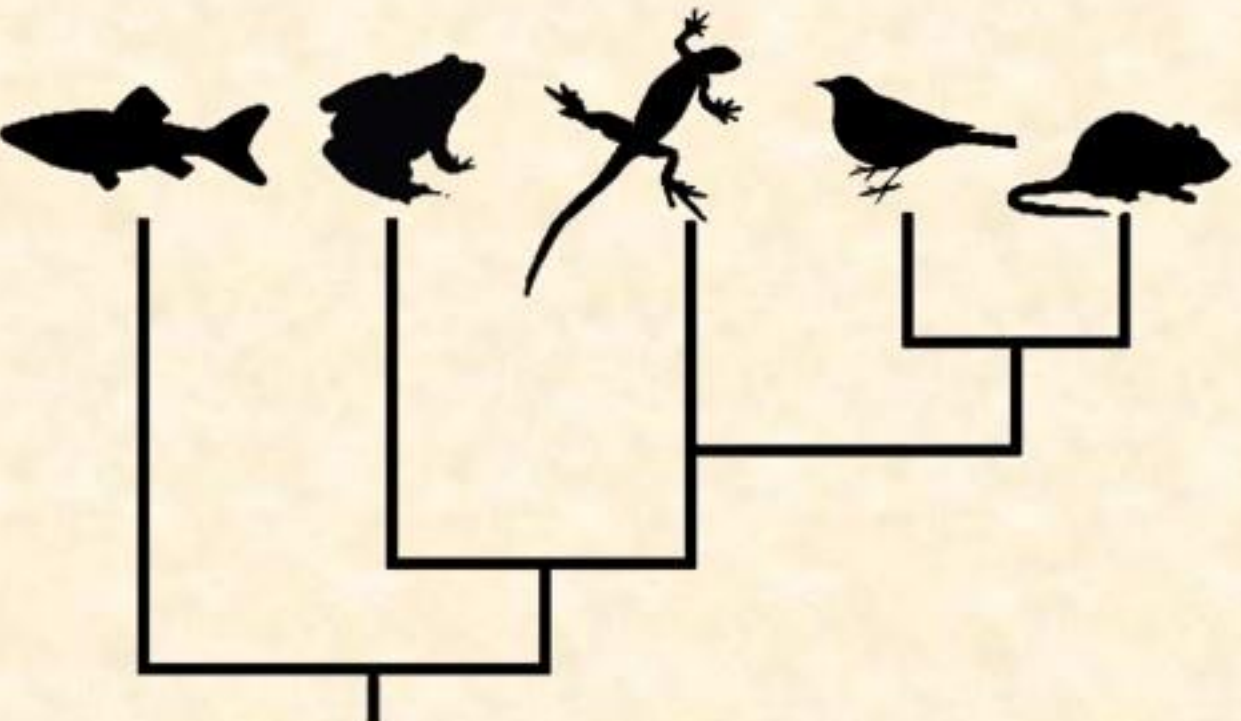
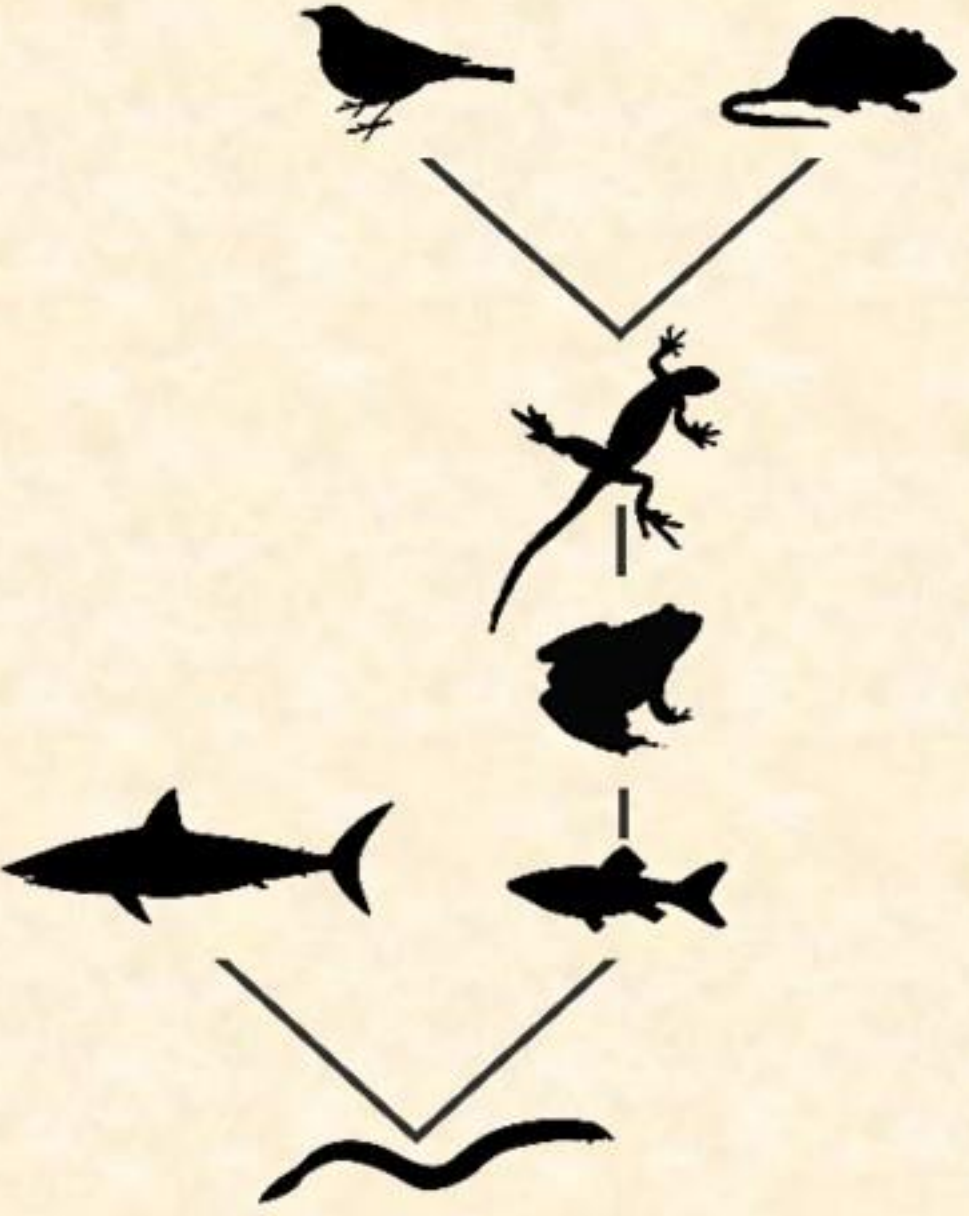


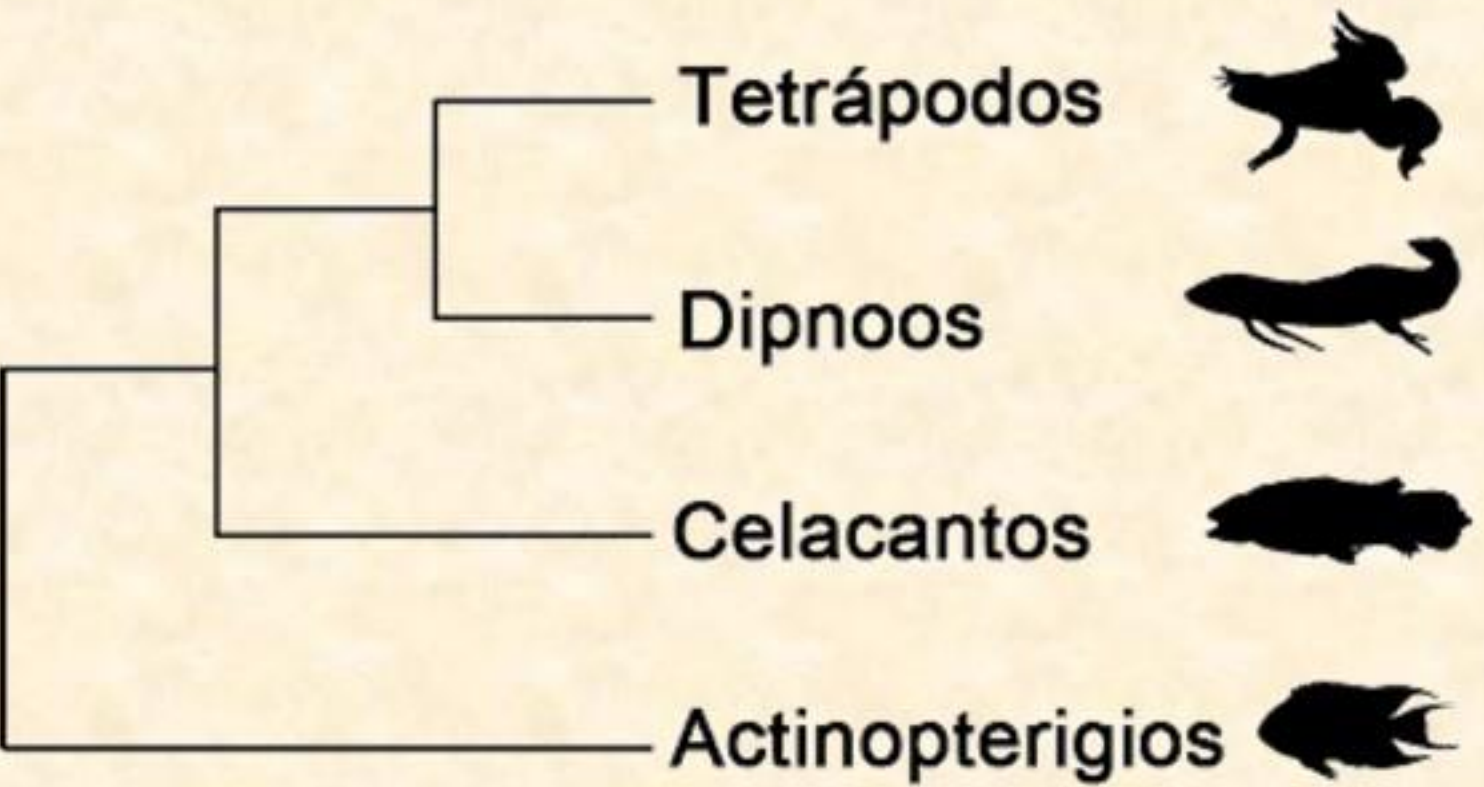
Jurásico













Super Class Agnatos

Class Ostracodermi

- Orden Osteostraci
- Orden Heterostraci
- Orden Anaspida

Class Cyclostomata

Super Class Gnathomata

Class Placodermos

- Orden Arthrodira
- Orden Phyllolepidia
- Orden Antiarchi

Class Chondrichthyes

- Subclase Elasmobranchii
 - Orden Selachii
 - Orden Batoidea
- Subclase Holocephali
 - Orden Chimaeriformes

Class Osteichthyes

- Subclase Actinopterygii
 - Superorden Chondrostei
 - Superorden Neopterygii
- Subclase Sarcopterygii - Crosopterygii

Super Class Agnatos

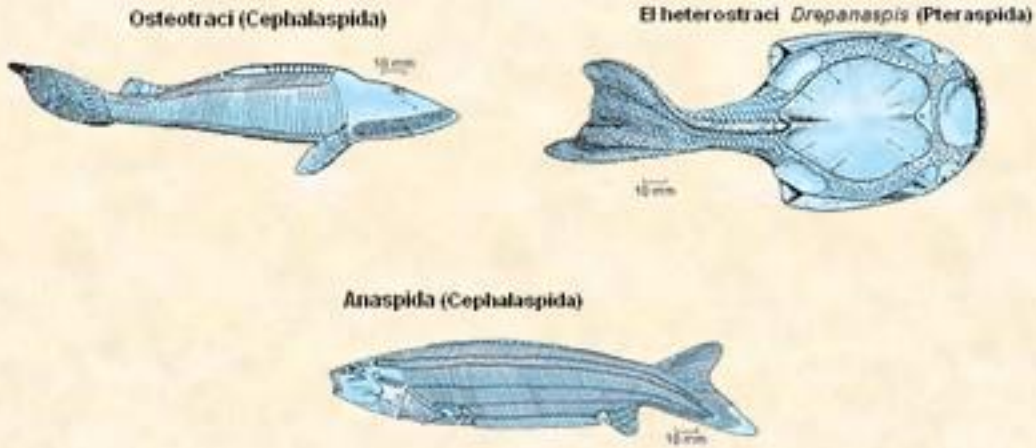
Clase Ostracodermi

Orden Osteostraci

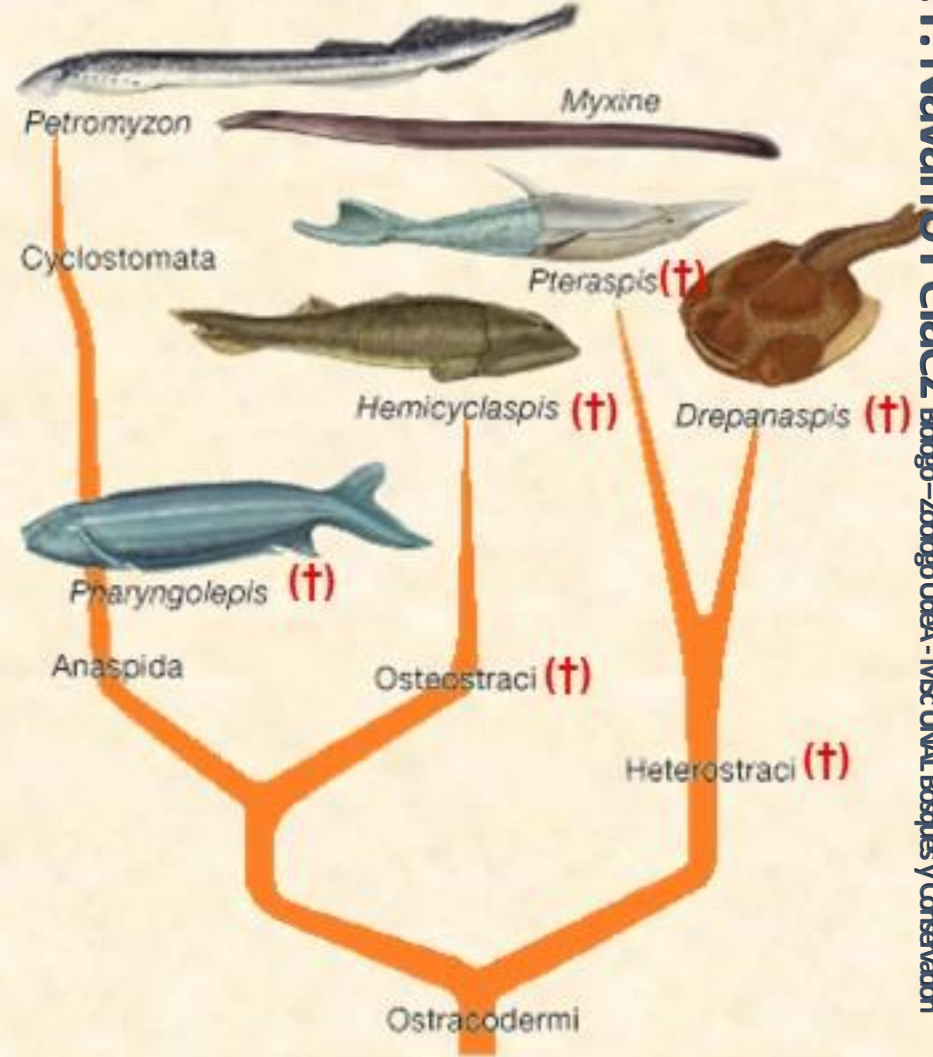
Orden Heterostraci

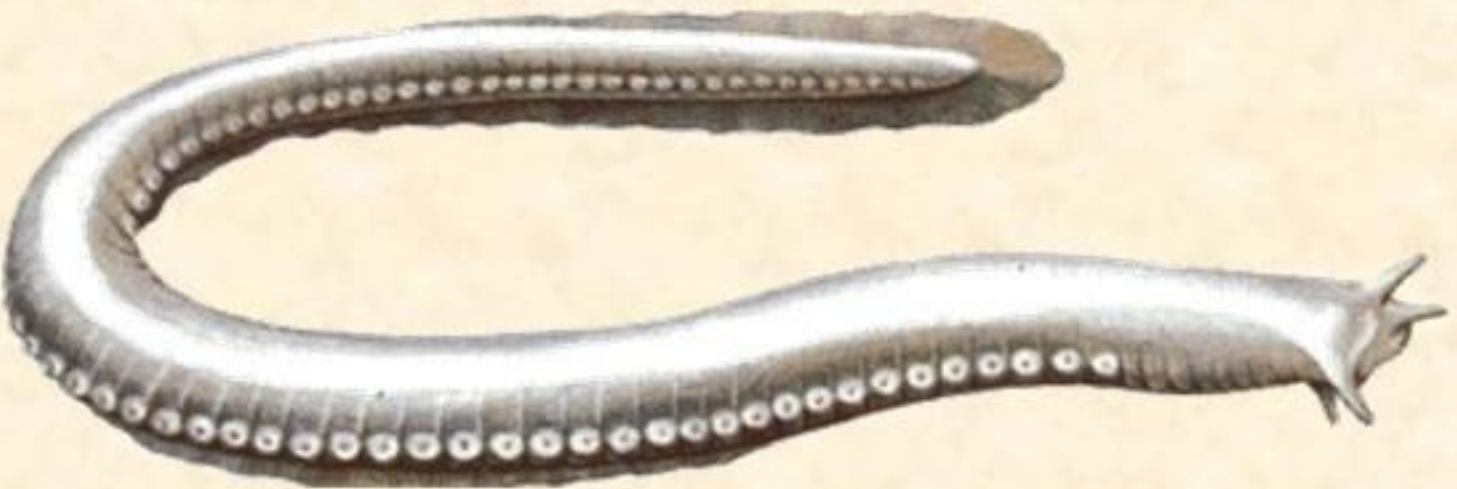
Orden Anaspida

Clase Cyclostomata



| | |
|-----------------------------------|------------|
| past 10,000 years | Recent |
| 359,000,000-416,000,000 years ago | Devonian |
| 416,000,000-444,000,000 years ago | Silurian |
| 444,000,000-488,000,000 years ago | Ordovician |





Mixines



Lampreas

Super Class Gnathomata

Clase Placodermos (†)

Orden Arthrodira

Orden Phyllolepida

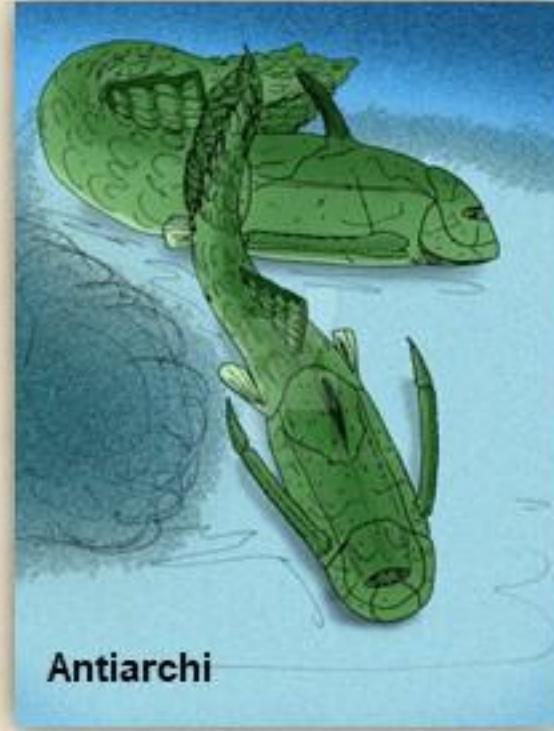
Orden Antiarchi

Clase Chondrichthyes



Arthrodira

Dunkleosteus (†)

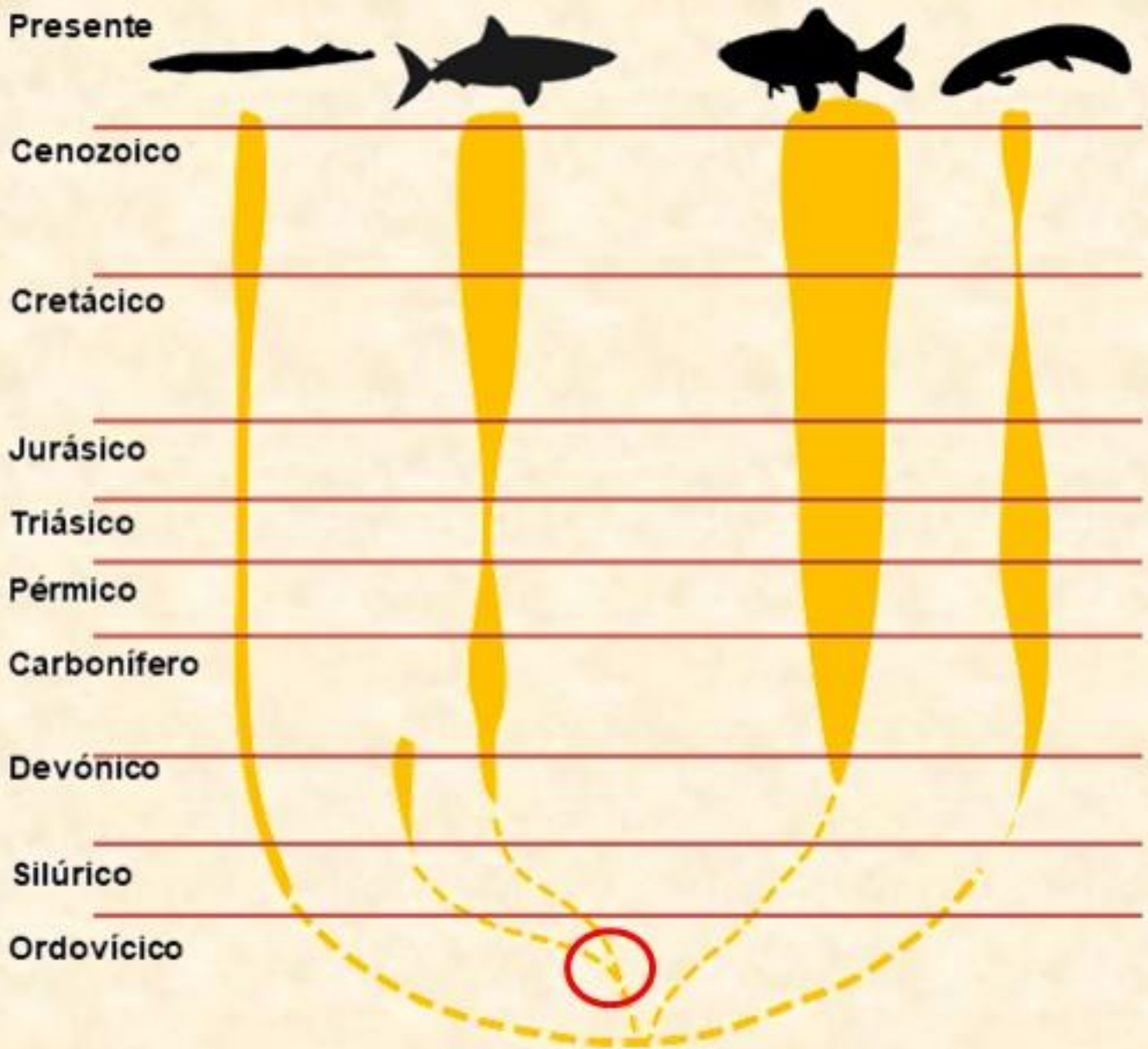


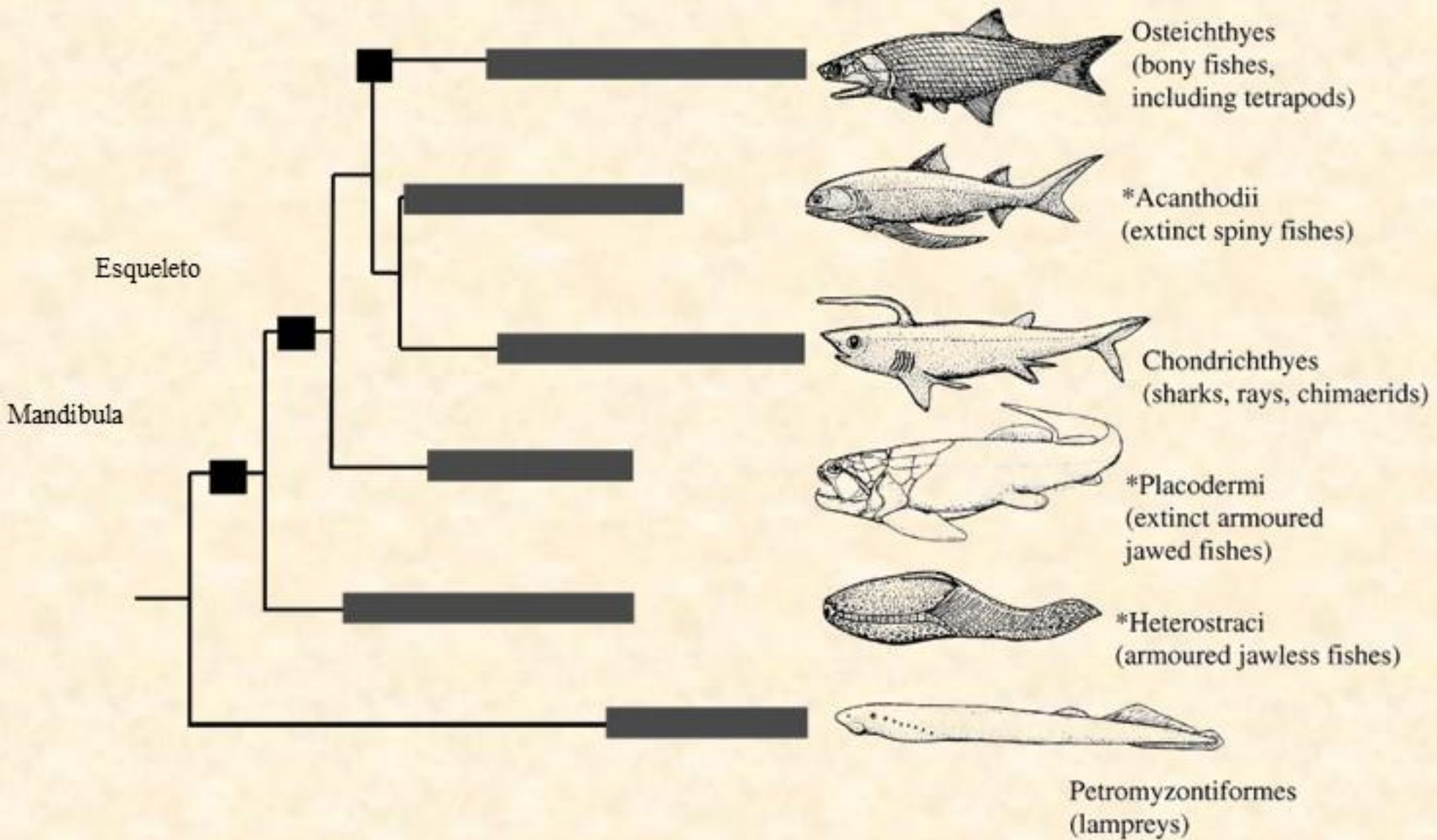
Antiarchi

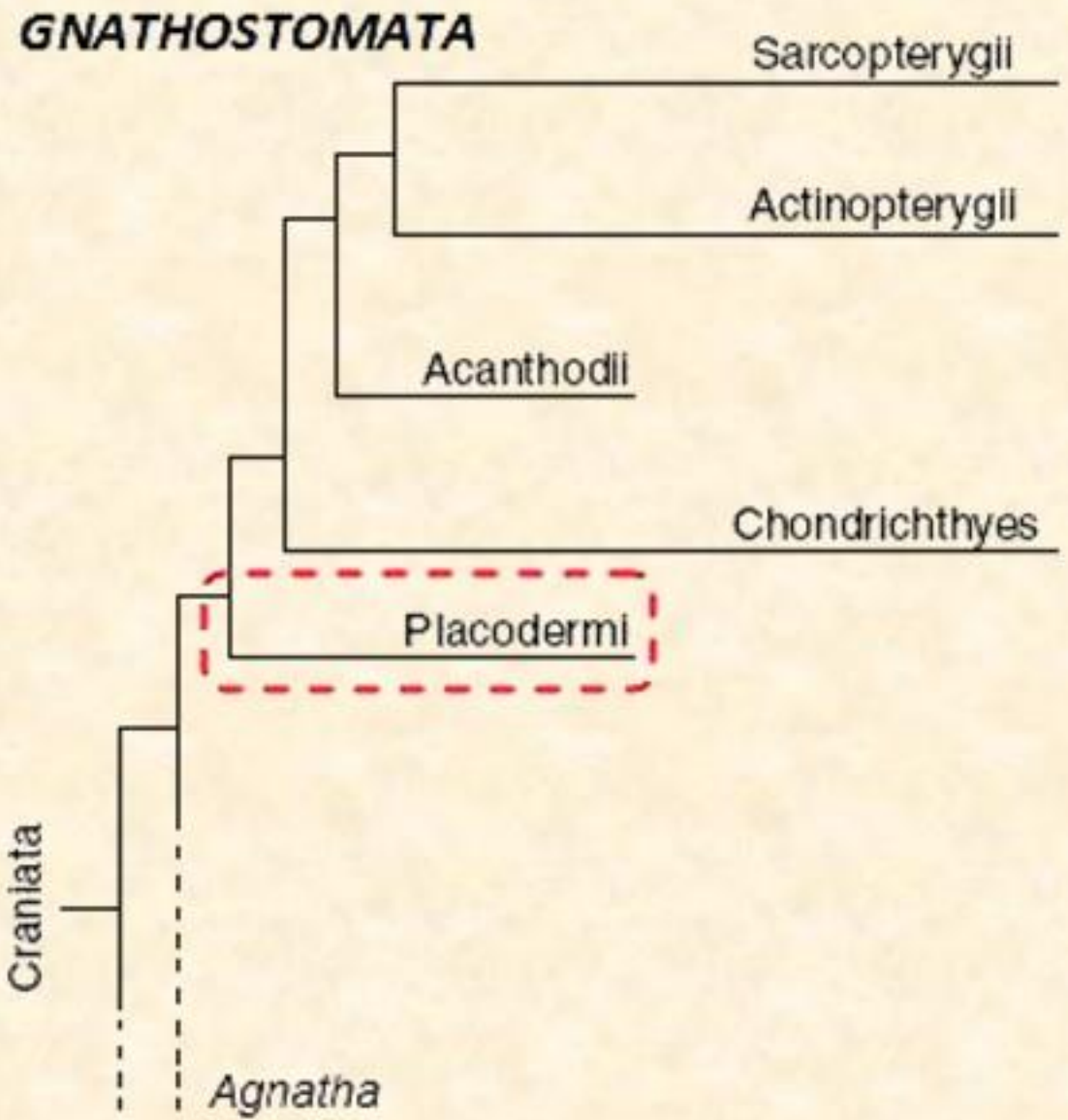


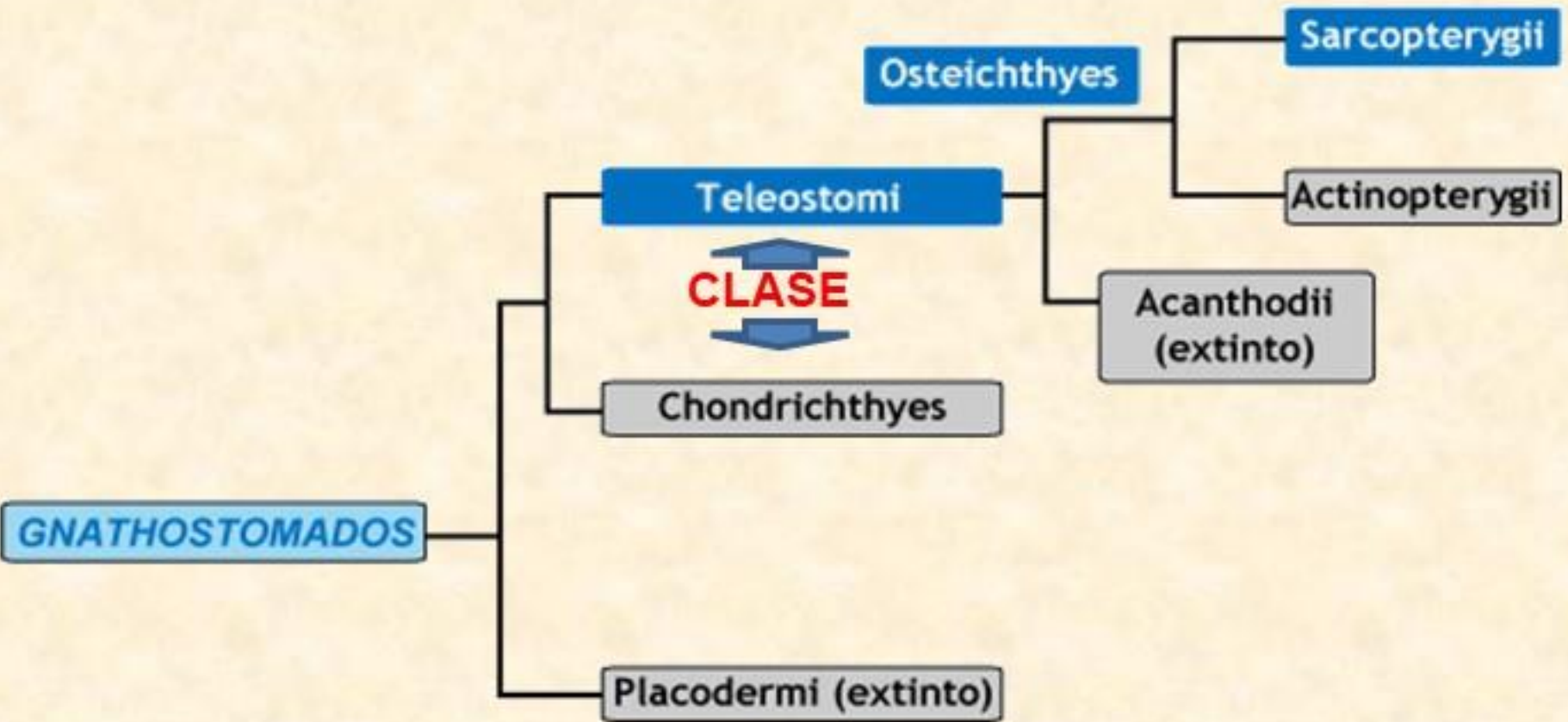
Phyllolepida

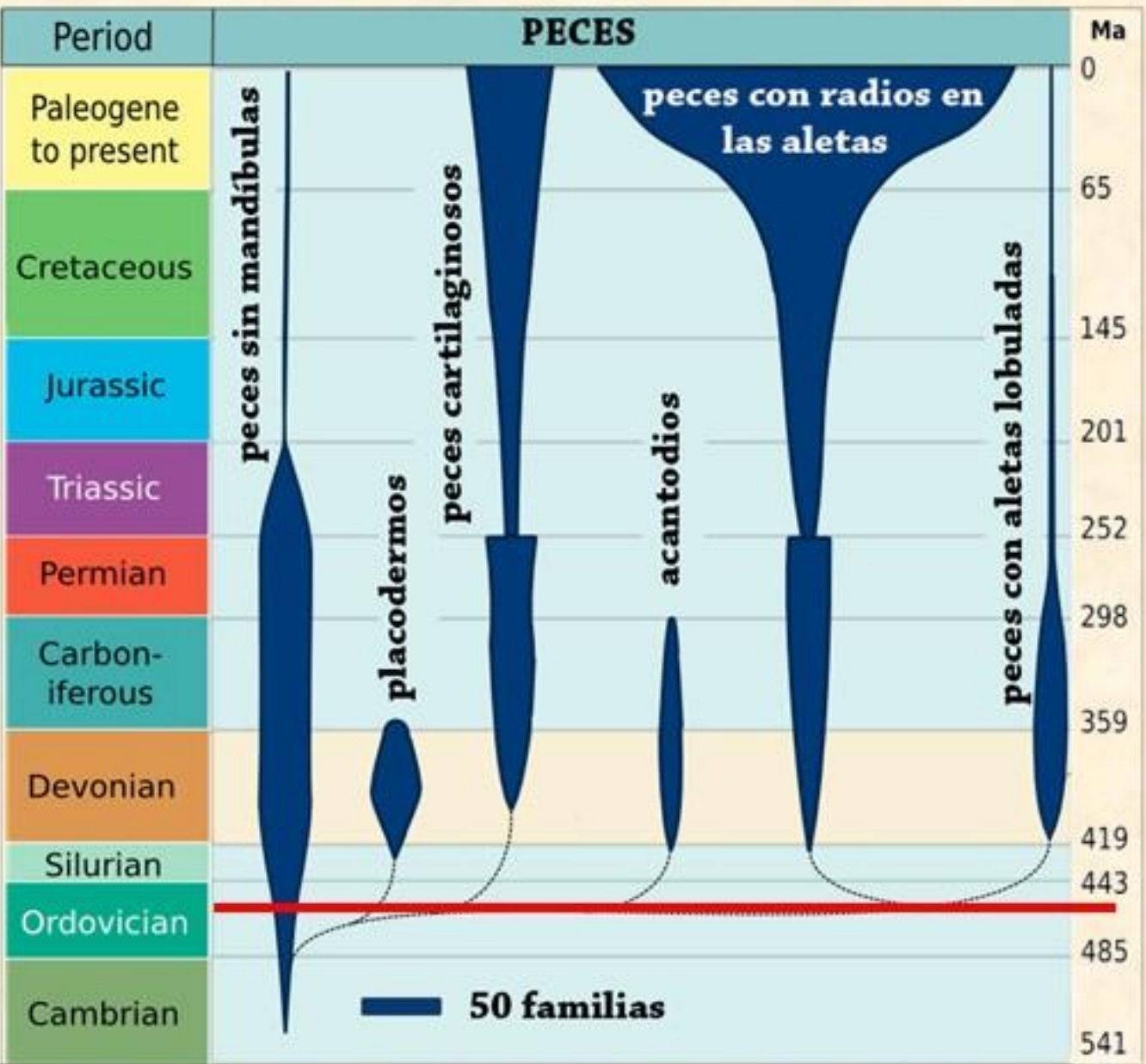
Arthrodiros, cuyo nombre significa "cuello articulado"
Phyllolepida, "escama hoja"
Antiarchi, "ano opuesto"

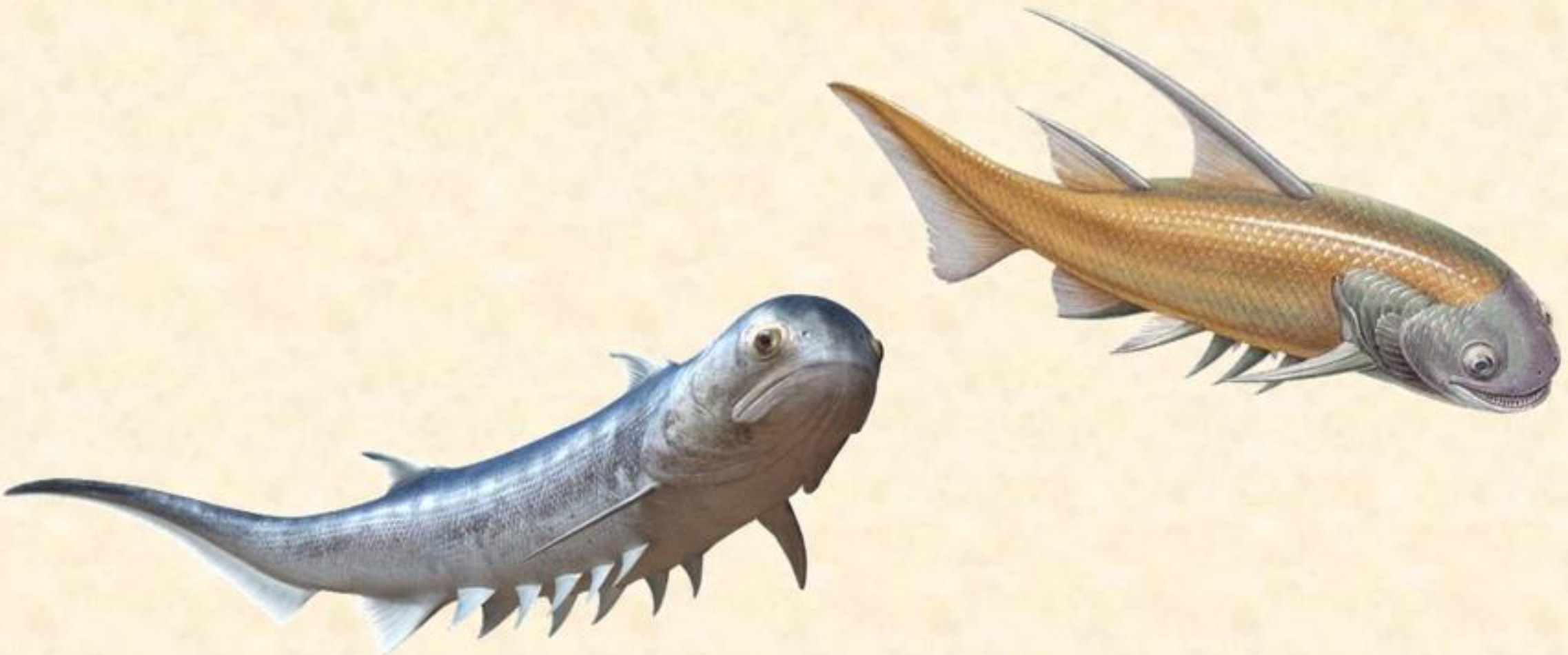




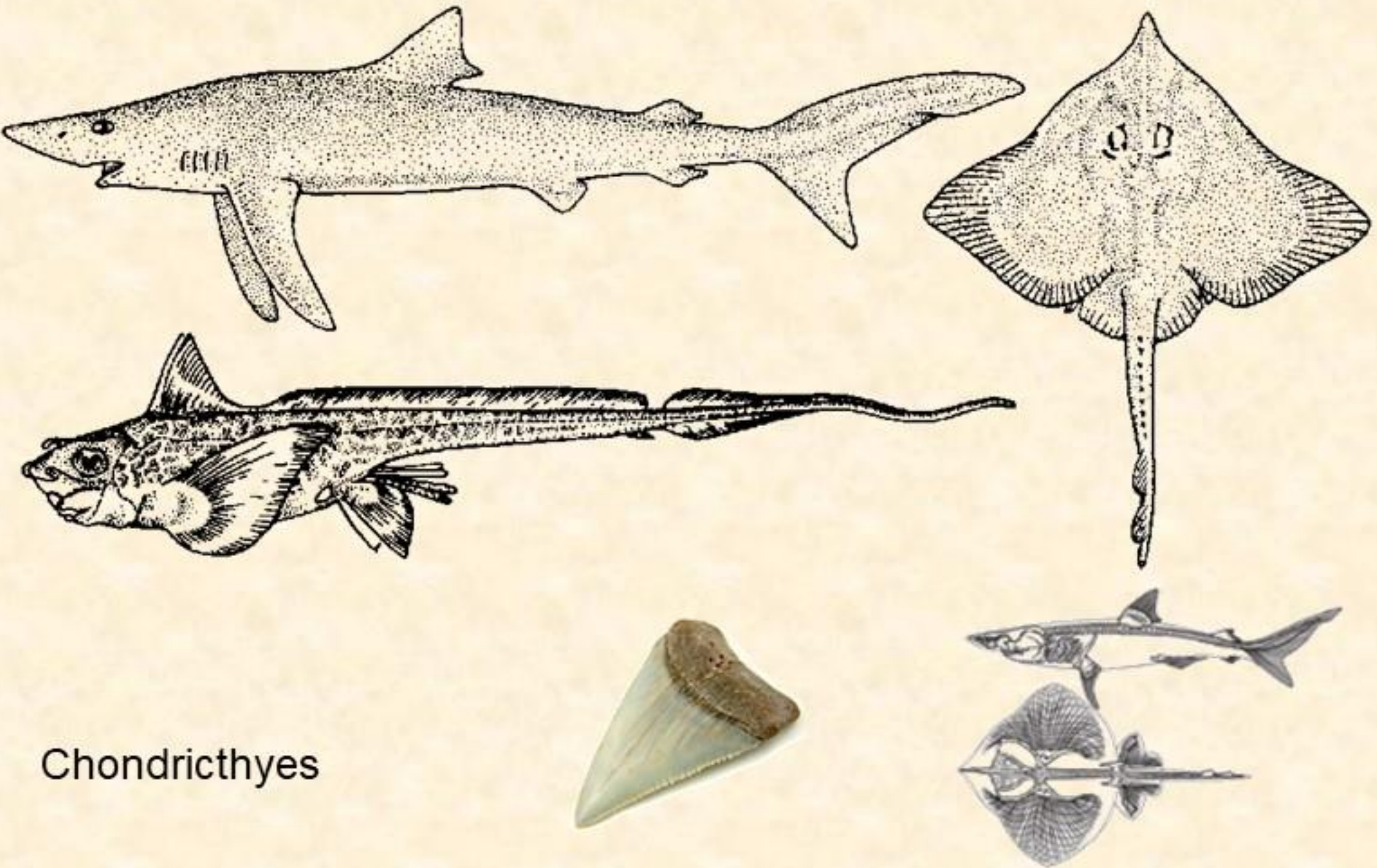




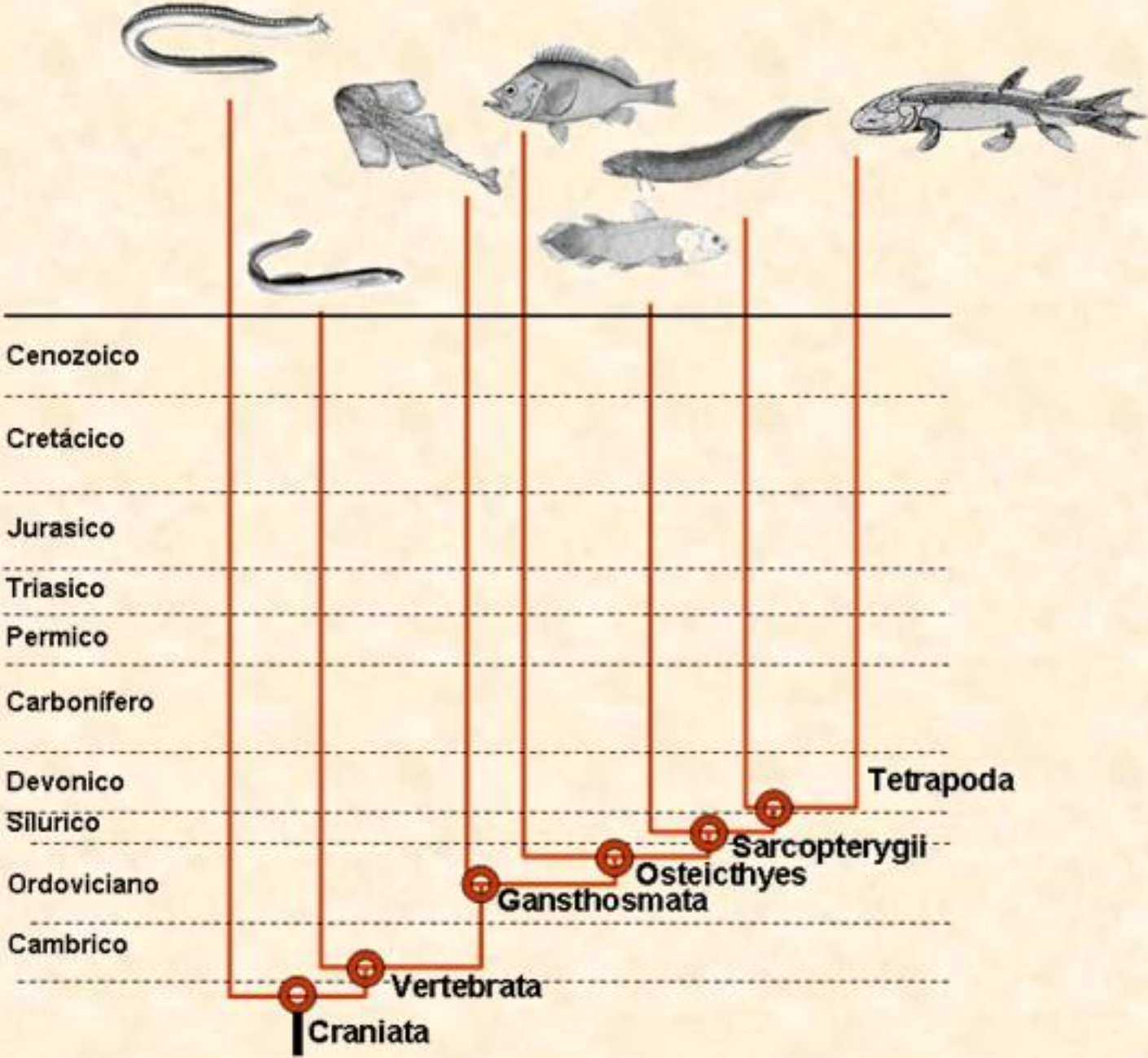




Acanthodii “tiburones espinosos”



Chondrichthyes

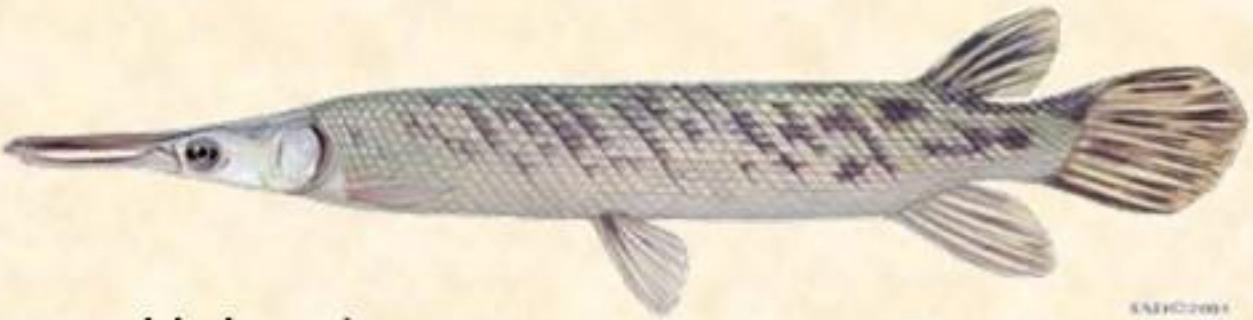




Actinoterygii



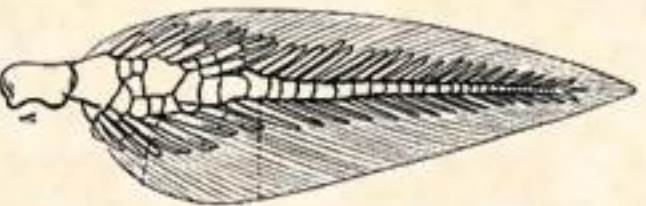
Teleosteo



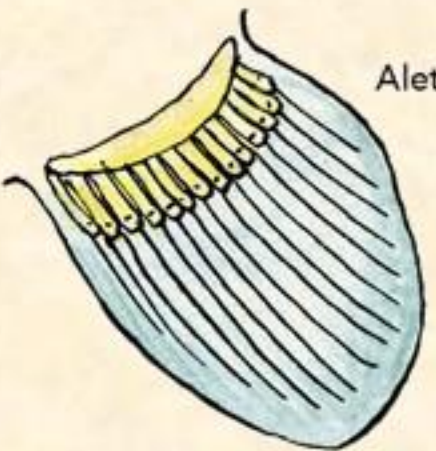
Holeosteo



Condrosteo



Aleta radiada



Aleta lobulada



Sarcopterygii



Pez Sudamericano

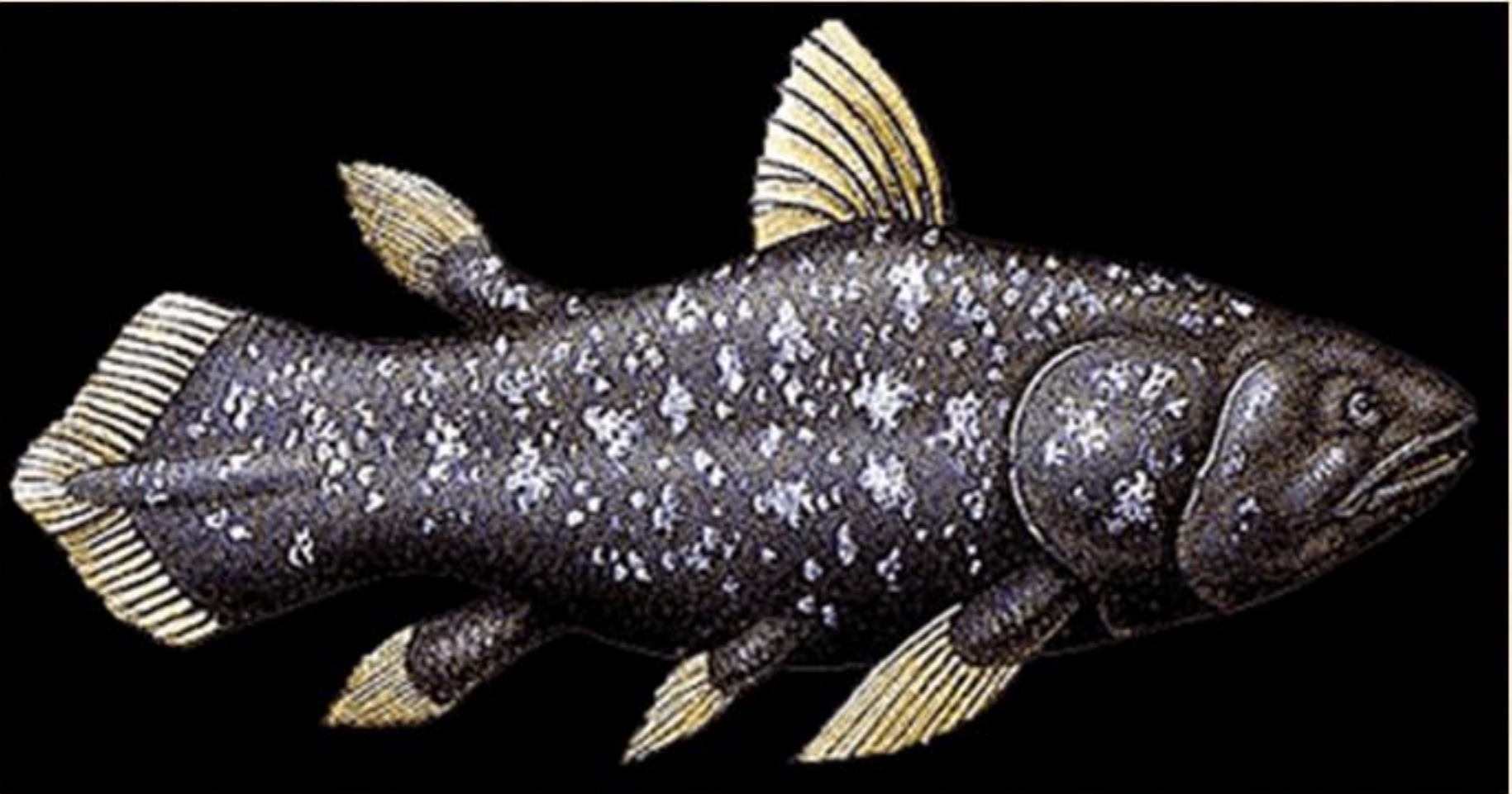


Pez Africano

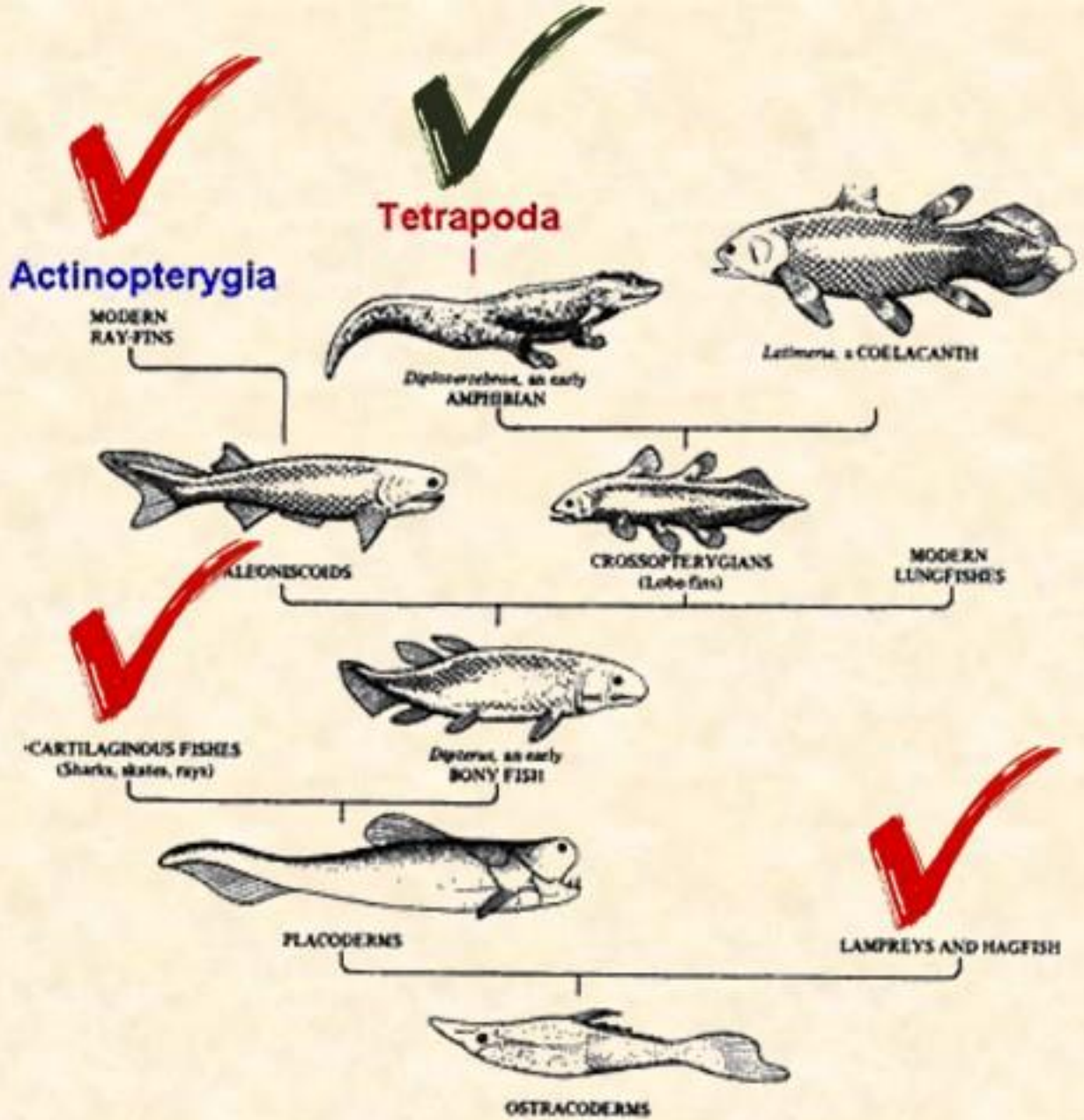


Pez Australiano

Dipneos



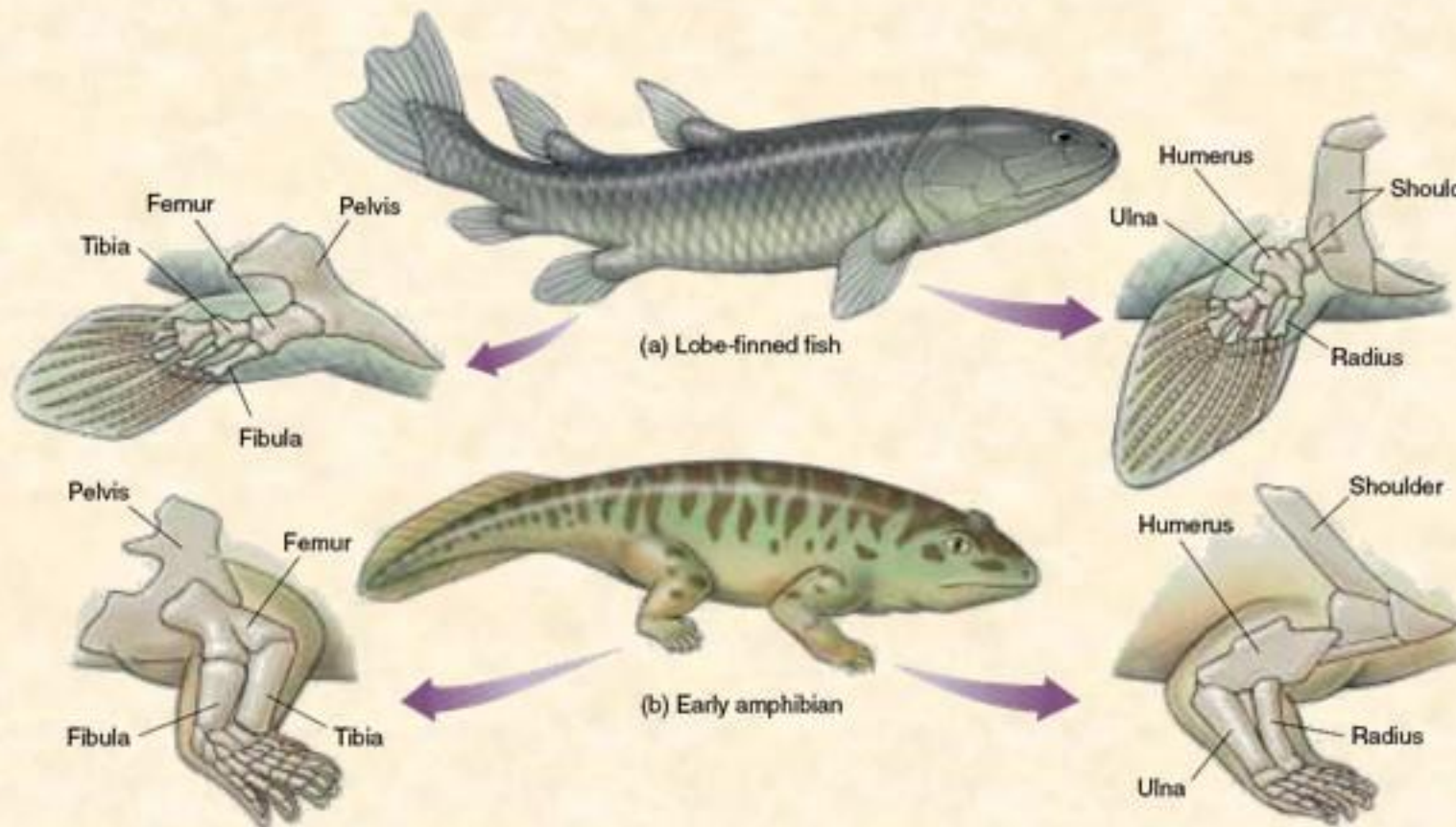
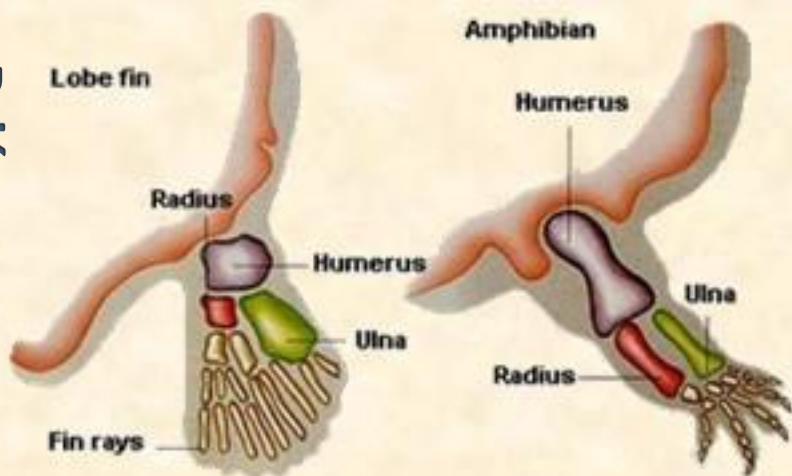
Latimeria



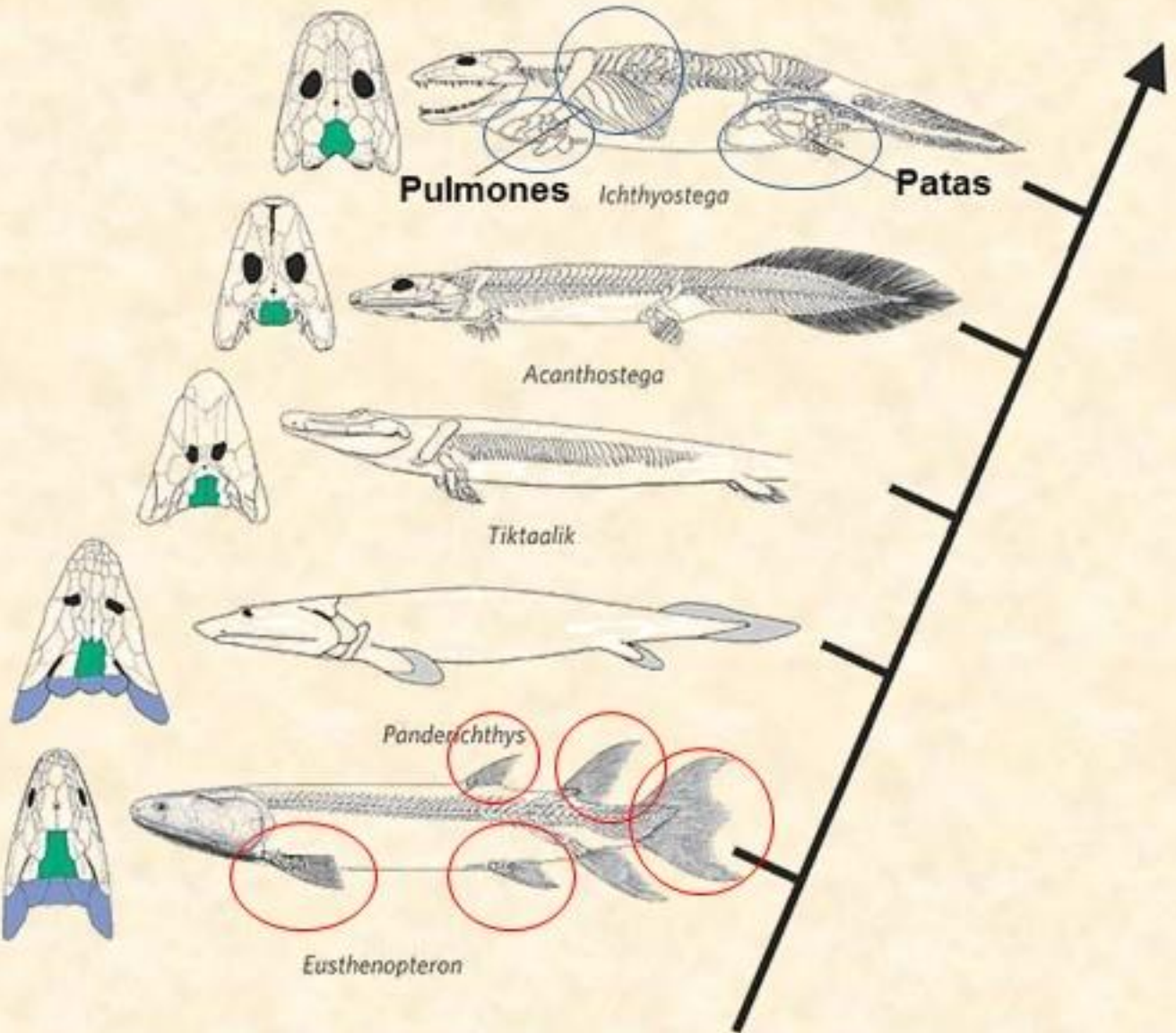
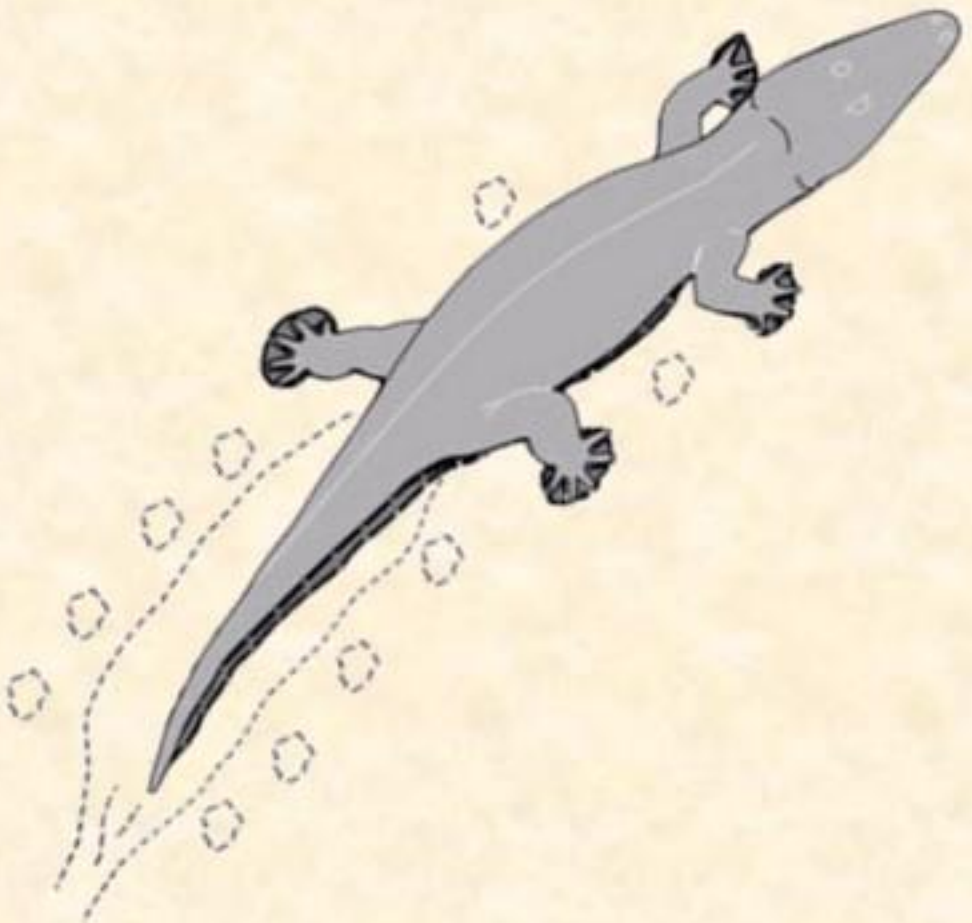
Aportes biológicos de los anfibios

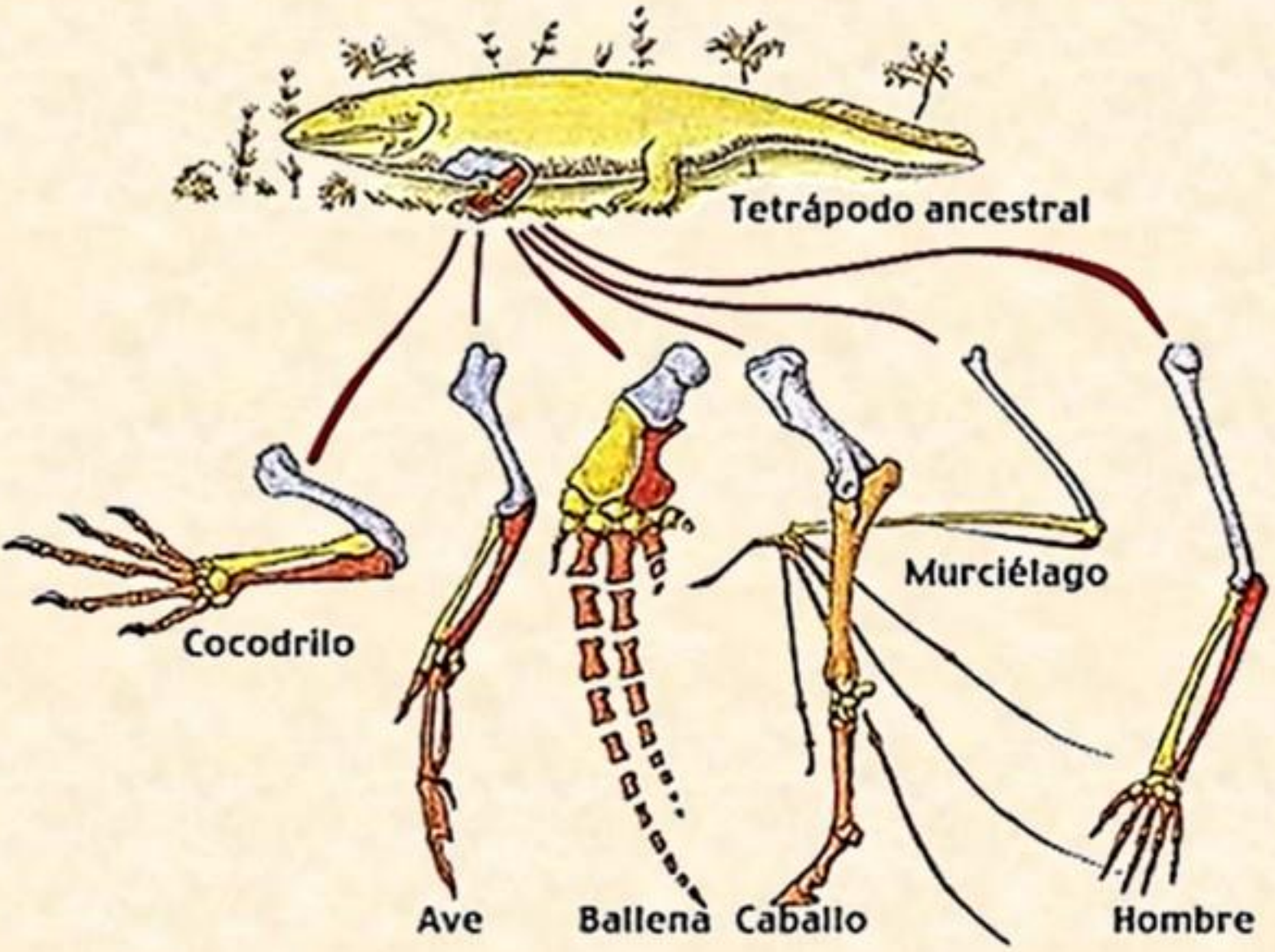


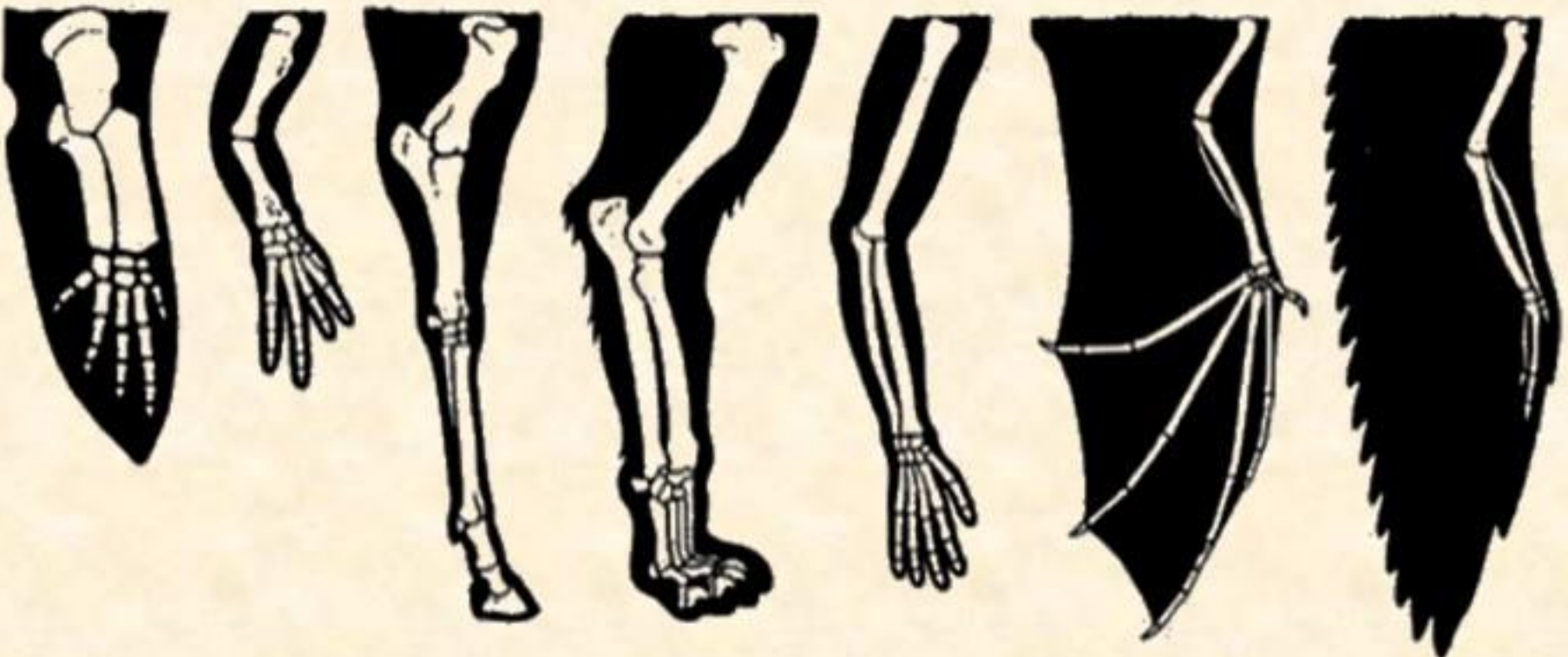
Estructura esquelética resistente y extremidades de tipo tetrápodo (**quiridio**), con sus correspondientes cinturas.



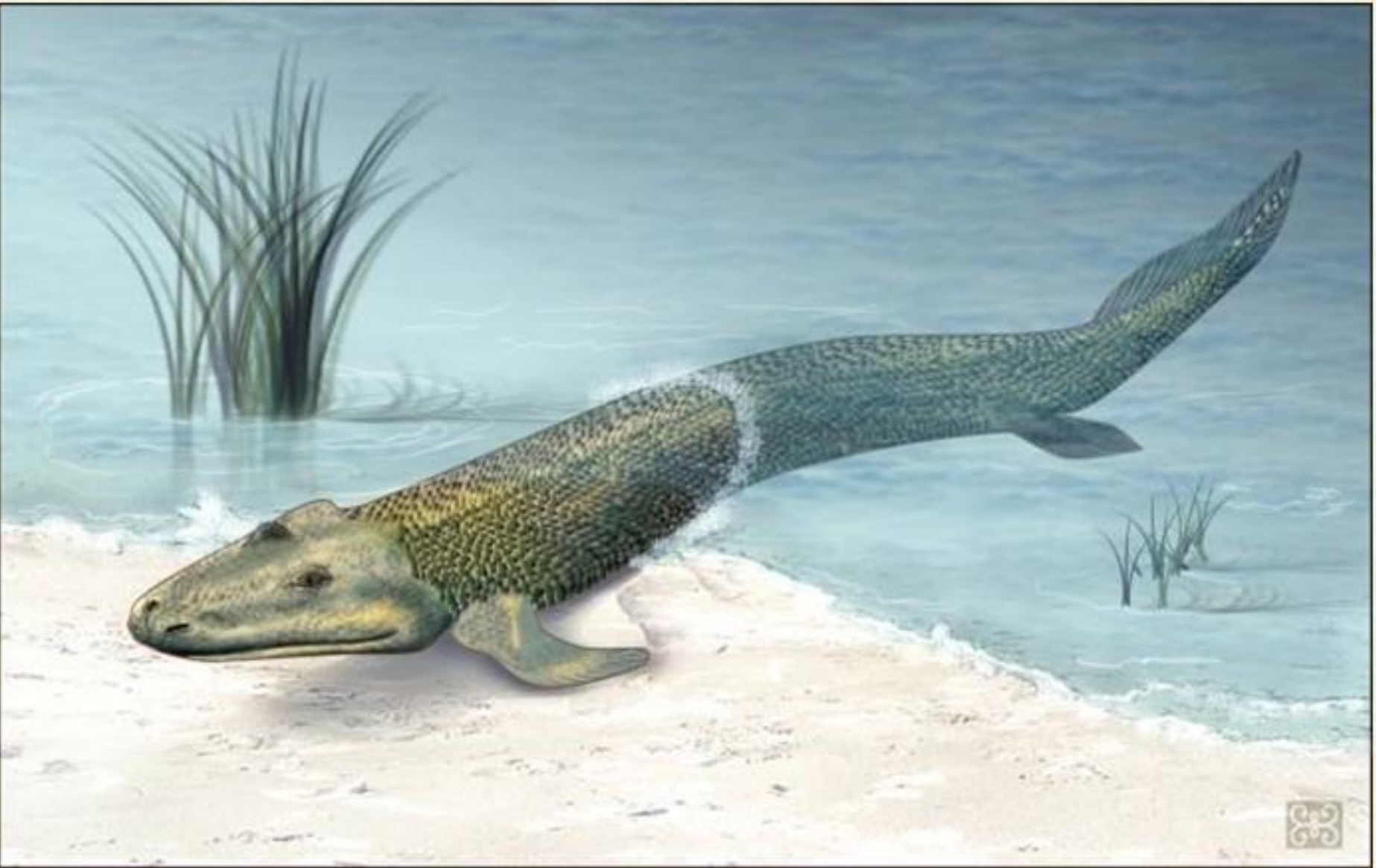
Quiridio es una estructura uniforme, y es una condición monofilética en tetrápodos.







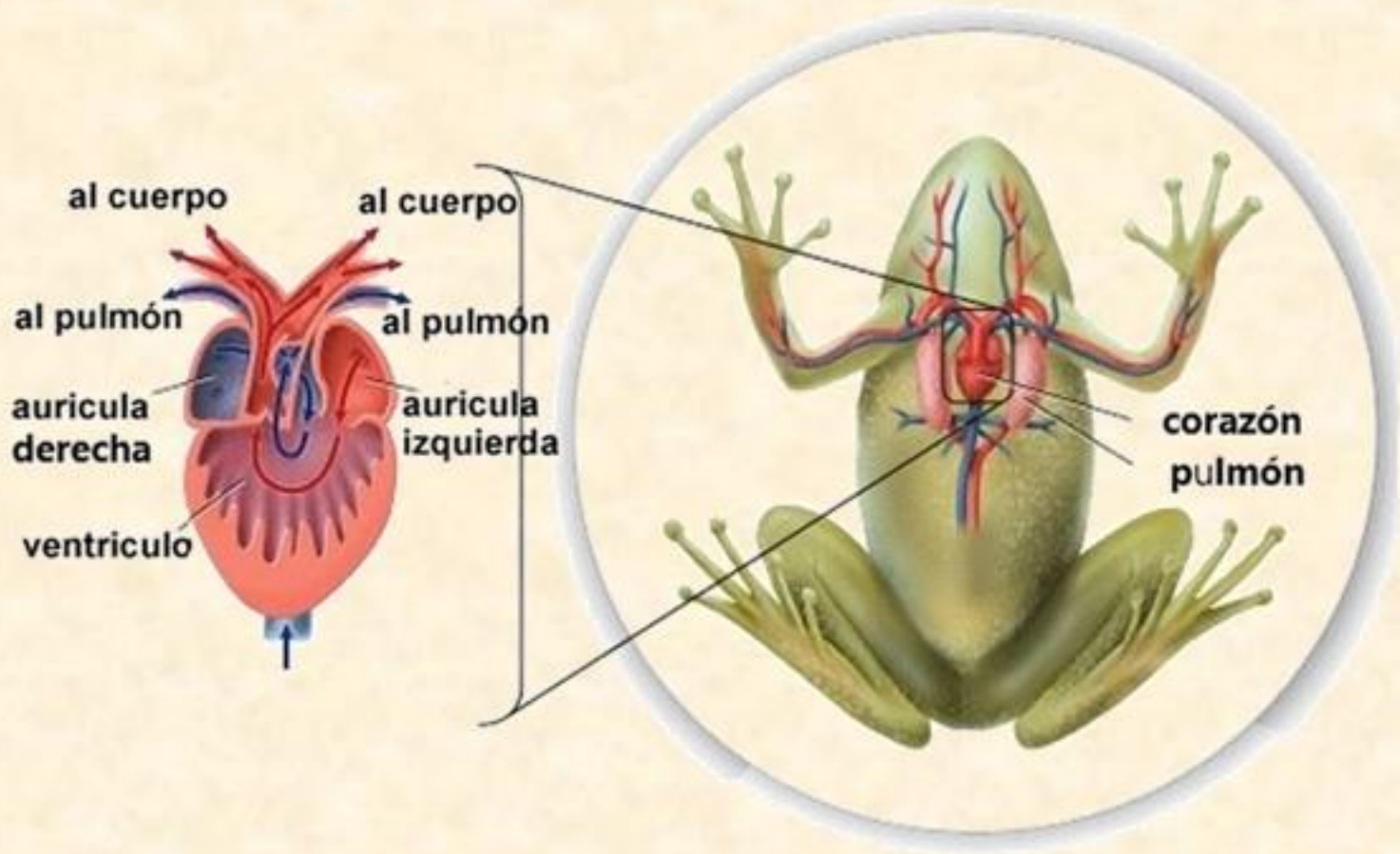
Tetrapodos



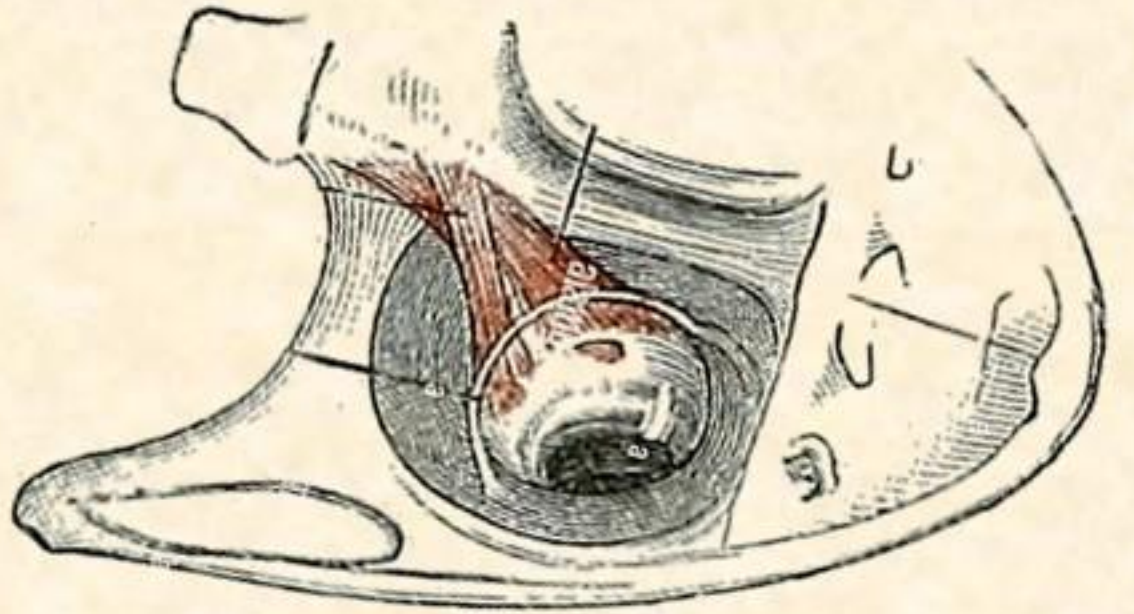
Sistema respiratorio con pulmones y narinas internas, que les permiten respirar por la nariz



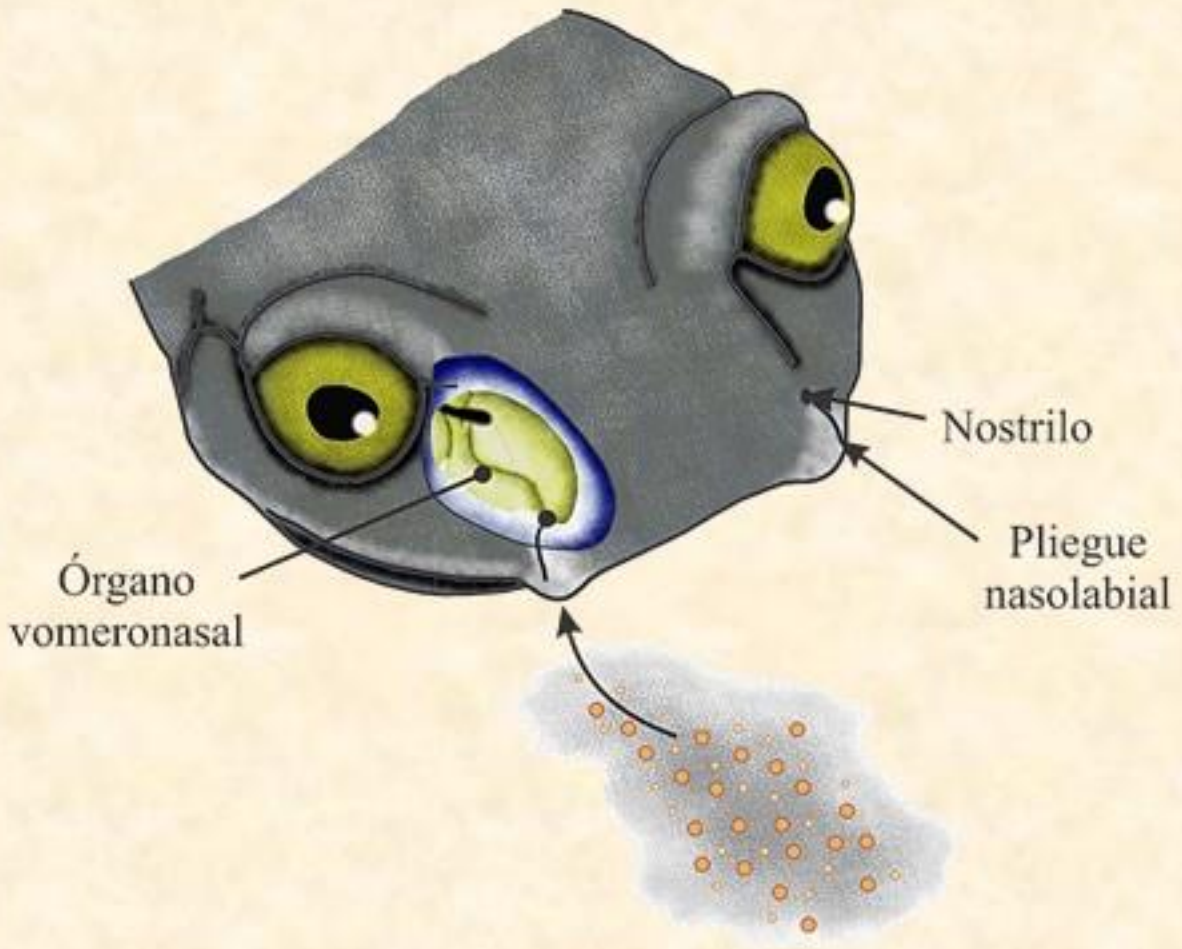
- Circulación doble, con circuitos pulmonar y sistémicos independientes y corazón tricameral.



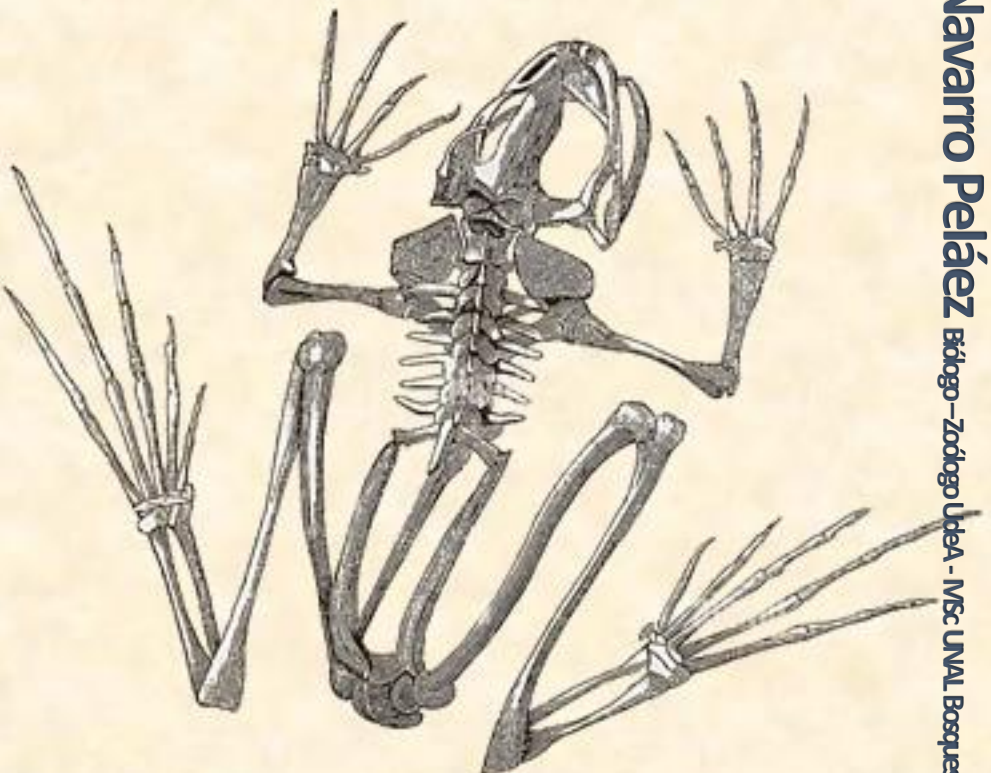
Los receptores sensoriales ancestrales se modificaron para la vida en tierra. El oído, con una membrana timpánica y un estribo para transmitir vibraciones al oído interno, está ya diseñado para la recepción de sonidos a través del aire. La córnea pasa a ser la superficie principal de refracción para desviar la luz. Aparecen los párpados y las glándulas lacrimales para proteger y limpiar el ojo.



- Se desarrolla un epitelio olfativo extenso que tapiza la cavidad nasal y capta los olores transmitidos por el aire.

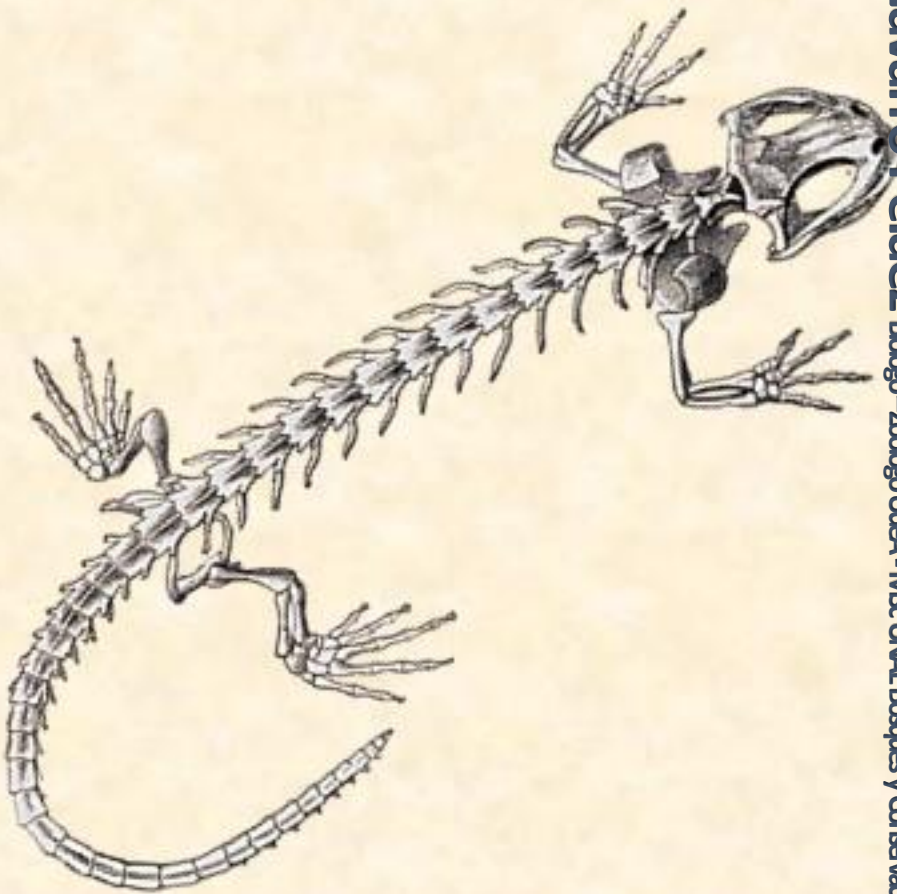






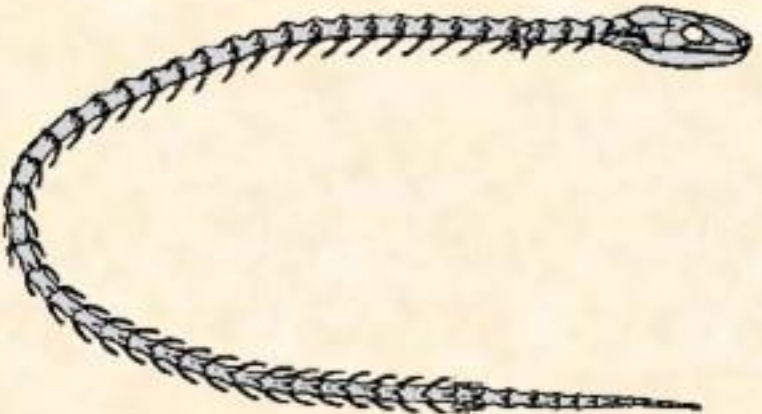
Anura





Urodelos





Apodos





Clase Amphibia (4000 especies aprox. Devónico, 400 millones de años)

Subclase Lepspondyli

Subclase Laberynthodontia

Subclase Lissamphibia

Orden Gymnofiones

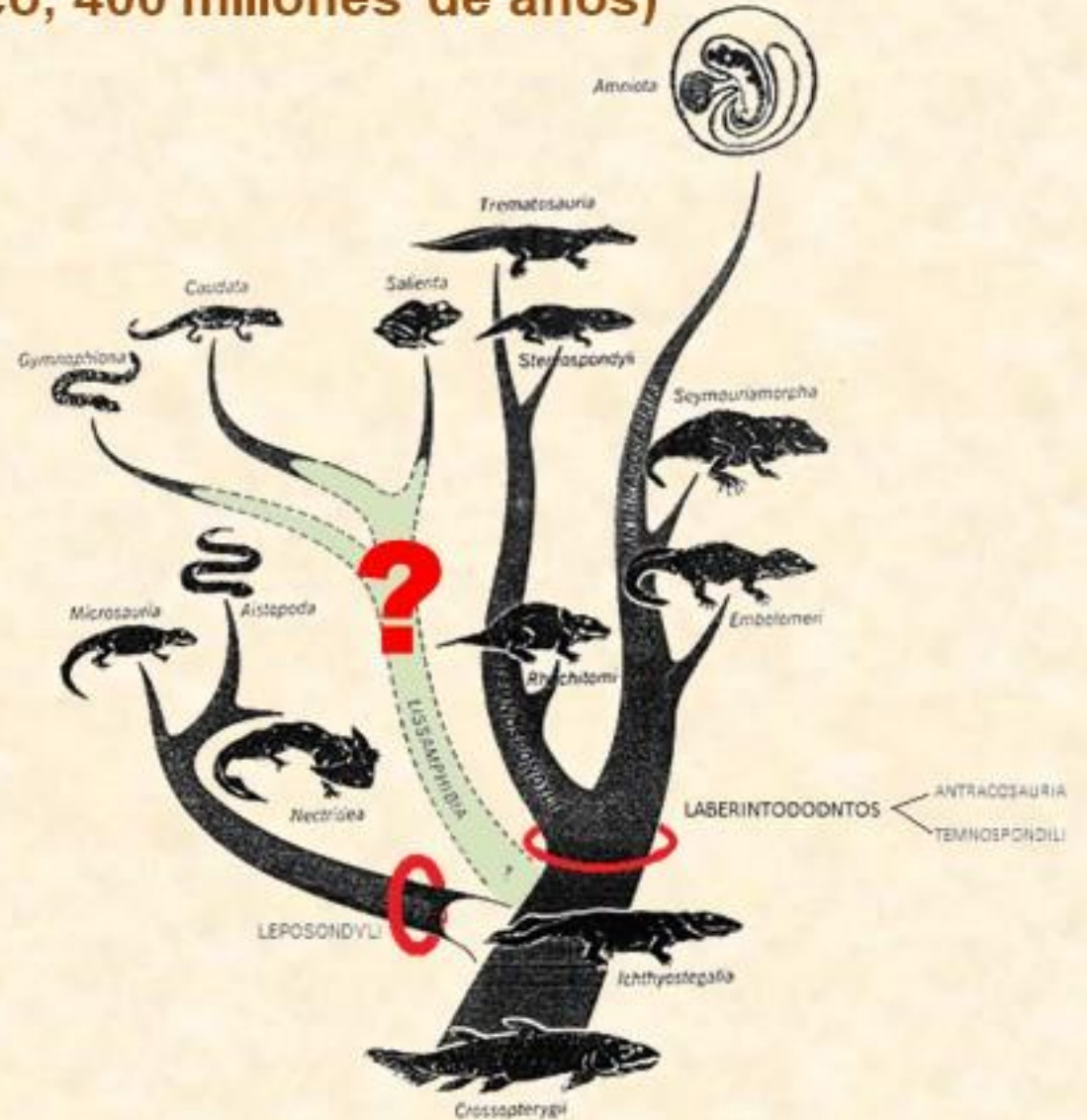
Orden Caudata

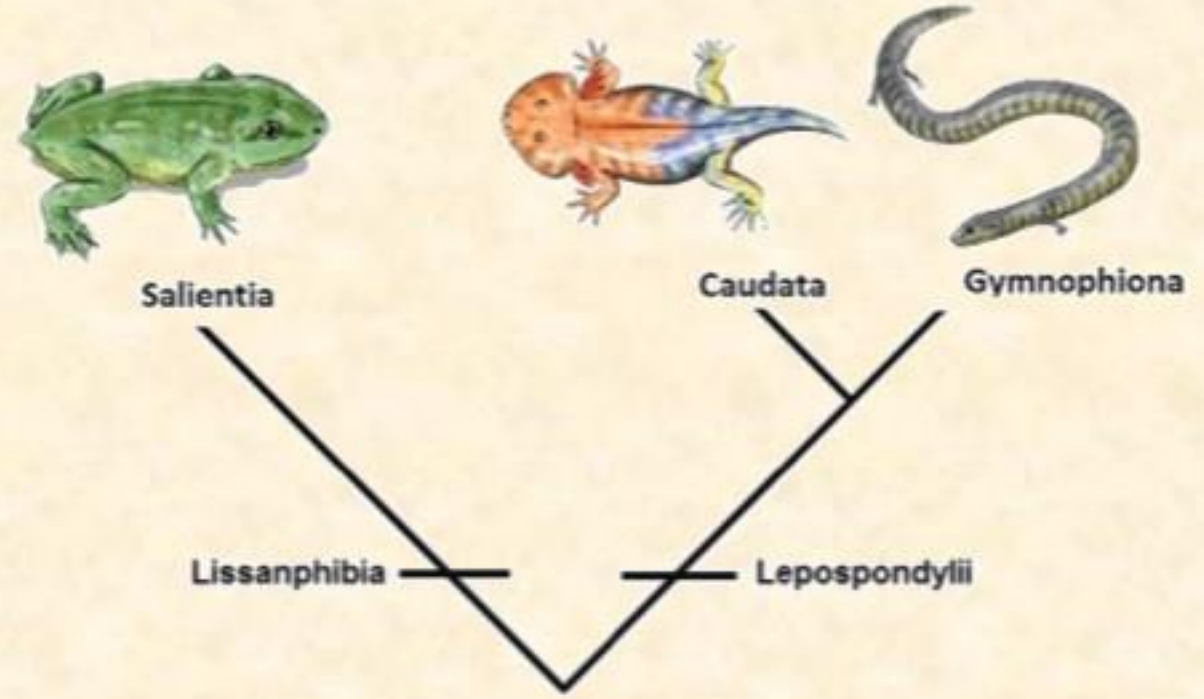
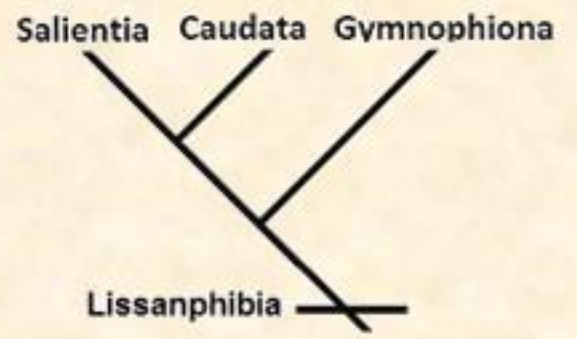
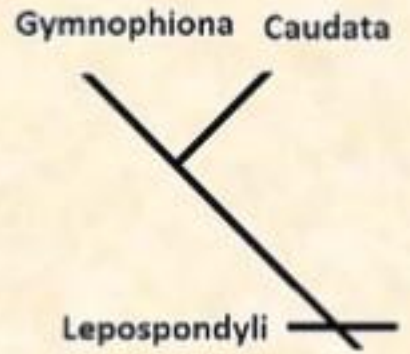
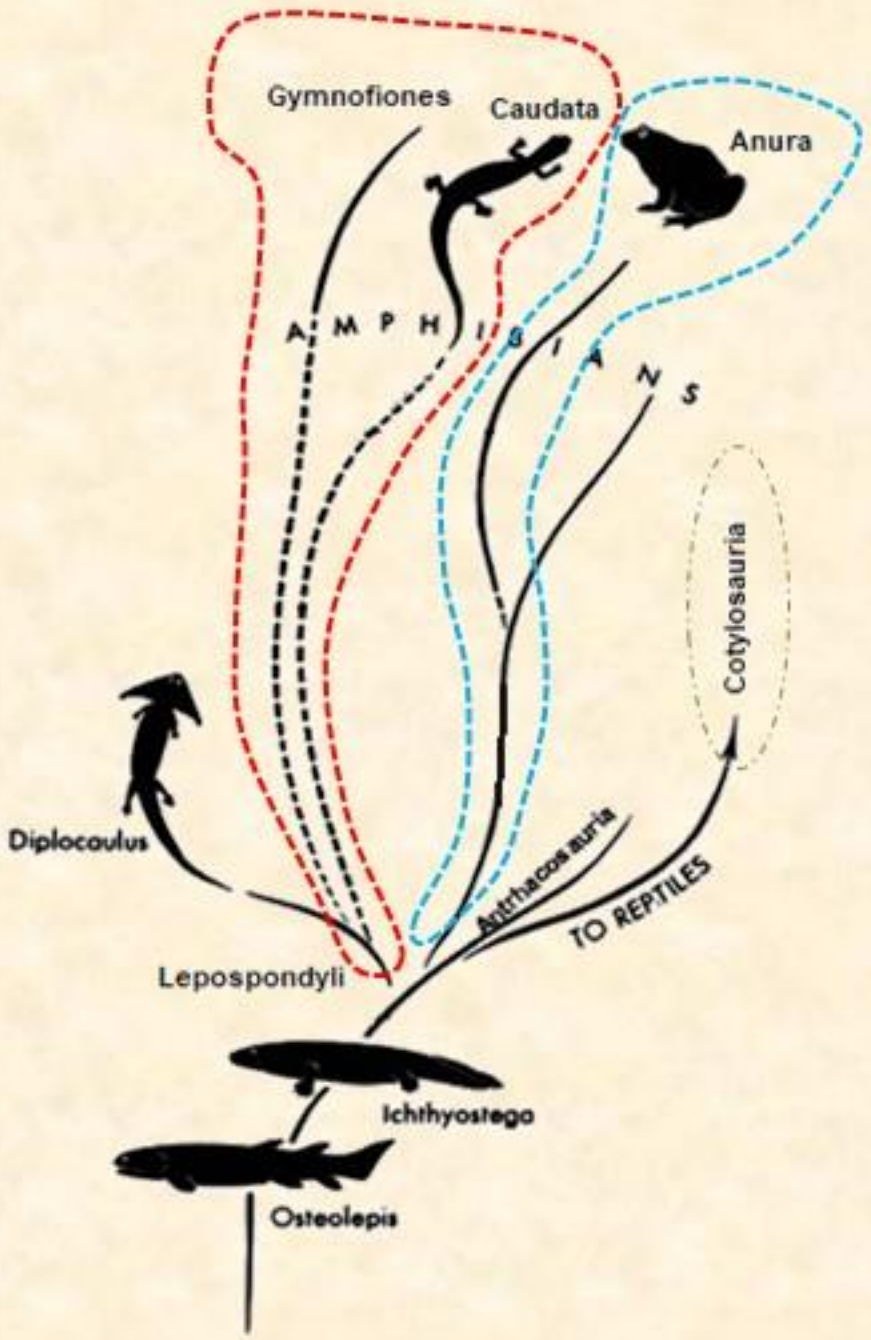
Orden Anura - Salientia

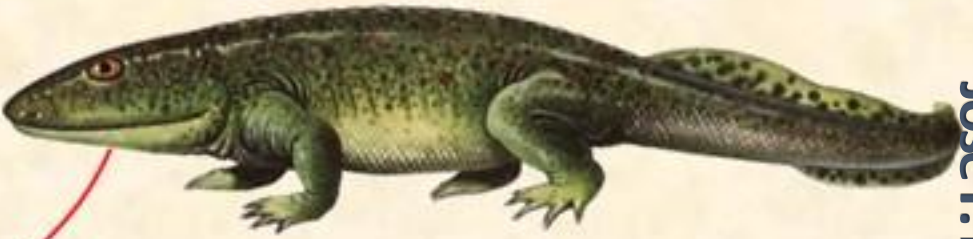
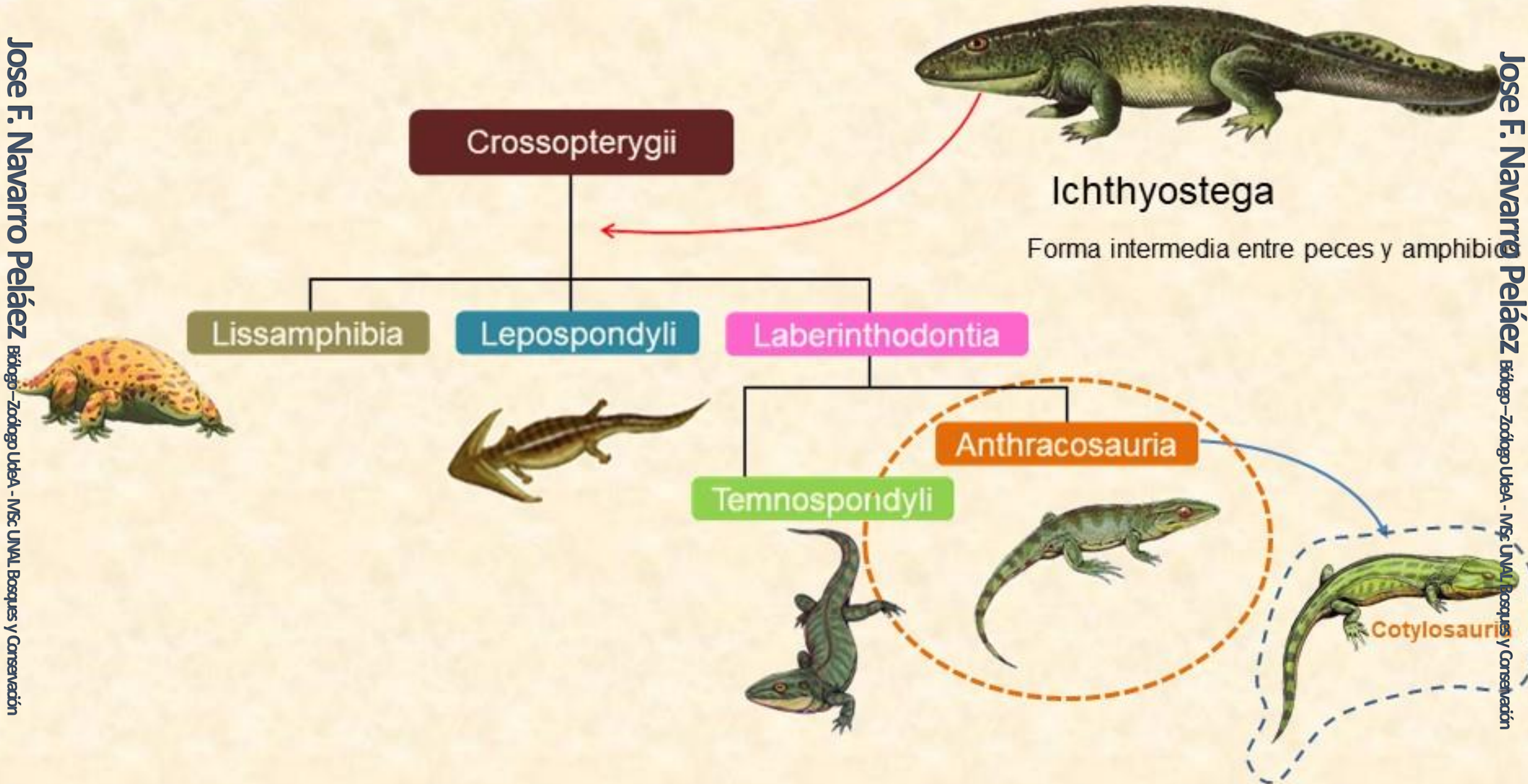
Suborden Archaeobatrachia

Suborden Mesobatrachia

Suborden Neobatrachia







Ichthyostega

Forma intermedia entre peces y anfibios

Lissamphibia

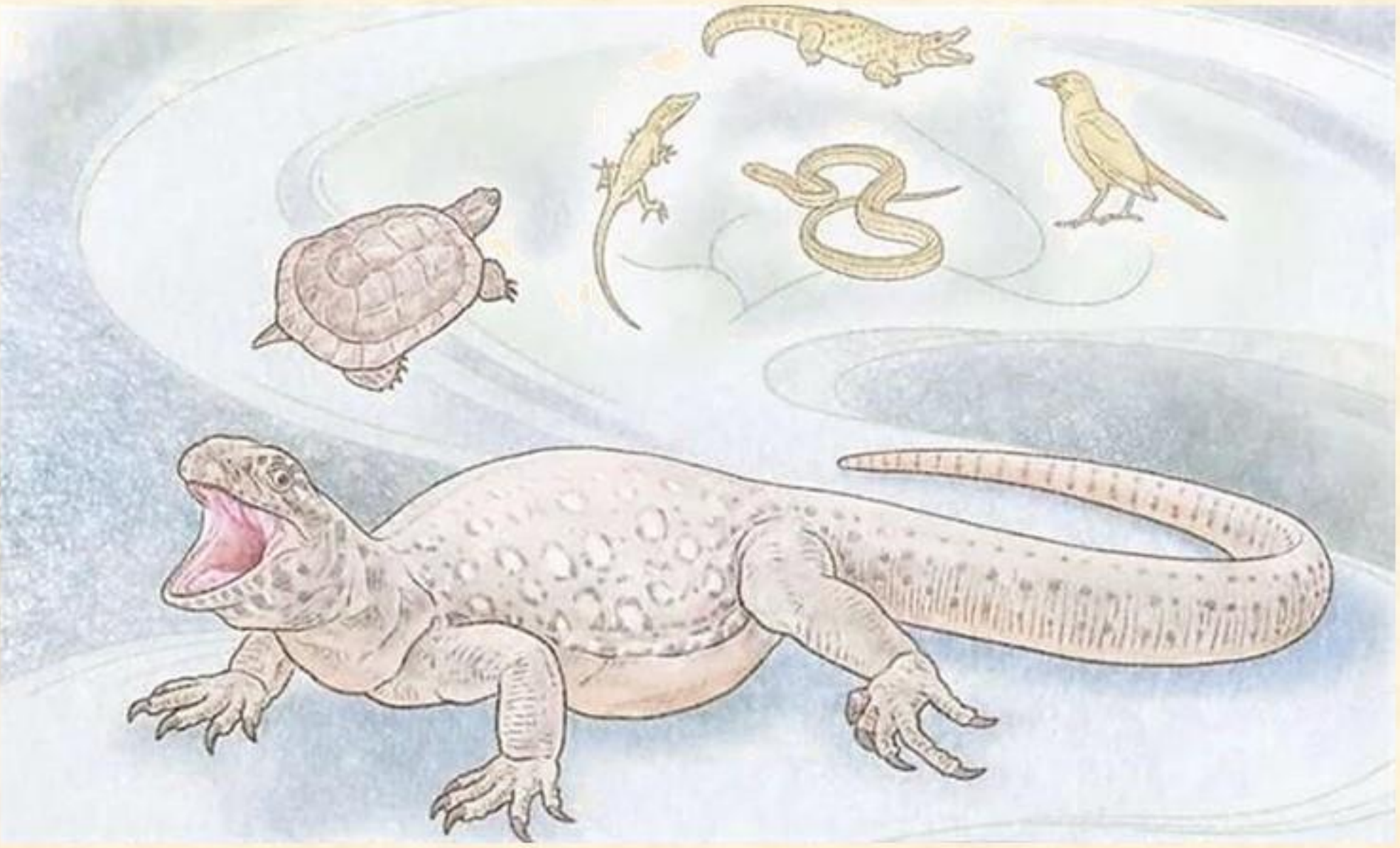
Lepospondyli

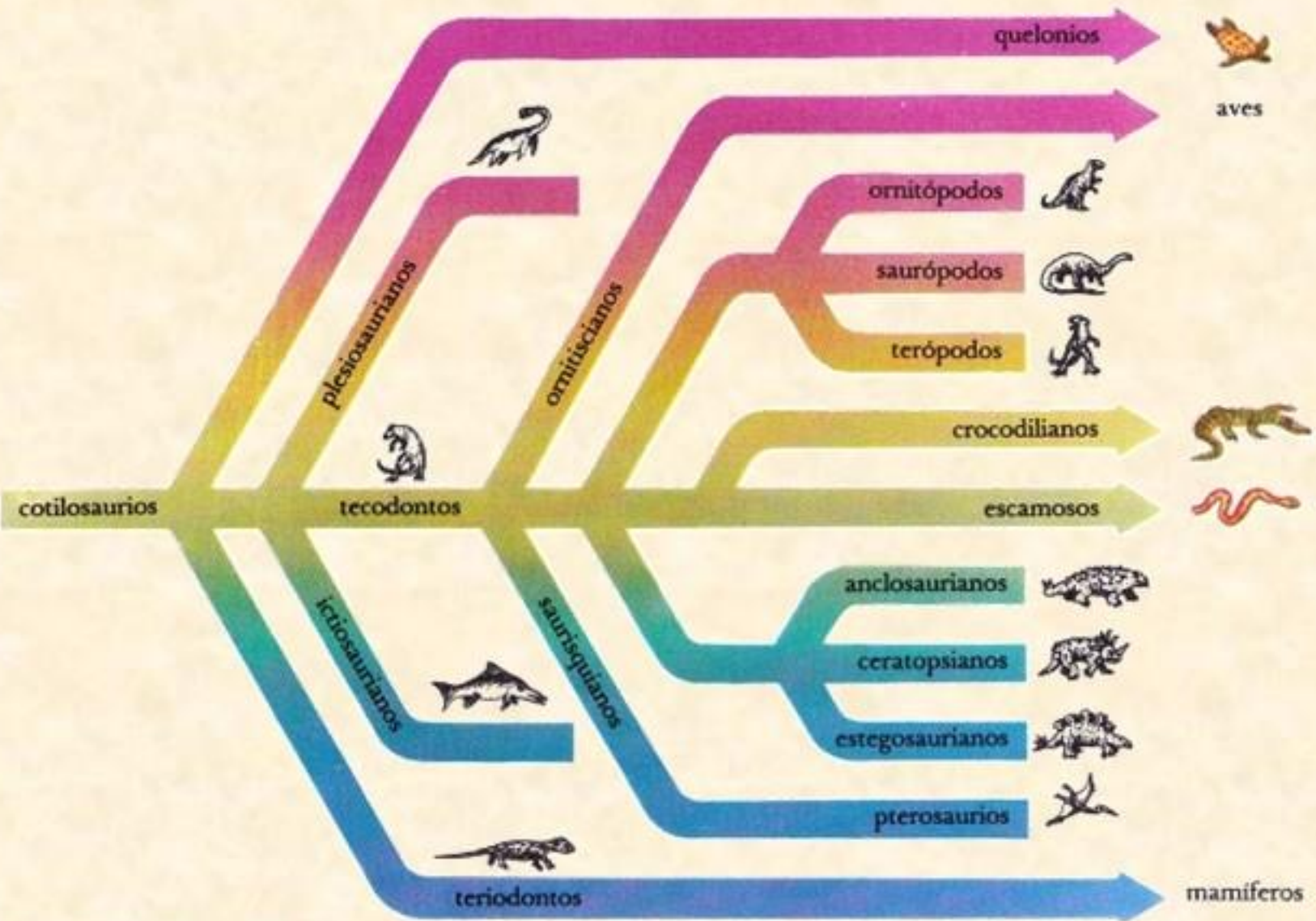
Laberinthodontia

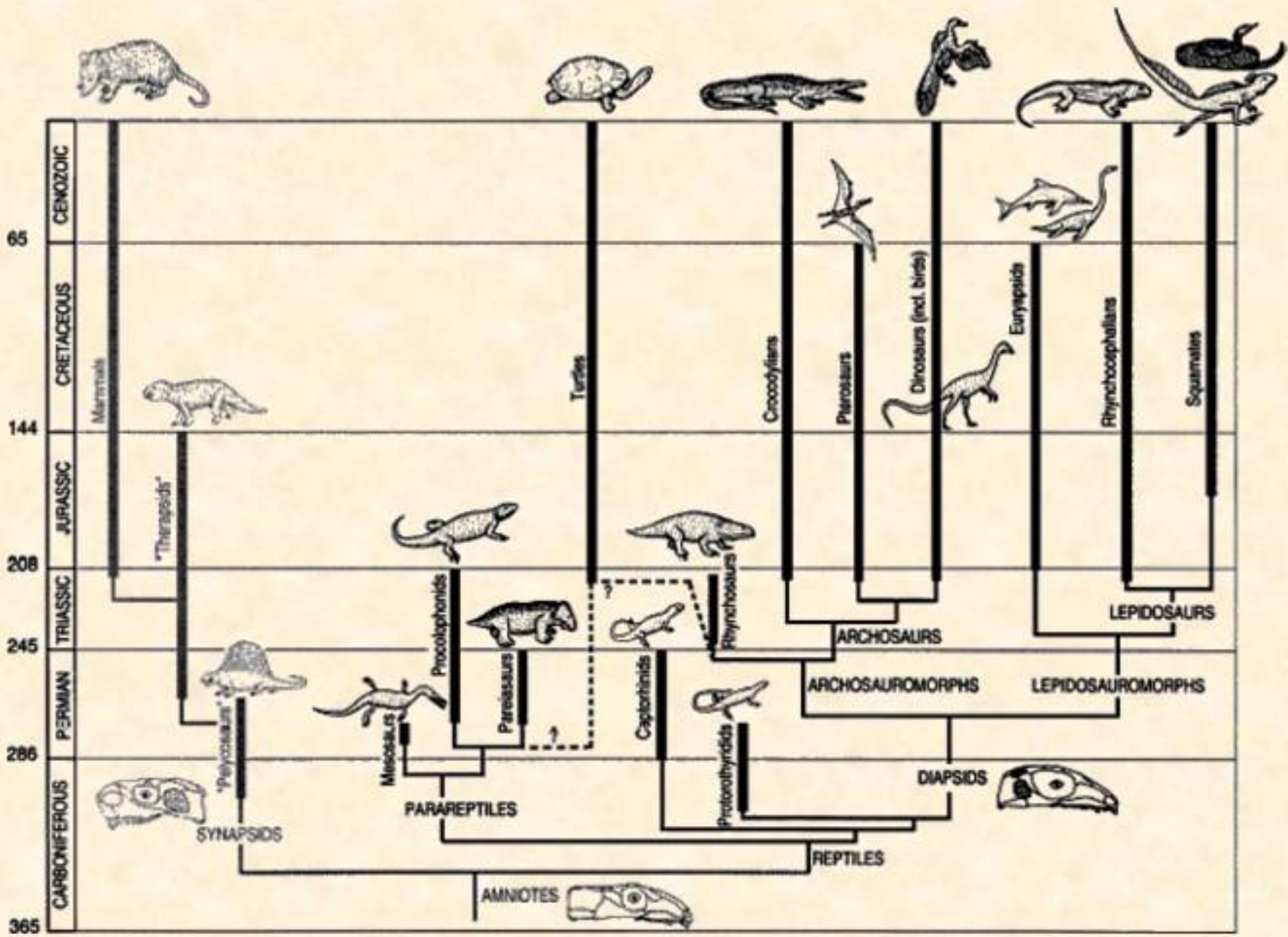
Anthracosauria

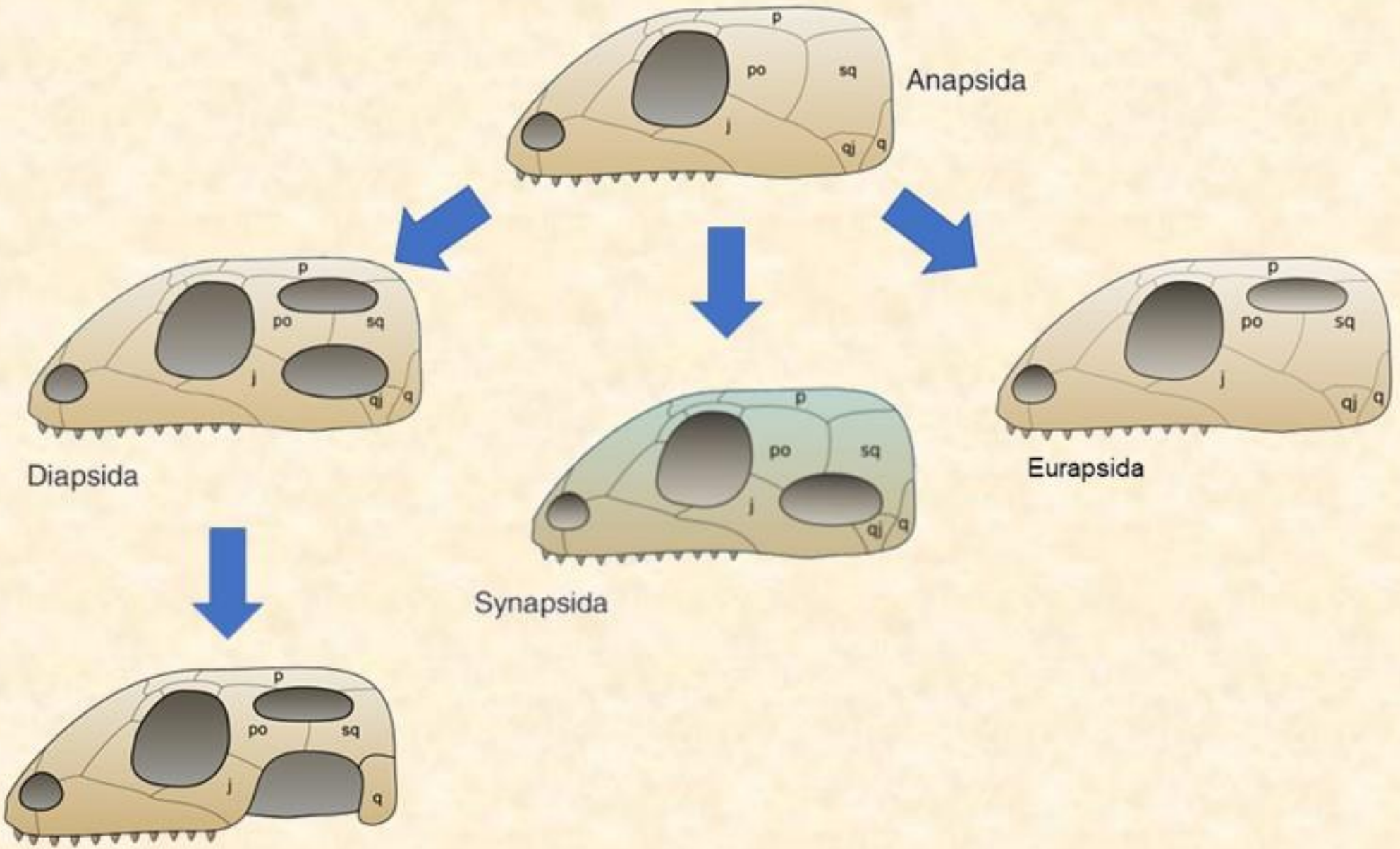
Temnospondyli

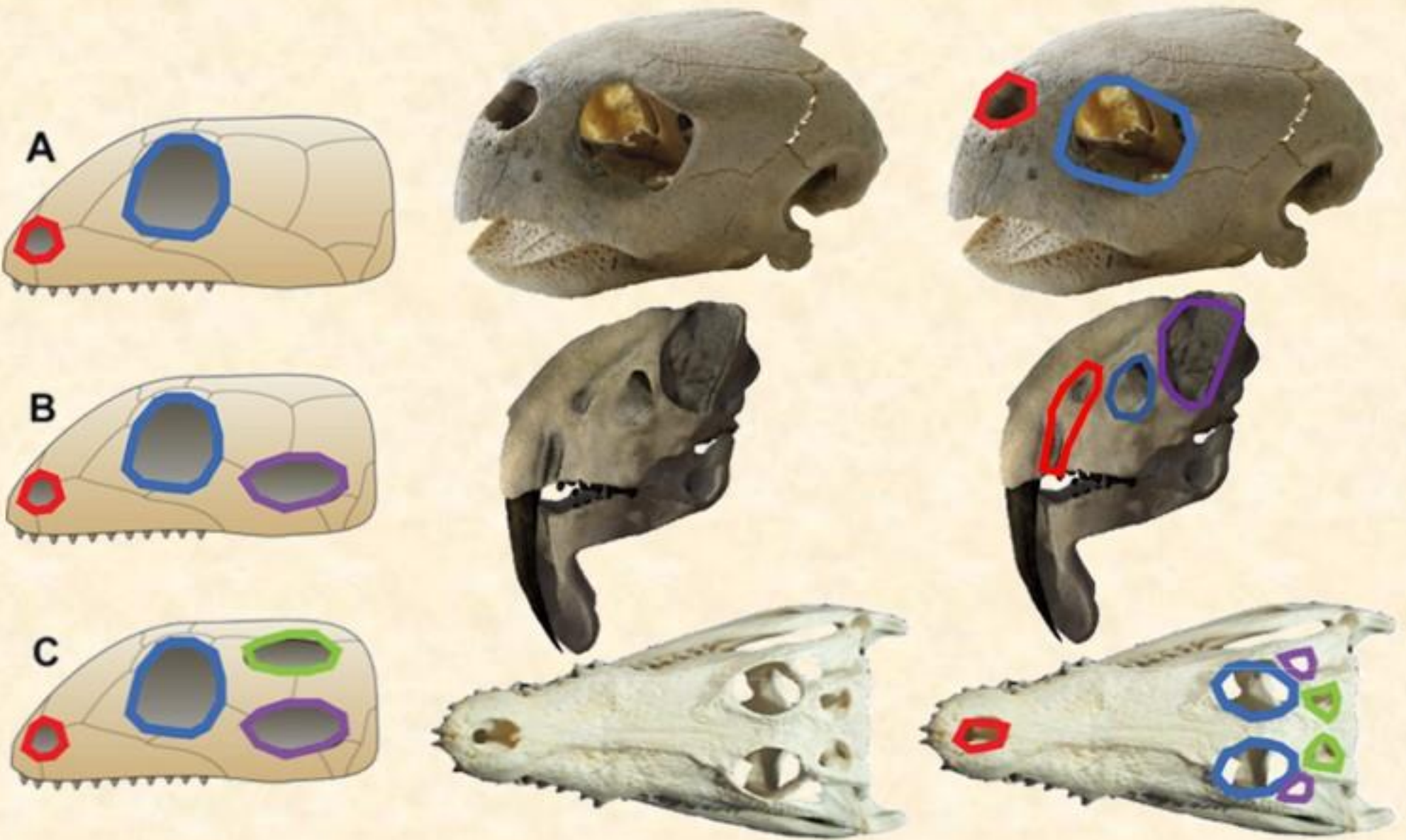
Cotylosauria











Anapsidos

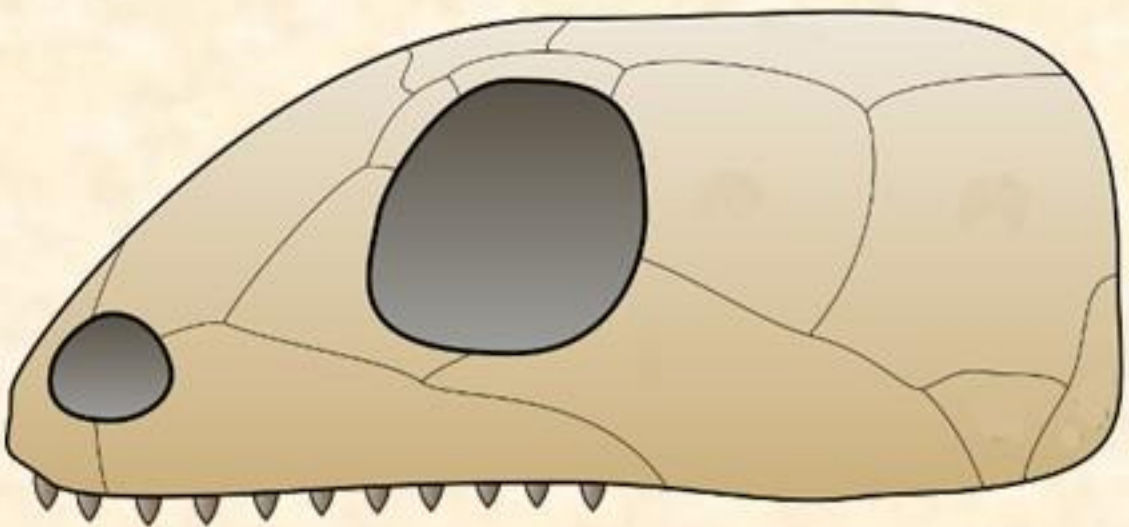
Synapsida

Diapsidos

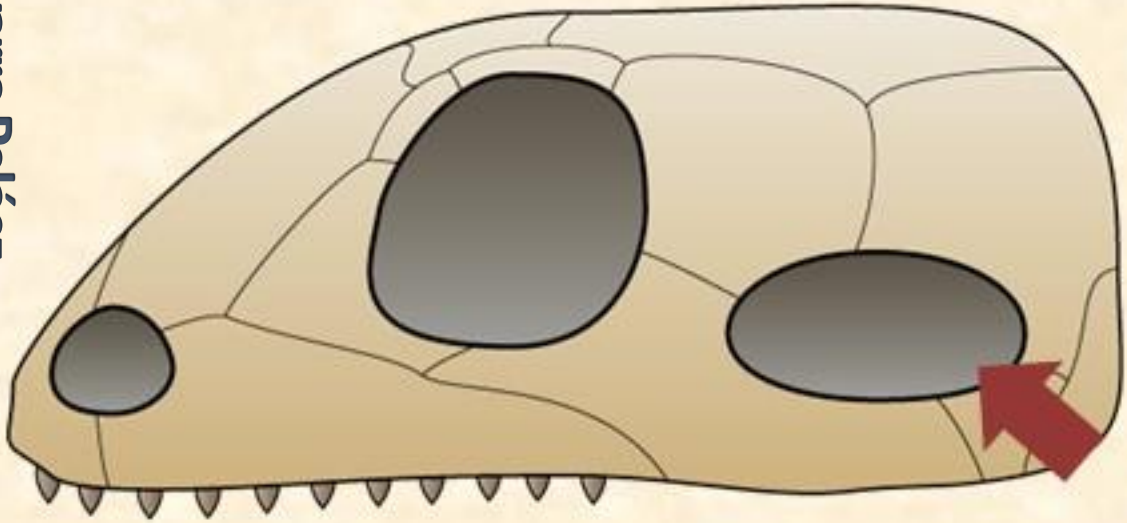
A

B

C



Anapsidos
"sin arcos"



Synapsida

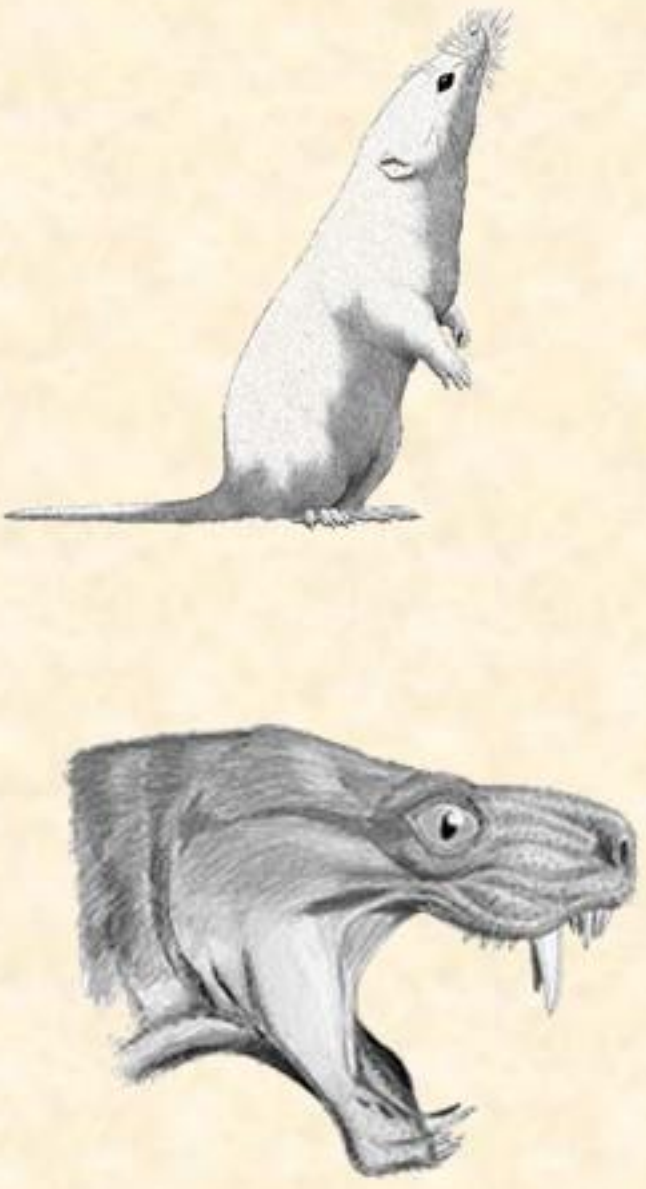
Ventana temporal

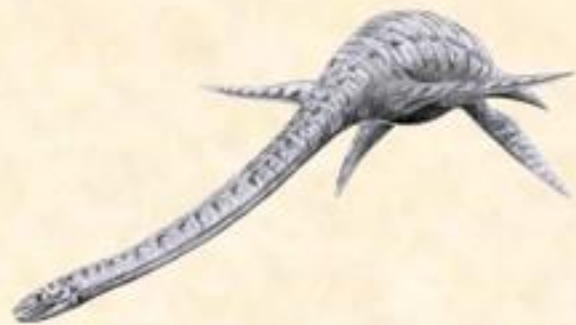


Pelicosauria



Therapsida





Pleisosauria

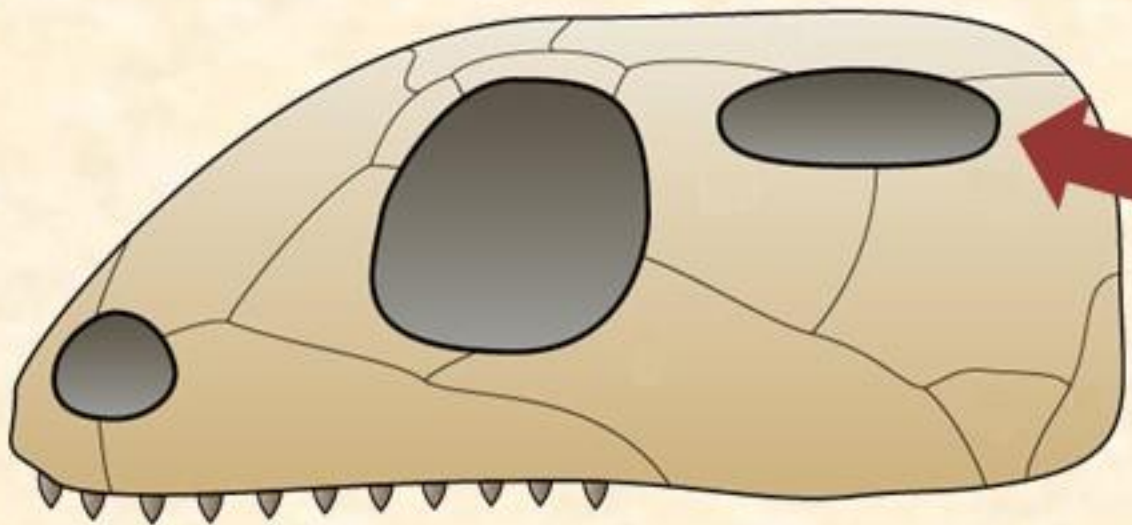


Ichthyosauria

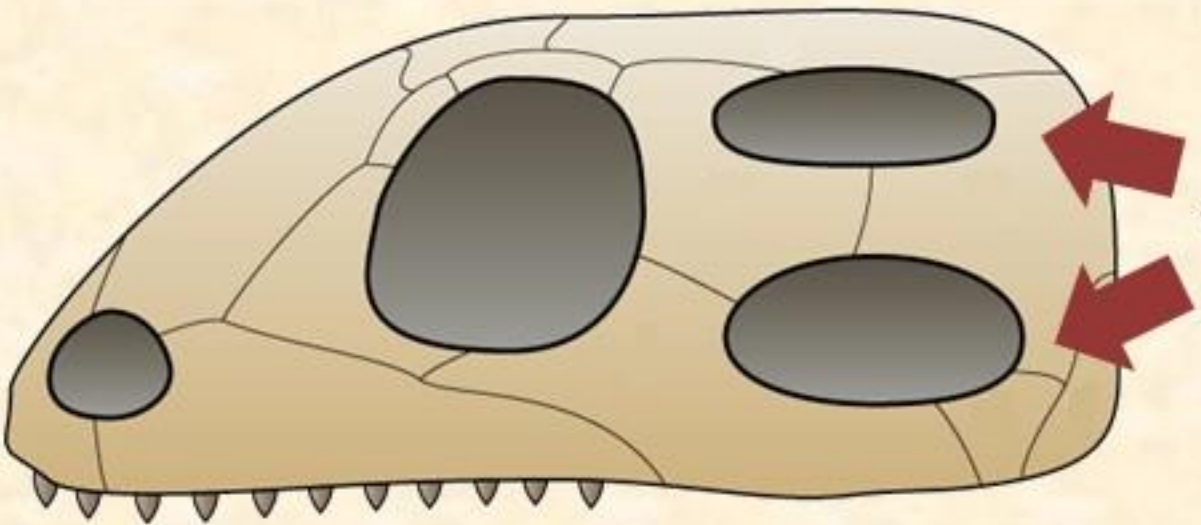


Pterosauria

Ventana temporal

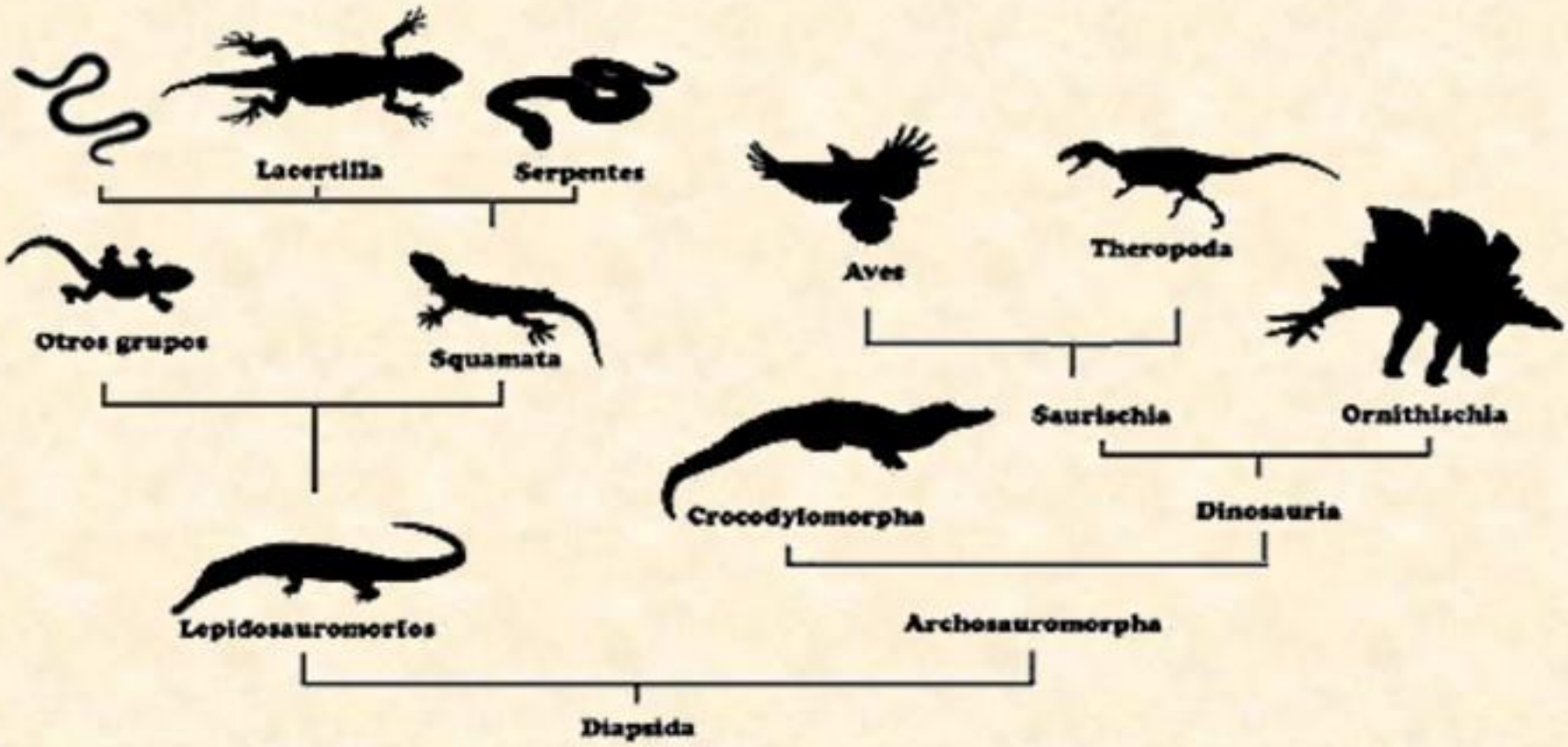


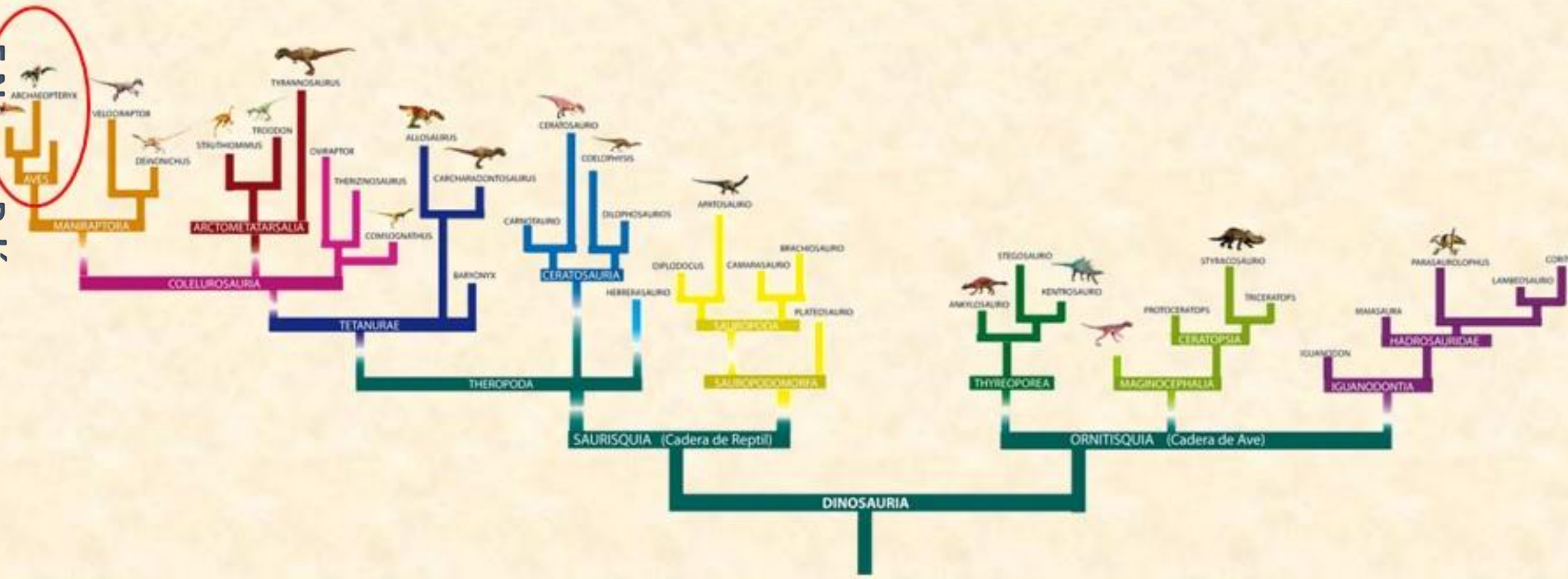
Eurapsida

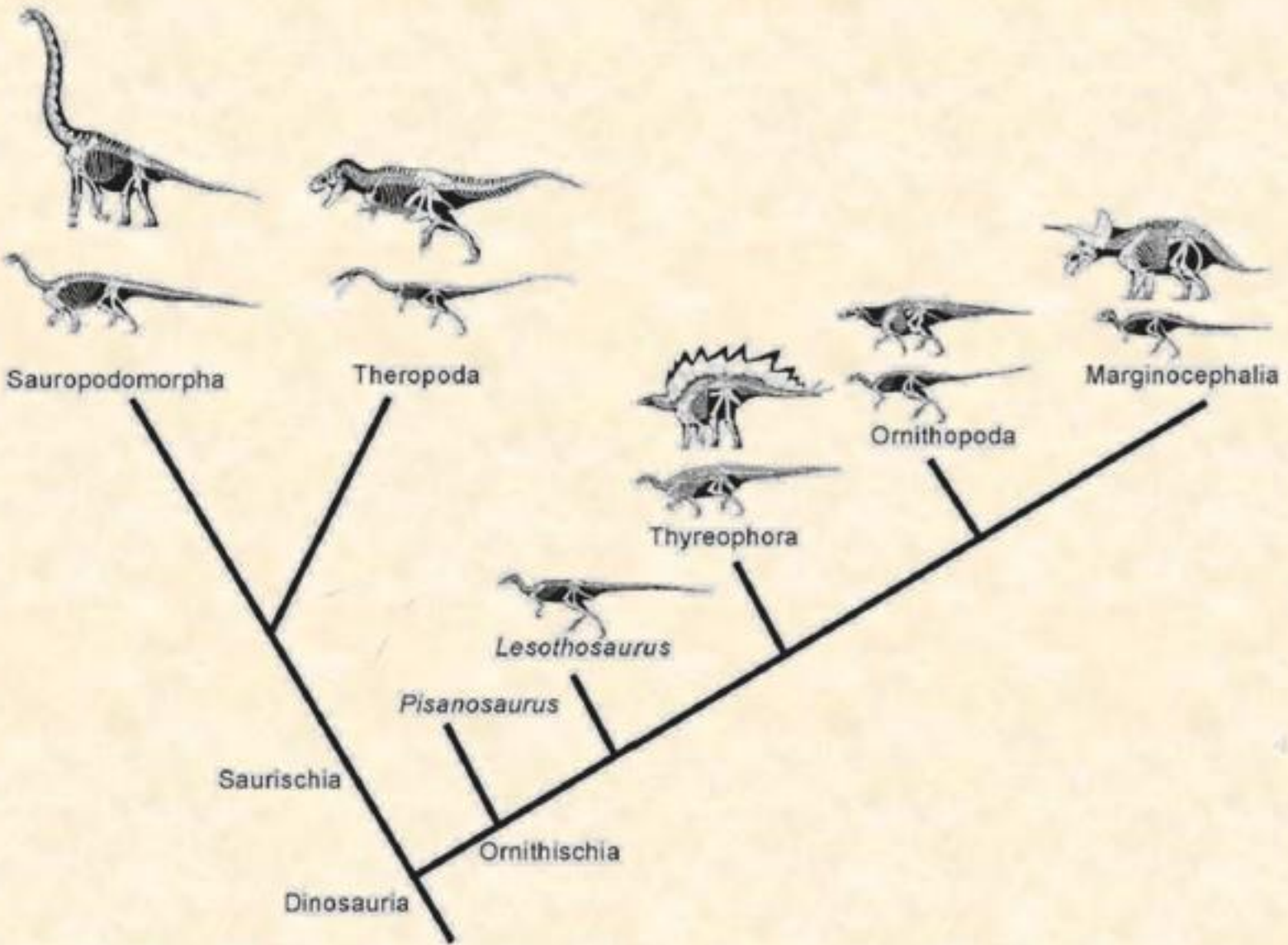


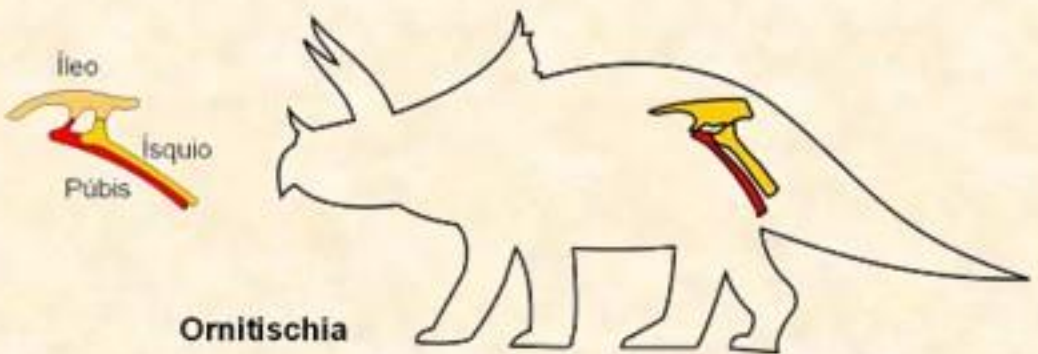
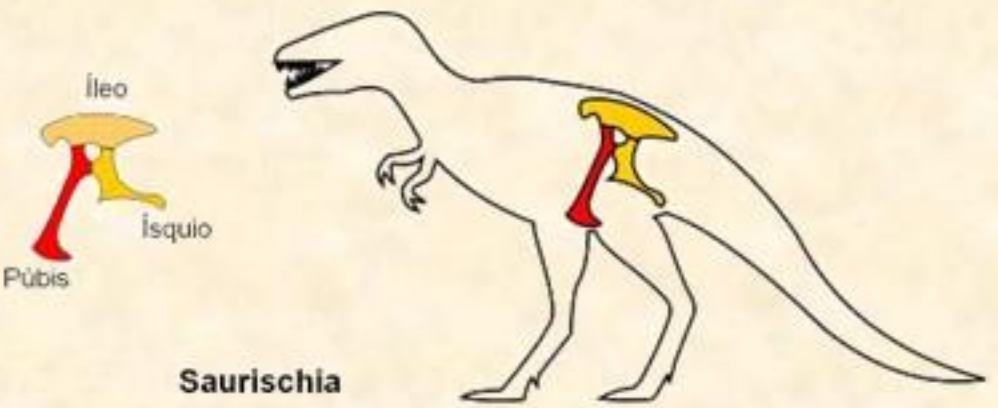
Ventanas temporales

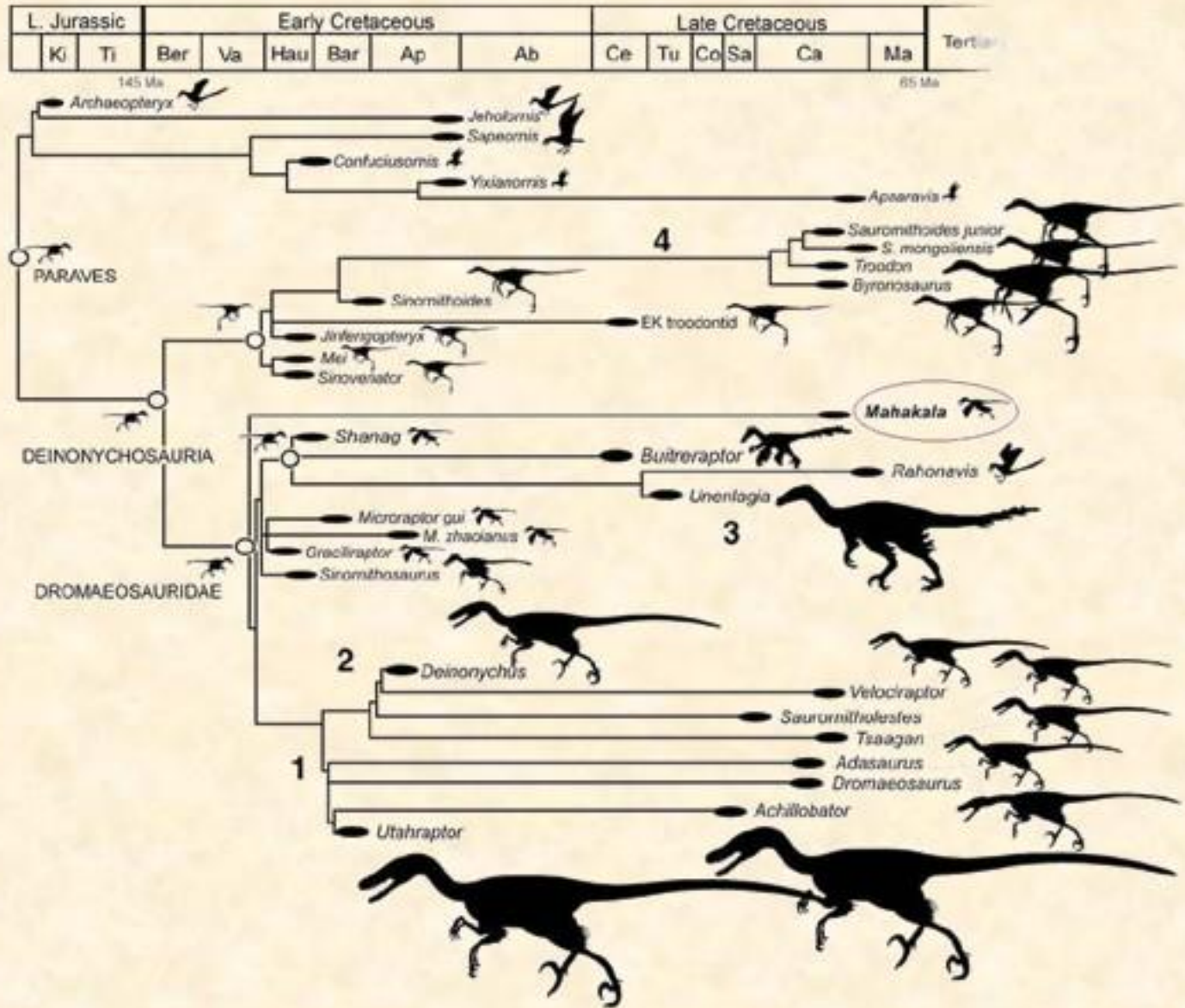
Diapsidos

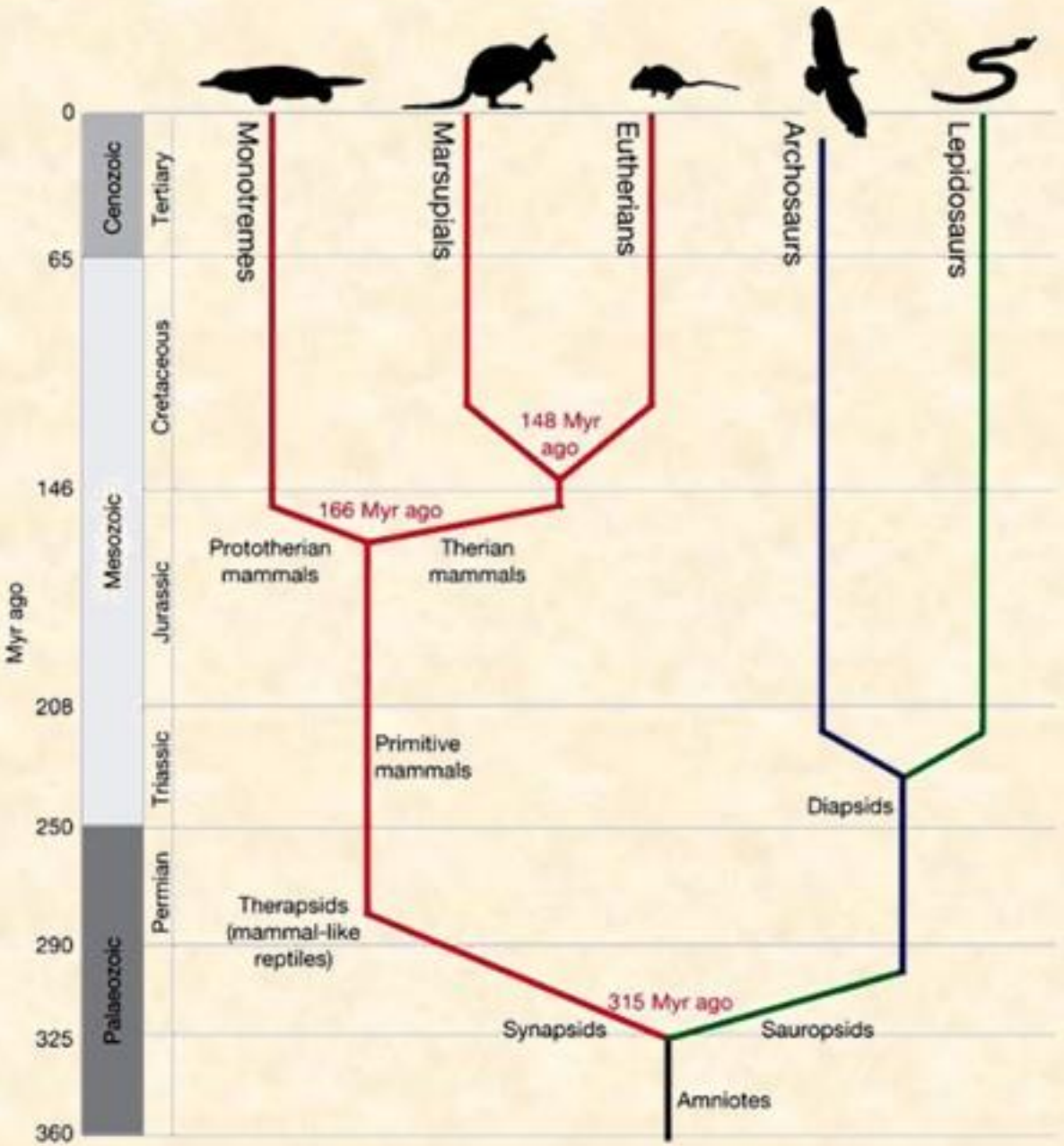


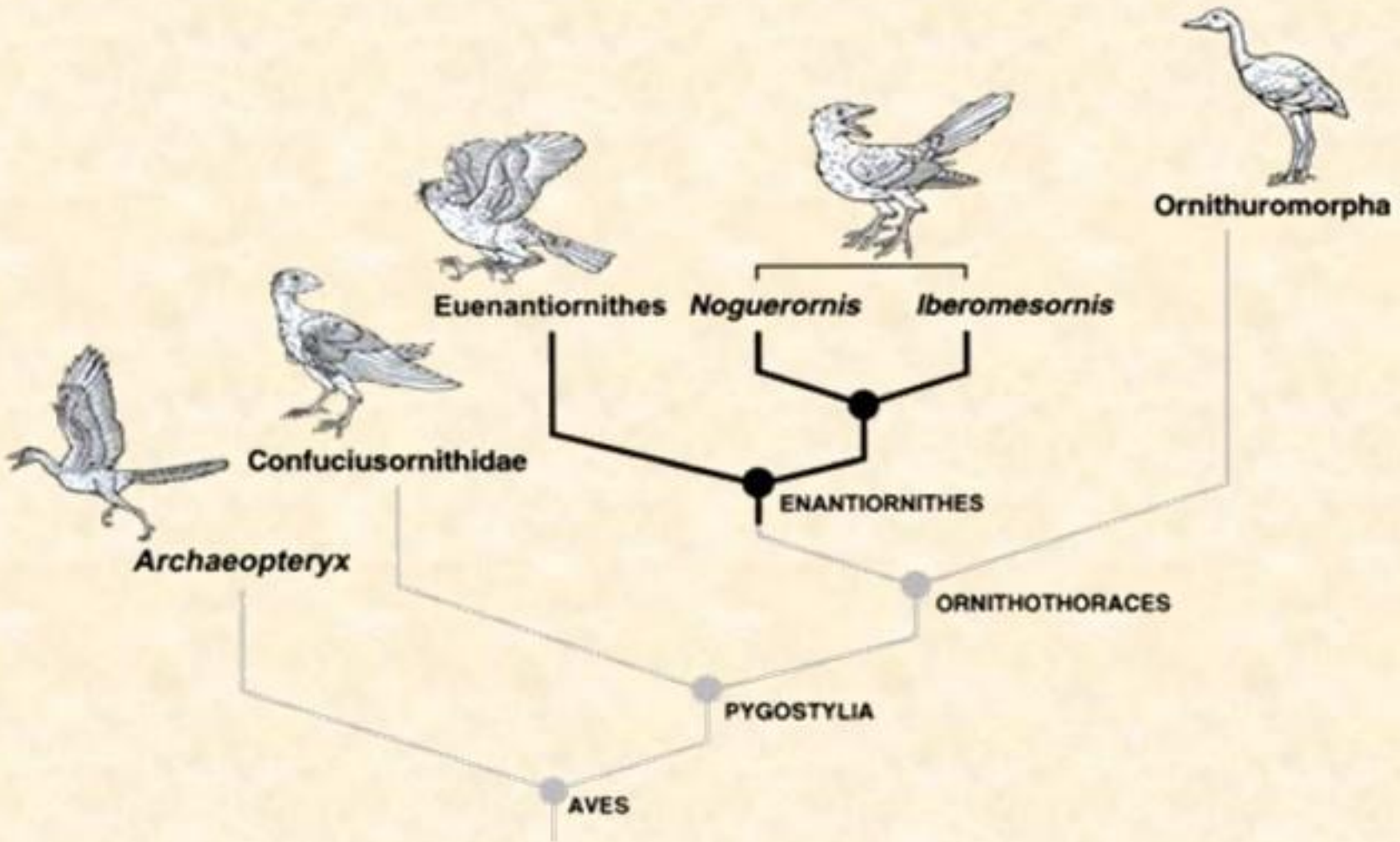






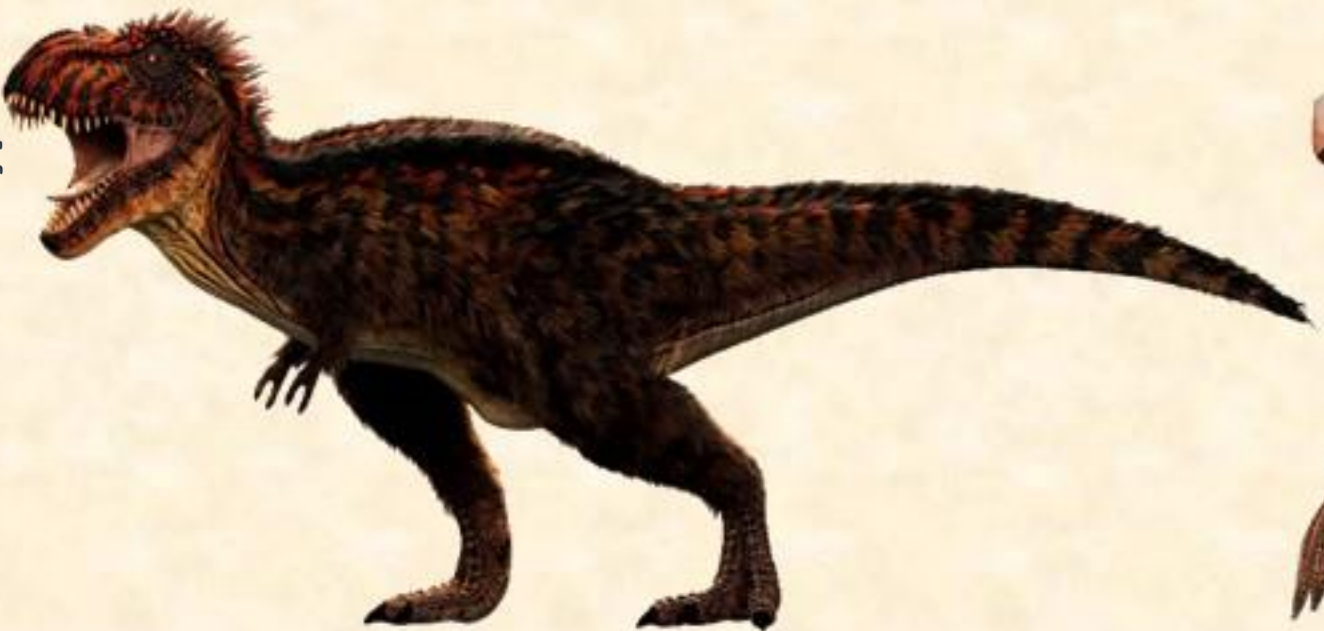




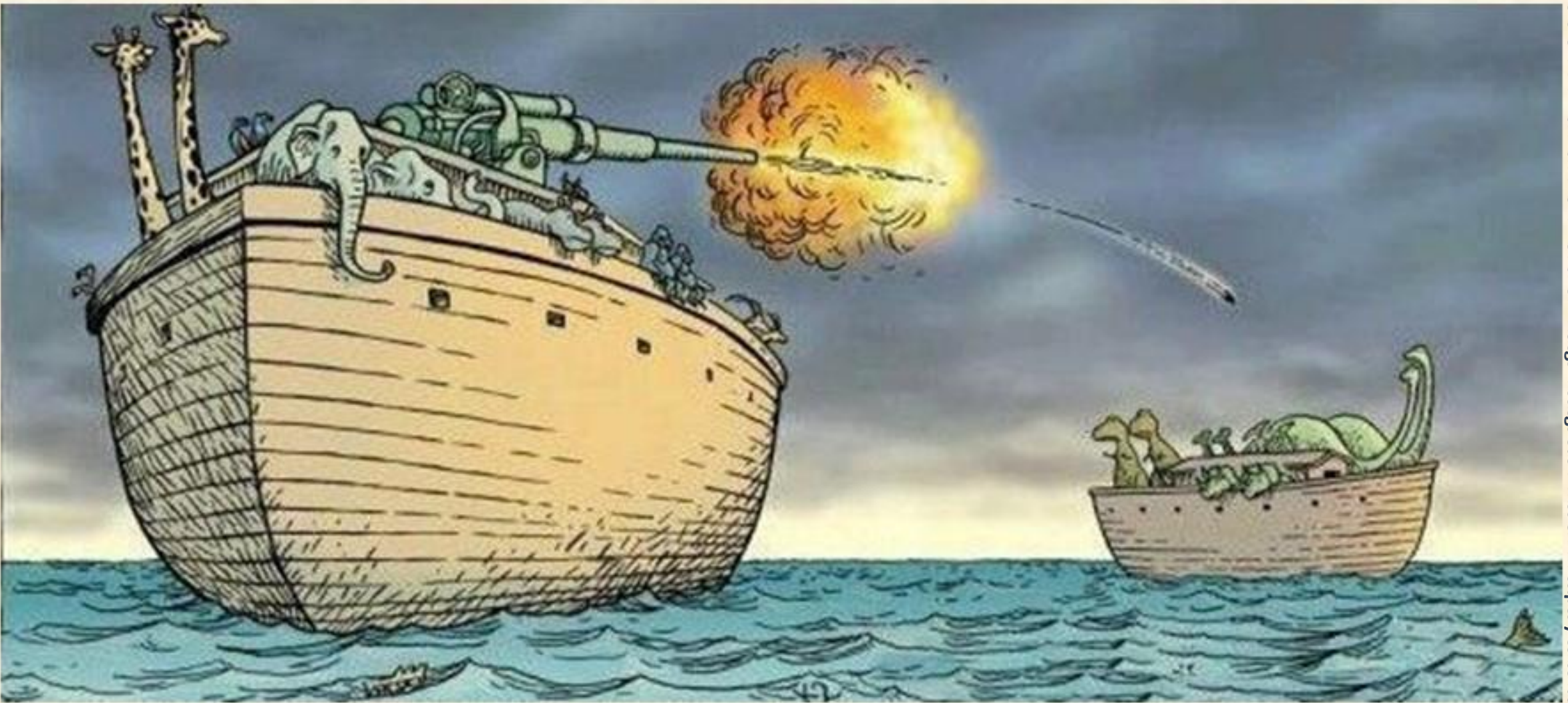




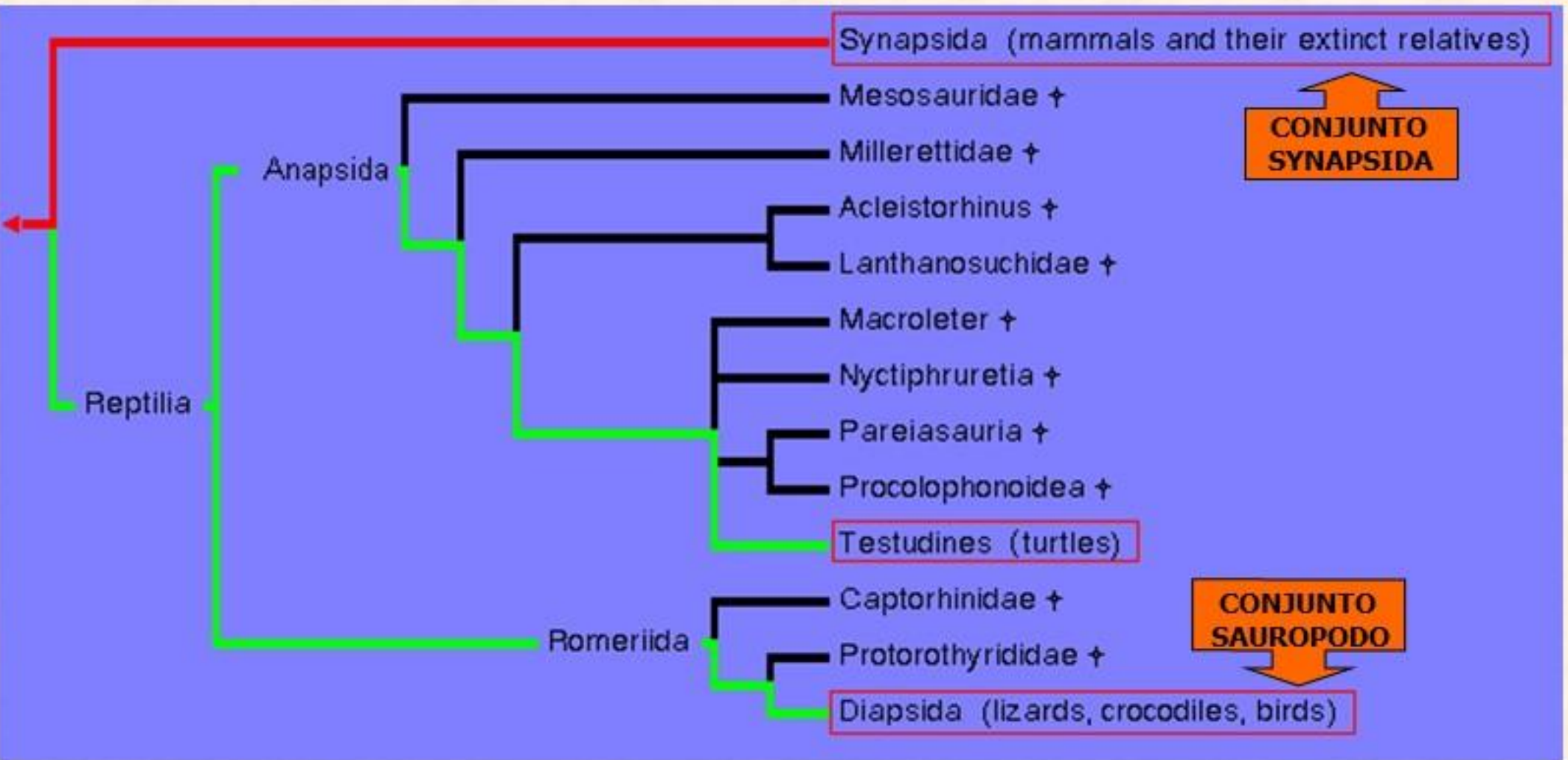
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PELYCOSAURIA



- Heterodoncia no marcada (caninos y molares)
- Falanges 2-3-4-5-3
- Homotermia (apofisis de las vértebras con gran desarrollo, formado una membrana para la regulación térmica)

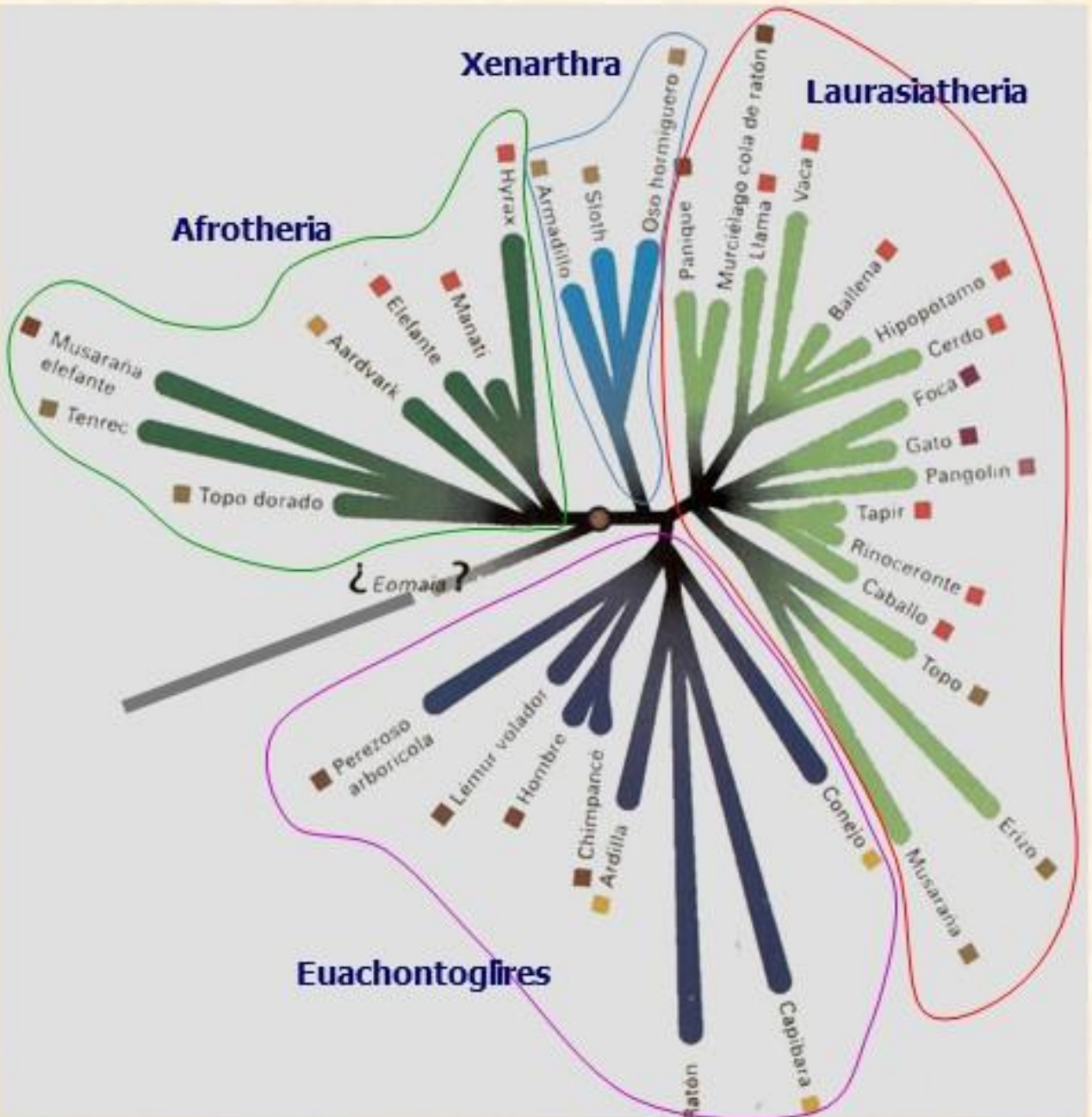
SYNAPSIDOS



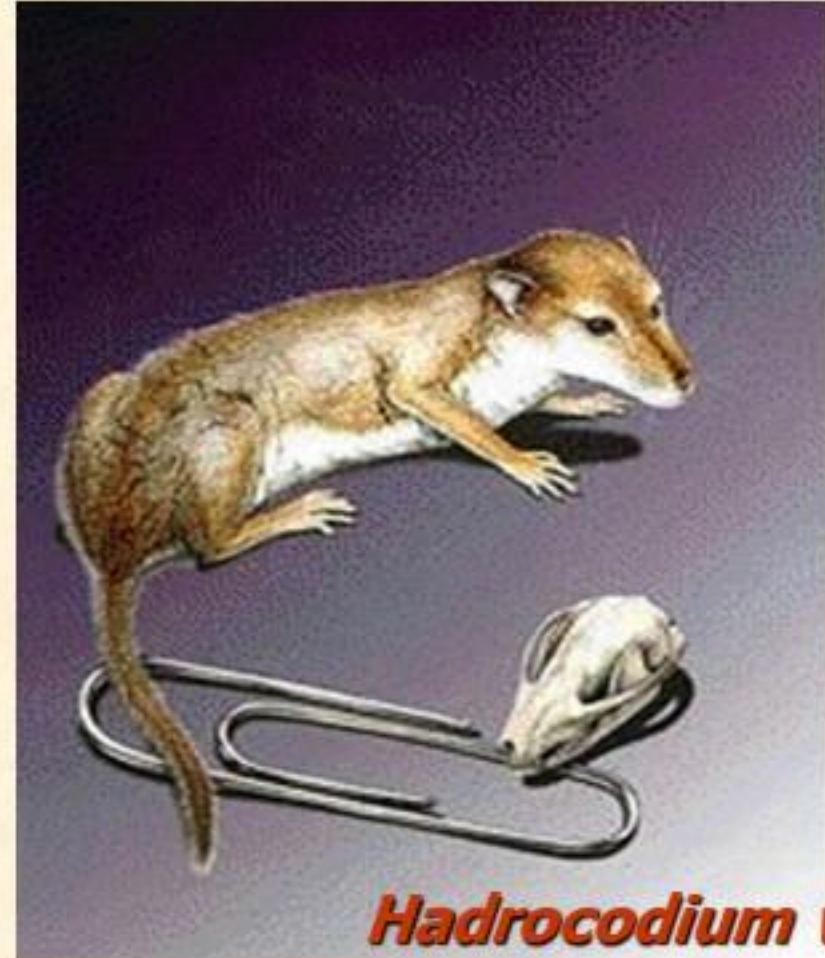
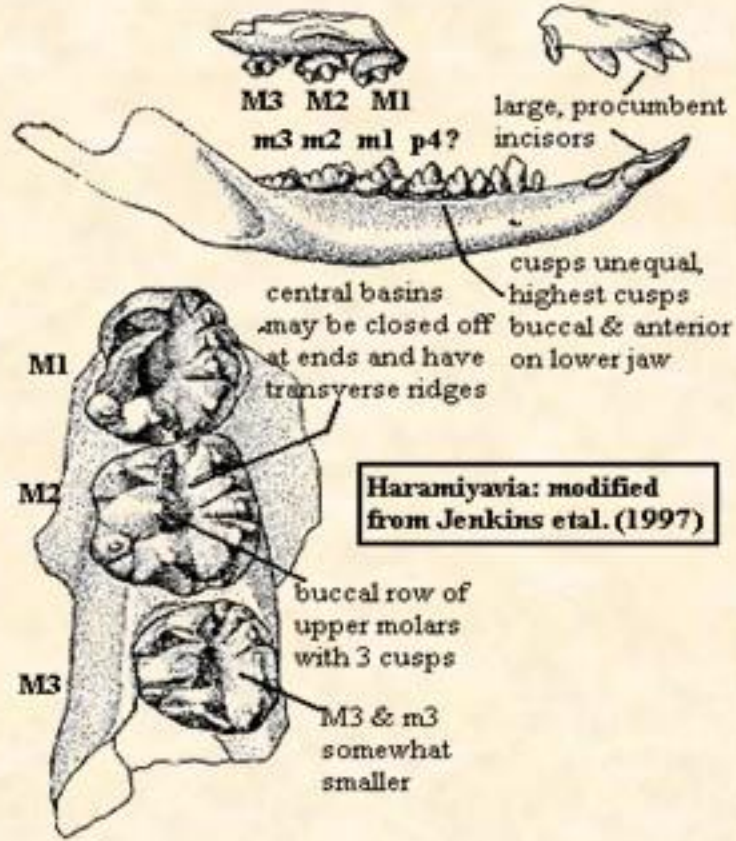
THERAPSIDA

- Heterodoncia perfecta (incisivos, caninos, molares y premolares)
- Falanges 3-3-3-3-2
- Organización craneal
- Homotermia (pelo)
- Paladar secundario
- Alimentación por leche

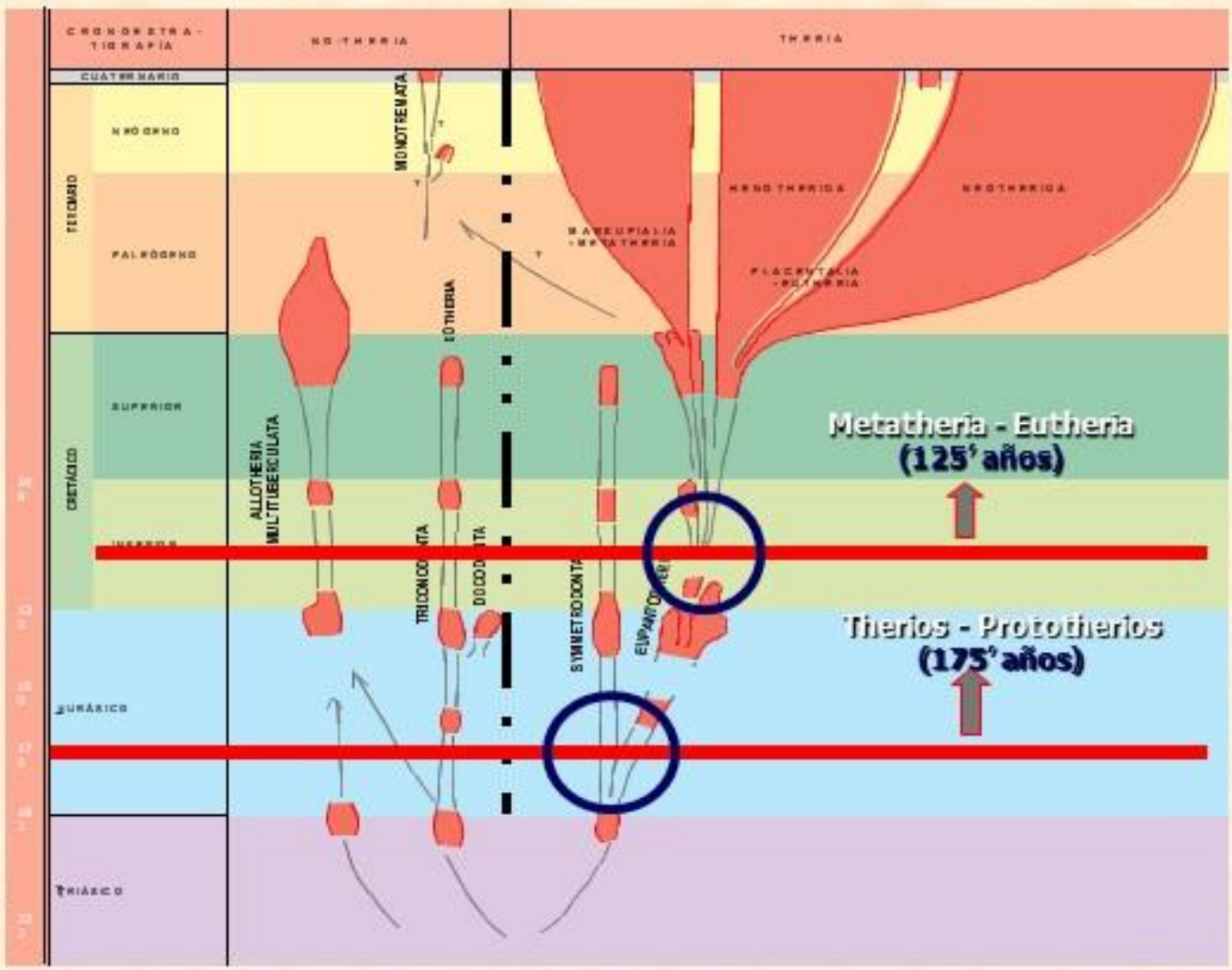
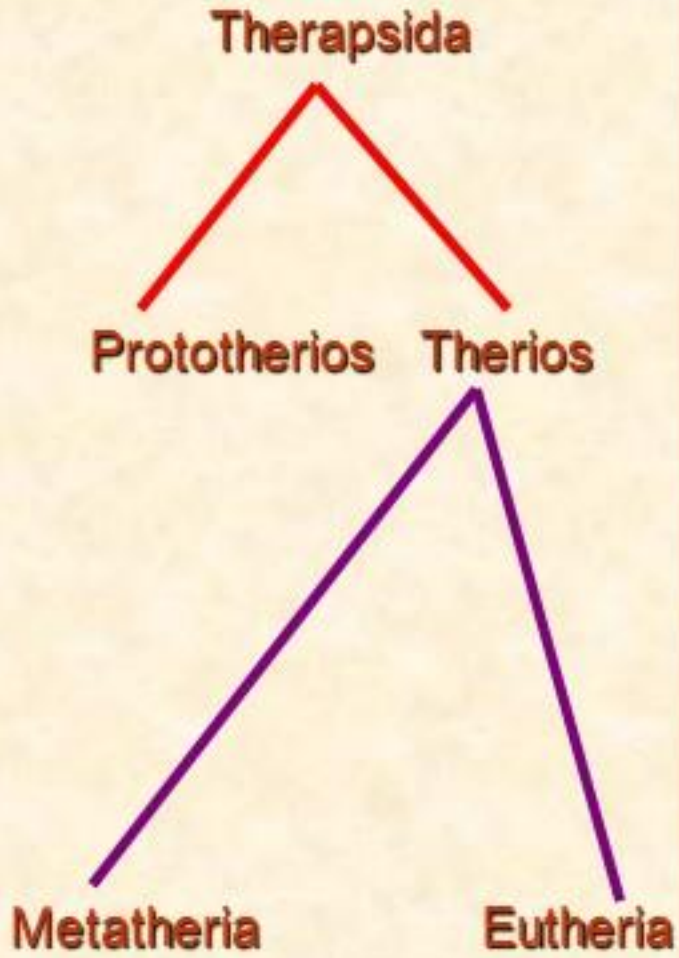


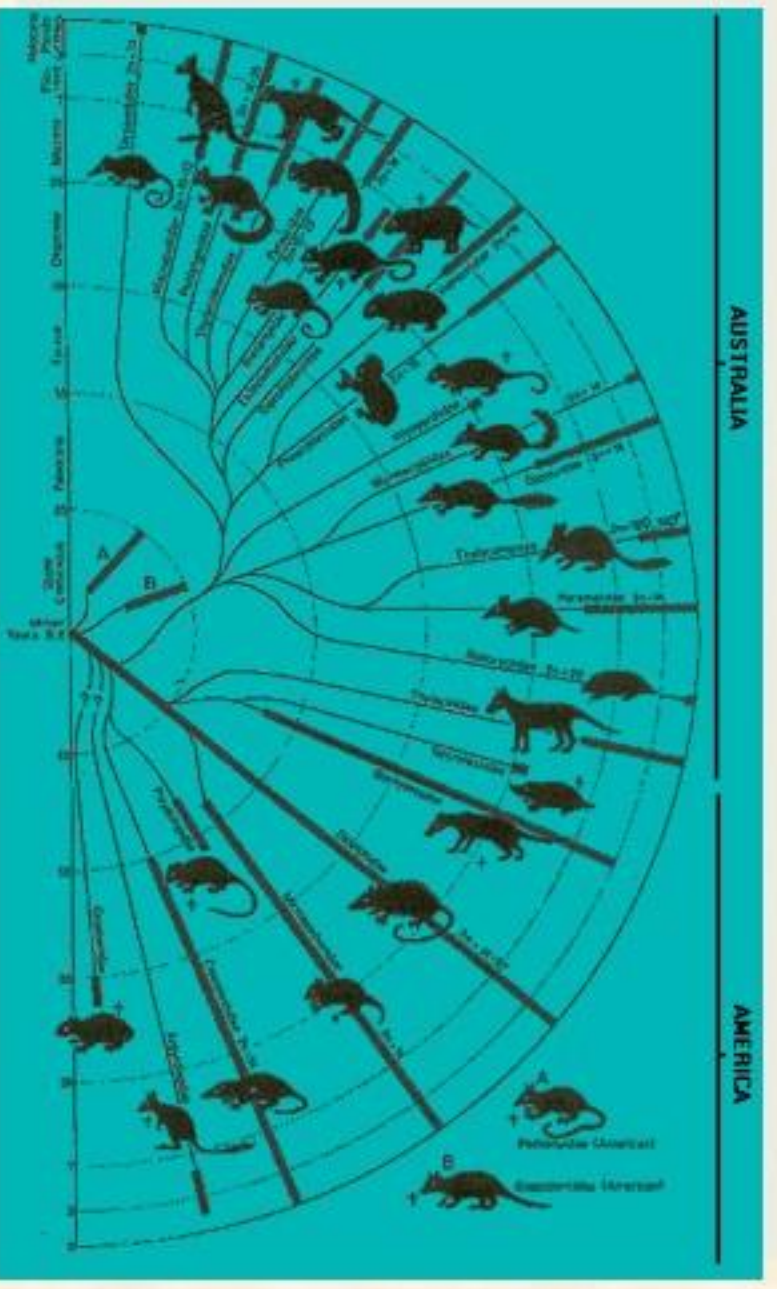


Las formas pequeñas, insectívoros Morganocudontidae, dominantes en Jurásico, se alimentaban un exhudado rico en azúcar, proteínas.
Restringidos al H. Norte. Jurásico Med-sup.
Organismos de pequeña talla

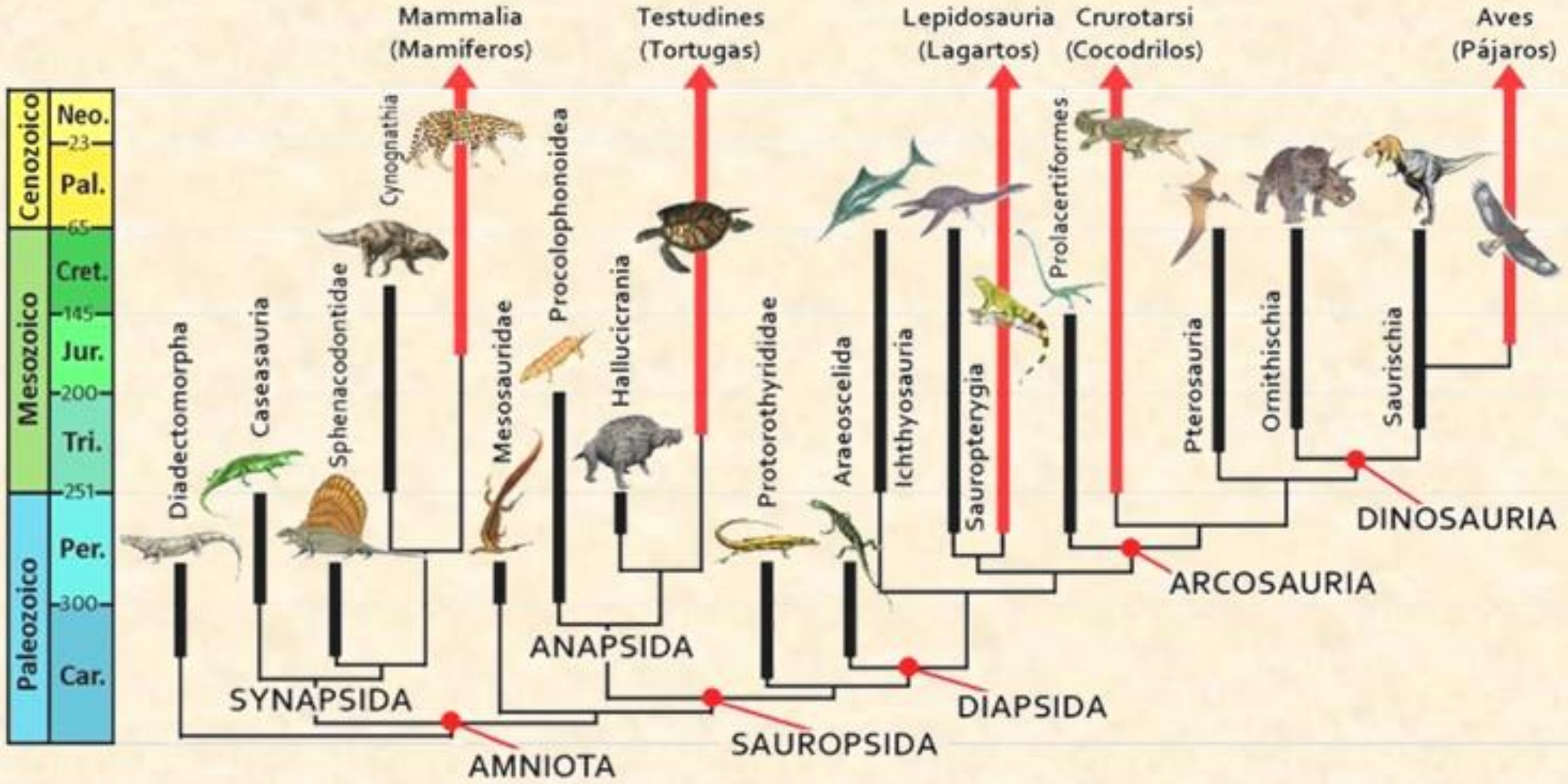


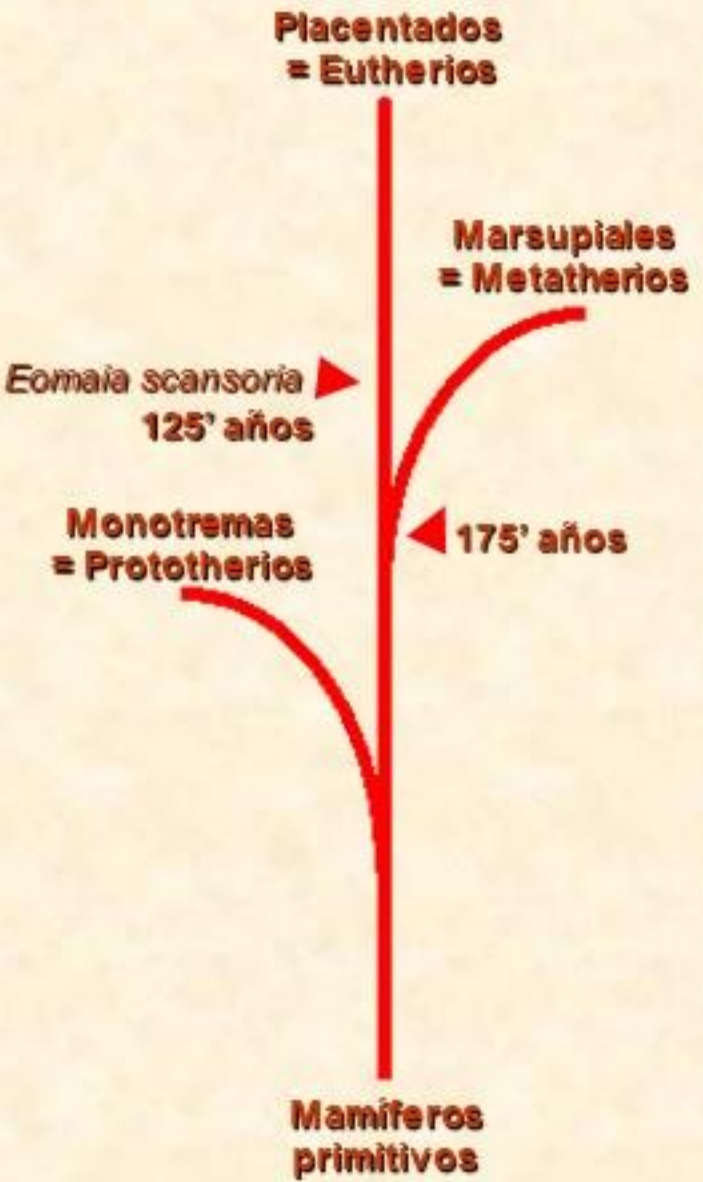
Hadrocodium wui

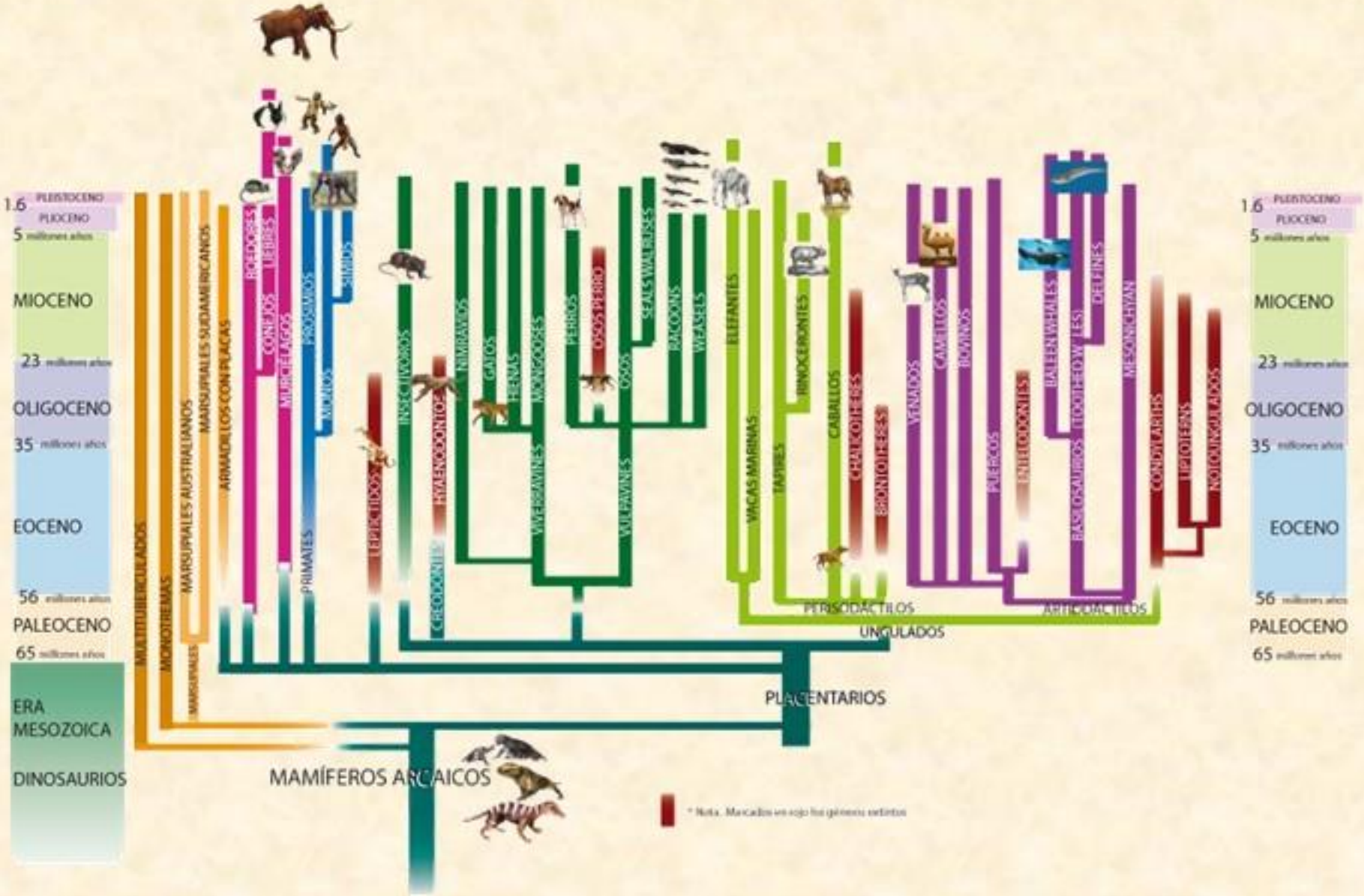


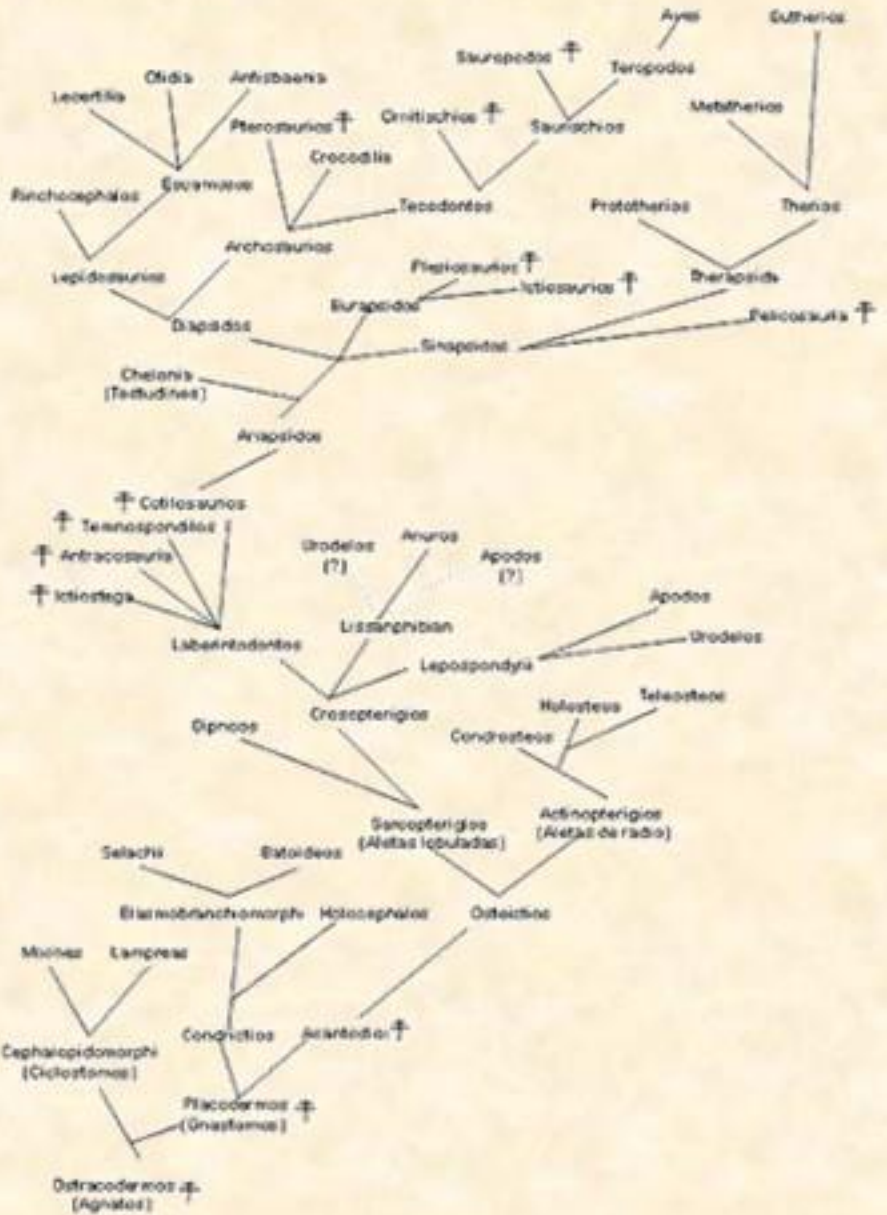


Los marsupiales se extinguieron debido a las diferencias reproductivas con los placentados, solamente sobreviven en Australia y América, lograron sobrevivir por la llegada tardía de los placentados a Gondwana.











GRACIAS