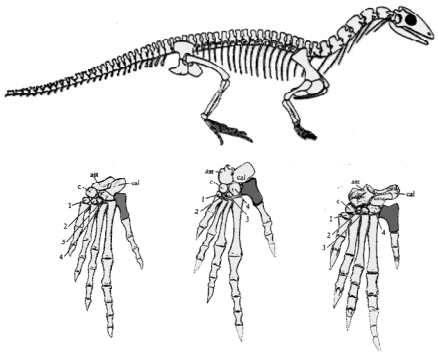
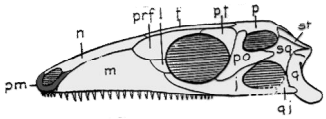
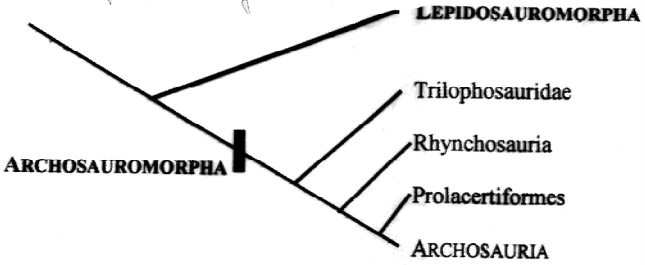


Archosauromorpha
Dal Permiano Medio





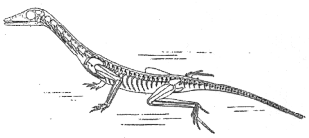
PROLACERTIFORMES (Permiano Superiore – Triassico Superiore)

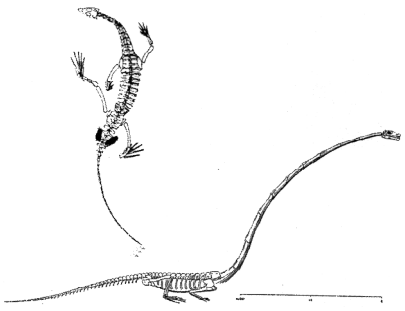
Prolacertiformes

7-12 vertebre cervicali lunghe con spine neurali basse

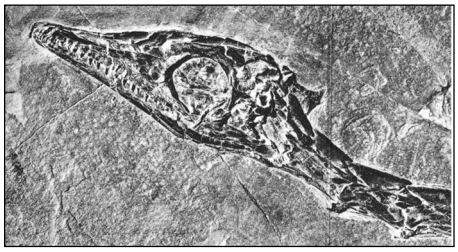
carpo poco ossificato

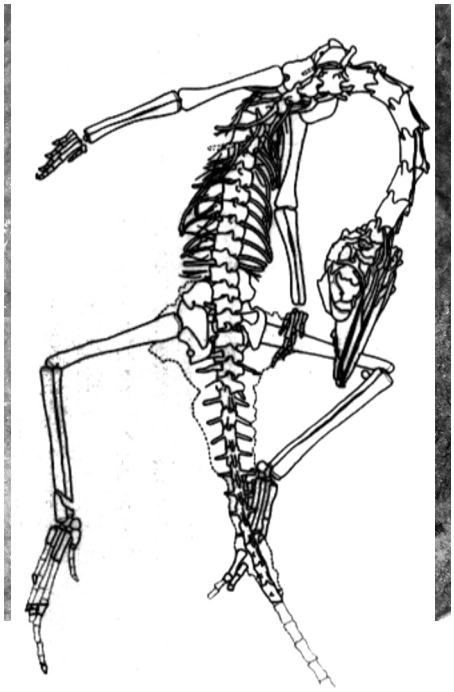
quadratojugale ridotto (f. t. aperta?)



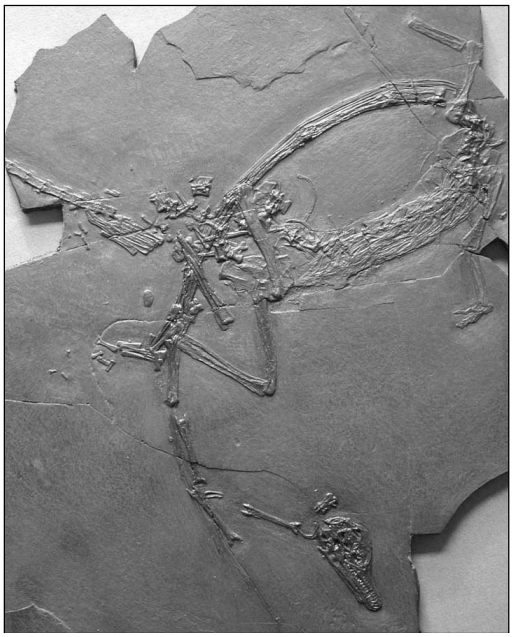


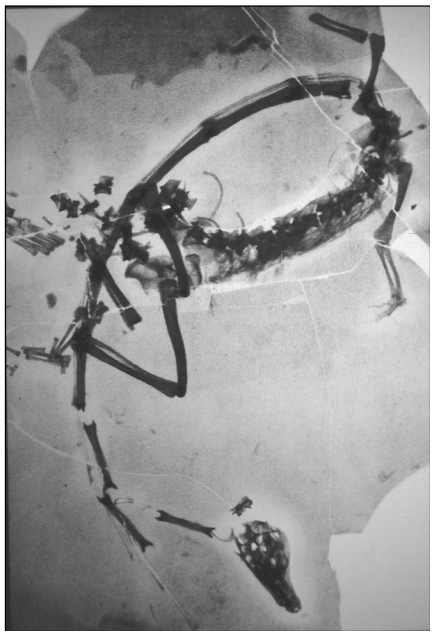
Macrocnemus





Tanystropheus





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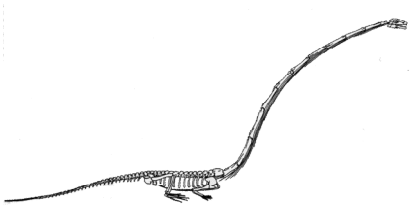
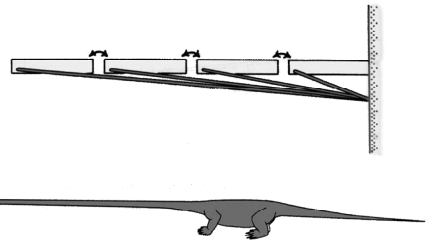
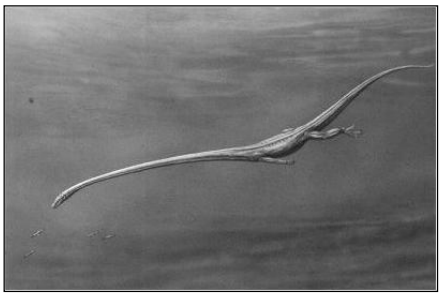
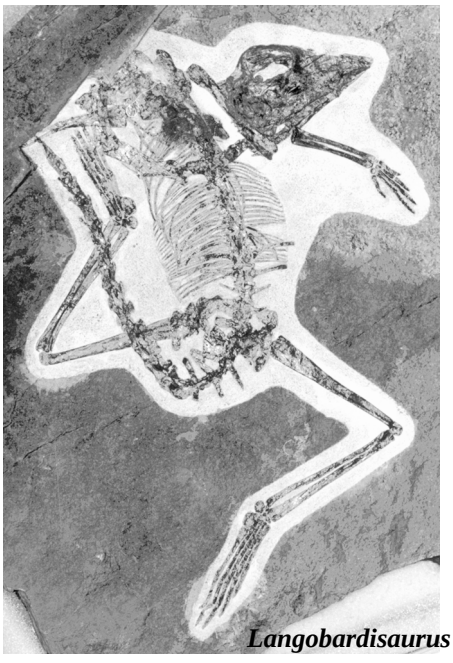
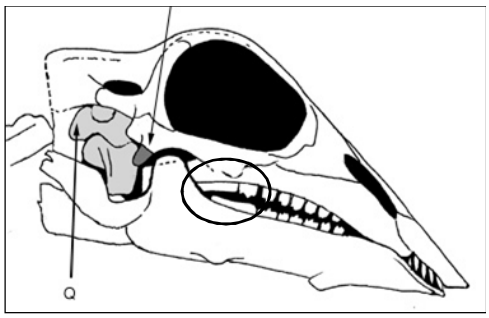


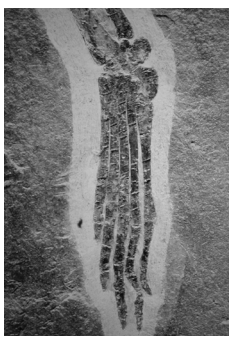


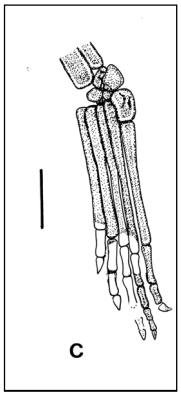




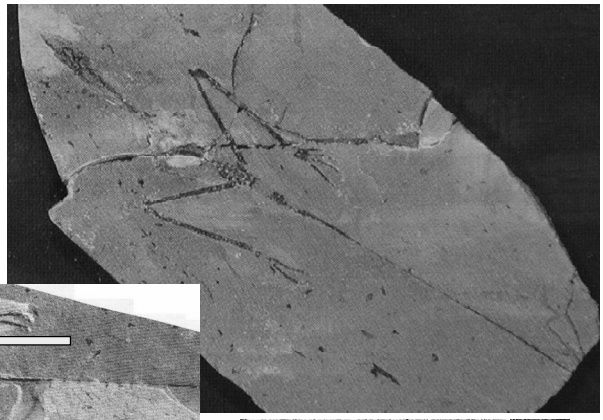
Langobardisaurus

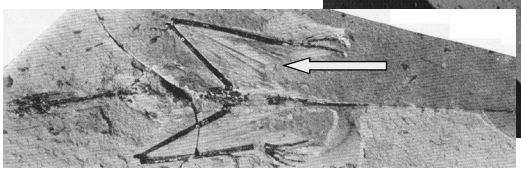


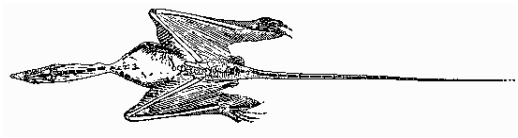


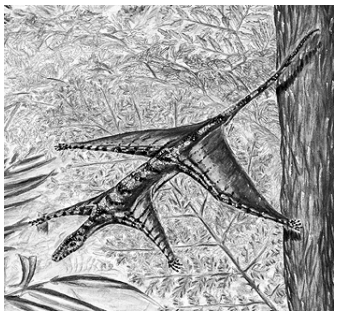


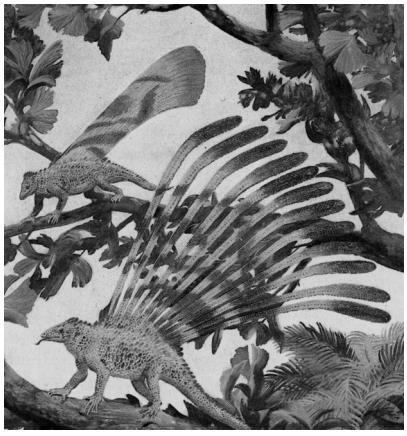
Sharovipteryx
Triassico Superiore
Fergana Ex Unione Sovietica

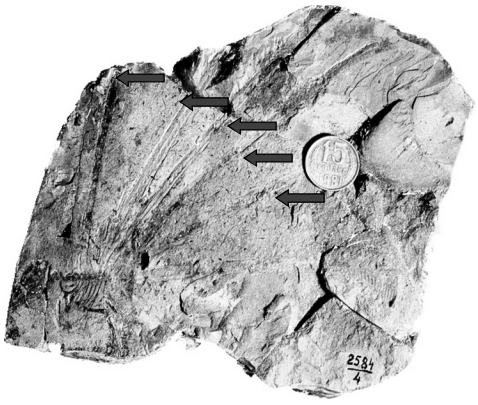




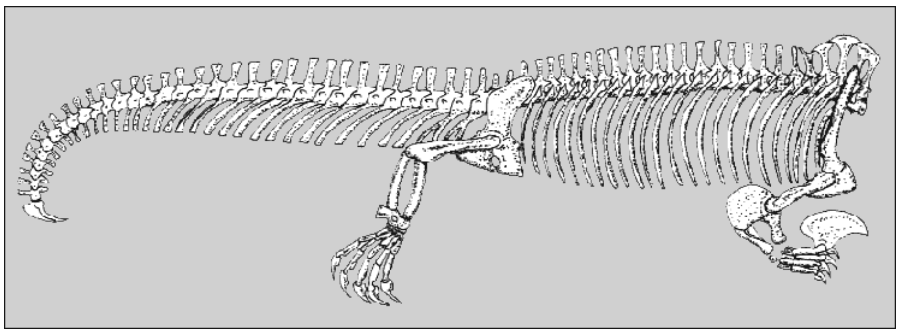


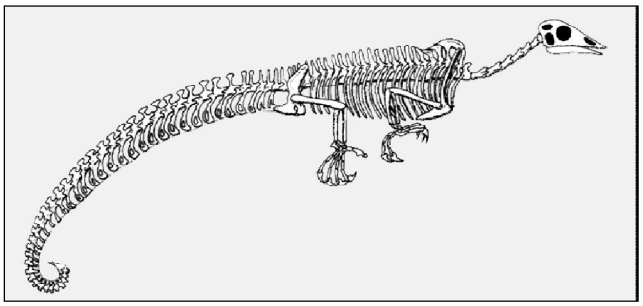






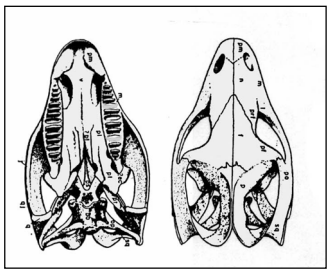
***Longisquama*, proveniente dalla stessa località di *Sharovipteryx*,**

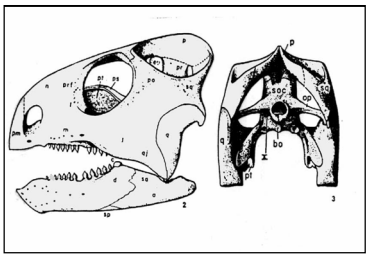




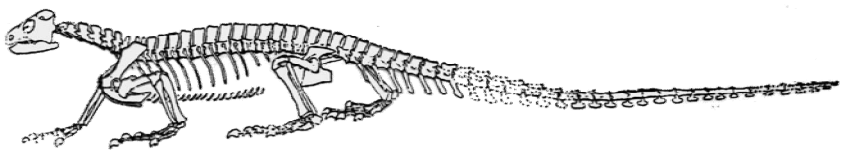
Drepanosaurus e ***Megalancosaurus*** costituiscono un gruppo a sé:

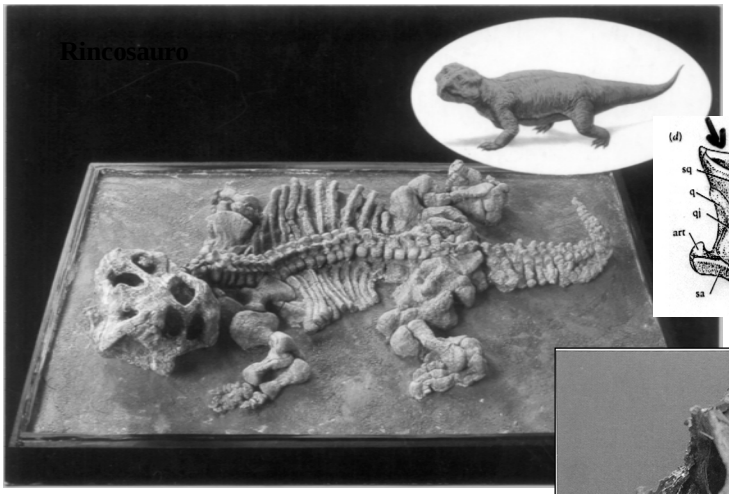
I Drepanosauridae

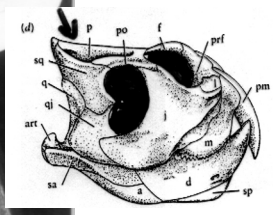


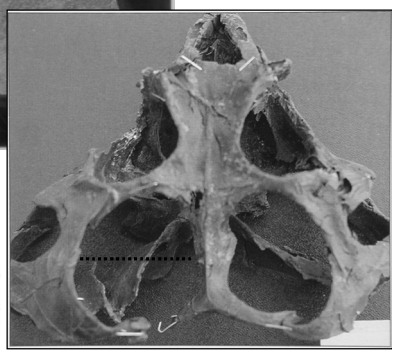


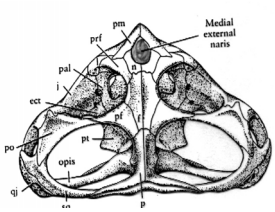
Trilophosaurus

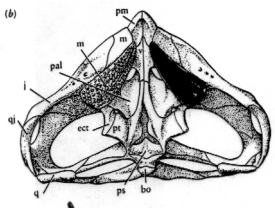




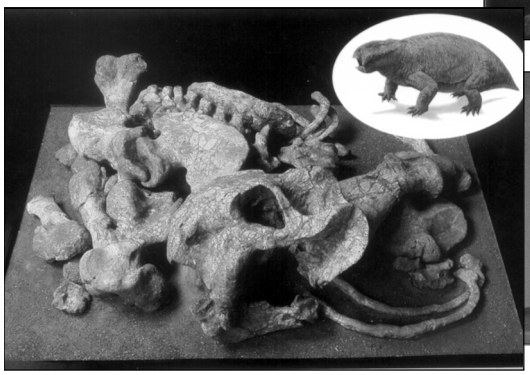


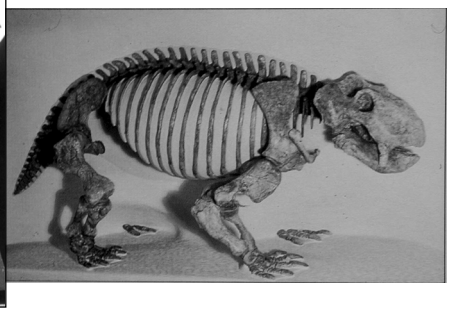






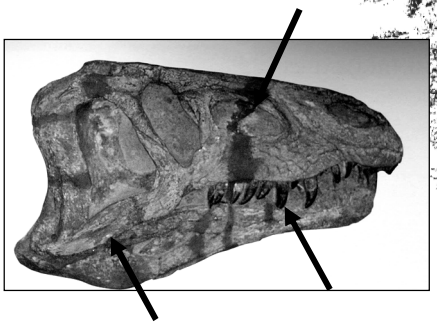
Grossi Dicinodonti, diversificatisi da forme sopravvissute all'estinzione permotriassica saranno gli erbivori di maggiori dimensioni fino a quando non verranno sostituiti dai Dinosauri

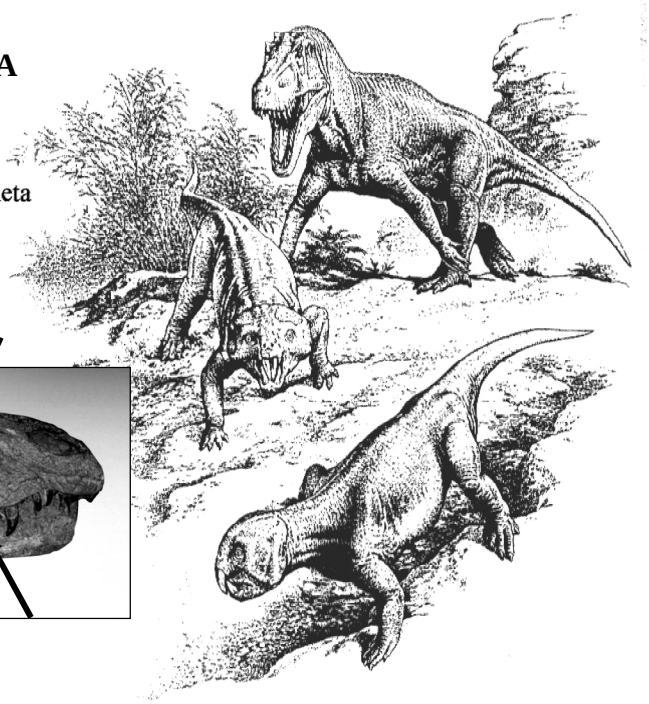




ARCHOSAURIA

- Finestra antorbitale
  A. temp. inferiore completa
  Laterosfenoide
  Denti tecodonti *



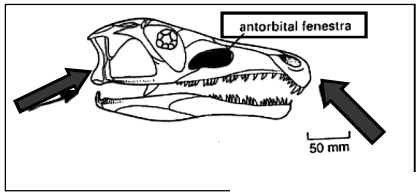


Archosauria
(Dal Permiano Superiore?)

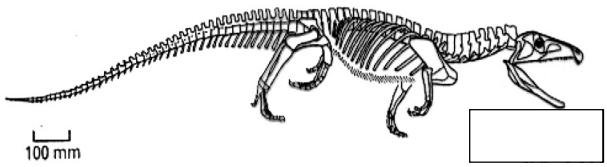
Archosauria primitivi

- Finestra antorbitale
  A. temp. inferiore completa *
  Laterosfenoide
  Denti tecodonti *

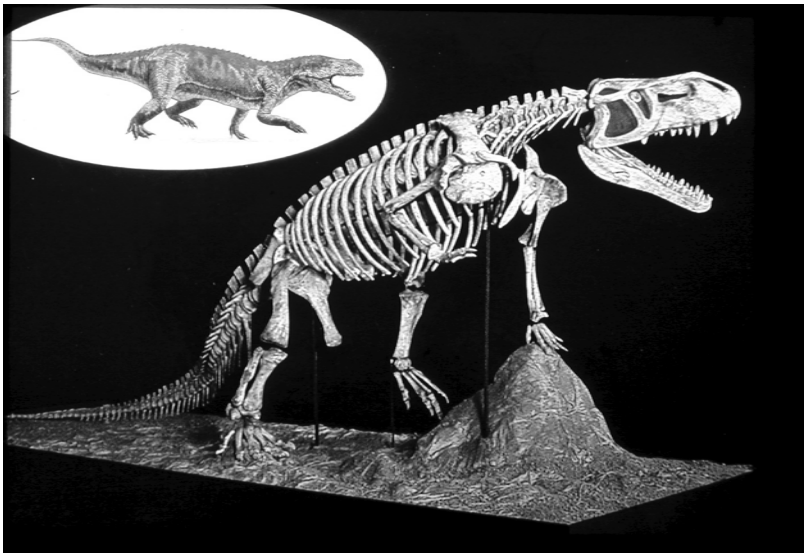
*carattere non esclusivo



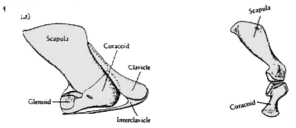
Proterosuchus



Gli Arcosauri assumono il dominio definitivo fra i predatori terrestri sostituendo completamente i Terapsidi

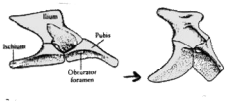


EVOLUZIONE DEGLI ARCOSAURI PRIMITIVI

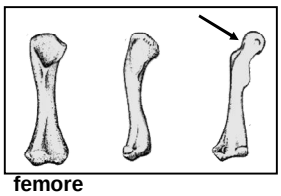


La testa sta da questa parte

Cinto pettorale

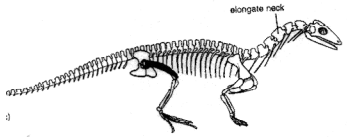


Cinto pelvico

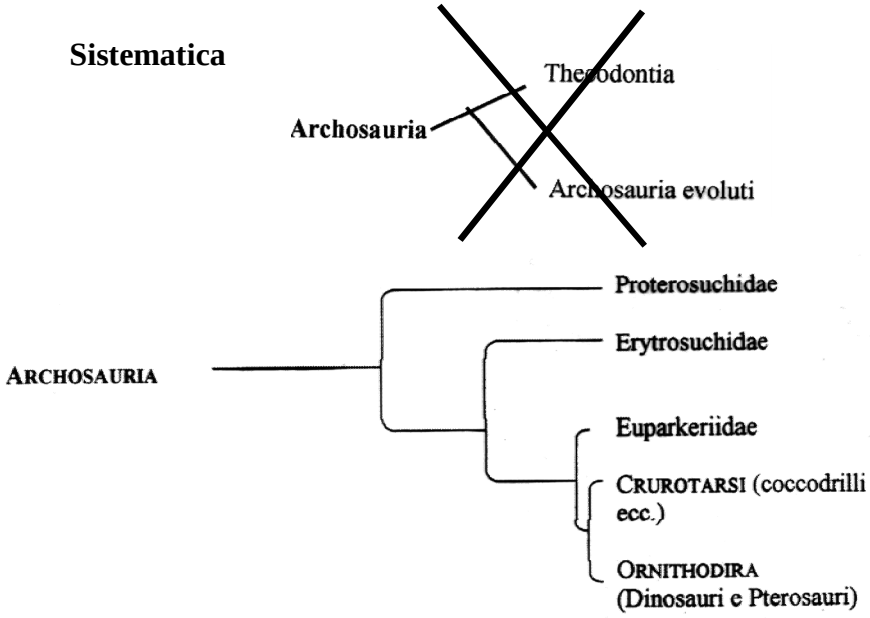


femore

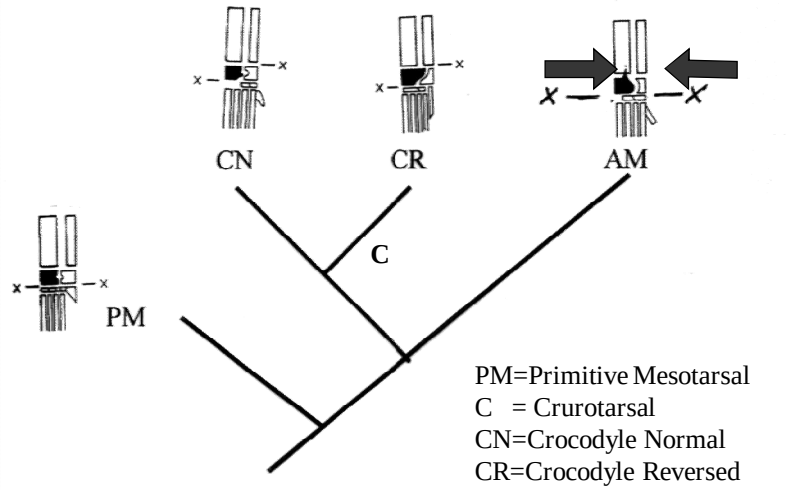
Postura



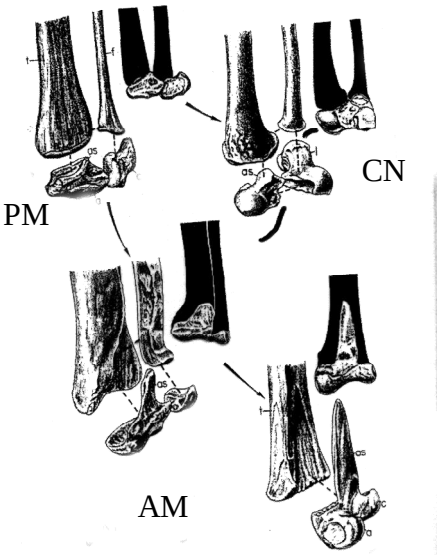
Sistematica



EVOLUZIONE DEL TARSO DEGLI ARCOSAURI



PM=Primitive Mesotarsal
C = Crurotarsal
CN=Crocodyle Normal
CR=Crocodyle Reversed
AM=Advanced Mesotarsal



PM = il piano di flessione passa a metà del tarso (mesotarsale appunto)

C = il piano di flessione passa fra astragalo e calcagno ed è di due tipi:
CN= sporgenza sull'astragalo e rientranza nel calcagno
CR=viceversa

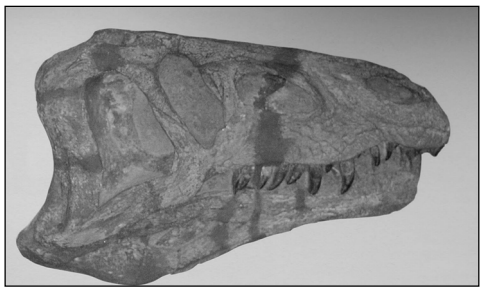
AM= il piano di flessione è di nuovo a livello mesotarsale, ma l'astragalo possiede un processo dorsale che lo integra con la tibia,

Erytrosuchi

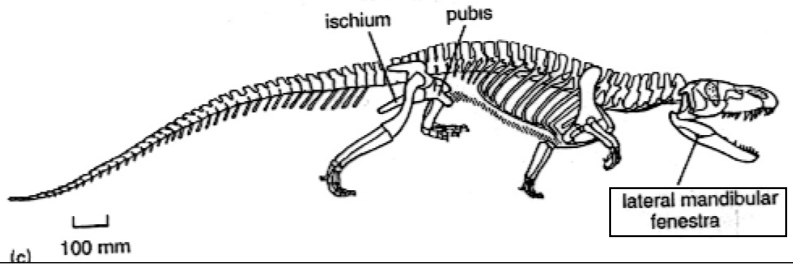
Triassico Inferiore

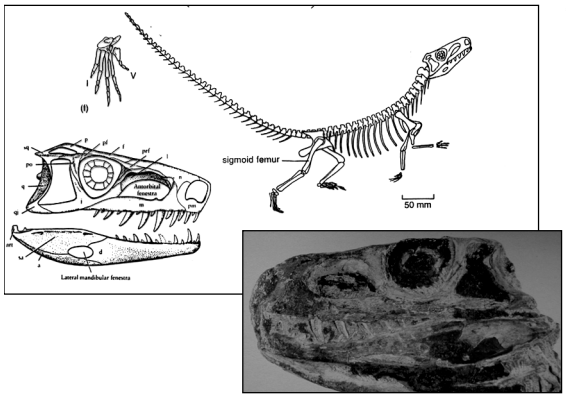
I più grandi vertebrati terrestri del loro periodo, al top della catena alimentare

Presenza di un 4° trocantere nel femore
Carpali e tarsali poco ossificati



Erytrosuchus





ARCHOSAURIA

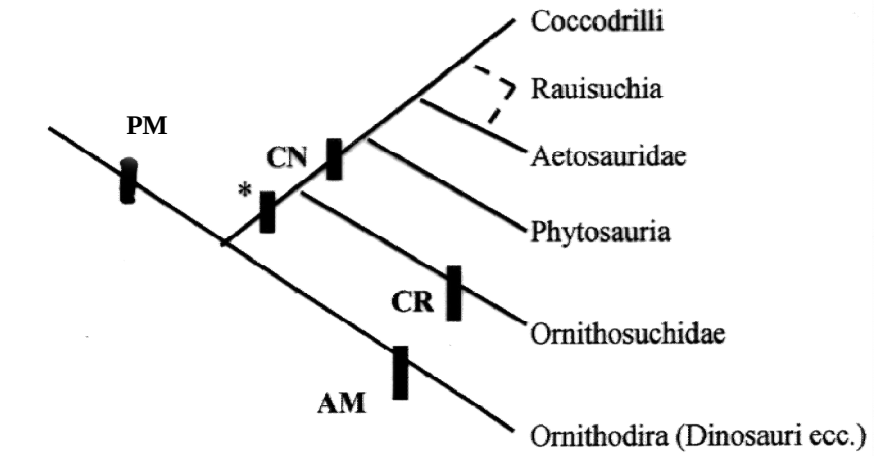
- Proterosuchidae
- Erytrosuchidae
- **Euparkeriidae**
- CRUROTARSI (coccodrilli ecc.)
- ORNITHODIRA (Dinosauri e Pterosauri)

Triassico Inferiore

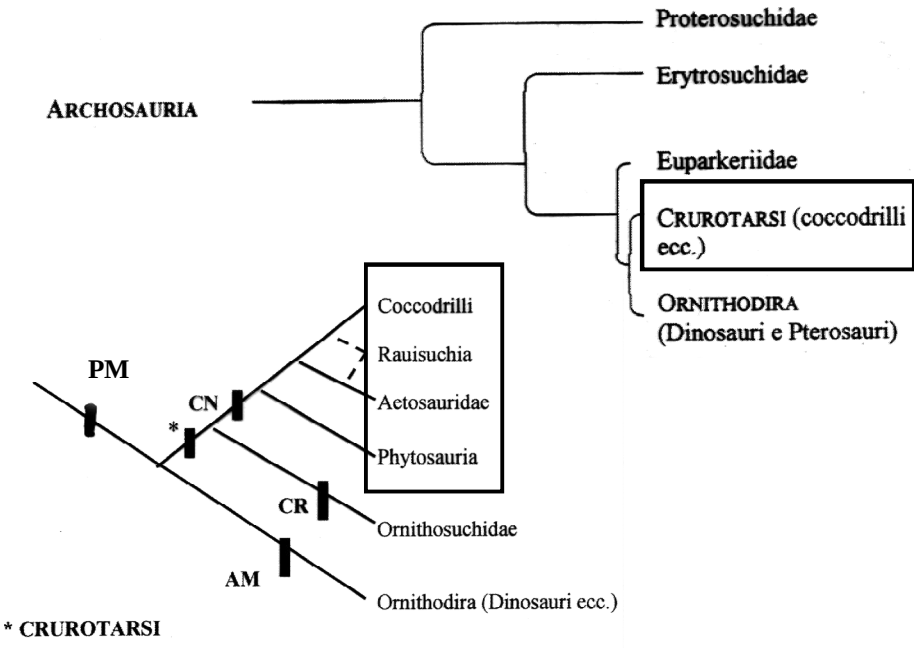
Arti post = 1,5 arti ant.
Possibile bipede facoltativo
Tarso PM
Prevalenza del terzo dito
Femore sigmoide
Staffa sottile

ARCHOSAURIA

- Proterosuchidae
- Erytrosuchidae
- Euparkeriidae
- **CRUROTARSI (coccodrilli ecc.)**
- ORNITHODIRA (Dinosauri e Pterosauri)

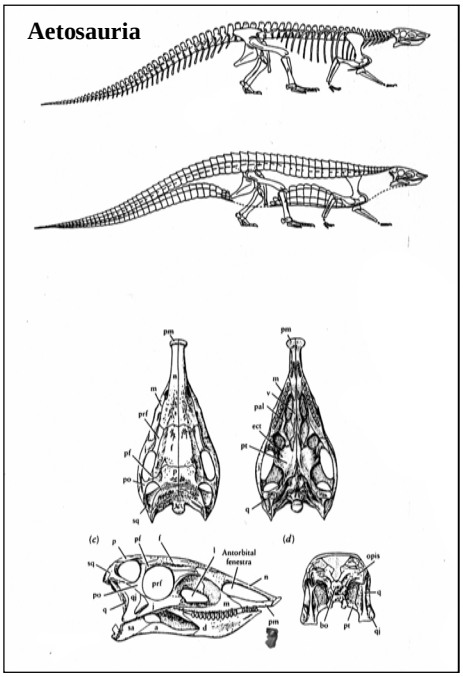


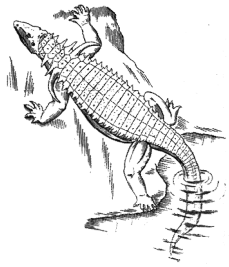
*** CRUROTARSI**



*** CRUROTARSI**

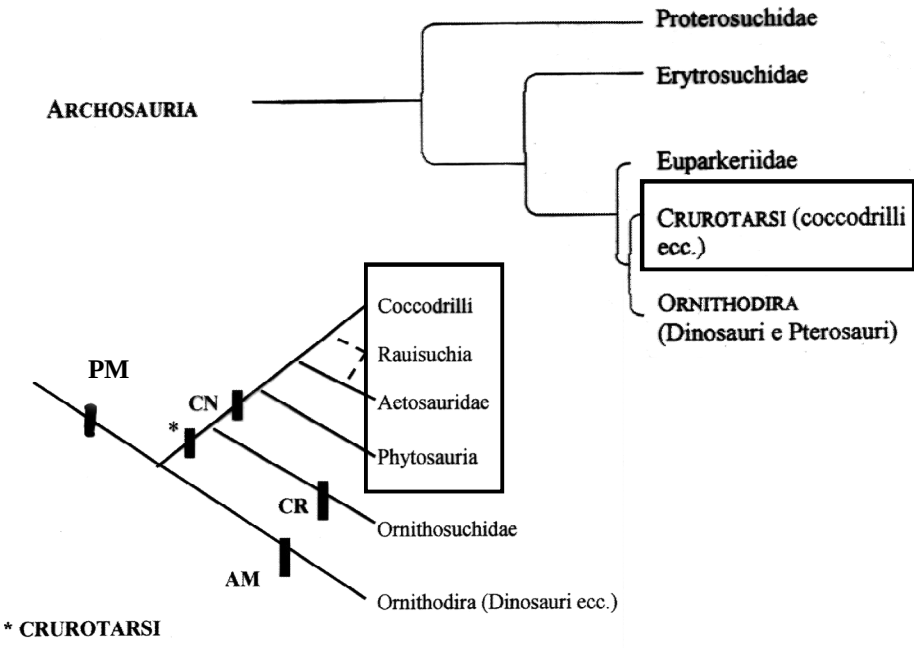
Aetosauria

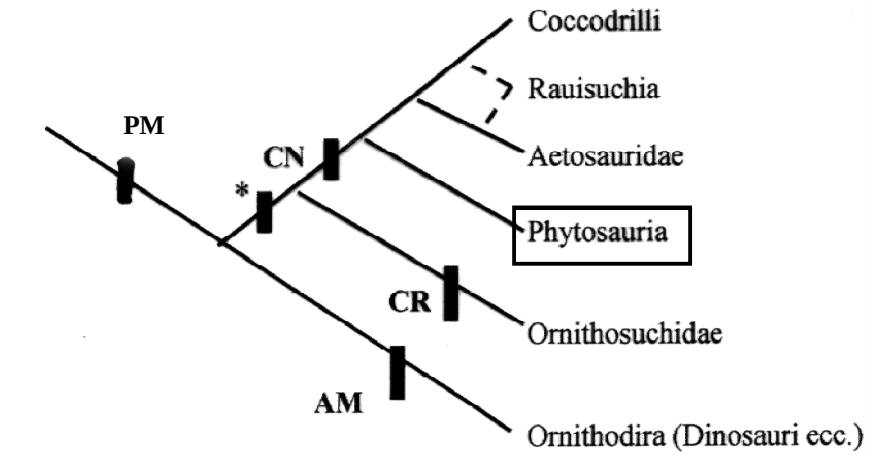




Triassico Medio Sup.

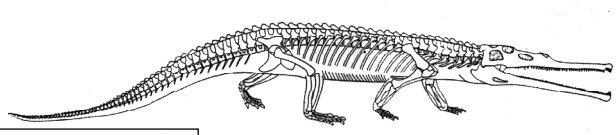
Muso con "grugno"
Pesante corazzatura
Tarso CN
Articolazione della mandibola al di sotto della fila dei denti
Denti a foglia
Forse deposito di grasso nella coda

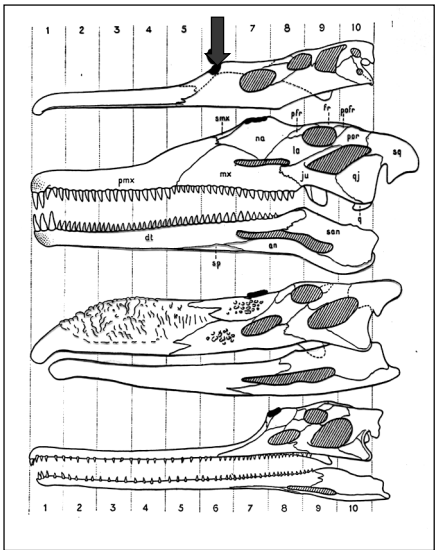




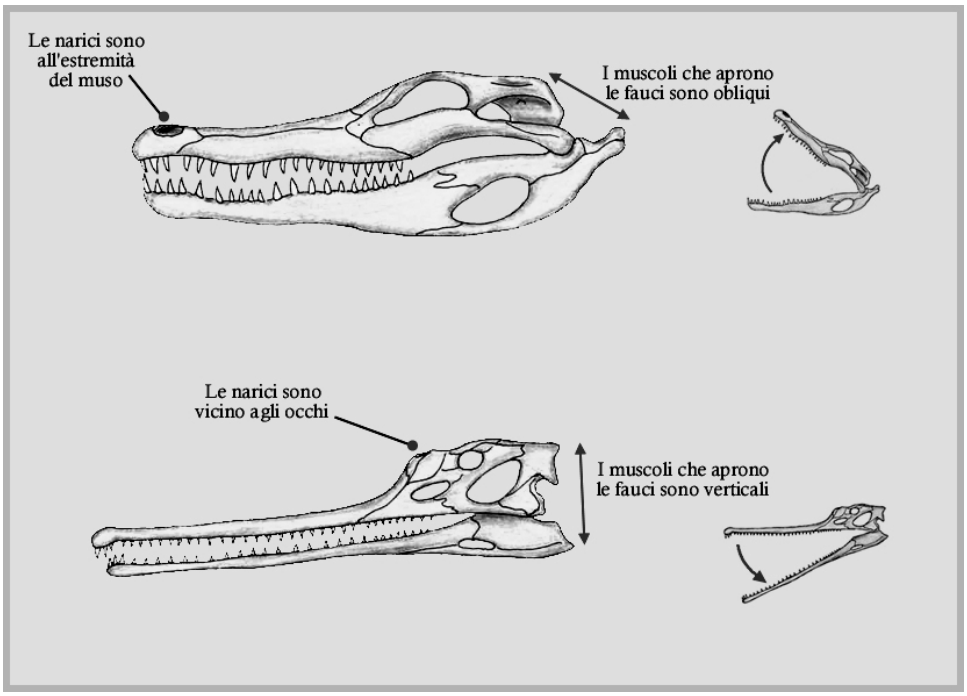
*** CRUROTARSI**

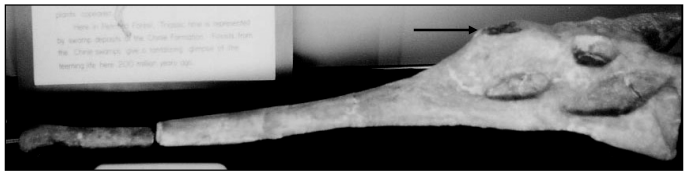
Fitosauri

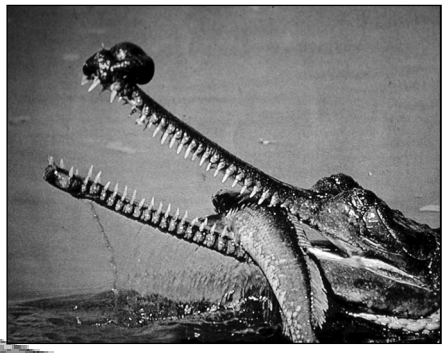


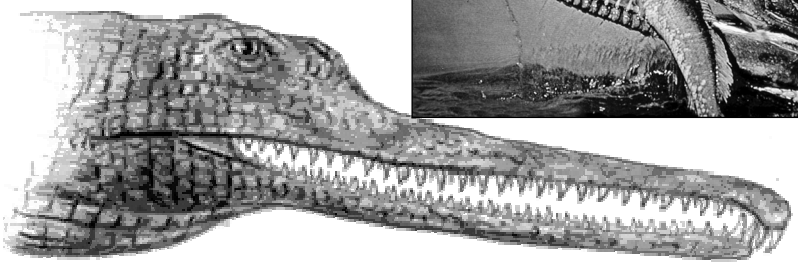


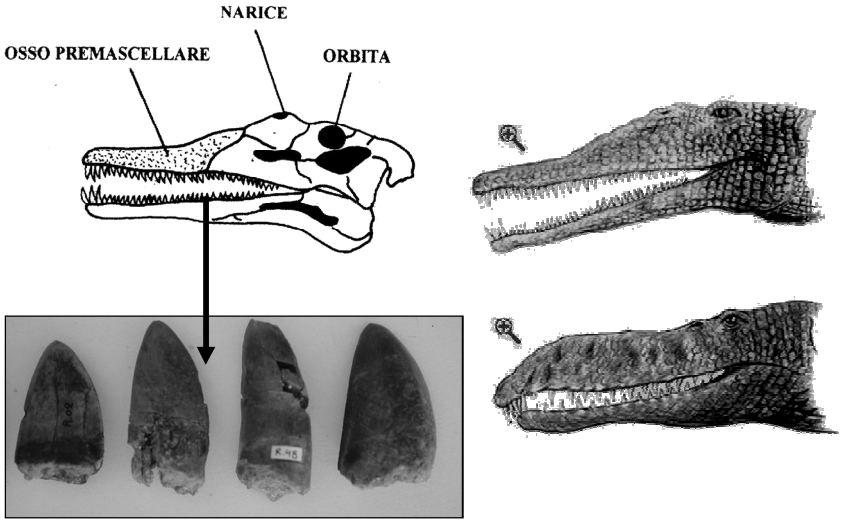
Triassico Medio Sup.
Modo di vita simile a quello dei coccodrilli moderni, ma con adattamenti diversi
Narici arretrate
No palato secondario
Eterodonzia
Differente altezza del rostro = diverse specializzazioni alimentari


Le narici sono all'estremità del muso
I muscoli che aprono le fauci sono obliqui
Le narici sono vicino agli occhi
I muscoli che aprono le fauci sono verticali

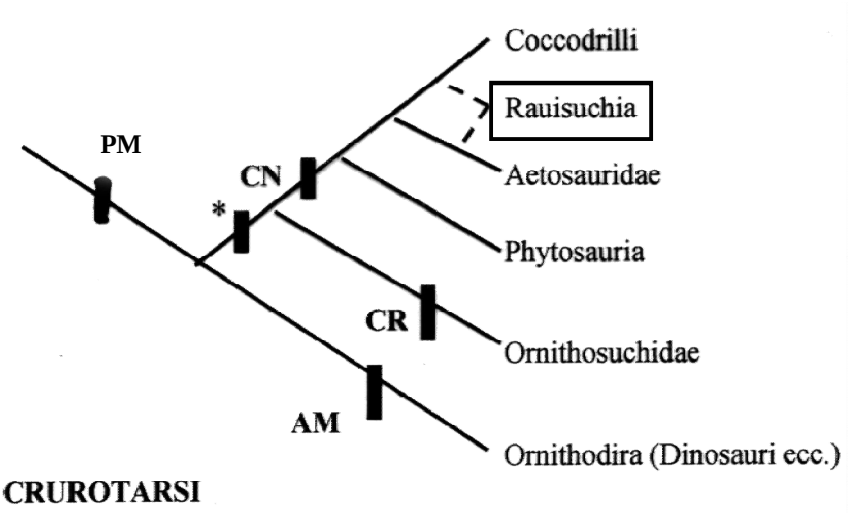








A differenza dei coccodrilli, molti fitosauri erano *eterodonti*, possedevano denti laterali compressi, atti a tagliare

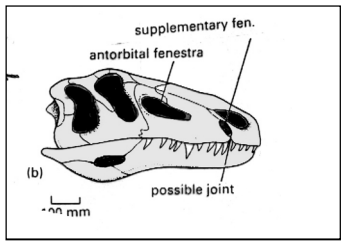


*** CRUROTARSI**

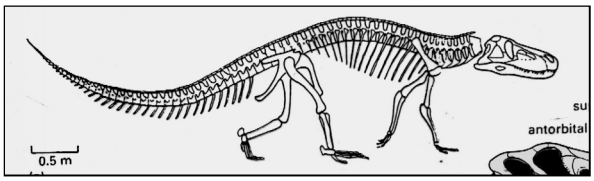
Rauisuchidae

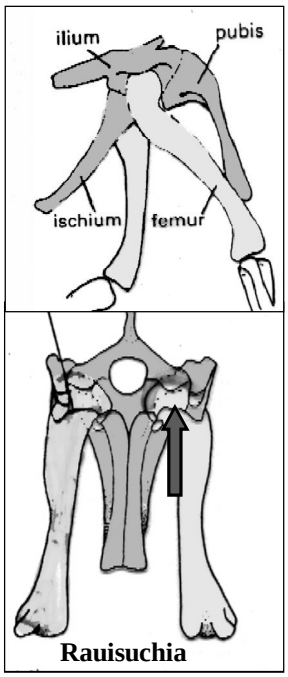
(Triassico Medio –Superiore)

CN
5°dito della zampa post. ridotto
Postura parasagittale *pillar-like*
(testa del femore in asse, acetabolo orizzontale)

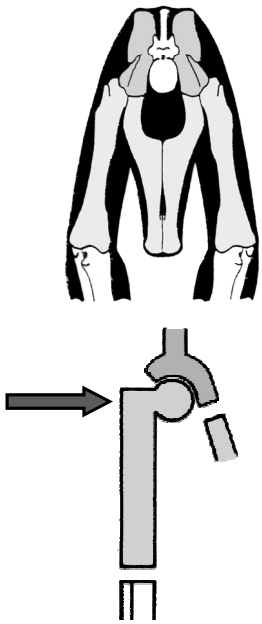


***Sarcosuchus* 7 m**

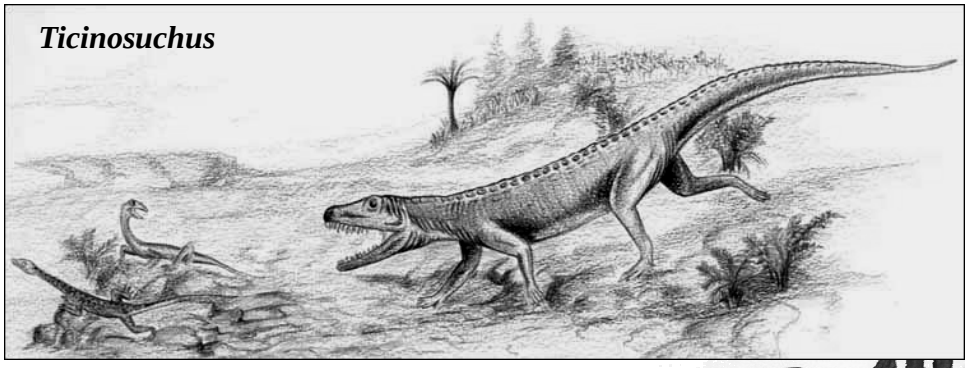




Rauisuchia

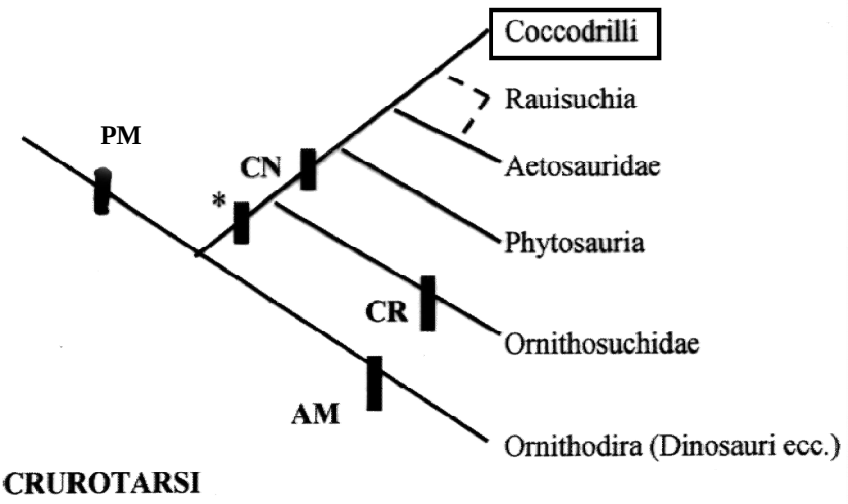


Dinosauria

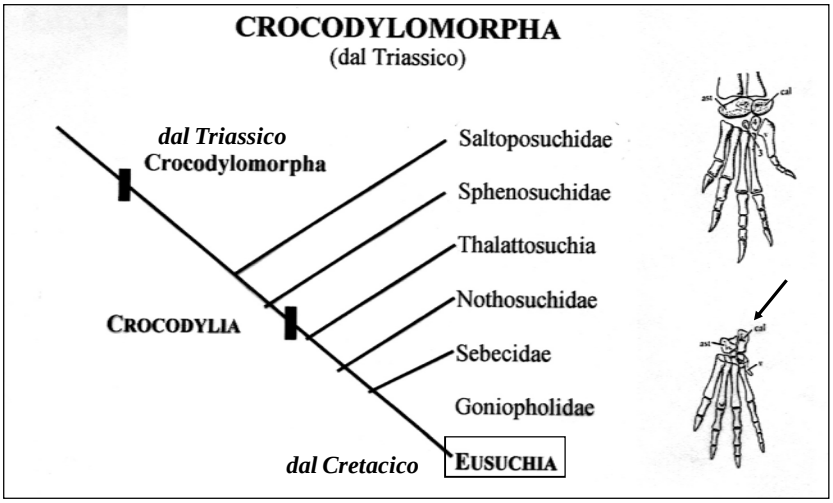


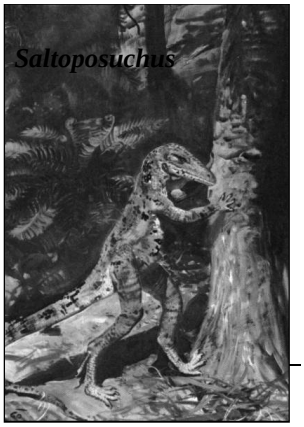
Erano feroci predatori dai denti a coltello e dalle fauci ampie, ***Ticinosucus*** era lungo tre metri, ma i suoi cugini americani più "giovani" (Triassico Superiore) passavano i sei.

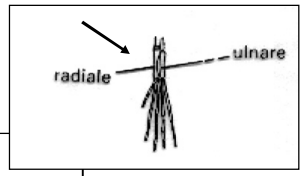
Postosuchus

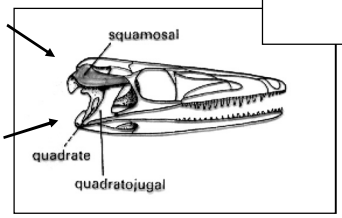


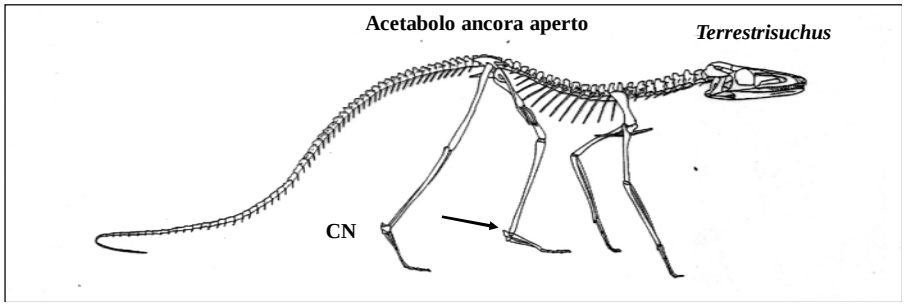
*** CRUROTARSI**

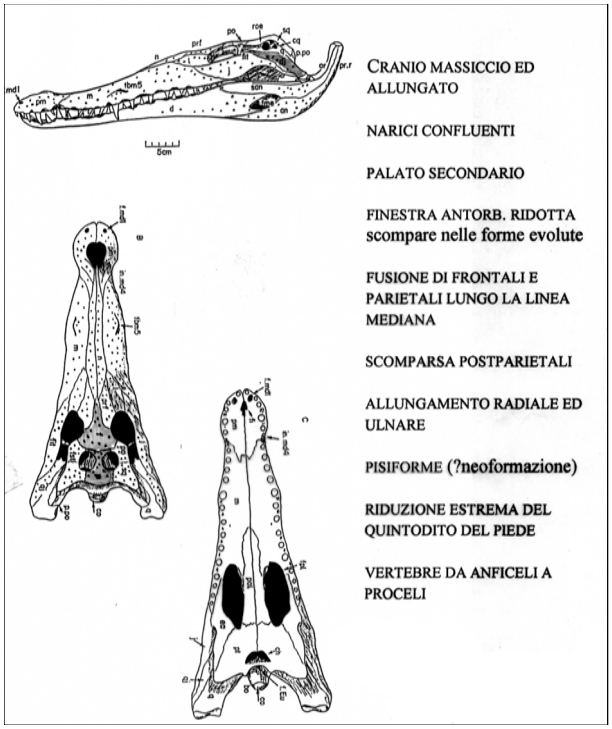

CROCODYLOMORPHA
(dal Triassico)
dal Triassico
Crocodylomorpha
Saltoposuchidae
Sphenosuchidae
Thalattosuchia
Nothosuchidae
Sebecidae
Goniopholidae
CROCODYLIA
dal Cretacico
EUSUCHIA


Saltoposuchus


radiale
ulnare


squamosal
quadrate
quadratojugal


Acetabolo ancora aperto
Terrestrisuchus
CN



Crocodylia

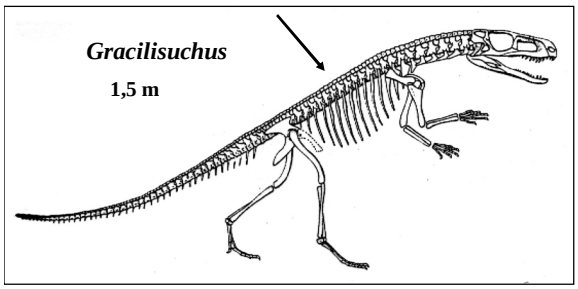
24 vertebre presacrali (tranne che nelle forme completamente marine)

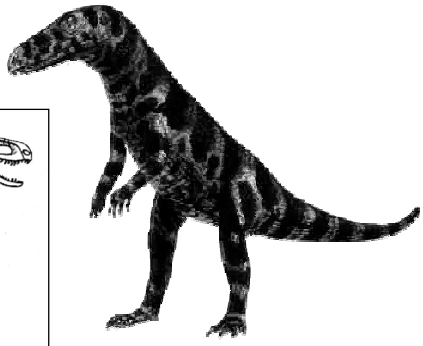
Espansione dei coracoidi

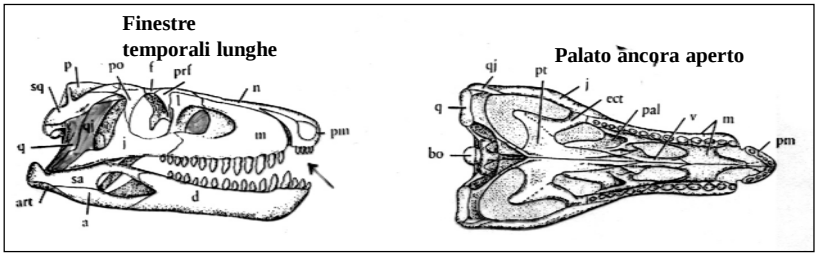
Riduzione degli altri elementi del cinto pettorale

Queste modifiche vengono progressivamente acquisite durante la storia evolutiva del gruppo.

Sphenosuchidae (Triassico Superiore)

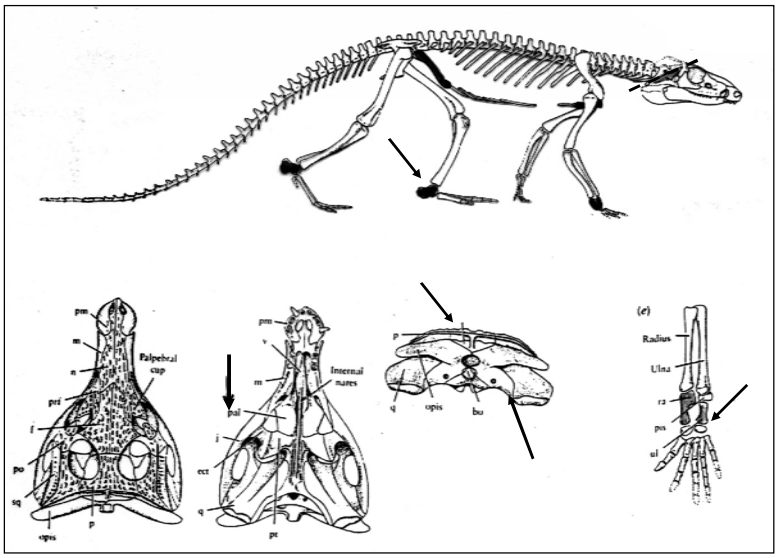


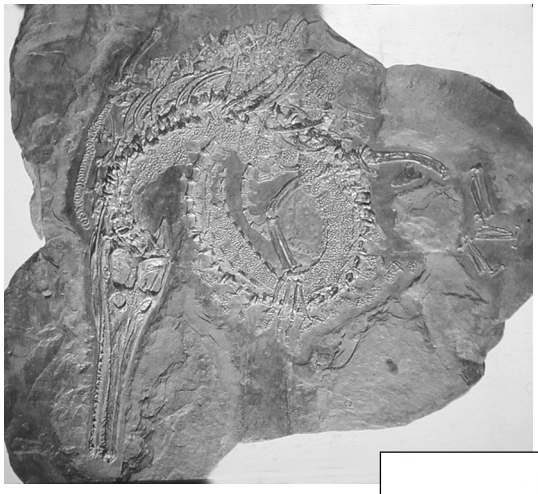




Proterosuchidae

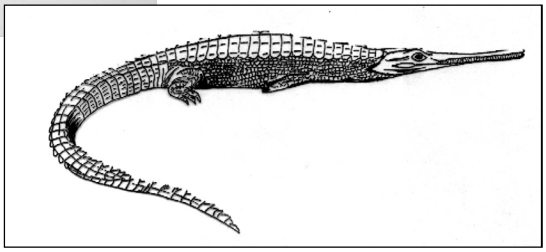
(Triassico Superiore)



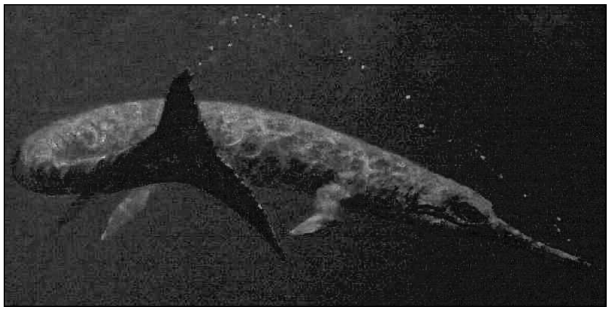


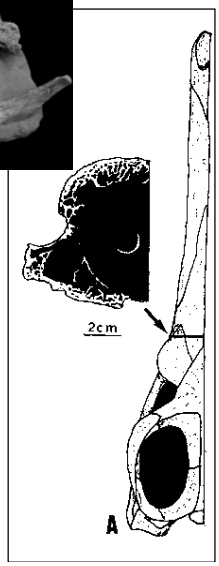
(Giurassico)

Altri si specializzarono per la vita acquatica, ***molto*** più dei coccodrilli attuali e diventarono marini…



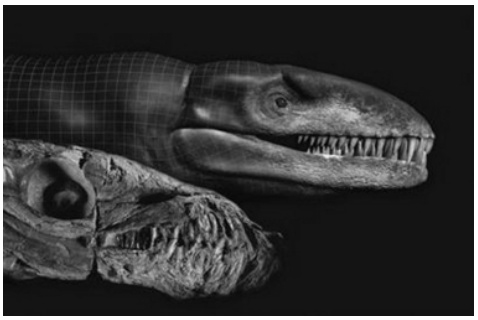
Teleosauri

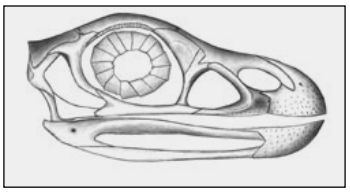




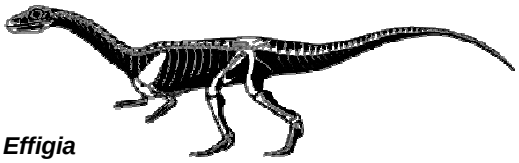
Ritrovato in Argentina di un coccodrillomorfo marino un po' diverso ***Dakosaurus***
Indubbiamente un predatore specializzato, lungo 4 m

La forma del cranio e dei denti, simile a quella dei Dinosauri carnivori, suggerisce che si nutriva di grosse prede.
L'animale era lungo circa 4m, il suo modo di vita doveva essere simile a quello di uno squalo …
Il guaio è che gli scopritori lo hanno soprannominato "Godzilla"…

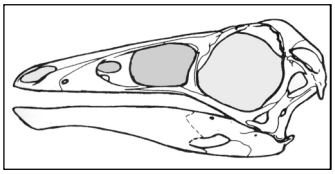




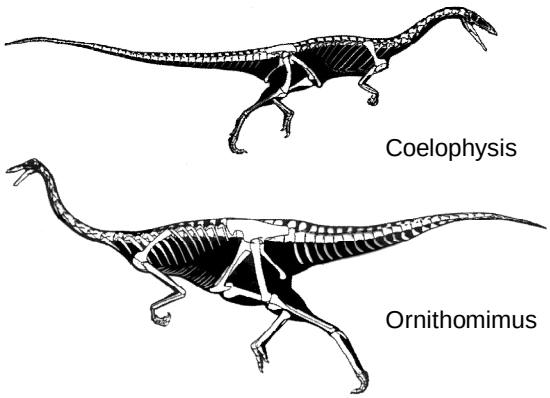
Effigia



Effigia
Il coccodrillo che voleva essere un dinosauro…



Ornithomimus

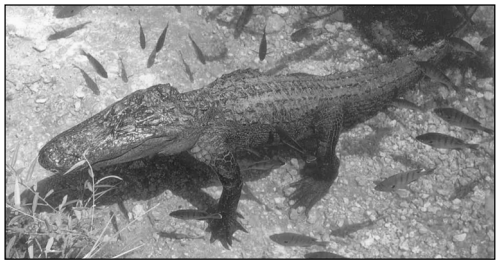


Coelophysis

Ornithomimus

Eusuchia (dal Cretacico)

Alligatori



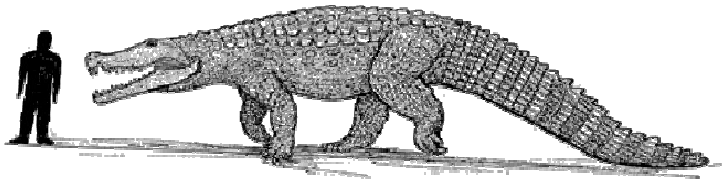
Gaviali

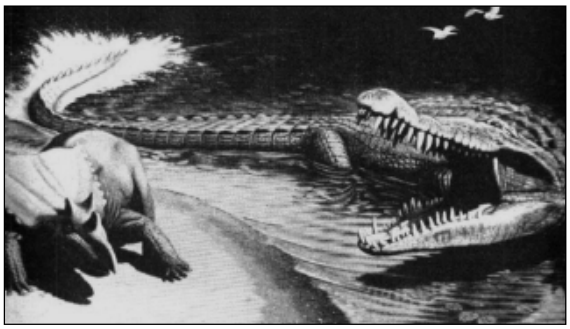
…. e Caimani

Verso la fine del Mesozoico i coccodrilli avevano ormai assunto una forma da …***coccodrillo***, ma qualcuno aveva esagerato con le dimensioni…

Deinosuchus…

Questa ricostruzione non è fra le più corrette (zampe troppo "dritte"), ma serve per dare un'idea delle dimensioni…





Sarcosuchus