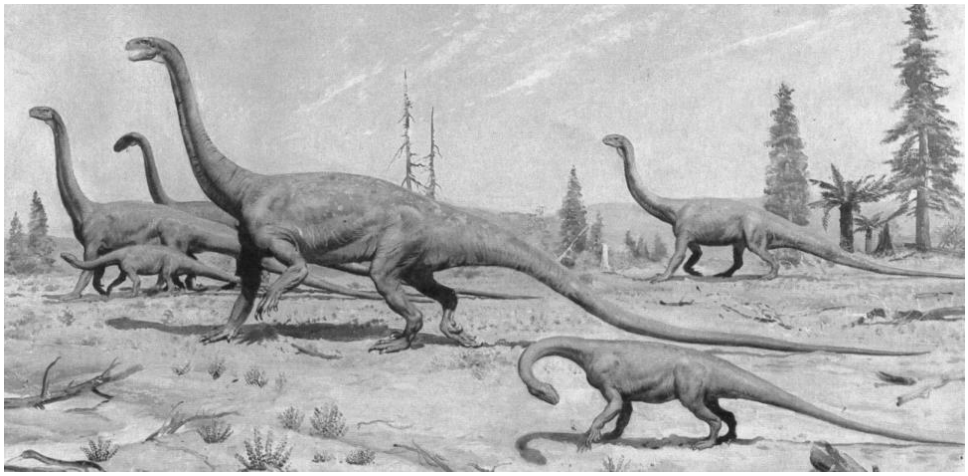
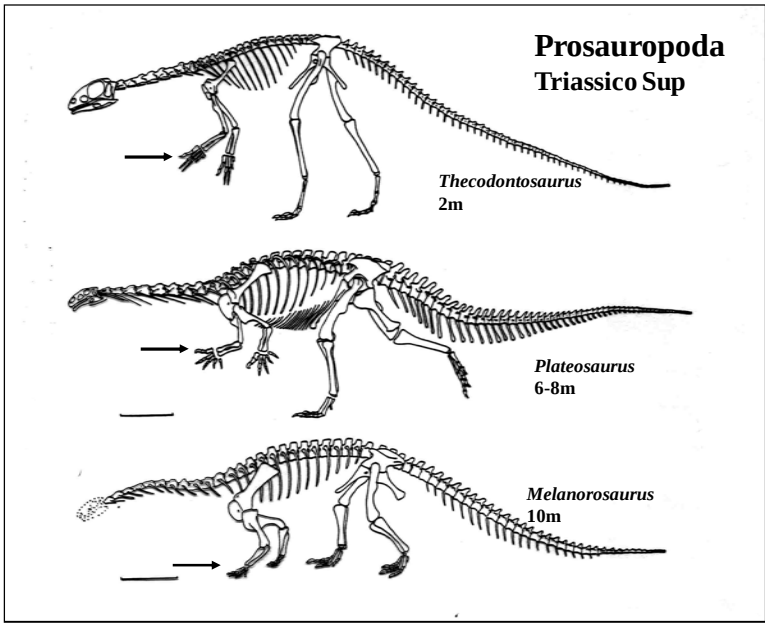
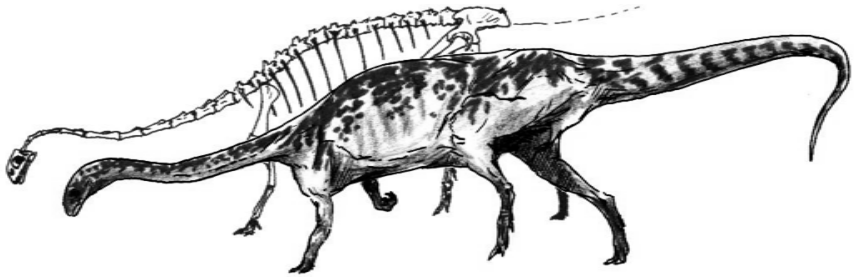
Sauropodomorpha

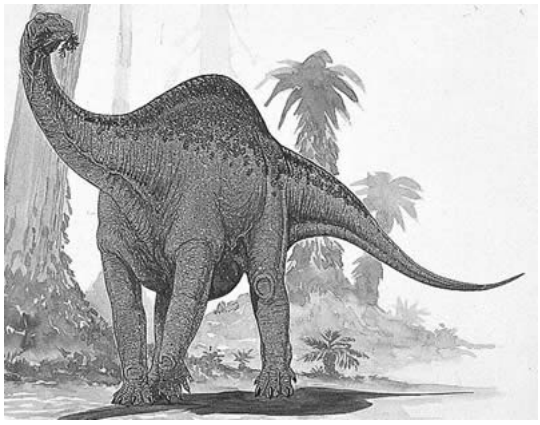




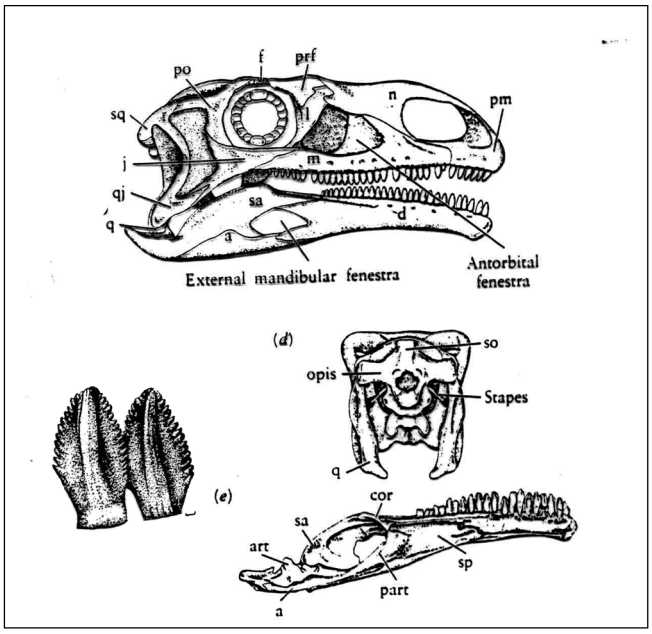
Sauropodomorpha



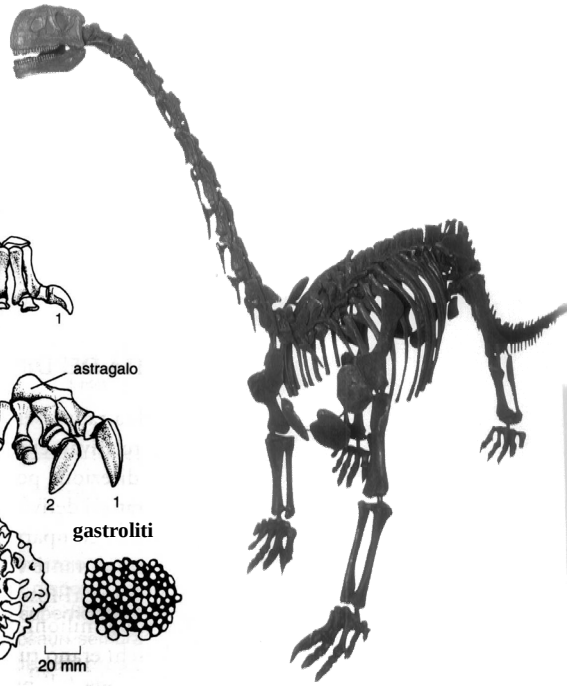
Massospondylus

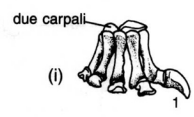


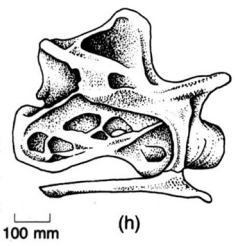
Melanorosaurus

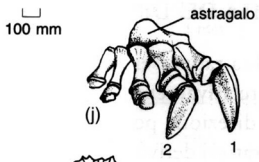


Sauropoda
Giurassico - Cretacico

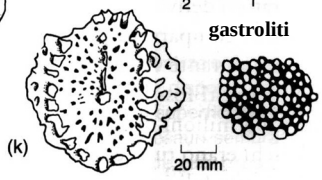




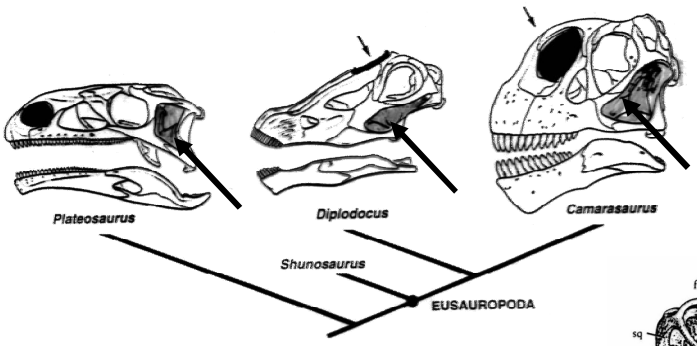


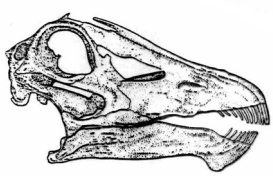


gastroliti

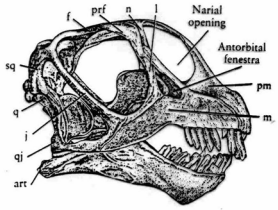


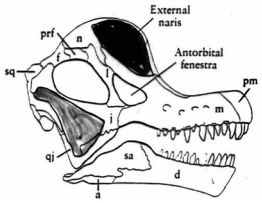
Vertebre pleuroceliche e cervicali pneumatiche

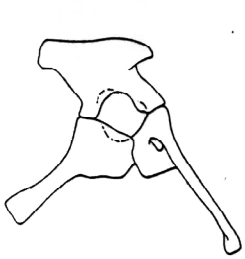

Plateosaurus
Diplodocus
Camarasaurus
Shunosaurus
EUSAUROPODA

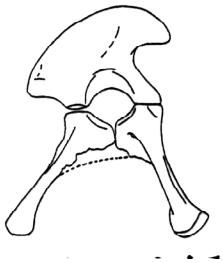


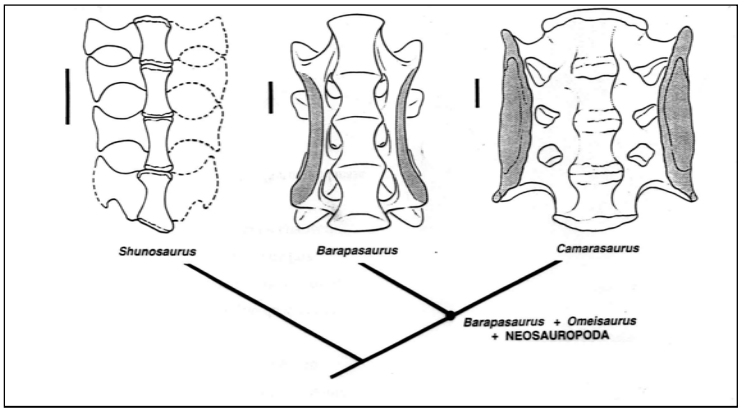

External nares

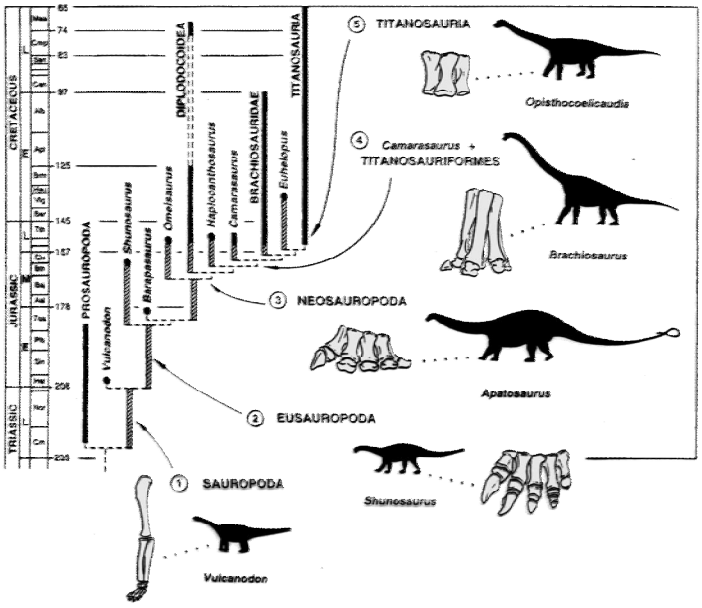

Narial opening
Antorbital fenestra
prf
n
l
f
sq
q
j
qj
art
pm
m


External naris
Antorbital fenestra
prf
n
f
l
sq
pm
m
j
qj
sa
d
a



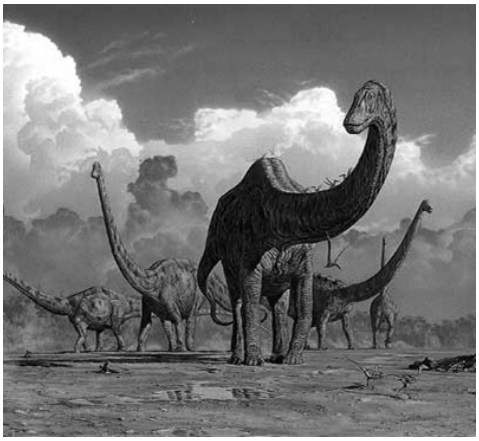


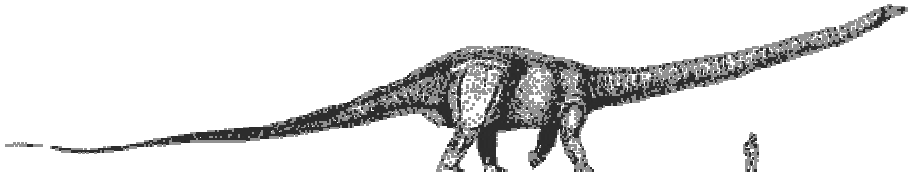

Shunosaurus
Barapasaurus
Camarasaurus
Barapasaurus + Omeisaurus
+ NEOSAUROPODA

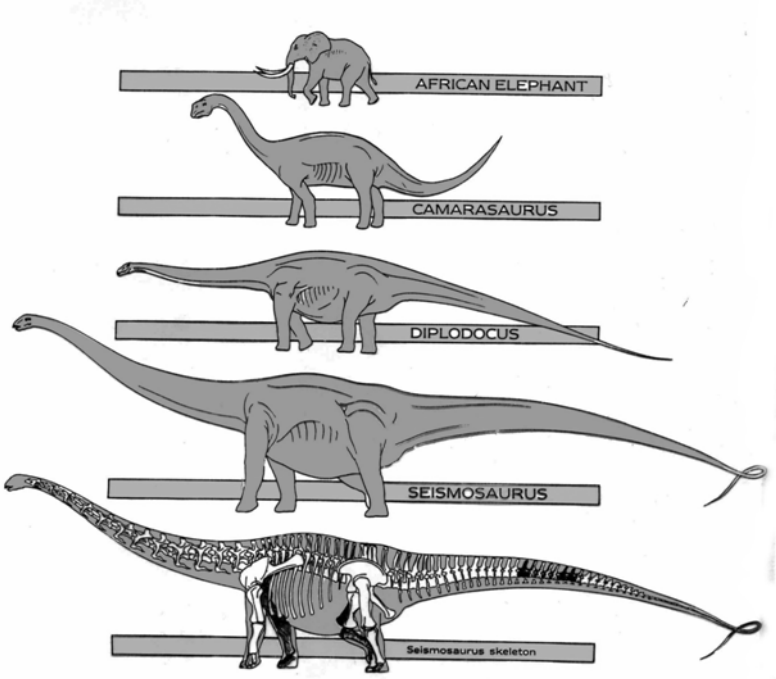


Diplodocoidea
I più lunghi

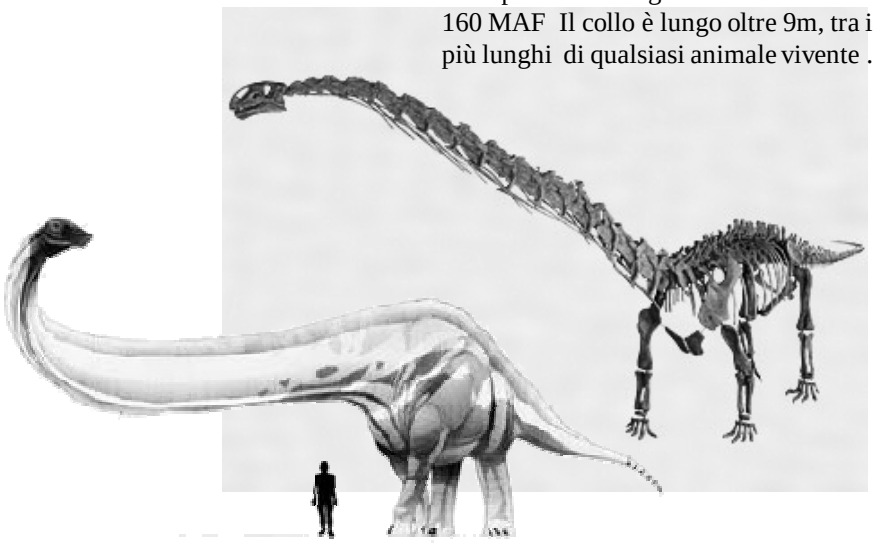
Seismosaurus
(?Supersaurus)
Un super-*Diplodocus*
lungo 44m!!!!



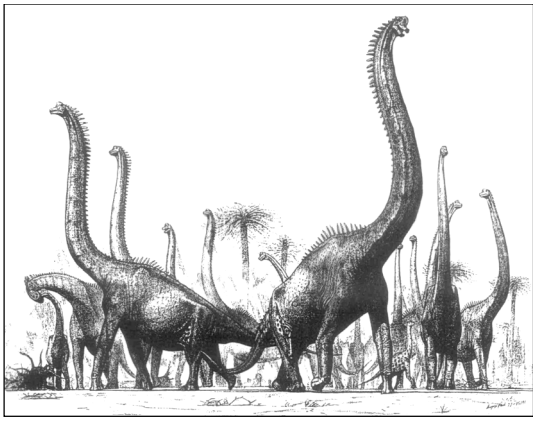


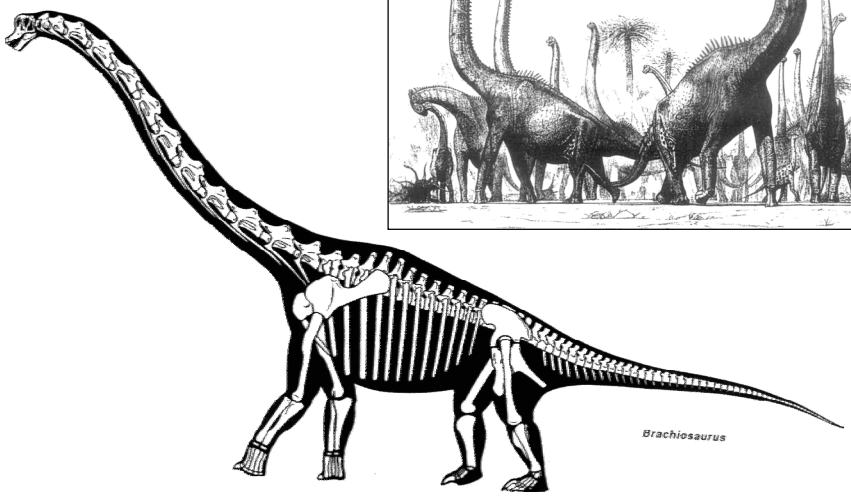


Mamenchisaurus jingyanensis
Un diplodocide lungo sui 20-25m vissuto 160 MAF Il collo è lungo oltre 9m, tra i più lunghi di qualsiasi animale vivente .

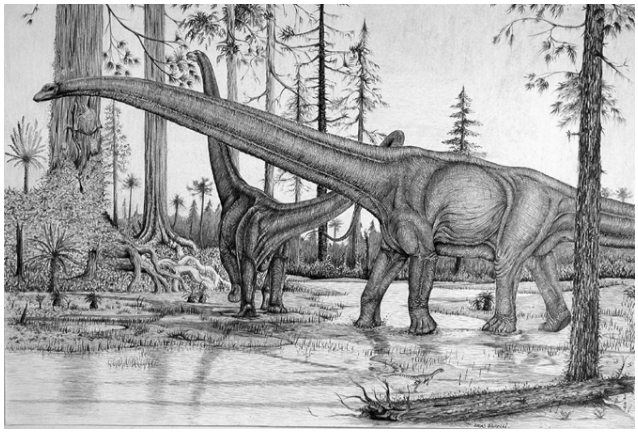


Brachiosauroidea
I più grandi e pesanti
Giurassico Sup.- Cretacico Inf.





Argentinosaurus è un grosso titanosauro. Il materiale è però incompleto Una vertebra è alta circa 1,6m!!! La tibia circa 1,55m . Questi elementi hanno permesso alcune stime sulle dimensioni dell'animale. Variabili…



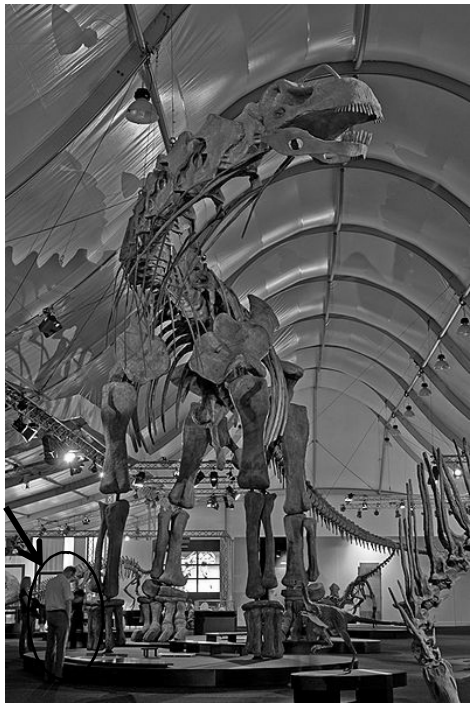
Greg Paul , 1993: 30-35m di lunghezza, 80-100 tonnellate di peso

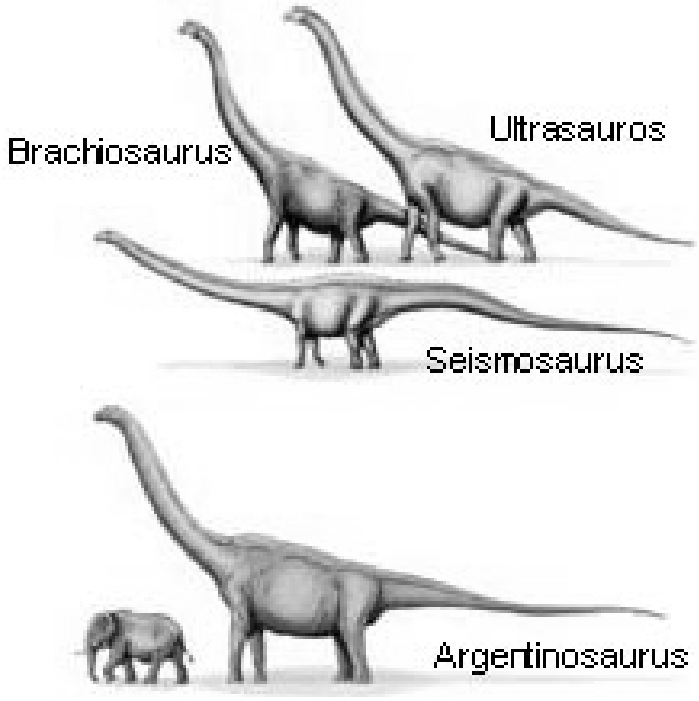
Carpenter 2006: 30m di lunghezza

Mazzetta et al. 2004, 26m, 66-88 tonnellate

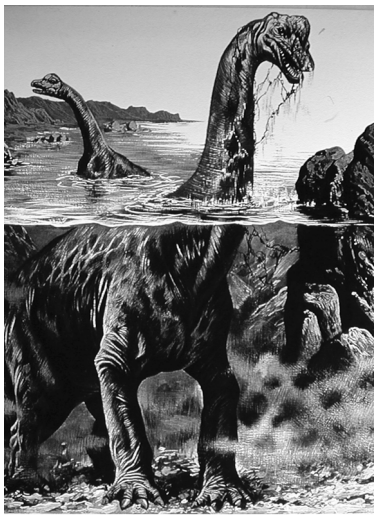
Insomma, piccolo non era….

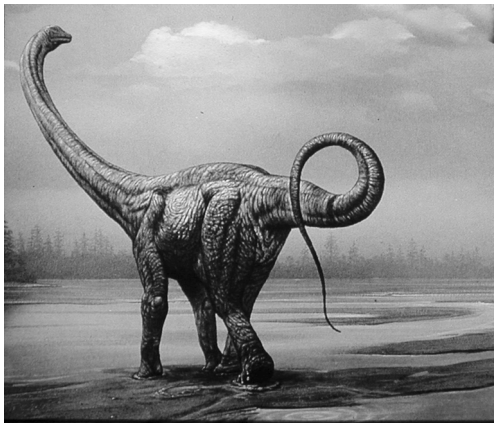
“mezzo” femore, 1,20 cm circa





Modo di vita





CONTRO L'IPOTESI DI SAUROPODI ACQUATICI

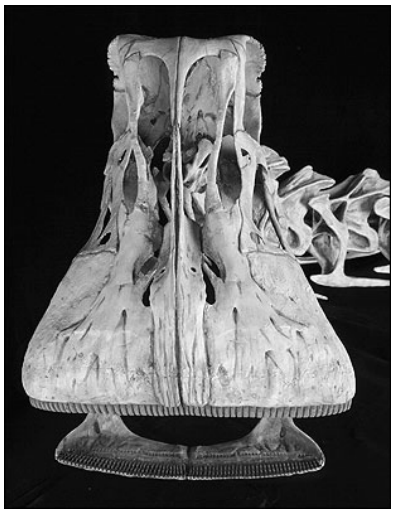
ANATOMIA	**Elefante**	**Sauropode**	**Ippopotamo**
Struttura delle zampe	colonnari	colonnari	corte e tozze
Cassa toracica	alta e stretta	alta e stretta	a botte
Vertebre e coste	risparmio peso	risparmio peso	ispessite

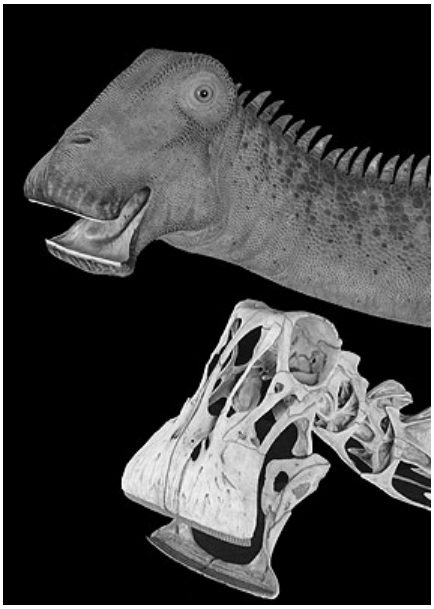
FISICA

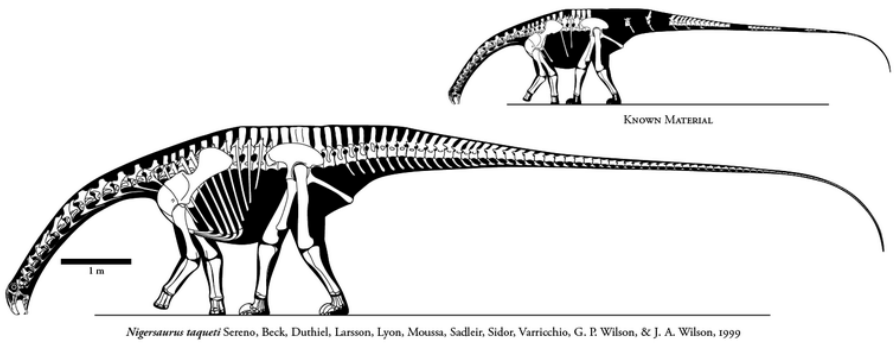
Pressione idrostatica sulla cassa toracica

ECOLOGIA

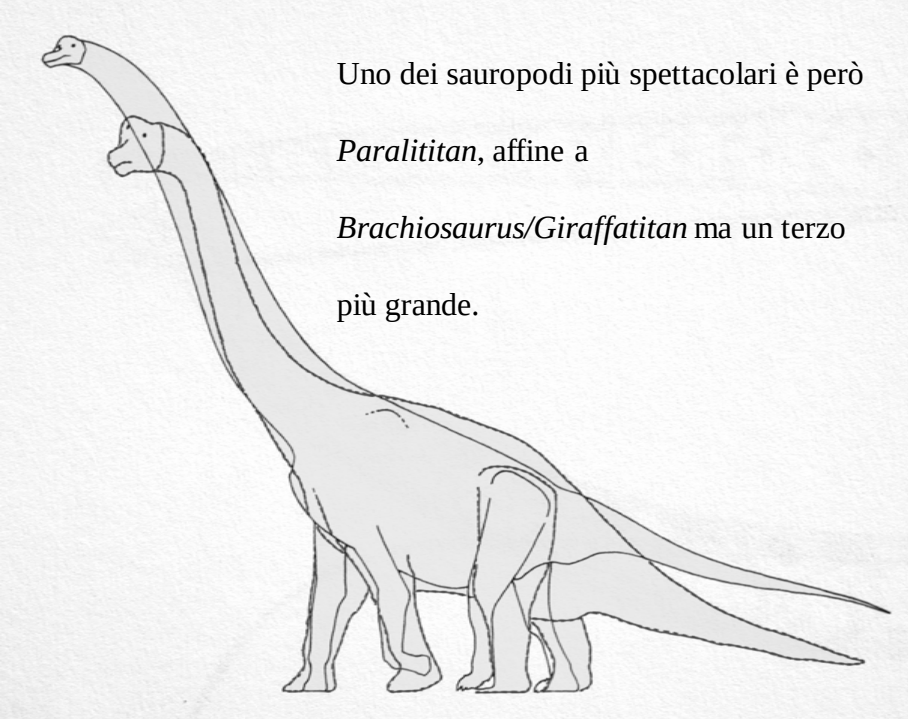
Difficoltà di reperire cibo in acqua (gli ippopotami *escono* dall' acqua per mangiare)



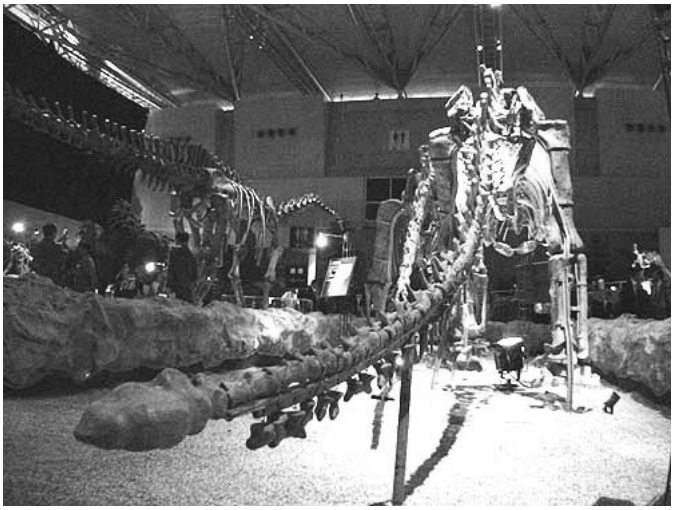




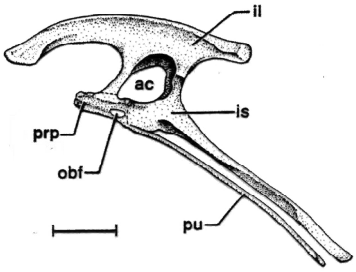
Nigersaurus taqueti Sereno, Beck, Duthiel, Larsson, Lyon, Moussa, Sadleir, Sidor, Varricchio, G. P. Wilson, & J. A. Wilson, 1999



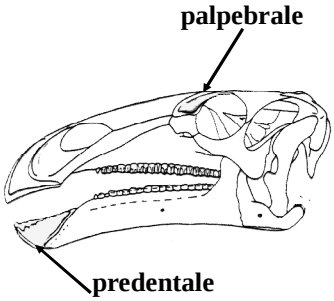
Uno dei sauropodi più spettacolari è però *Paralititan*, affine a *Brachiosaurus/Giraffatitan* ma un terzo più grande.



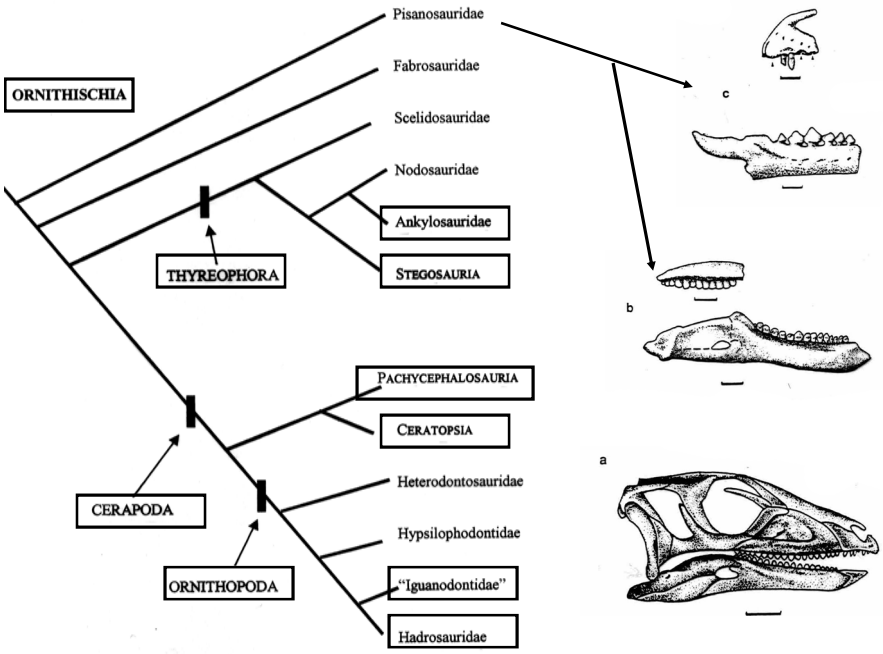
ORNITHISCHIA
(dal ? Triassico)



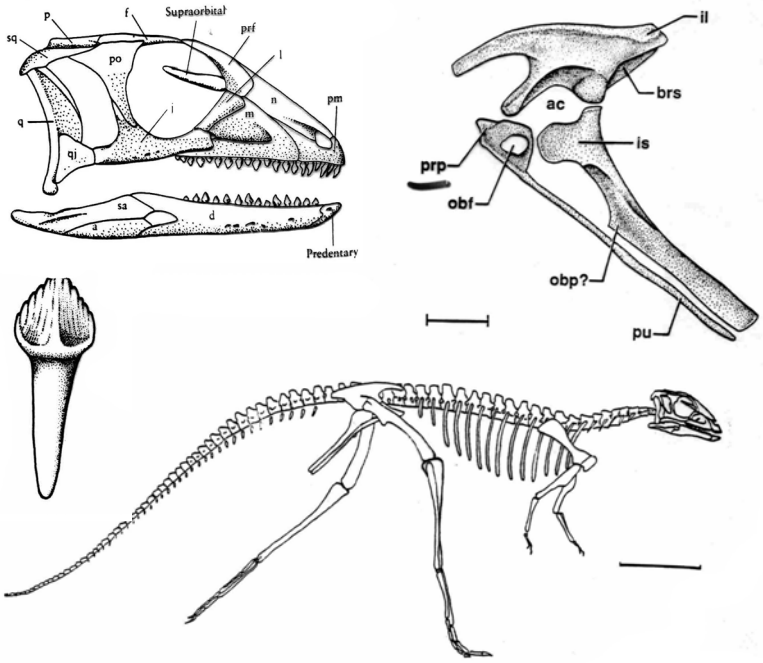
Pube rivolto indietro, parallelamente all'ischio e processo prepubico

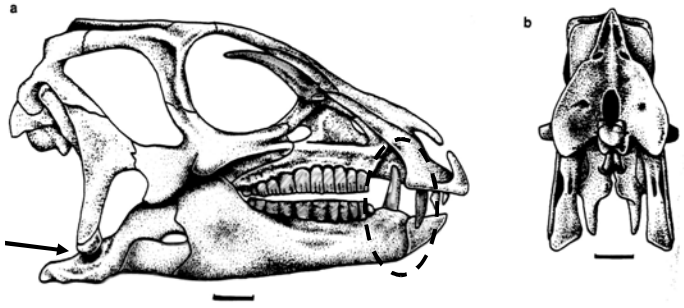


Predentale
Palpebrale
Assenza di denti nella parte anteriore del muso
Possibile presenza di guance

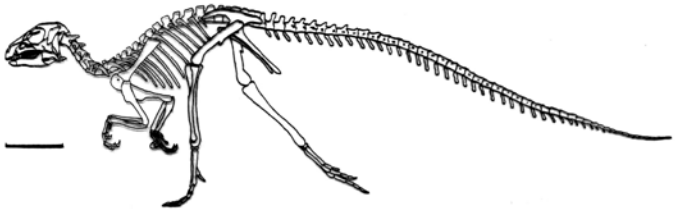


Fabrosauridae

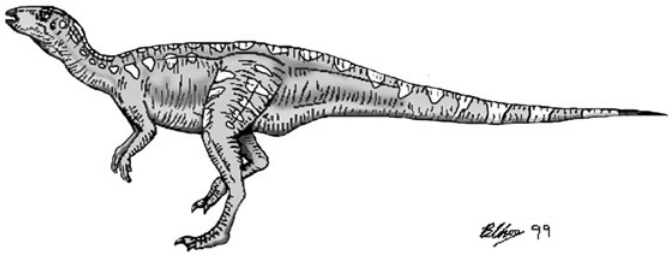


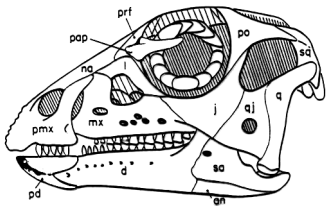


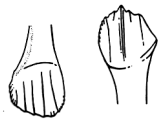
Heterodontosauridae

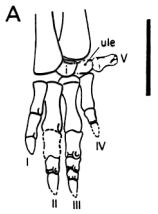


Cerapodi
Hypsilophodontidae

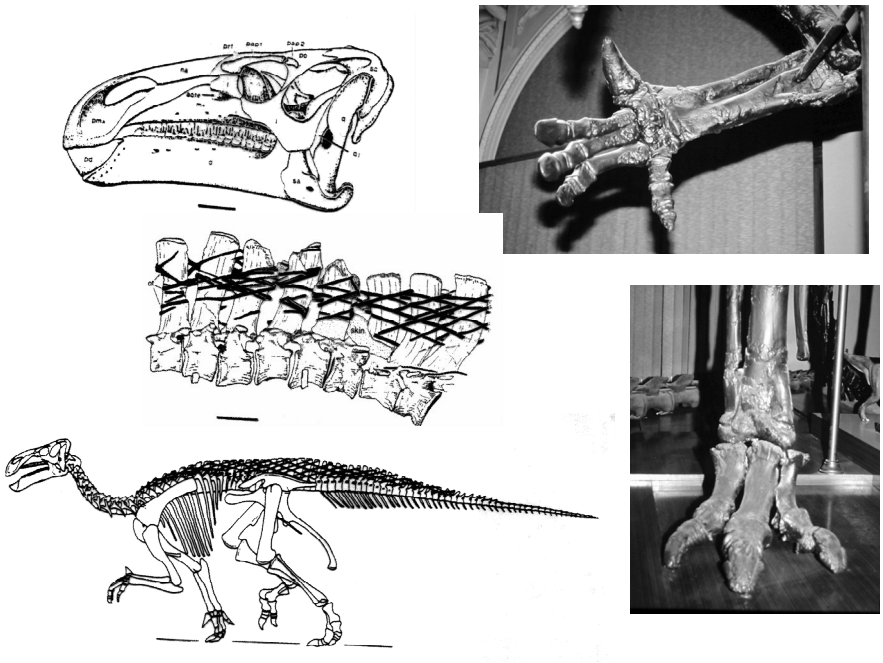


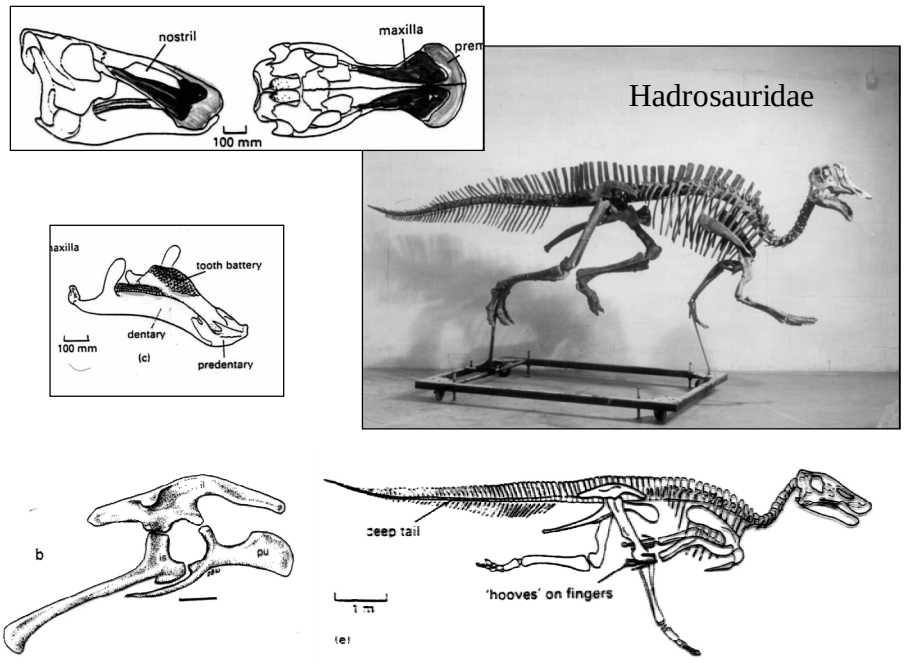




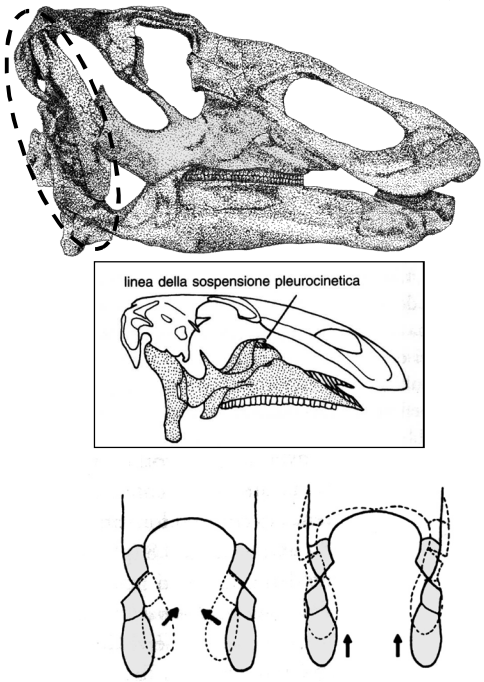


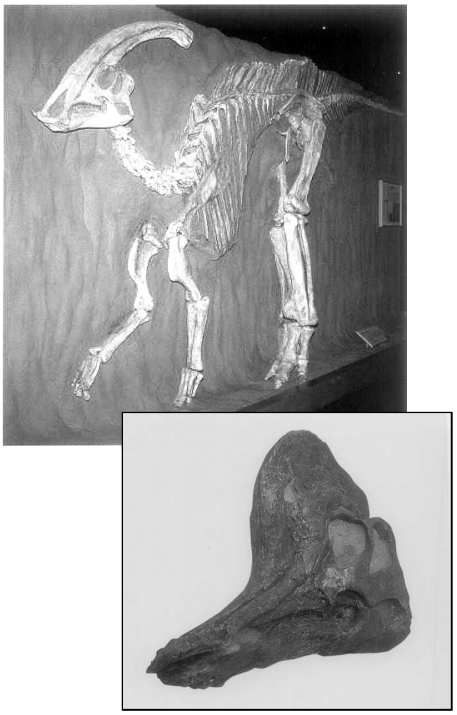
[illegible]ontidae"
[illegible] Cretacico



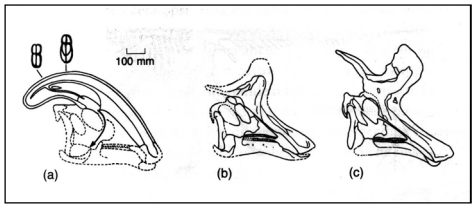

nostril
maxilla
prem
100 mm
Hadrosauridae
axilla
tooth battery
dentary
100 mm
(c)
predentary
b
pu
deep tail
'hooves' on fingers
1 m

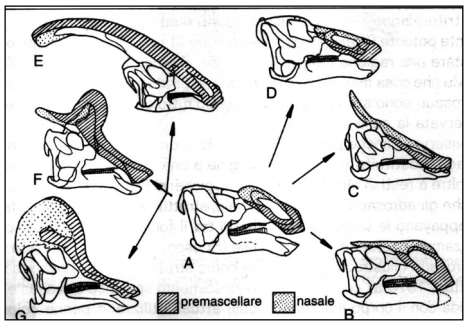
"Masticazione" con ciclo verticale, la chiave del successo?



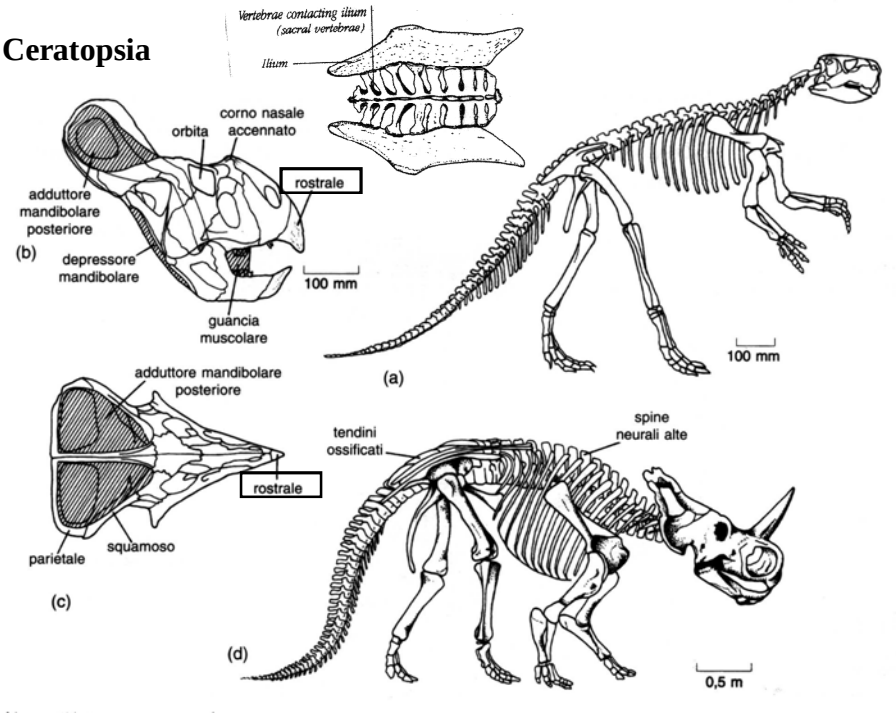


Funzione della "cresta"

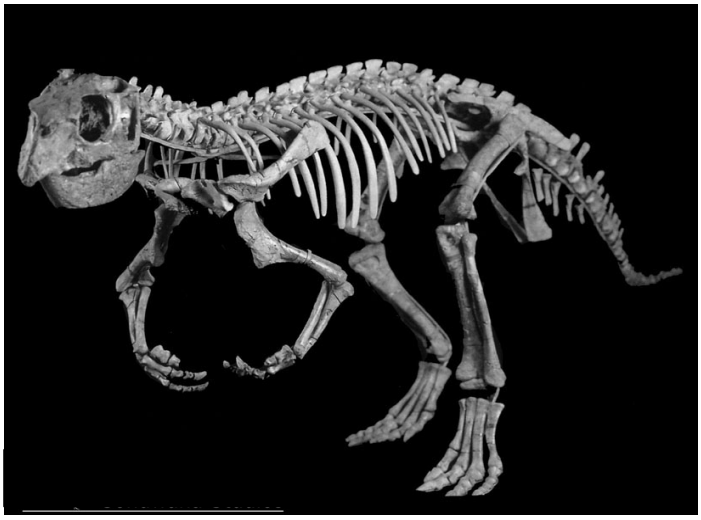




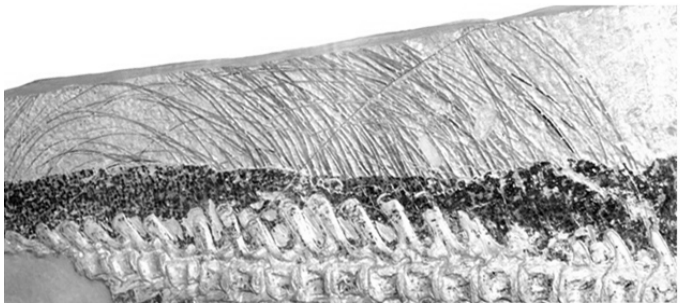
Ceratopsia

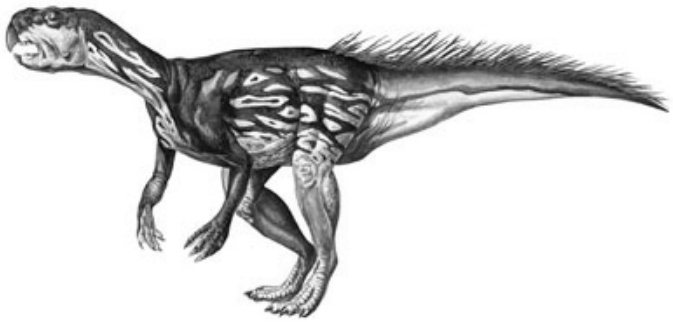


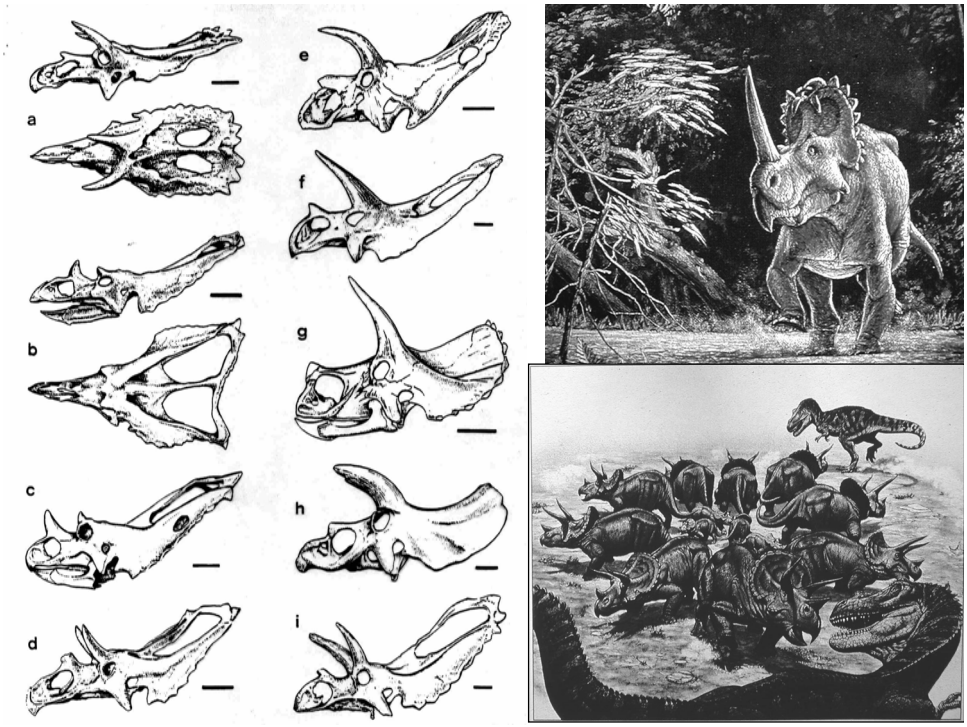
Psittacosaurus

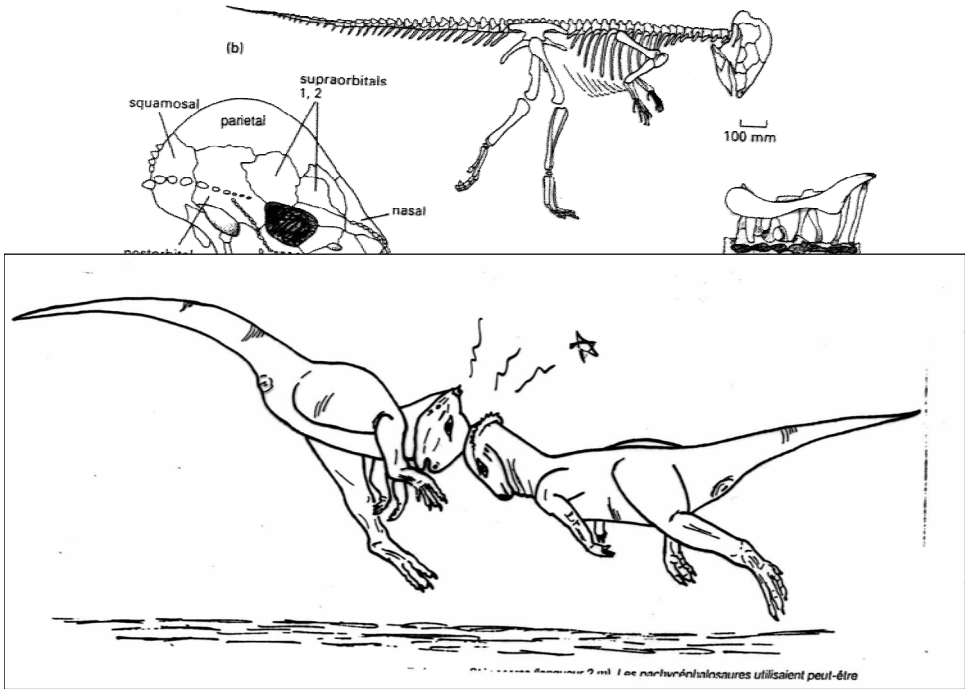


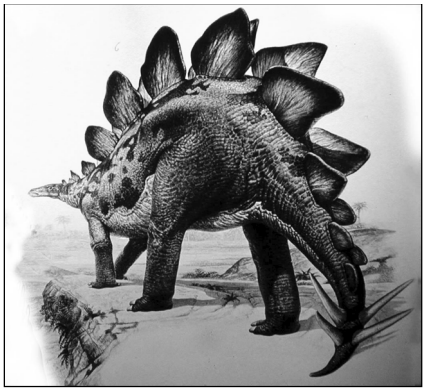
La recente scoperta che *Psittacosaurus* aveva protopenne allungate sulla coda indica che questa copertura cutanea era più diffusa di quanto si pensasse fra I Dinosauri.





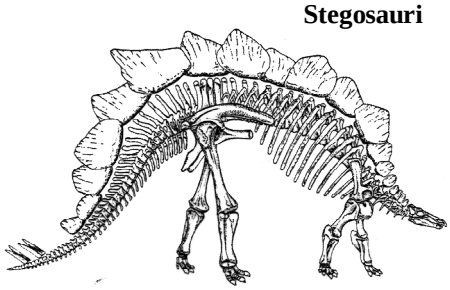

a
b
c
d
e
f
g
h
i

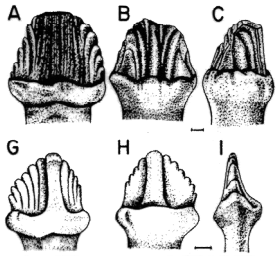

(b)
supraorbitals
1, 2
squamosal
parietal
nasal
100 mm

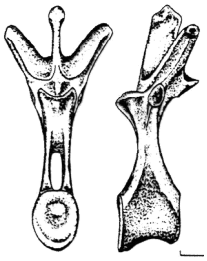


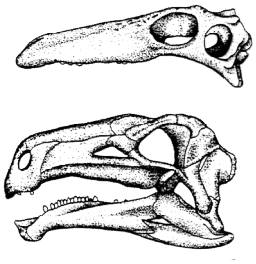
Tyreophora

Stegosauri

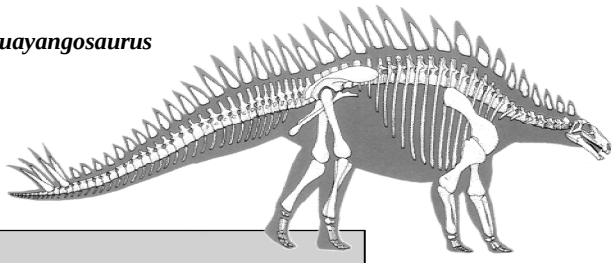


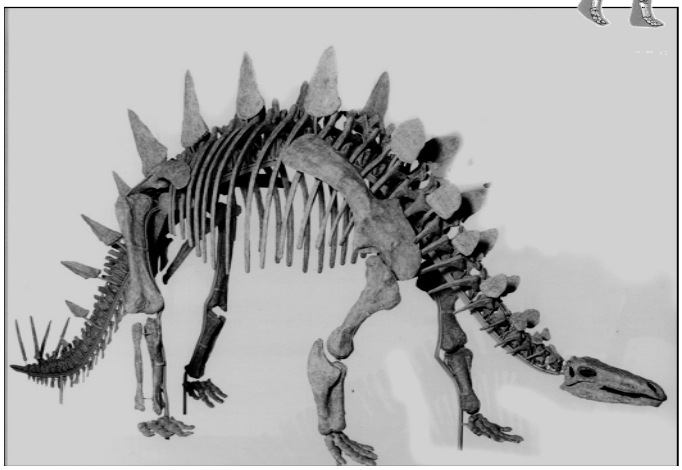






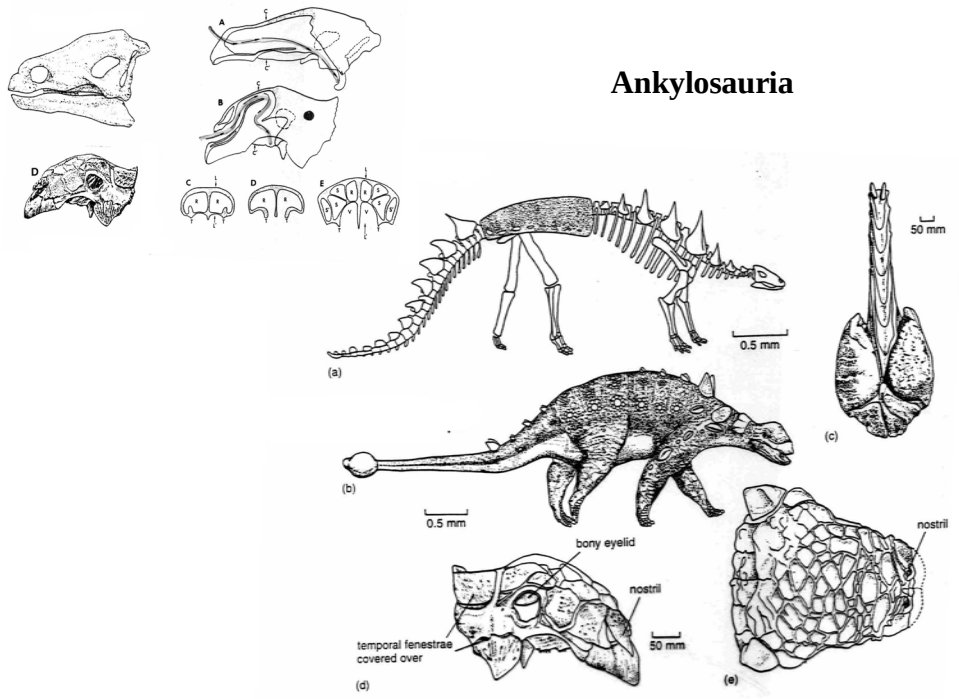
Huayangosaurus

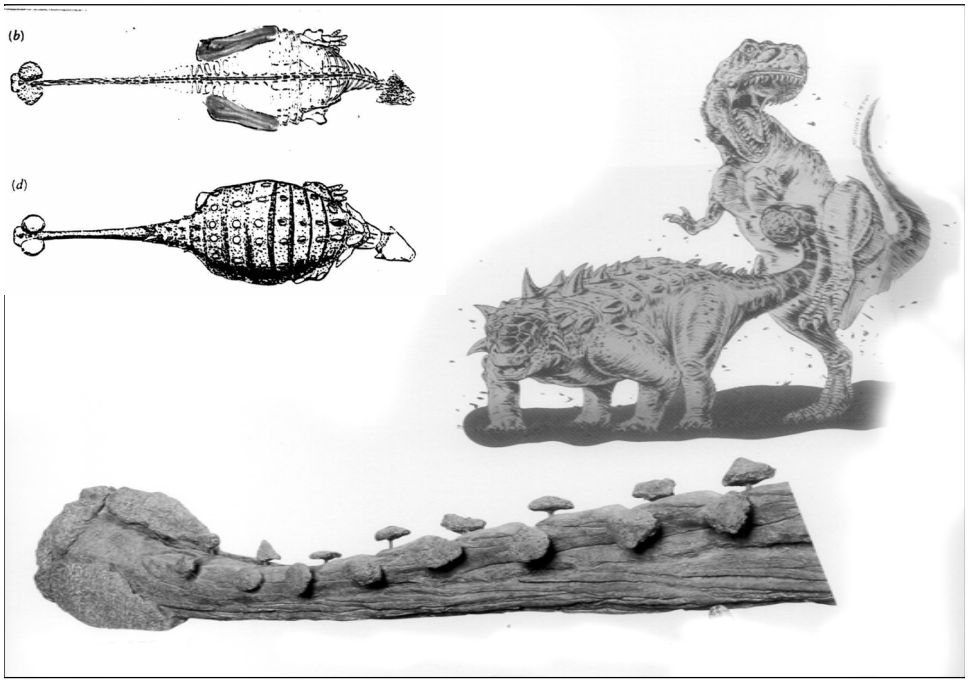




Tuoyangosaurus

Ankylosauria





postura eretta

velocità nella corsa

emodinamica

distribuzione geografica

rapporto predatore preda

istologia delle ossa

dimensioni del cervello

differenza fra temperatura centrale e periferica

turbinati

Dinosauri "piumati"

Omeotermia inerziale

Omeotermia inerziale

Ovvero, quanto doveva mangiare un brachiosauro "a sangue caldo" ?