

3. Amphibian and Reptile Skulls

3.1 Checklist of early amphibian skull objects by region

Neurocranium

Orbitosphenoid
Basioccipital
Exoccipital
Supraoccipital
Prootic

Splanchnocranium

Quadrate
Articular

Dermatocranium

Nasal
Frontal
Parietal
Postparietal
Prefrontal
Lacrimal
Postfrontal
Postorbital
Jugal
Intertemporal
Supratemporal
Squamosal
Tabular
Quadratojugal
Premaxilla
Maxilla *
Vomer
Palatine
Pterygoid
Ectopterygoid
Parasphenoid
Dentary *
Angular
Splénial
Coronoid
Prearticular
Supraangular (= Surangular)

Holes and features

External naris
Choana
Orbit
Supratemporal fenestra
Infratemporal fenestra
Foramen magnum
Occipital Condyle

3.2a Checklist of caecilian skull objects by region

Neurocranium

Sphenethmoid

(fusion of basisphenoid, mesethmoid, supraethmoid, and orbitosphenoid)

Os Basale

(fusion of occipitals, prootic, opisthotic, epiotic, and parasphenoid)

Splanchnocranium

Quadrate (or pteroquadrate)

Dermatocranium

Nasal (or nasopremaxilla)

Frontal

Parietal

Prefrontal

Postfrontal

Squamosal

Premaxilla

Maxillopalatines *

Vomer

Pterygoid

Ectopterygoid

Pseudodentary *

Pseudoangular

Holes and features

External naris

Choana

Orbit

Supratemporal fenestra

Infratemporal fenestra

Foramen magnum

Occipital condyle

Retroarticular process

3.2b Checklist of salamander (Caudata) skull objects by region

Neurocranium

Orbitosphenoid

Occipitootic

(fusion of exoccipital, prootic, and opisthotic)

Splanchnocranium

Quadrate

Articular

Dermatocranium

Nasal

Frontal

Parietal

Prefrontal

Lacrimal

Squamosal

Premaxilla

Maxilla *

Septomaxilla

Vomer

Pterygoid

Ectopterygoid

Parasphenoid

Dentary *

Angular

Coronoid

Prearticular

Surangular

Holes and features

External naris

Choana

Orbit

Supratemporal fenestra

Infratemporal fenestra

Foramen magnum

Occipital condyle

3.2c Checklist of frog (Anura) skull objects by region

Neurocranium

Orbitosphenoid
Exoccipital
Prootic

Splanchnocranium

Quadratoquadrate
Articular
Mentomeckelian or Mental [frogs]
Columella

Dermatocranium

Nasal
Frontoparietal
Squamosal
Quadratojugal
Preamaxilla
Maxilla *
Vomer
Palatine
Pterygoid
Parasphenoid
Dentary *
Prearticular
Septomaxilla

Holes and features

External naris
Choana
Orbit
Foramen magnum
Orbitonasal foramen
Occipital condyle
Coronoid process
Tympanic ring

3.3a Checklist of "lizard" skull objects by region

Neurocranium

Basisphenoid
Basioccipital*
Exoccipital
Supraoccipital
Prootic

Splanchnocranium

Quadrate
Articular

Dermatocranium

Nasals
Frontals
Parietals
Prefrontal
Lacrimal
Postfrontal
Postorbital
Jugal
Squamosal
Premaxilla
Maxilla *
Vomer
Palatine
Pterygoid
Ectopterygoid
Epipterygoid
Parasphenoid
Dentary *
Angular
Splénial
Coronoid
Prearticular
Surangular

Holes and features

External naris
Choana
Orbit
Supratemporal fenestra
Infratemporal fenestra
Foramen magnum
Pineal foramen

3.3b Checklist of snake (Serpentes) skull objects by region

Neurocranium

Basisphenoid
Basioccipital *
Exoccipital
Supraoccipital
Prootic
Opisthotic

Splanchnocranium

Quadrate

Dermatocranium

Nasal
Frontal
Parietal
Prefrontal
Postfrontal
Postorbital
Supratemporal
Preamaxilla
Maxilla *
Septomaxilla
Vomer
Palatine
Pterygoid
Ectopterygoid
Parasphenoid
Dentary *
Angular
Splénial
Coronoid
Compound bone
(fusion of surangular, articular, and prearticular)

Holes and features

External naris
Choana
Orbit
Supratemporal fenestra
Infratemporal fenestra
Foramen magnum
Occipital condyle
Pineal foramen

3.4 Checklist of turtle (Testudines) skull objects by region

Neurocranium

Basisphenoid
Basioccipital *
Exoccipital
Supraoccipital
(fused with epiotic and opisthotic)
Prootic

Splanchnocranium

Quadrate
Articular

Dermatocranium

Frontal
Parietal
Prefrontal
Postorbital
Jugal
Squamosal
Quadratojugal
Premaxilla
Maxilla *
Vomer
Palatine
Pterygoid
Dentary *
Angular
Coronoid
Prearticular
Surangular

Holes and features

External naris
Choana
Orbit
Supratemporal fenestra
Infratemporal fenestra
Foramen magnum
Occipital condyle
Mandibular fenestra

3.5 Checklist of crocodile (Crocodylia) skull objects by region

Neurocranium

Orbitosphenoid
Basisphenoid
Basioccipital*
Exoccipital
Supraoccipital
Prootic
Opisthotic

Splanchnocranium

Quadrate
Articular

Dermatocranium

Nasals
Frontals
Parietals
Prefrontal
Lacrimal
Postfrontal
Postorbital
Jugal
Squamosal
Quadratojugal
Premaxilla
Maxilla *
Vomer
Palatine
Pterygoid
Ectopterygoid
Dentary *
Angular
Splénial
Coronoid
Surangular

Holes and features

External naris
Choana
Orbit
Supratemporal fenestra
Infratemporal fenestra
Foramen magnum
Mandibular fenestra
Occipital condyle
Retroarticular process

3.6 Checklist of bird (Aves) skull objects by region

Neurocranium

Occipital

Splanchnocranium

Quadrate

Articular

Dermatocranium

Nasal

Frontal

Parietal

Lacrimal (+ prefrontal)

Jugal

Squamosal

Quadratojugal

Premaxilla

Maxilla *

Vomer

Palatine

Pterygoid

Parasphenoid

Dentary *

Angular

Splénial

Surangular

Holes and features

External naris

Choana

Orbit

Supratemporal fenestra

Infratemporal fenestra

Foramen magnum

Postorbital process

Coronoid process

Mandibular fenestra