

COMPARATIVE VERTEBRATE ANATOMY SPRING 2009

REVIEW FOR CHAPTER 7

1. Know the components to the skull and the elements they contain, explain their development and what elements are present and/or evolve into which structures in different vertebrates.
2. Be able to explain how the splanchnocranium evolved and the elements that are a part of this skull component. Discuss how the elements evolve into different structures in vertebrate groups.
3. Be able to discuss the evolution of different patterns of jaw suspensions in vertebrate groups, the elements that contribute to the formation of each kind of jaw and supporting structure.
4. Be able to identify each of the dermal cranial bones and the series to which each belongs.
5. Be able to identify the hyoid apparatus, the bones from which it originates, and its functions.
6. Be able to describe how the structures of the mandibular arch change in element composition, structure and function in different vertebrate groups.
7. Discuss different forms of cranial kinesis and the groups that have each.
8. Discuss the evolution of cranial fenestrae and the different groups in which they occur. Explain how emargination is an alternate solution to the evolution of fenestrae, and the group in which this condition occurs.
9. Explain how cranial fenestration leads to the evolution of the zygomatic arch and what that structure does for the vertebrate groups that possess it.
10. Be able to explain how the middle ear bones change in the transition from therapsids to mammals.
11. Explain the evolution of a secondary palate and the implications of having this structure in the lifestyle of vertebrates.

Be able to identify, define and other explain each of the following key terms for this chapter.

Akinesis, auditory bulla, amphistylic, atlas, autostylic, basal plate, basibranchial, braincase (and all of the bone elements therein), branchial arches (= gill arches), ceratobranchial, chondrocranium, choanae, columella, craniostylic, cranium, cribriform plate, dentary, dermal bones series (and all of the individual bone names for each series), dermatocranium, emarginations, endoskeleton, epibranchial, ethmoid plate, euautostylic, extracolumella, exoskeleton, fenestrae (of skull), foramen magnum, gill lamellae, hard palate, head shield (= dermal armor, cranial shield), hypobranchial, hyoid apparatus, hyostylic, incus, interbranchial septa, jaws, labyrinthodont teeth, malleus, mandibular arch, Meckel's cartilage, mesethmoid, mesokinesis, metakinesis, metautostylic, nasal capsule (= nasal sac), nasolacrimal sac, neurocranium, nuchal crest, occipital arch, occipital cartilages, operculum, optic capsule, otic capsule, palatoquadrate cartilage, paleostylic, parachordal cartilages, petrosal, pharyngobranchial, polar cartilages, polyphyodonty, postorbital ligament, preadaptation, prokinesis, quadrate, spiracle, splanchnocranium (=visceral cranium), squamosal, streptostyly, suction feeding, suspension feeding, suspensorium, symplectic bone, trabeculae (= trabecular cartilages), tympanic bulla, zygomatic arch.