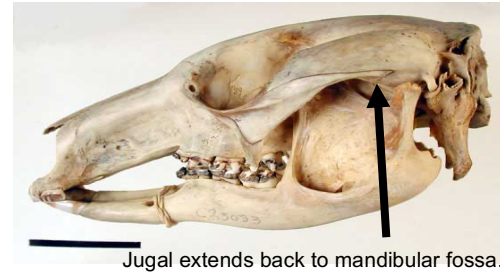
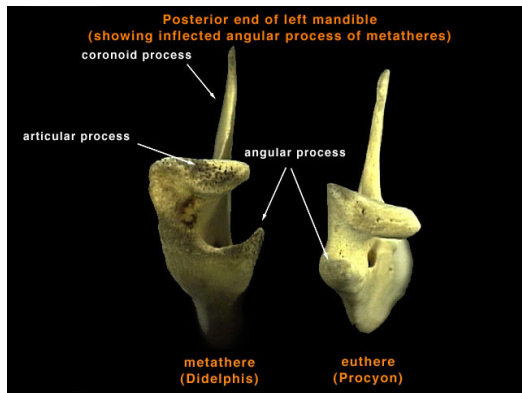


Mammalogy Lab Study Guide for Skulls: 2023 Mid-Term

When you get a skull, look first at the angular process and the jugal to see if it's a marsupial. If it is a metatherian (inflected angular process and jugal that extends back to the mandibular fossa), it could be *Monodelphis*, *Didelphis*, *Macropus*, *Vombatus*, *Phascolarctus*, *Sarcophilus*. Note that most of these have 5/4 incisors, or at least more upper than lower incisors and they're easy to tell apart; spend some time looking for their differences.



Also, be able to recognize the two monotreme skulls, *Tachyglossus* (myrmecophagous) and *Ornithorhynchus* (laterally flattened maxillae and premaxillae).

If the skull is a eutherian, there are some that are easy to recognize:

Choloepus – Incomplete zygomatic arch, no upper incisors.

Tamandua – Lacks teeth and shows other myrmecophagous adaptations.

Dasybus – Simple peg-like teeth, other myrmecophagous adaptations.

Then, determine if it is a rodent (note incisors) or insectivoran (*Scapanus* with dilambdodont teeth and *Sorex* with pigmented teeth).

Rodents are the tough ones, but they're pretty recognizable once you know how to parse them. First, learn to recognize *Aplodontia*. It is protrogomorphous and the cheek teeth have labial tines.

Second, learn how to identify hystricomorphs. These have huge infra-orbital canals, and we have two genera: *Myocastor* (with very large mastoid processes) and *Erethizon* (not with large mastoid processes).

Third, learn to recognize the sciuriformous forms, which have very small infra-orbital canal with evidence that the anterior portion of masseter passes under zygomatic arch and attaching to rostrum. All the sciuriformous skulls we have (for the mid-term) are sciurids.

The first place to look to ID our sciurid skulls is the infraorbital canal.

In *Tamias*, it's round, and is simply a window in the zygomatic plate (i.e., there's no depth).
In *Ammospermophilus*, it's oval and has a bit of depth.

In *Uroditellus*, the masseteric tubercle is prominent and projects ventero-laterally from the infraorbital canal.

In the rest of our sciurids, the infraorbital canal is rather non-descript. However, flying squirrels (*Glaucomys*) have rather prominent auditory bullae.



Marmots (*Marmota*) have prominent post-orbital processes and sculpted temporal ridges.



There are two remaining skulls from sciurid genera in our collection, *Tamiasciurus*, which has four cheek teeth, and *Sciurus*. Our representative of this genus, has the sockets which housed a very small anterior premolar (the photo below is what it looks like when the little premolars have not fallen out).

