Mammal Phylogeny

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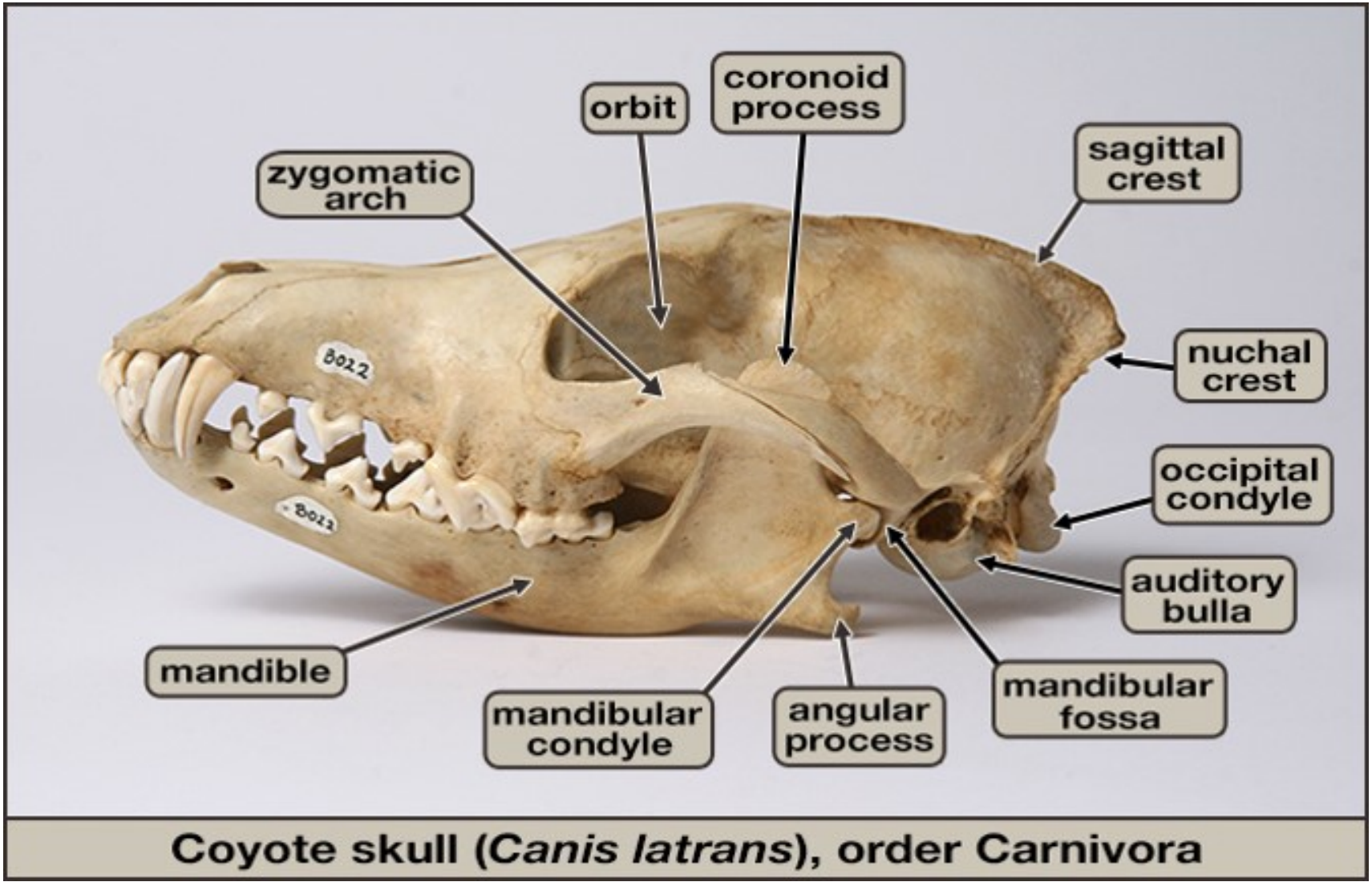
Part I - Identifying Structure and Function

- Observe different structures of mammal skulls
- Propose claims about the life history of 4 species based on skull structure

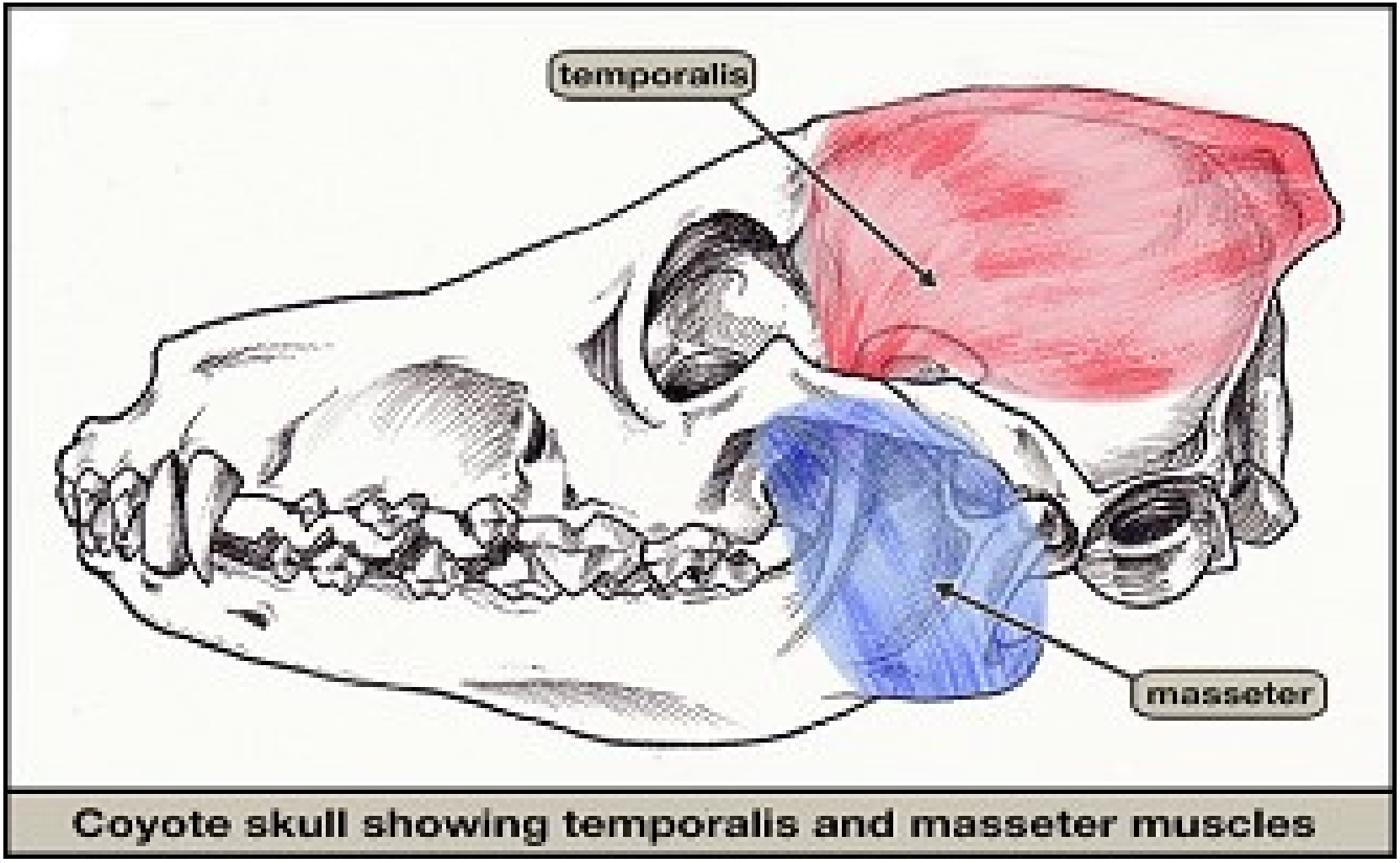


Coyote skull (*Canis latrans*), order Carnivora

Terms

- “mandible” = lower jaw
- “orbit” = eye socket
- “fossa” = depression or hole
- “process” = outward projection
- “condyle” = a knob such as the ball of a ball and socket joint

Important Muscles



Coyote skull showing temporalis and masseter muscles

Blood Vessels

- Skulls need depressions, channels, and canals for arteries and veins to allow for blood flow
- Alisphenoid canal found in some animals underneath upper jaw

Eyes

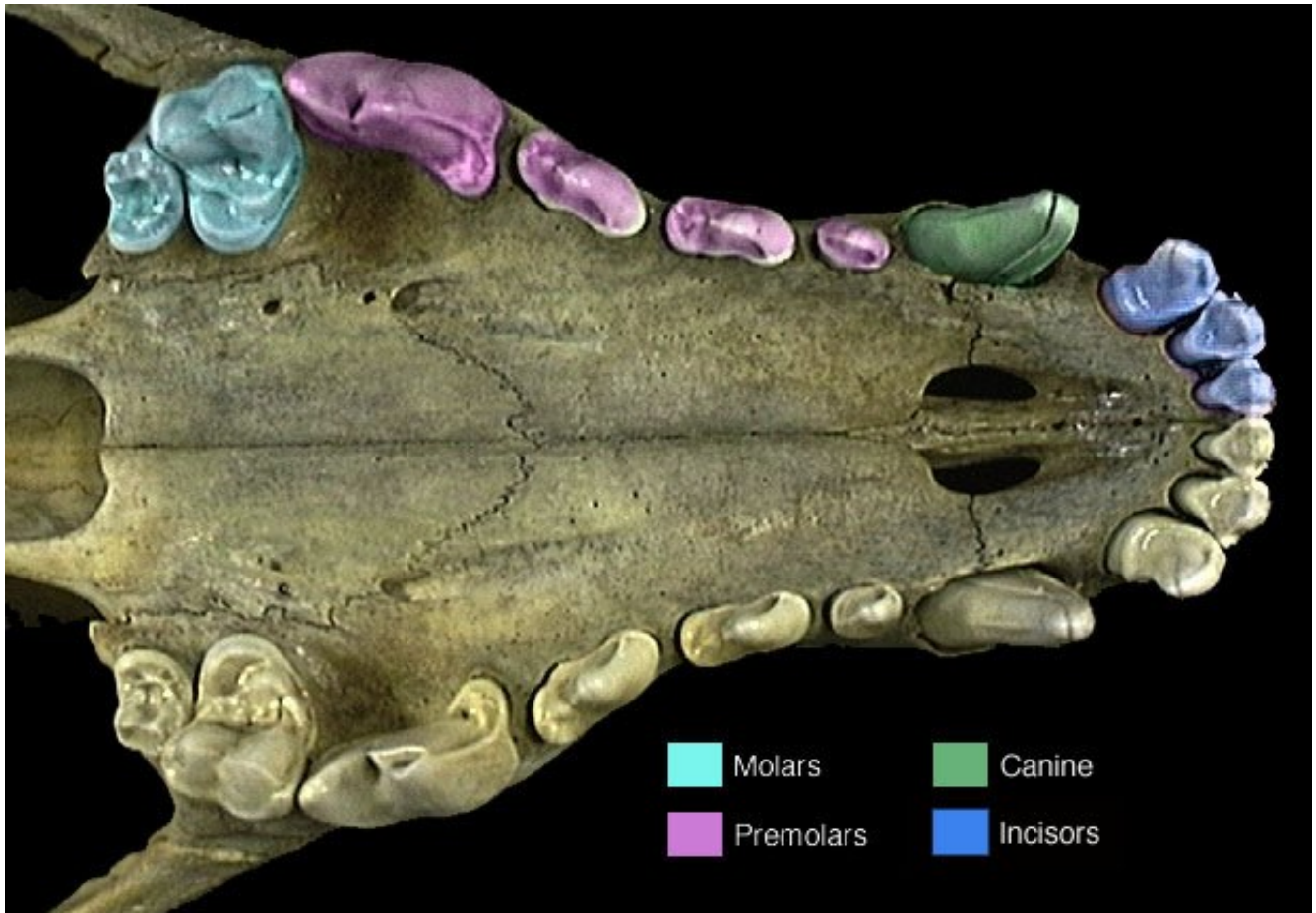
- Eye orientation
- Predators have forward-facing eyes
- Prey have side-facing eyes
- Eye Size
- Nocturnal species have larger

Teeth

- The lifestyles of mammals require being able to capture, ingest, and digest food efficiently
- Mammalian teeth have been modified to obtain and ingest food more efficiently

Types of Teeth

- Incisors
- Canines
- Premolars
- Molars



Incisors

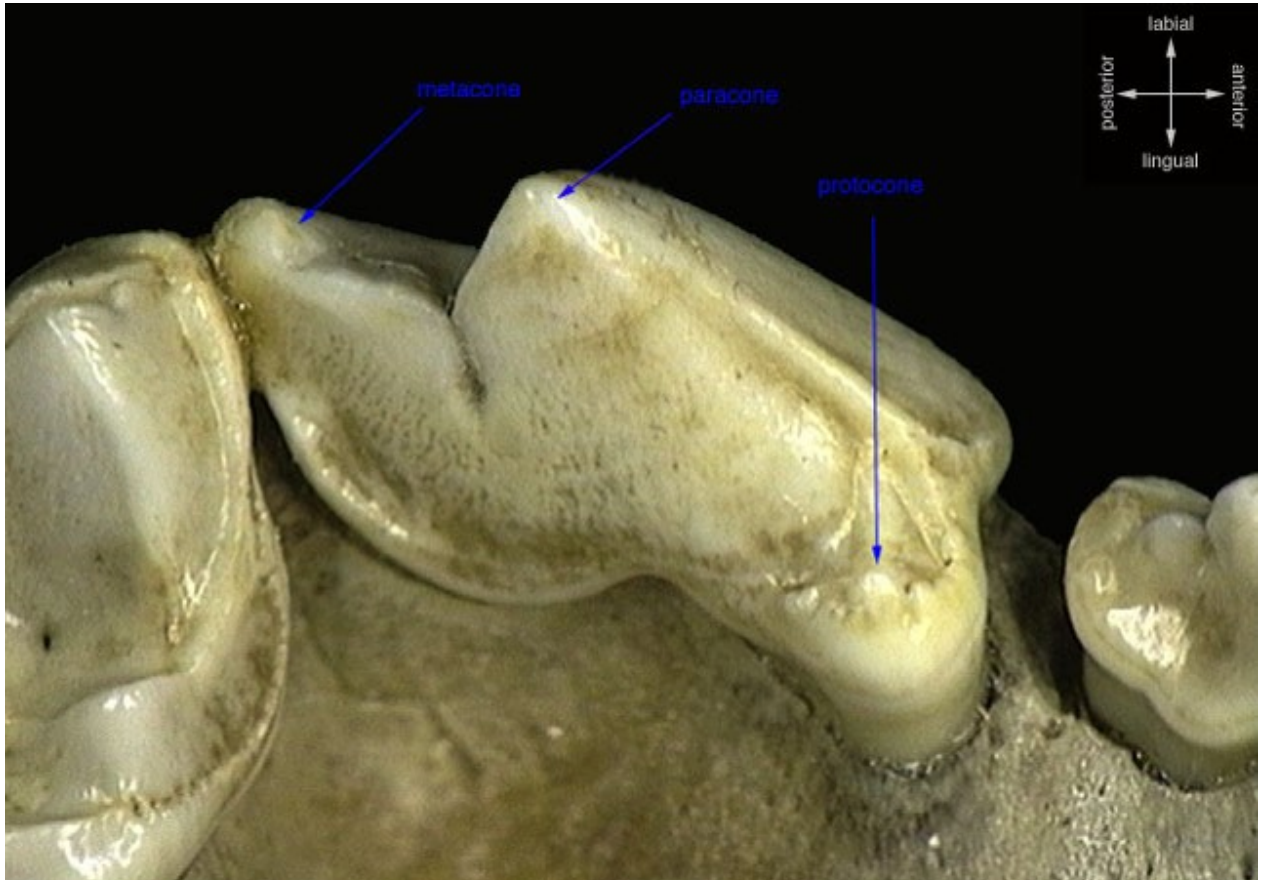
- Thin teeth located at the front of the jaw
- Used for slicing food

Canines

- Located right next to the incisors (if they have them!)
- Used for tearing food

Carnassials

- Order Carnivora have these
- Specialized teeth which slide together to slice meat
- P^4 and M^1 = carnassial pair, overlap



Note

These skulls are fragile and expensive! Try not to handle them any more than you have to. When you do pick them up, do so over a padded surface so in case they are accidentally dropped they will be less likely to break.