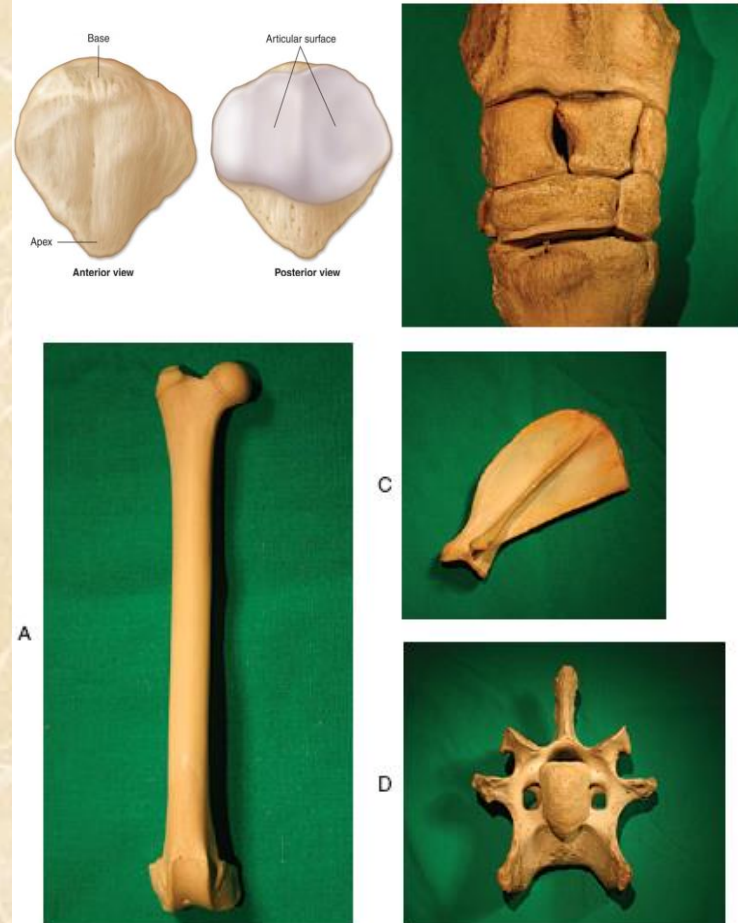


Laboratory 2

Bone Shapes

● Four basic shapes:

1. Long
2. Short
3. Flat
4. Irregular
5. Sesamoid



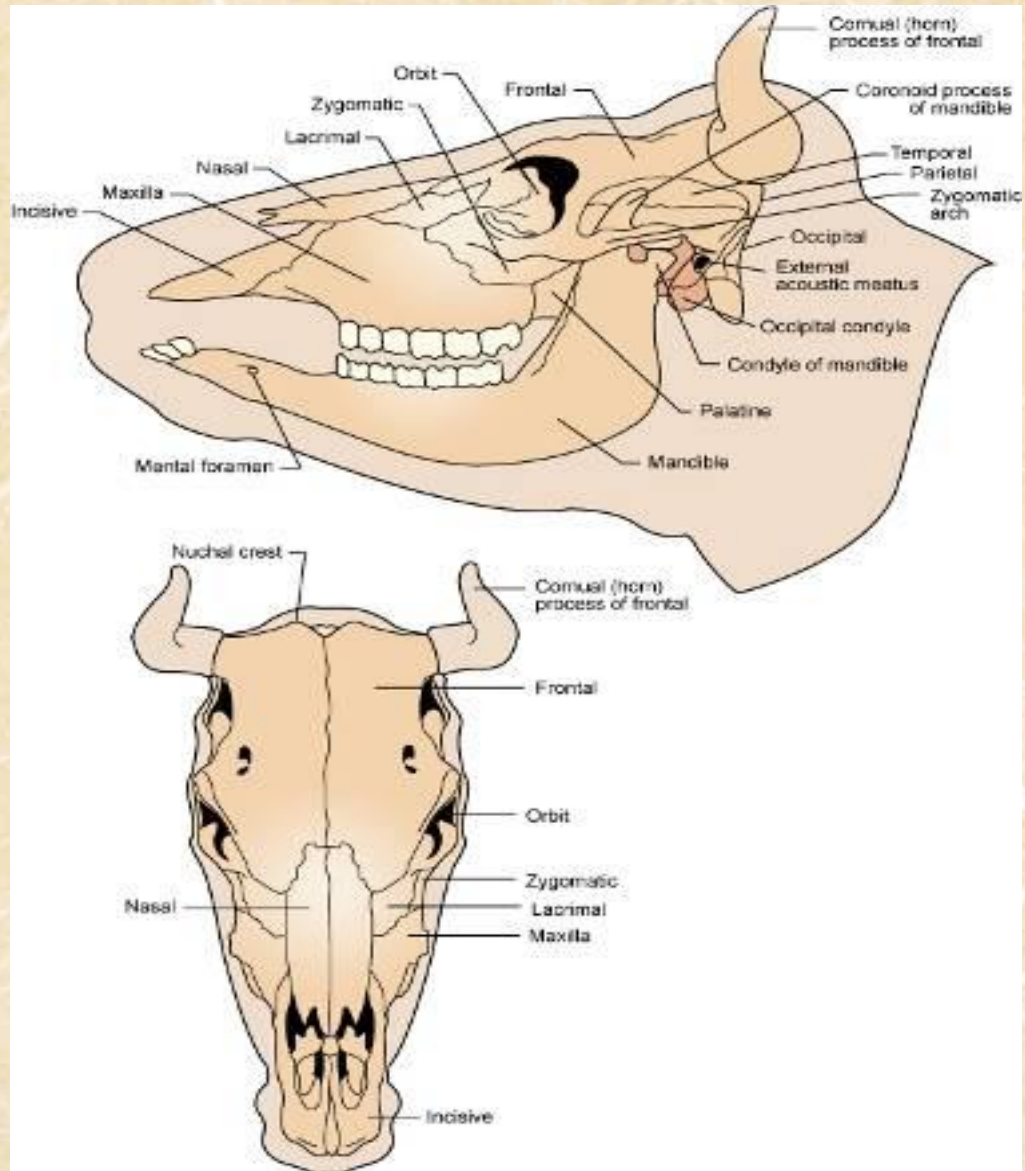
Axial Skelton

- Skull
- Hyoid bone
- Spinal column
- Ribs
- Sternum



Skull

- Usually consists of 37 or 38 separate bones
- Most of the skull bones are joints called sutures.
- The mandible is connected to the rest of the skull by a synovial joint.



Bones of the Cranium

External bones:

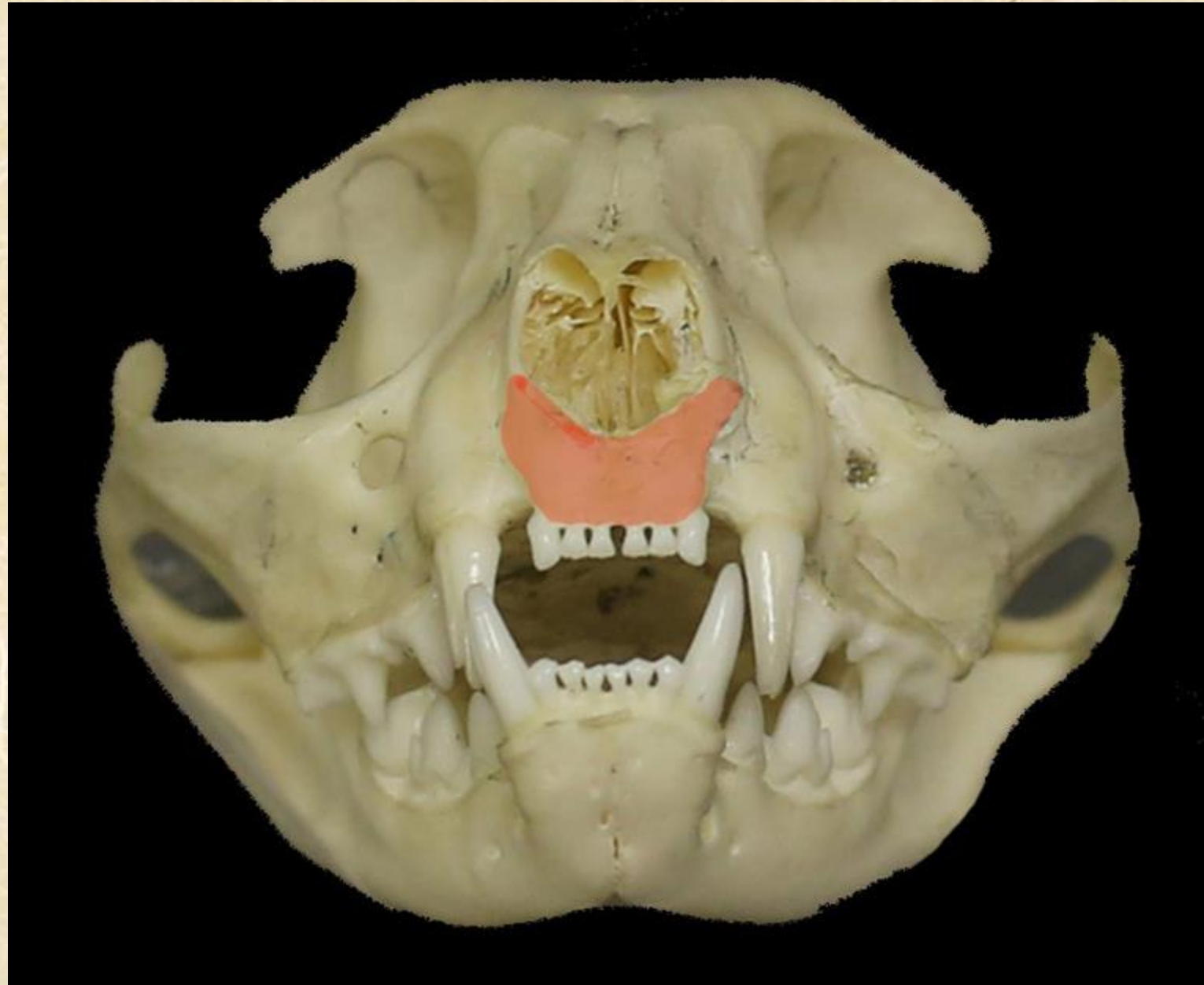
- Frontal bones (2)
- Interparietal bones (2)
- Occipital bones (1)
- Parietal bones (2)
- Temporal bones (2)

Internal Bones:

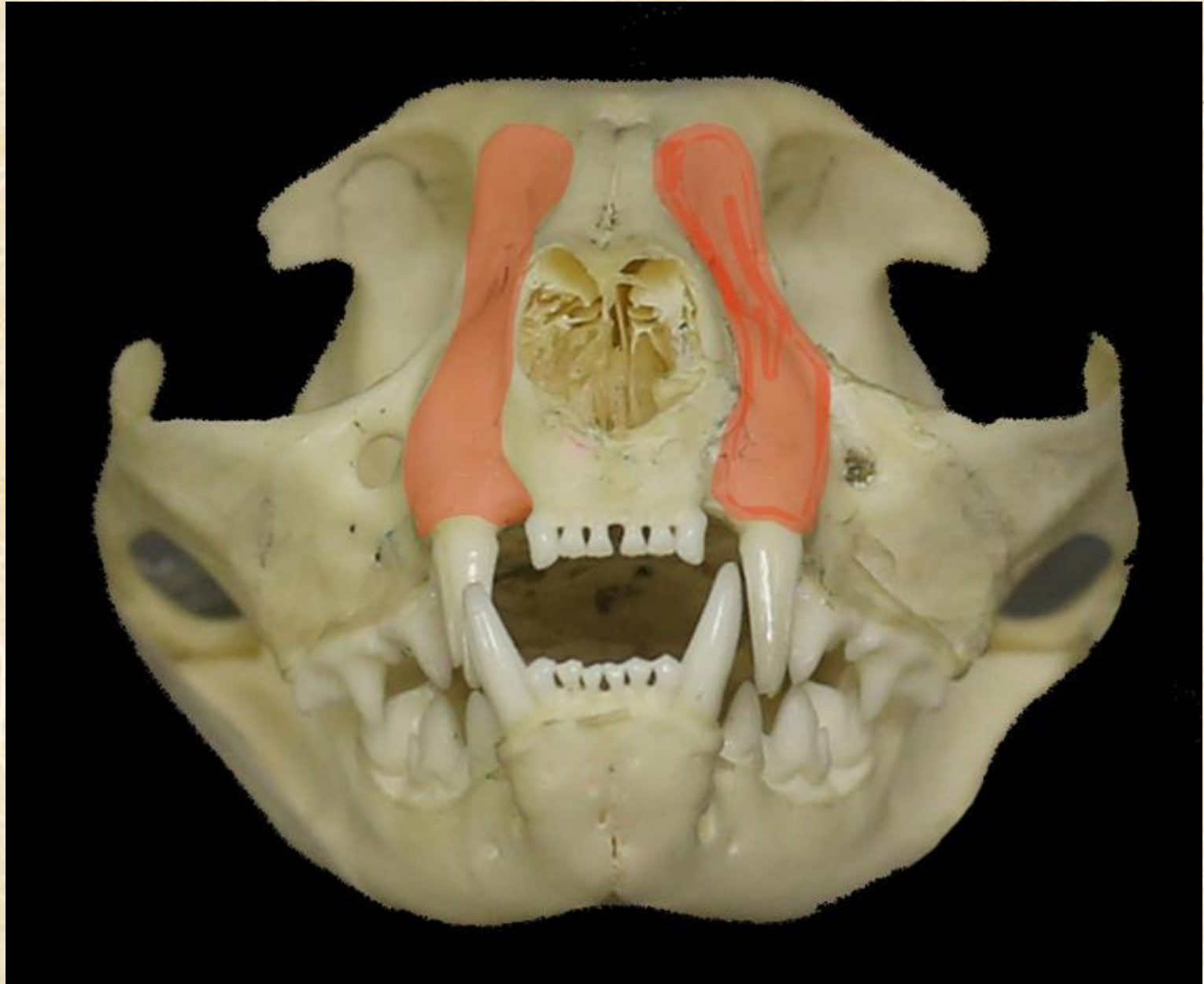
- Ethmoid bone (1)
- Sphenoid bone (1)

Cat skull frontal view

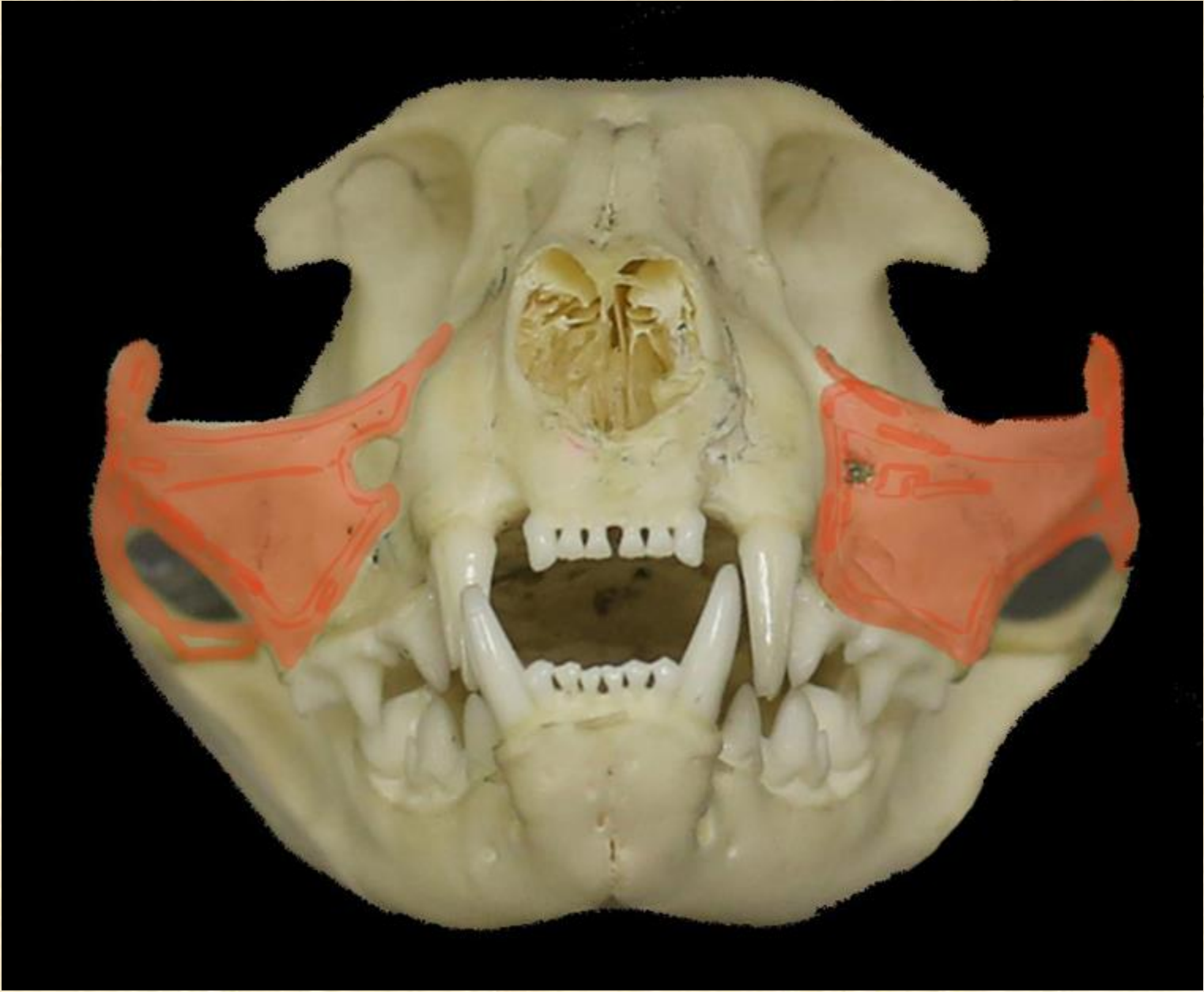
Premaxilla or Incisive bone



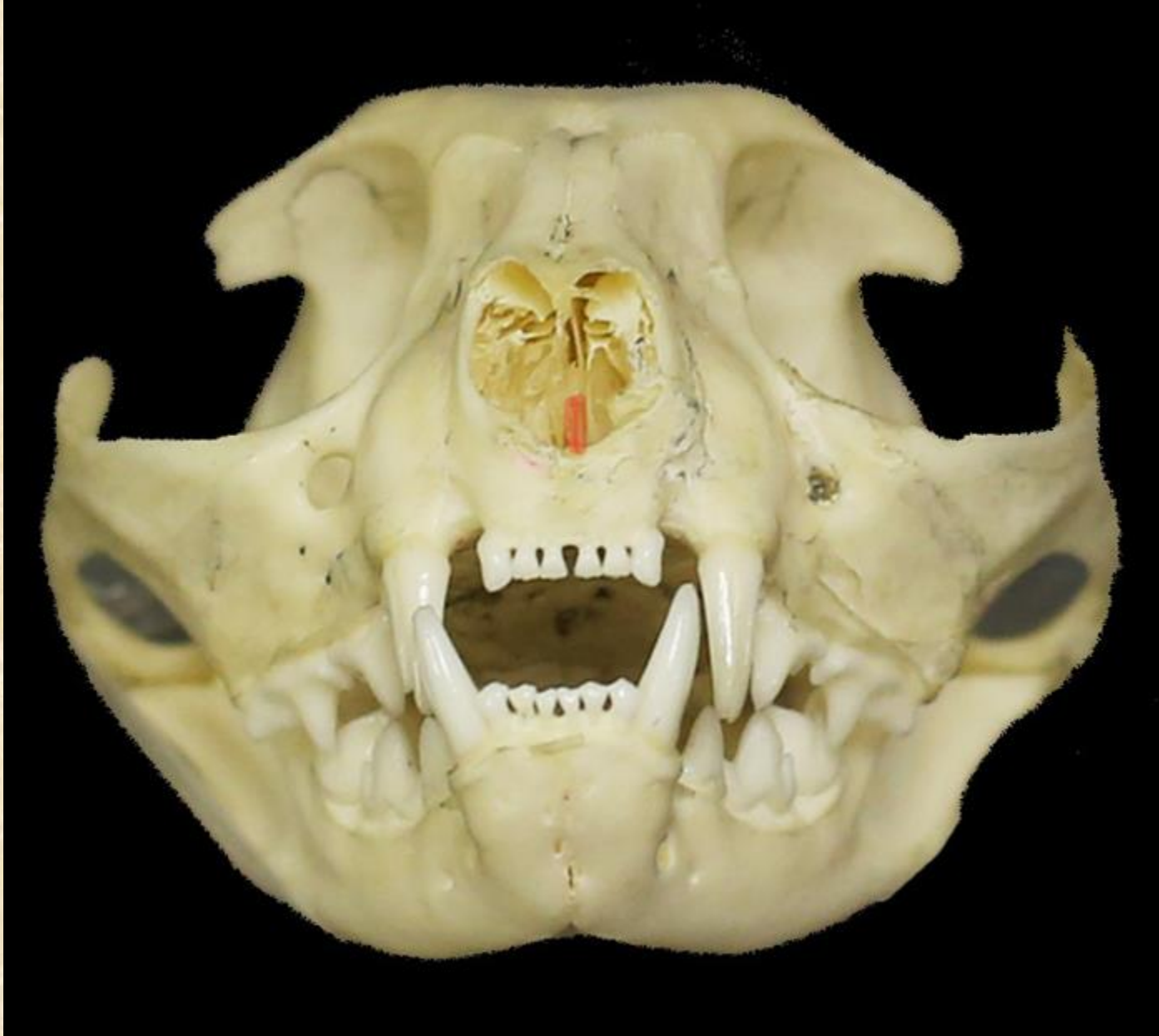
Maxilla



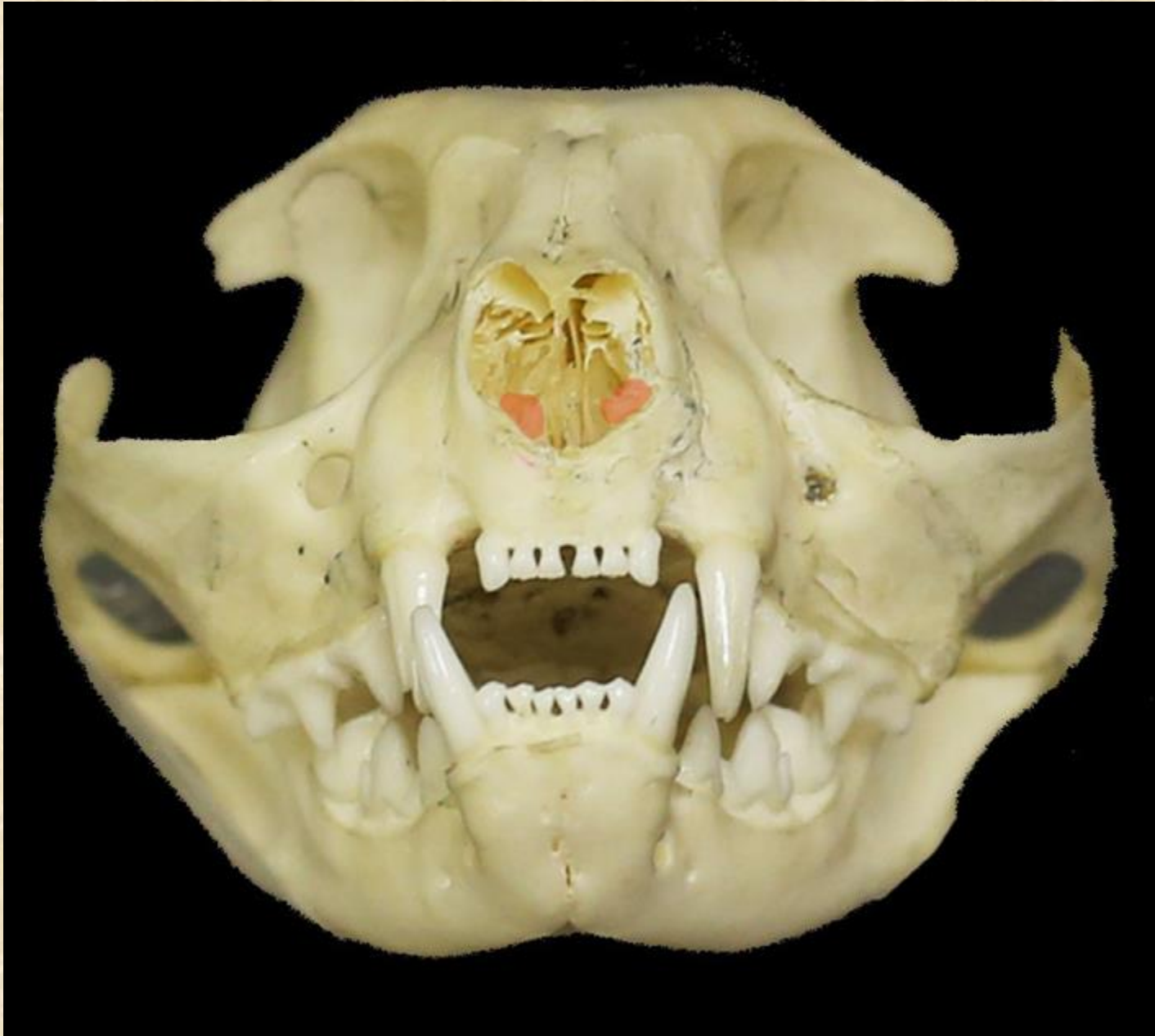
Zygomatic, Malar, or Jugular



Vomer



Turbinates or Inferior nasal conchae



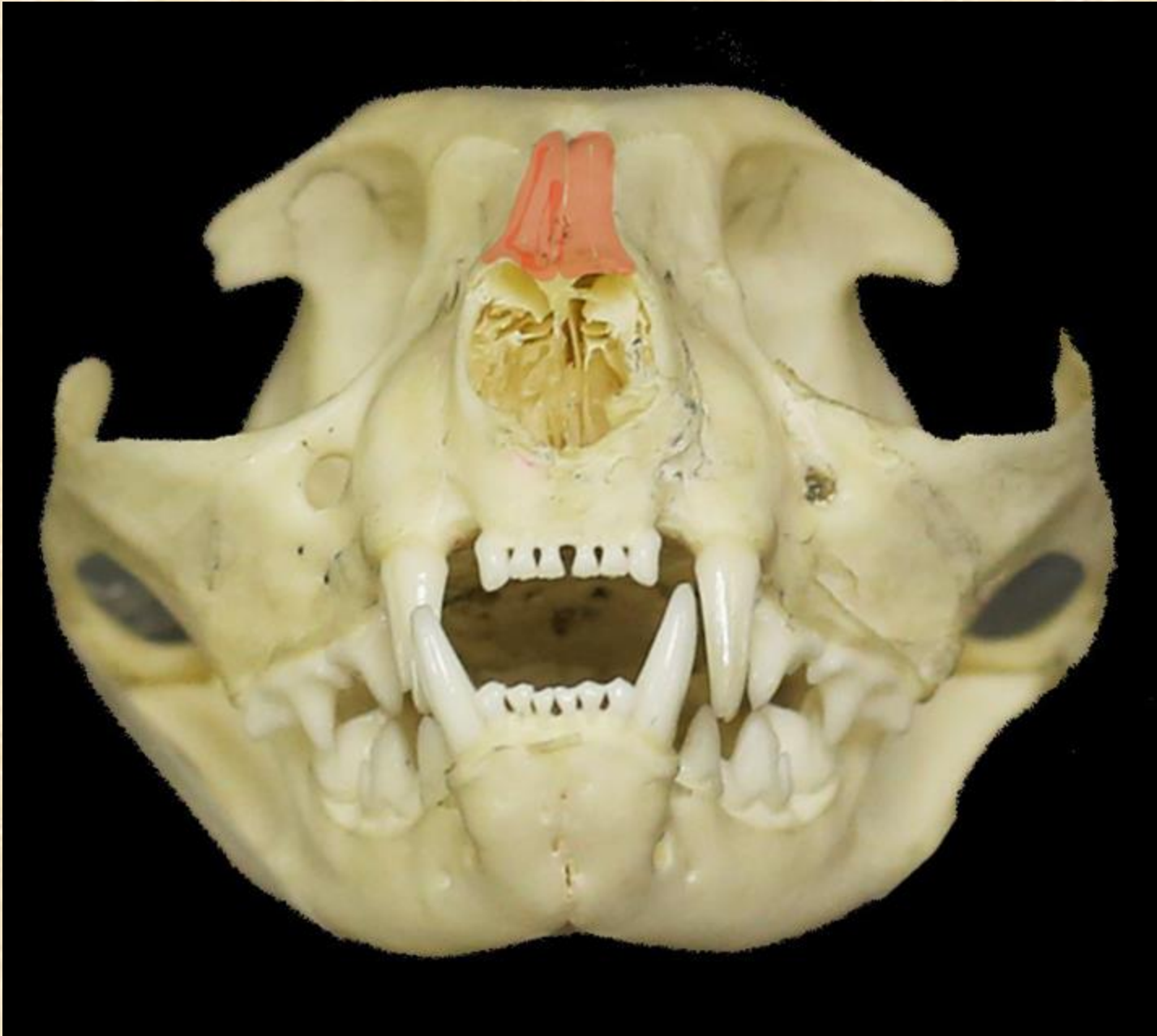
Turbinates or Superior Nasal Conchae



Perpendicular plate of Ethmoid bone



Nasal bone



Frontal bone



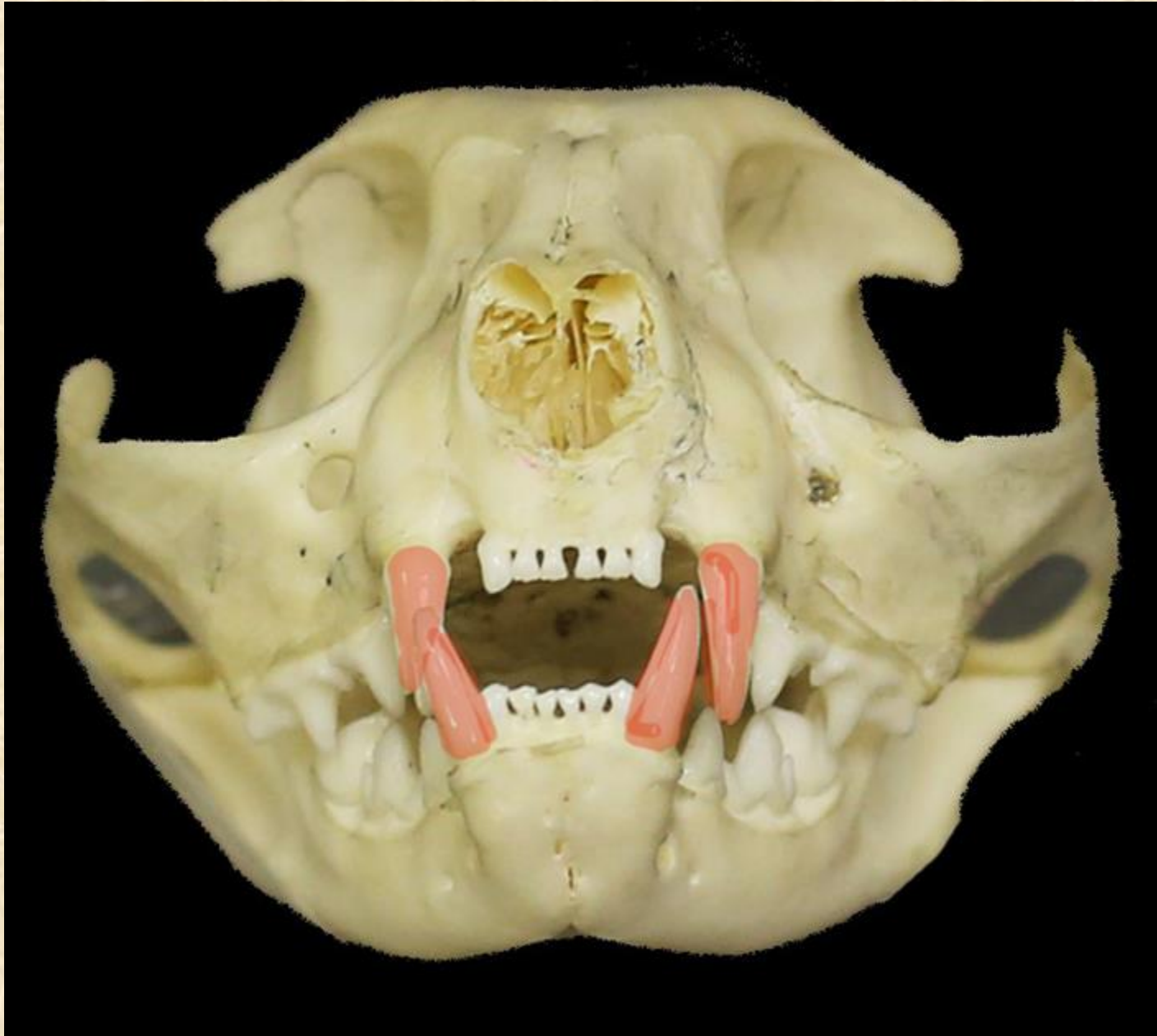
Infraorbital foramen



Incisors



Canines



Premolars



Molars



Cat skull Dorsal view

Premaxilla or incisive bone



Maxilla



Nasal bones



Frontal bones



Parietal Bones



Interparietal bones



Temporal or squamous bones



Zygomatic, malar, or jugular bones



Zygomatic arch



Frontal suture



Sagittal crest



Coronal suture



Temporal or squamous suture



Cat skull lateral view

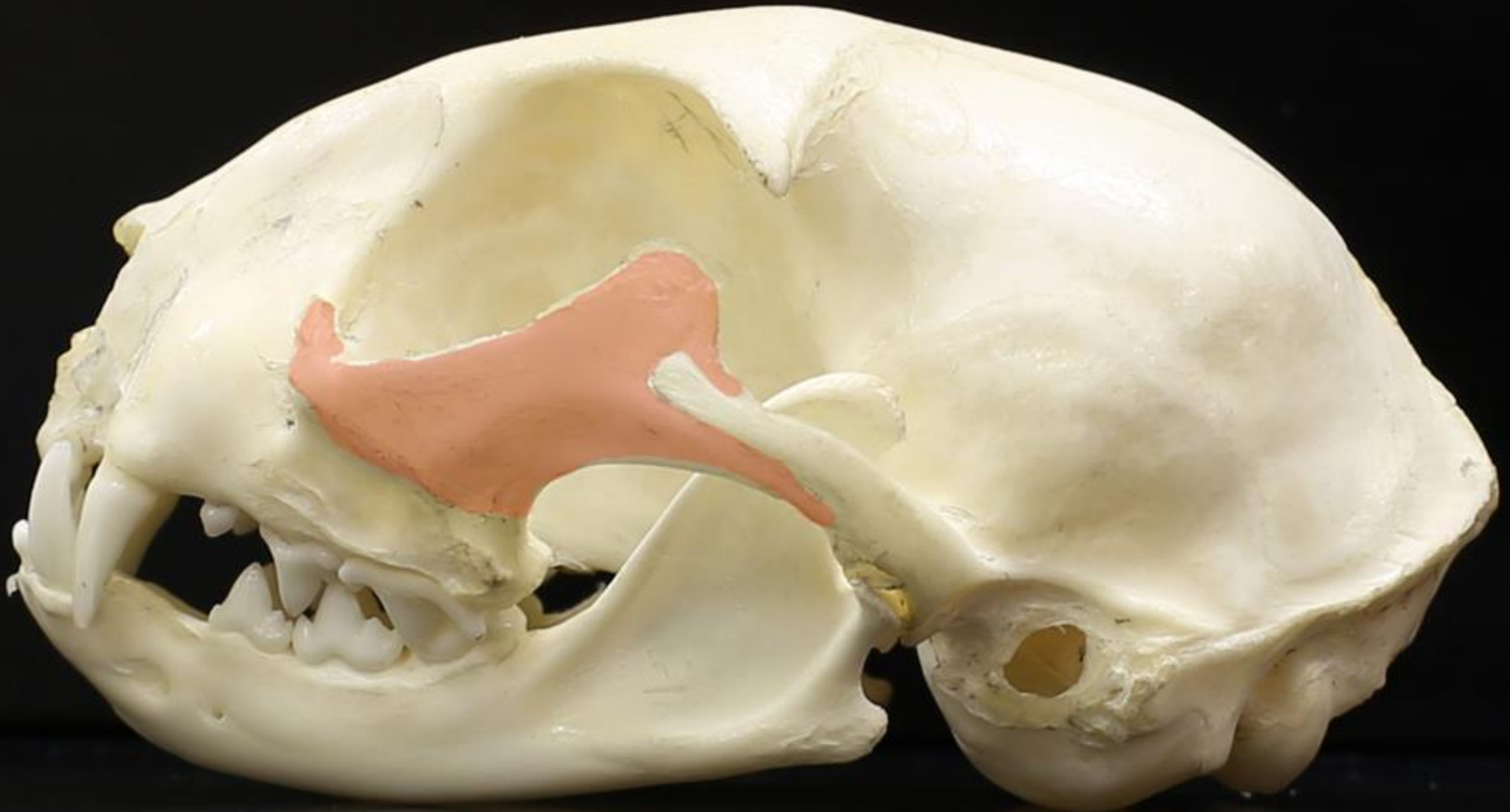
Premaxilla or incisive bone



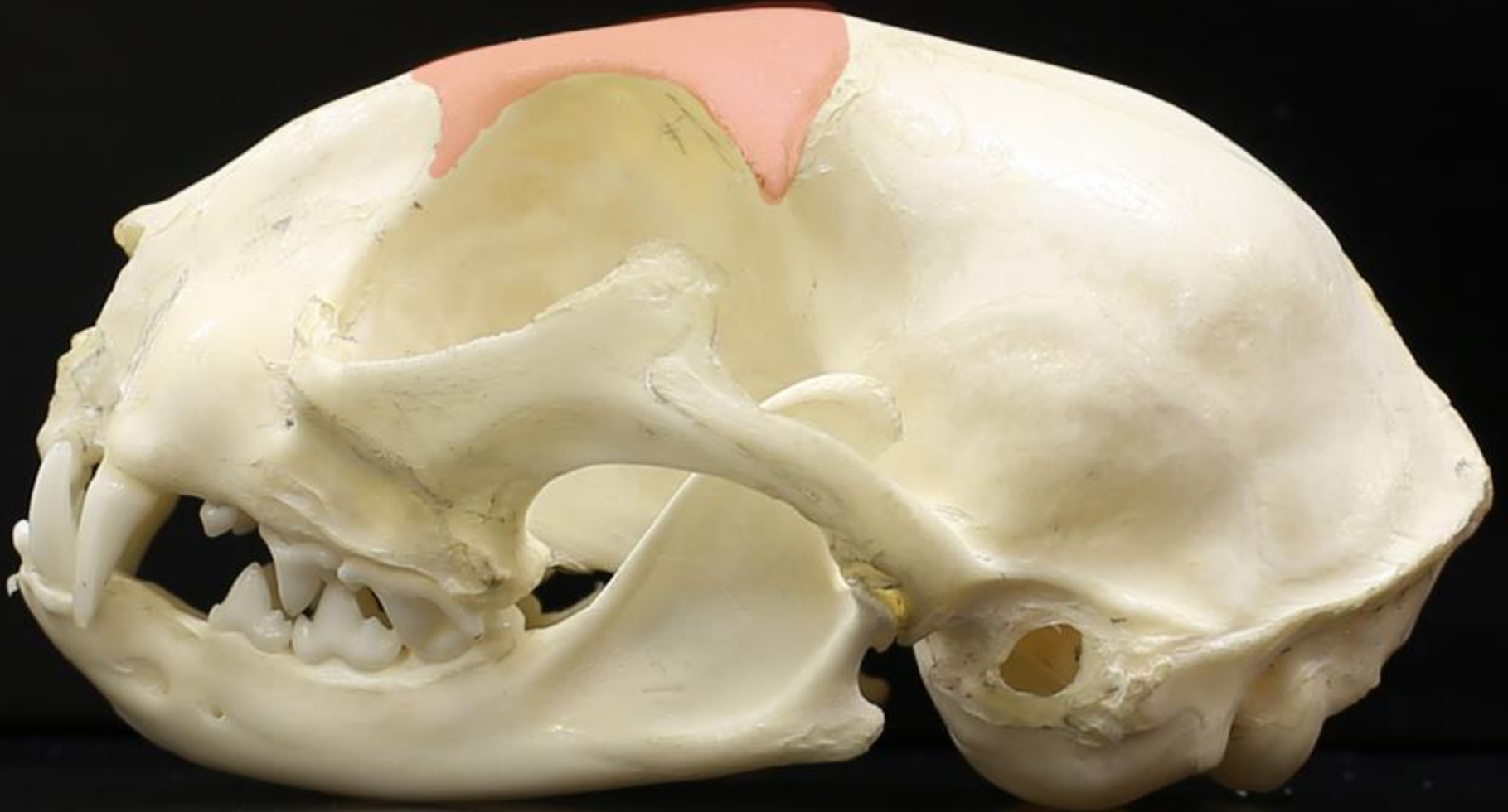
Maxilla



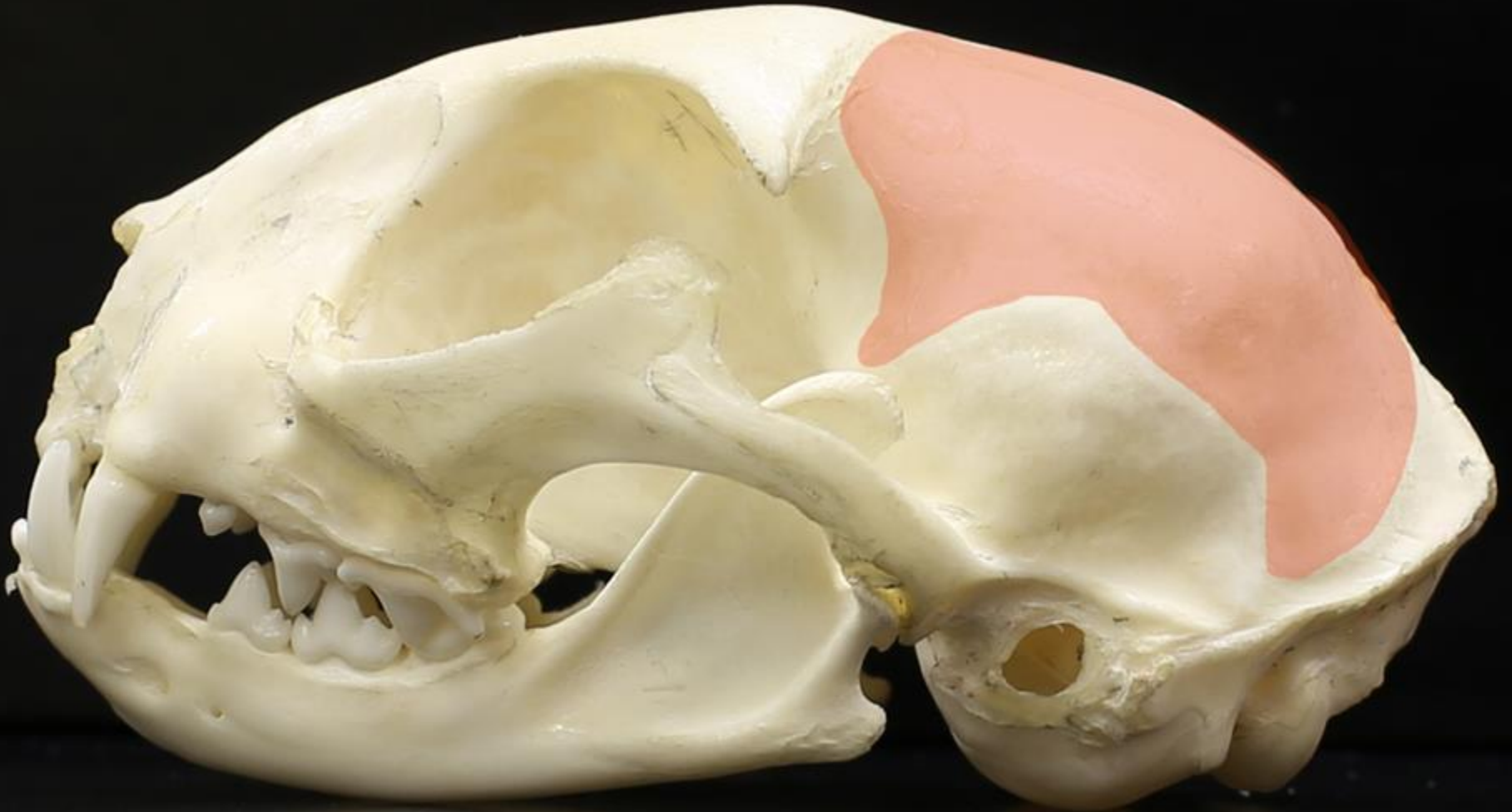
Zygomatic, malar or jugular bone



Frontal bone



Parietal bone



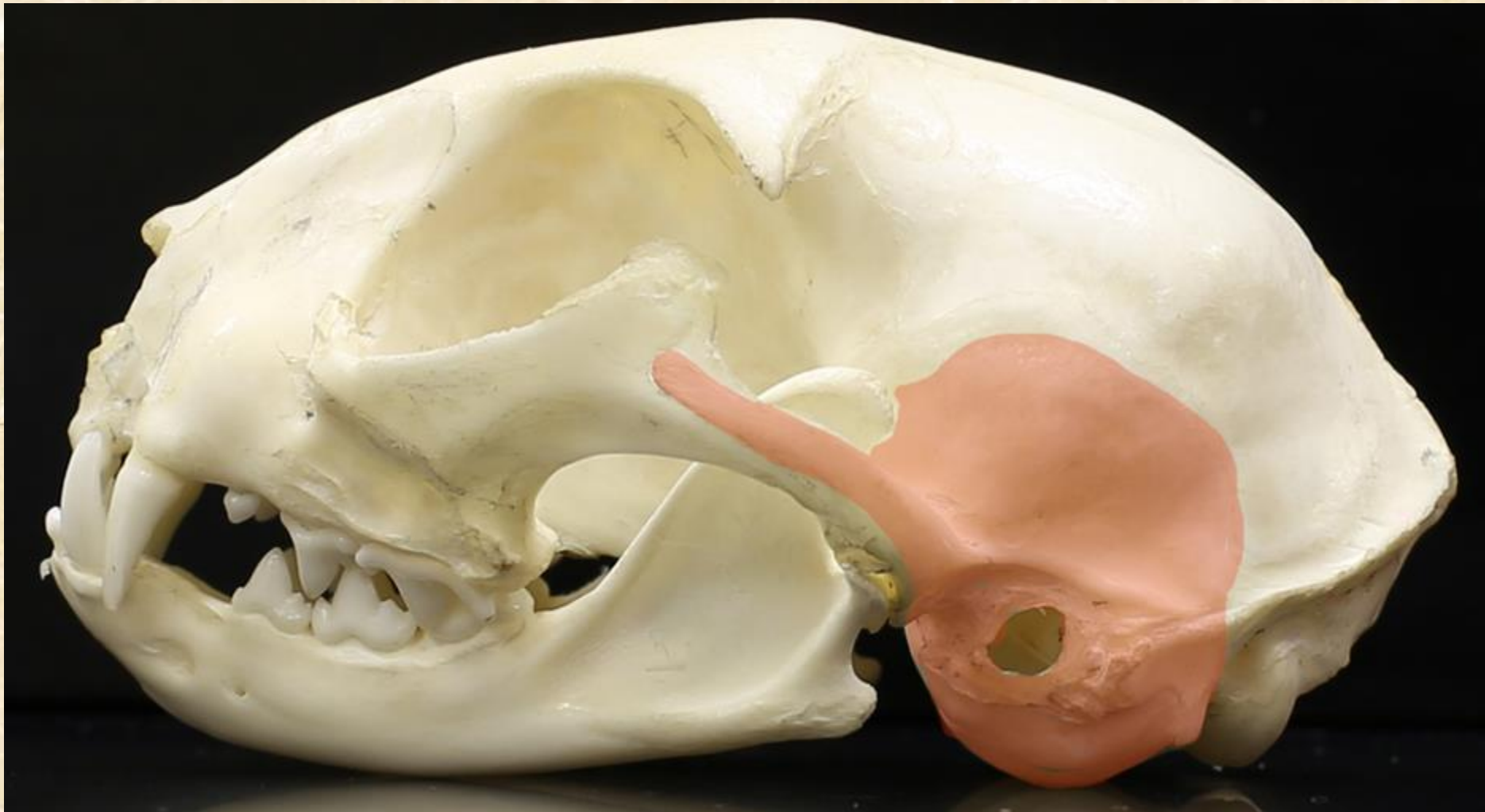
Interparietal bone



Occipital bone



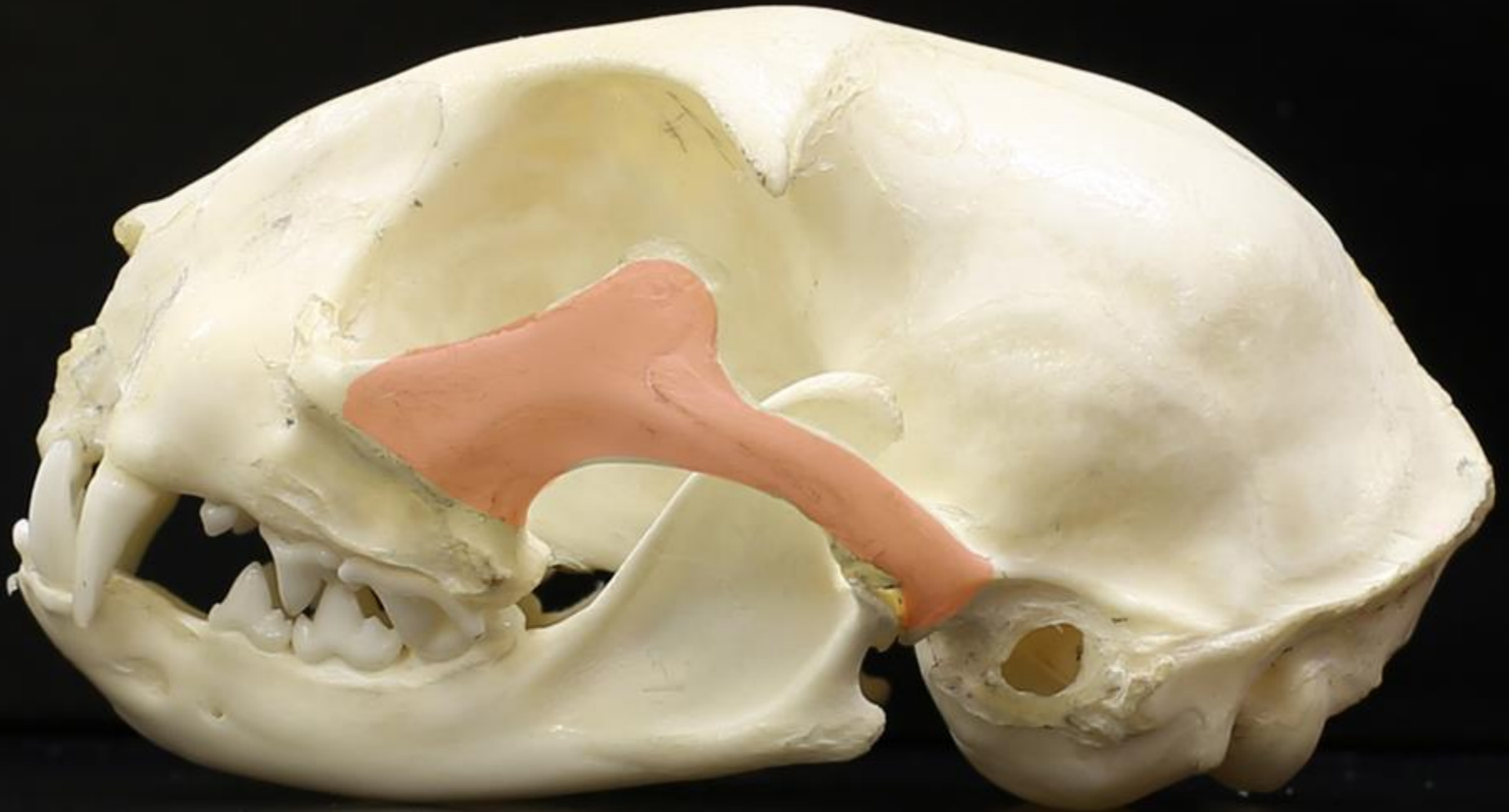
Temporal or squamous bone



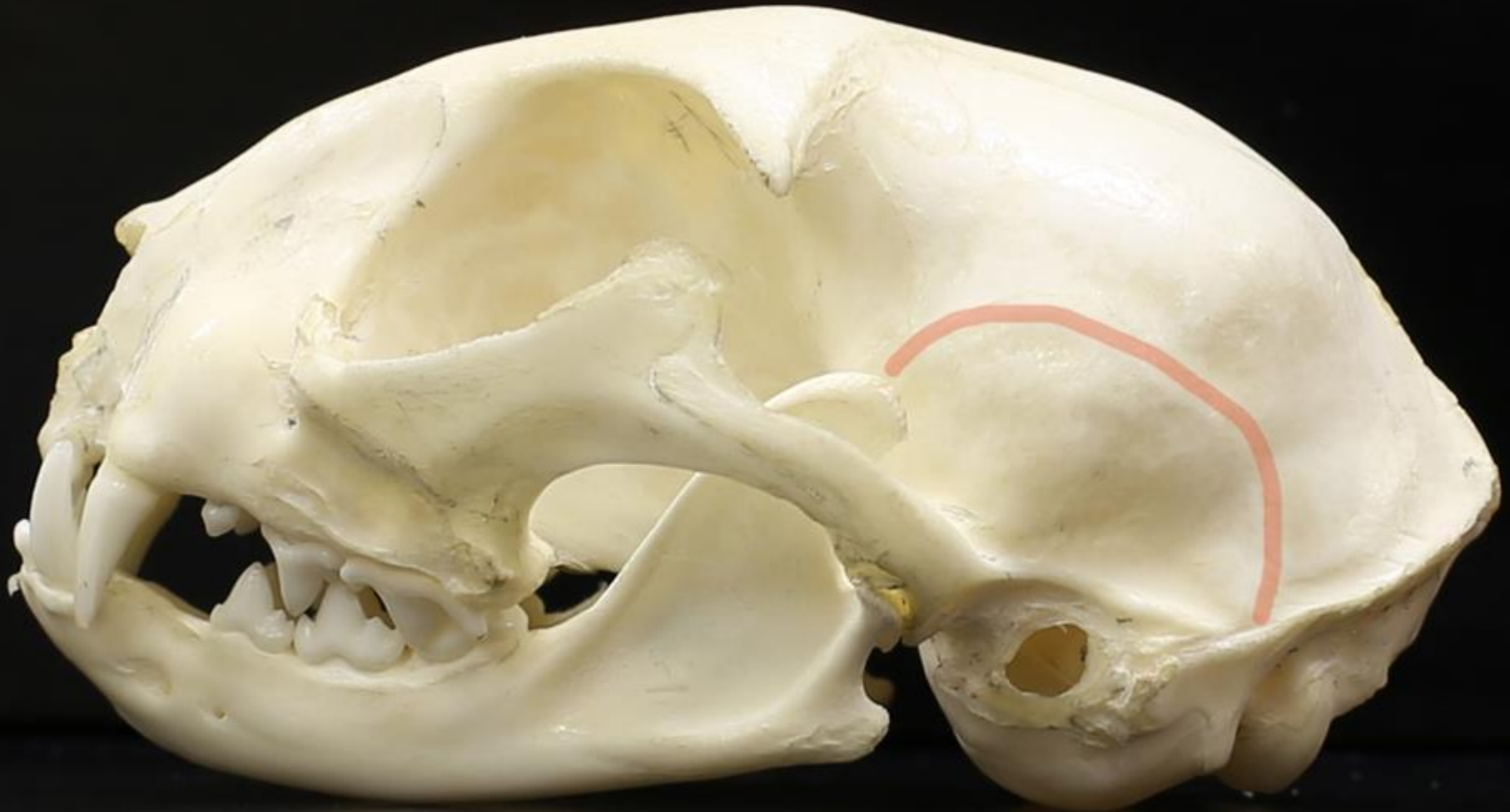
Lacrimal bone and lacrimal canal



Zygomatic arch



Temporal or squamous suture



Tympanic bulla



External auditory (acoustic) meatus

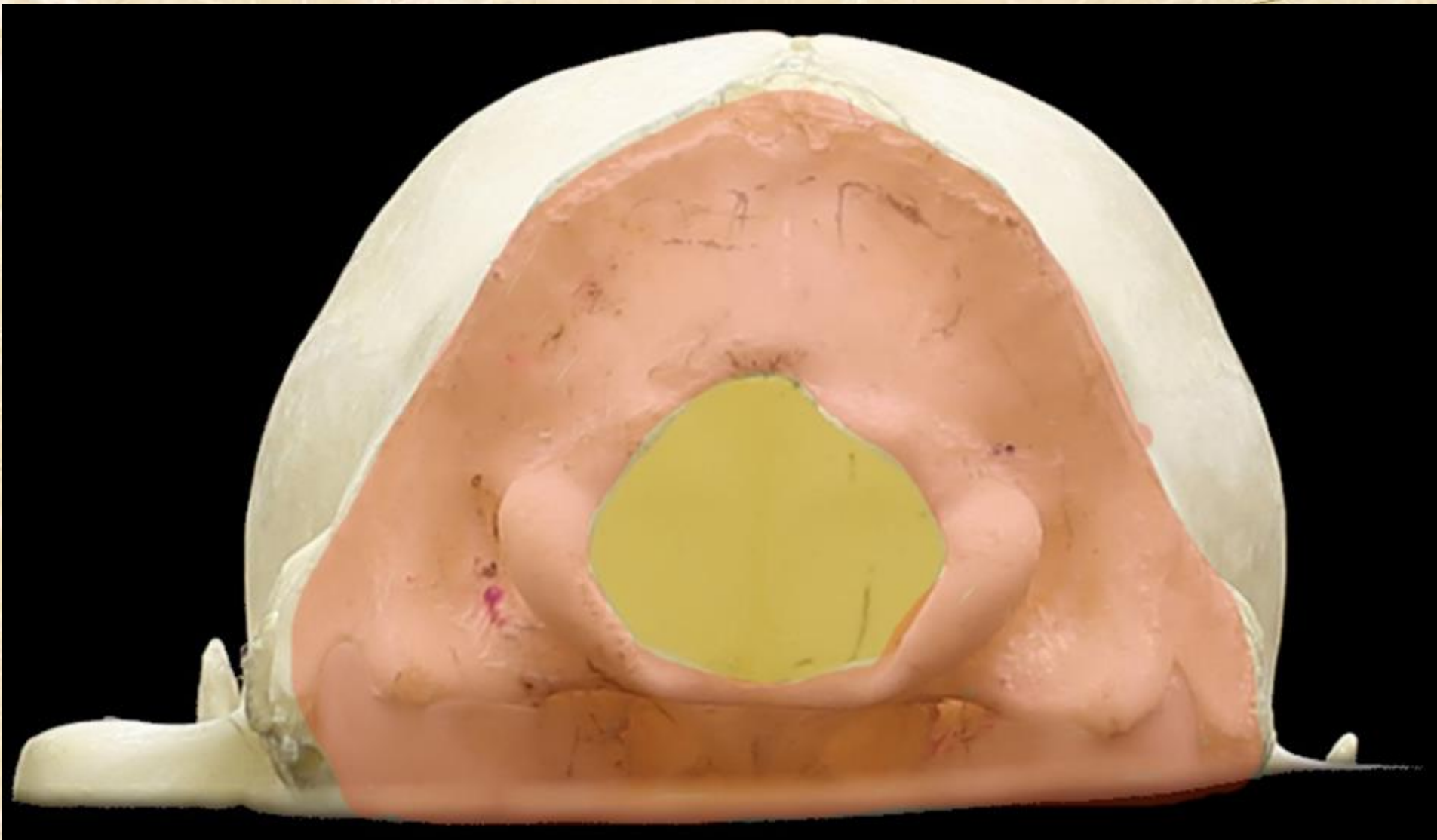


Mastoid process

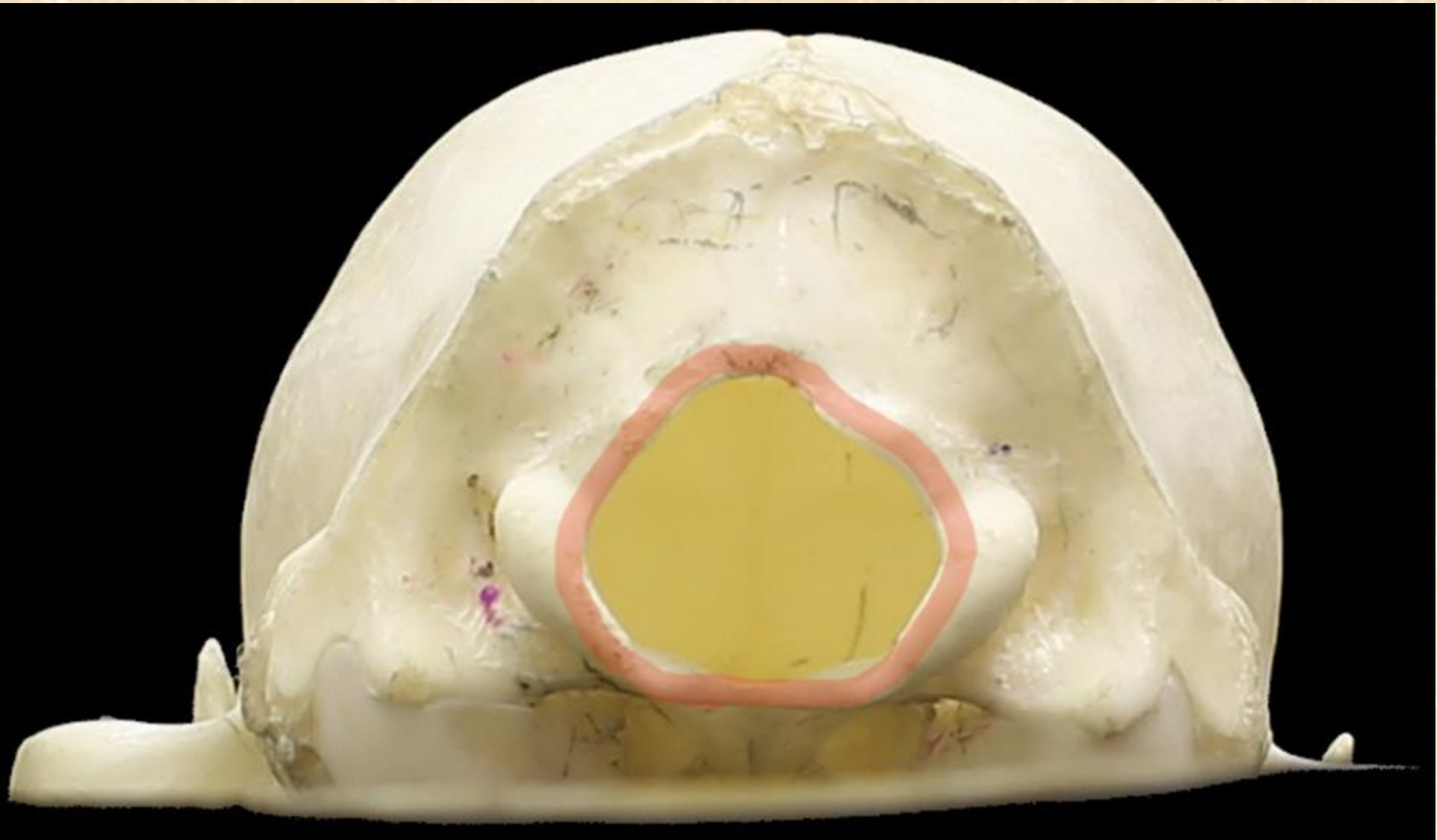


Cat skull posterior view

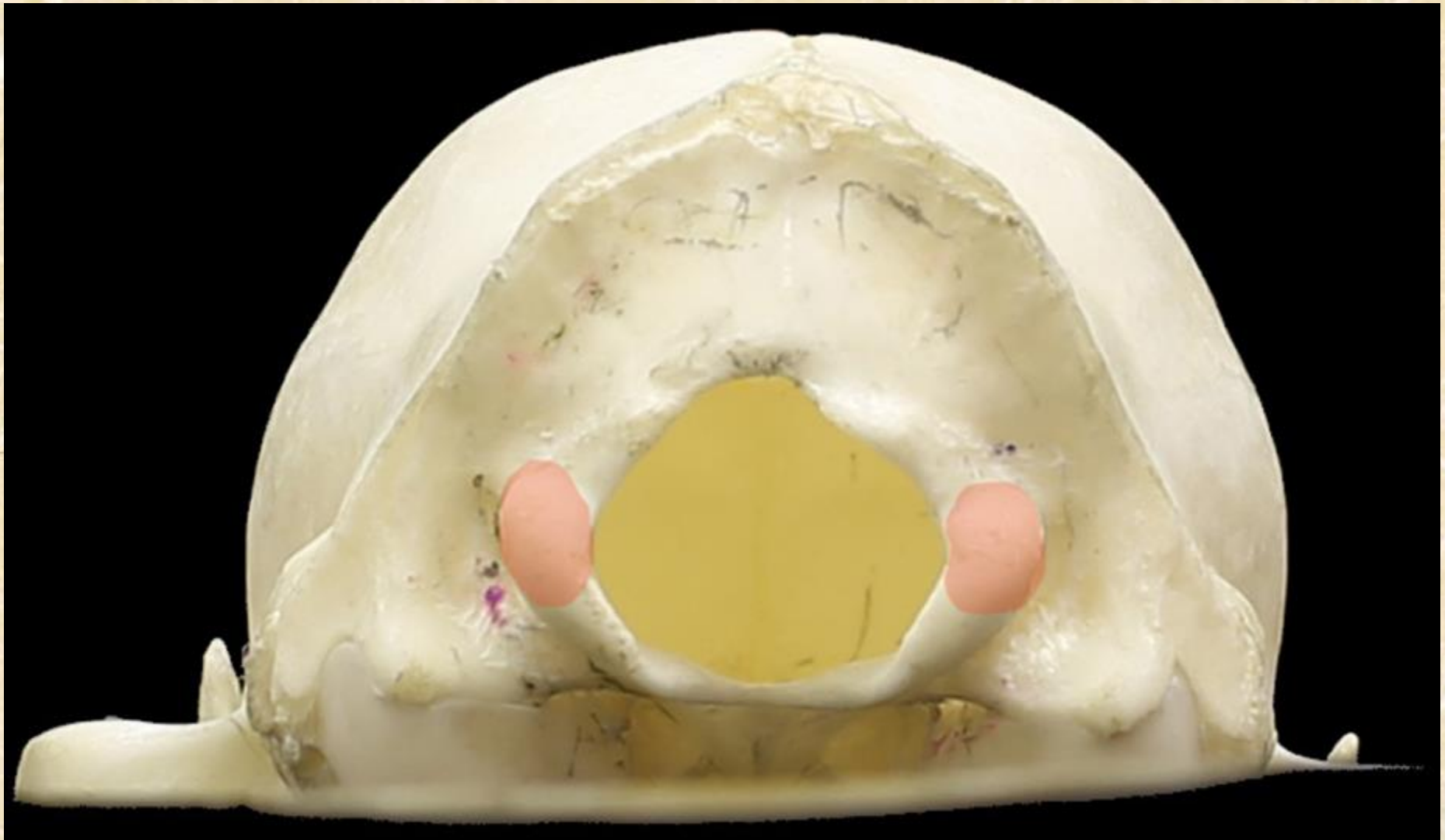
Occipital bone



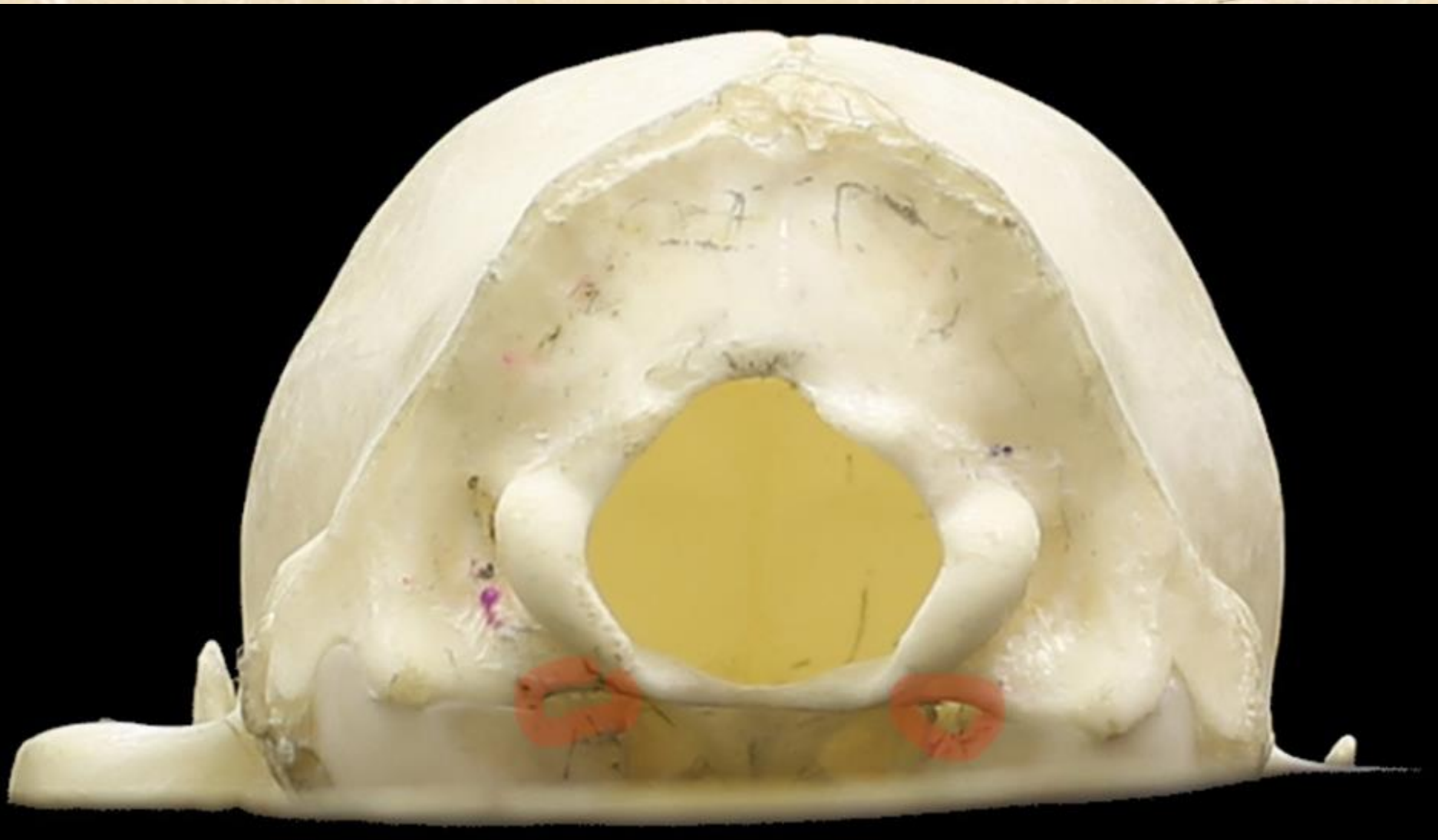
Foramen magnum



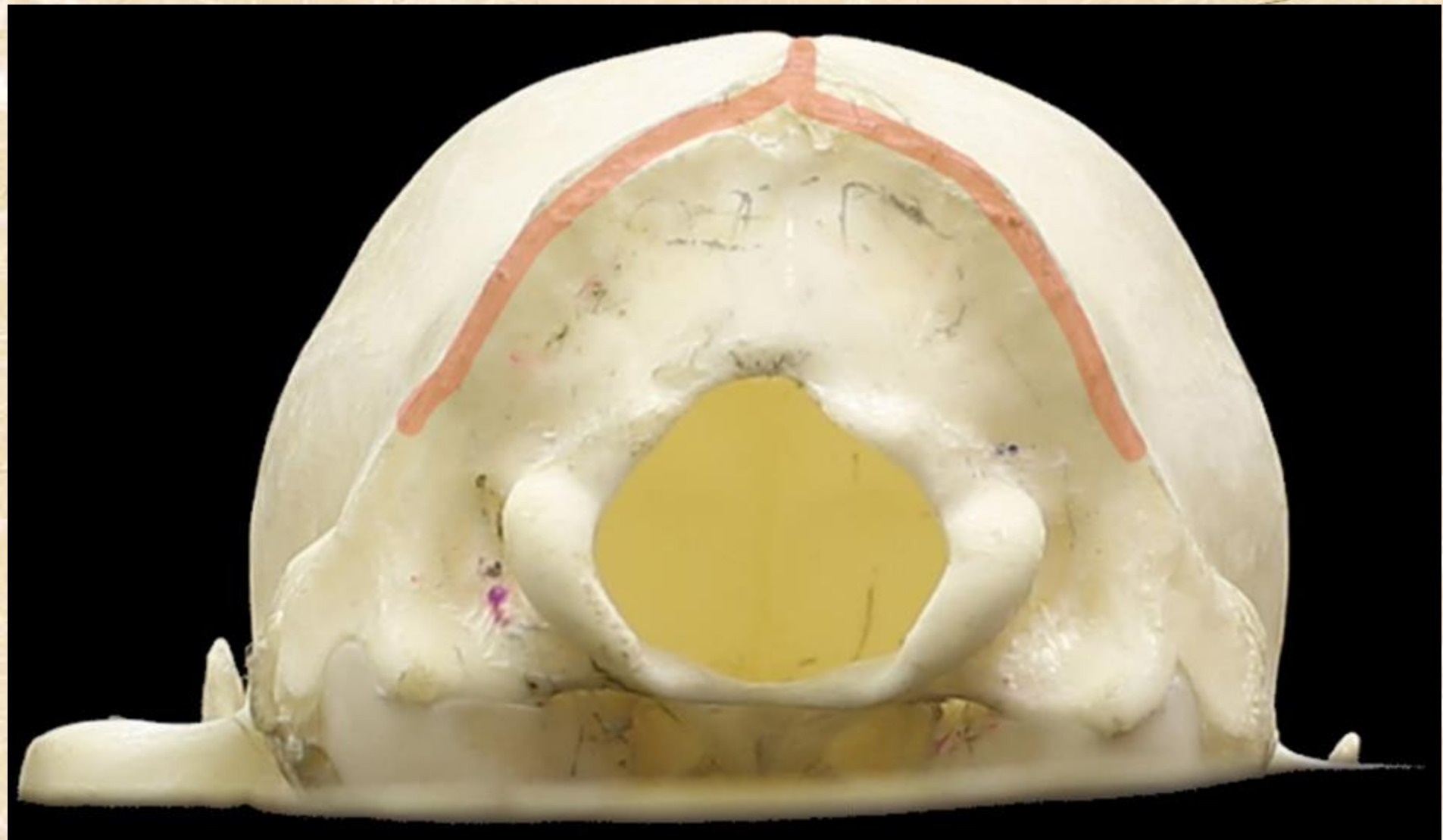
Occipital condyles



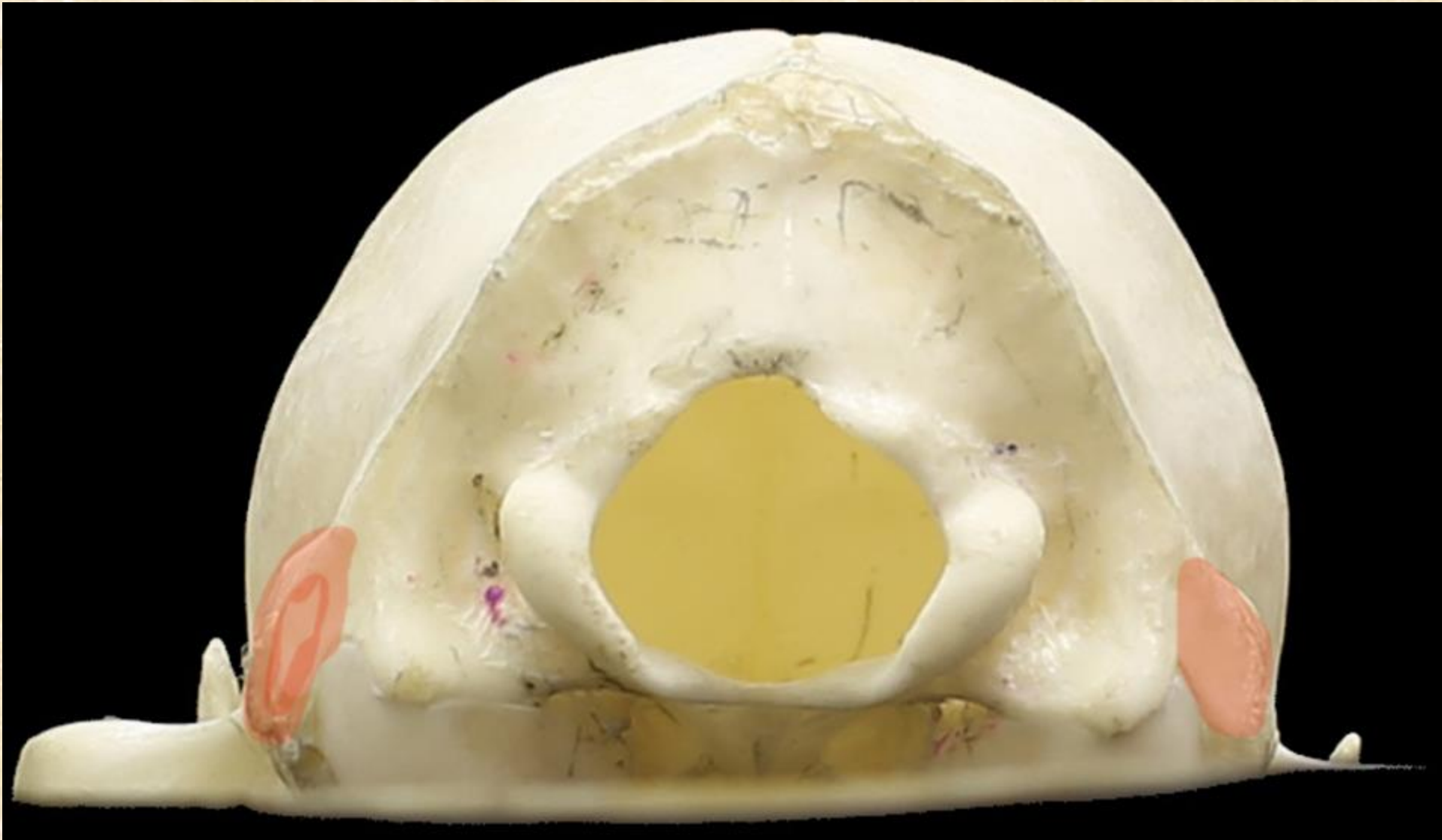
Jugular foramen

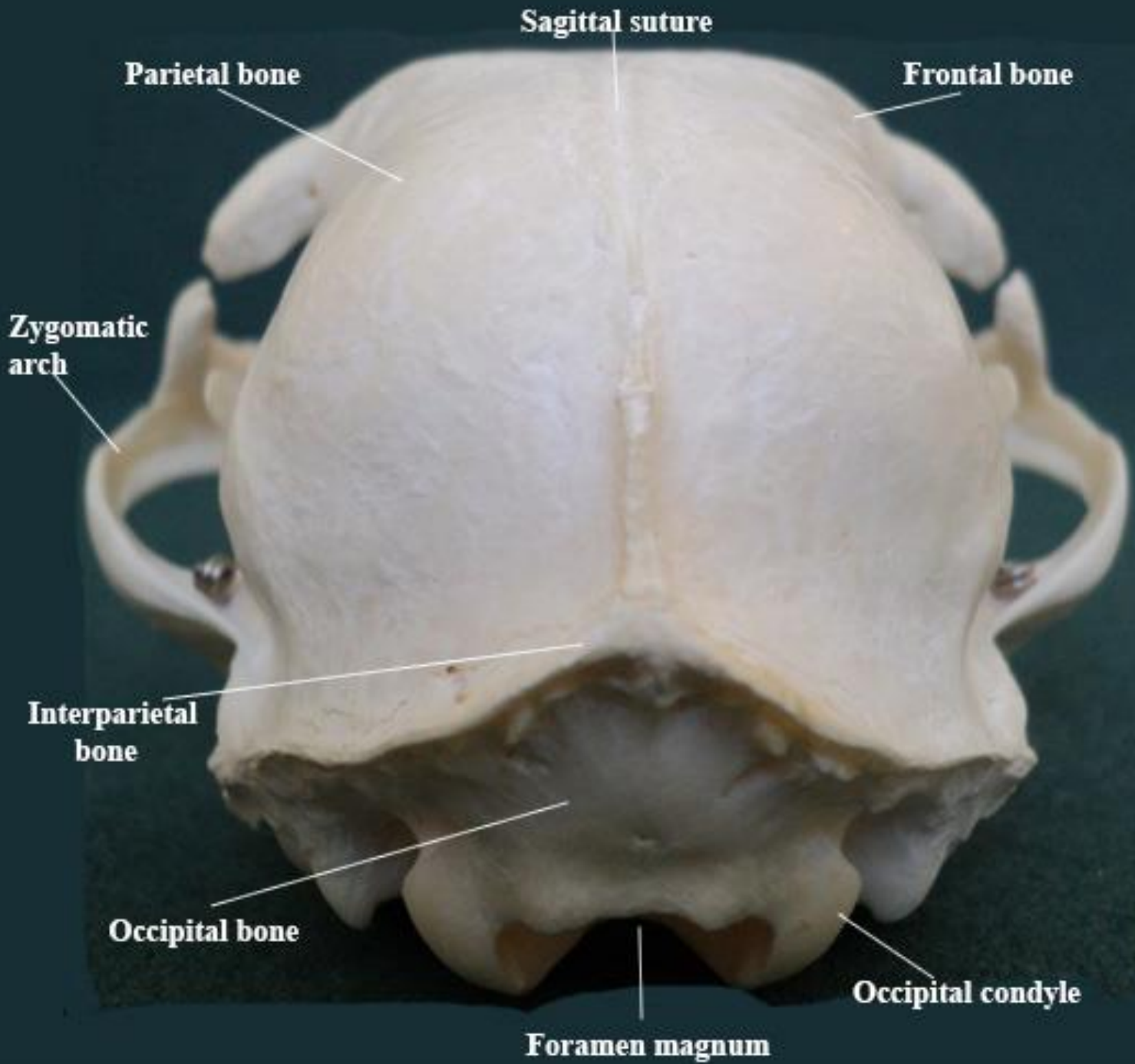


Lambdoidal suture

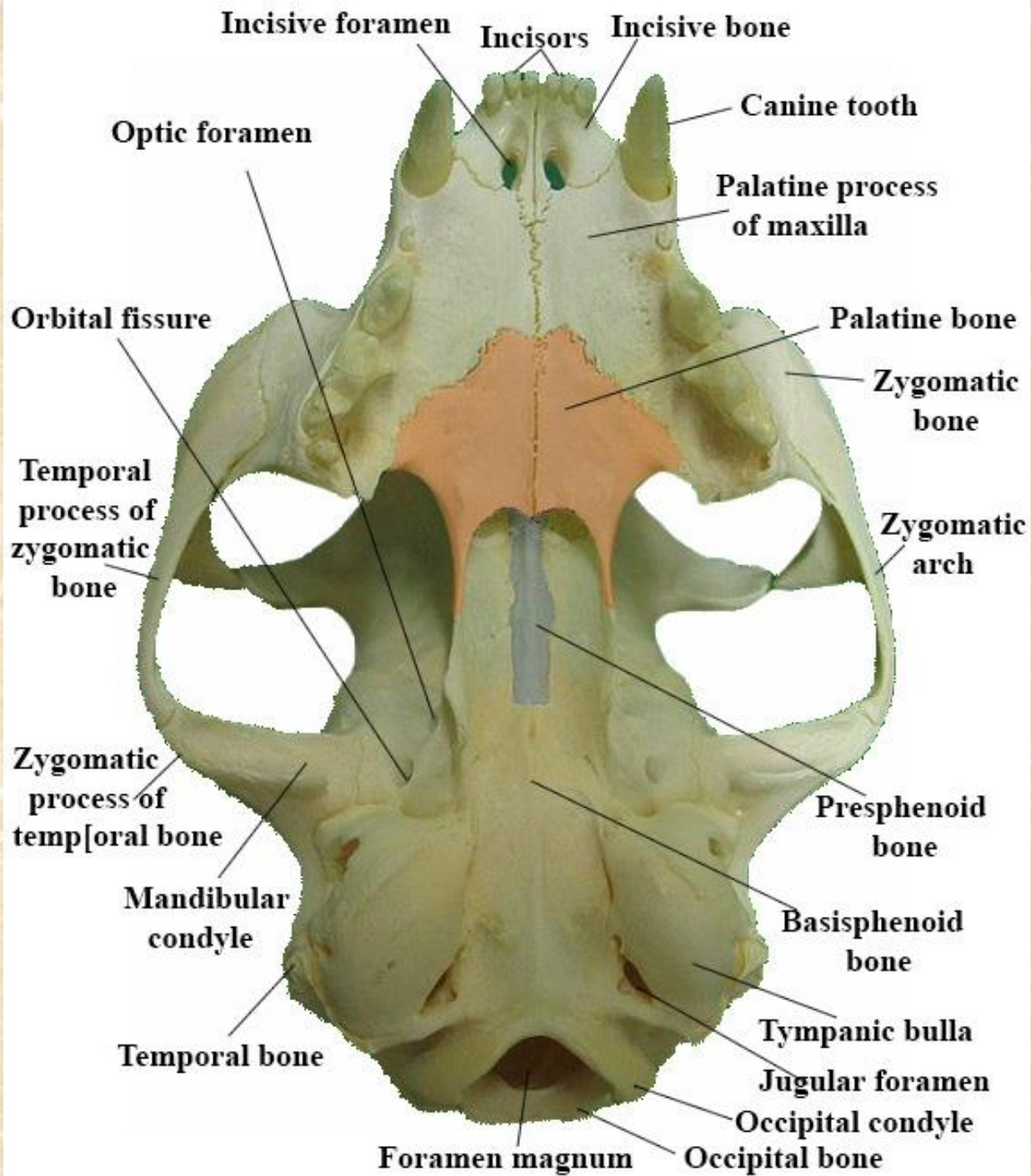


Mastoid process





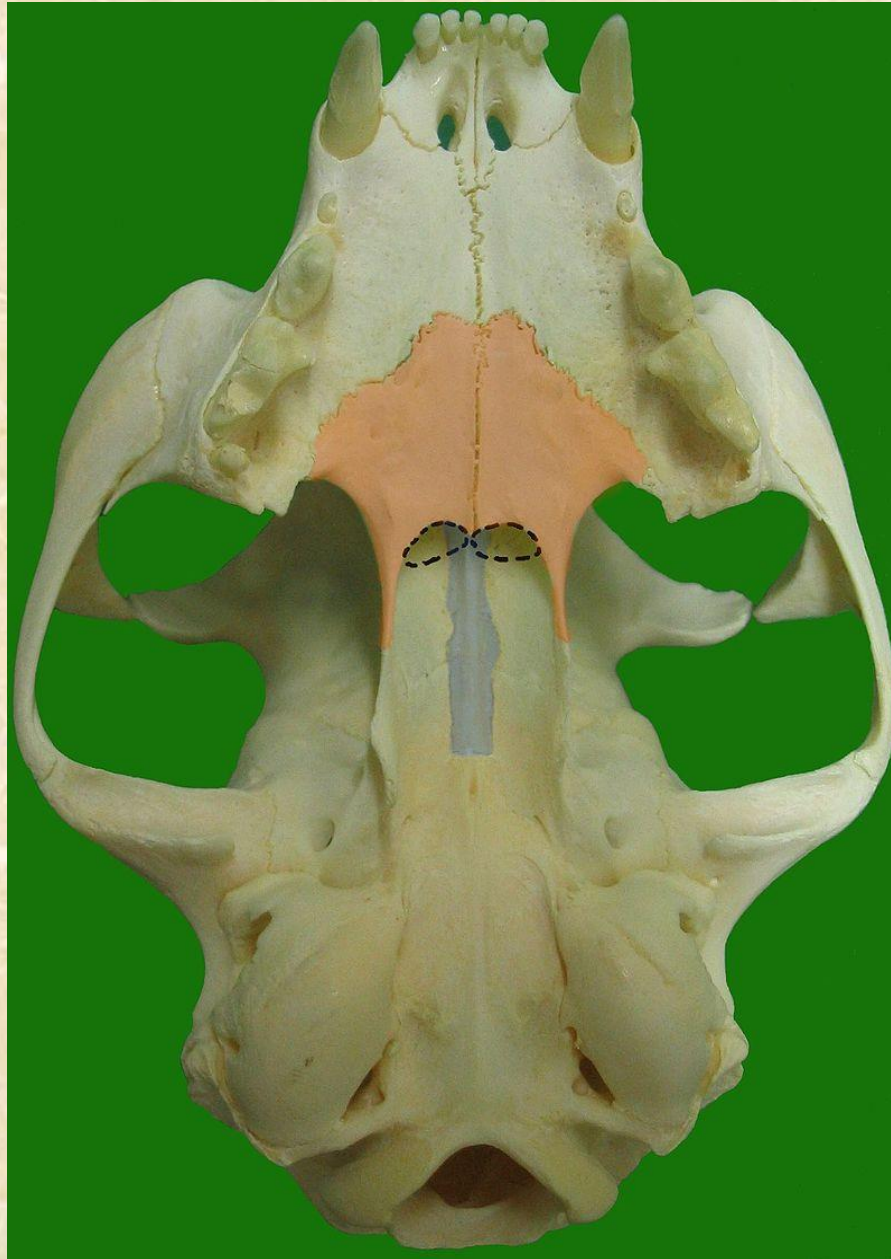
Cat skull ventral view



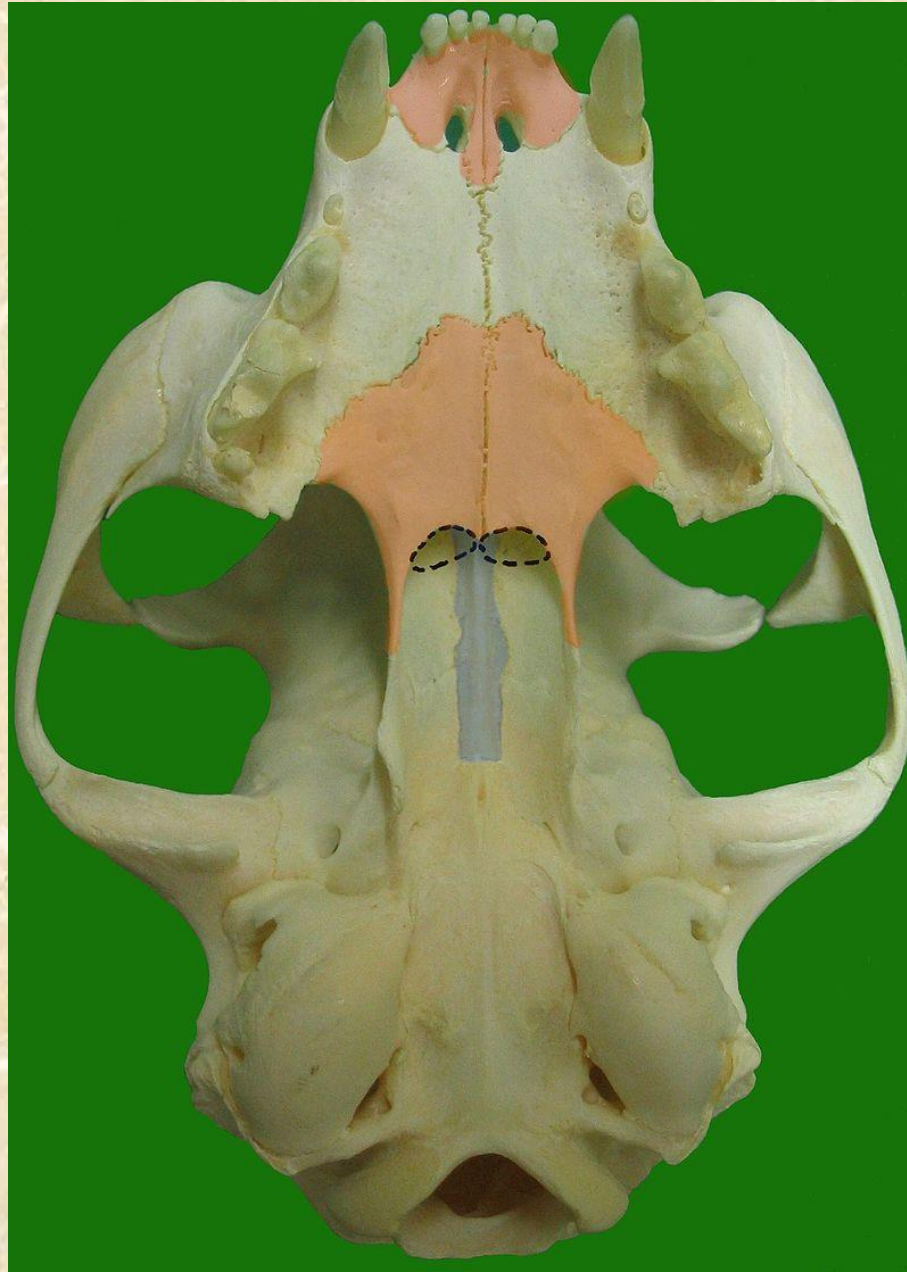
Occipital bone



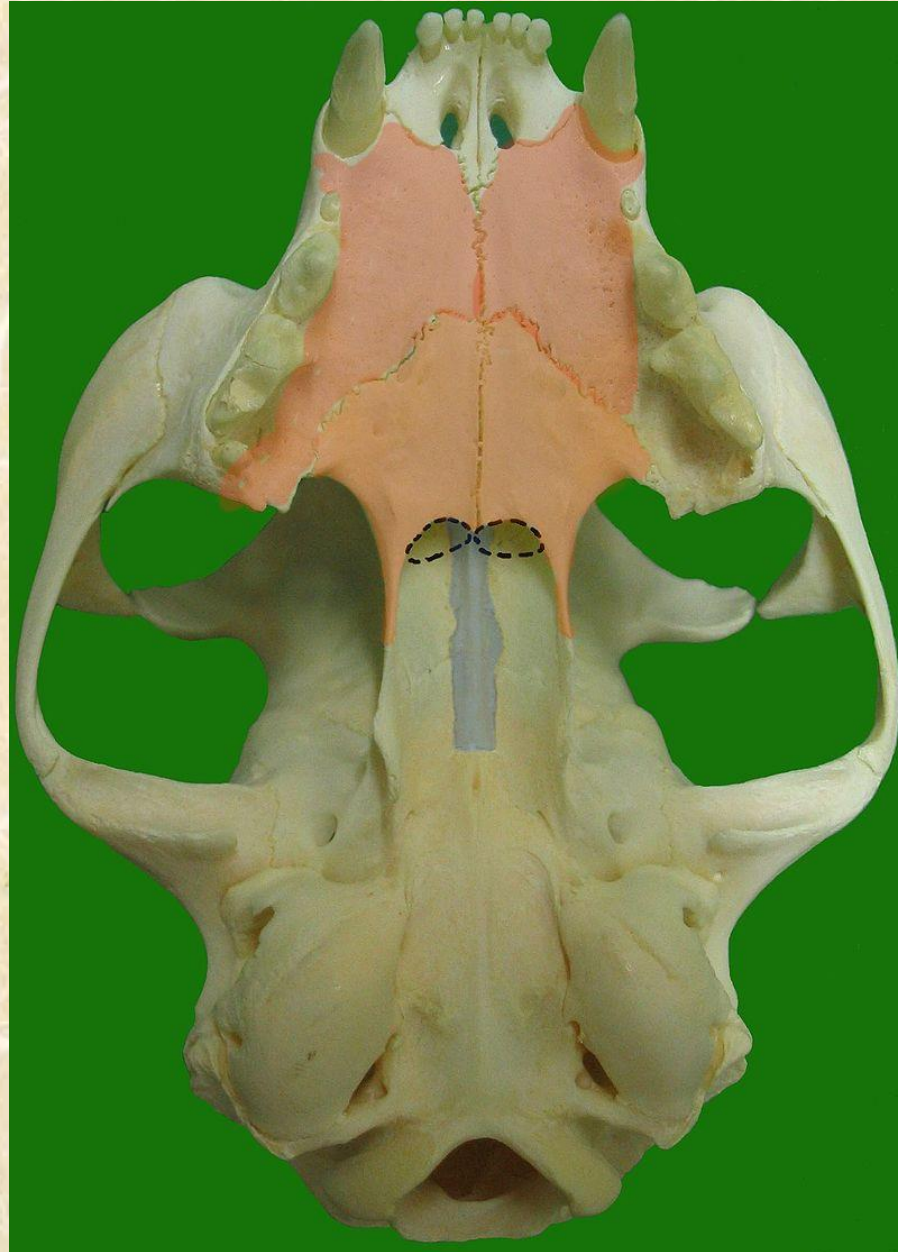
Palatine bone



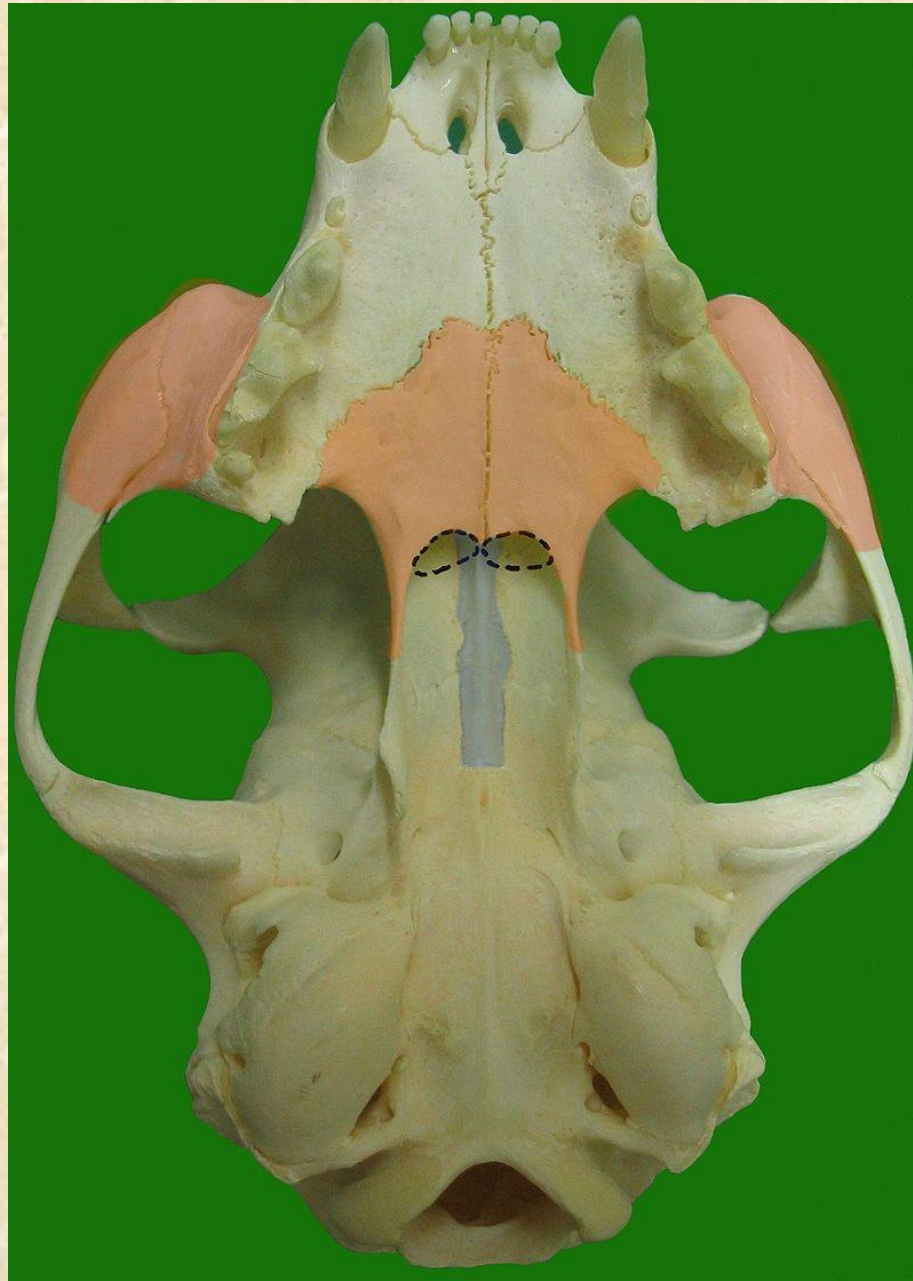
Premaxilla or incisive bone



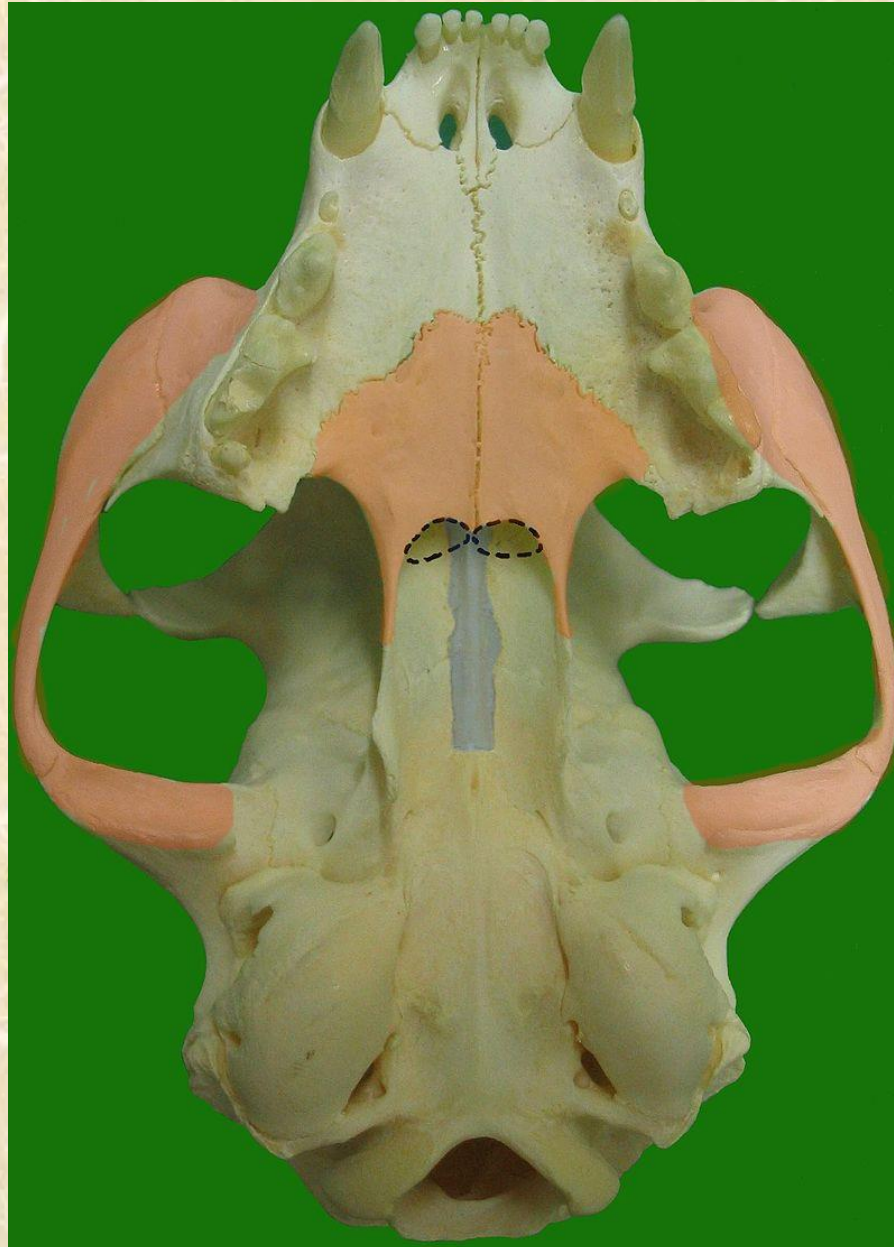
Palatine process of maxilla



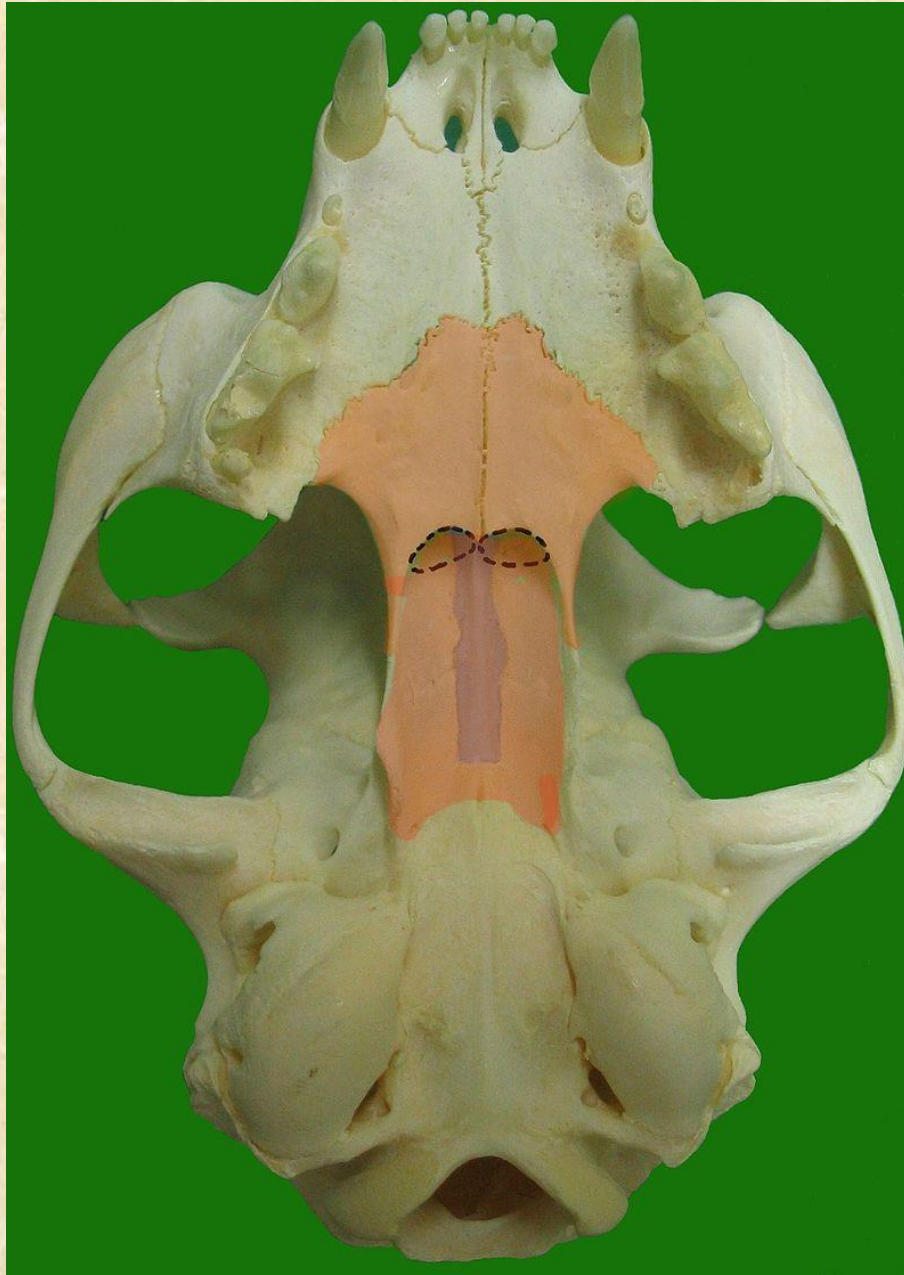
Zygomatic or malar bones



Zygomatic arch



Sphenoid bones



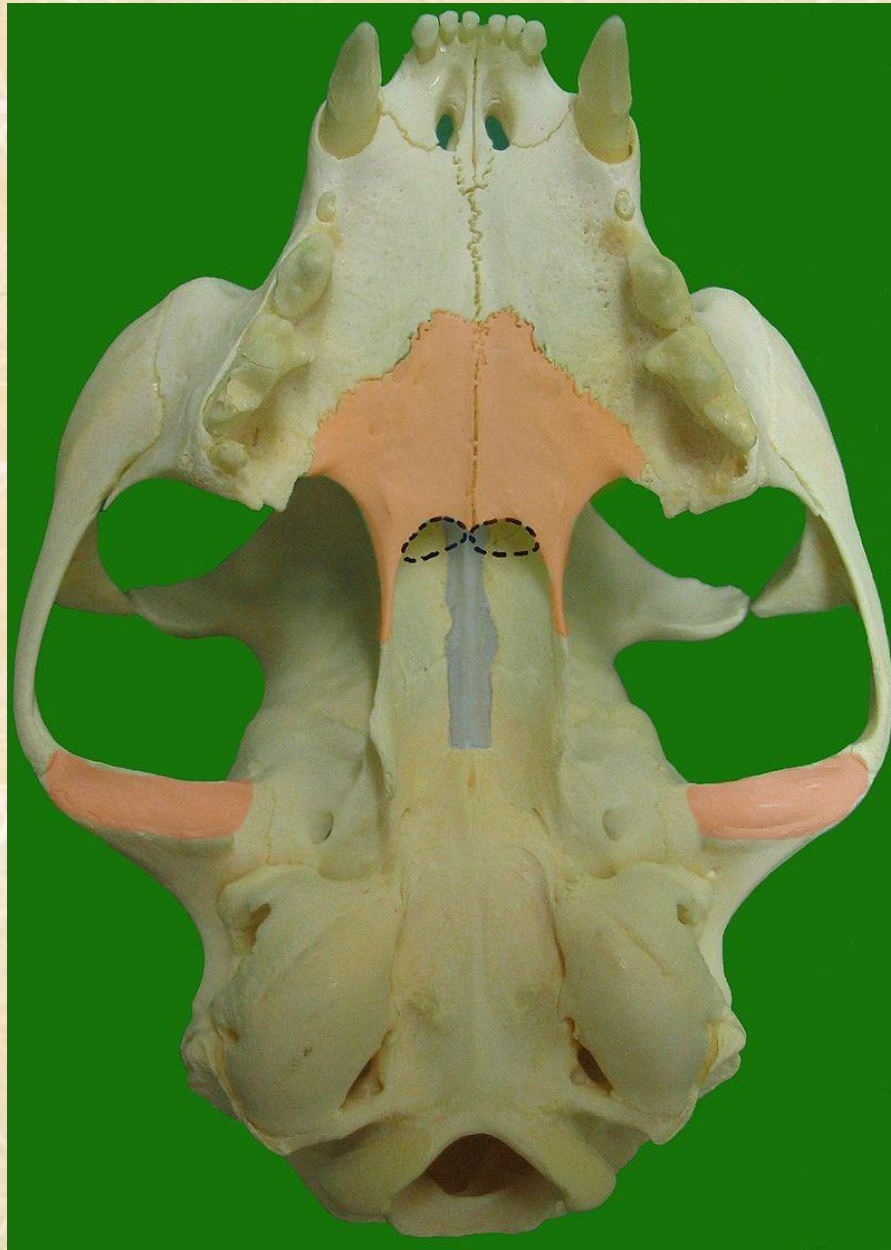
Temporal or squamous bones



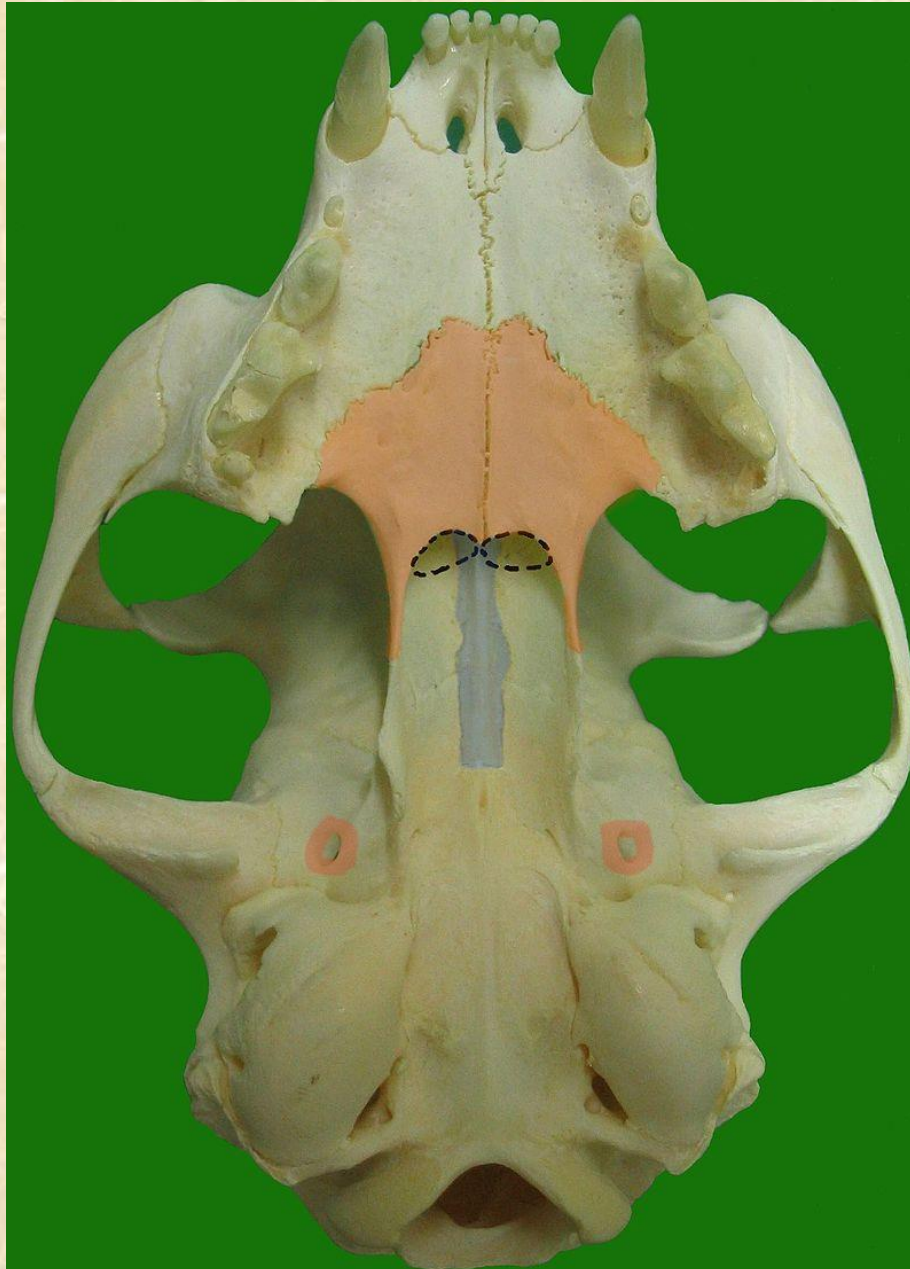
Tympanic bulla



Mandibular fossa



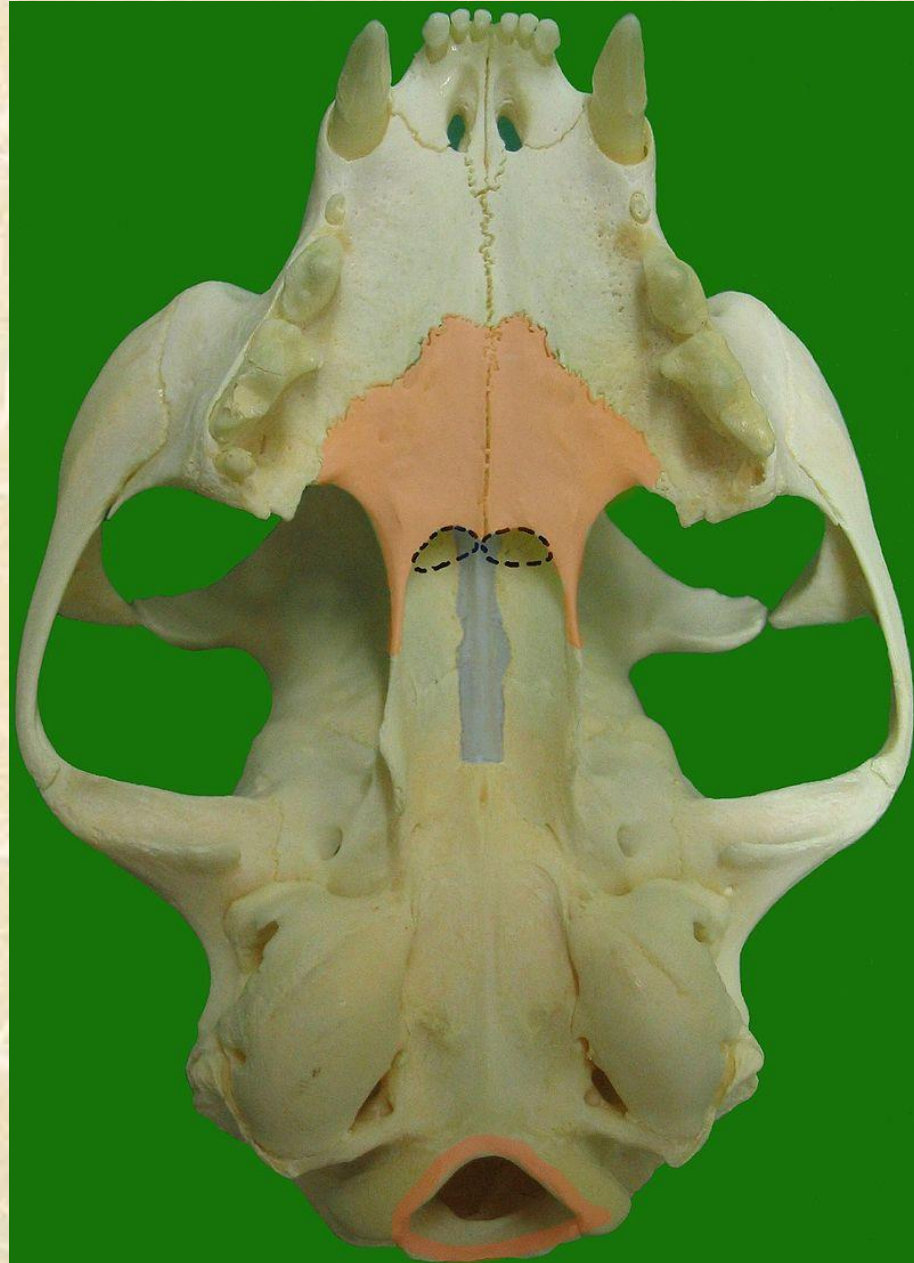
Foramen ovale



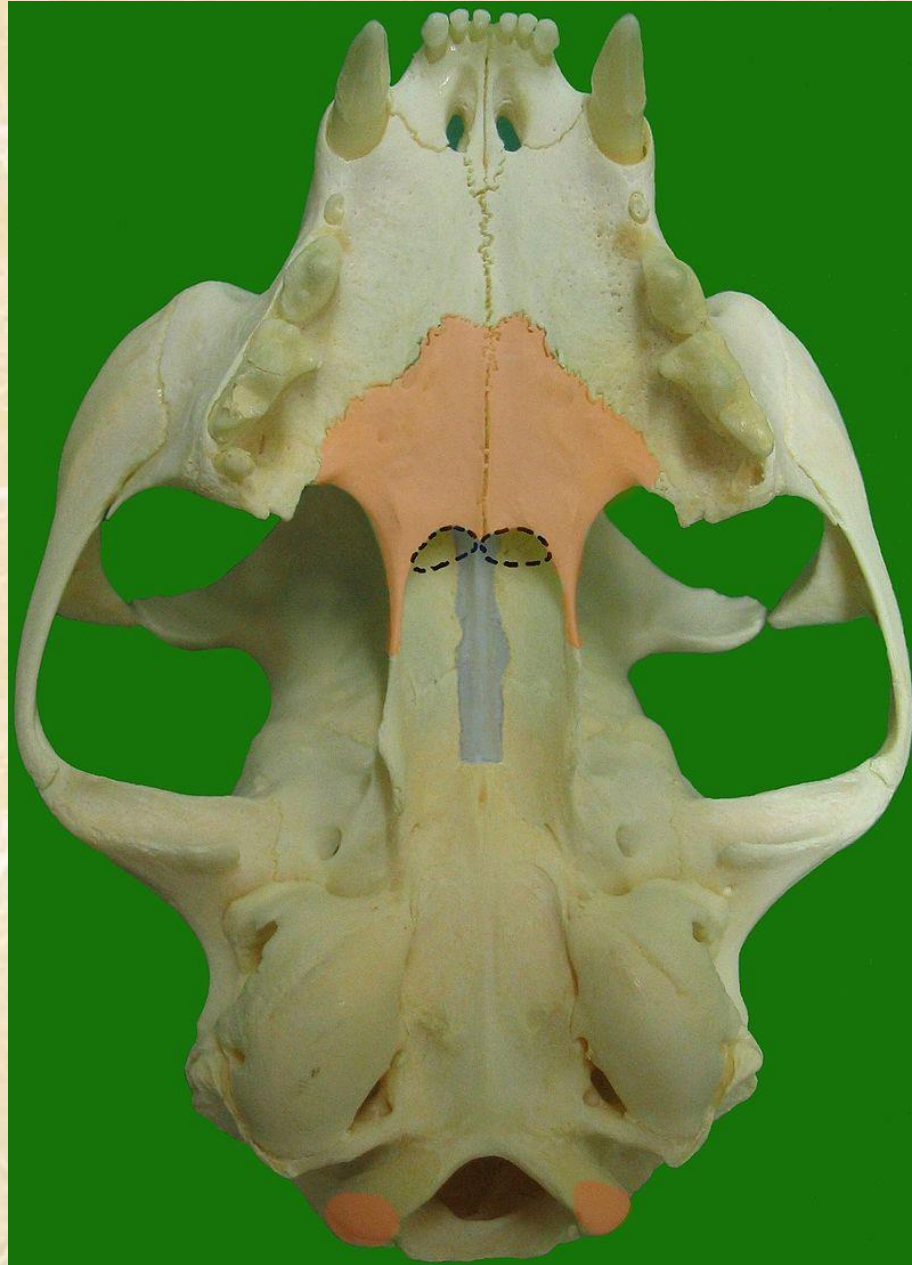
Jugular foramen



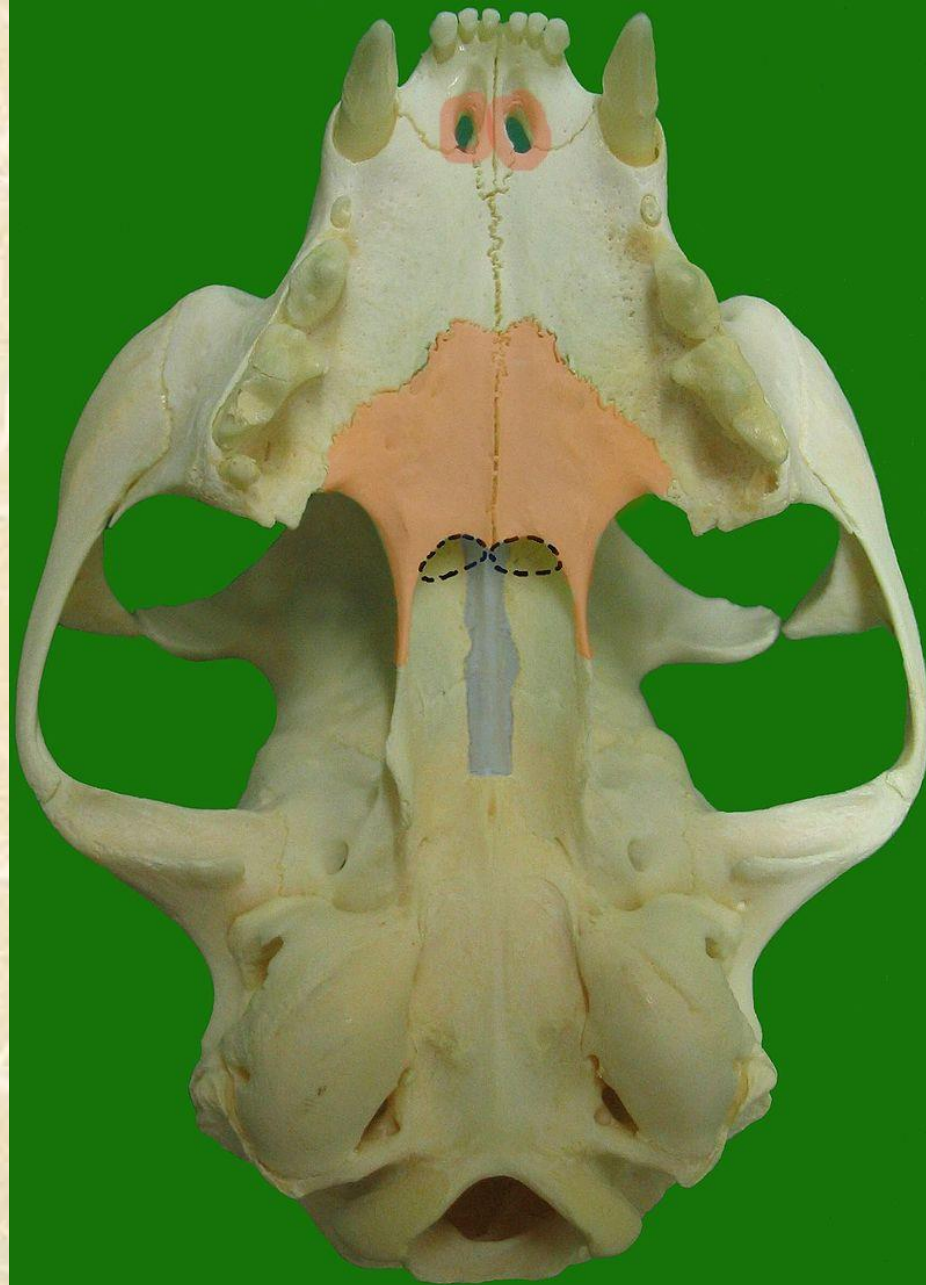
Foramen magnum



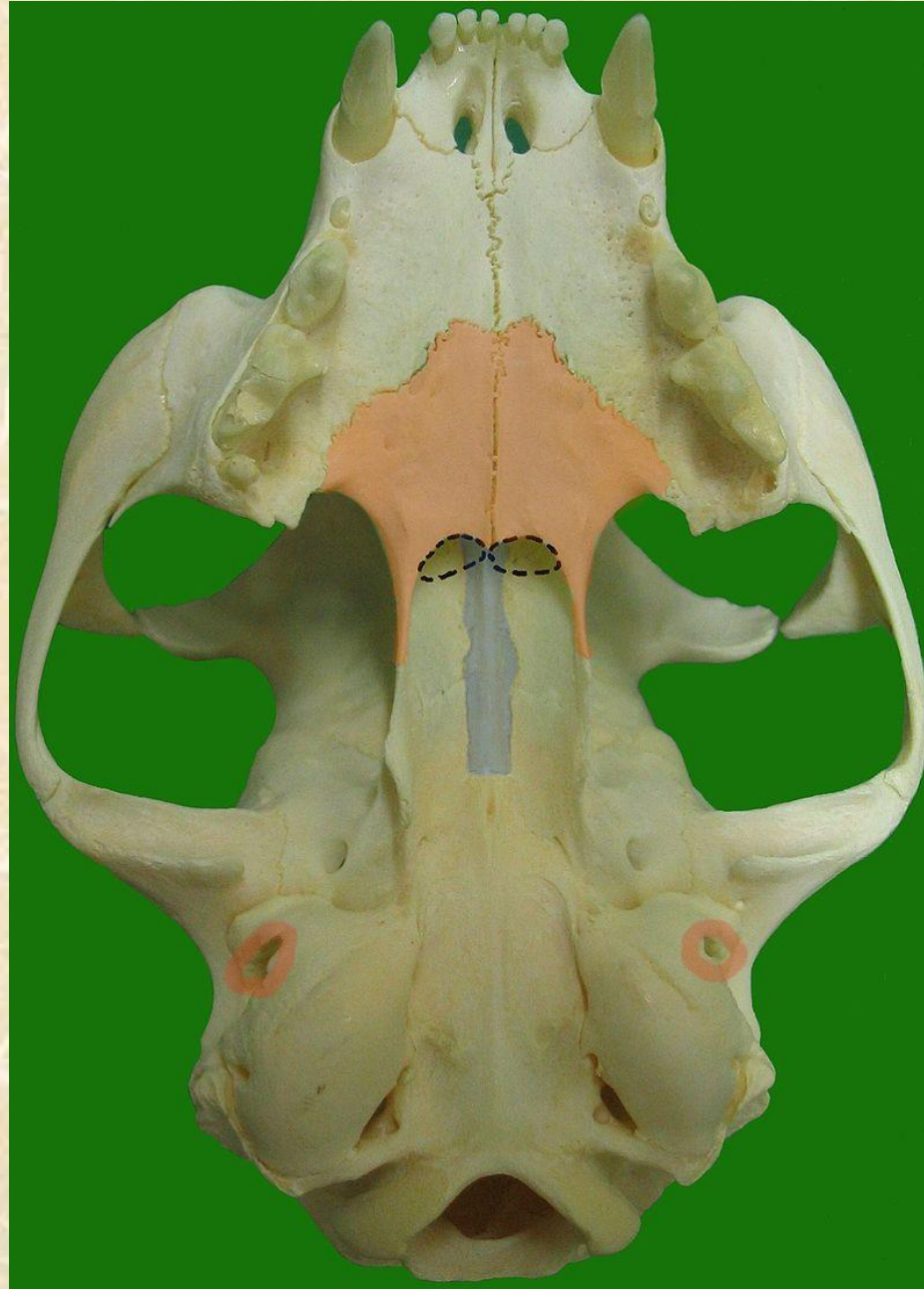
Occipital condyles



Anterior palatine (incisive) foramens



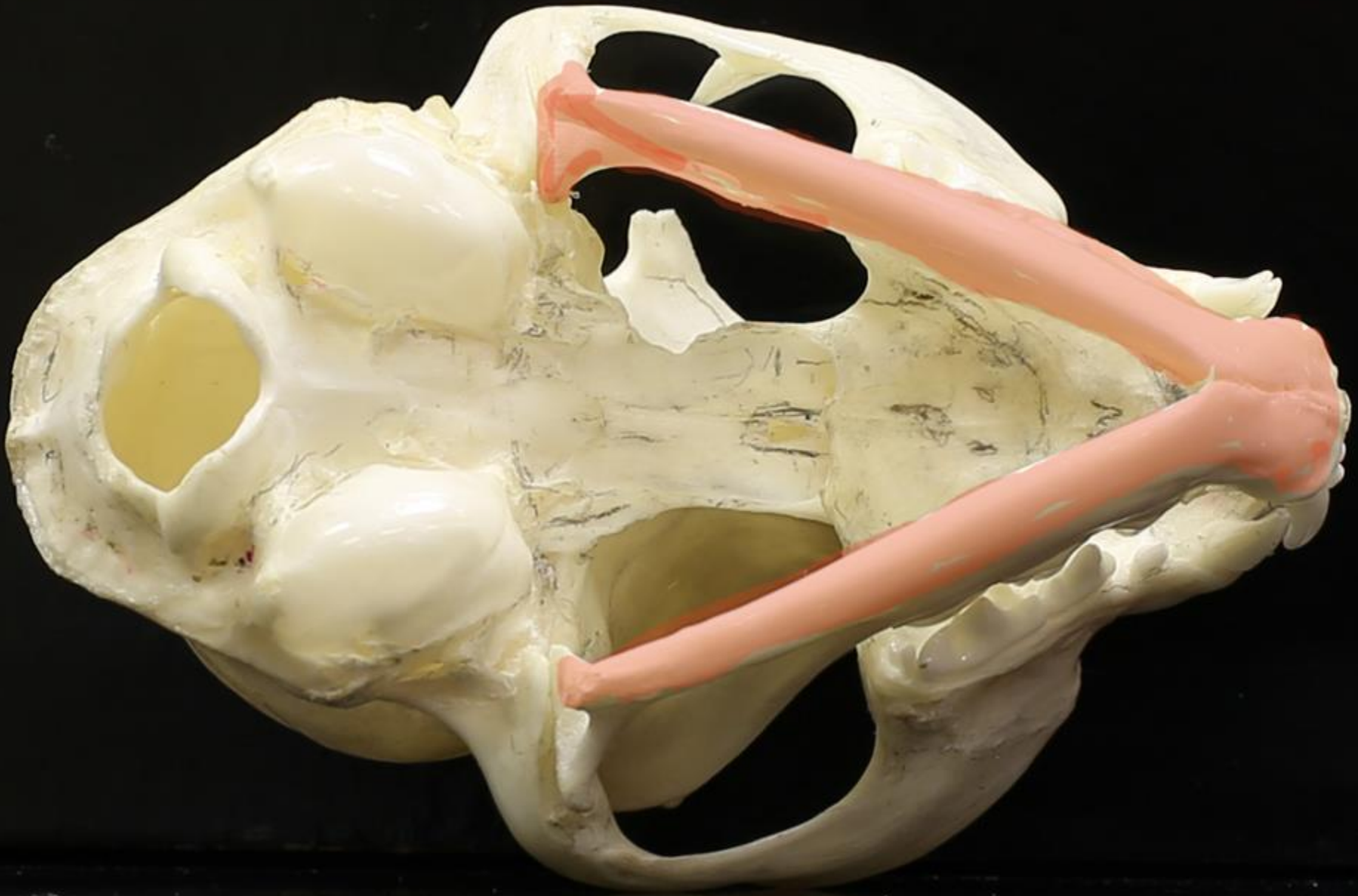
Stylomastoid foramen



Molars



Mandible



Symphysis mandibularis



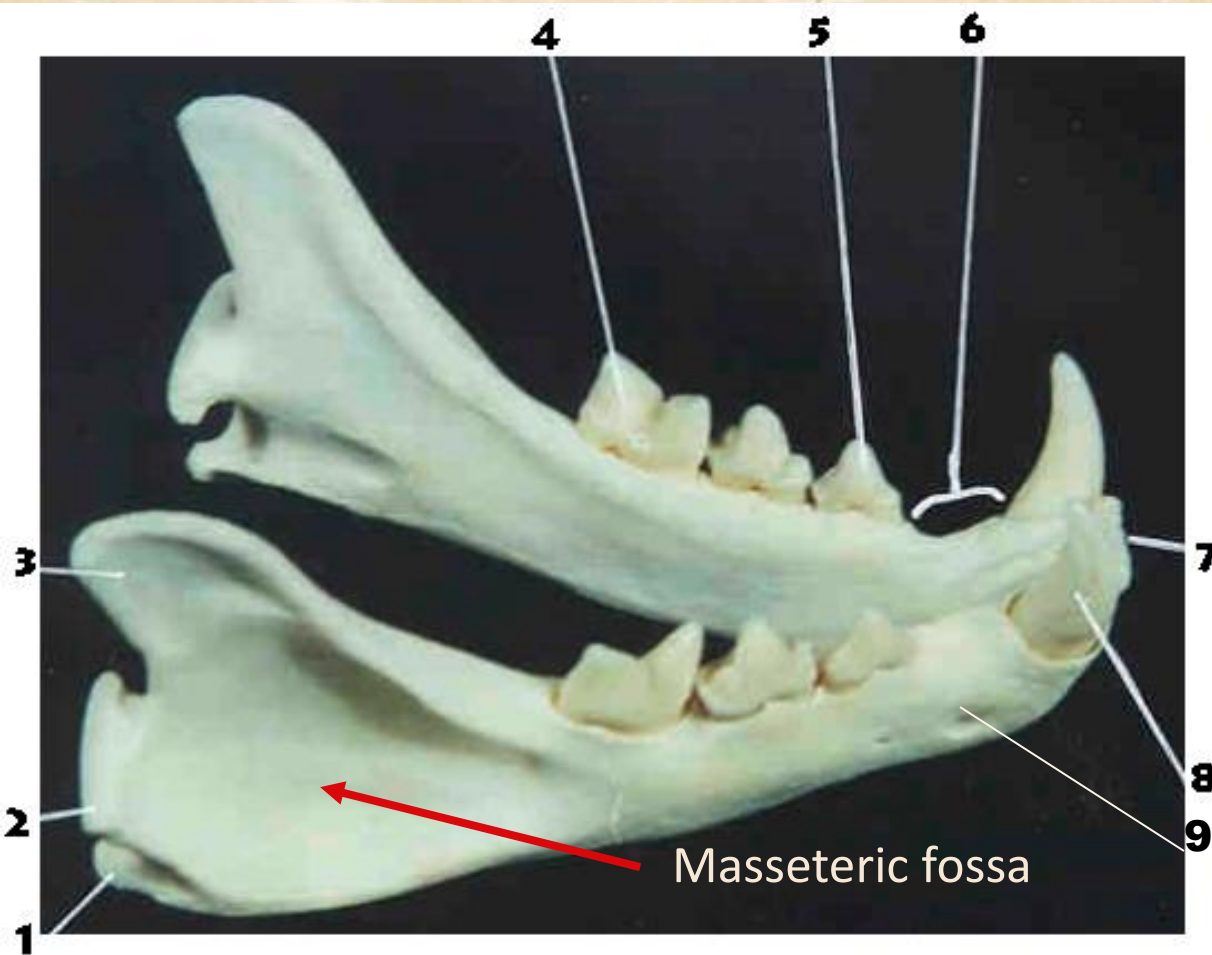
Mandible body



Mandible ramus

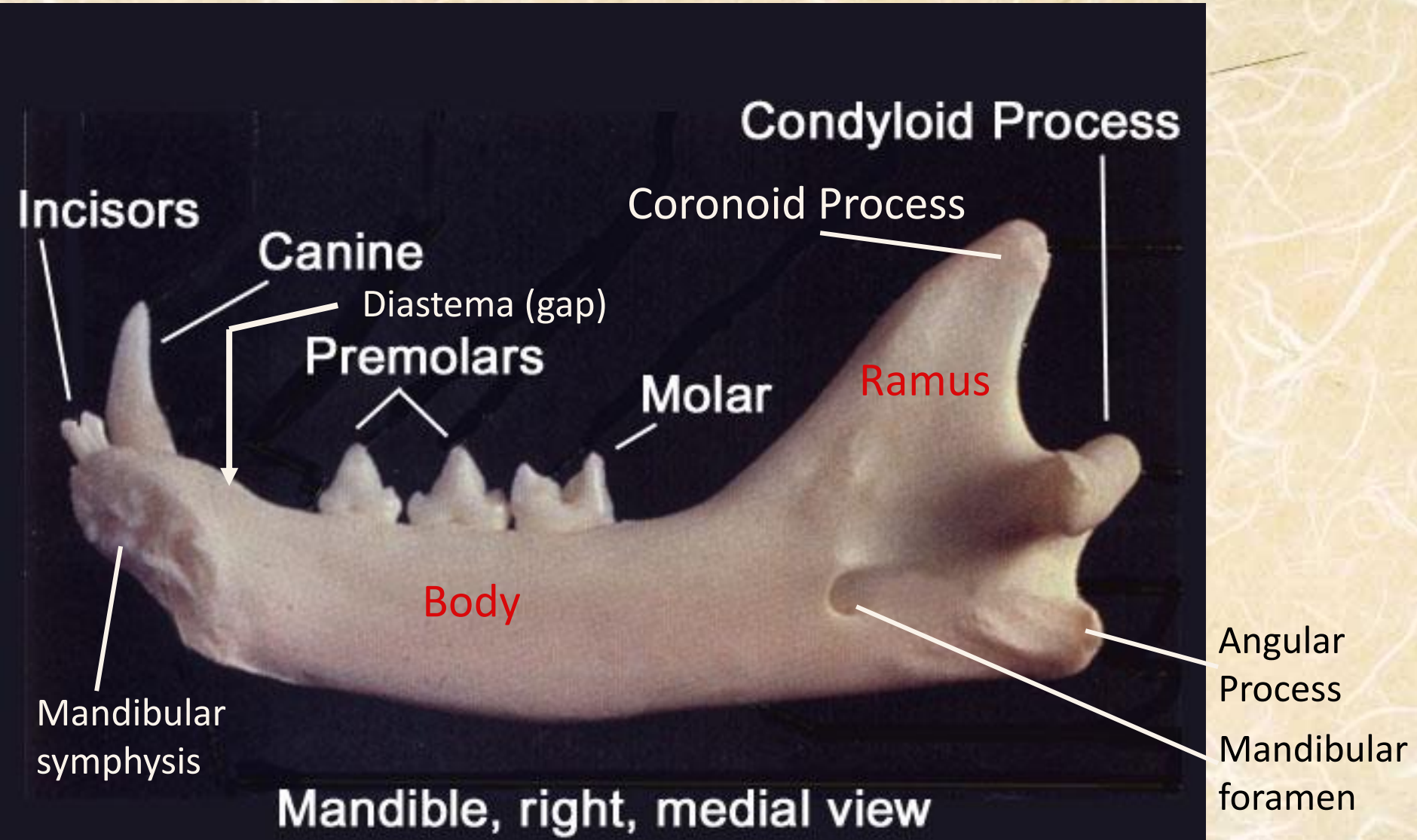


Whole Mandible Lateral View



1. angular process
2. condyloid process
3. coronoid process
4. carnassial tooth (molar #1)
5. premolar #3
6. diastema
7. incisors
8. canine
9. mental foramen

Right Dentary Bone-Medial View



Downloaded 9/18/2013:
Reccomended Link ---
http://www.redbankvalley.net/user_files/lmccullough/Cat_skull_bones%20ppt.ppt



Cat Skull Bones

“A most complicated amalgamation of bones”.

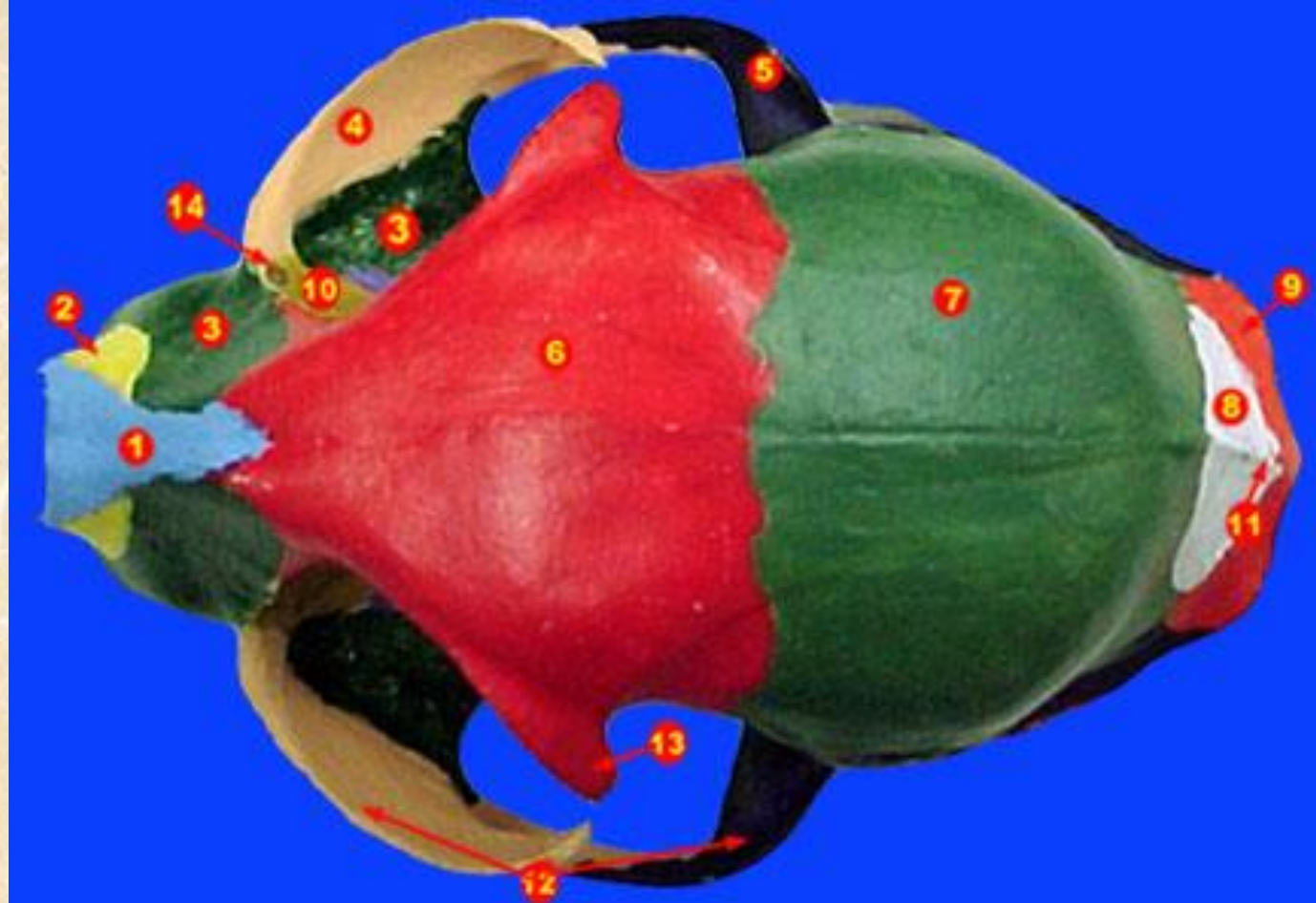
Great resource-

biology.kenyon.edu

Look under “Cat Anatomy Tutorial”

Cat Skull, painted

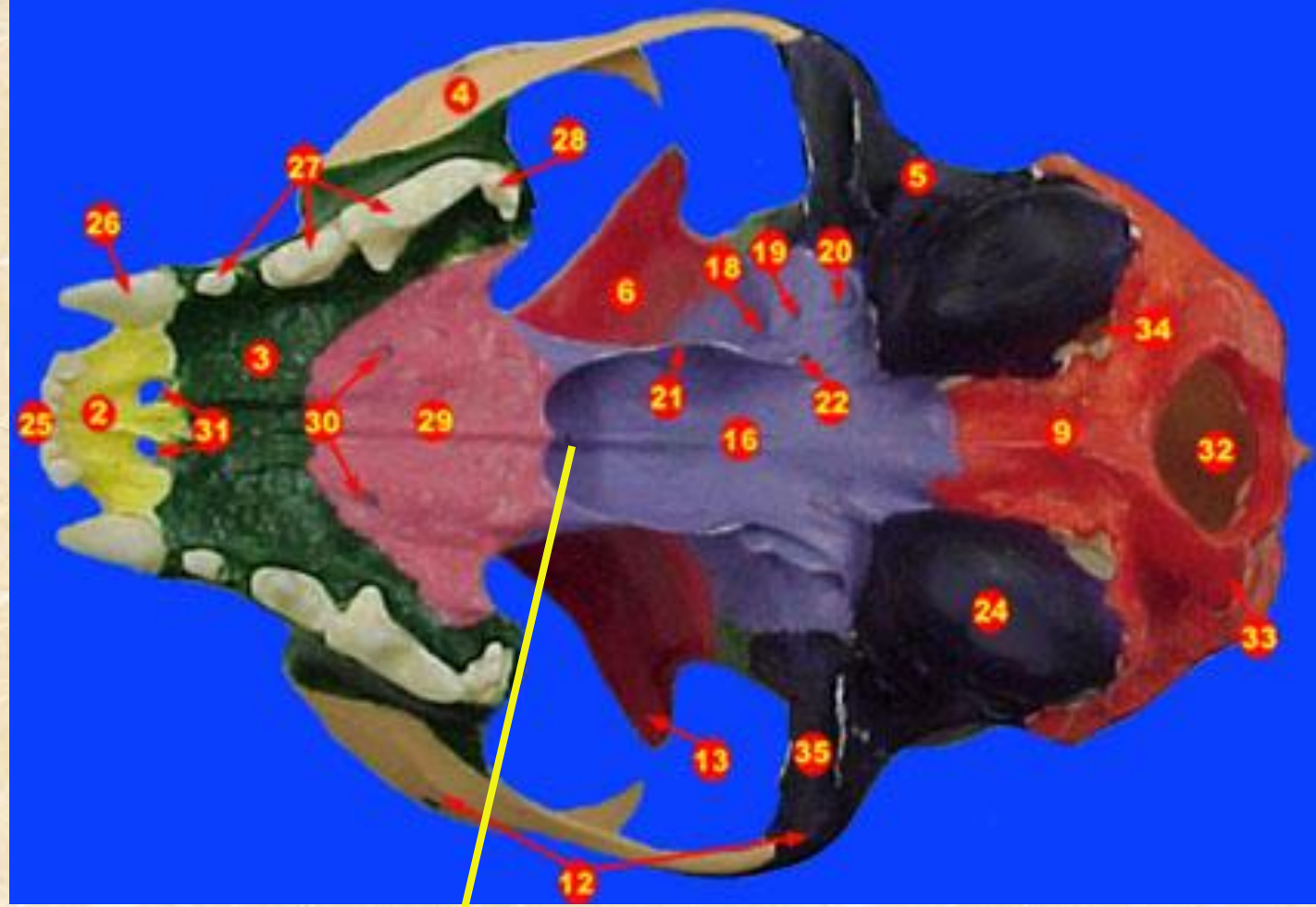
1. nasal
2. premaxilla
3. maxilla
4. malar
5. temporal
6. frontal
7. parietal
8. interparietal
9. occipital
10. lacrimal
11. sagittal crest
12. zygomatic arch
13. postorbital process
14. nasolacrimal canal



Dorsal View Painted

Cat Skull, painted

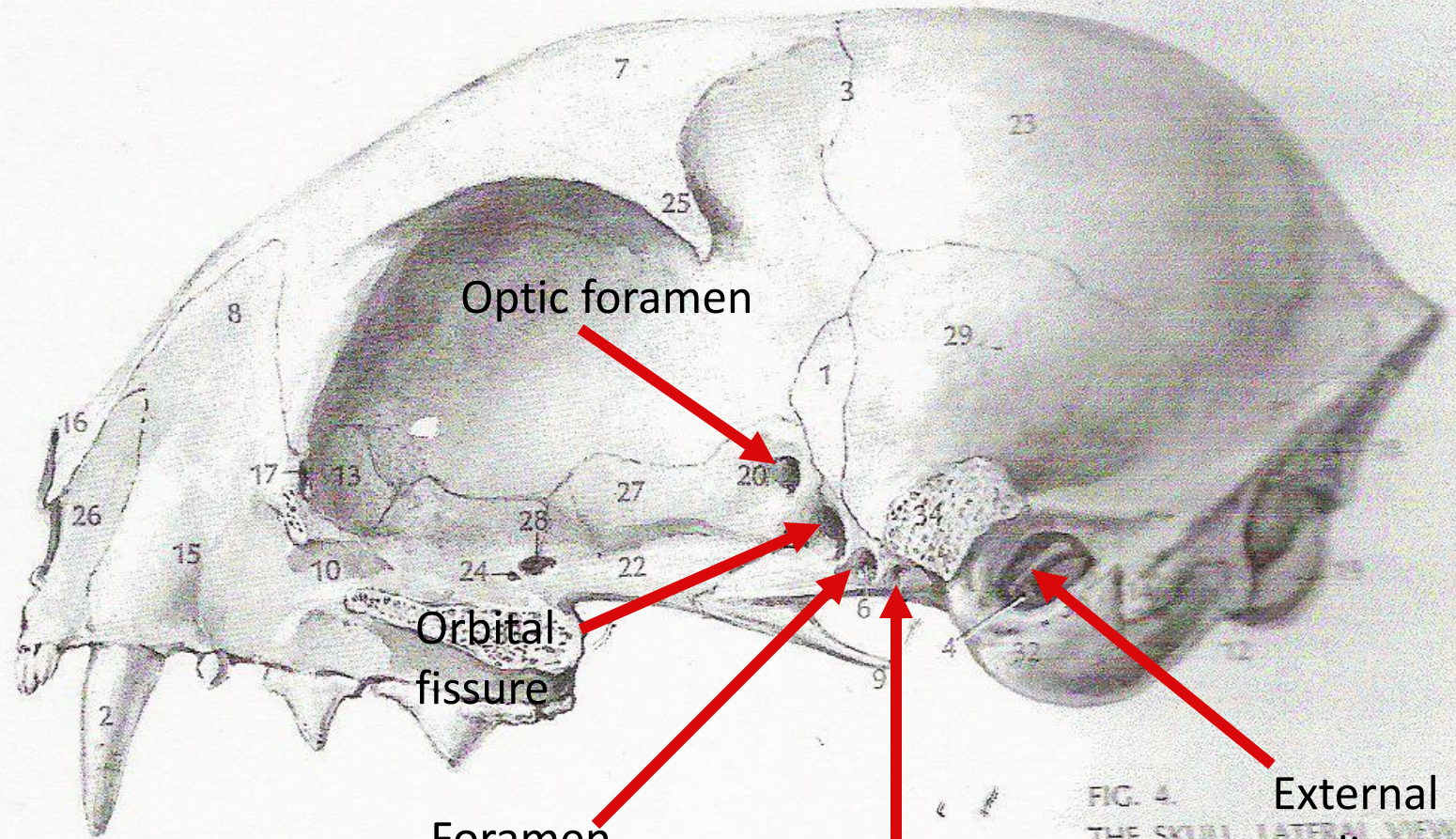
- 2. premaxilla
- 3. maxilla
- 4. malar
- 5. temporal
- 6. frontal
- 7. vomer
- 9. occipital
- 12. zygomatic arch
- 13. **postorbital process**
- 16. sphenoid
- 18. **orbital fissure**
- 19. **foramen rotundum**
- 20. **foramen ovale**
- 21. **pterygoid process**
- 22. **hamulus**
- 24. tympanic bulla
- 25. incisors
- 26. canine
- 27. premolars
- 28. molar
- 29. palatine
- 30. **posterior palatine foramen**
- 31. **incisive foramen**
- 32. **foramen magnum**
- 33. **occipital condyle**
- 34. **jugular foramen**



7.

Ventral View
Painted

4 Foramen + 1



Optic foramen

Orbital
fissure

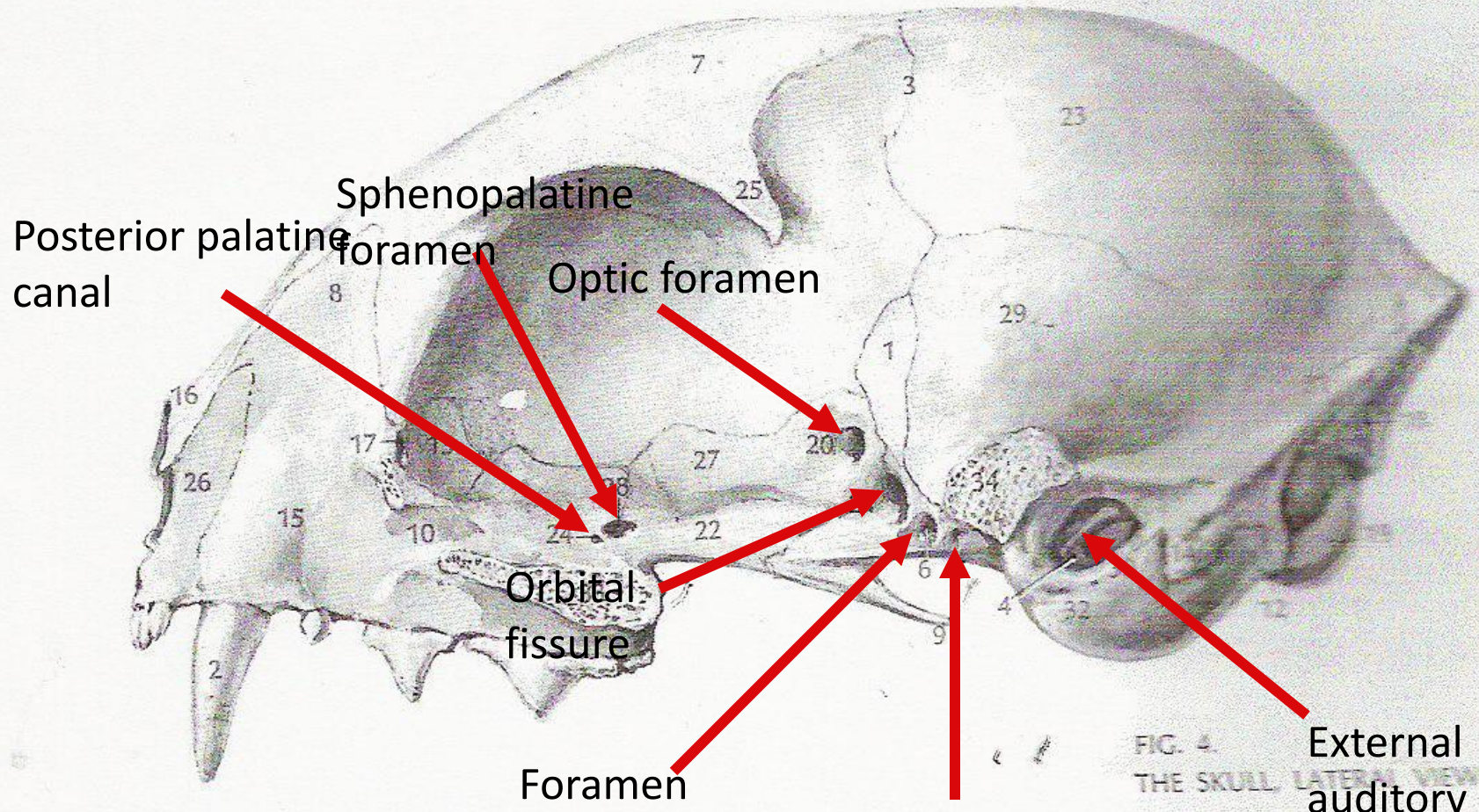
Foramen
rotundum

Foramen ovale

External
auditory
meatus

FIG. 4.
THE SKULL, LATERAL VIEW

7 Foramina



Posterior palatine canal

Sphenopalatine foramen

Optic foramen

Orbital fissure

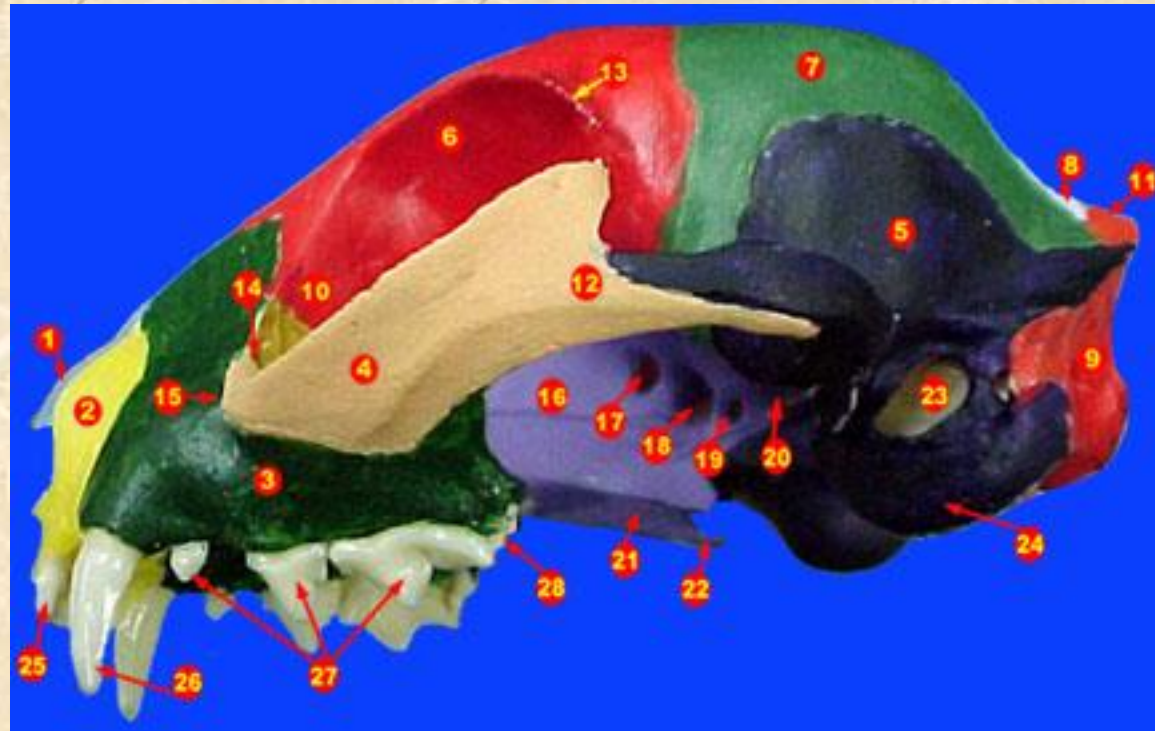
Foramen rotundum

Foramen ovale

External auditory meatus

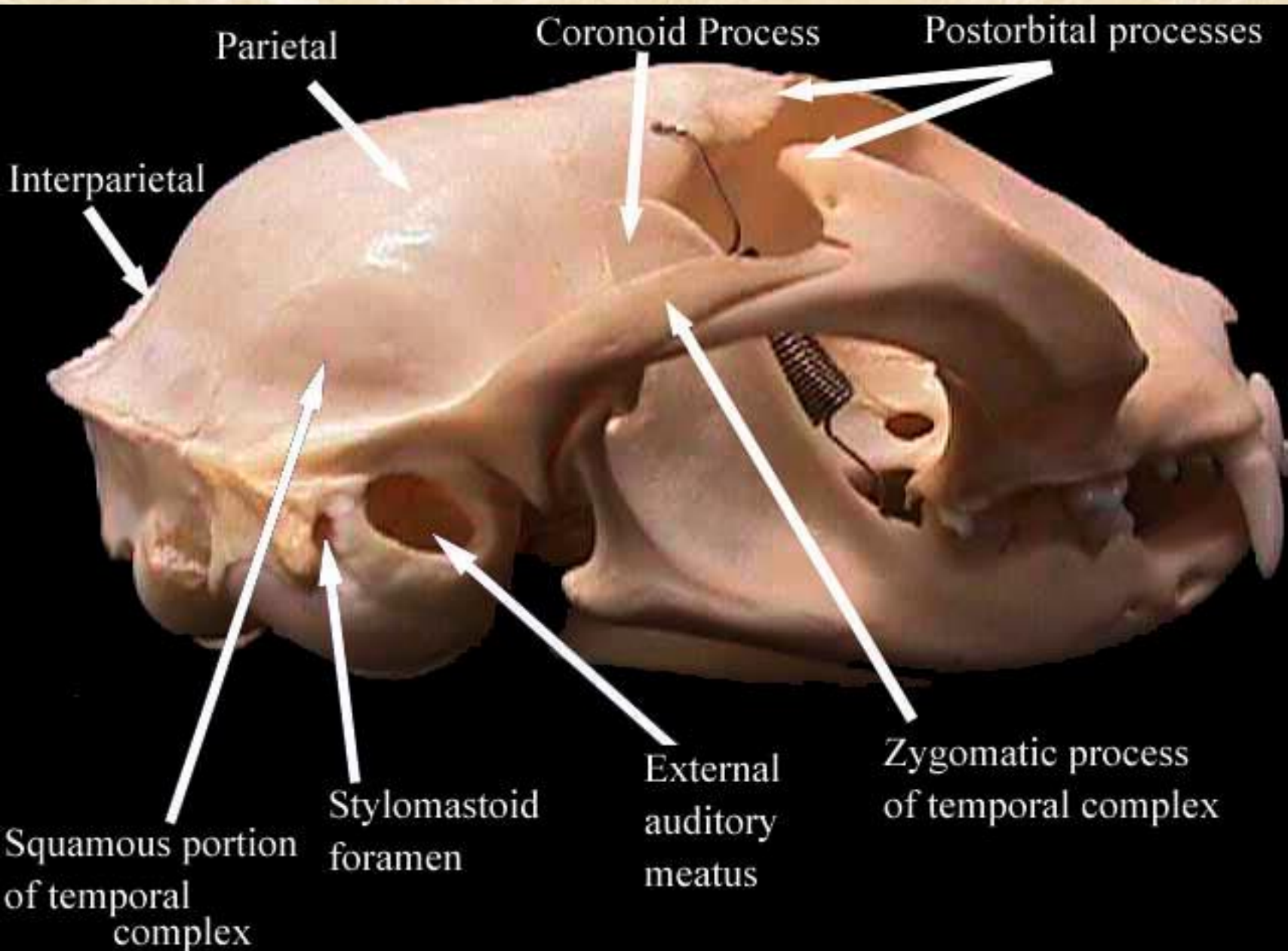
Cat Skull, painted

1. nasal
2. premaxilla
3. maxilla
4. malar
5. temporal
6. frontal
7. parietal
8. interparietal
9. occipital
10. lacrimal
11. sagittal crest
12. zygomatic arch
13. postorbital process
14. nasolacrimal canal
15. infraorbital foramen
16. sphenoid
17. optic foramen
18. orbital fissure
19. foramen rotundum
20. foramen ovale
21. pterygoid process
22. hamulus
23. external auditory meatus
24. tympanic bulla
25. incisors
26. canine
27. premolars
28. molar

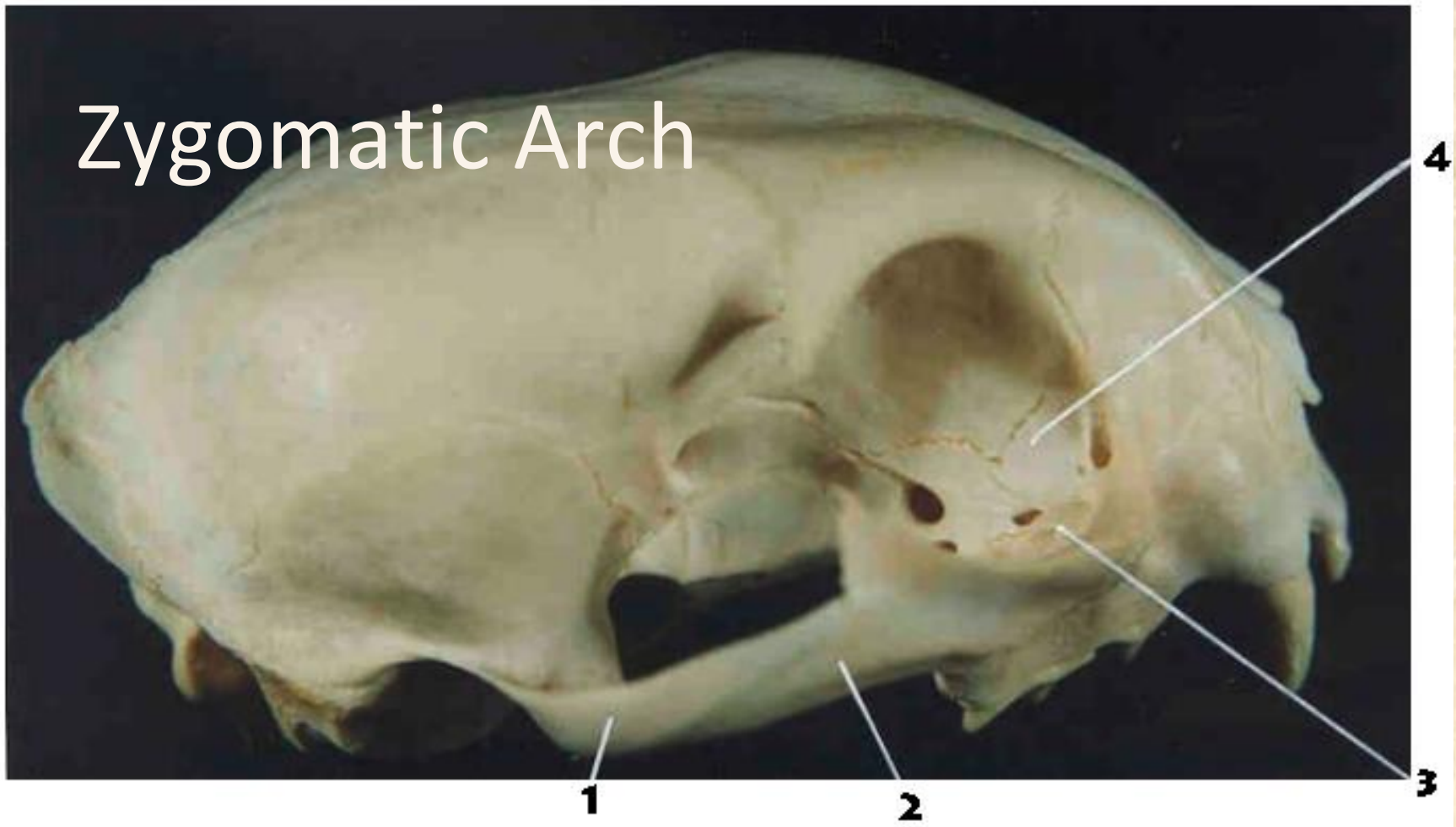


Lateral View
Painted

Whole Skull Lateral view

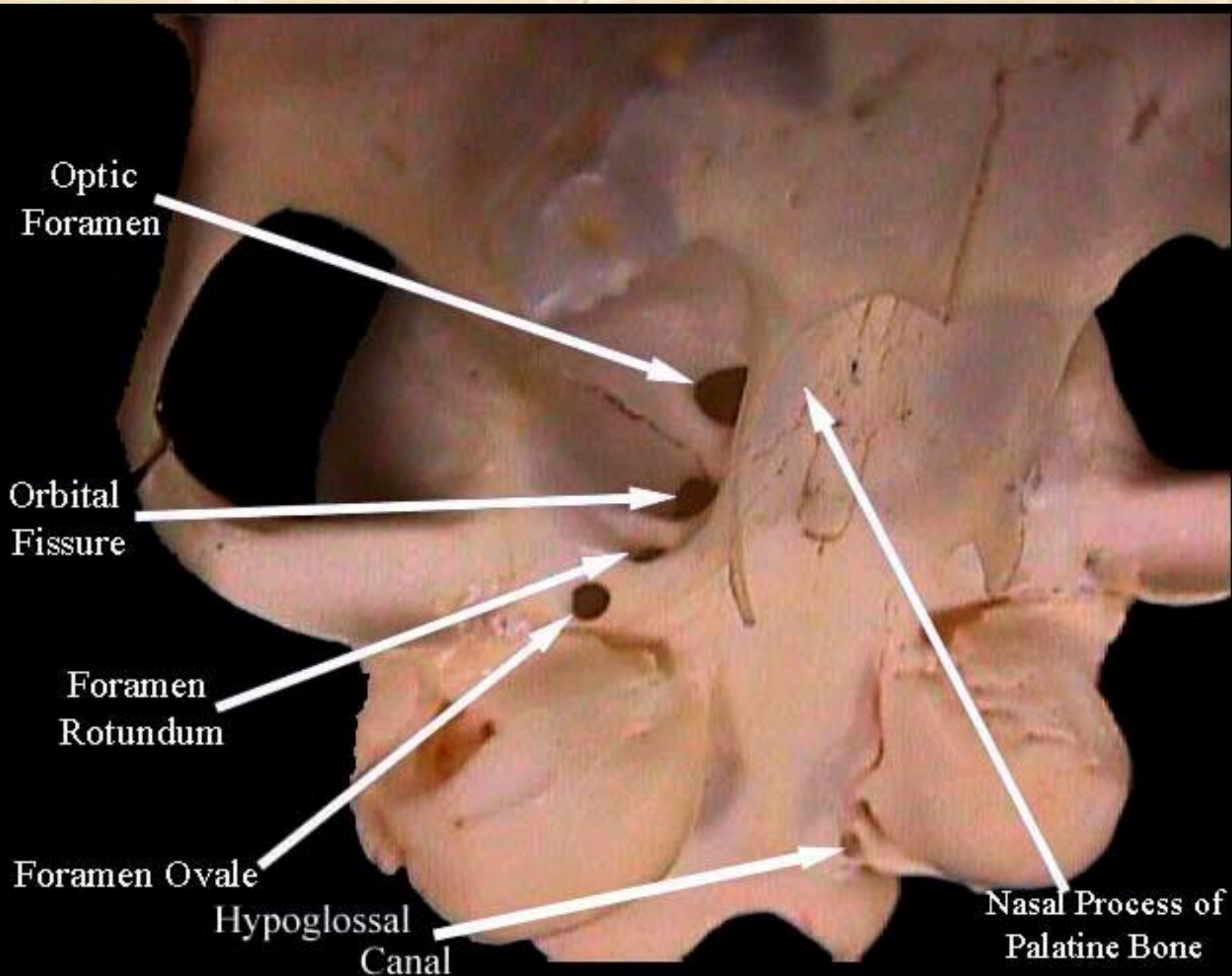


Zygomatic Arch

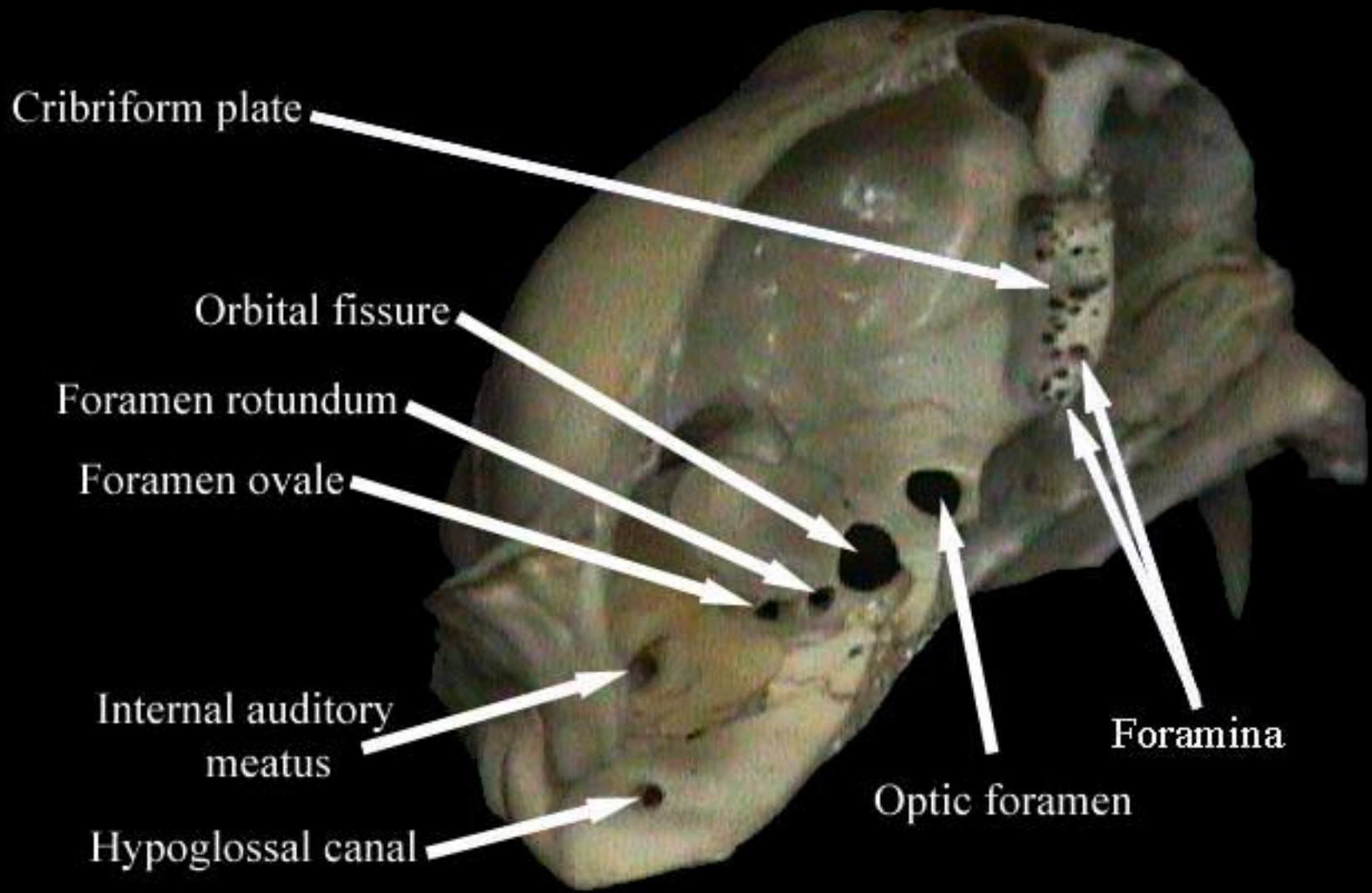


1. **squamous** portion of temporal
2. malar (jugal) bone
3. ethmoid
4. lacrimal

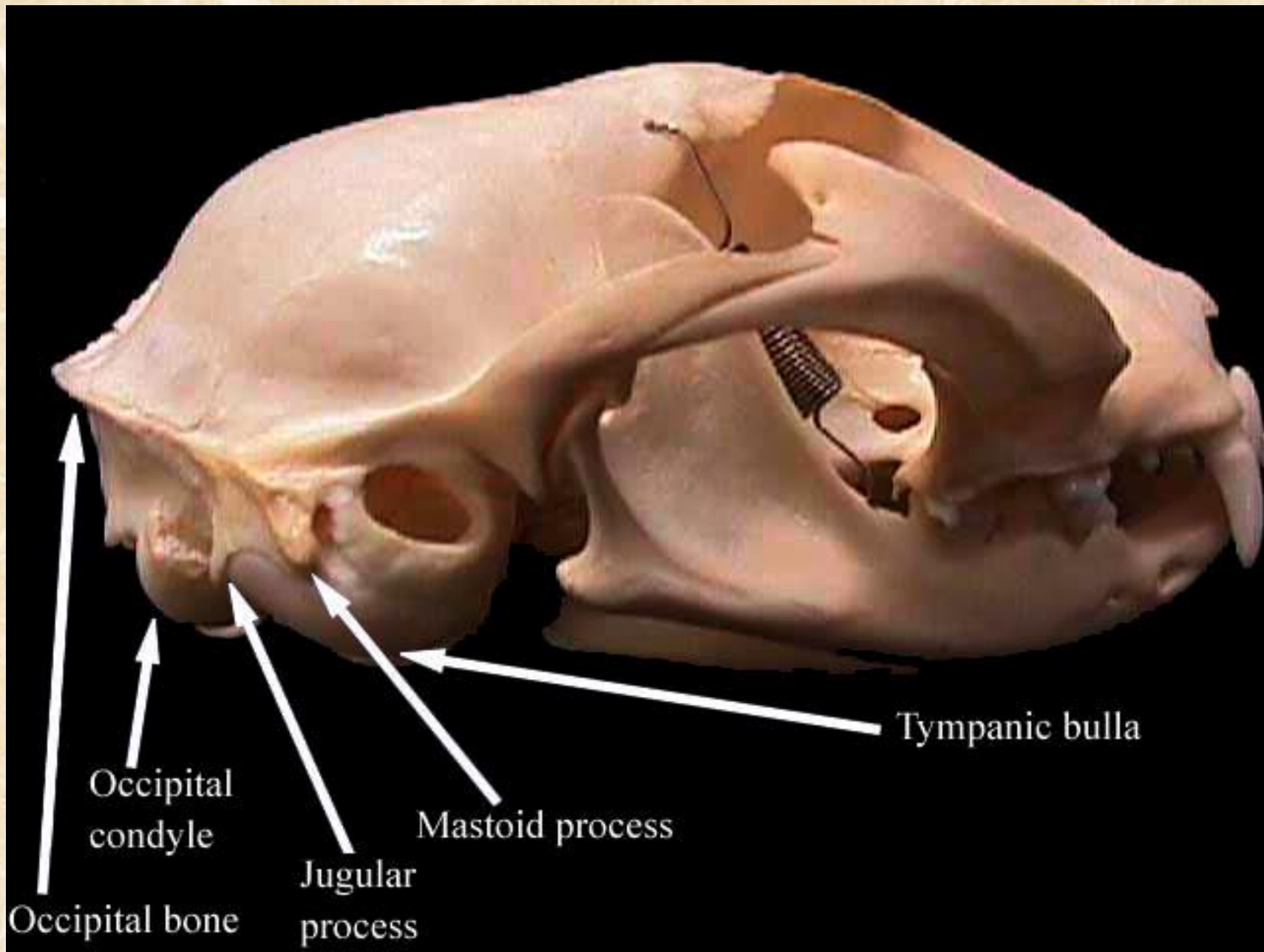
4 Foramina ventral view



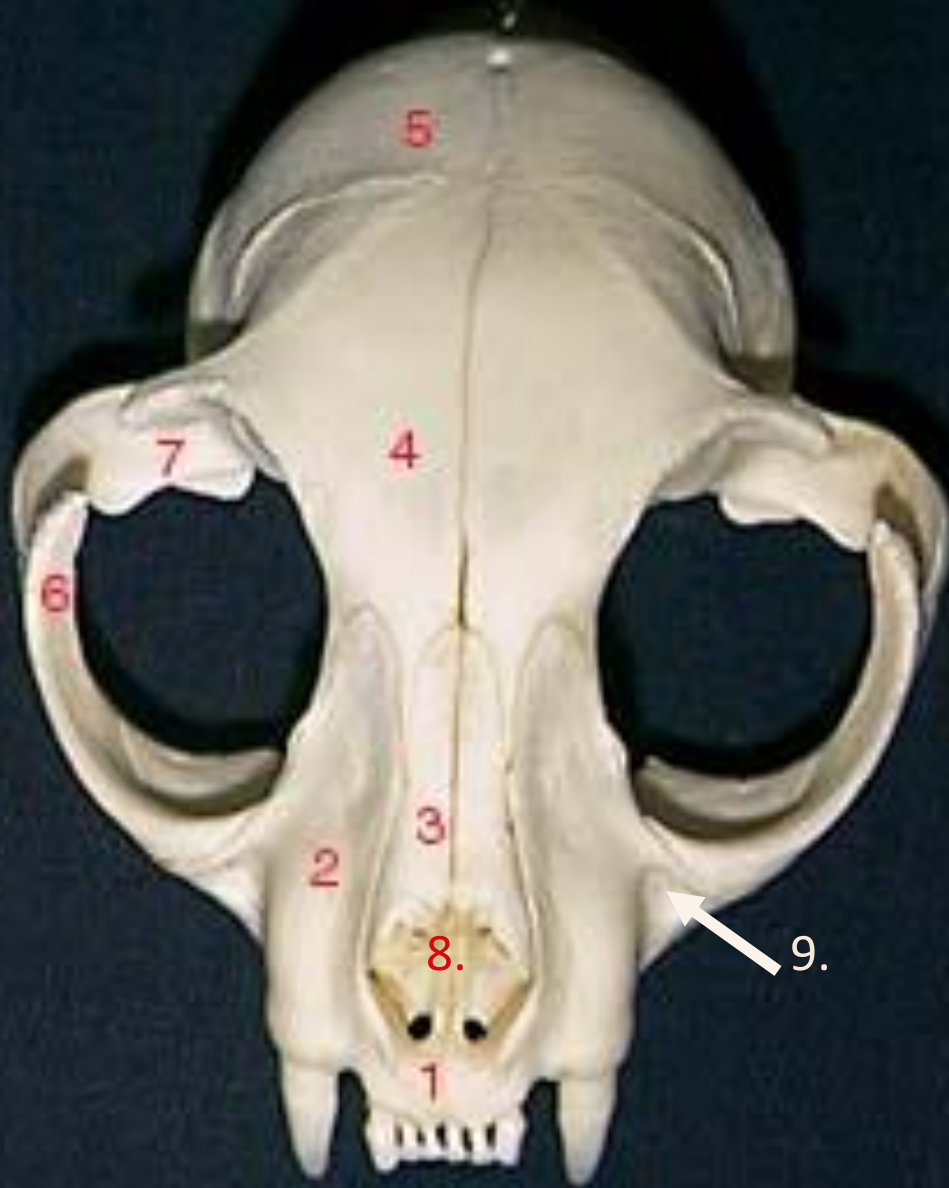
4 Foramina posterior view



Whole Skull-Cat Bones Posterior



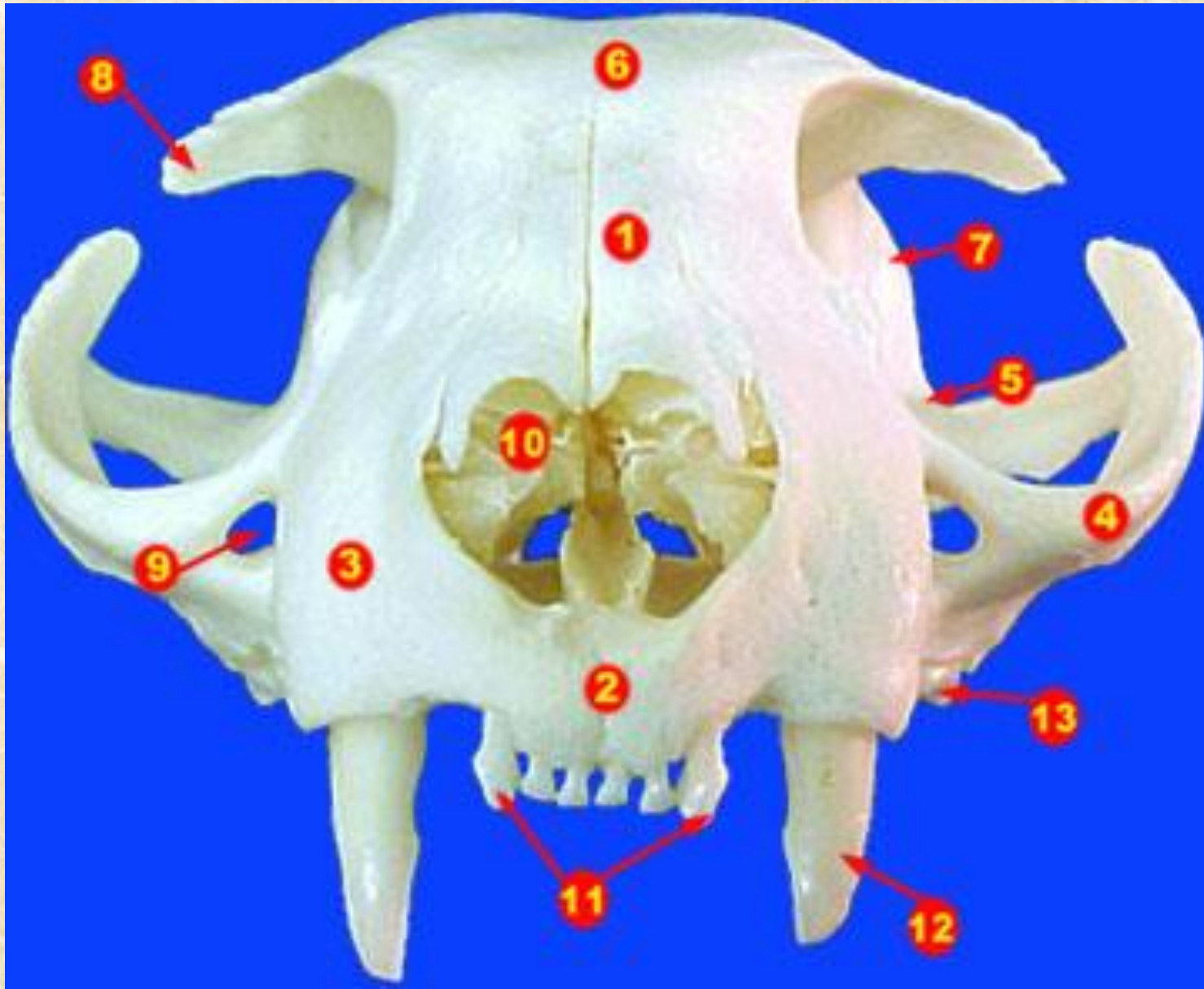
Anterior View



1. Premaxilla
2. Maxilla
3. Nasal
4. Frontal
5. Parietal
6. Malar (jugal) bone
7. Temporal bone (squamosal)
8. Nasal conchae (turbinals)
9. Infraorbital foramen

Anterior View

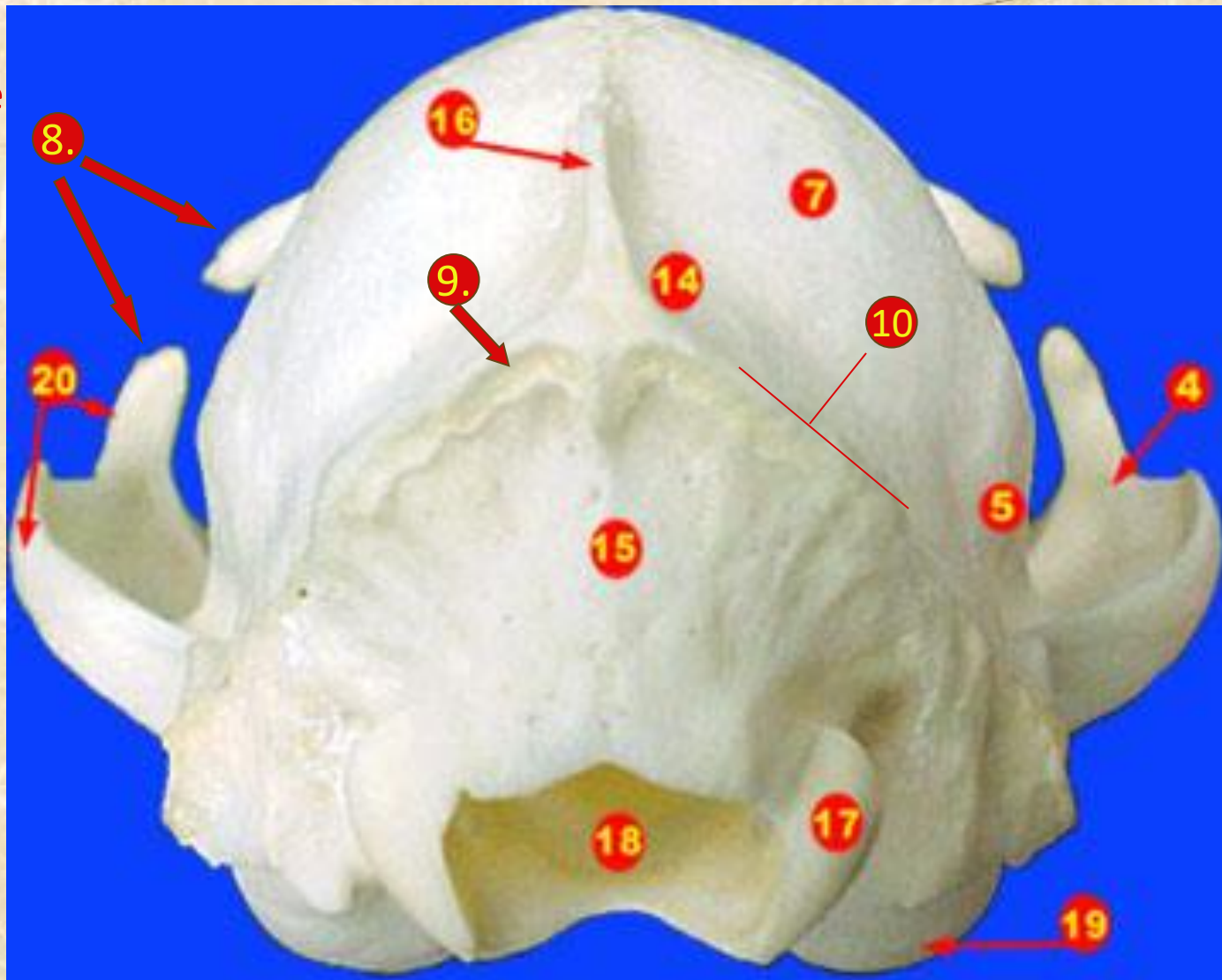
1. nasal
2. premaxillary
3. maxillary
4. malar
5. temporal
6. frontal
7. parietal
8. postorbital process
9. infraorbital foramen
10. nasal conchae (turbinals)
11. incisors
12. canine
13. premolars



Cat Skull

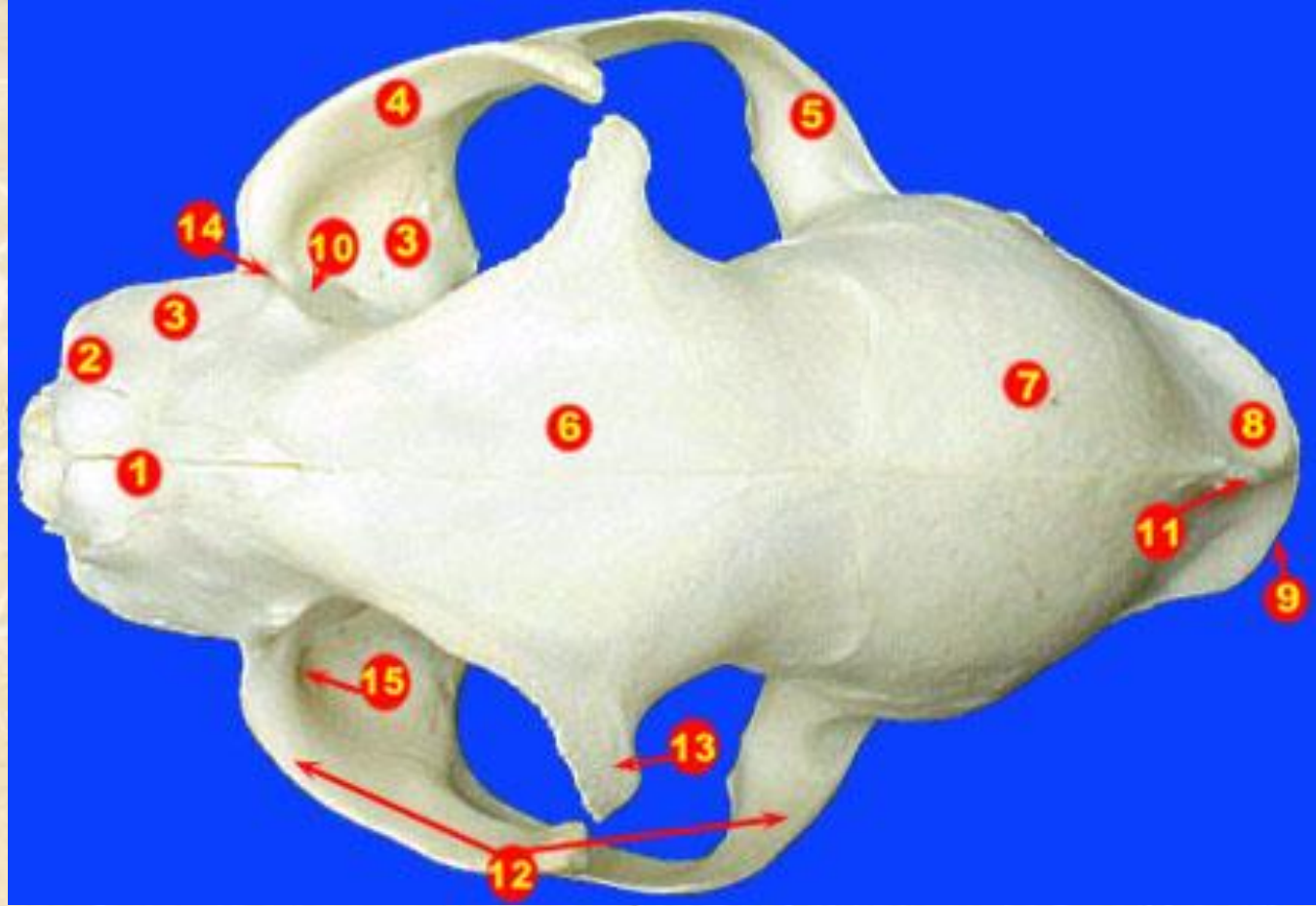
Posterior View

- 4. malar
- 5. temporal
- 7. parietal
- 8. postorbital processes
- 9. **occipital crest**
- 10. **superior nuchal line**
- 14. interparietal
- 15. occipital
- 16. sagittal crest
- 17. occipital condyle
- 18. foramen magnum
- 19. tympanic bulla
- 20. zygomatic arch



Cat Skull

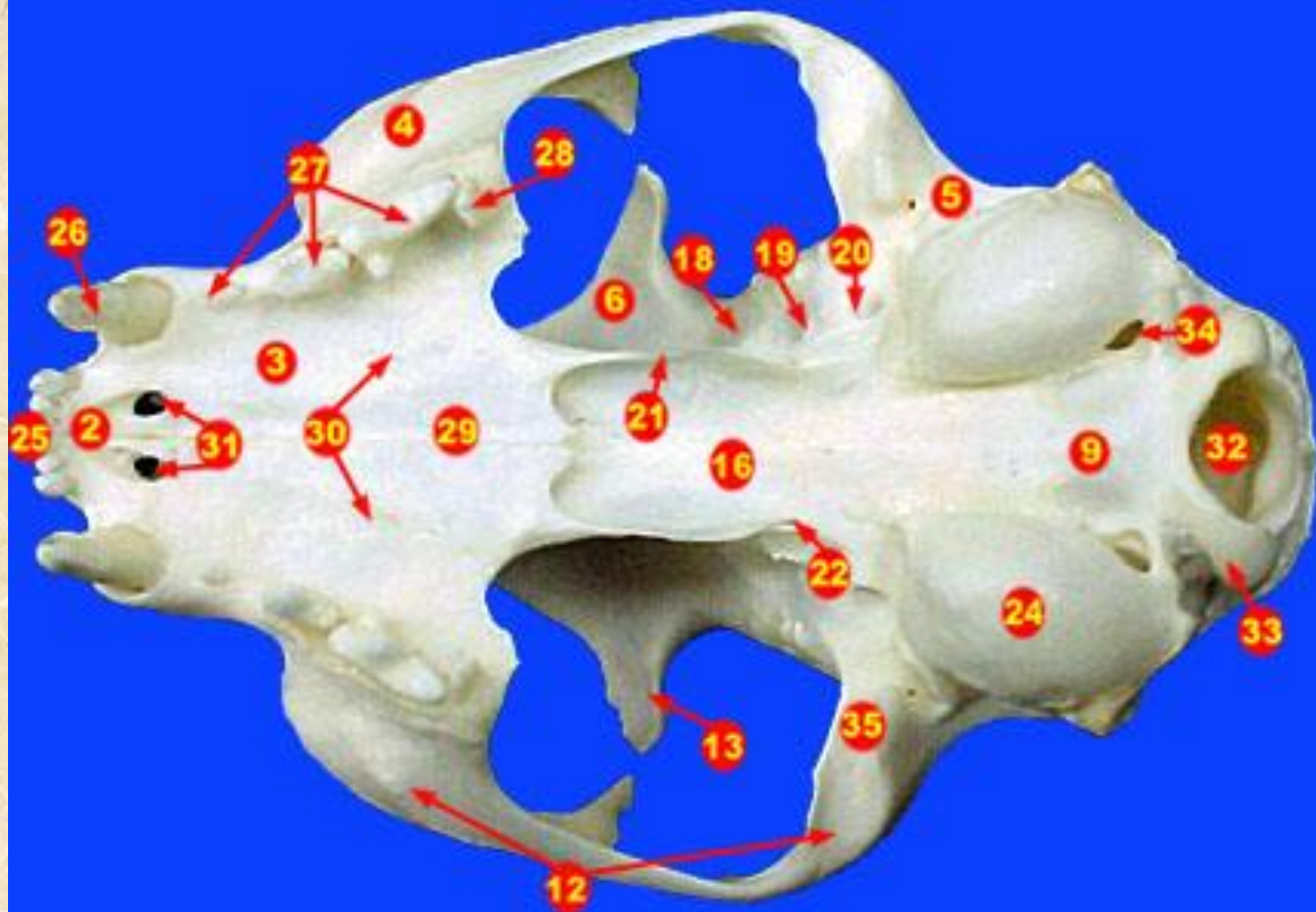
1. nasal
2. premaxilla
3. maxilla
4. malar
5. temporal
6. frontal
7. parietal
8. interparietal
9. occipital
10. lacrimal
11. sagittal crest
12. zygomatic arch
13. postorbital process
14. nasolacrimal canal
15. infraorbital foramen



Dorsal View

Cat Skull

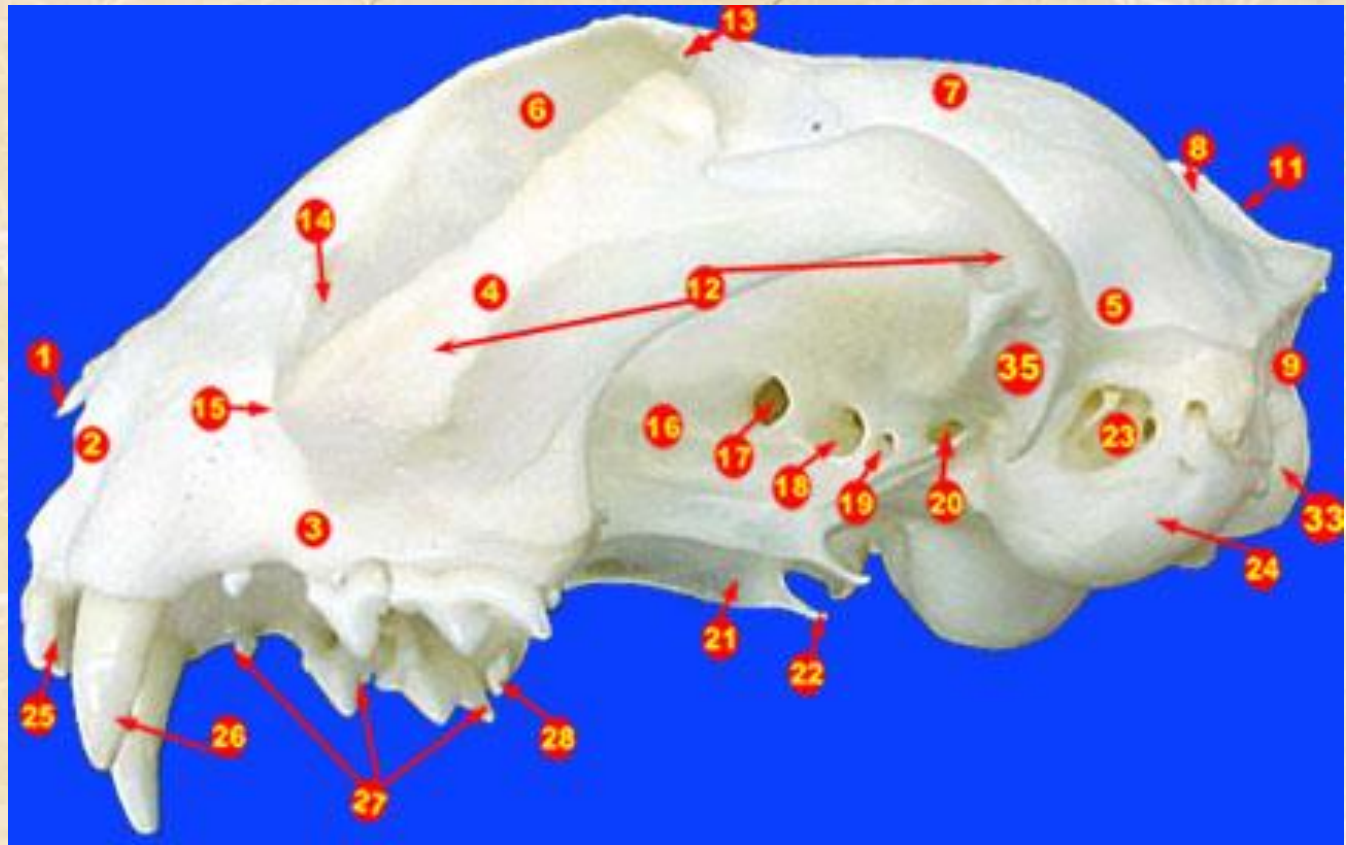
2. premaxilla
3. maxilla
4. malar
5. temporal
6. frontal
9. occipital
12. zygomatic arch
13. postorbital process
16. presphenoid
18. orbital fissure
19. foramen rotundum
20. foramen ovale
21. pterygoid process
22. hamulus
24. tympanic bulla
25. incisors
26. canine
27. premolars
28. molar
29. palatine
30. posterior palatine foramen
31. incisive foramen
32. foramen magnum
33. occipital condyle
34. jugular foramen
35. mandibular fossa



Ventral View

Cat Skull

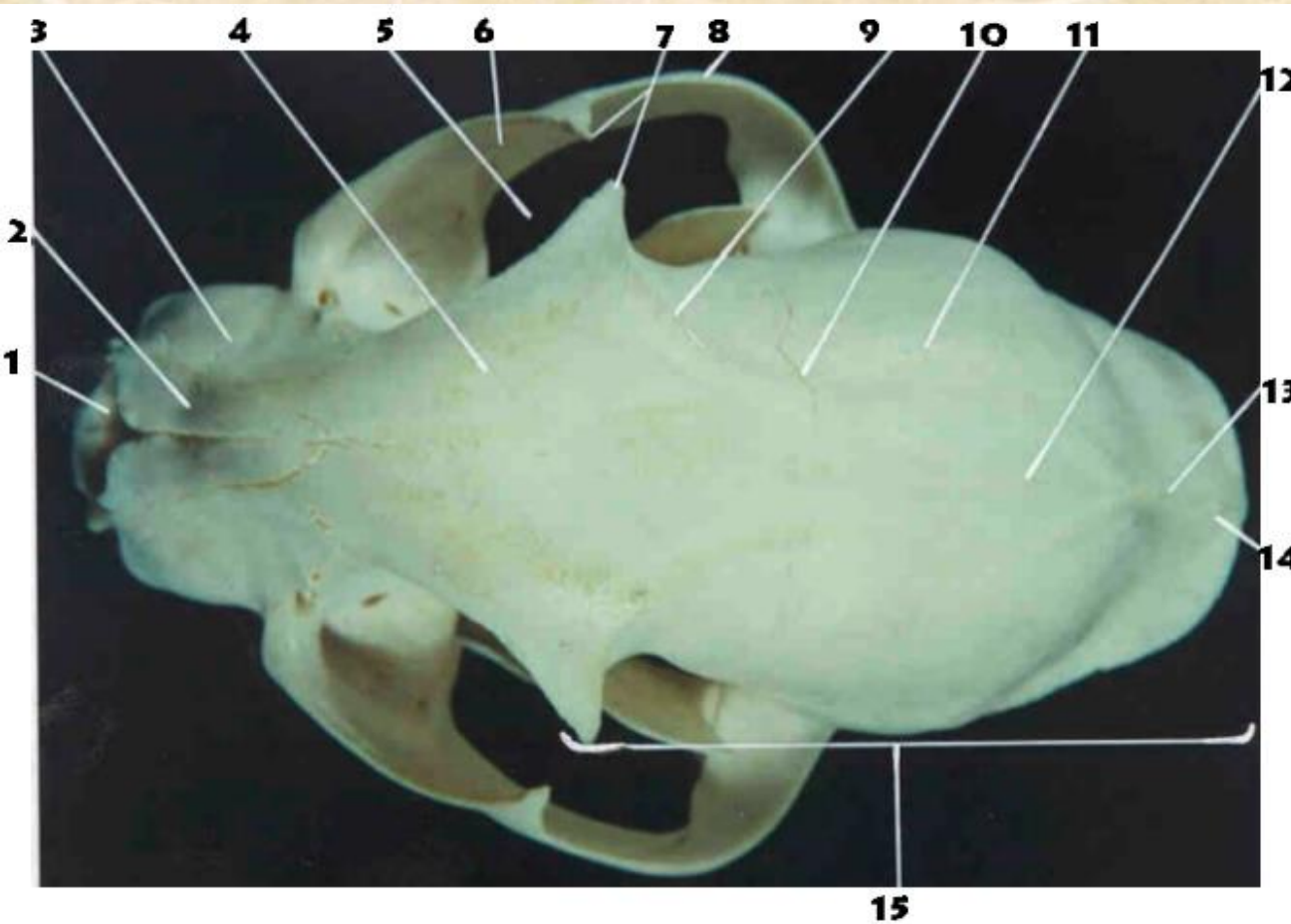
- 1. nasal
- 2. premaxilla
- 3. maxilla
- 4. malar
- 5. temporal
- 6. frontal
- 7. parietal
- 8. interparietal
- 9. occipital
- 11. **sagittal crest**
- 12. zygomatic arch
- 13. **postorbital process**
- 14. nasolacrimal canal
- 15. infraorbital foramen
- 16. sphenoid
- 17. **optic foramen**
- 18. **orbital fissure**
- 19. **foramen rotundum**
- 20. **foramen ovale**
- 21. **pterygoid process**
- 22. **hamulus**
- 23. **external auditory meatus**
- 24. tympanic bulla
- 25. incisors
- 26. canine



- 27. premolars
- 28. molar
- 29. palatine
- 33. **occipital condyle**

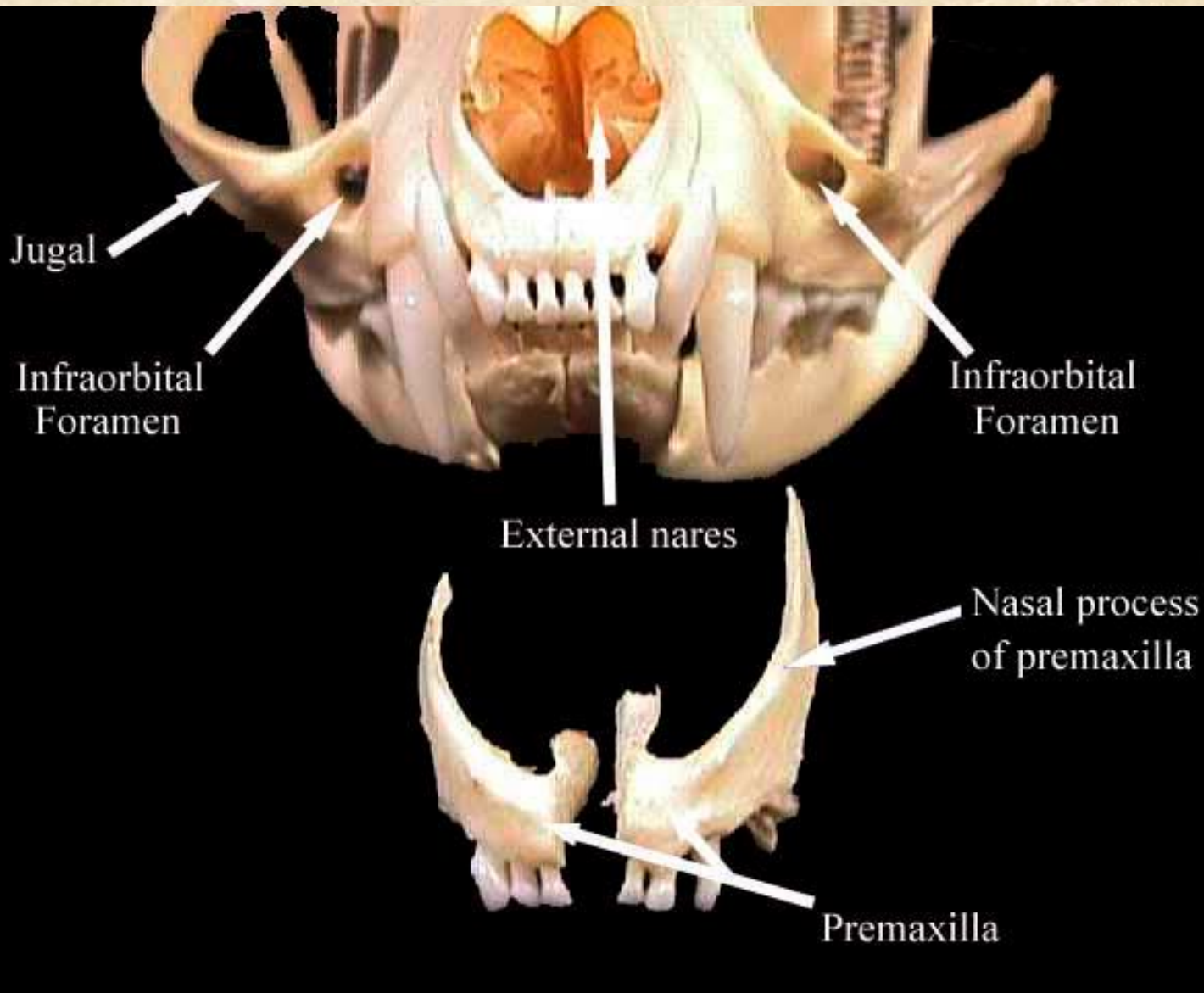
Lateral View

Dorsal View

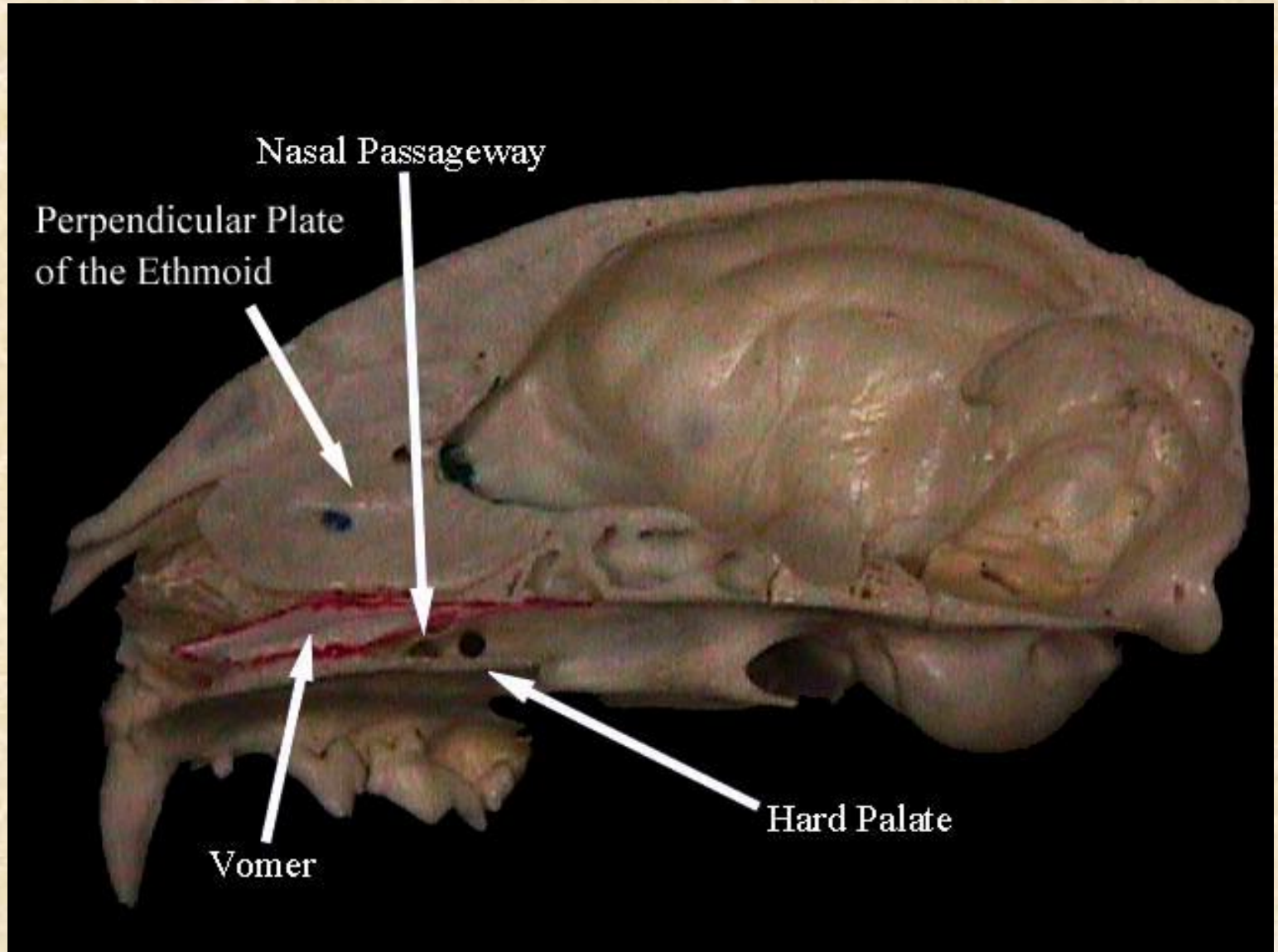


1. premaxilla
2. nasal
3. maxilla
4. frontal
5. orbit
6. zygomatic (jugal)
7. postorbital processes
8. zygomatic arch
9. **temporal line**
10. **coronal suture**
11. parietal
12. **sagittal suture**
13. **sagittal crest**

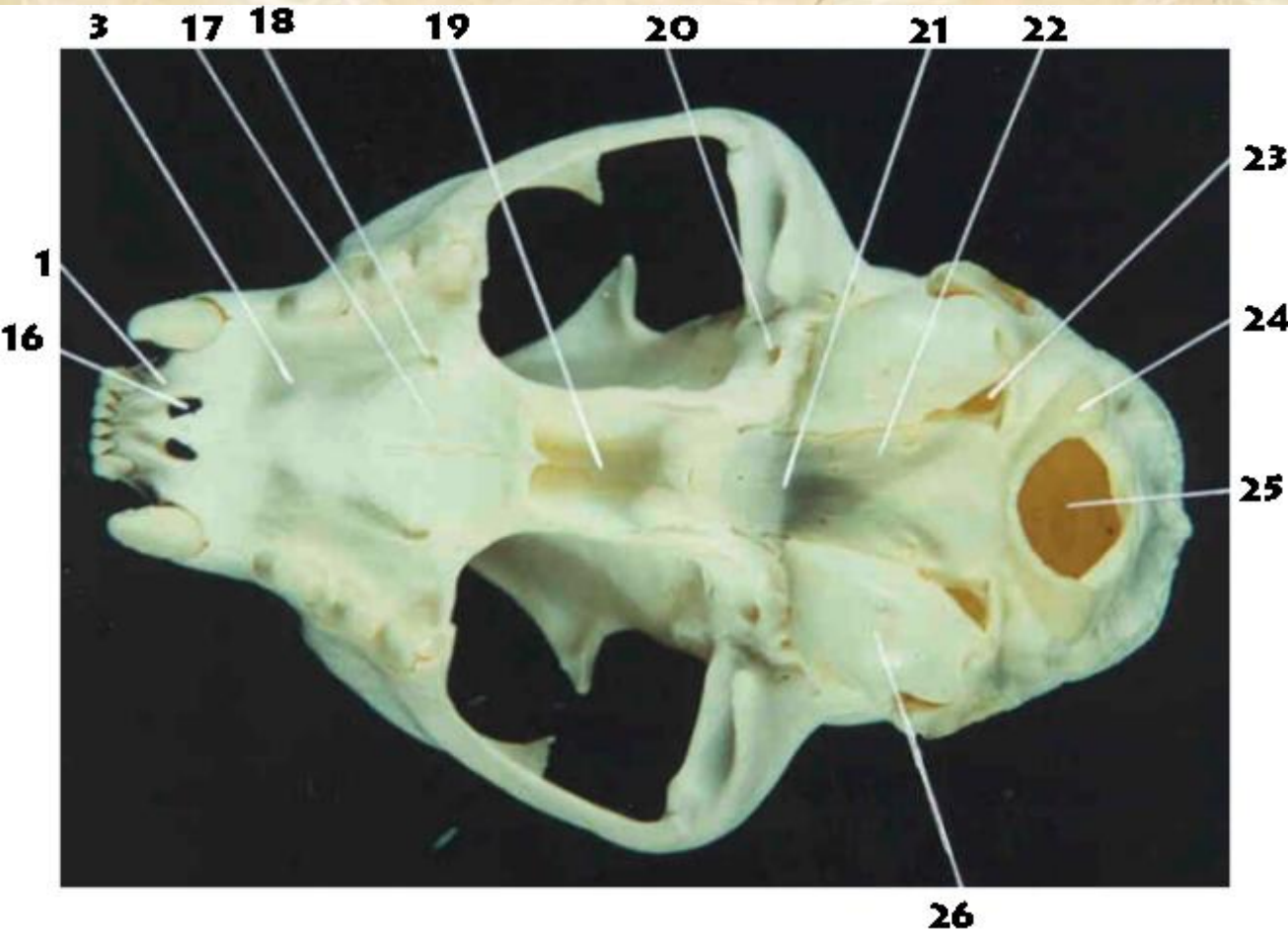
Frontal view



Midsagittal Palate View

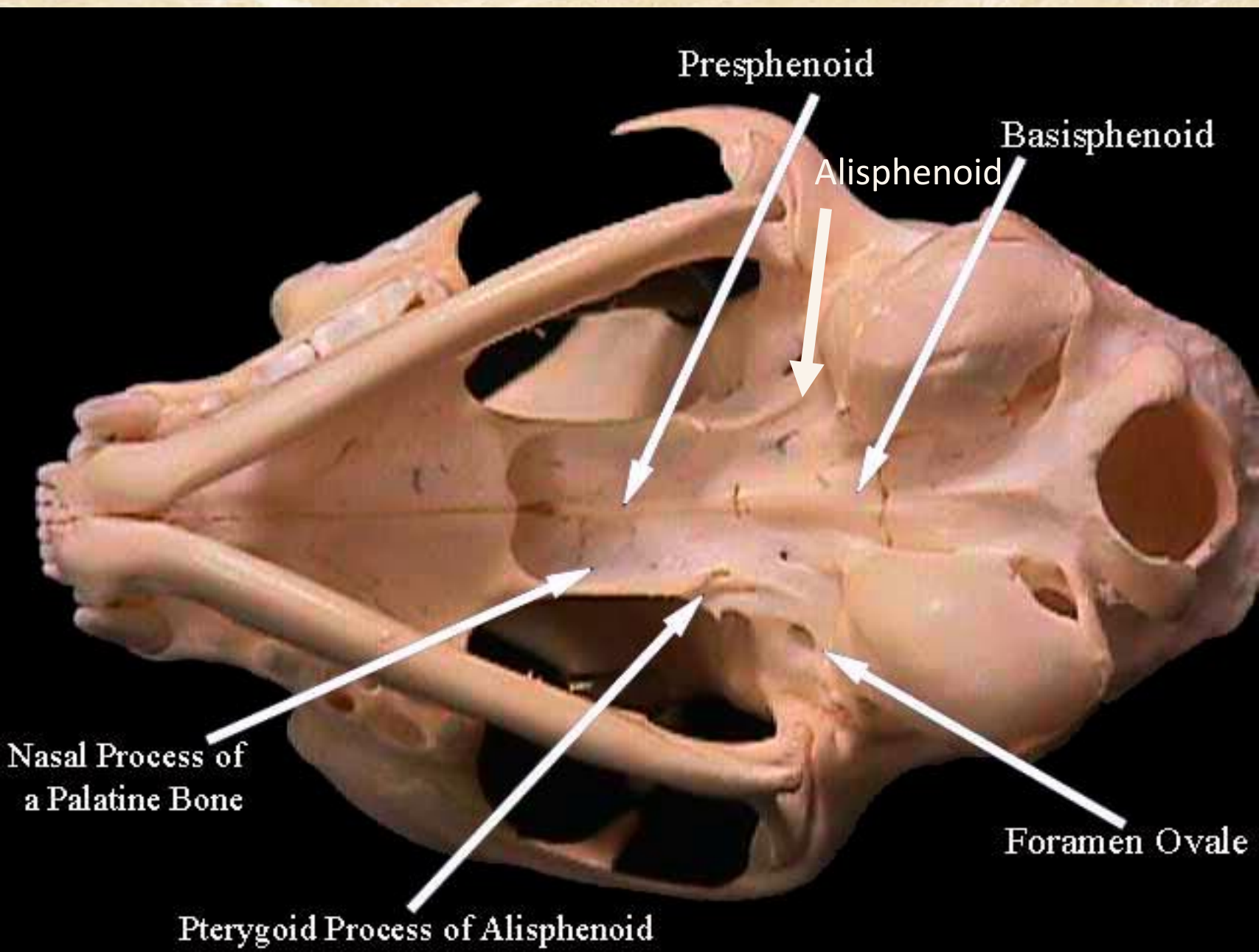


Ventral view

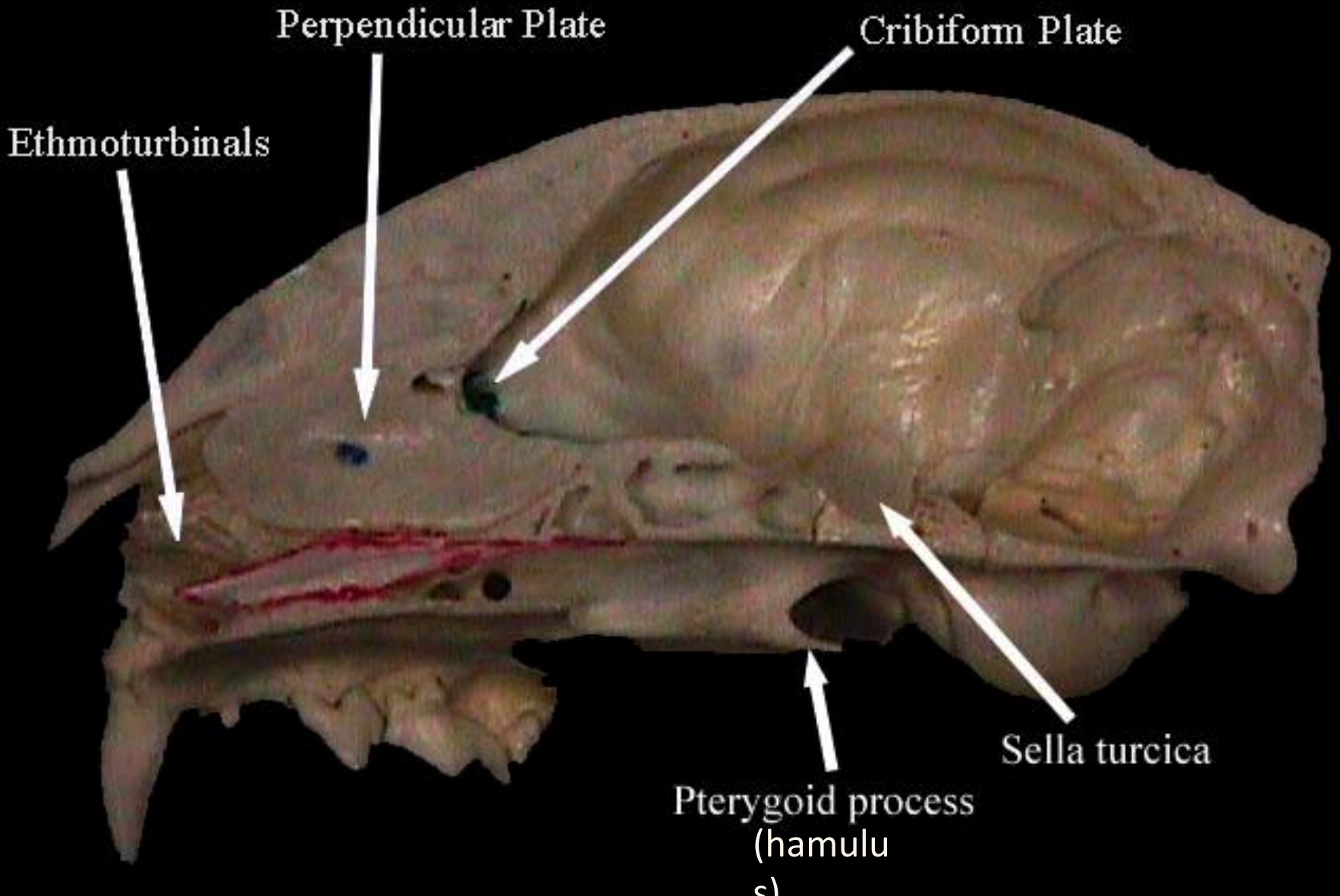


1. premaxilla
14. interparietal
16. incisive foramen
17. palatine
18. postpalatine foramen
19. presphenoid
20. foramen ovale
21. basisphenoid
22. basioccipital
23. jugular foramen
24. occipital condyle
25. foramen magnum
26. tympanic bulla

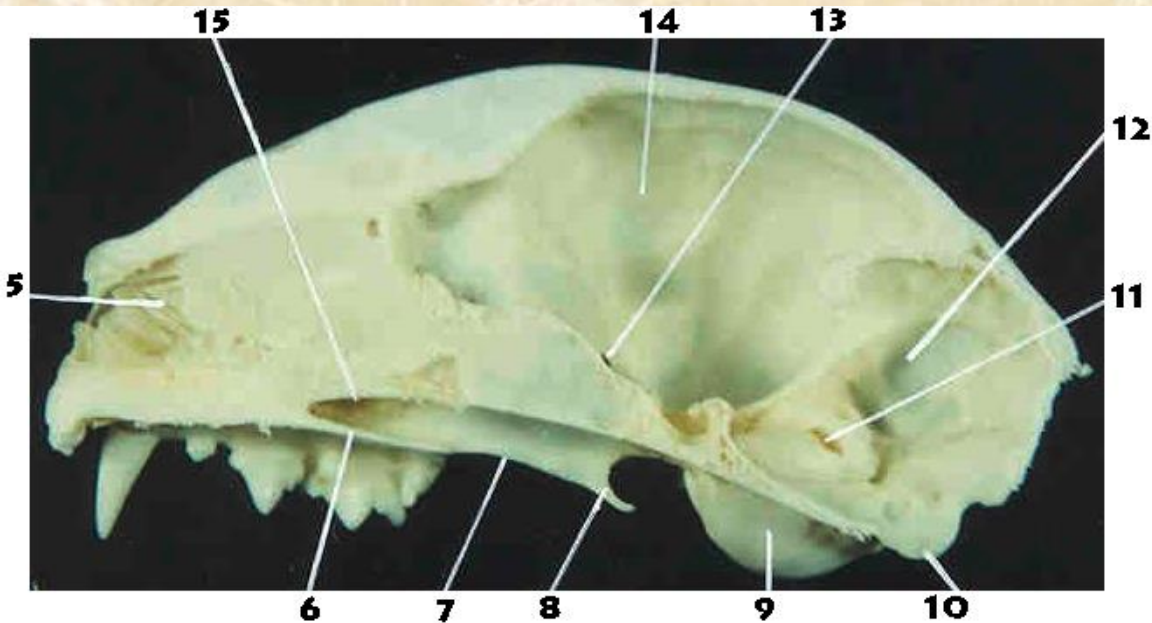
Ventral View



1/2 Skull View of Palate

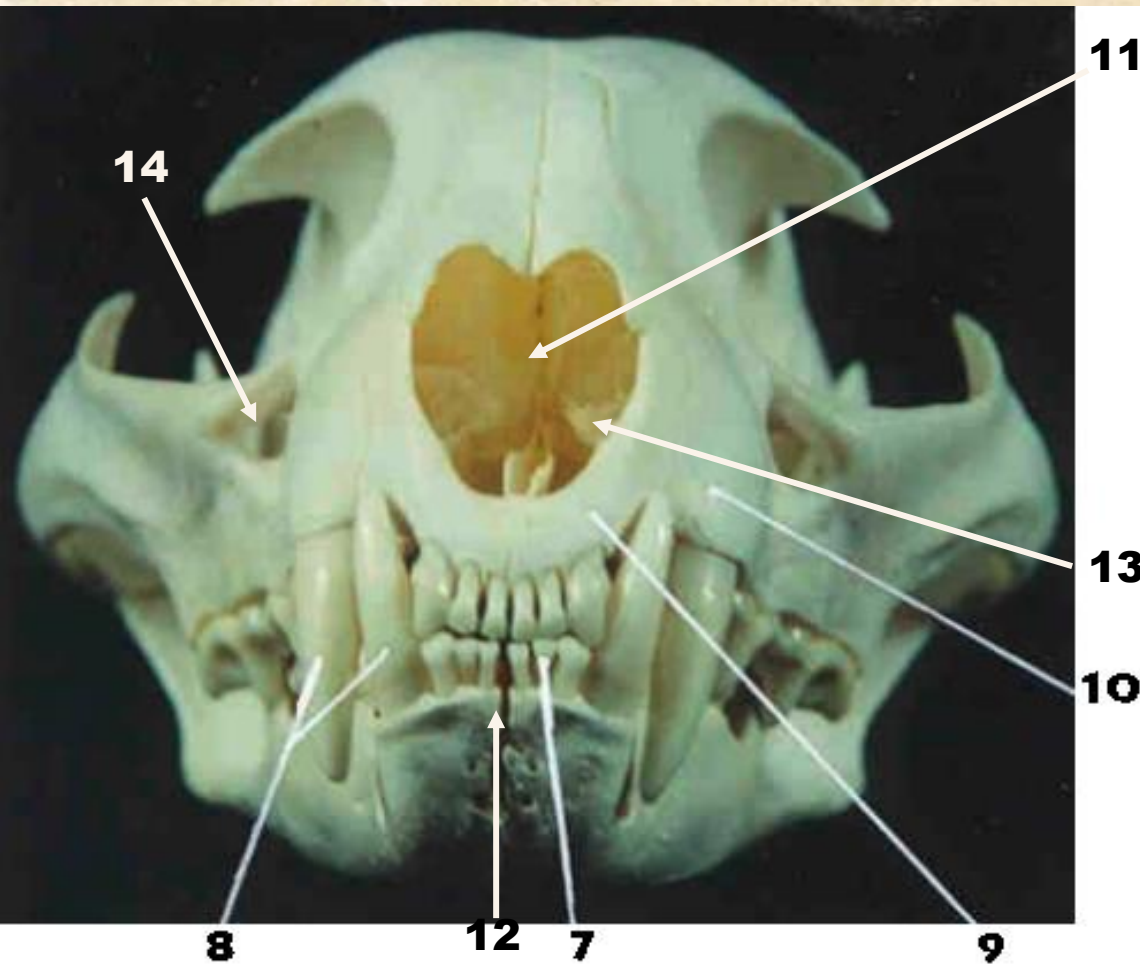


Midsagittal View



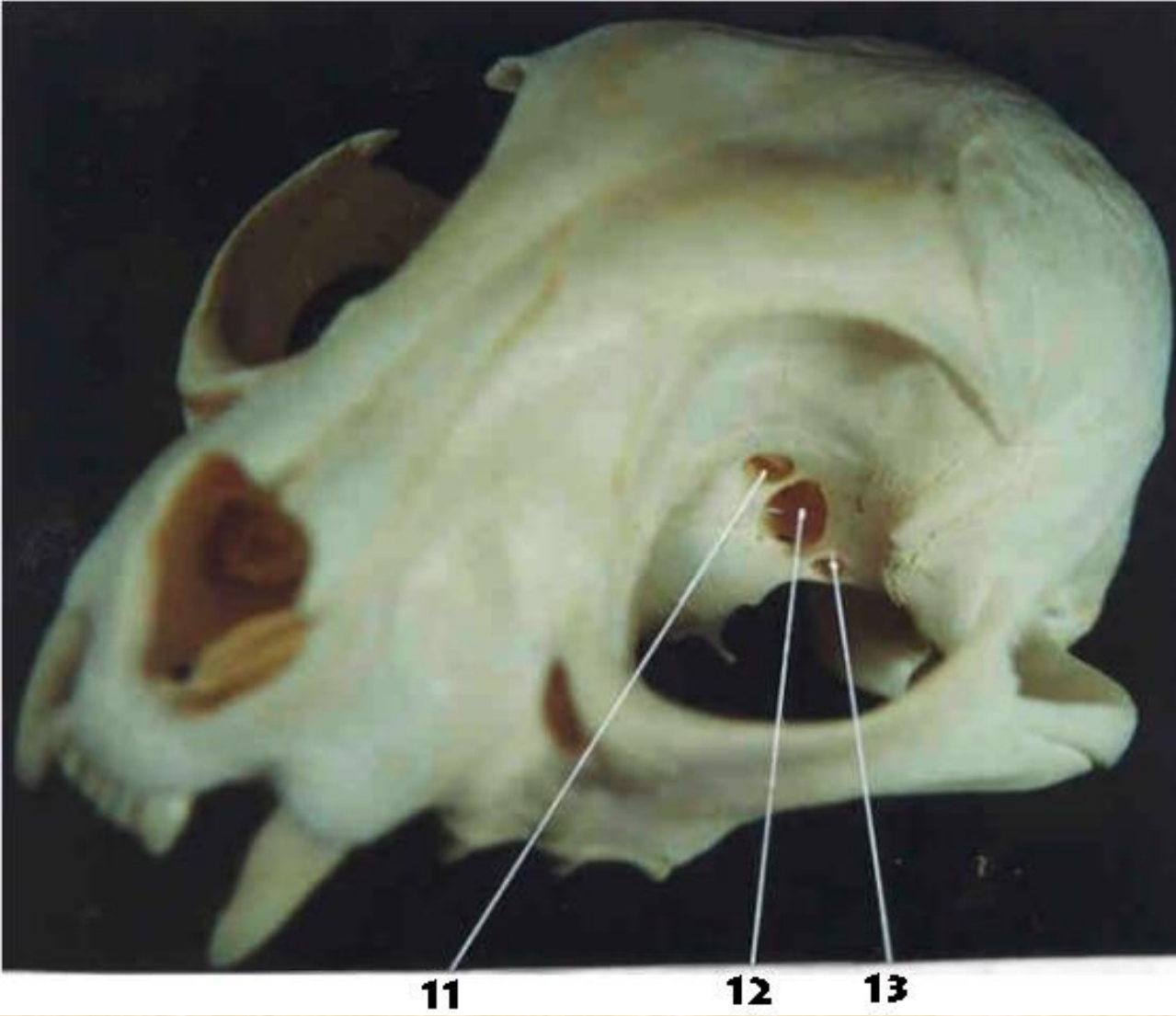
5. Turbinals (nasal conchae)
6. hard palate (palatine)
7. **pterygoid process**
8. **hamulus**
9. tympanic bulla
10. occipital condyle
11. internal acoustic meatus
12. caudal cranial fossa
13. optic canal
14. middle cranial fossa
15. choana

Frontal view



- 7. incisors
- 8. canines
- 9. premaxilla
- 10. maxilla
- 11. internal nares
- 12. mandibular symphysis
- 13. nasal conchae (turbinals)
- 14. Infraorbital foramen

3 of 4 Foramina



11

12

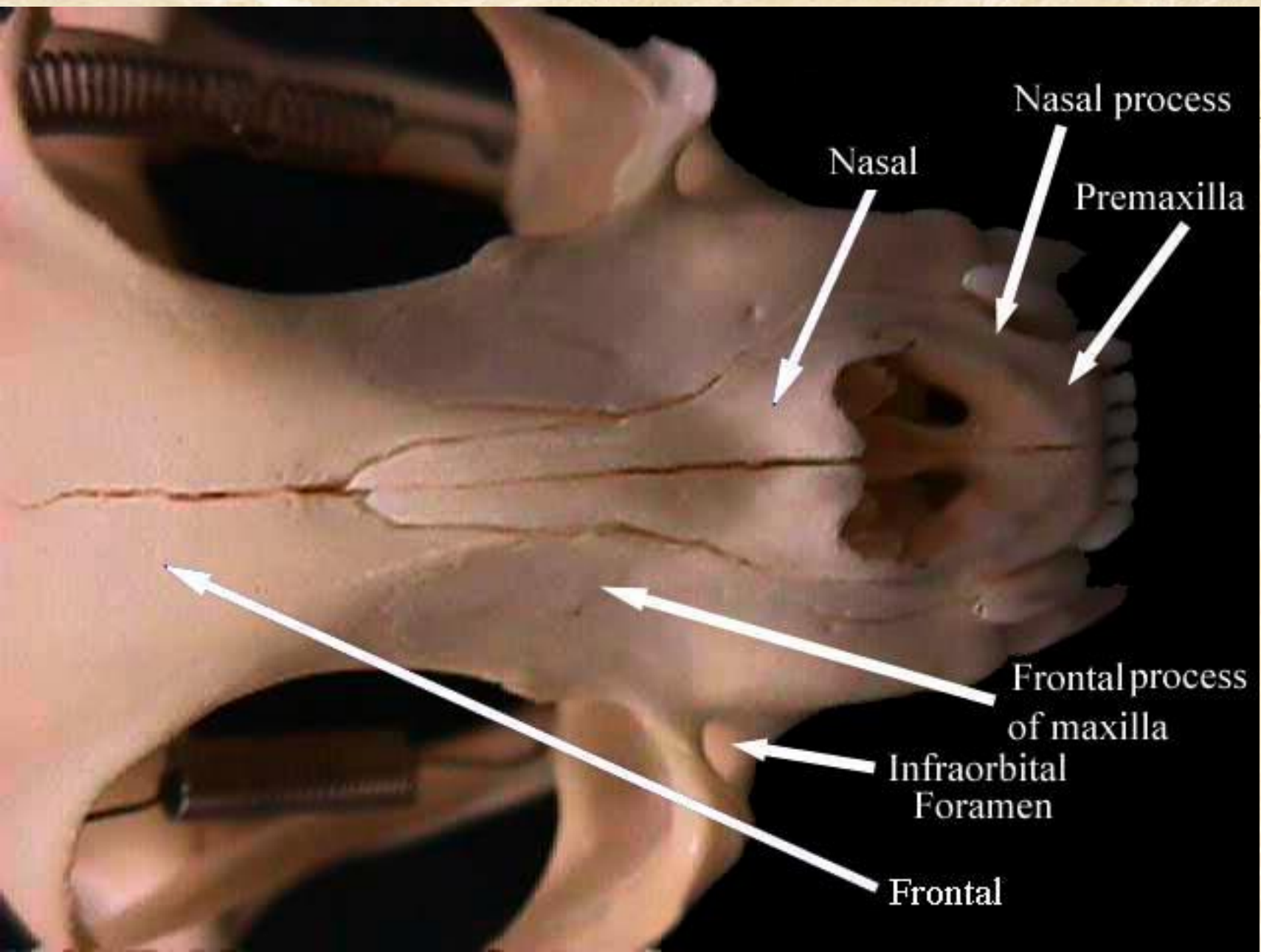
13

11. Optic foramen

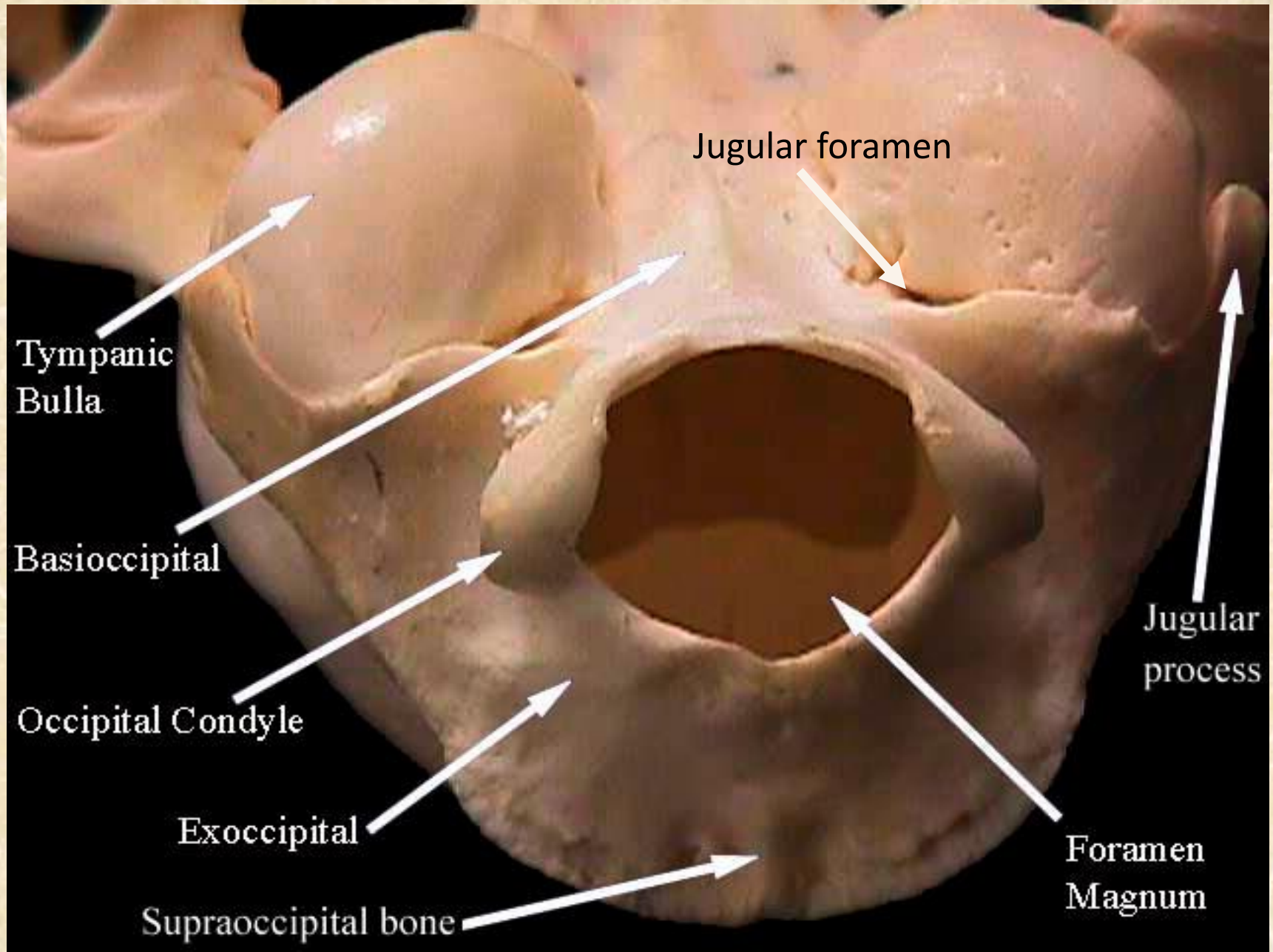
12. orbital fissure

13. foramen rotundum

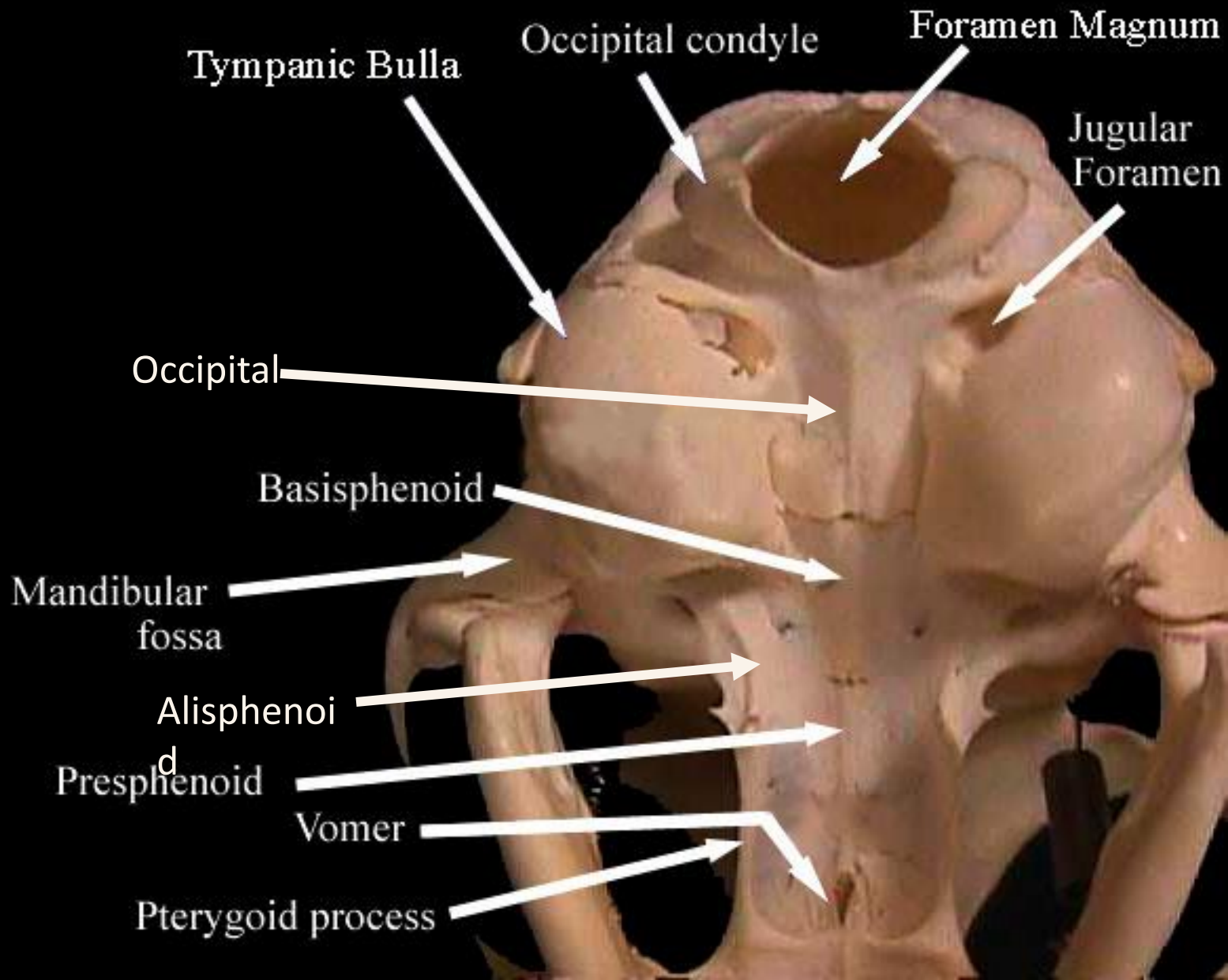
Cat Bones Anterior



Posterior ventral view



Rear Ventral View



Internal Sagittal View

