



Anatomija živine

Skeletni sistem i mišići

As. dr Dejana Ćupić Miladinović

Živina

Gallus domesticus – domaća kokoška

Meleagris gallopavo – ćurka

Numida meleagris – morka

Anas boschas domestica – plovka

Anser cinereus domesticus – guska



Živina

Coturnix japonica – japanska prepelica

Phasianus colchicus – fazani

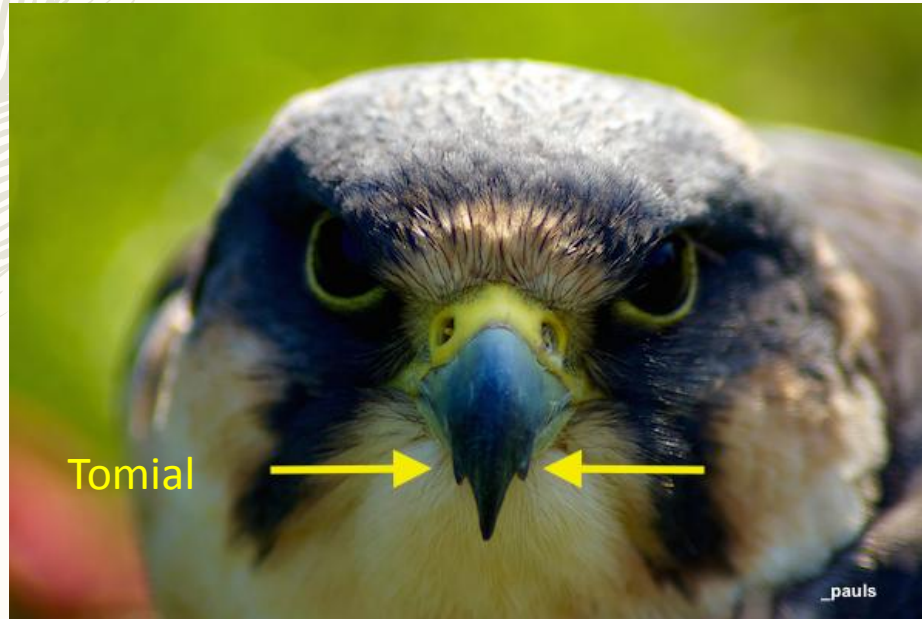
Pavo cristatus – paun



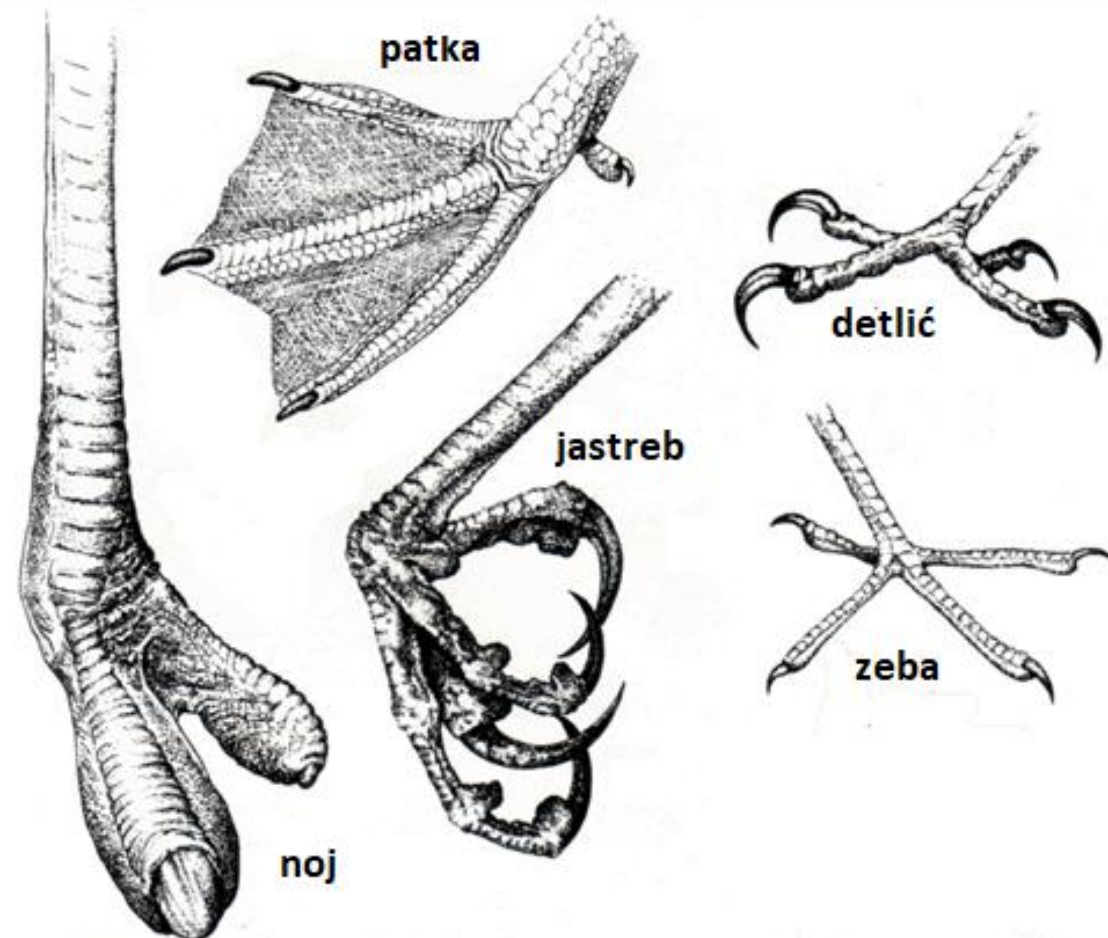
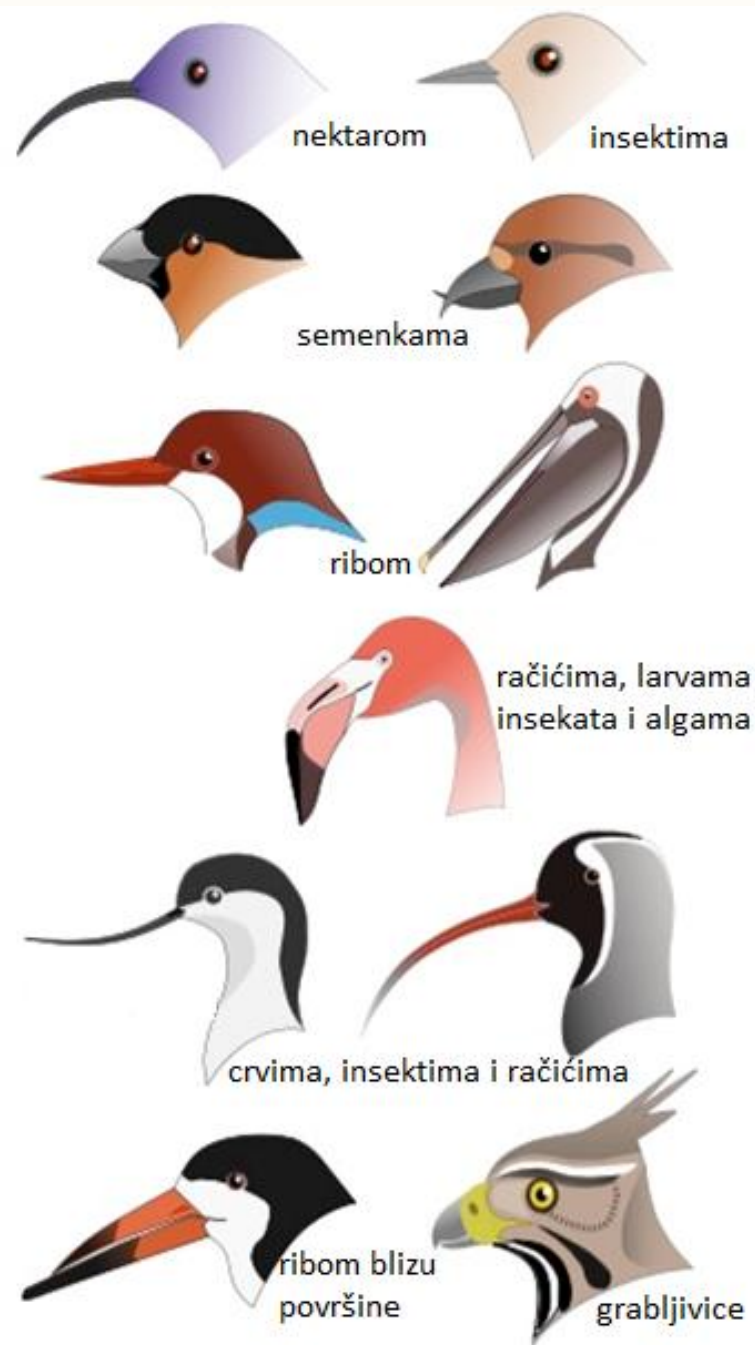
Koje su razlike između sisara i ptica?



Zubi kod ptica?



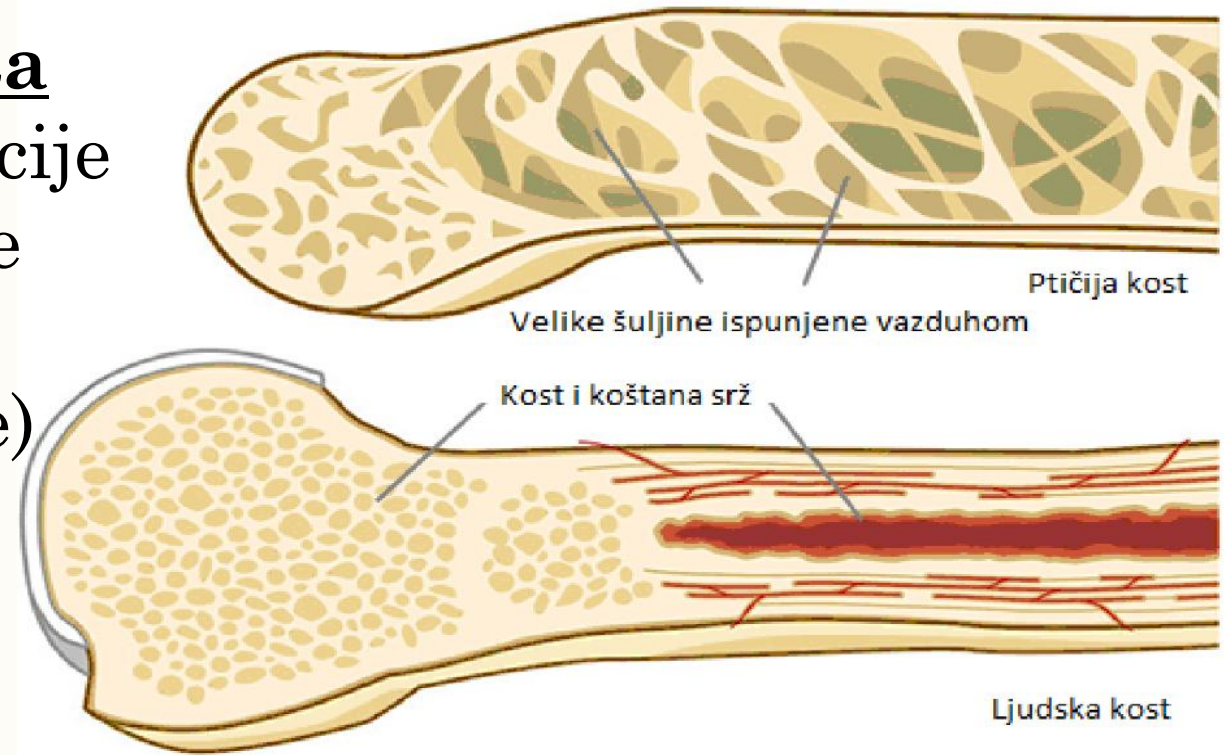
Kljunovi i stopala



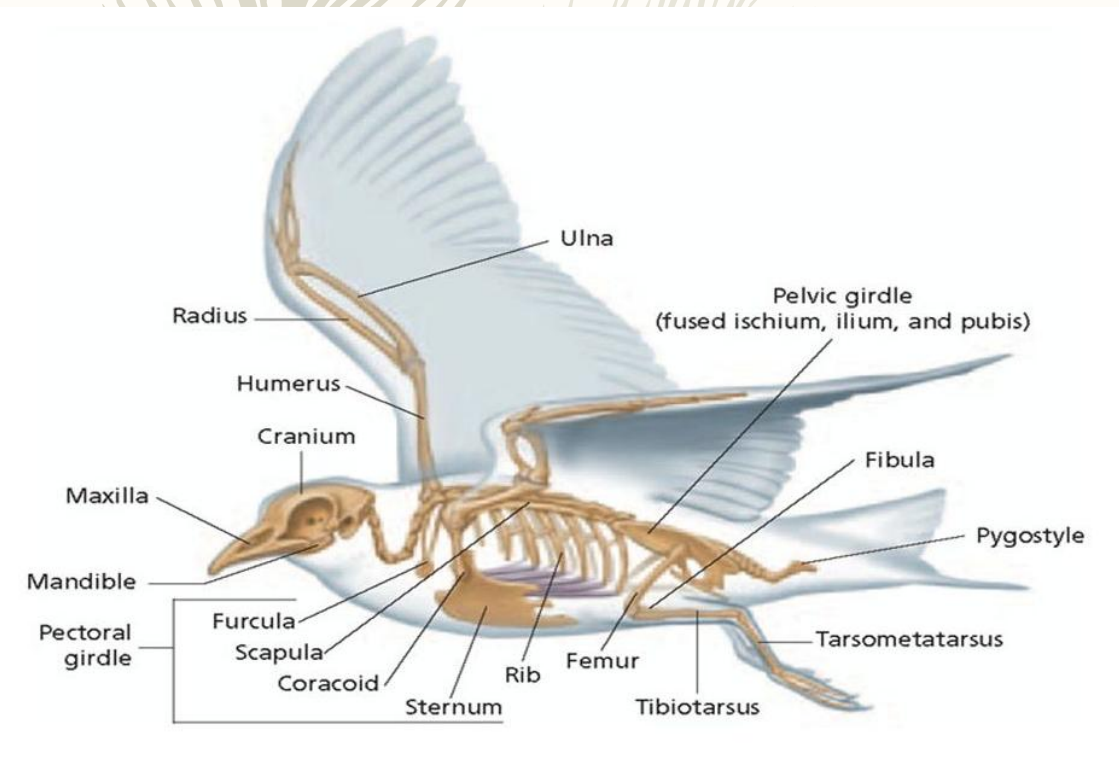
Skeletni sistem

Karakteristike kostiju i skeleta

- Veoma lake usled pneumatizacije
- Pojedine kosti su srasle čime se dobija veća stabilnost skeleta.
- Srasle su ključnjače (claviculae)



Skeletni sistem



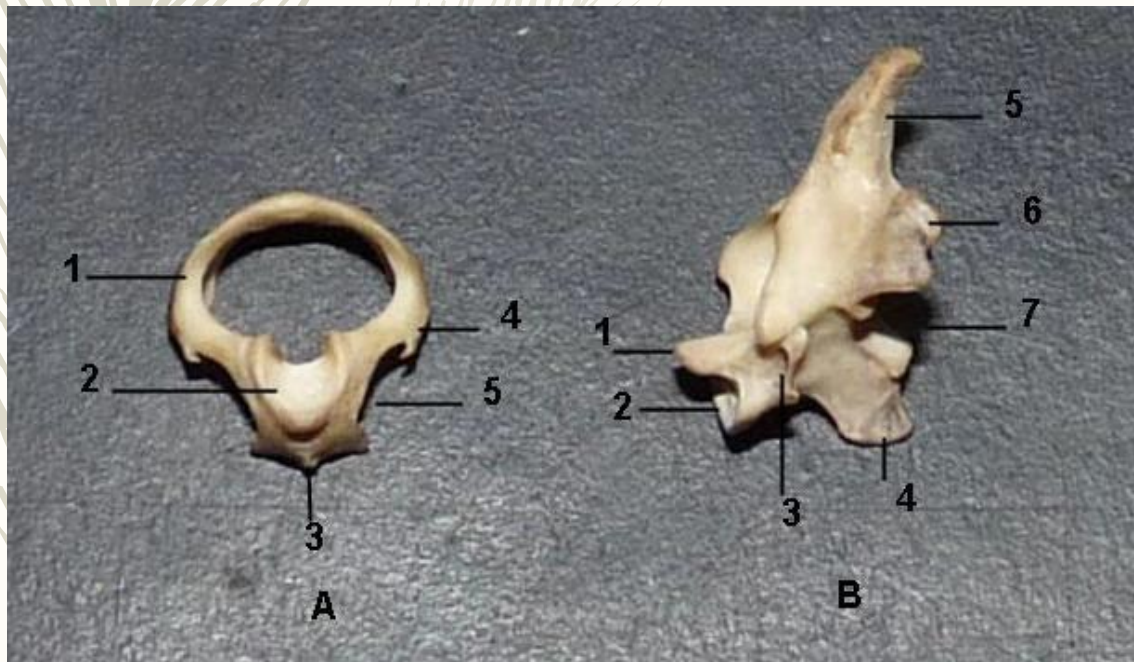
- Prednji eksteremiteti adaptirani za letenje
- Potpuno razvijen rameni pojas sa pojavom gavranove kosti (os coracoideum)
- Zadnji ekstremiteti za kretanje
- Kukasti nastavci na rebrima

Kosti trupa

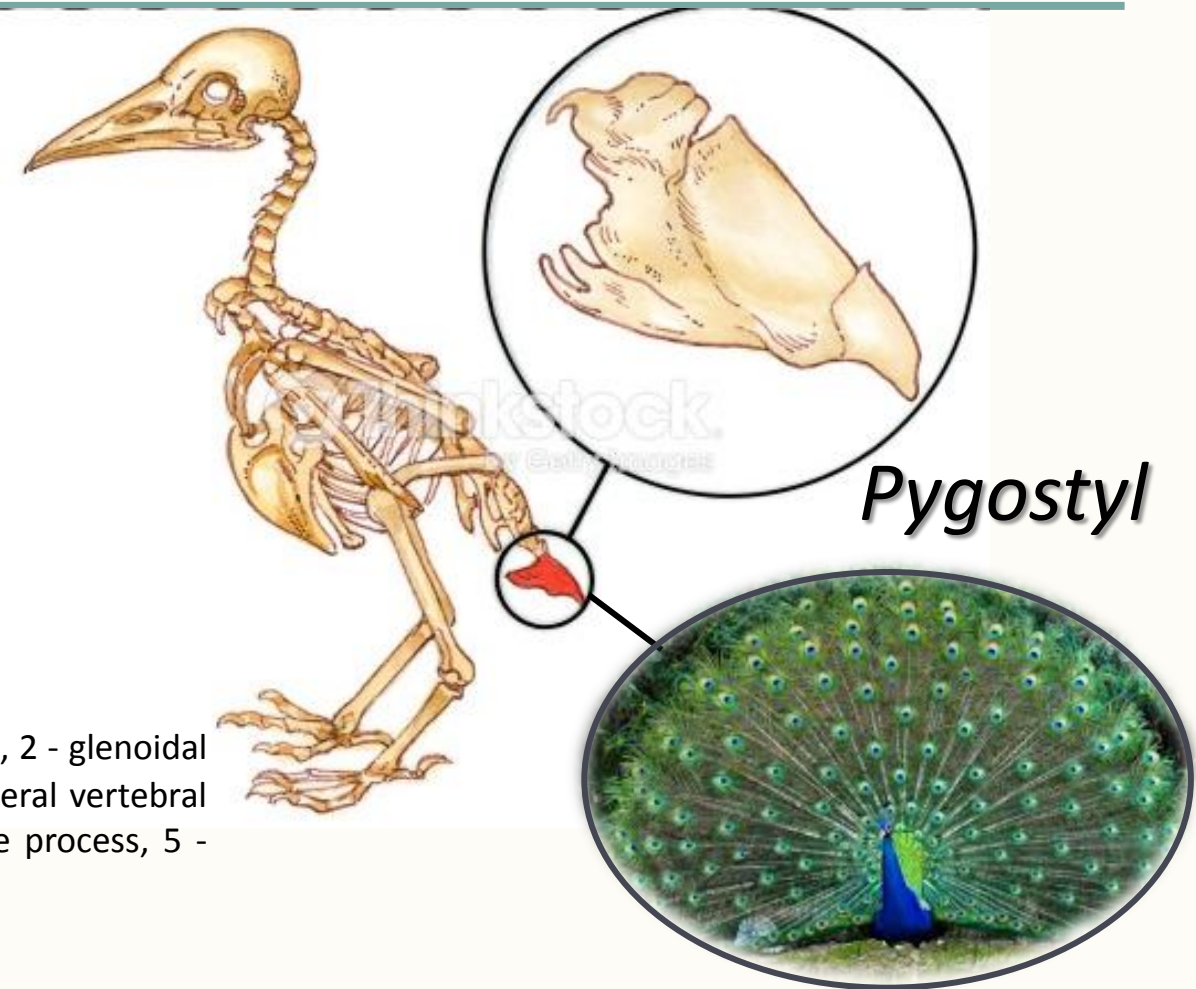
Kičma (Columna vertebralis)
Rebra (Costae)
Grudna kost (Sternum)
Karlica (Pelvis)



Pršljenovi



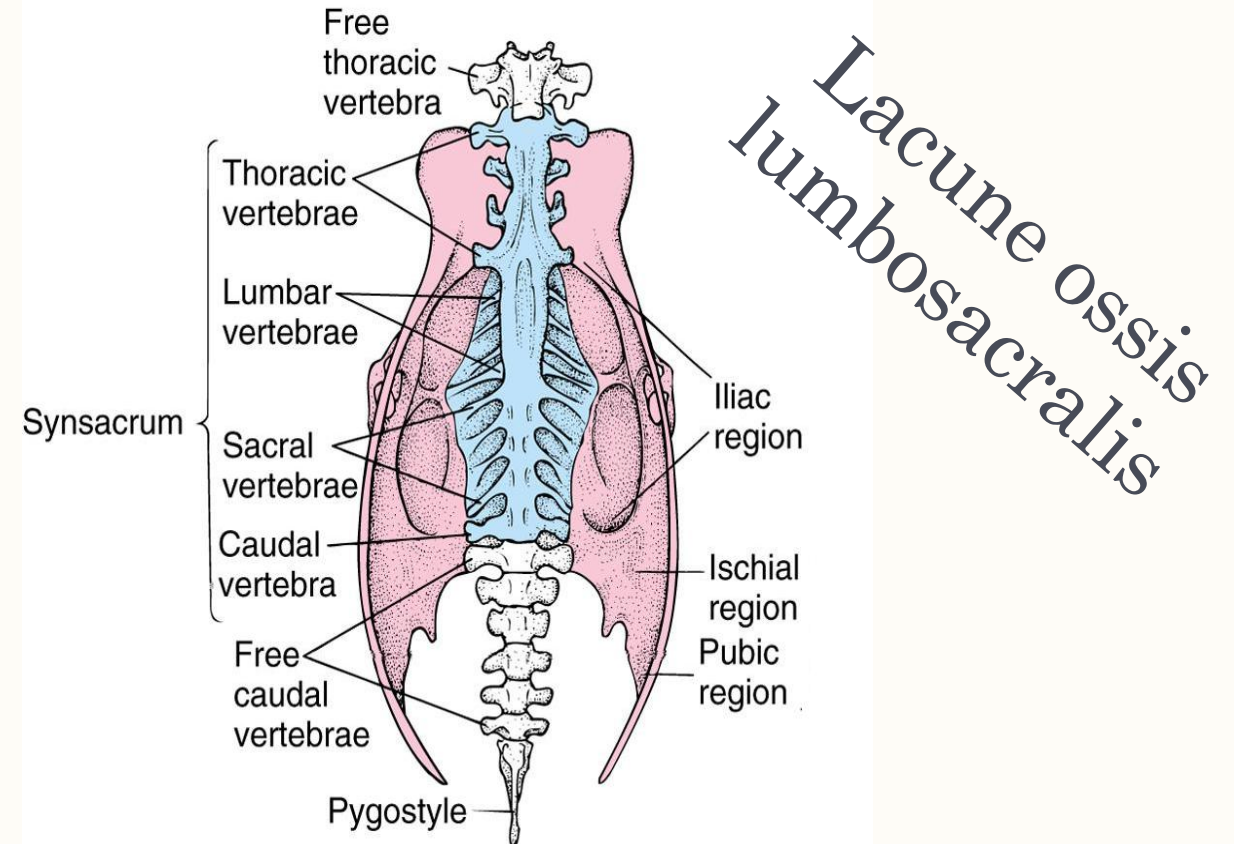
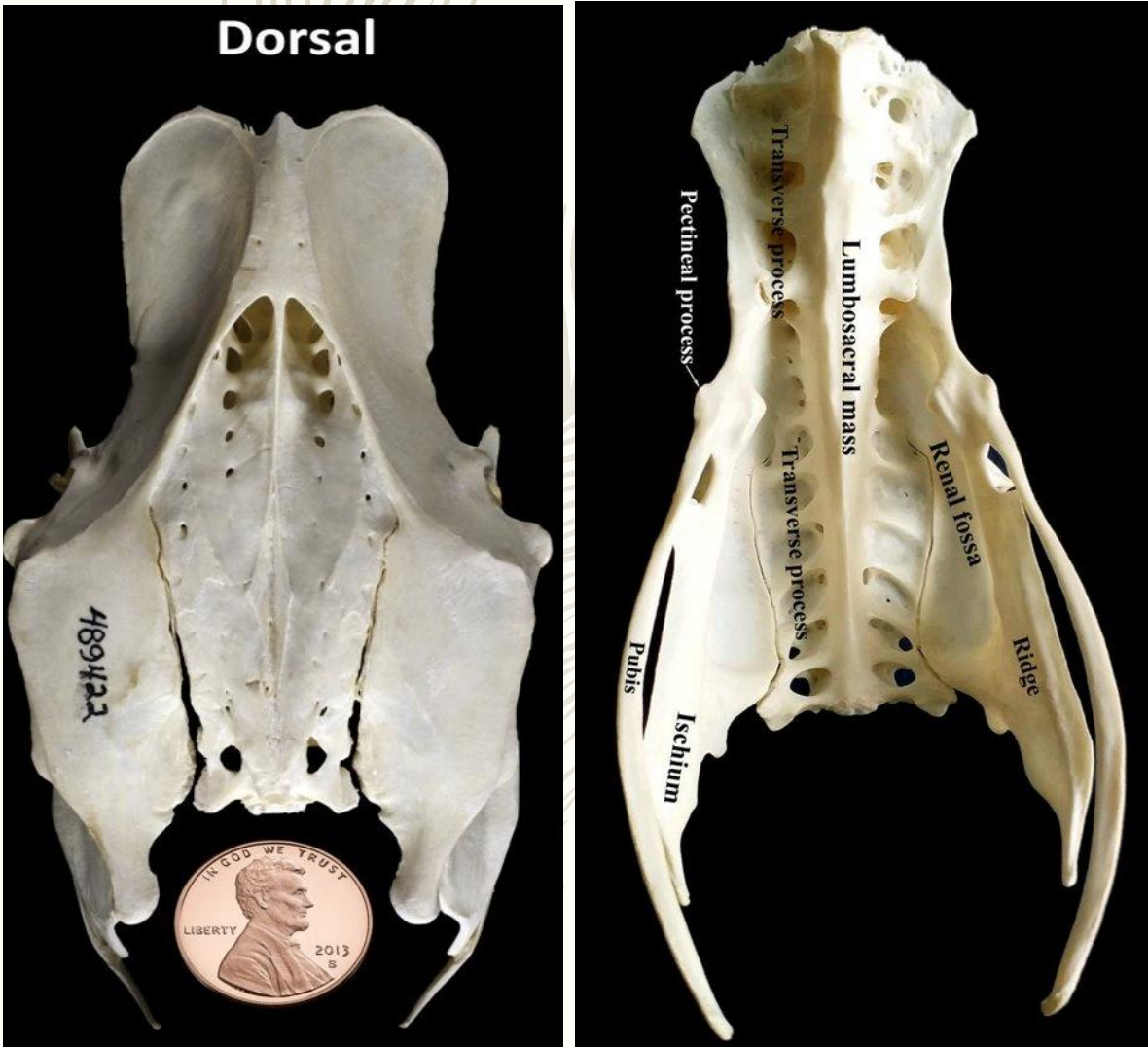
Atlas (A) and axis (B) of a Common Buzzard (*Buteo buteo*). A: 1 - vertebral arch, 2 - glenoidal cavity for occipital condyle of skull, 3 - ventral process, 4 - transverse process, 5 - lateral vertebral notch. B: 1 - dens, 2 - articular facet for atlas, 3 - vertebral foramen, 4 - transverse process, 5 - spinous process, 6 - postzygapophysis, 7 - vertebral canal (Bitoiu et al. 2011).



Pršljenovi

Columna vertebralis	Kokoške	Golubovi	Ćurke	Plovke	Guske
Vratni deo	13-14	12	14-15	15-16	17-18
Leđni deo	7	7	7	9	9
Slabinski I krsni deo	14	14	14	13-15	14-15
Repni	6-7	6-7	6	7-9	7
Parovi rebara	7	7	7	9	9
Sternalna	4	4	4	7	7
Asternalna	3	3	3	2	2

Os lumbo sacrale



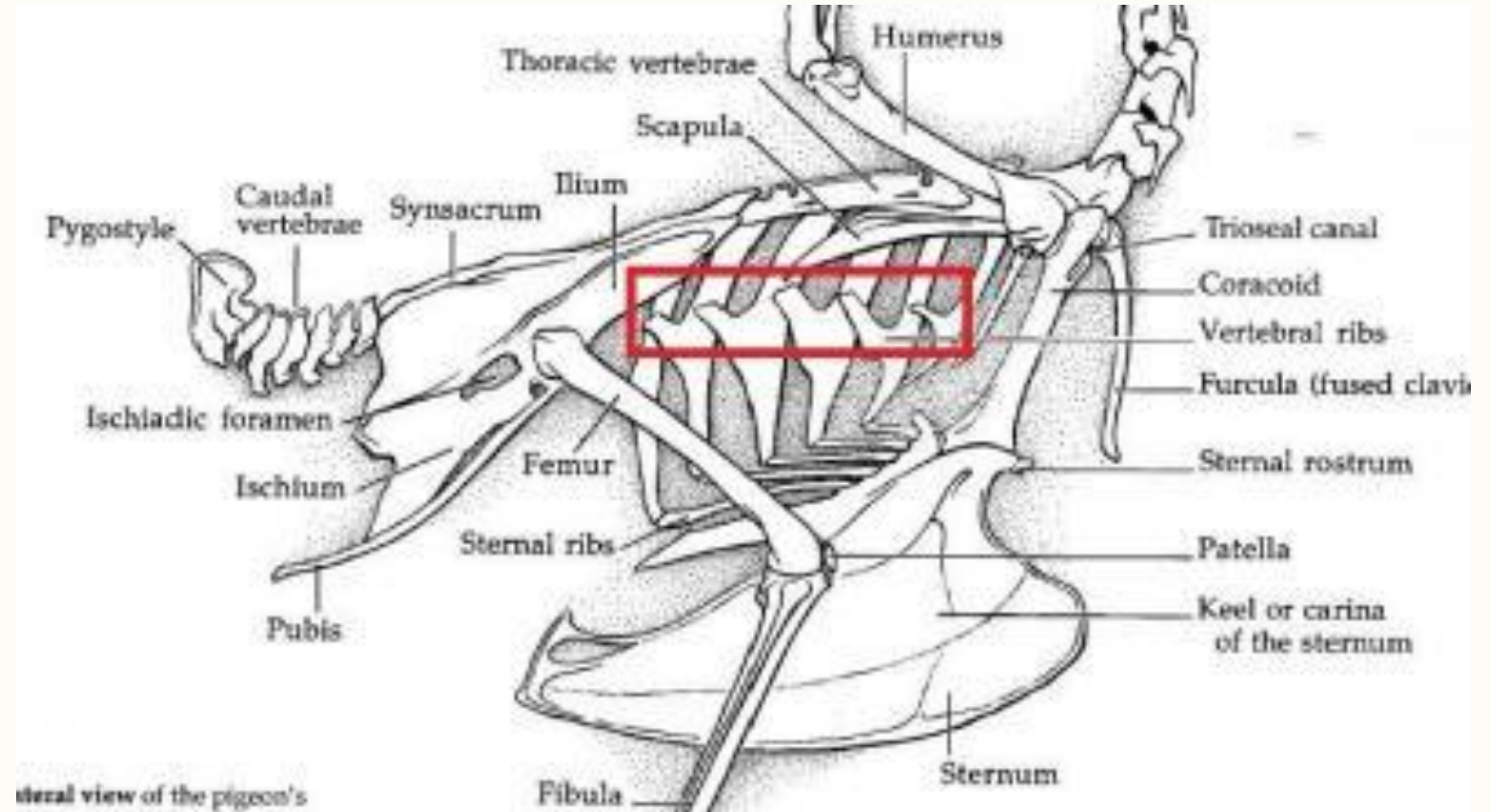
Processus uncinati

Rebra živine se sastoje iz:

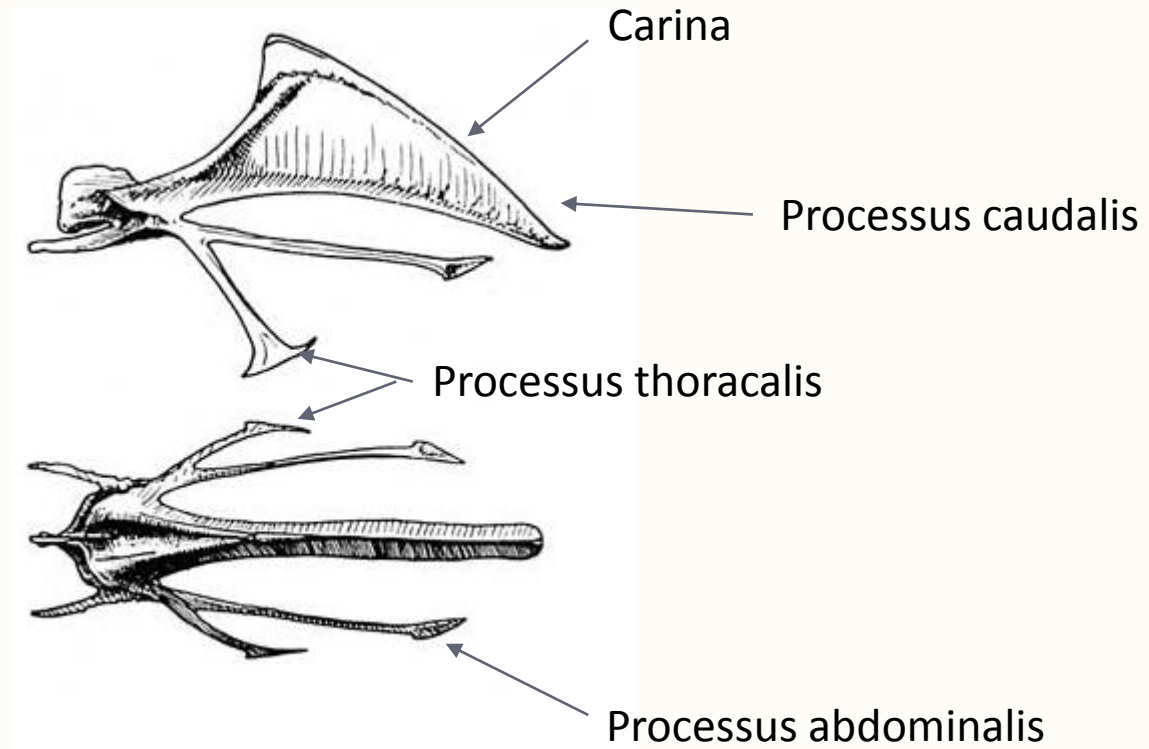
- pars vertebralis costae
- pars sternalis costae.

Na dorzalnim delovima rebara postoje kukasti izdanci.

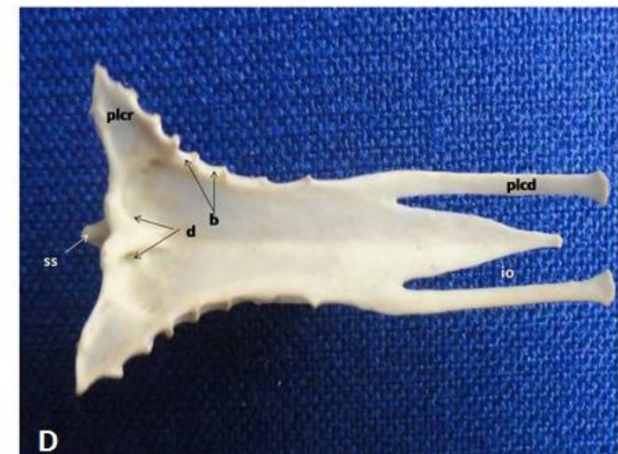
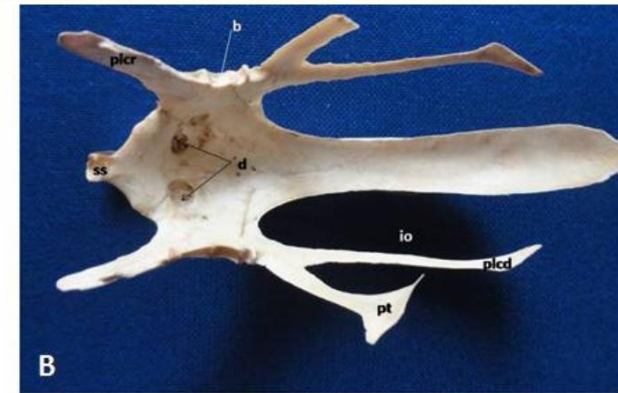
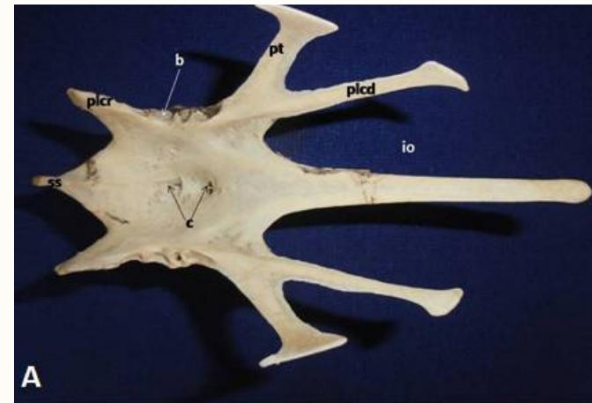
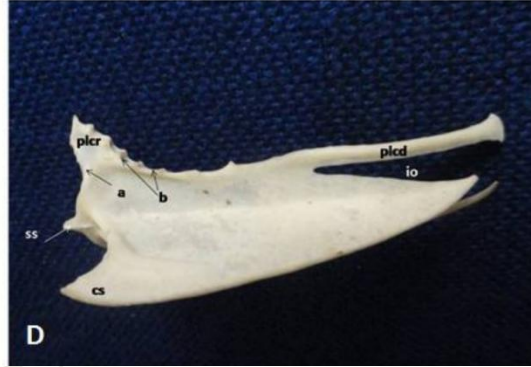
Nemaju rebarne rskavice.



Sternum



Sternum

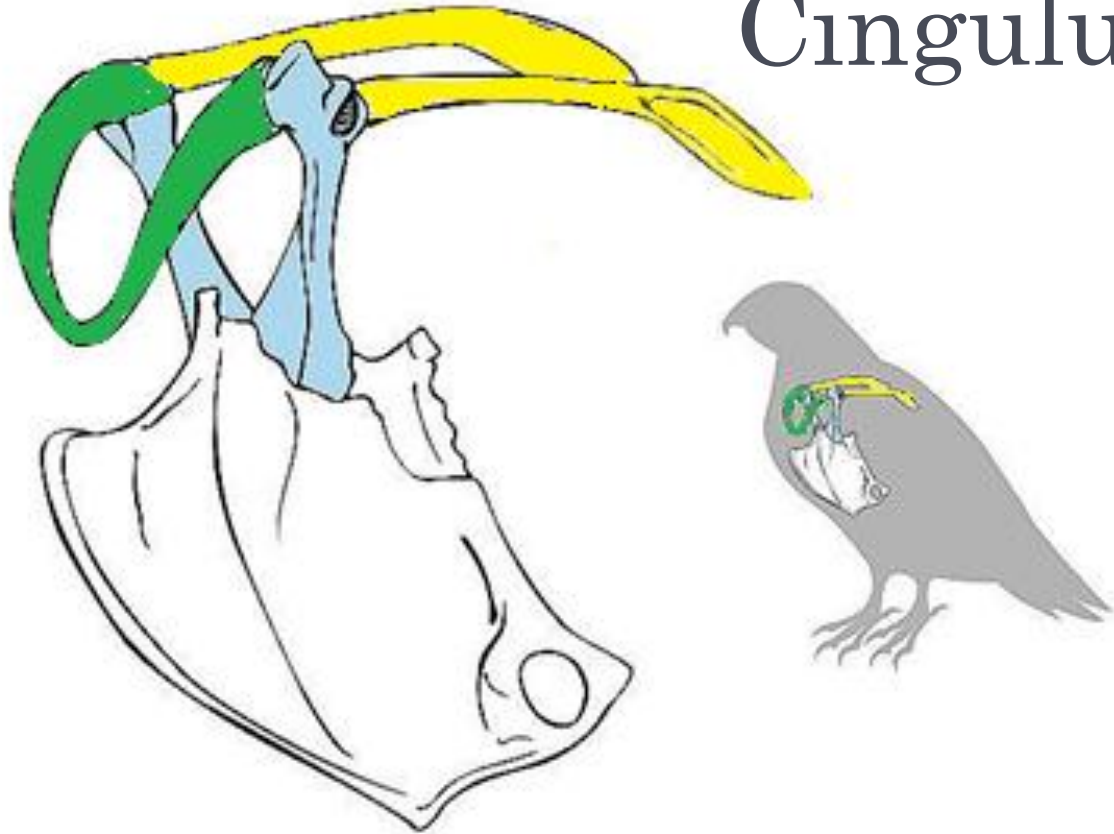


- A – sternum pauna
- B – sternum ćurke
- C – sternum patke
- D – belogrudi mali petlovan



Kosti prednjih ekstremiteta

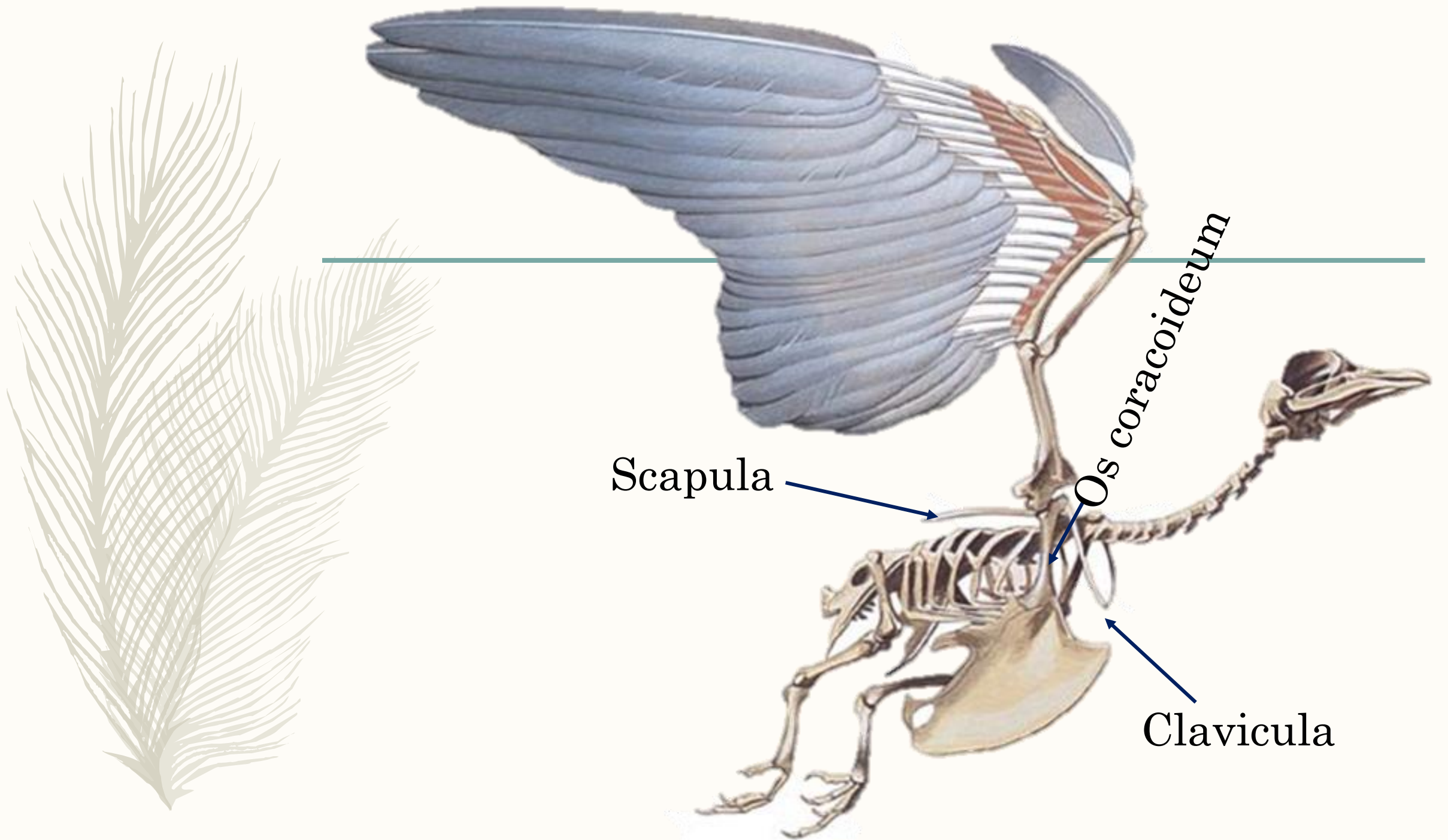
Cingulum extremitatis cranialis

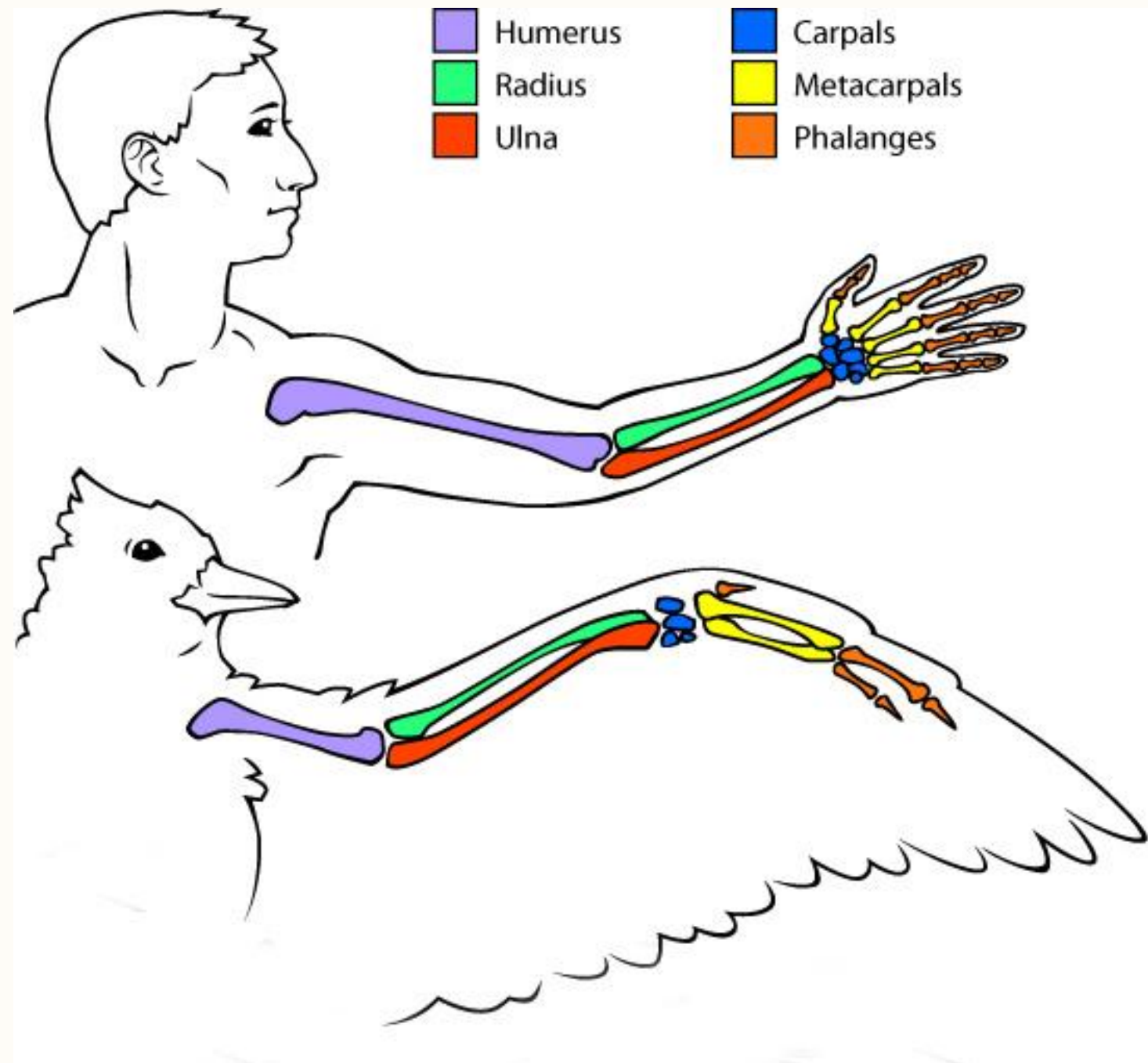


Scapula

Os coracoideum

Clavicula=Furcula



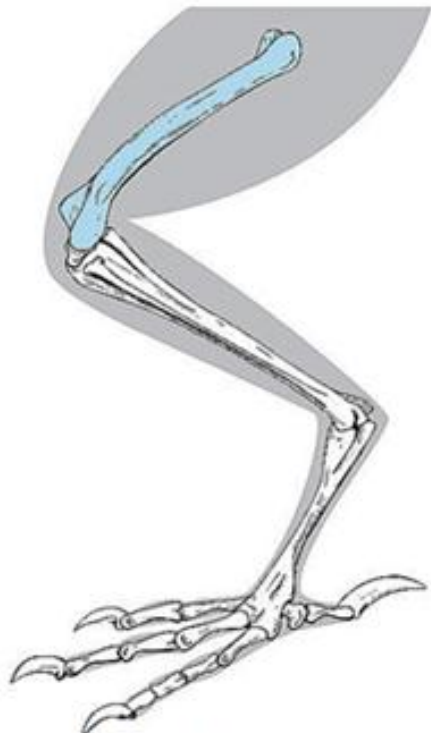


Kosti krila

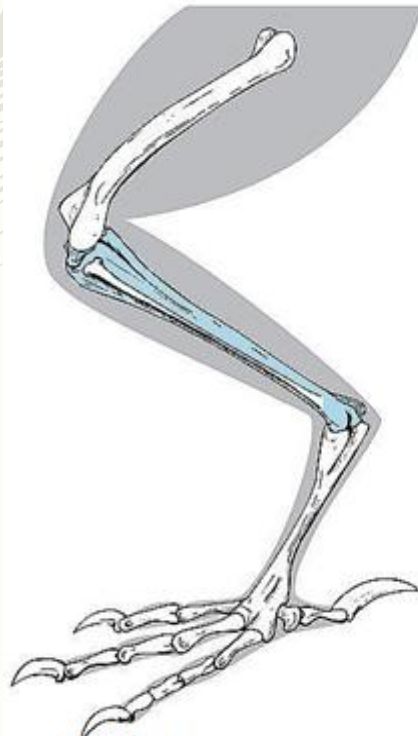
- Humerus je kod ptica zglobno vezan sa lopaticom i gavrانovom kosti.
- Ulna je deblja i bolje razvijena od Radius-a.
- Ossa carpi se sastoje samo od 2 koščice: Os carpi radilae os carpi ulnare.
- Os metacarpale secundum et os metacarpale tertium.



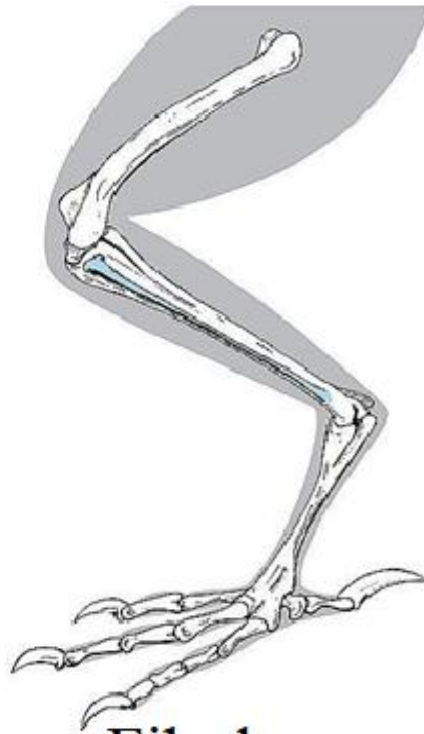
Kosti zadnjih ekstremiteta



Os femoris



Tibia



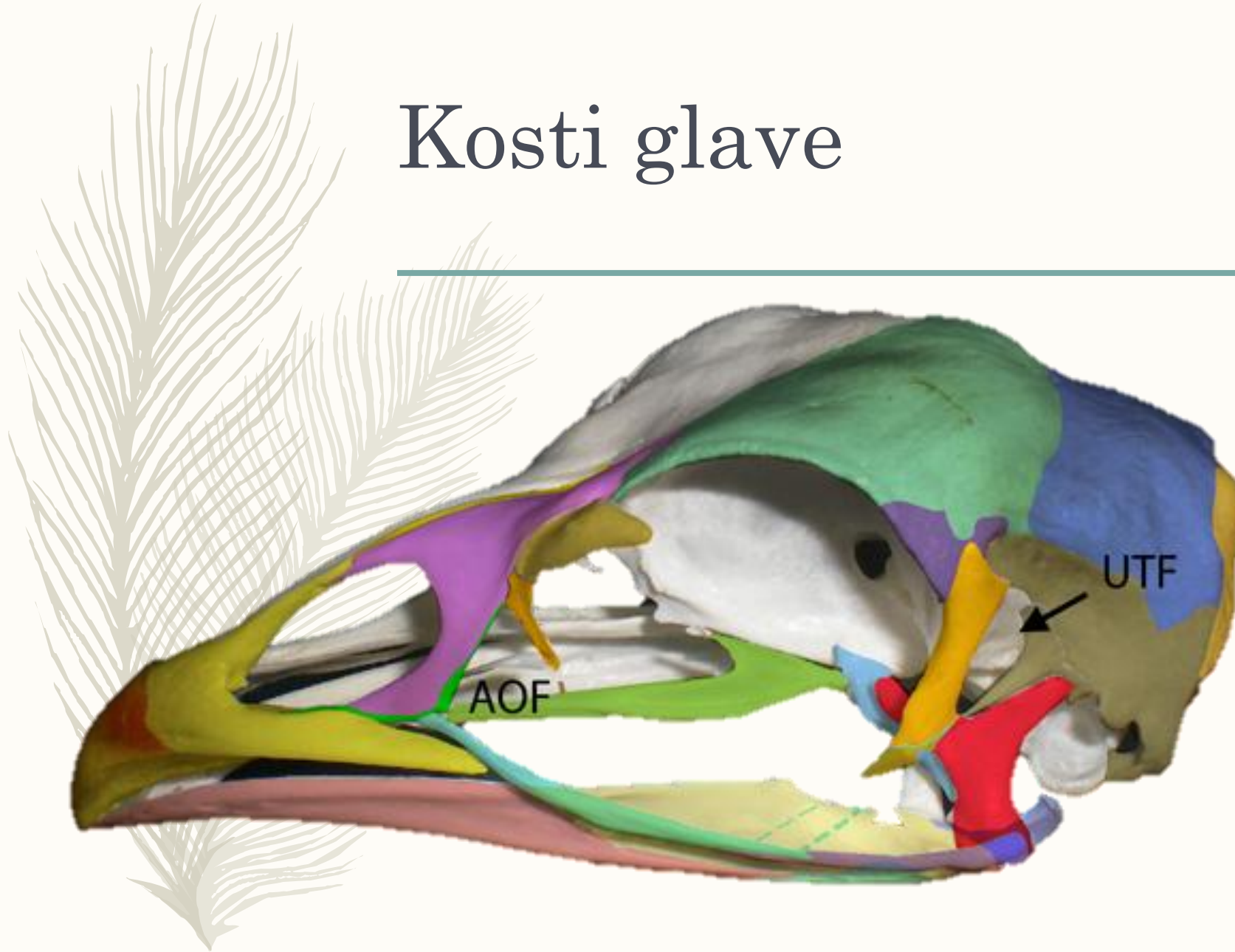
Fibula



Os metatarsale-Pisak

Tarzne kosti ne postoje.

Kosti glave



Kosti lobanje:

Os occipitale

Os sphenoidale

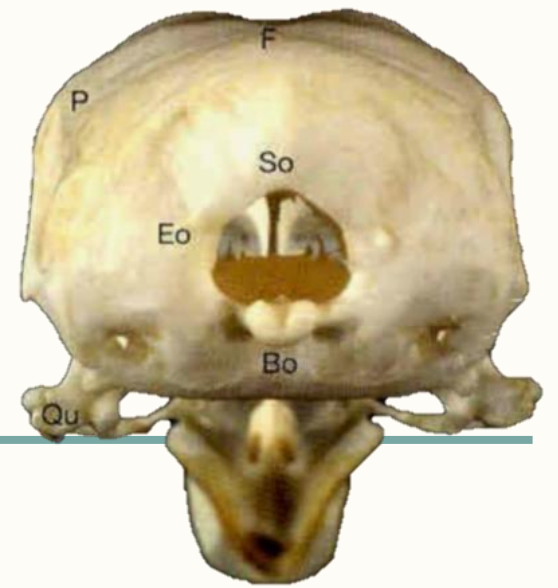
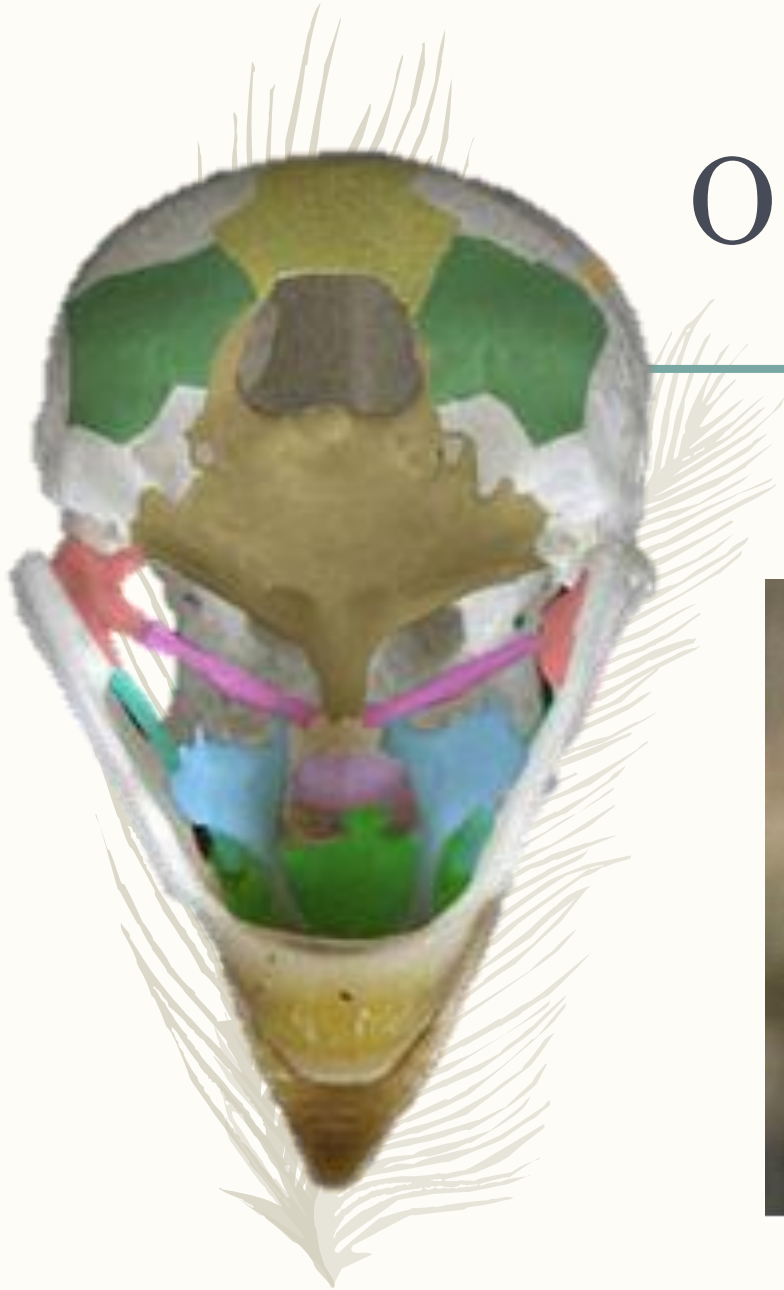
Os ethmoidale

Ossa frontalia

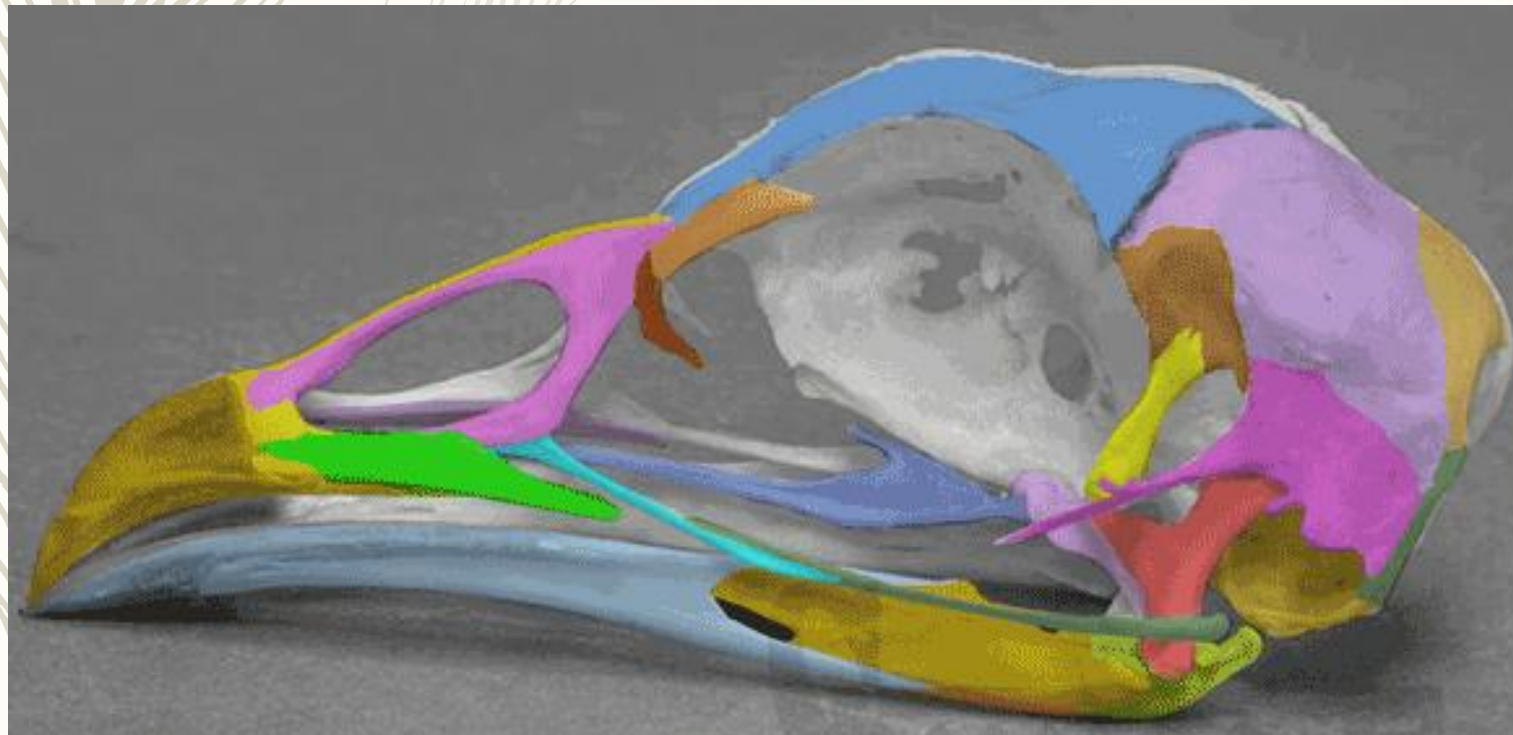
Ossa parietalia

Ossa temporalia

Os occipitale



Kosti glave



Kosti lica:

Ossa incisiva

Ossa mandibularia

Ossa nasalia

Ossa maxillaria

Ossa zygomatica

Ossa lacrimalia

Ossa palatina

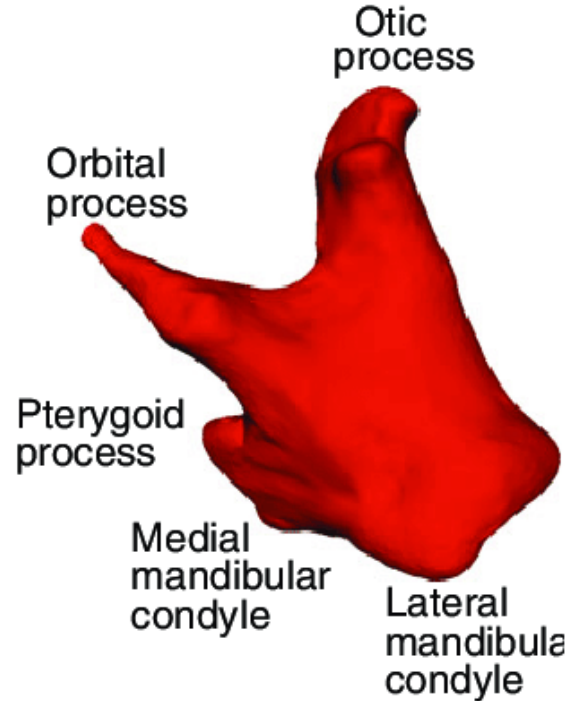
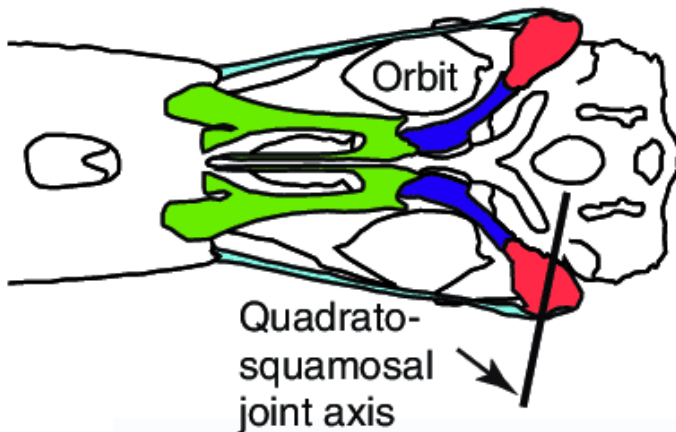
Ossa pterygoidea

Vomer

Os quadratum

Os hyoideum

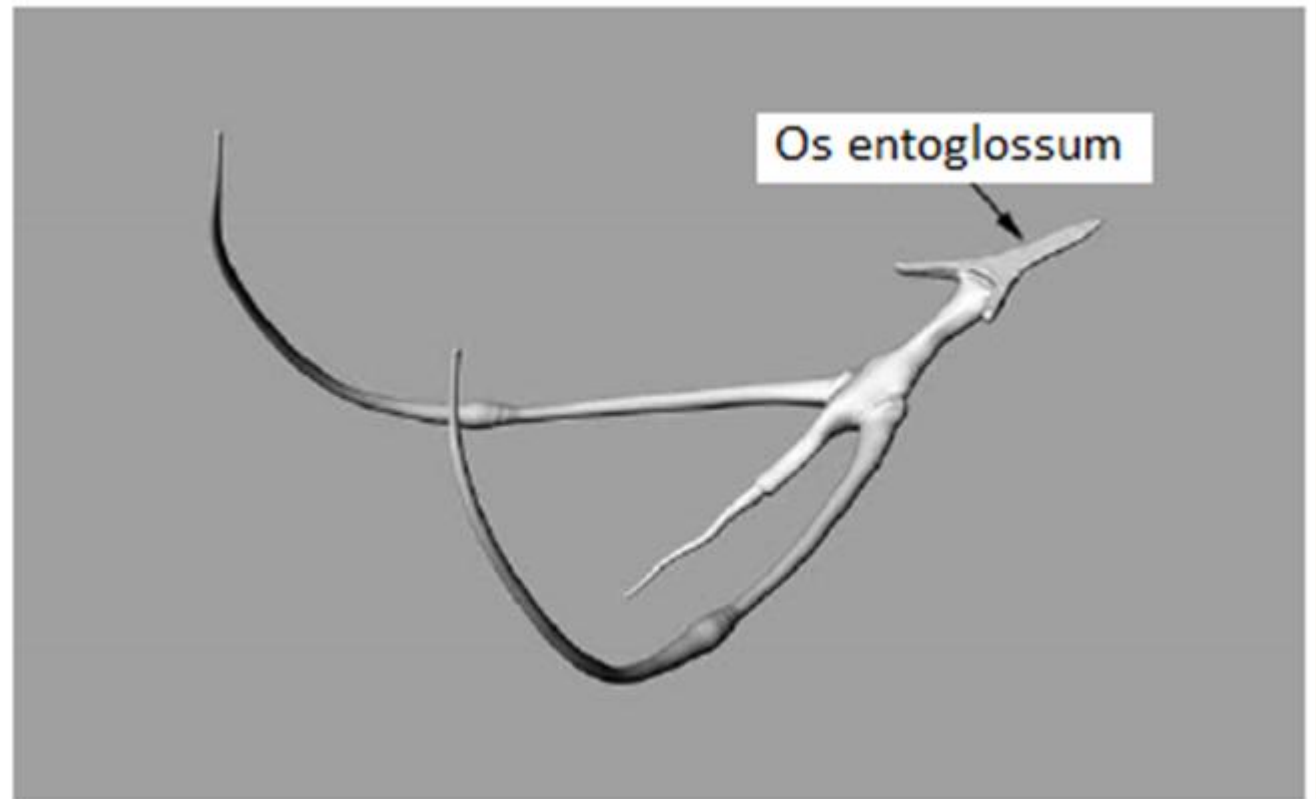
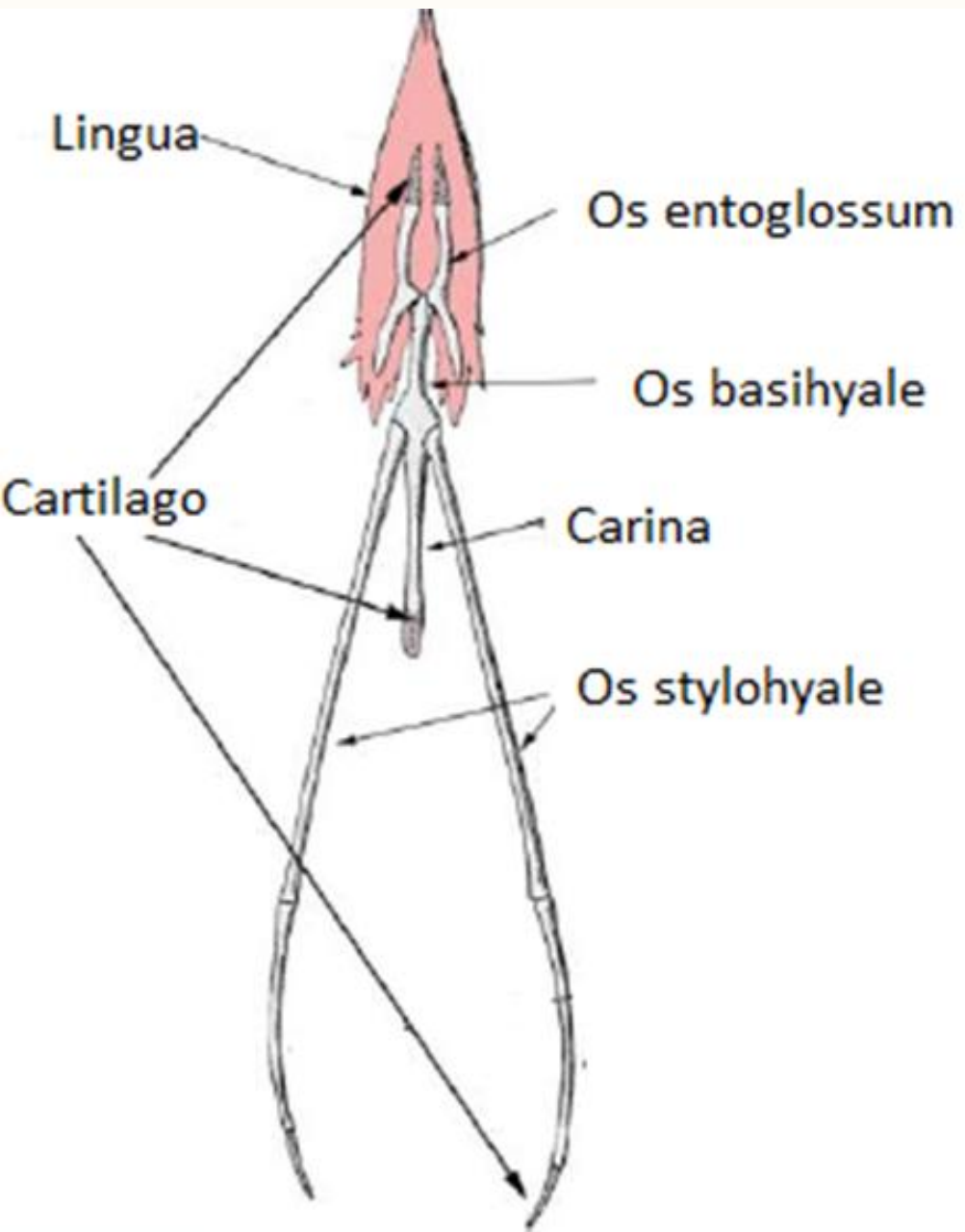
Os quadratum ili nakovanj



Os quadratum je povezana sa:

1. Mandubulom
2. Os zygomaticum
3. Ossa pterygoidea
4. Ossa temporalia

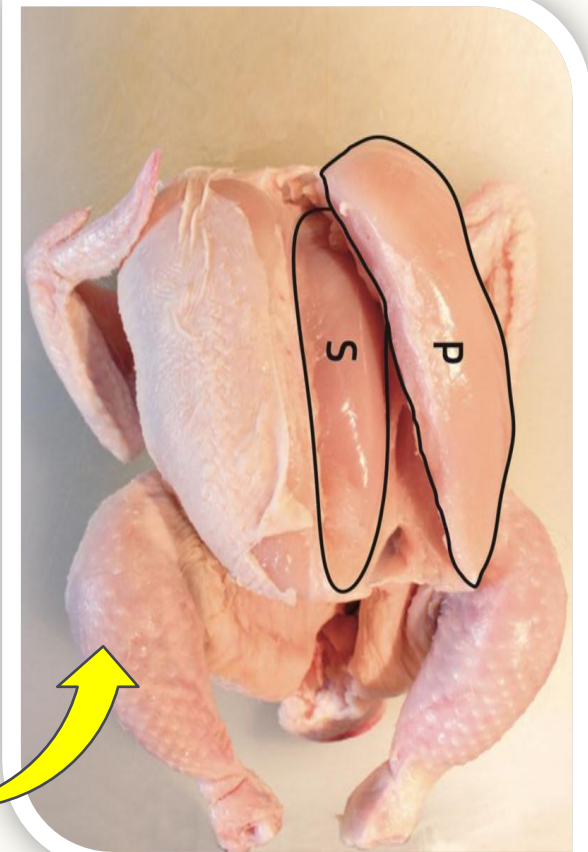
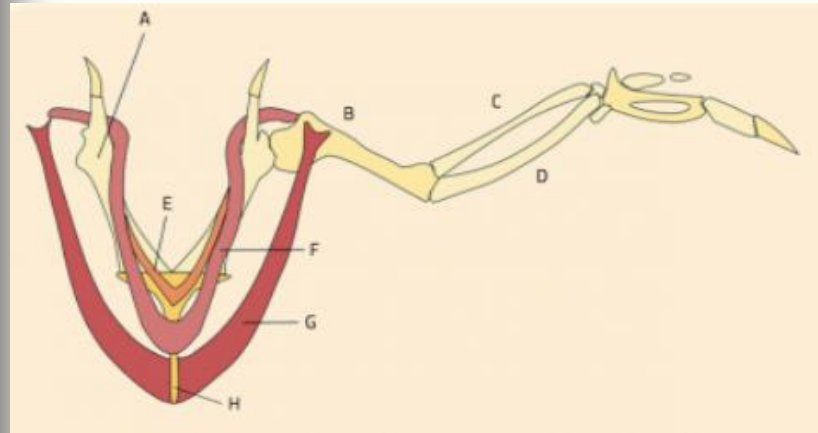
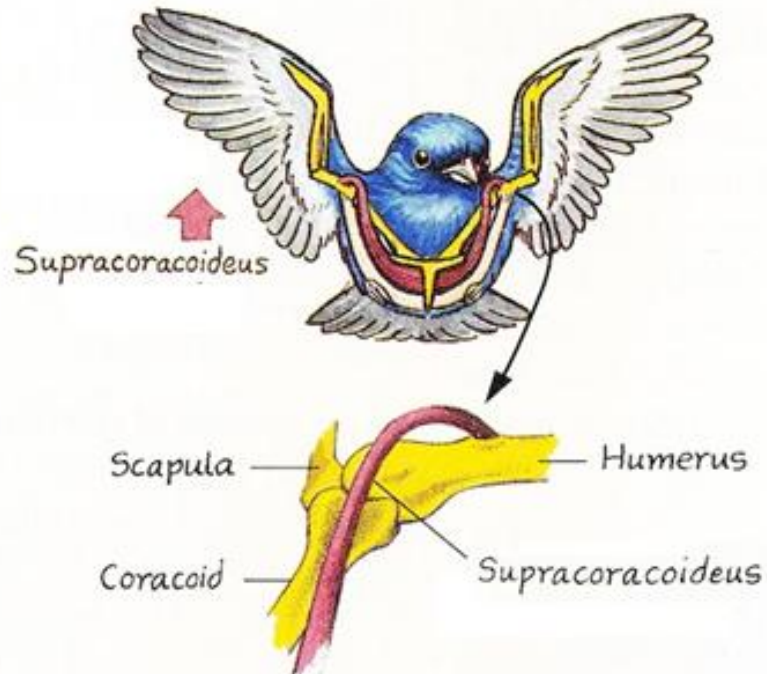
Os hyoideum



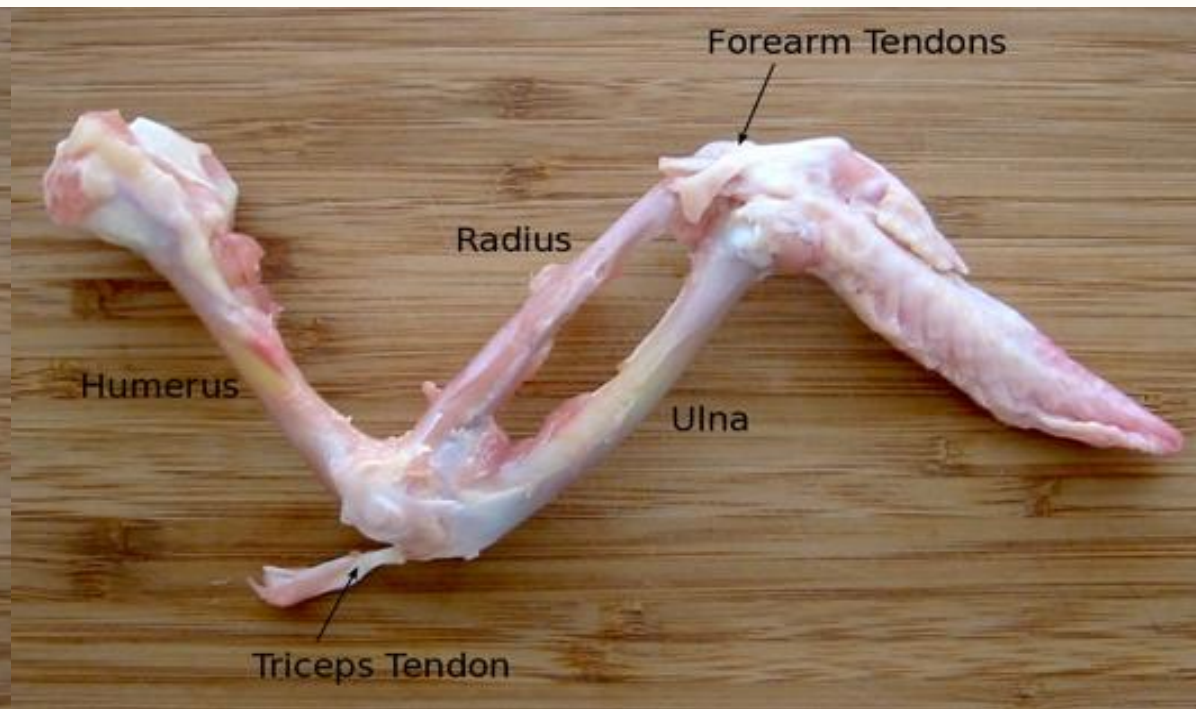
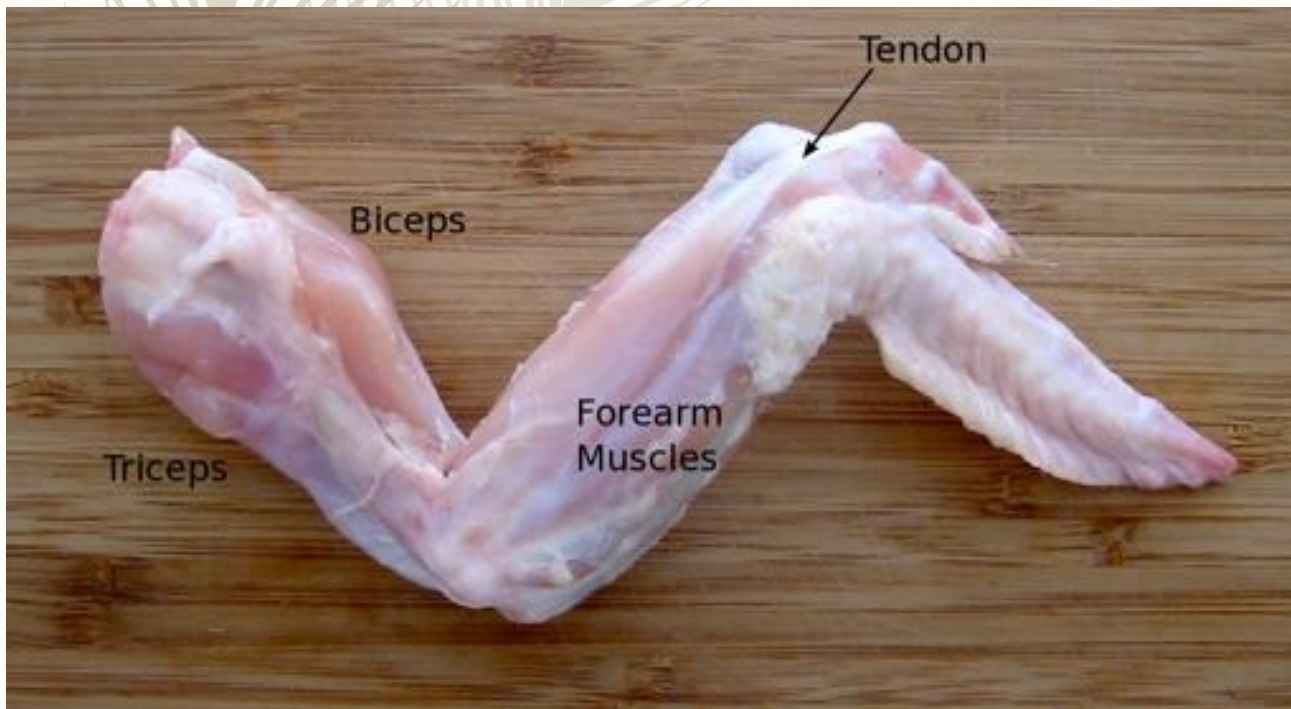
Mišićni sistem



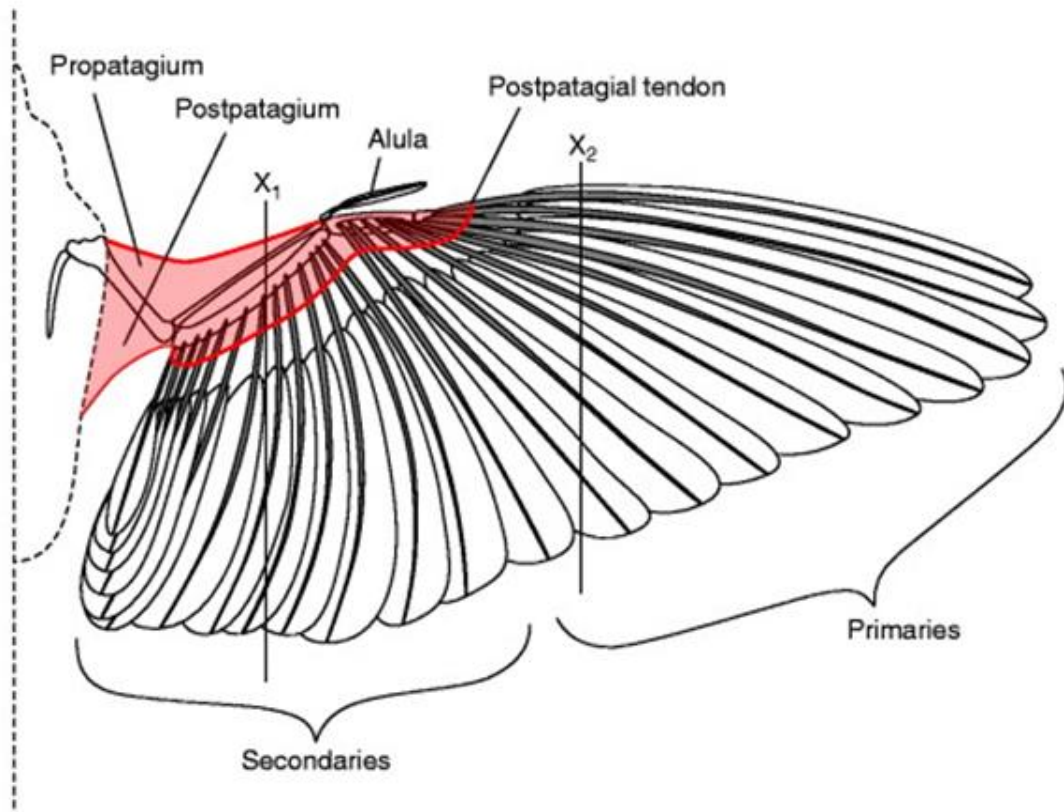
Mm. pectorales



Mišići krila



M. tensor patagii





Mišići zadnjih ekstremiteta

M. quadriceps

M. tensor fasciae latae

M. gluteus superficialis + M. biceps femoris = M.
gluteobiceps

M. gracilis

M. gastrocnemius (ekstenzor tarzalnog zgloba)

M. tibialis anterior (fleksor tarzalnog zgloba)

M. psoas minor

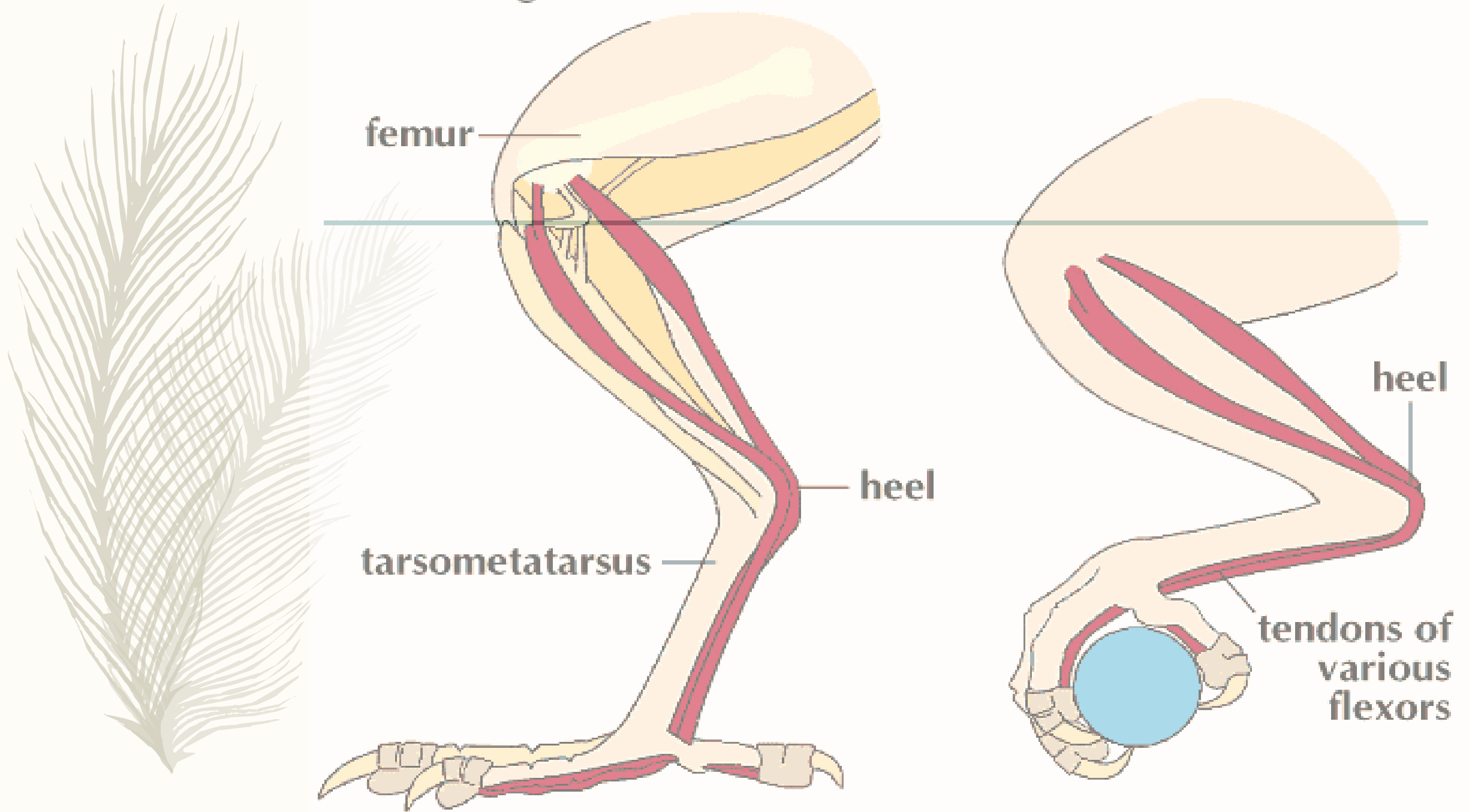
M. psoas major

M. quadratus lumborum

M. obturator externus

} Nisu razvijeni

Perching Mechanism of a Bird

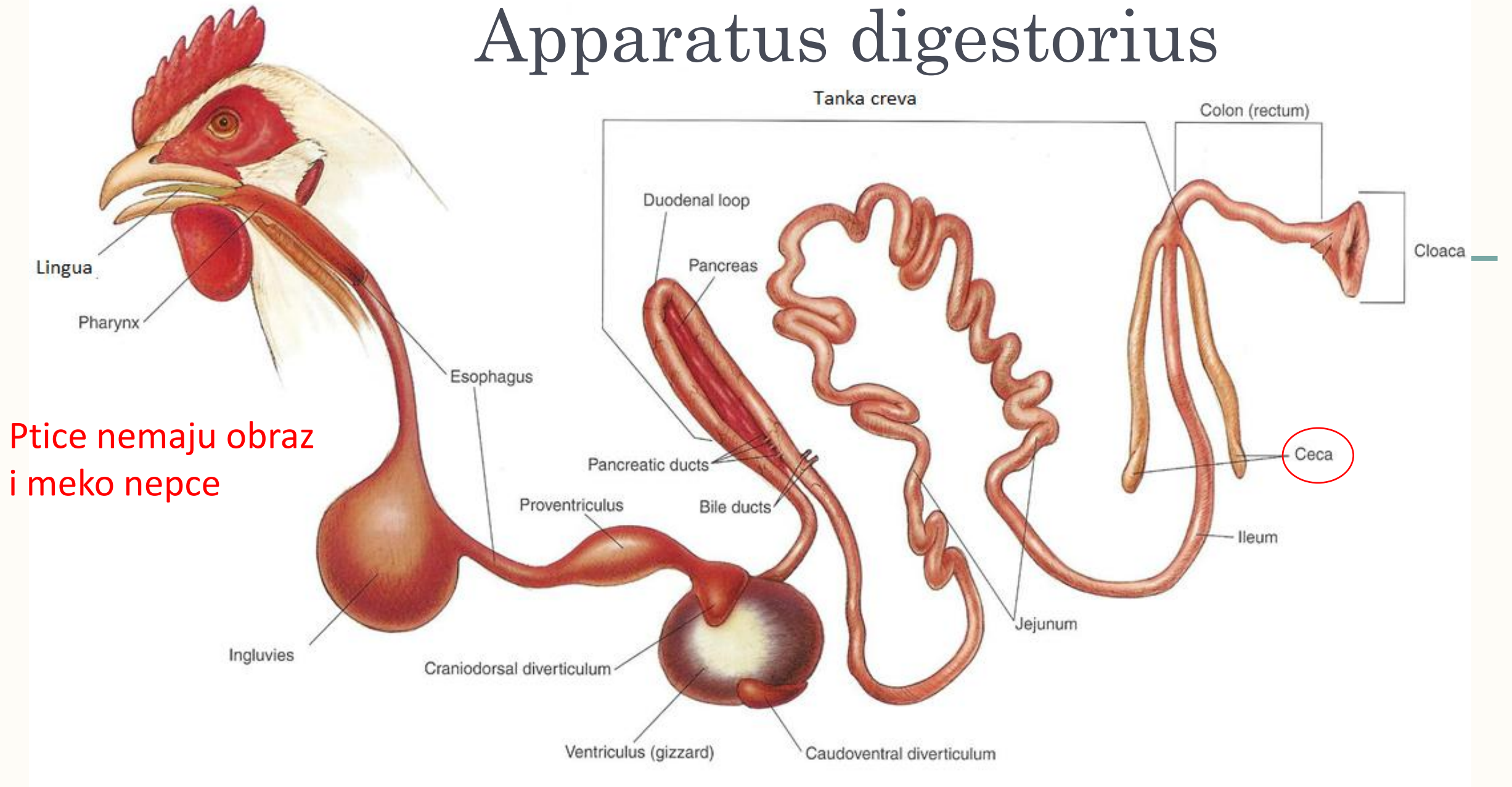




Unutrašnji organi živine

As. dr Dejana Ćupić Miladinović

Apparatus digestorius



Ptice nemaju obraz
i meko nepce

Golubovi, morke i papagaji nemaju žučnu kesu (vesica felea)

Jednjak

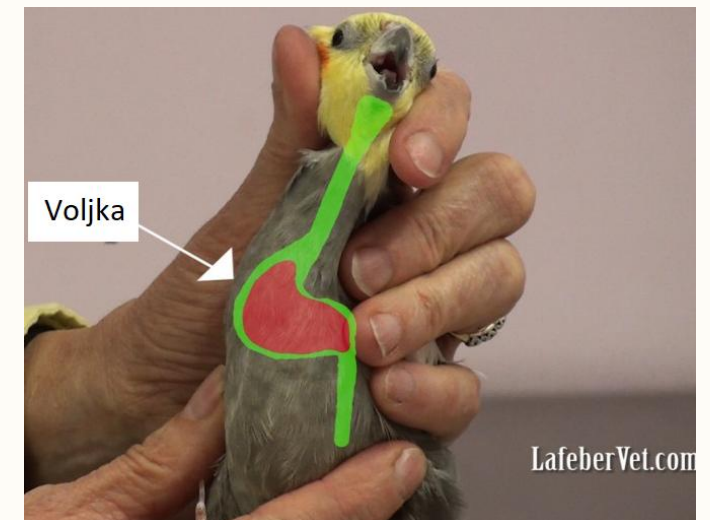
Voljka (Ingluvies)

Kesasto proširenje kod kokoške i ćurke, dok je kod patke i guske je u vidu levka.

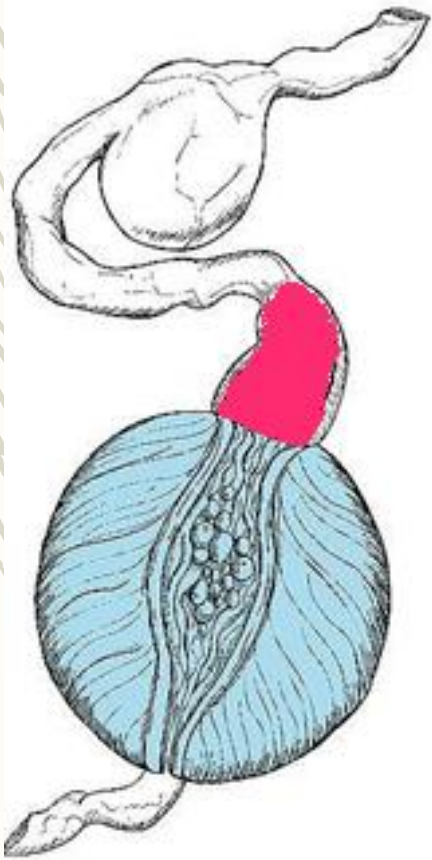


Ptičije mleko

Ingluvijalno mleko

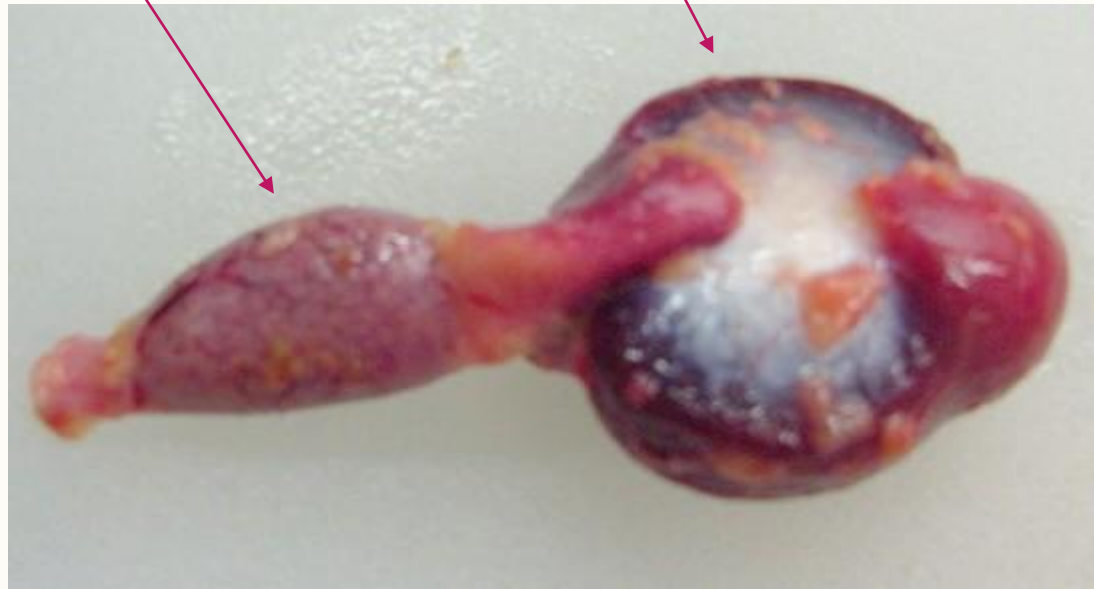


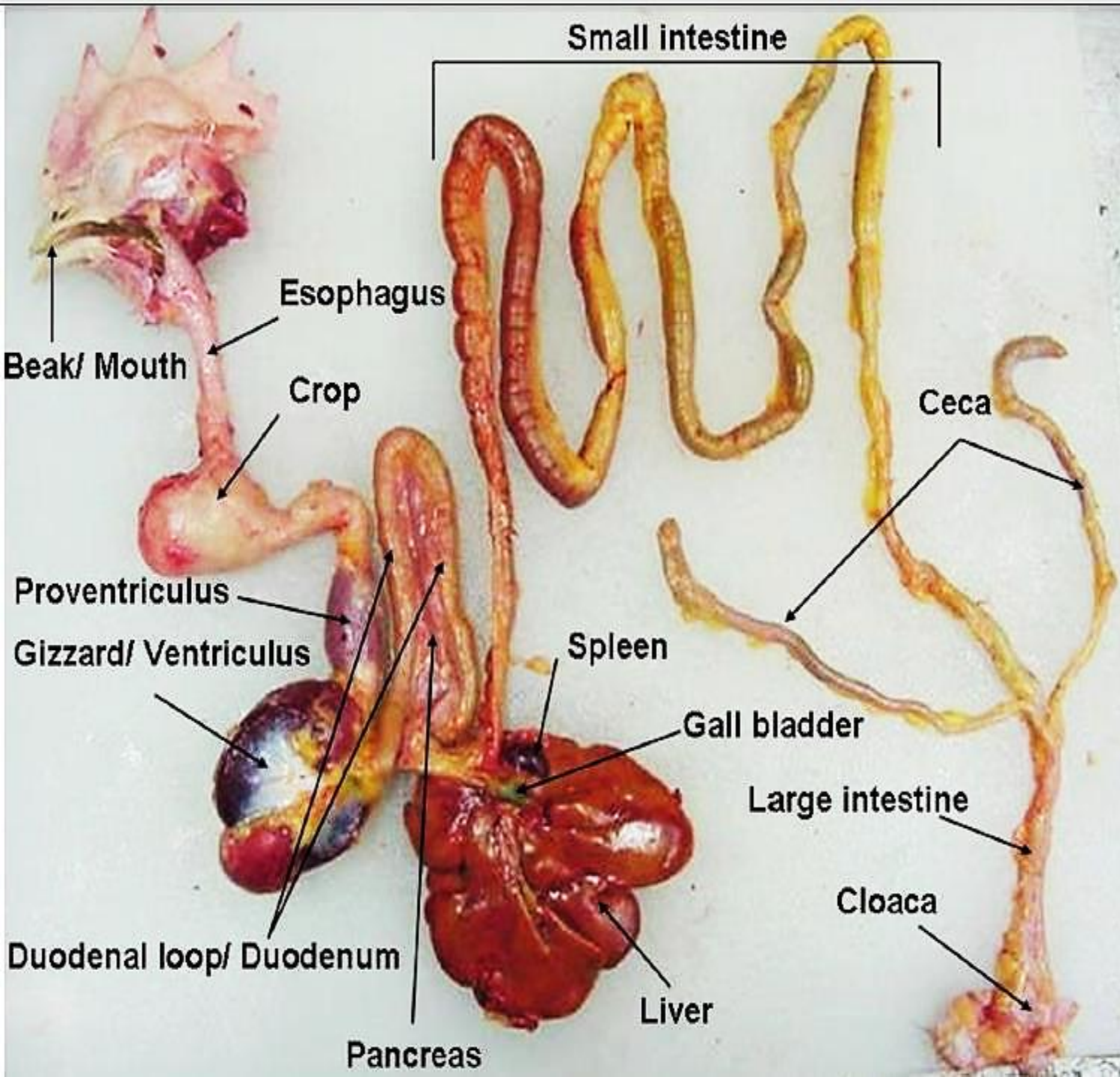
Ventriculus



PARS GLANDULARIS

PARS MUSCULARIS (bubac)





Creva

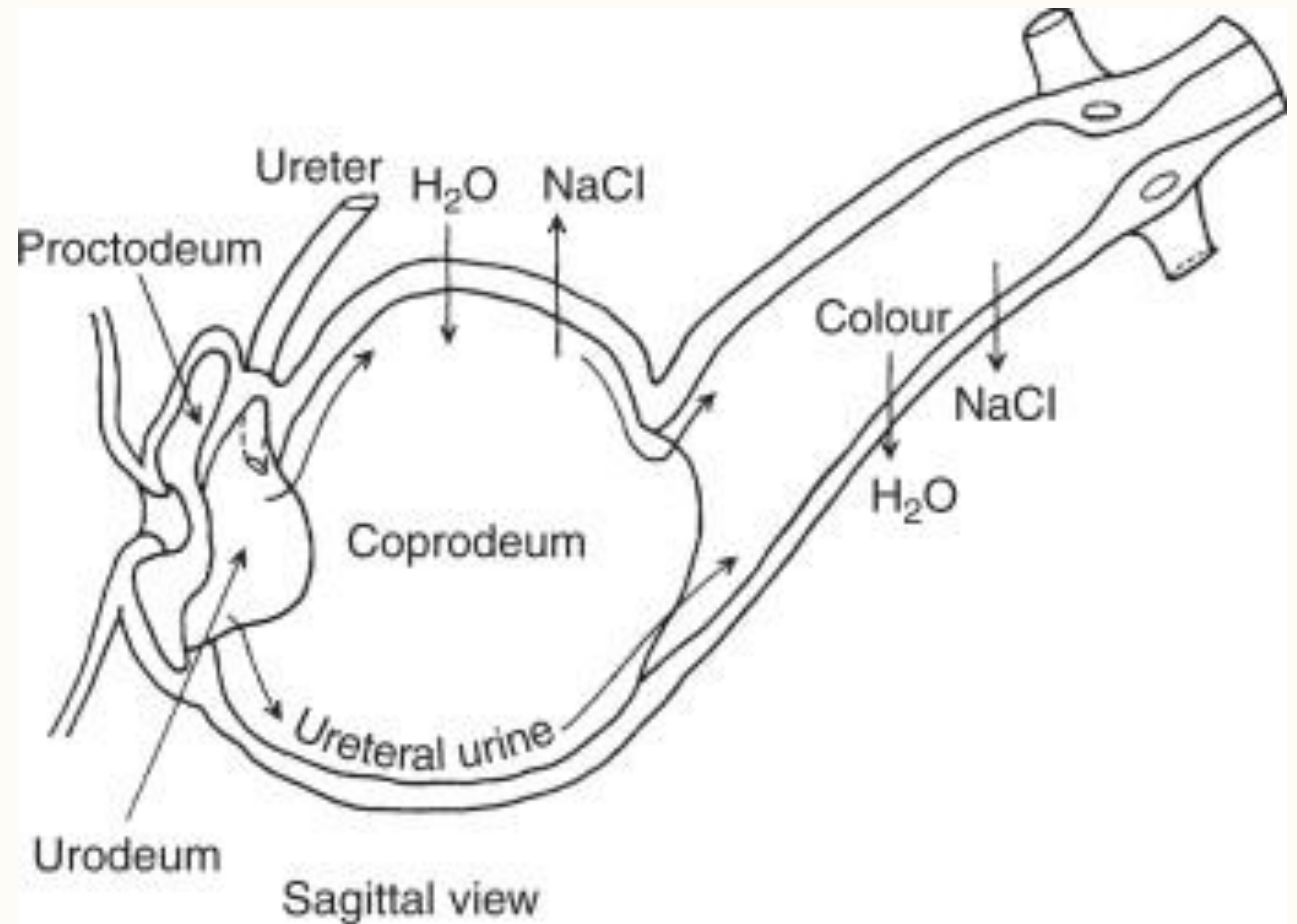
Mekelov diverticulum
Ostatak žumančetine kese



Cloaca (jazva)

1. Coprodeum
2. Urodeum
3. Proctodeum

Ptice nemaju mokraćnu bešiku!



Jetra



Visceralna površina

Parijetalna površina

Levi
lateralni
režanj

Desni
nepodeljen
režanj

Levi
medijalni
režanj

Levi
intermedijalni
režnjić

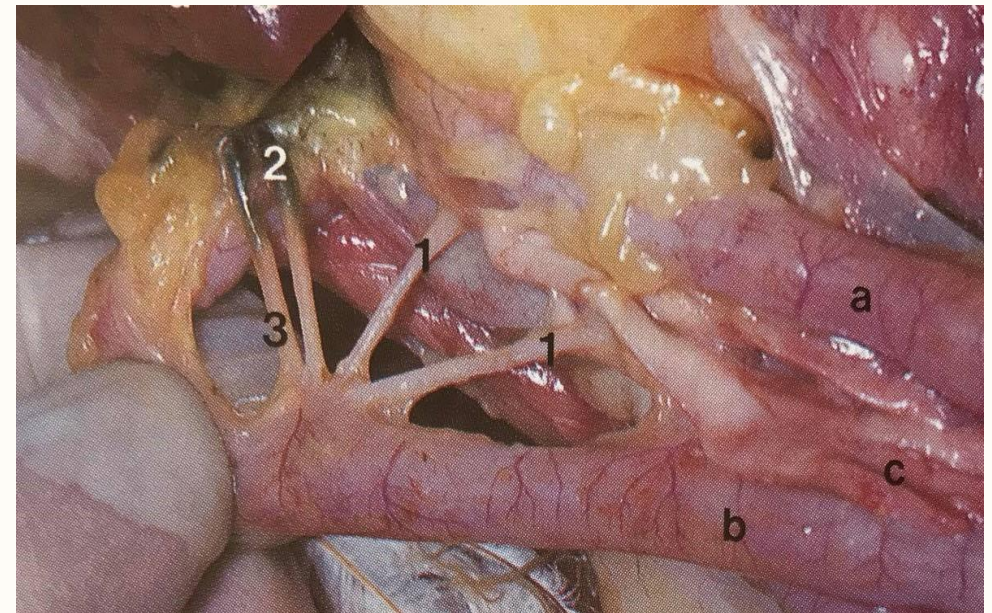
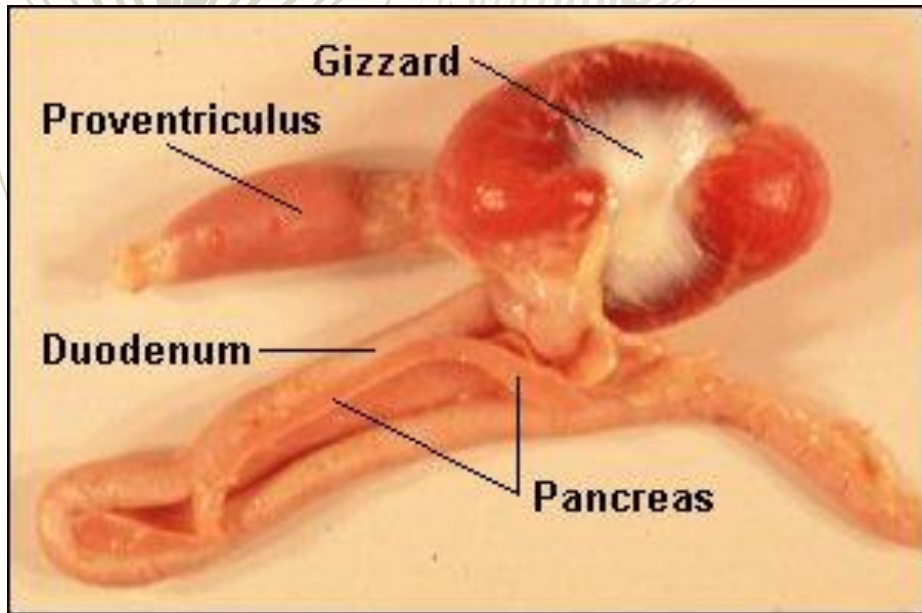
Vesica
fellea

Desni
režanj

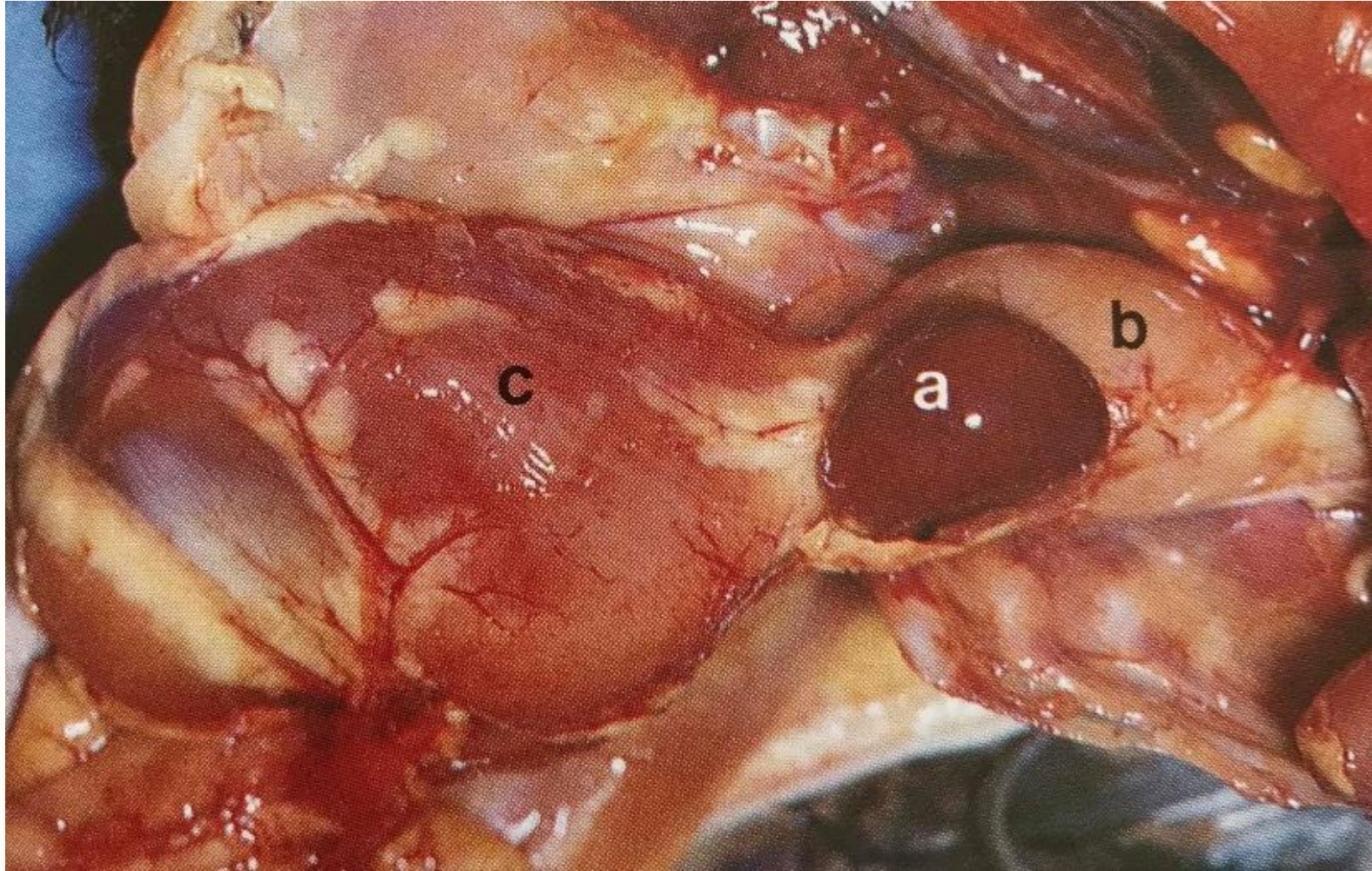
Levi
lat.
medijalni

a

Pankreas



- a duodenum descendens**
- b duodenum ascendens**
- c pancreas**
- 1 ductus pancreaticus**
- 2, 3 bile duct**



Slezina

a lien

b ventriculusglandularis

c ventriculusmuscularis

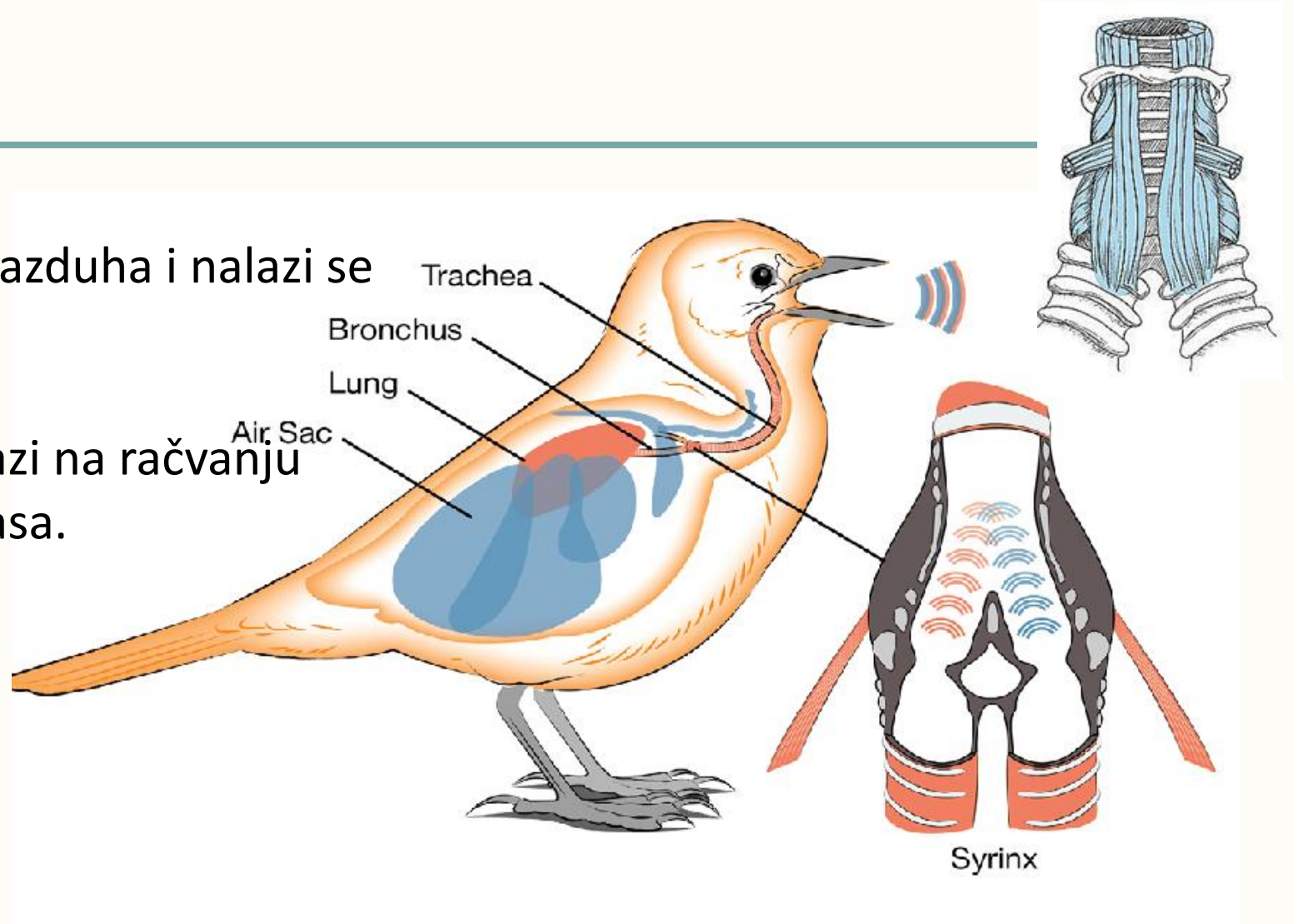
Respiratorni organi

Kod ptica postoje 2 grkljana.

Larynx cranialis služi za prolaz vazduha i nalazi se na početku dušnika.

Larynx caudalis ili **Syrinx** se nalazi na račvanju dušnika i služi za proizvodnju glasa.

Ptice nemaju dijafragmu



Pulmo

Nemaju alveole

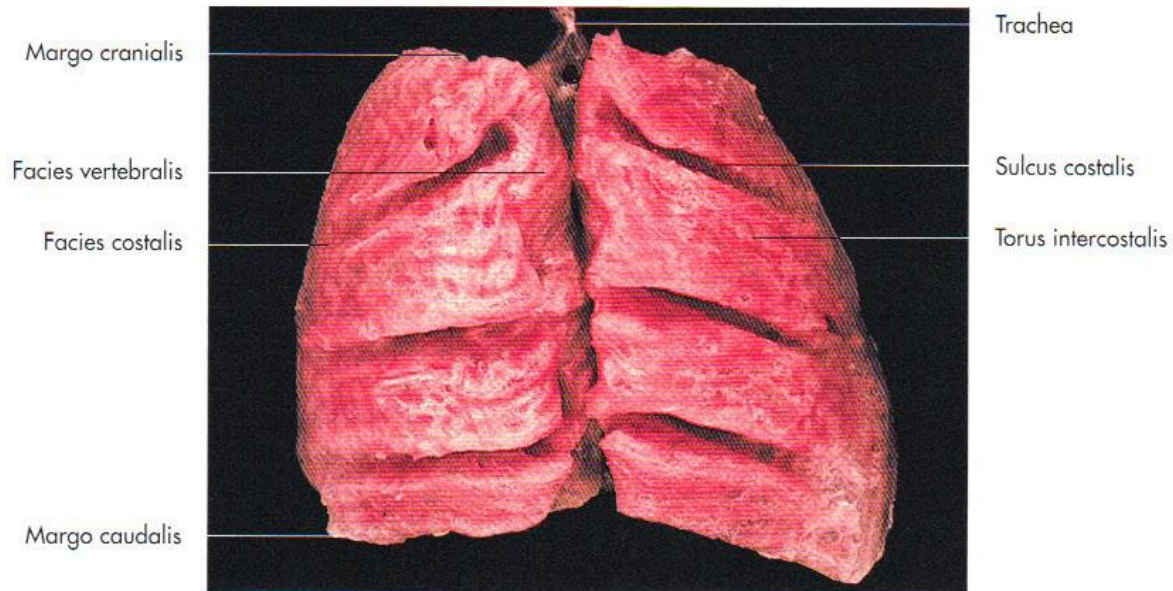
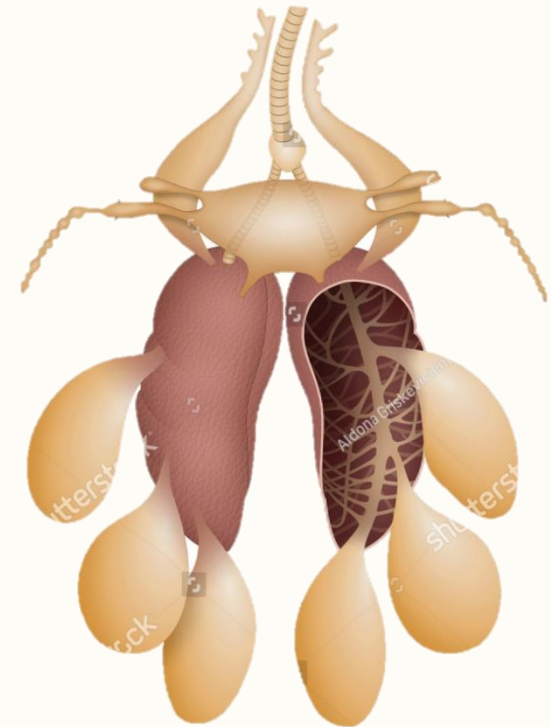
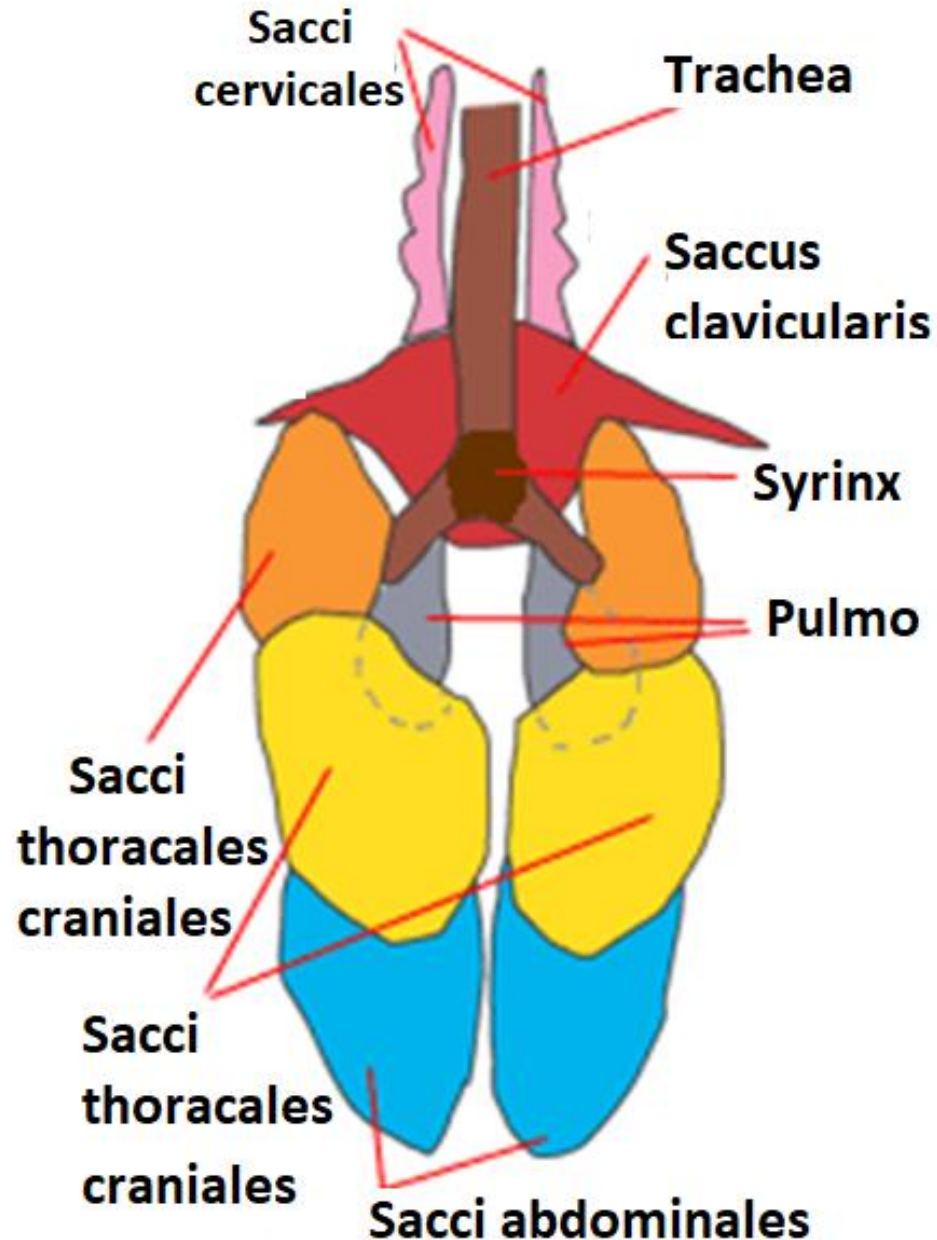


Abb. 7-13. Rechte und linke Lunge eines Haushuhnes (isoliert, Dorsalansicht), Präparat PD Dr. J. Maierl, München.



Vazdušne kese



-vratne (Sacci cervicales)

-klavikularna
(Saccus clavicularis)

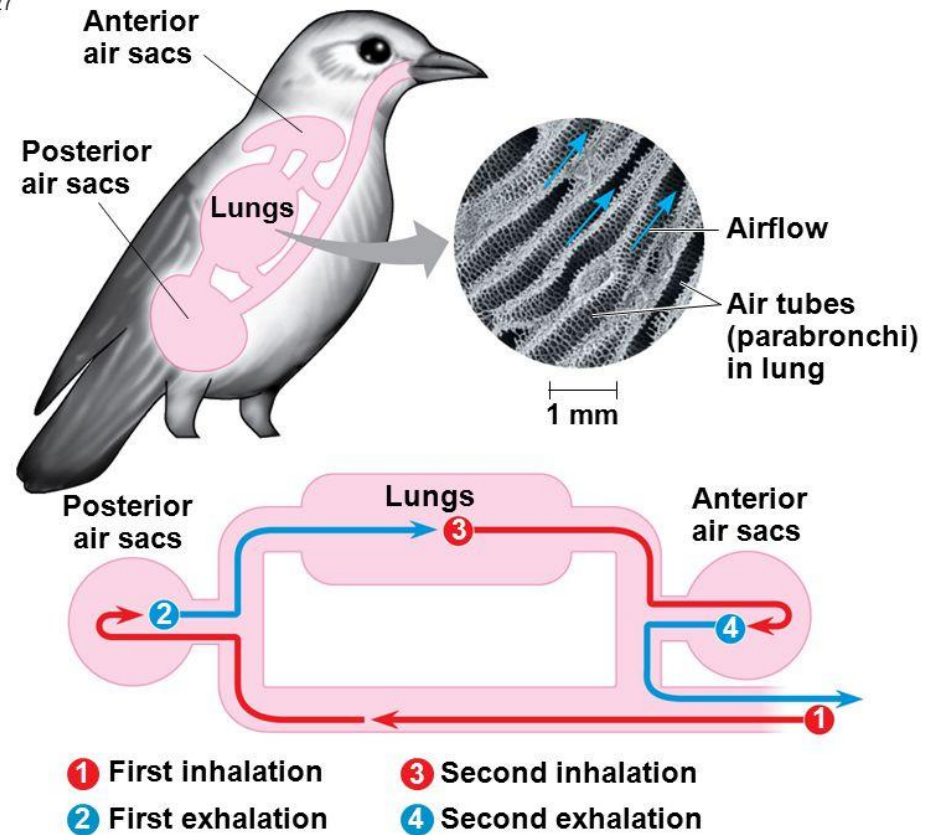
-kranijalne grudne
(Sacci thoracales craniales)

-kaudalne grudne
(Sacci thoracales caudales)

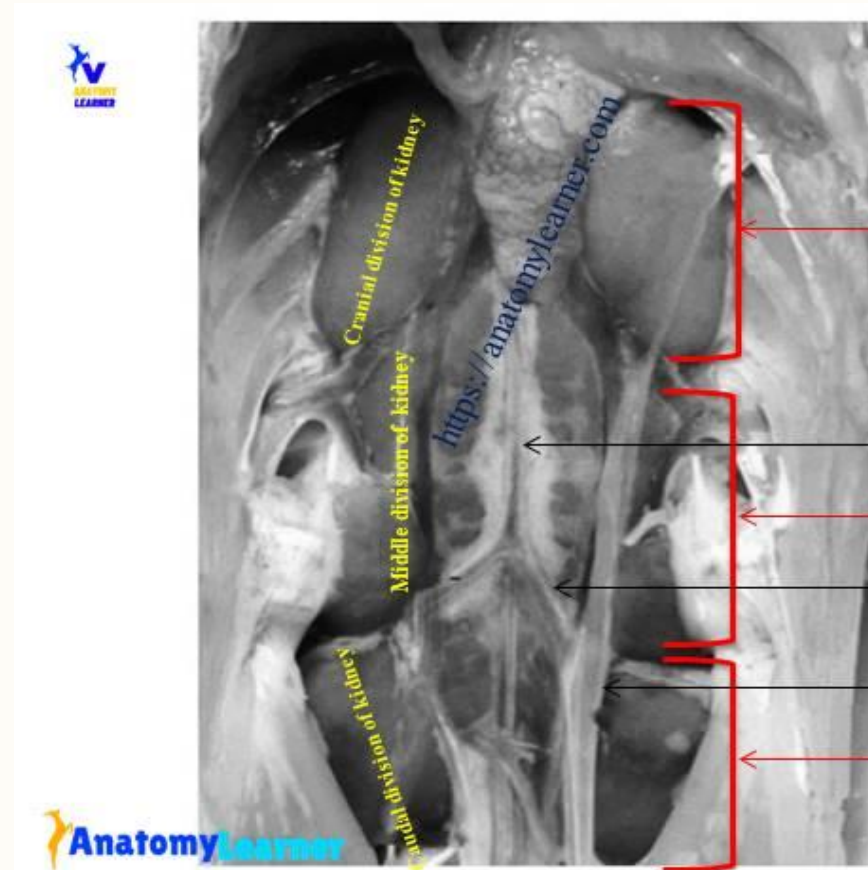
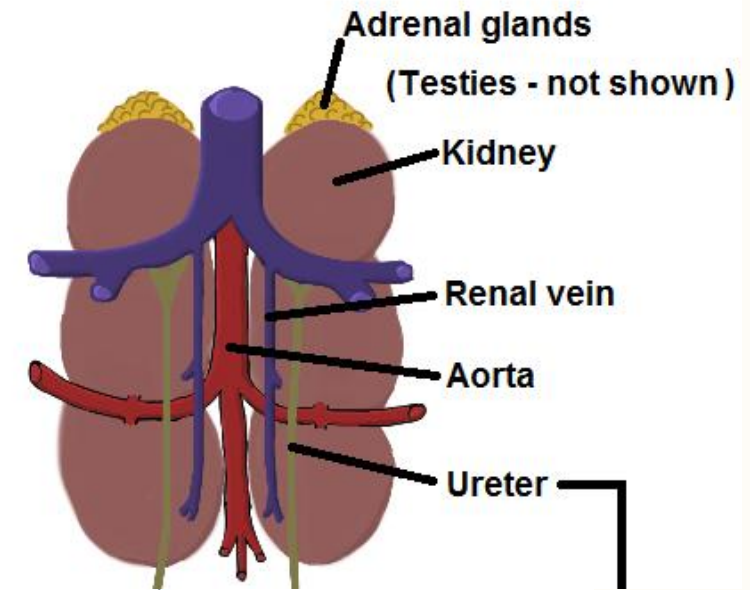
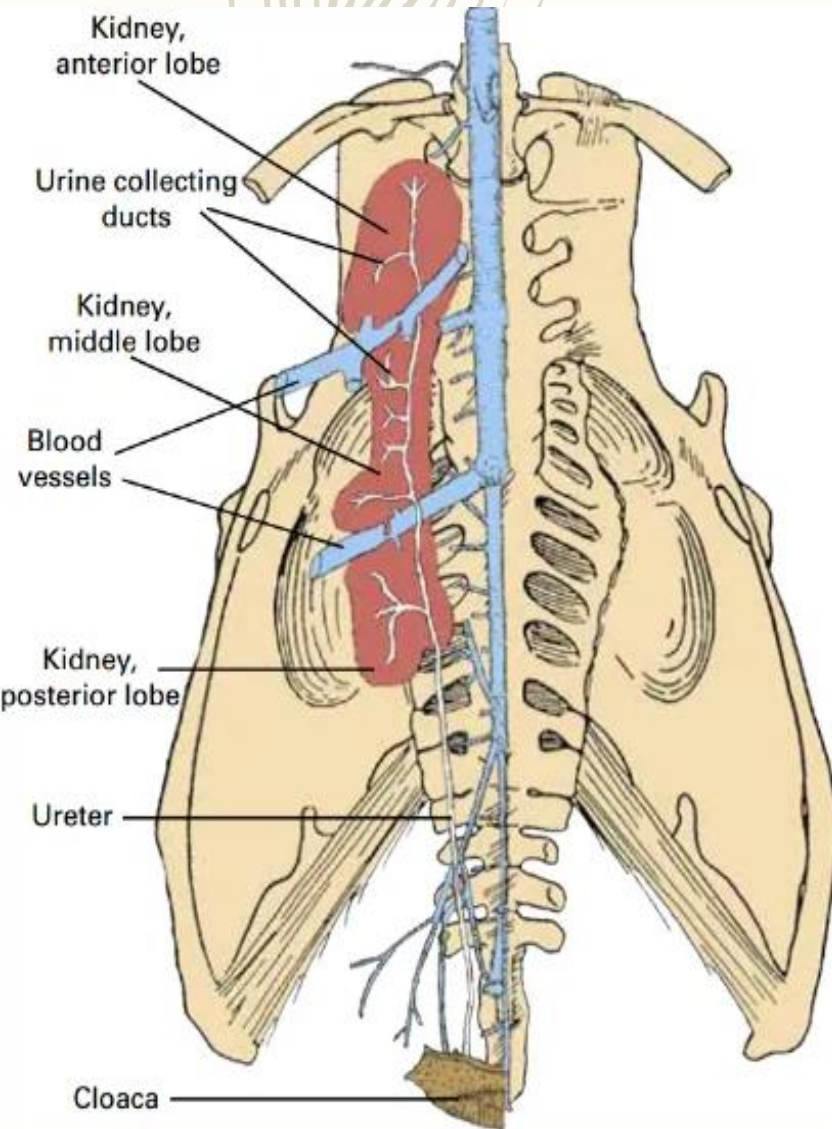
-trbušne (Sacci abdominales)

Kako ptice dišu?

Figure 42.27



Mokrační přístroj



Cranial division of chicken kidney

Aorta of chicken

Middle division of chicken kidney

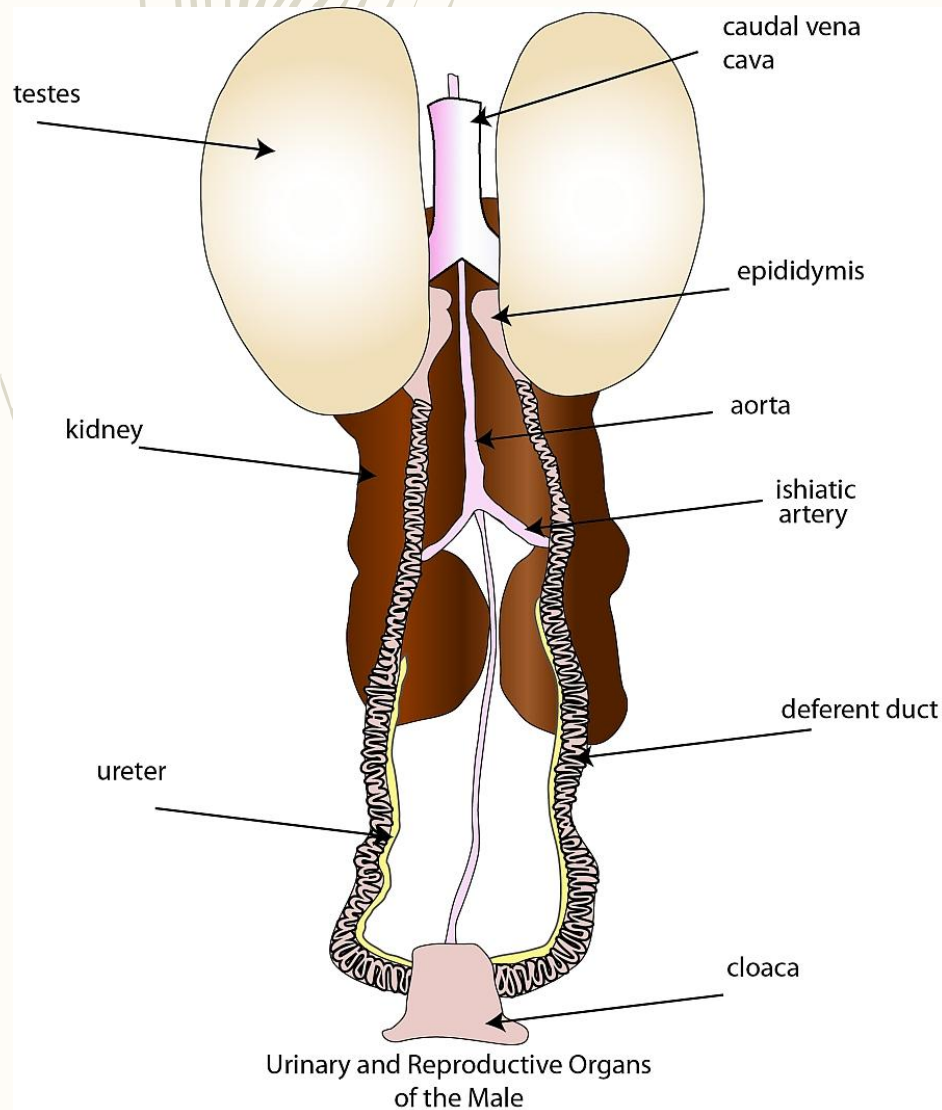
Ischiatic artery

Ureter of chicken

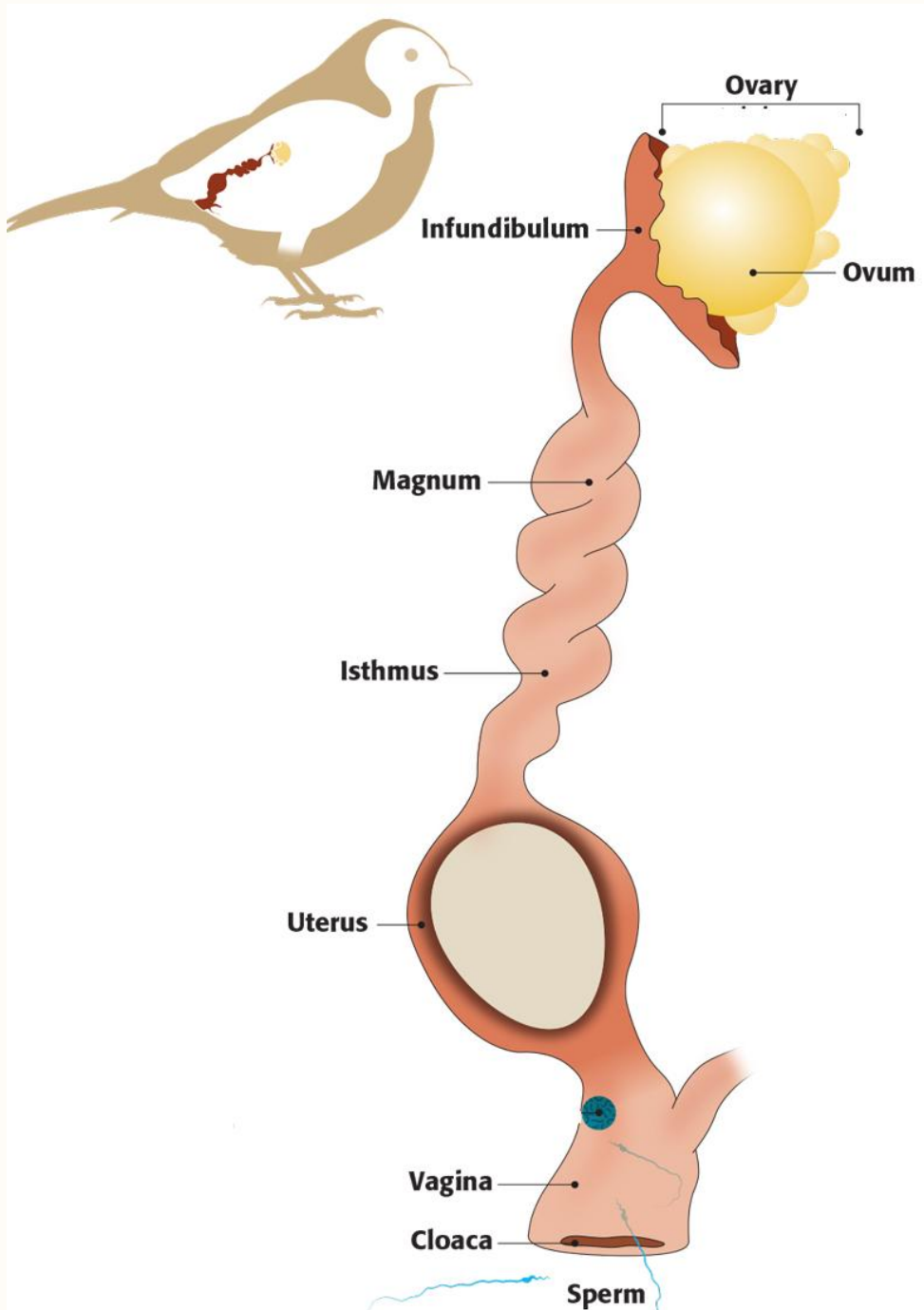
Caudal division of chicken kidney

<https://anatomylearner.com>

Muški polni organi kod ptica



- Semenici leže u trbušnoj duplji, u blizini bubrega.
- Kod labudova, pataka i gusaka postoji pseudokopulacioni organ.
- U živine aksesorne polne žlezde nisu razvijene.



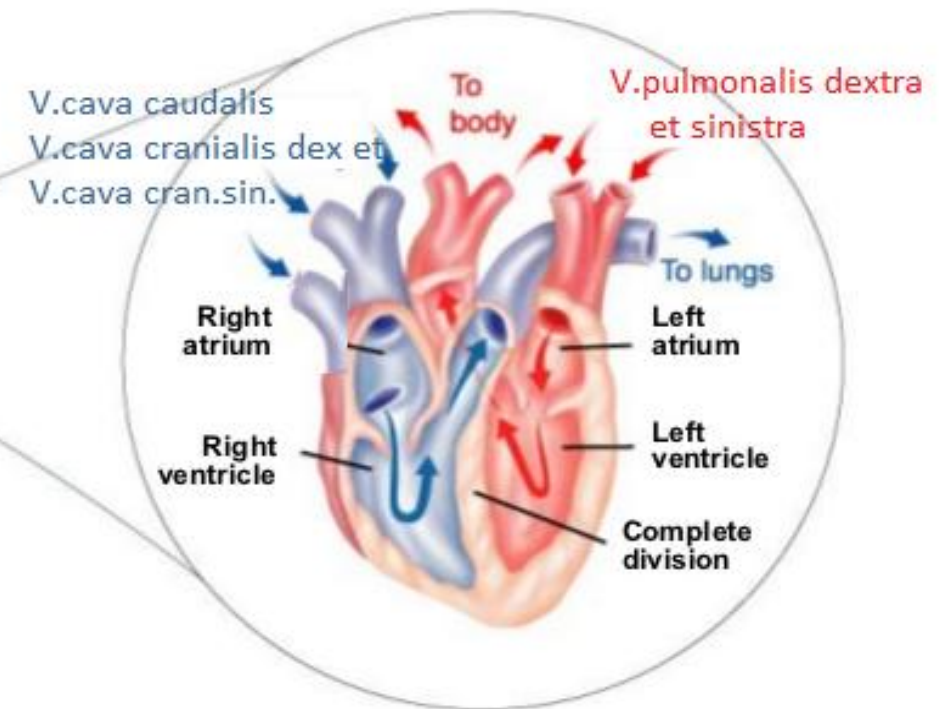
Ženski polni organi kod ptica

- Kod živine su razvijeni samo levi jajnik I levi jajovod.
- Na jajovodu se razlikuje 5 segmenata:
 - Infundibulum
 - Magnum
 - Isthmus
 - Uterus
 - Vagina

Srce

Razlike u odnosu na srce kod sisara:

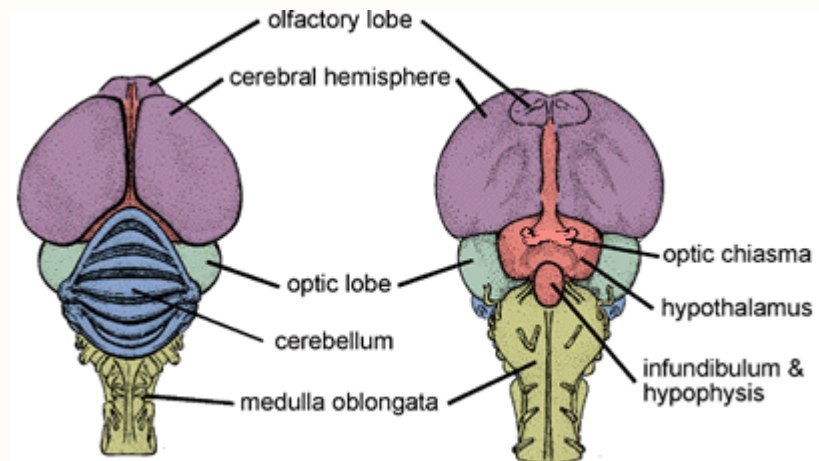
- Otvor između desne pretkomore i komore zatvara poseban mišićni zalistak (Lamina muscularis), zato kod živine ne postoje 3 papilarna mišića u desnoj komori.
- Otvor između leve pretkomore i komore zatvaraju trikuspidalni, a ne bikuspidalni zalisci.



Pileći mozak

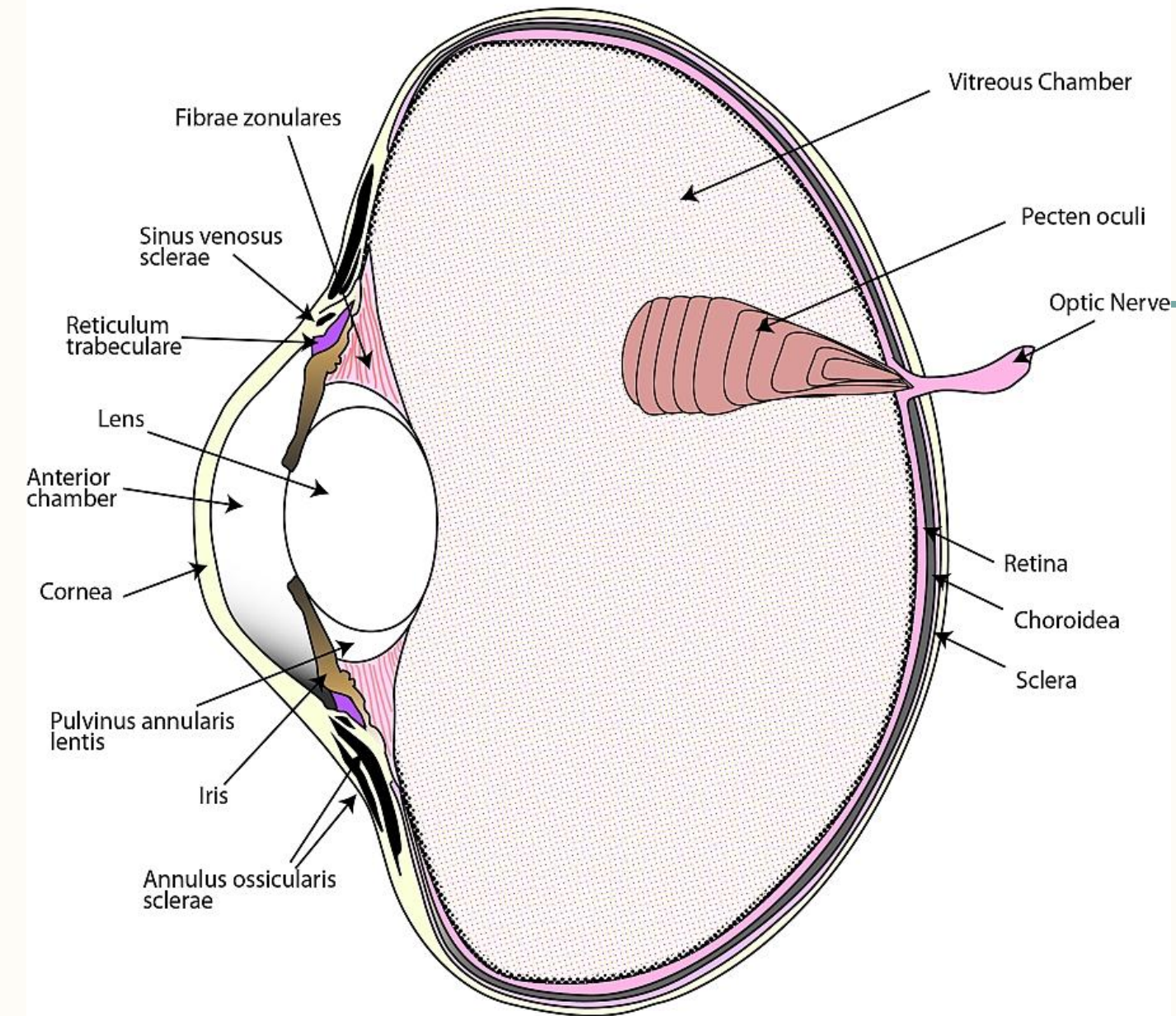


- Na kori hemisfere velikog mozga nema brazdi i vijuga.
- Kod ptica nedostaju : Corpus callosum
Corpus mamillare
Cornu Ammonis
Septum pellucidum.
- Jako je dobro razvijen mali mozak i vidni brežuljci (thalami optici).



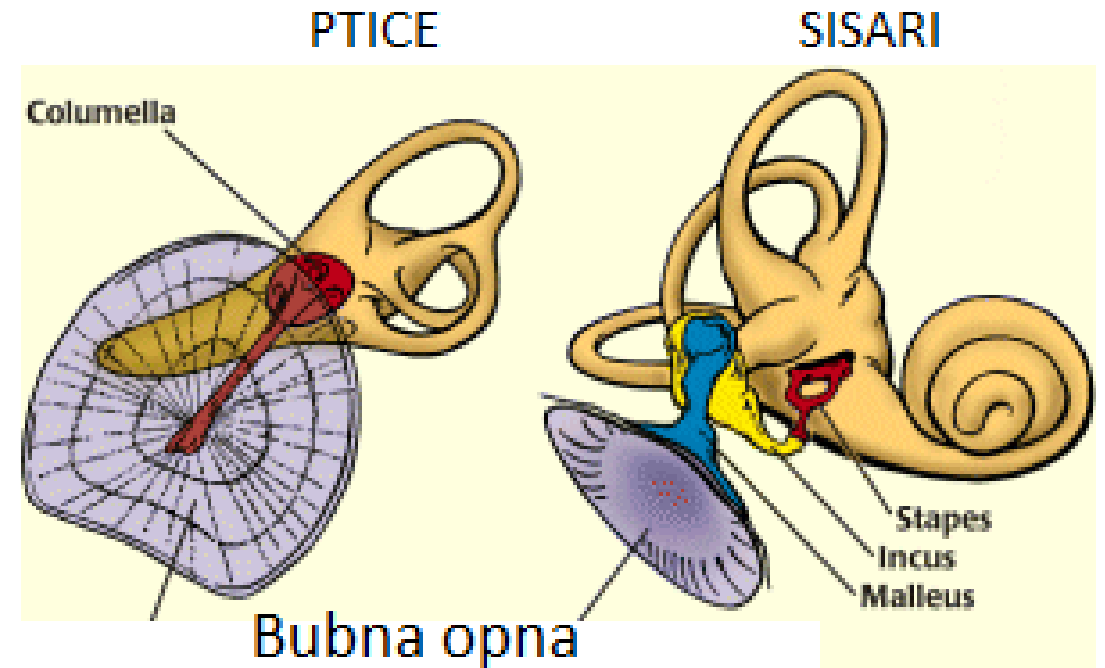
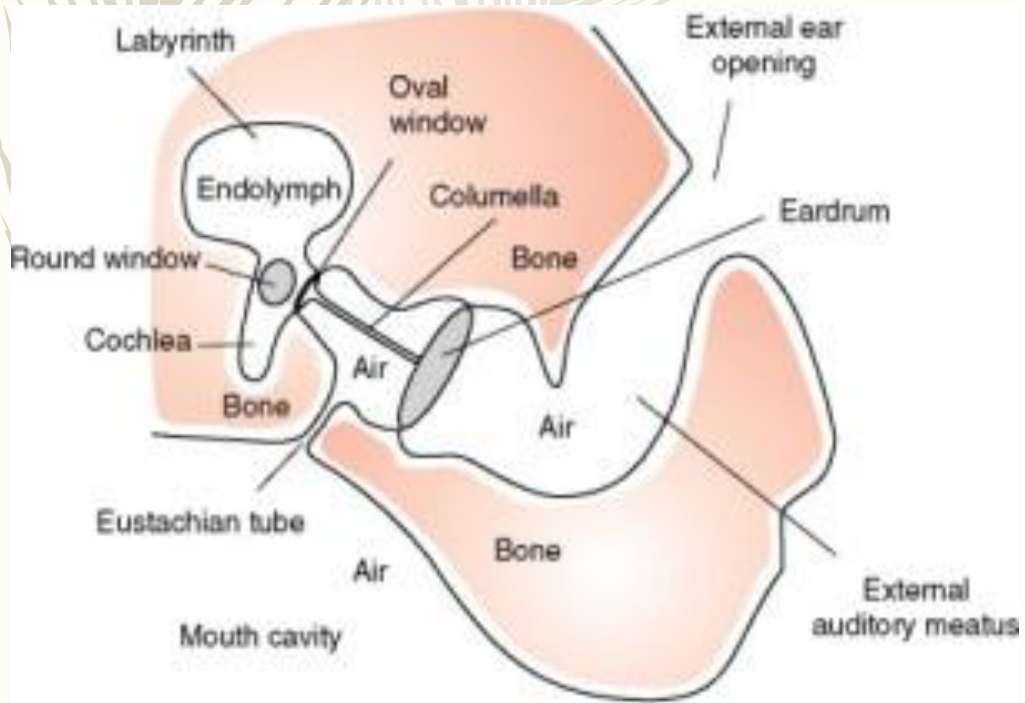
Čulo vida (Organum visus)

Palpebra tertia

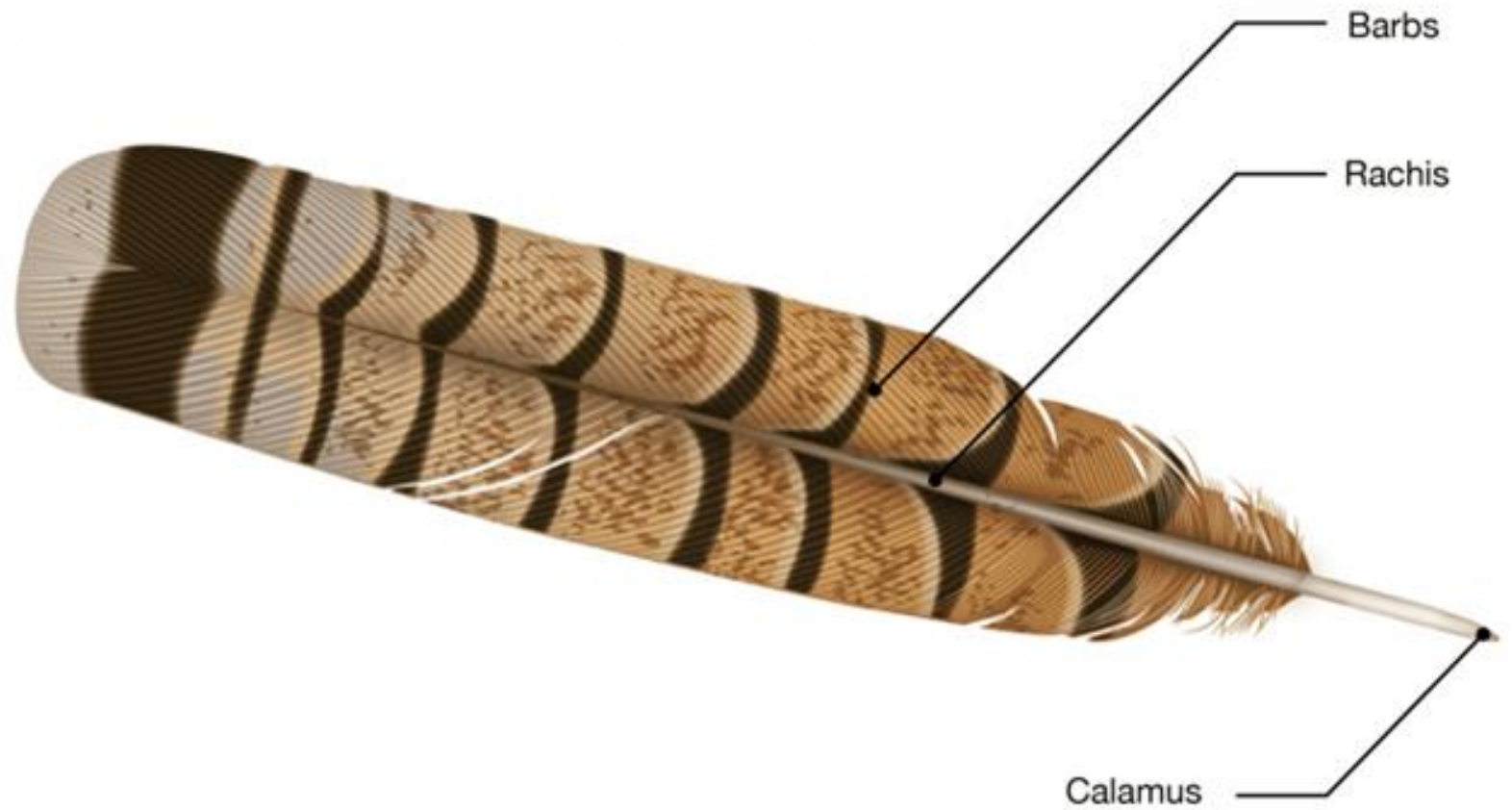




Čulo sluha (Organum statoacusticus)



Pera-Pennae



Pera-Pennae



Remiges



Plumae



Rectrices



Tectrices



Semiplumae



Filoplumae

Proizvodi kože i lojna žlezda



1. Crista capitis
2. Palear subrostralis
3. Palear auricularis



Gl.uropygii



Adobe Stock | #278443255

HVALA NA PAŽNJI