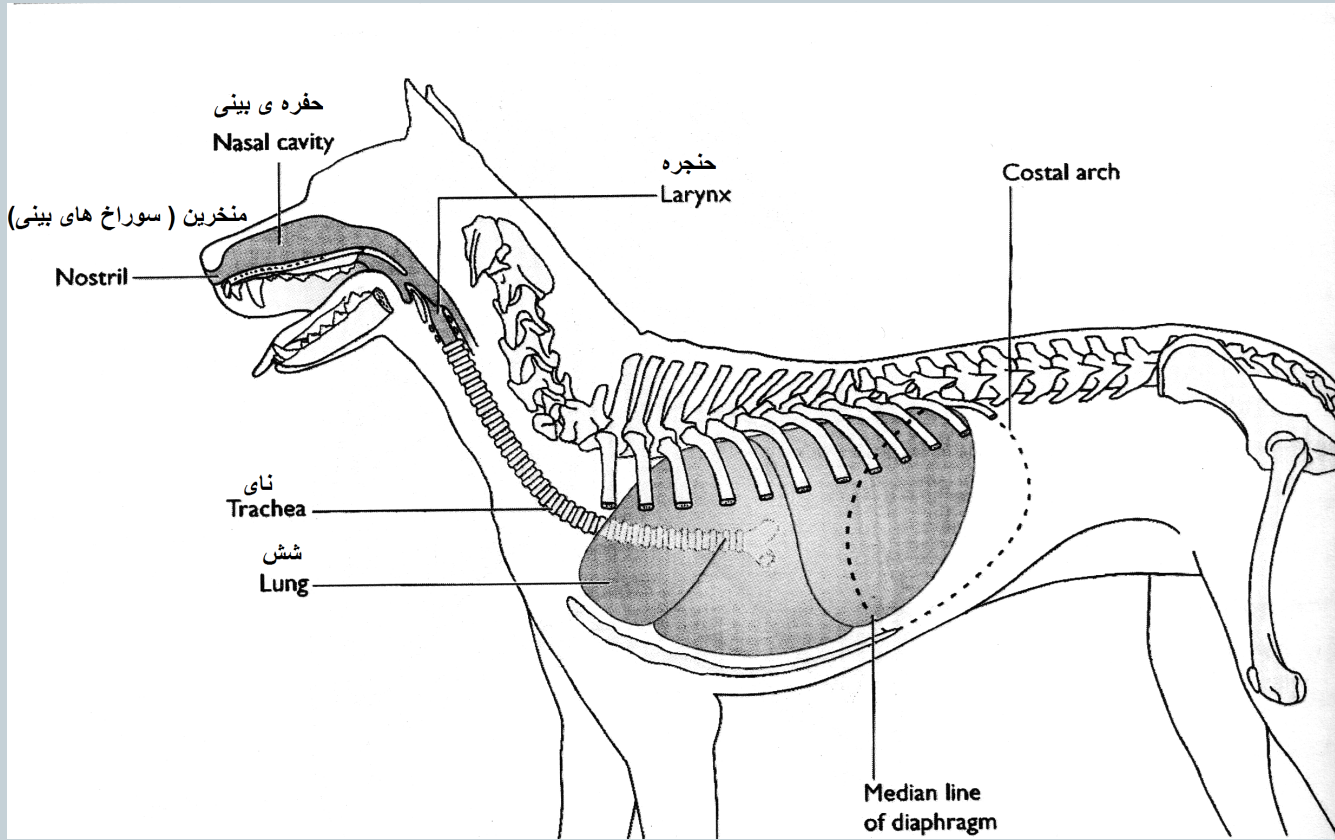


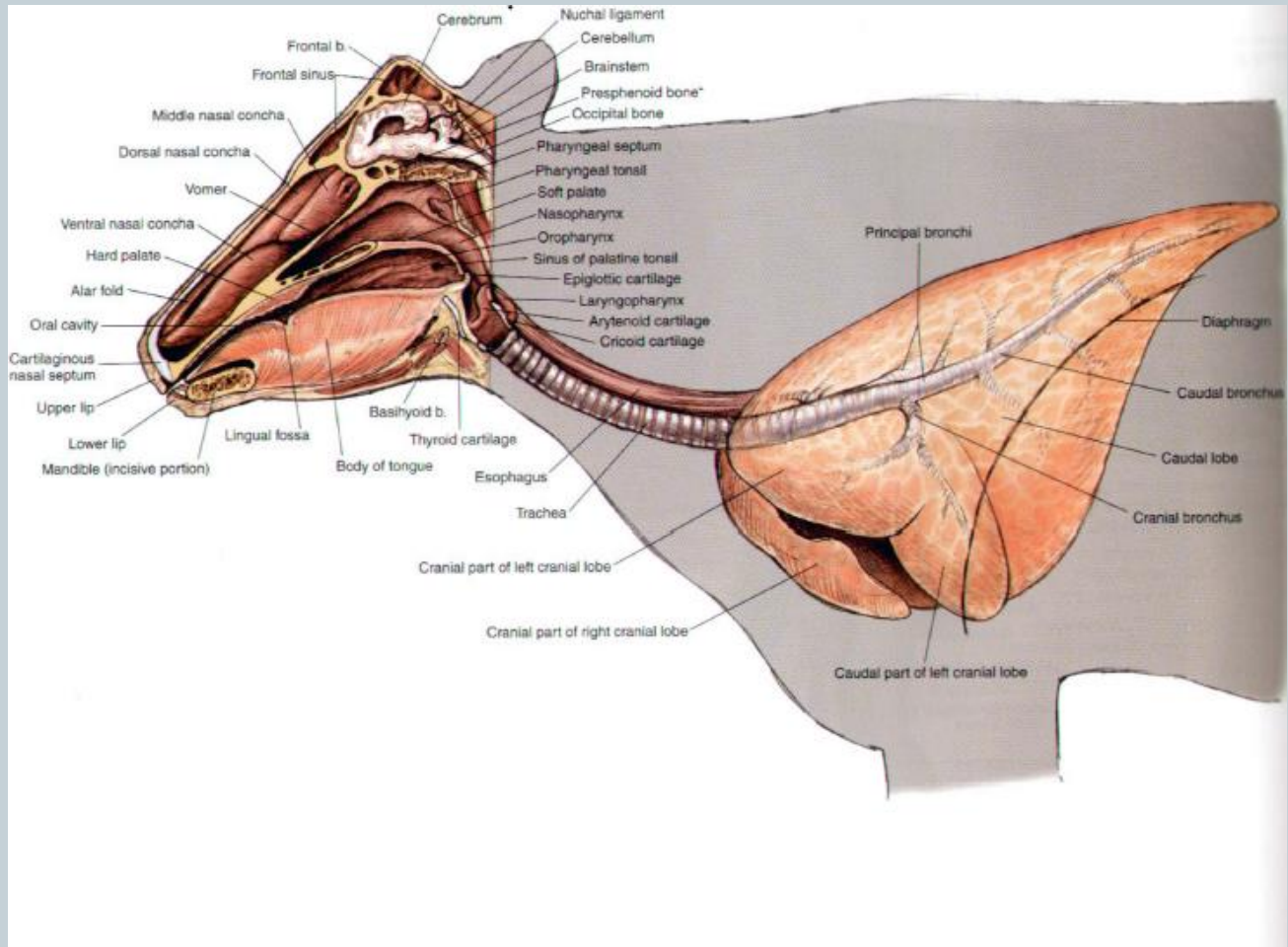
Respiratory system

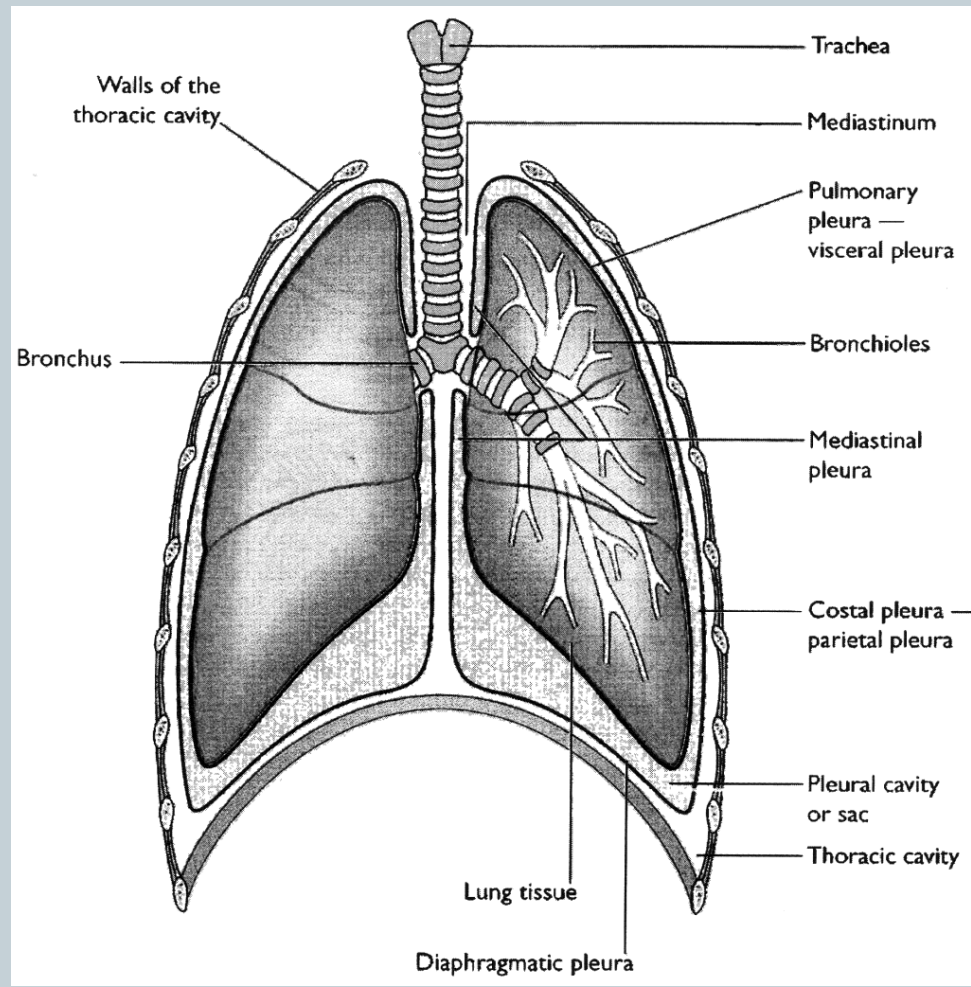
دستگاه

تنفس



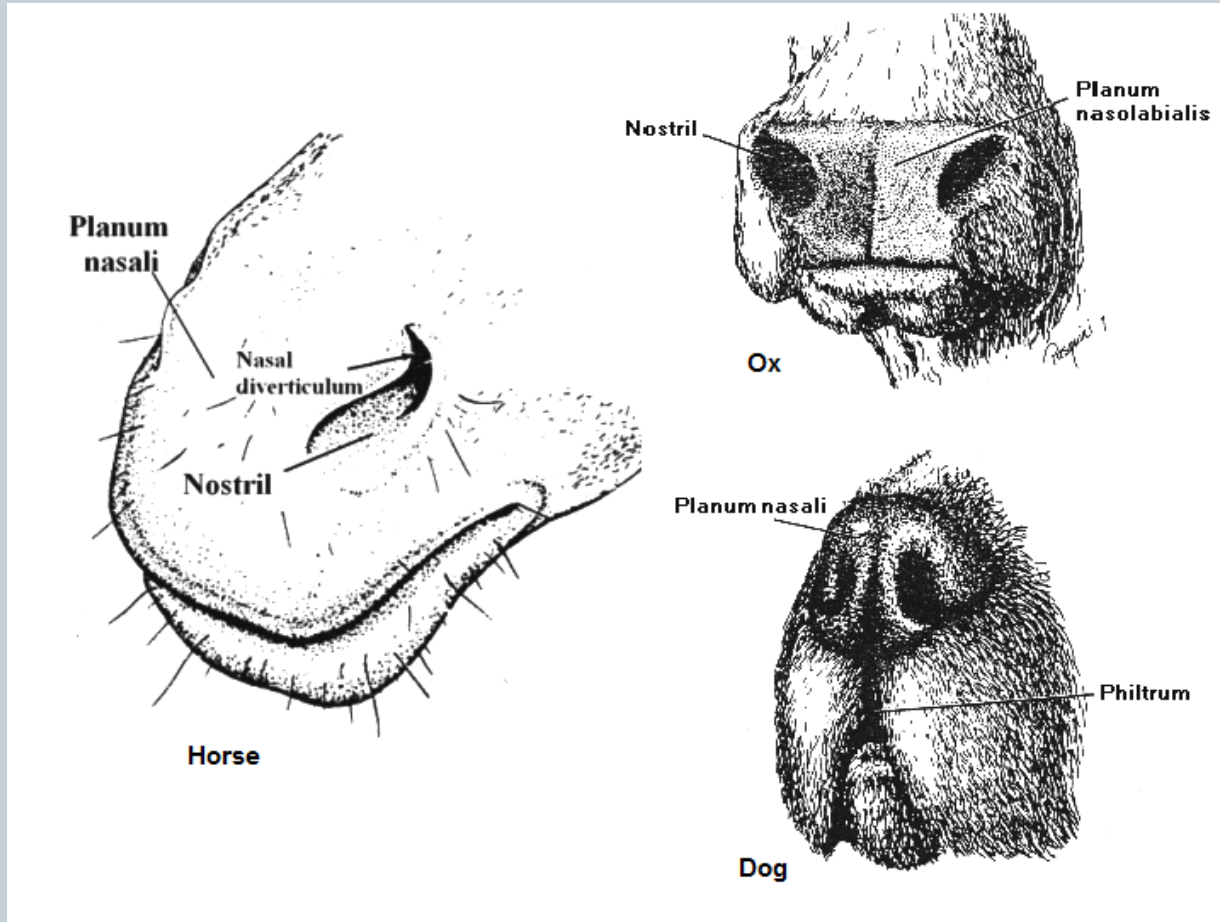






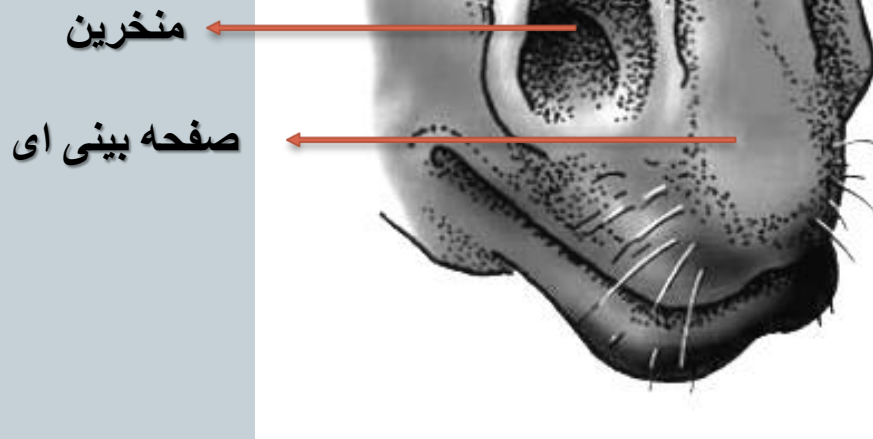
Nostrils

منخرین (سوراخ های بینی)



Nose

بینی







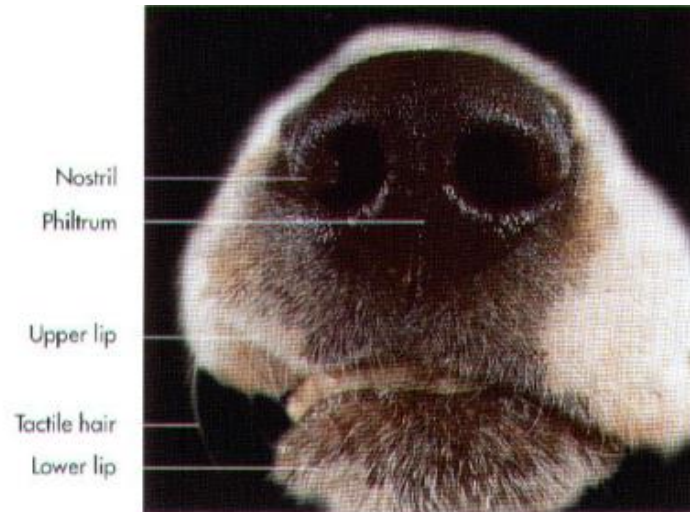


Fig. 8-1. External nose of a dog, frontal aspect.

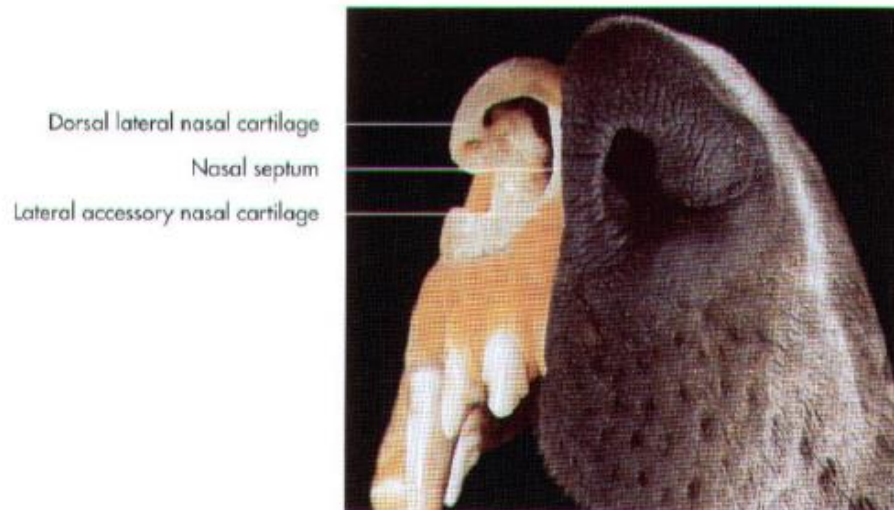


Fig. 8-2. External nose of a dog with exposed right nasal cartilages, frontal aspect (courtesy of Dr. R. Macher, Vienna).



Dorsal lateral nasal cartilage

Alar cartilage
Plate

Horn

Nasal septum

Interincisive canal

Incisive bone

Incisive teeth

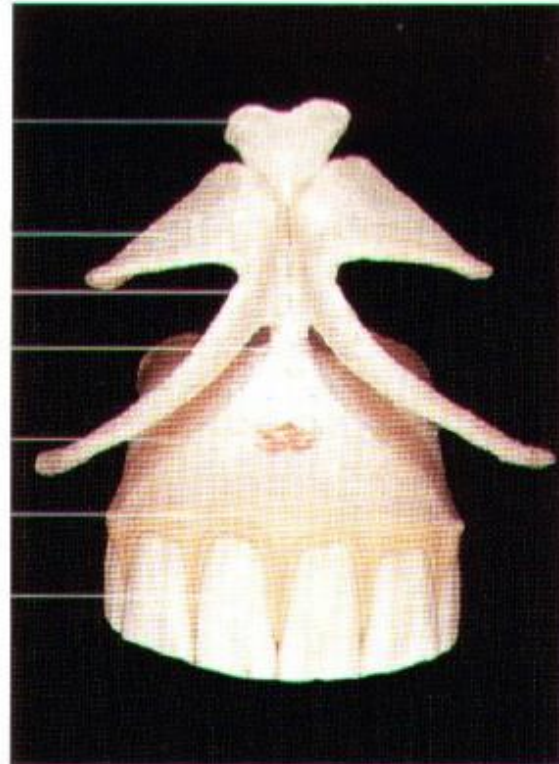
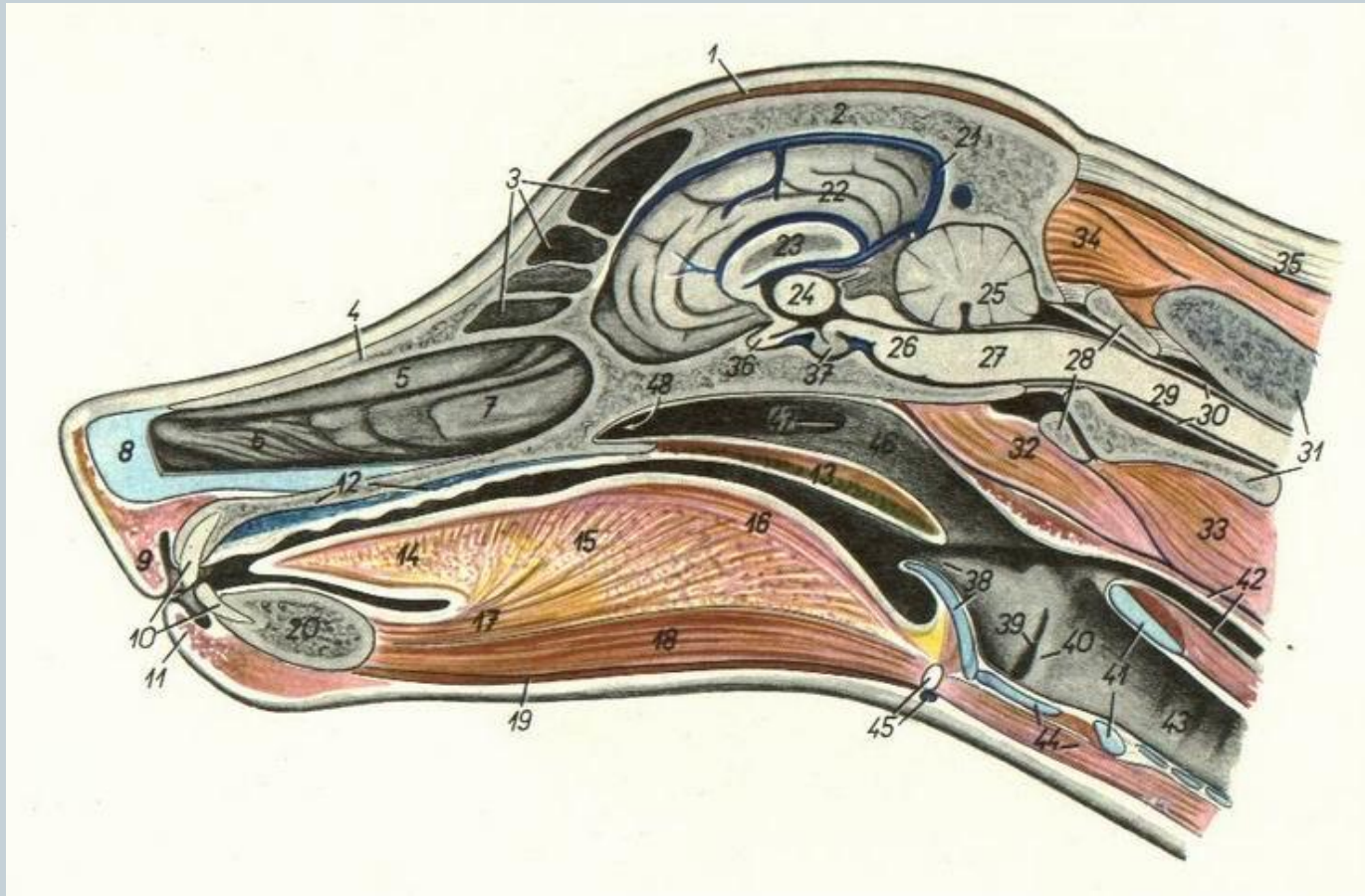
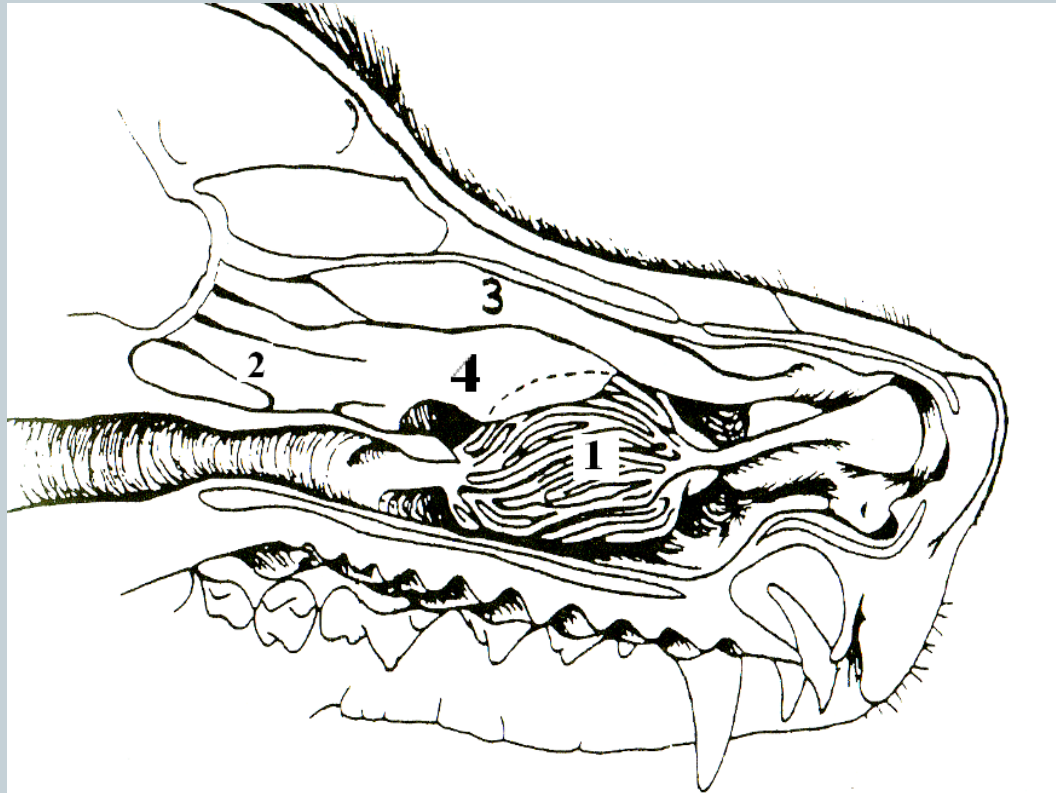


Fig. 8-3. Nasal cartilages of a horse, frontal aspect.

Choncha

بوقی

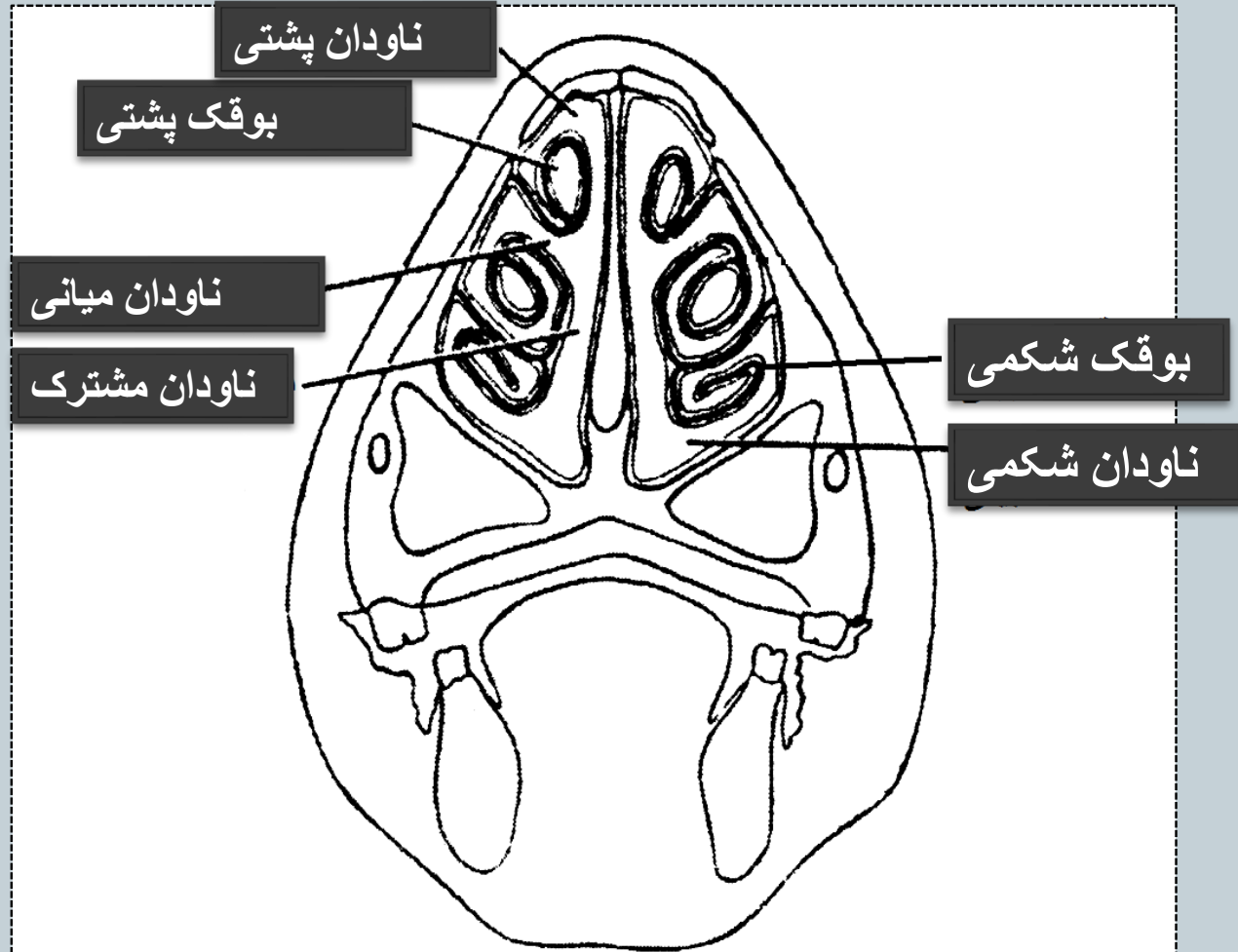


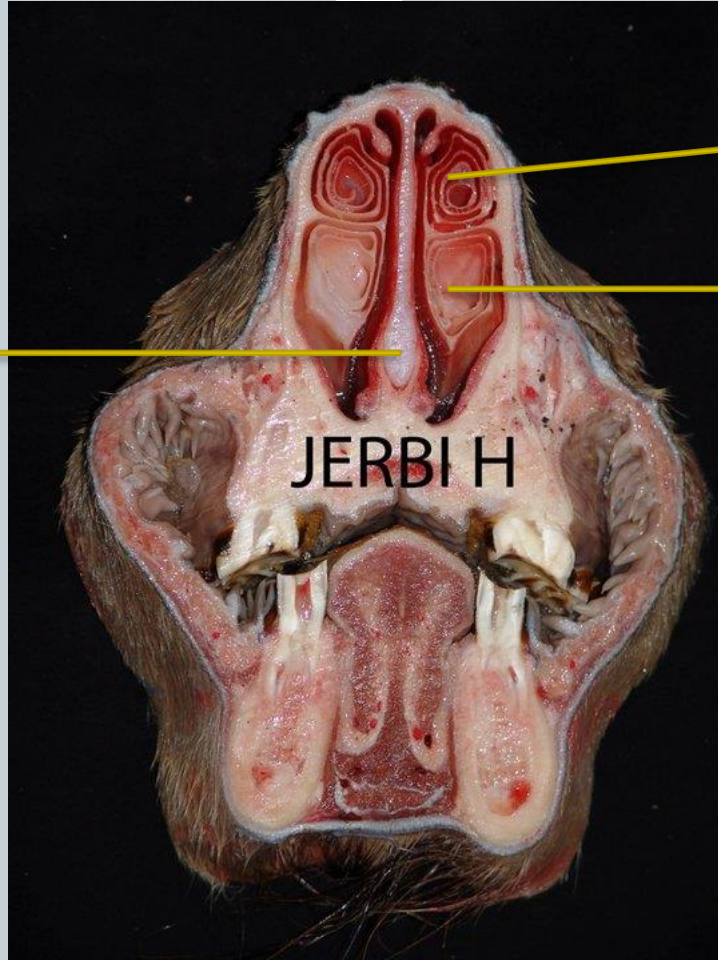


**1.Ventral nasal choncha 2.Ethmoidal n.c 3.Dorsal n.c
4.Middle n.c**

Meatus

مجاری بینی





بوقک پشتی

بوقک شکمی

تیغه بینی

بوقک Choncha

سینوس پیشانی

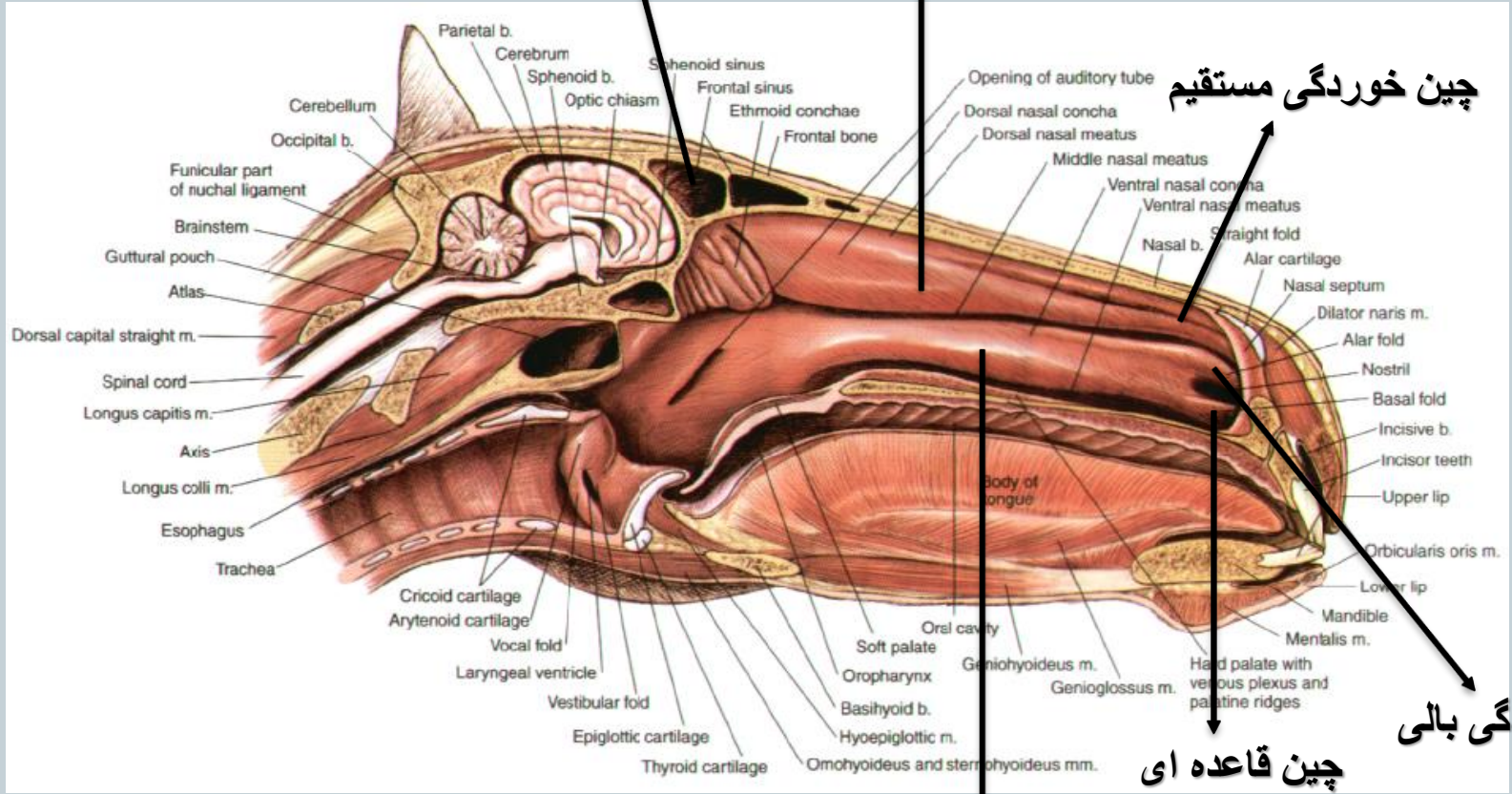
بوقک بالایی

چین خوردگی مستقیم

چین قاعده ای

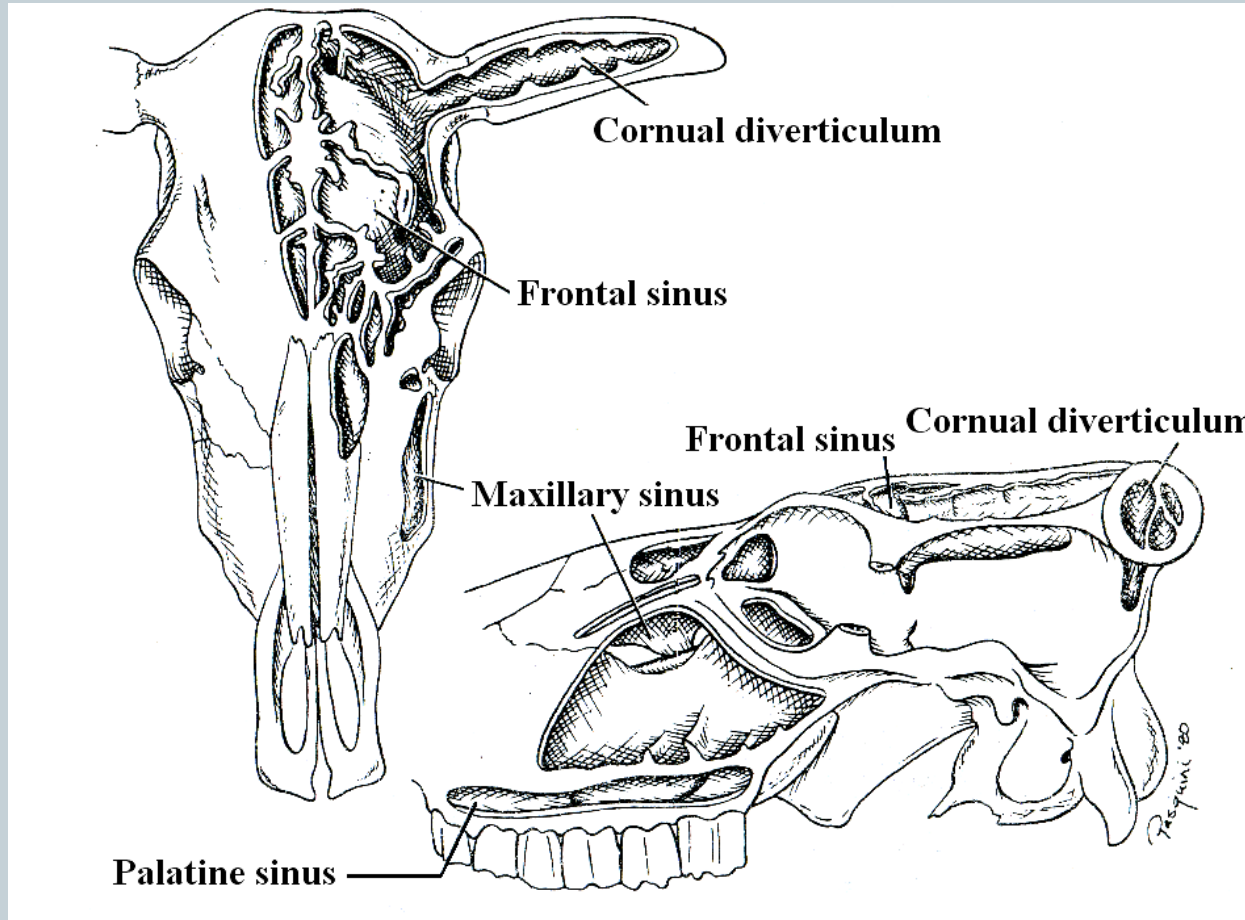
چین خوردگی بالی

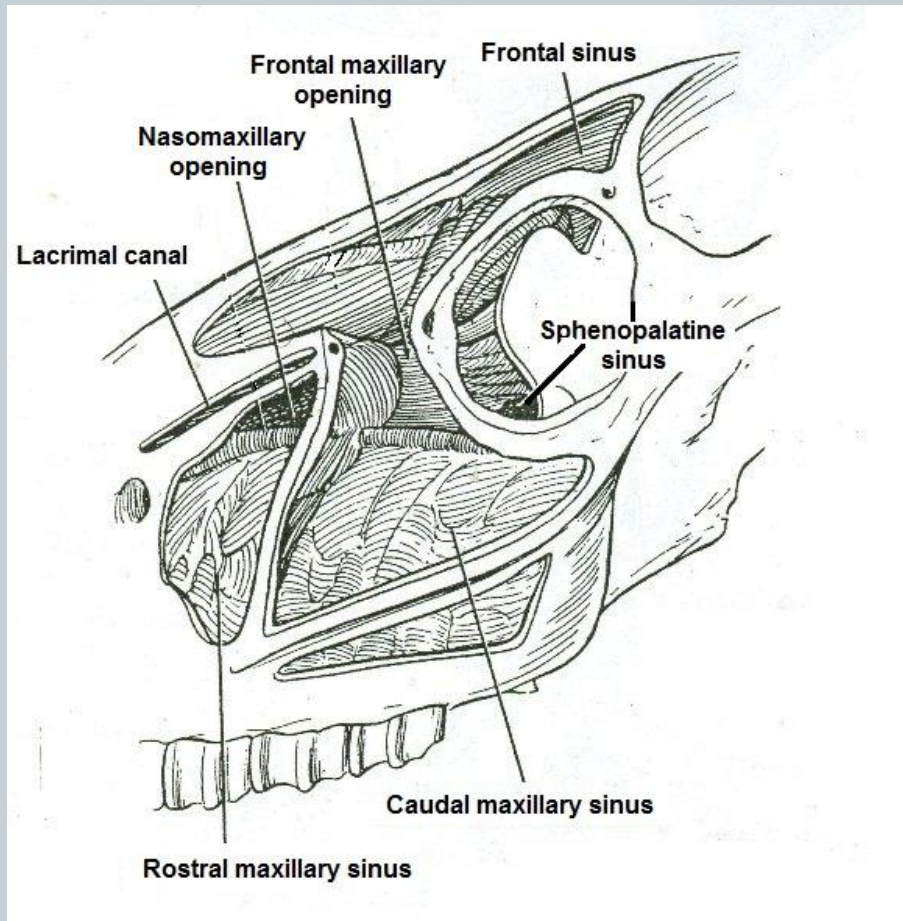
بوقک پائینی



Sinus

سینوس ها

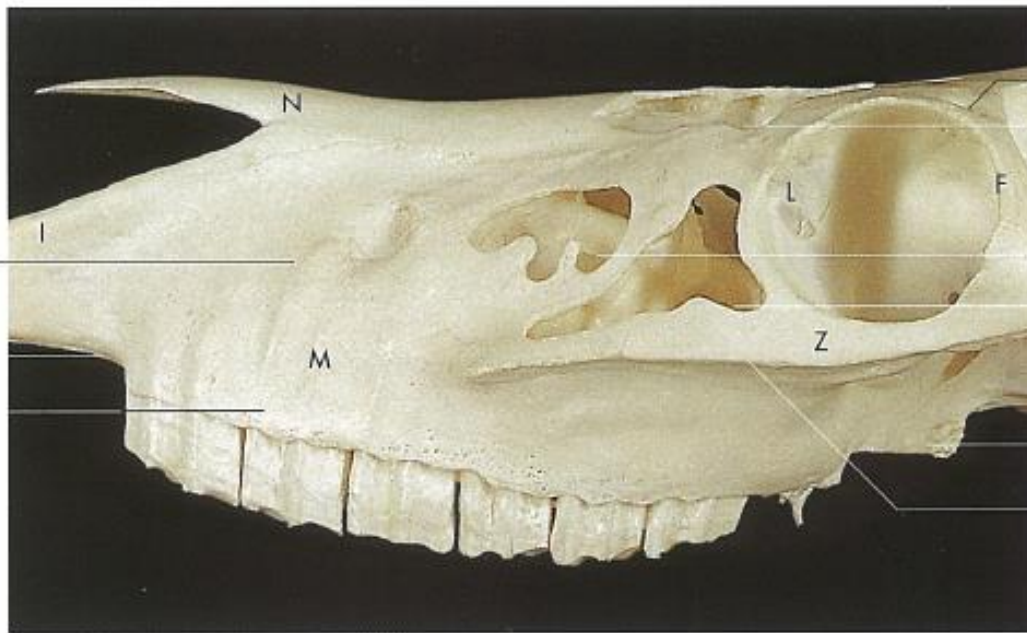






- F Frontal
- I Incisive
- L Lacrimal
- M Maxilla
- N Nasal
- Pl Palatine
- Pt Pterygoid
- Z Zygomatic

- Infraorbital foramen
- Interalveolar margin
- Lateral alveolar border of the maxilla

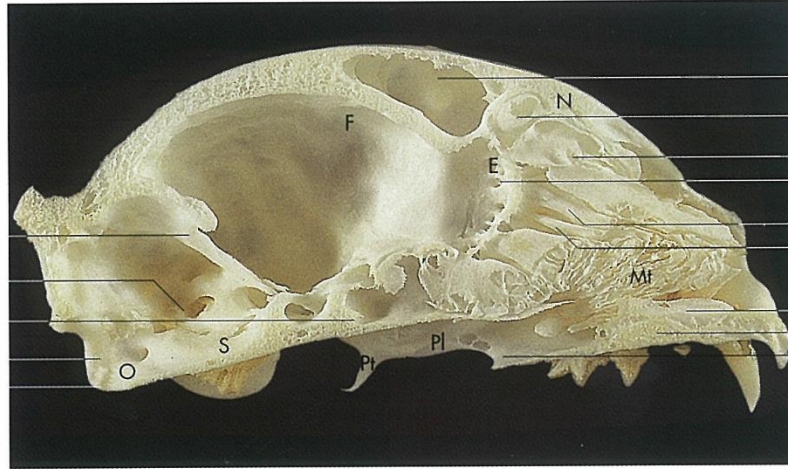


- Supraorbital foramen
- Frontal sinus
- Rostral maxillary sinus
- Caudal maxillary sinus
- Pterygoid process of the basisphenoid bone
- Facial crest

Fig. 1-64. Frontal and maxillary sinuses of a horse (lateral aspect).

- E Ethmoid
- F Frontal
- N Nasal
- Mt Maxilloturbinate
- O Occipital
- Pl Palatine
- Pt Pterygoid
- S Sphenoid

- Tentorium osseum
- Internal acoustic meatus
- Sphenoidal sinus
- Foramen magnum
- Occipital condyle

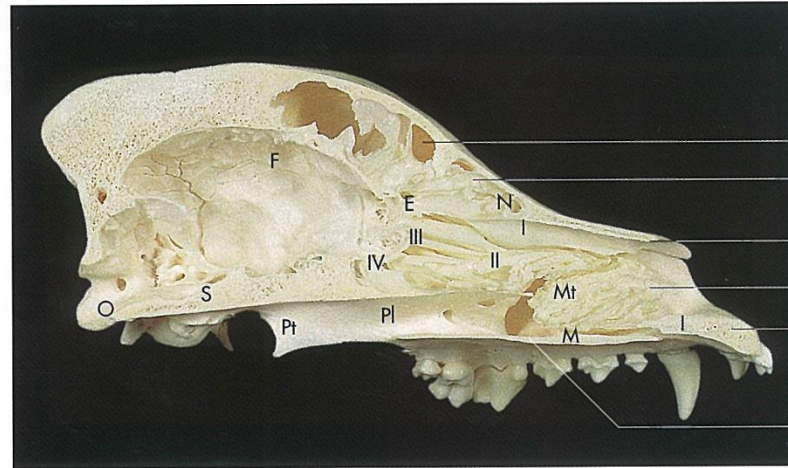


- Frontal sinus
- Ectoturbinate II
- Dorsal nasal concha
- Cribriform plate of the ethmoid bone
- Middle nasal concha
- Ventral nasal concha
- Remnant of nasal septum
- Vomer
- Nasopharyngeal meatus

Fig. 1-29. Skull of a cat (medial aspect of sagittal section).

- E Ethmoid
- F Frontal
- I Incisive
- M Maxilla
- Mt Maxilloturbinate
- N Nasal
- O Occipital
- Pl Palatine
- Pt Pterygoid
- S Sphenoid

- I Endoturbinate I
- II Endoturbinate II
- III Endoturbinate III
- IV Endoturbinate IV



- Frontal sinus
- Septal process of the nasal bone
- Rostral process of the nasal bone
- Nasal process of the incisive bone
- Palatine process of the incisive bone
- Palatine process of the maxilla

Fig. 1-30. Skull of a dog (medial aspect of sagittal section).

38 1 Axial skeleton (skeleton axiale)

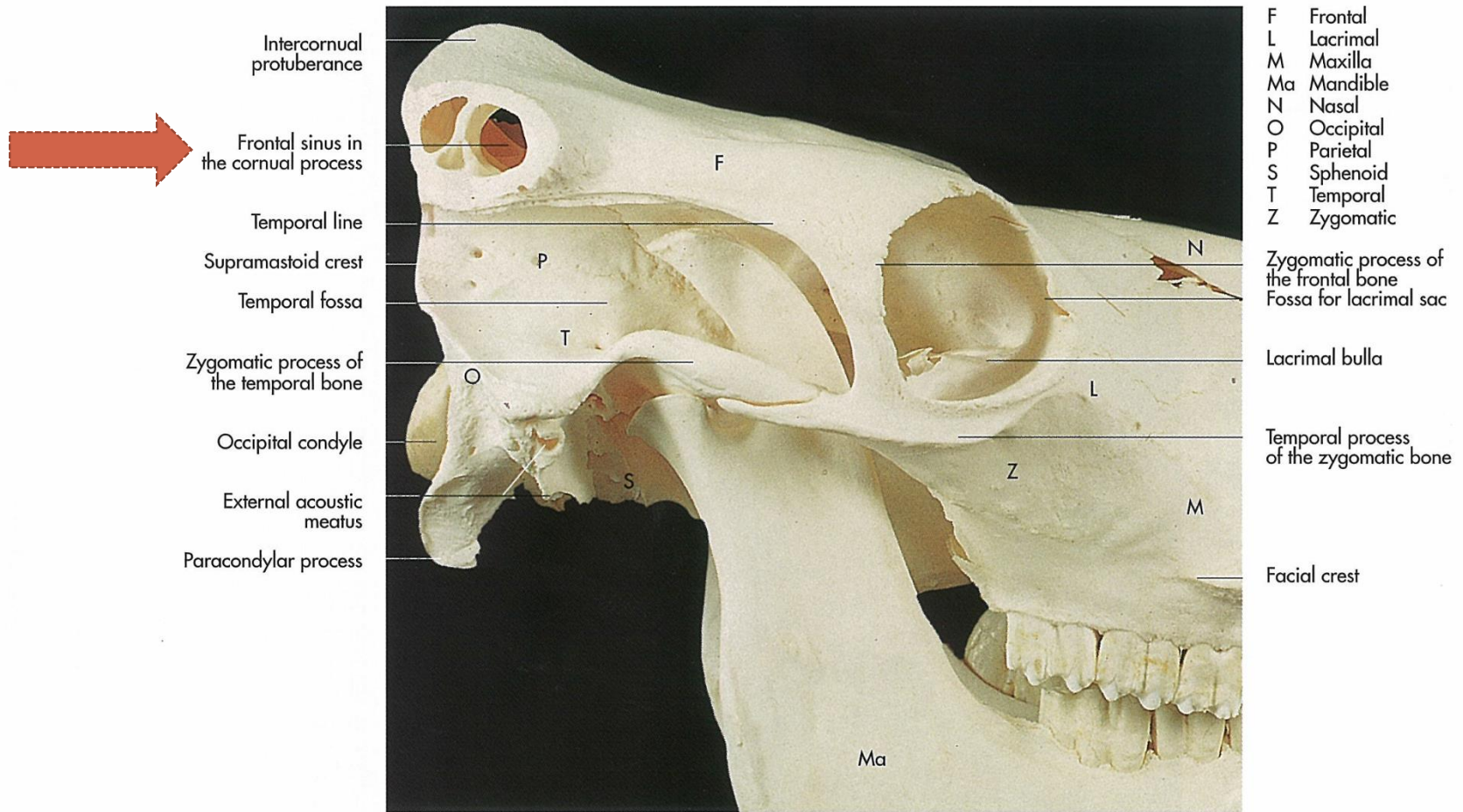


Fig. 1-15. Bones of the cranial part of a bovine skull (lateral aspect).

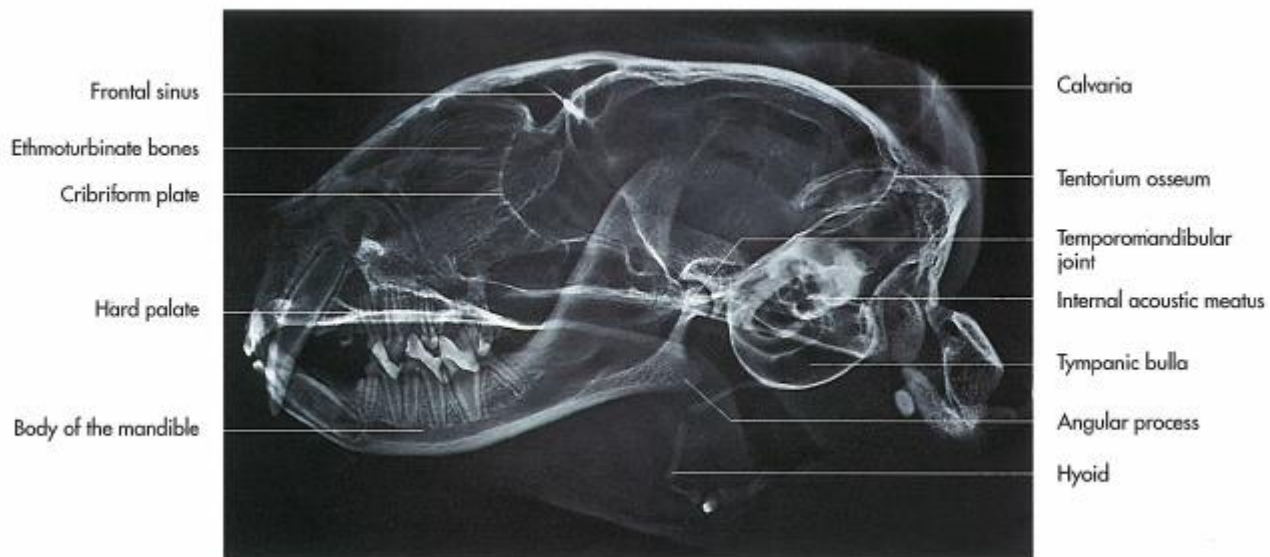
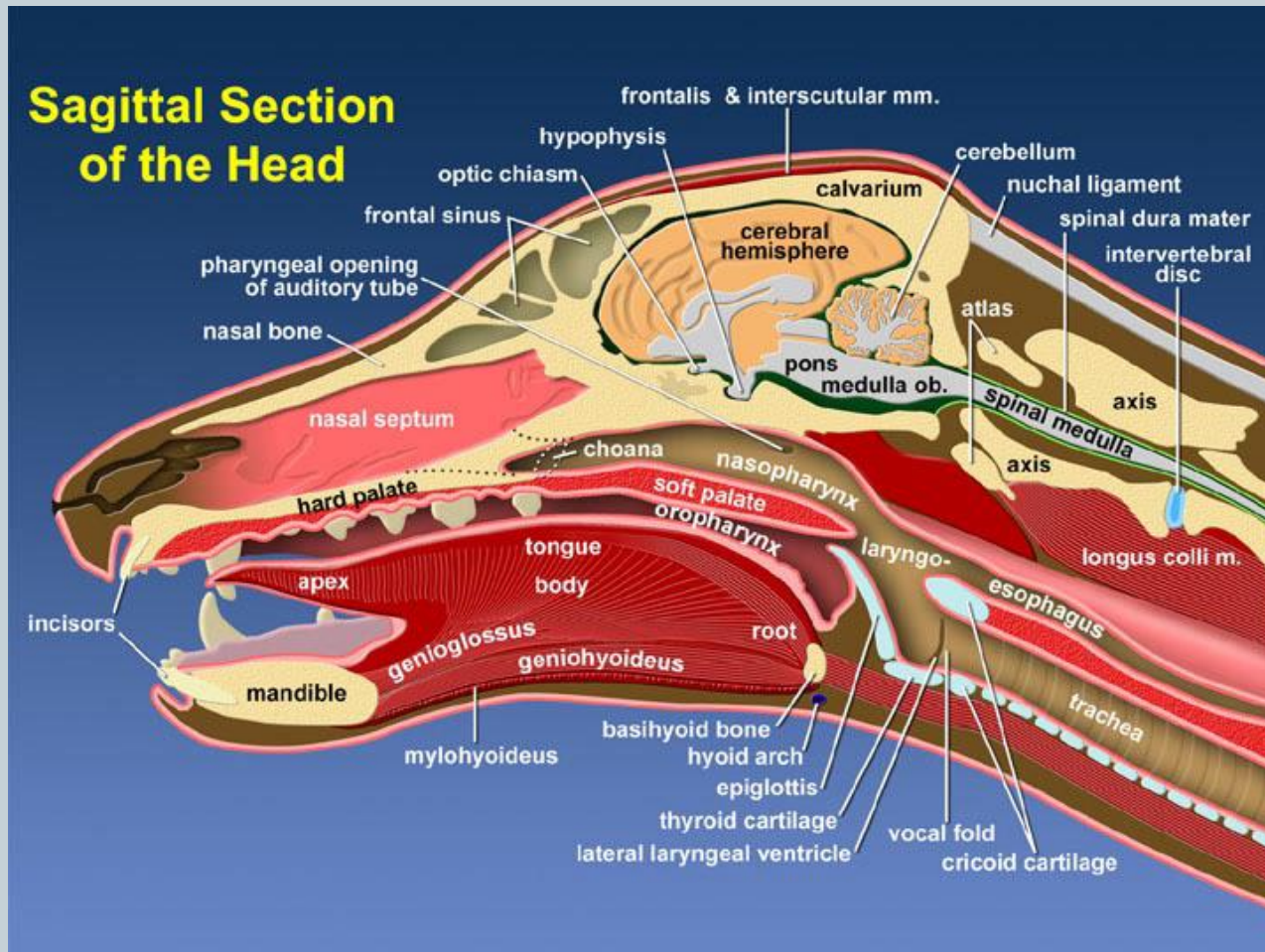


Fig. 1-55. Radiograph of a feline skull (laterolateral projection) (courtesy of Prof. Dr. Cordula Poulsen Nautrup, Munich).



Guttural pouch



Horse and Perissodactyl •
(hyrax, South American mouse) •

vagus nerve •

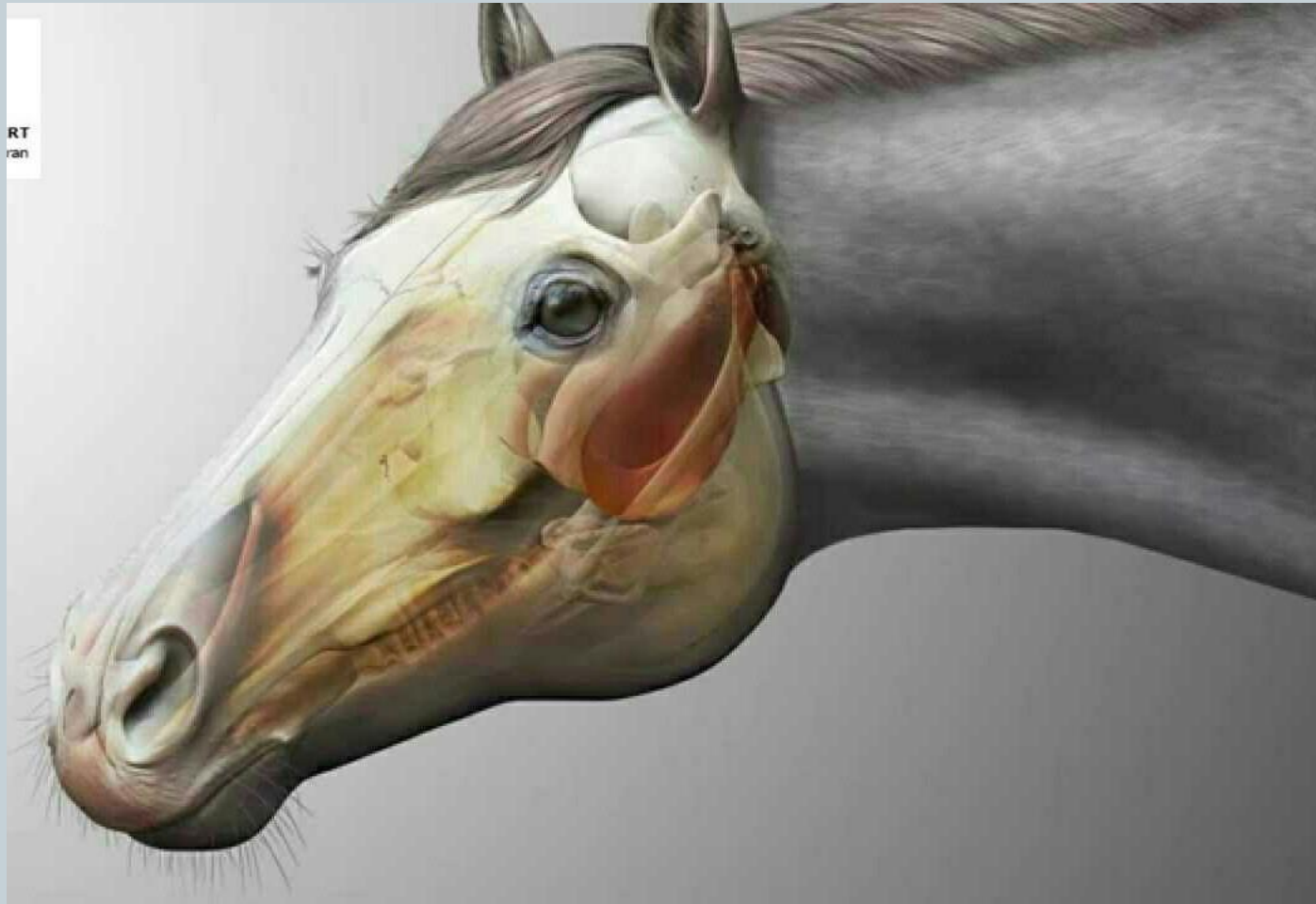
Glossopharyngeal nerve •

internal carotid artery •

A diverticulum of the auditory tube, a pair of air chambers in the neck just behind the skull and below the ears. •

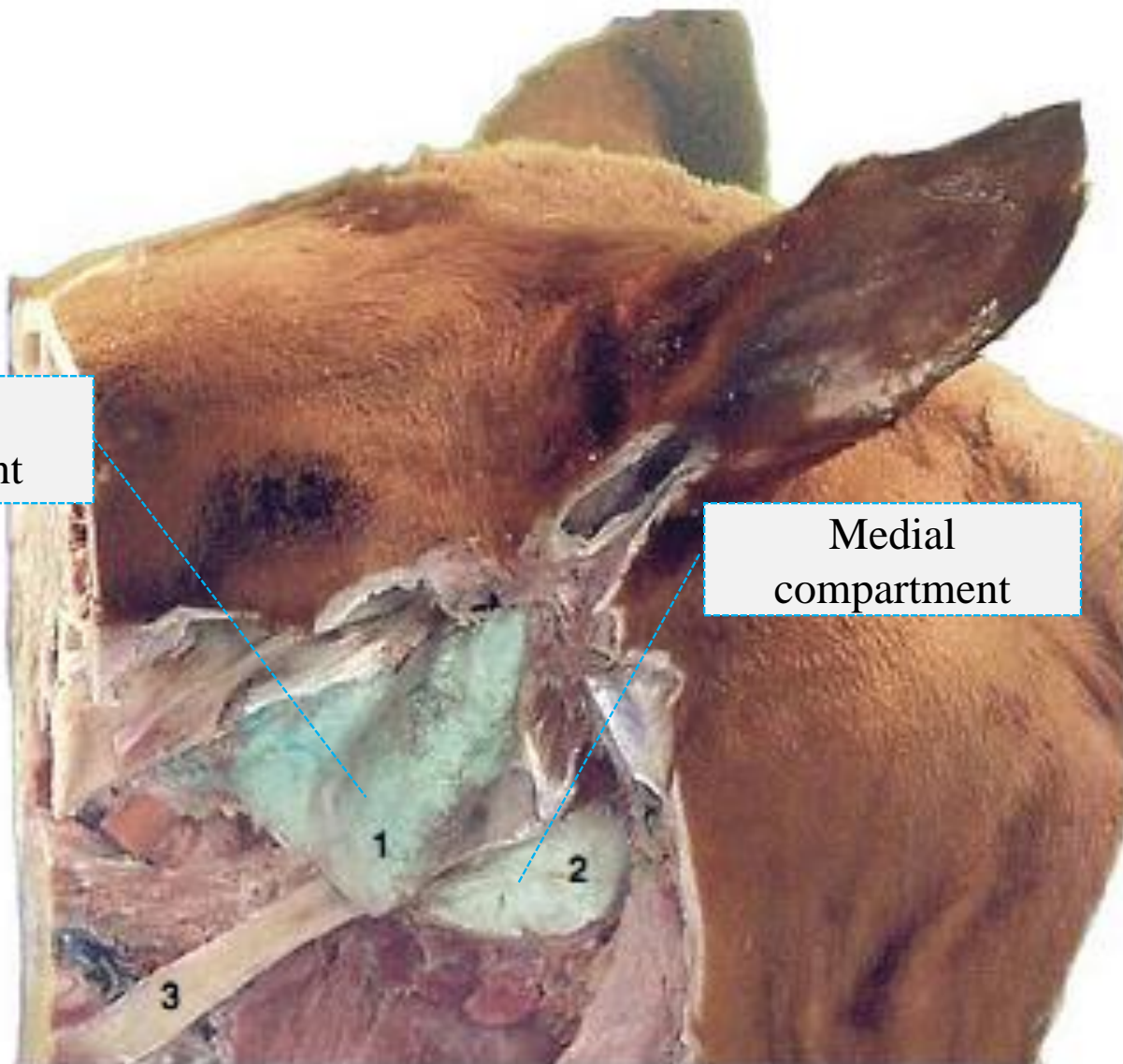
researchers believe the pouches serve to cool blood flow to the brain during extended strenuous exercise (2006) •

By stylohyoid → lateral compartment •
→ medial compartment

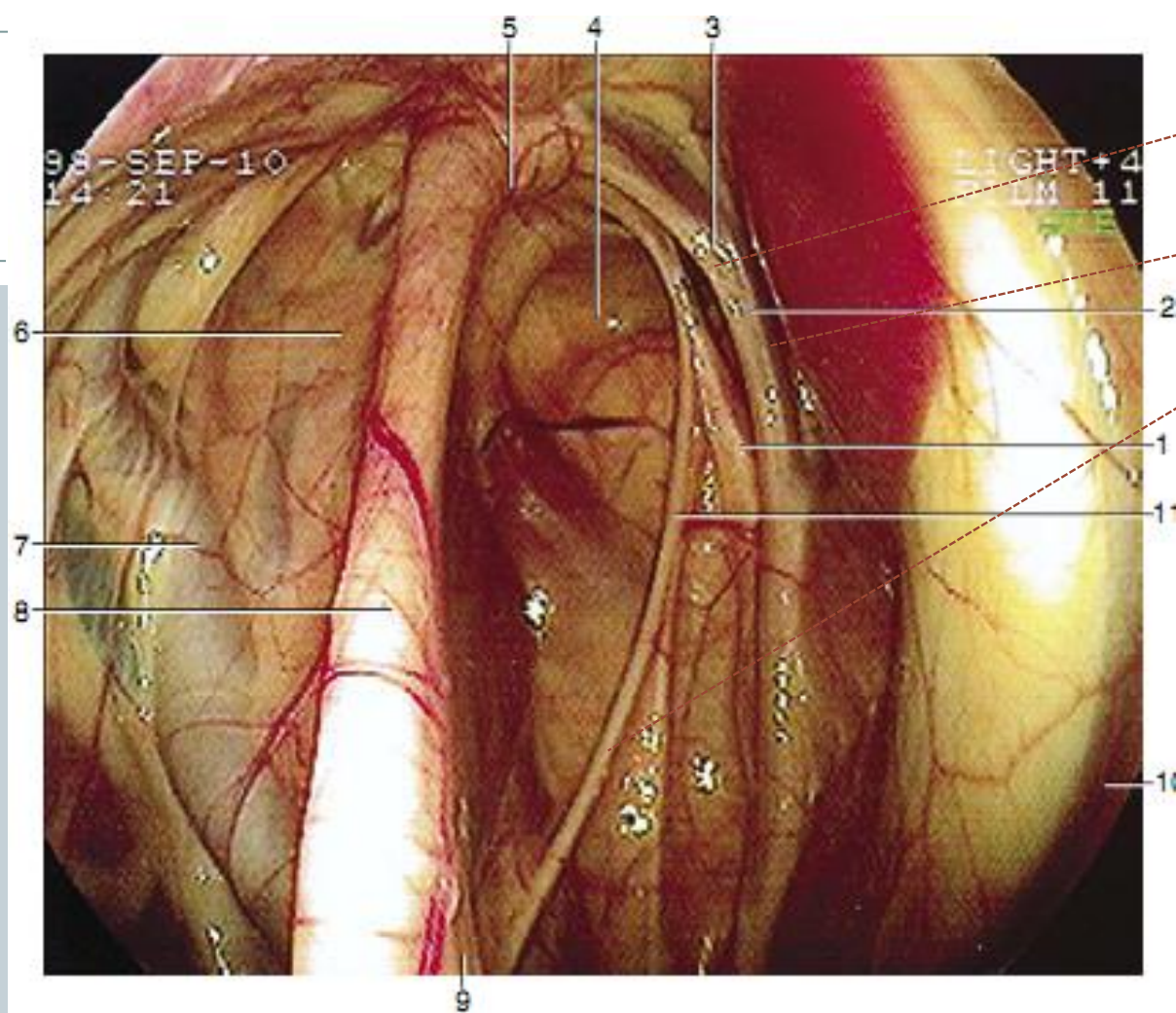


RT
ran

Lateral
compartment



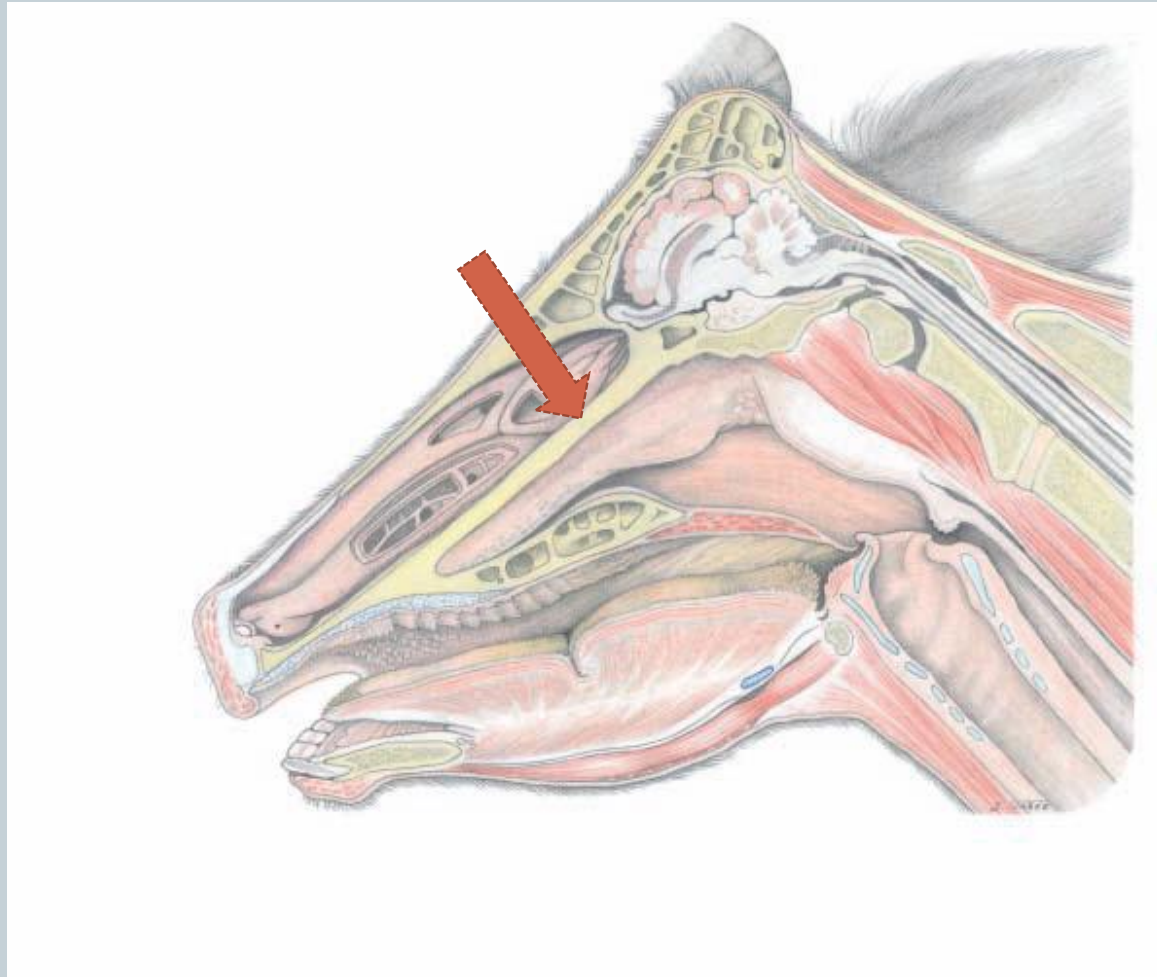
Medial
compartment

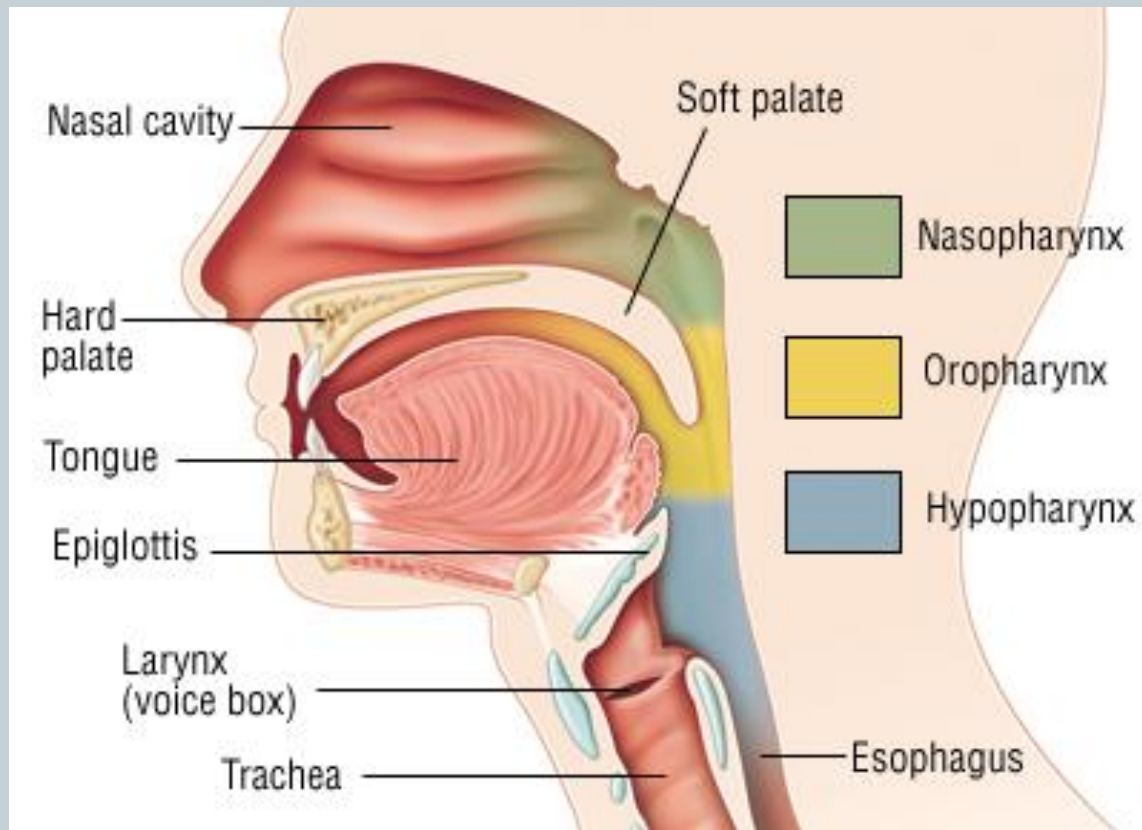


- internal carotid artery
- vagus nerve
- glossopharyngeal nerve

Endoscopic view of the interior of the guttural pouch. 1, Hypoglossal; 2, vagus nerve; 3, internal carotid artery; 4, medial compartment; 5, articulation of the stylohyoid and petrous temporal bone; 6, lateral compartment; 7, external carotid artery; 8, stylohyoid bone; 9, stylopharyngeus muscle; 10, longus capitus muscle; 11, glossopharyngeal nerve.

Pharyngeal septum





Muscles of pharynx



1-constrictor M.

1-a-cranial group:

- i. Palatopharyngeus M.
- ii. Pterygopharyngeus M.
- iii. Stylopharyngeus rostralis M.
- iv. Hyopharyngeus M.

The insertion of these muscles → Cranial part of midline of pharynx

1-b-caudal group:

- i. Thyropharyngeus M.
- ii. Cricopharyngeus M.

The insertion of these muscles → Caudal part of midline of pharynx

2-Dilator M.

Just → **stylopharyngeus caudalis M.**

(O: medial surface of 1/3 dorasal of stylohyoid B.)

(I: lateral wall of the pharynx)

Pharyngeal muscles

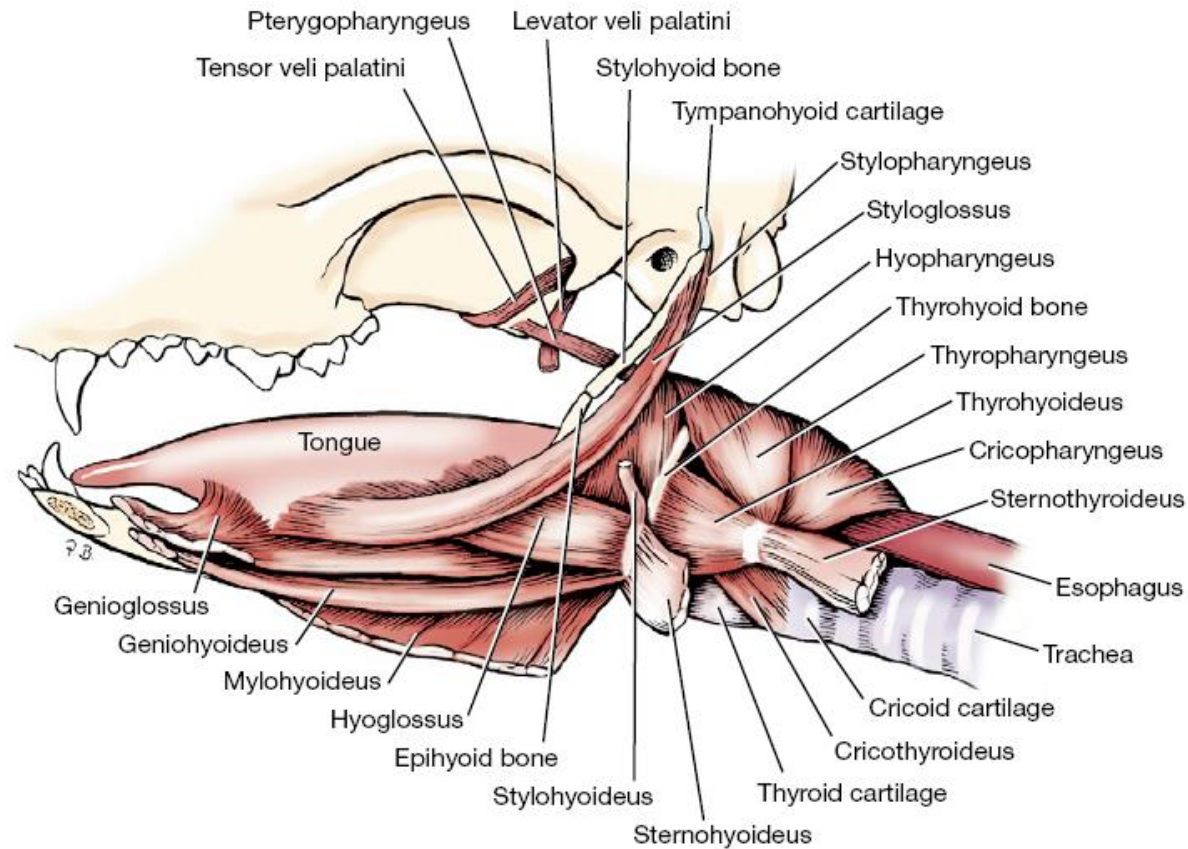
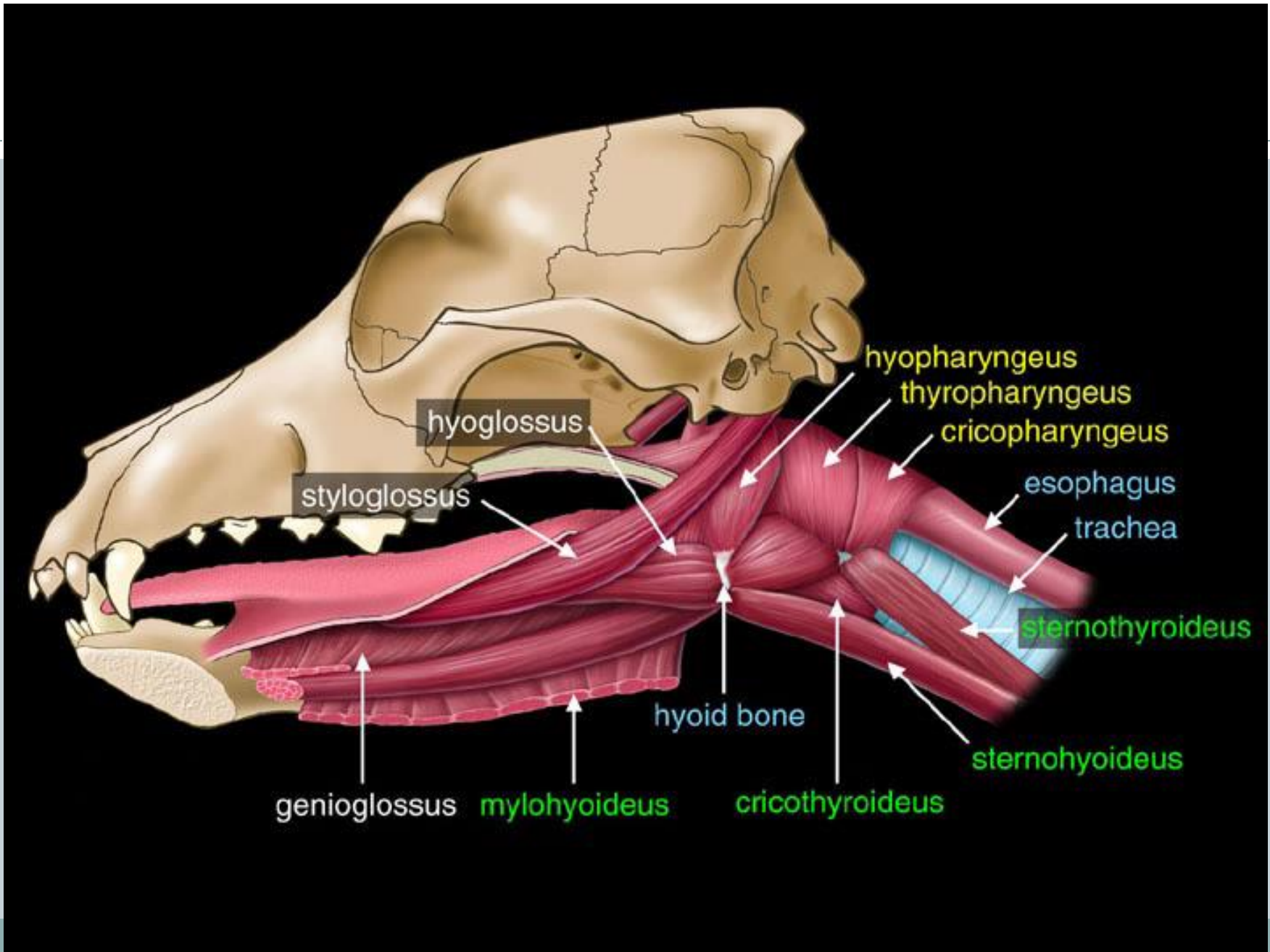
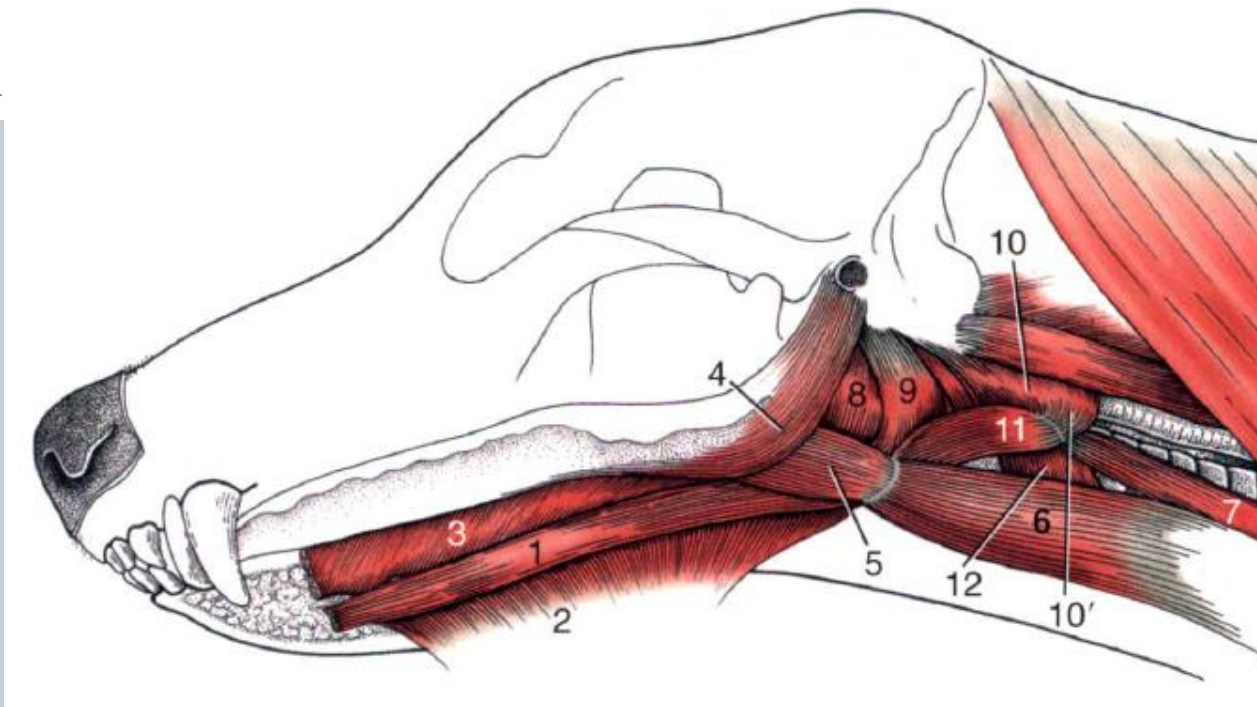


Fig. 5-32 Muscles of pharynx and tongue, left lateral view, left mandible removed.





Muscles of the tongue and pharynx of the dog.

1, Geniohyoideus; 2, mylohyoideus; 3, genioglossus; 4, styloglossus;
5, hyoglossus; 6, sternohyoideus; 7, sternothyroideus; 8,9, hyopharyngeus (two parts); 10, thyropharyngeus; 10', cricopharyngeus; 11, thyrohyoideus; 12, cricothyroideus.

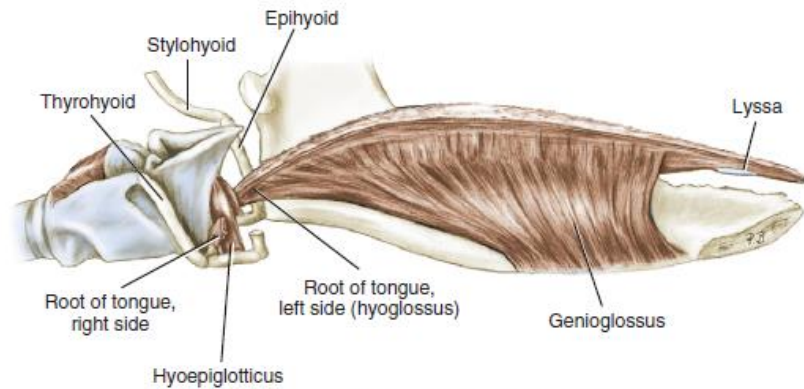


FIGURE 6-14 The larynx, hyoid apparatus, and left half of the tongue.

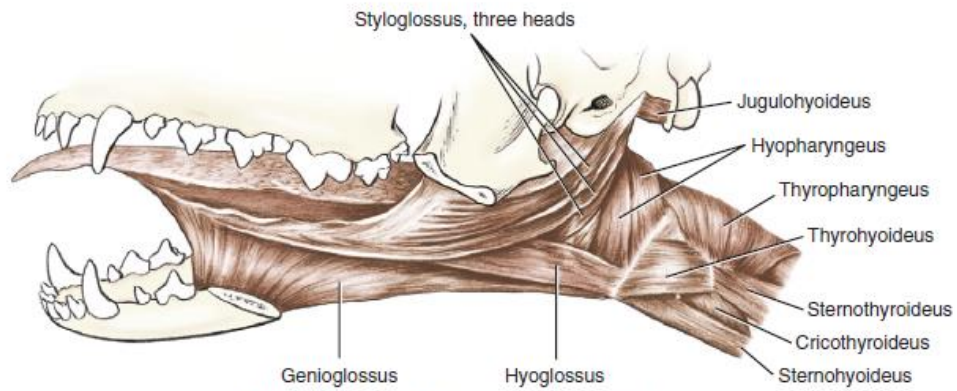
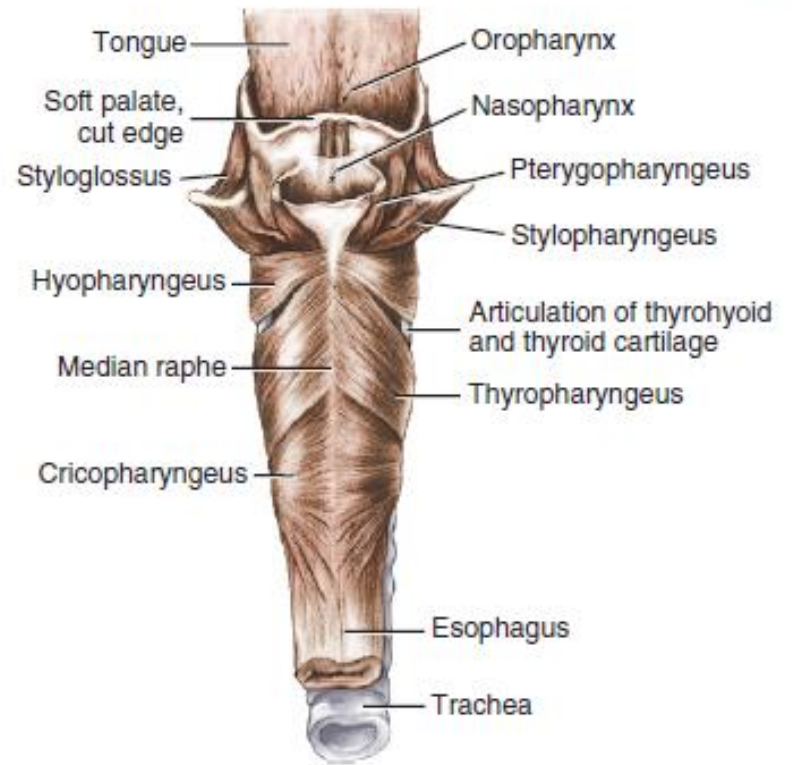
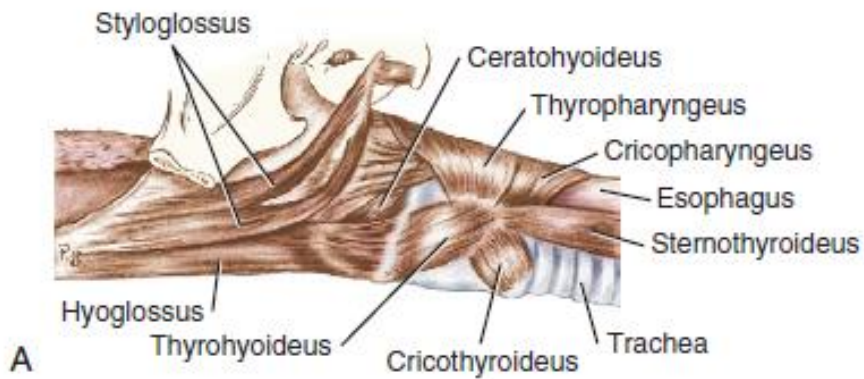


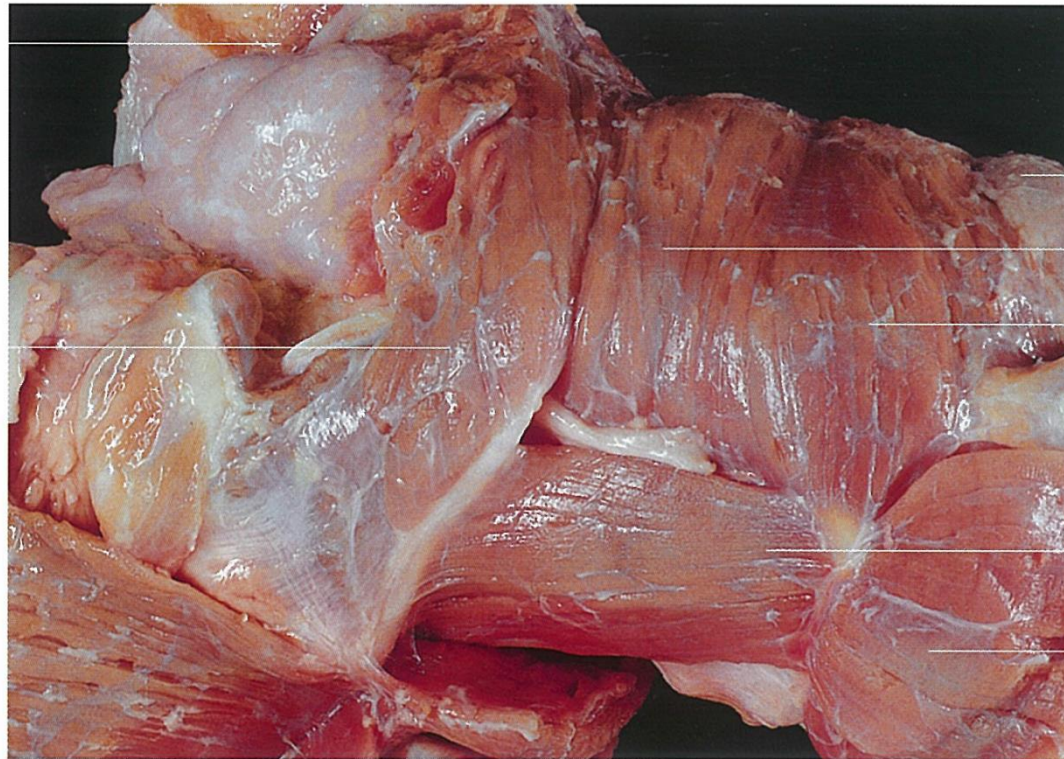
FIGURE 6-15 Muscles of the tongue and pharynx, lateral aspect.





Palato- and
pterygopharyngeal
muscles

Hyopharyngeal muscle



Esophagus

Thyropharyngeal
muscle

Cricopharyngeal
muscle

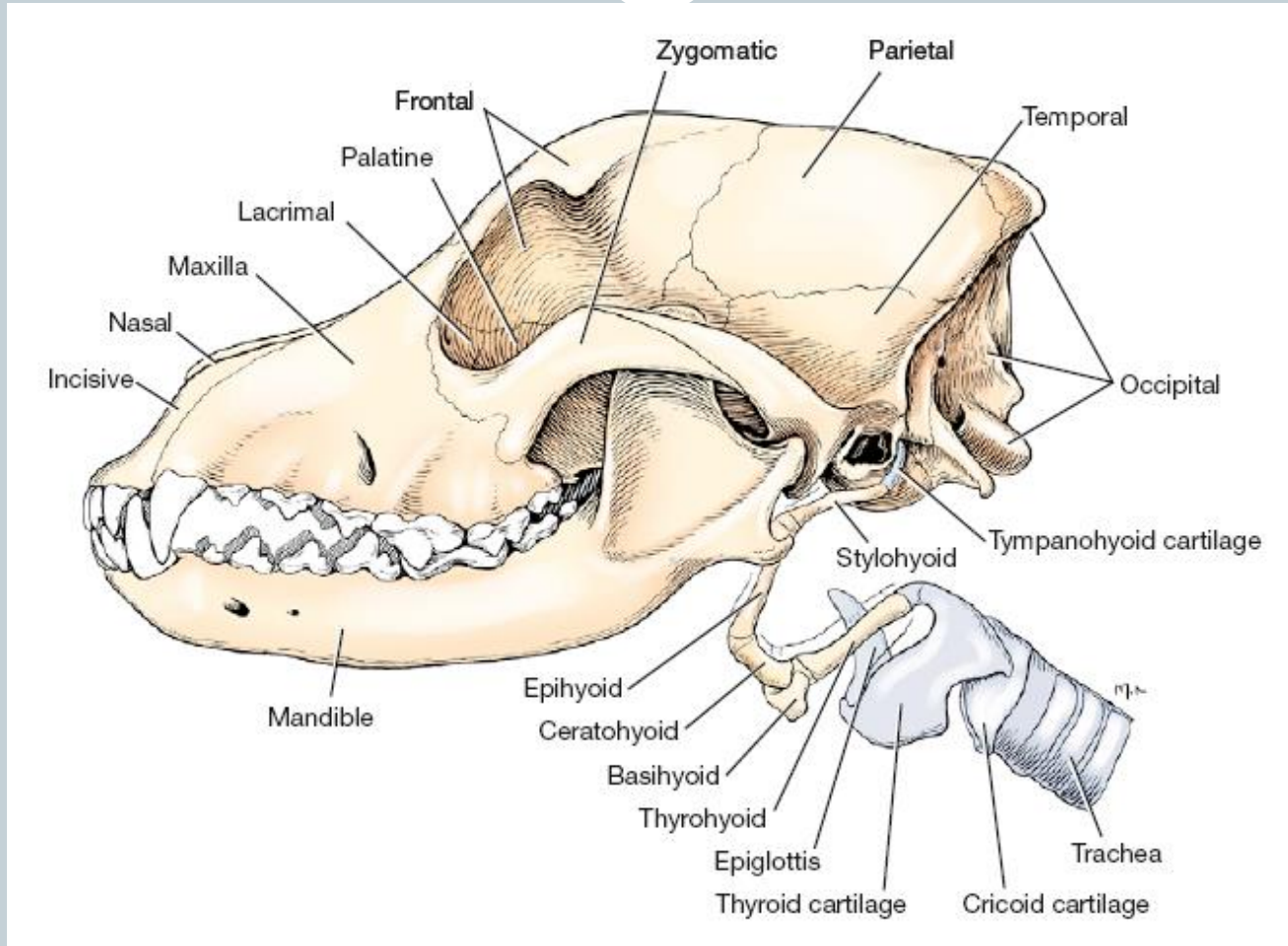
Thyrohyoid muscle

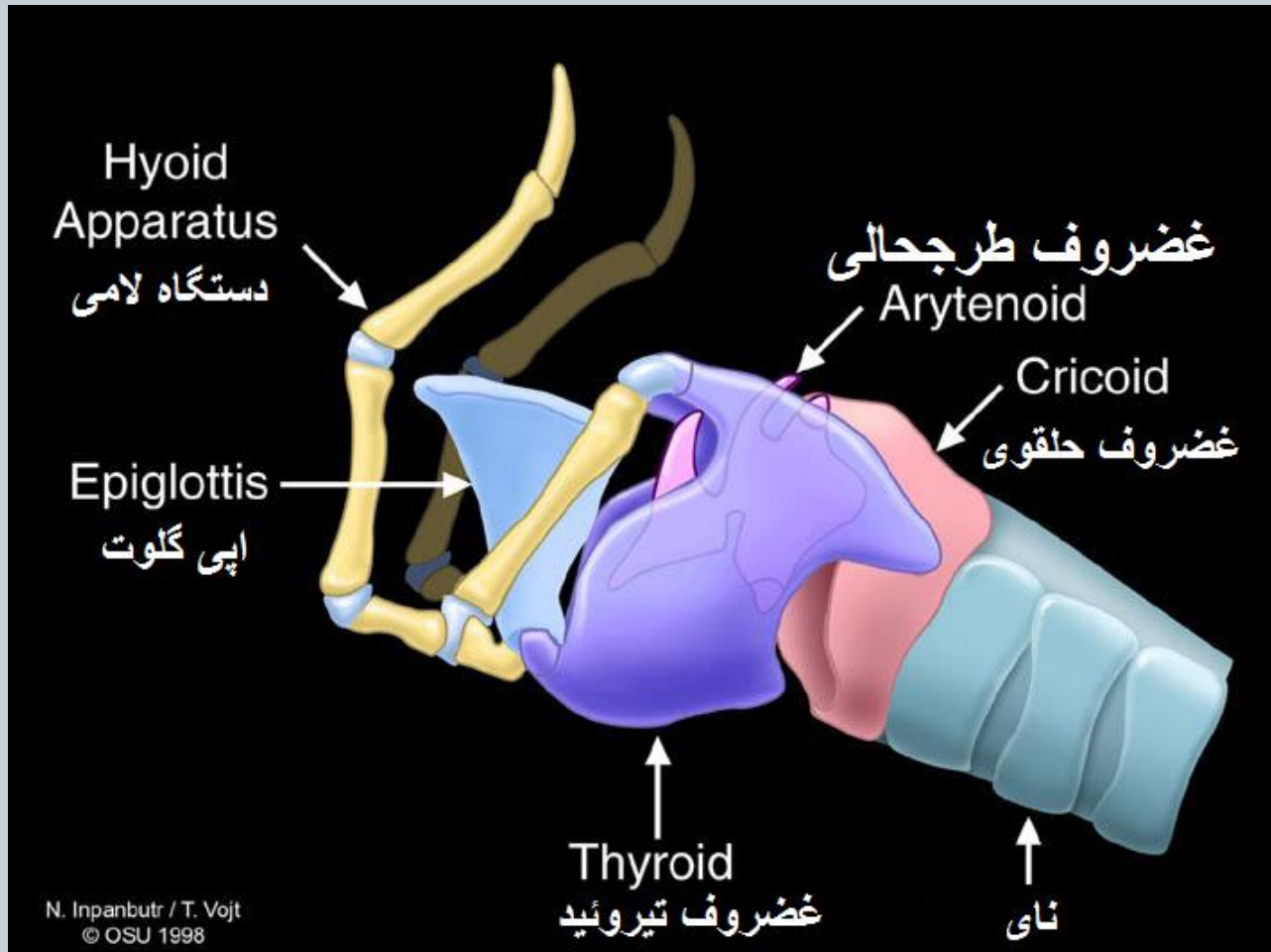
Sternothyroid muscle

Fig 7-44. External musculature of the pharynx of an ox, lateral aspect (courtesy of Dr. R. Macher, Vienna).

Larynx

حنجره







غضروف انگشتری



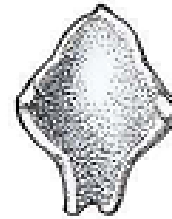
A

4

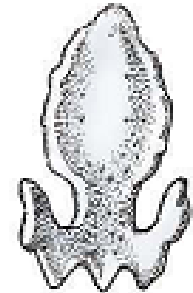


B

غضروف اپیگلوت



1



2

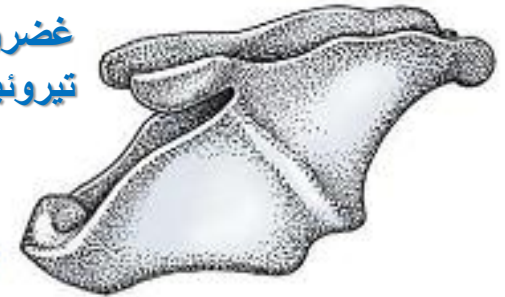
غضروف هرمی

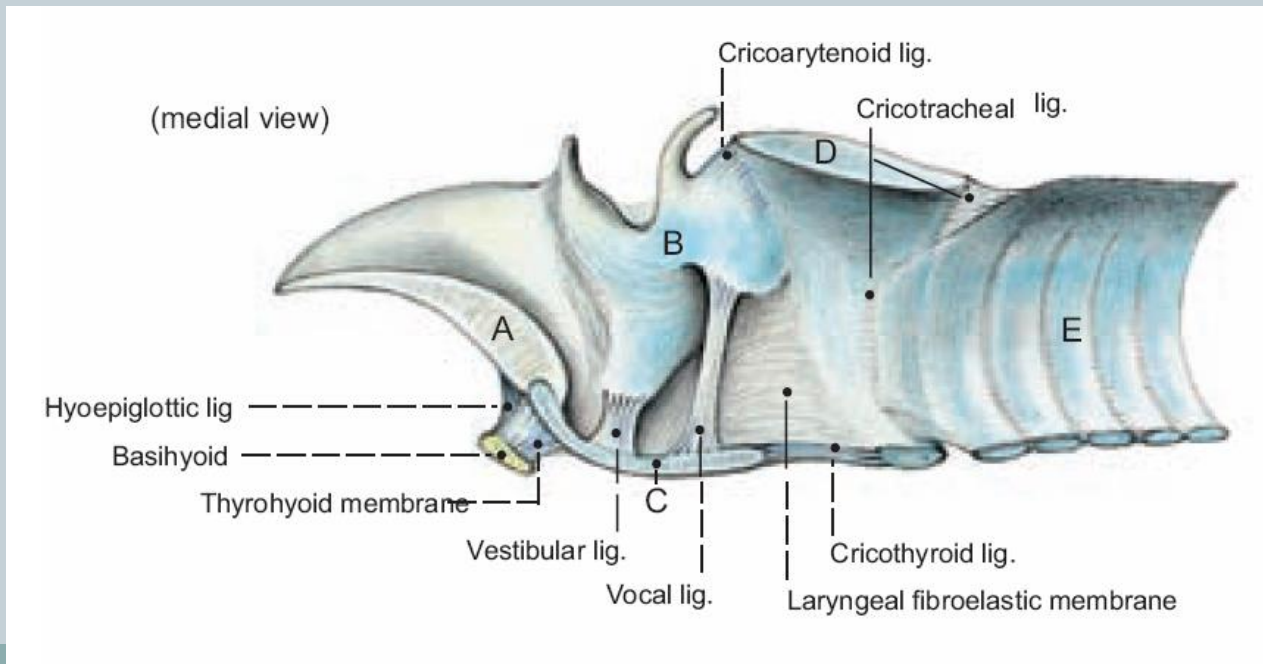
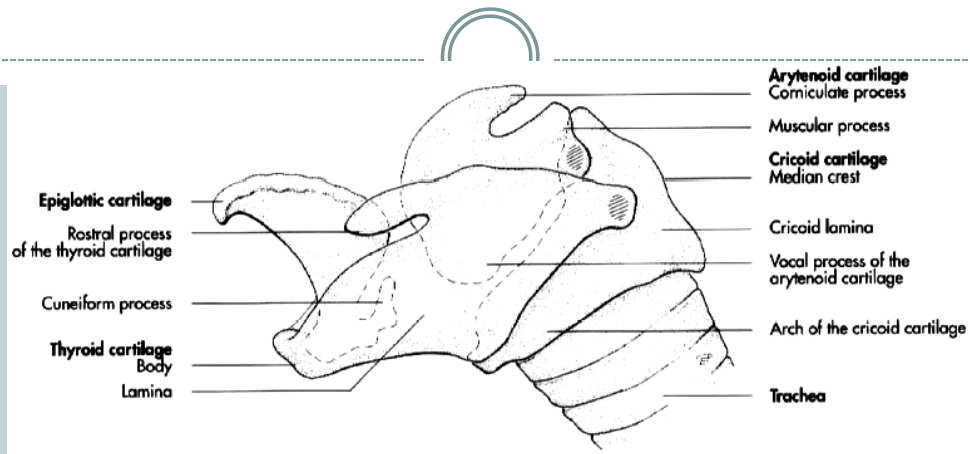


غضروف تیروئیدی

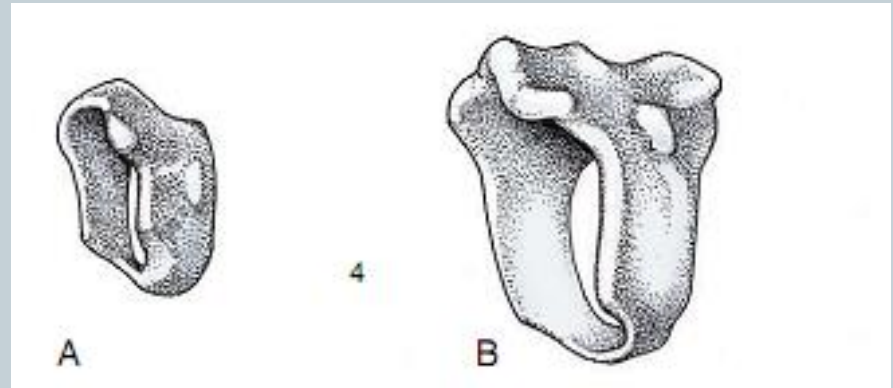


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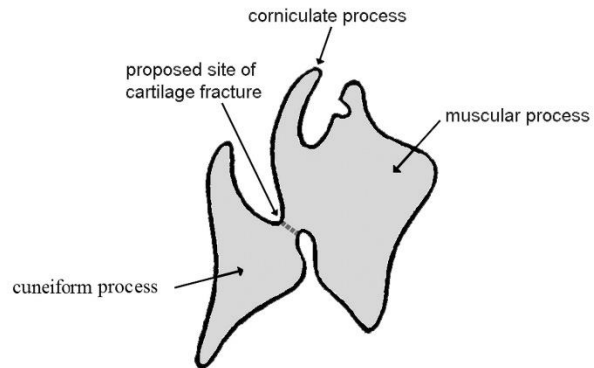




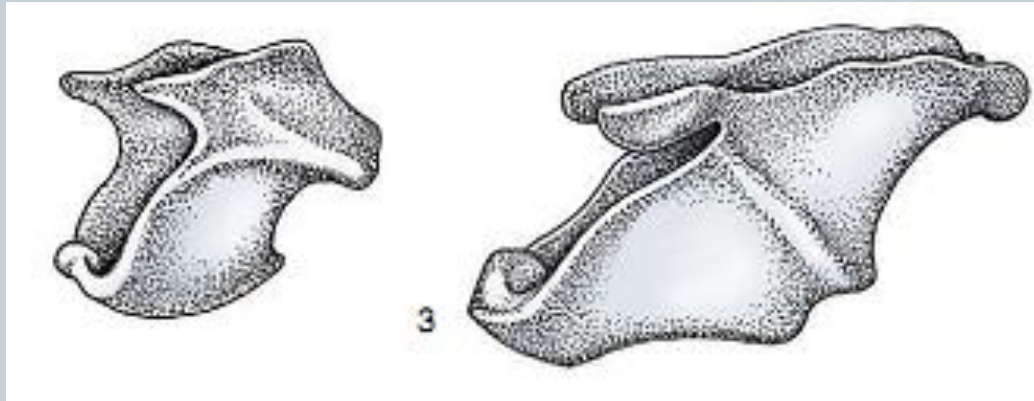
Cricoid cart. & Arytenoid cartilage



Left Arytenoid Cartilage



Thyroid and Epiglottic cartilage

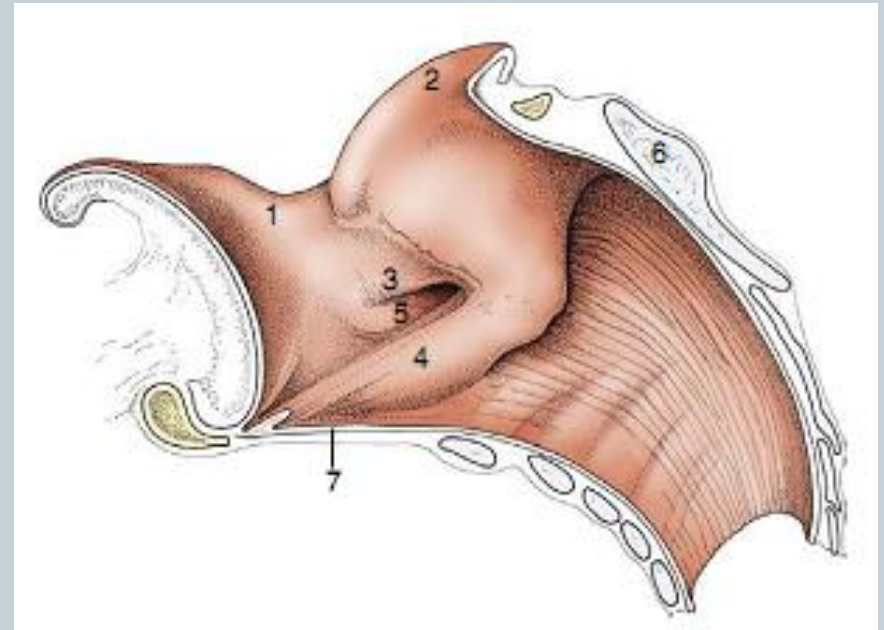
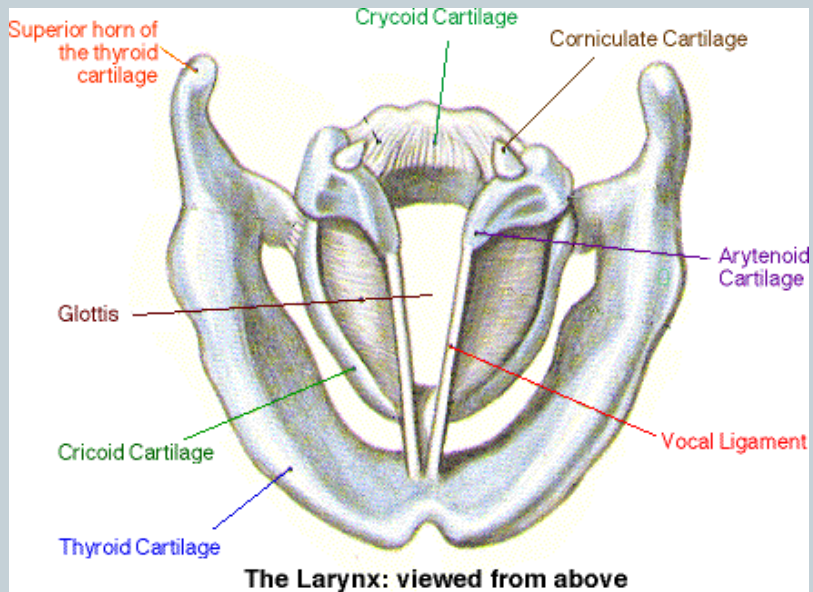


Adam's apple



Rima glottidis

شکاف حنجره



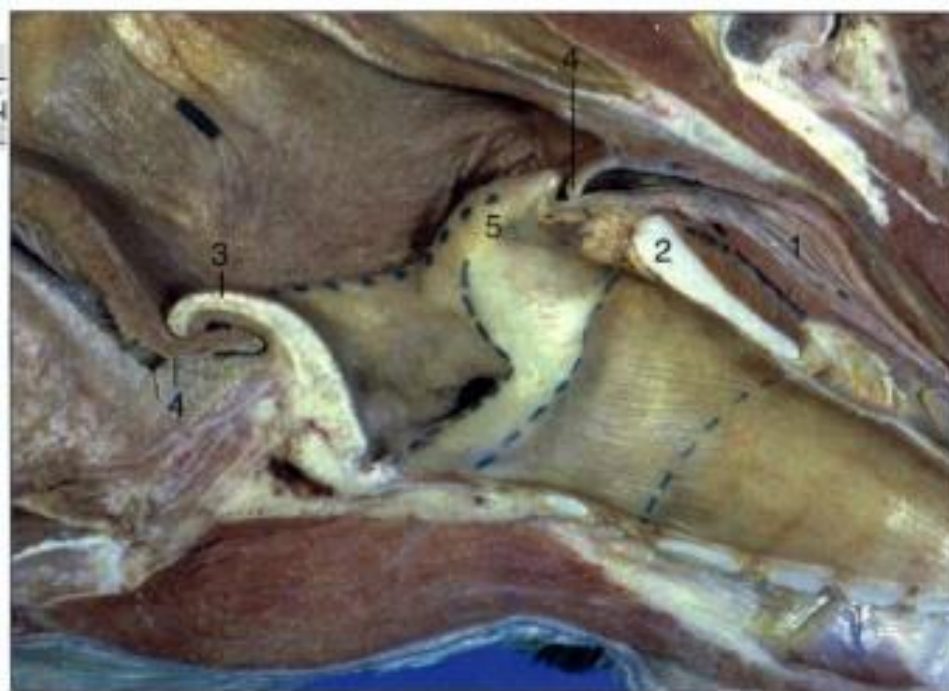
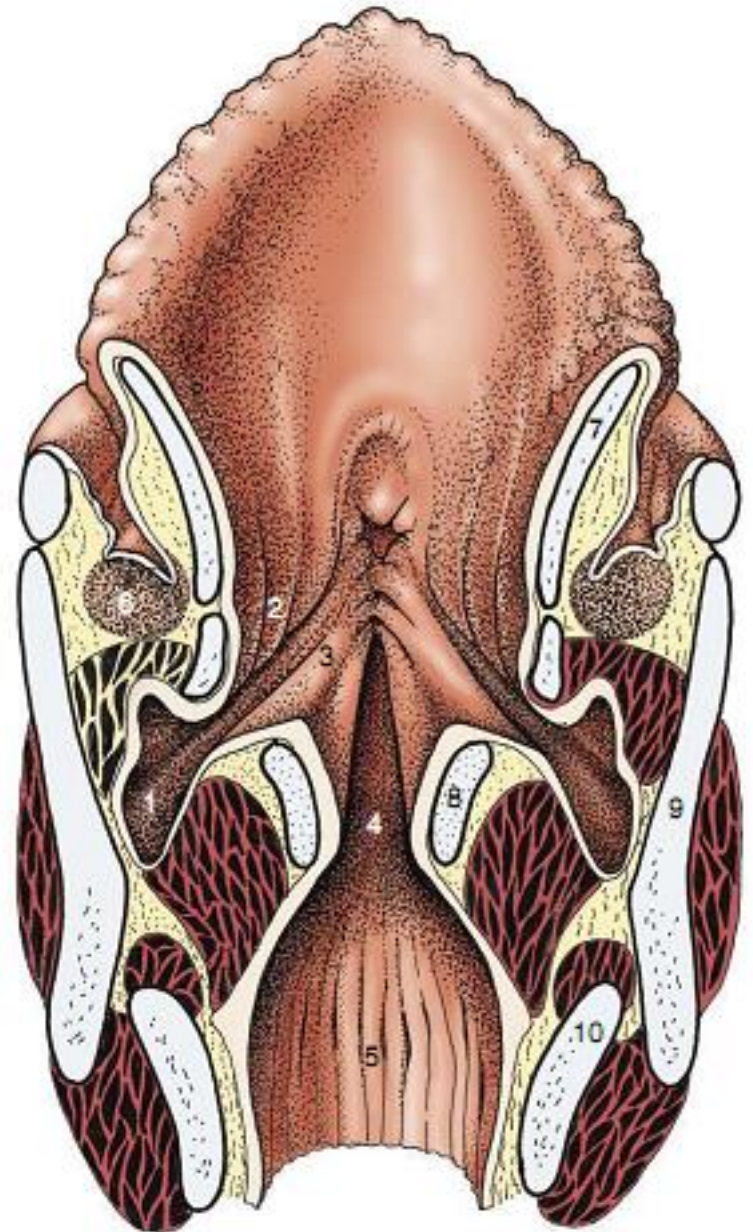


Figure 4-14 Sagittal section of junction of pharynx with larynx (horse). 1, Esophagus; 2, cricoid lamina; 3, epiglottis; 4, palatopharyngeal arch; 5, corniculate process of arytenoid cartilage.

Dorsal section of the larynx.

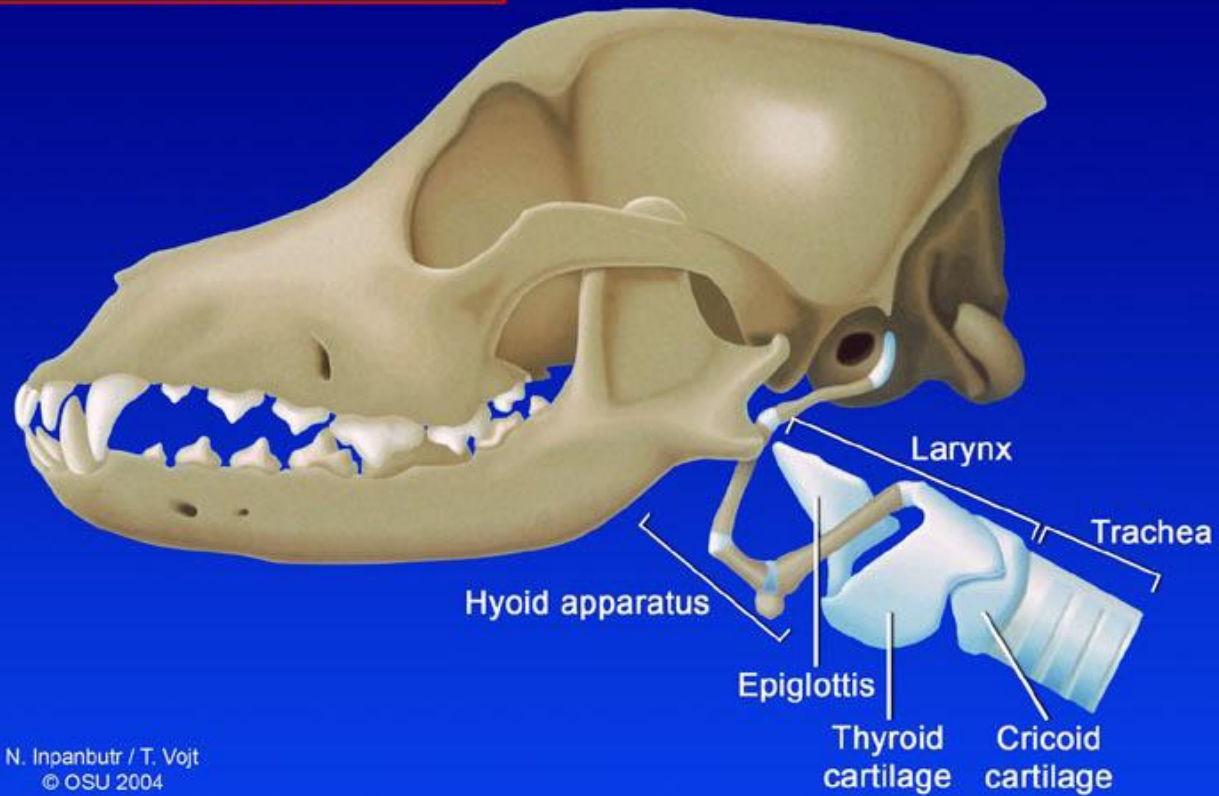
- 1, Laryngeal ventricle; •
- 2, vestibular fold with •
ventricularis;
- 3, vocal fold with vocalis; •
- 4, glottic cleft; •
- 5, infraglottic cavity; •
- 6, caudal end of palatine •
tonsil;
- 7, epiglottic cartilage; •
- 8, arytenoid cartilage; •
- 9, thyroid cartilage; •
- 10, cricoid cartilage. •



Laryngeal Joints



Hyoid Apparatus and larynx,
lateral view



N. Inpanbutr / T. Vojt
© OSU 2004

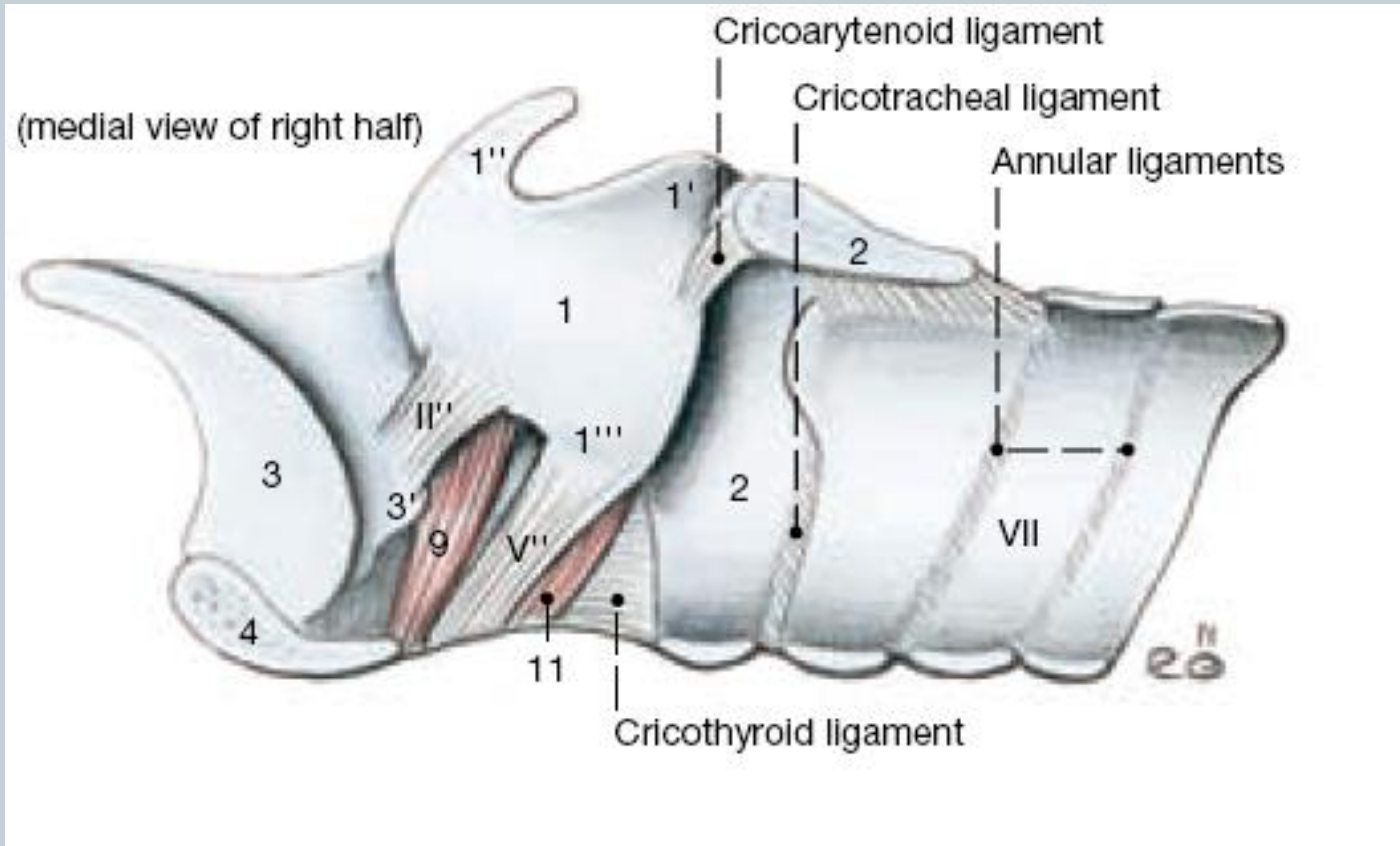
Ligaments of larynx



1. Cricothyroid lig. → large in H. (imp. In surgery for roaring disease)
 2. Cricoarythenoid lig. (ventral cricoid + arythenoid)
 3. Interarythenoid lig. (dorsally)
 4. Thyroepiglottic lig. (base of epiglottis + thyroid cartilage)
- Hyoepiglottic lig. (basihyoid B. + base of epiglottis)

1. Thyrohyoid membrane . (basihyoid B. + thyroid cartilage)
2. Cricotracheal lig. (membrane)
3. Vocal ligament & Vestibular ligament →

****RIMA GLOTIDIS** → between left & right Vocal fold



Muscles of larynx



1-extrinsic muscles:

thyrohyoideus M. ➤

Hyoepiglotticus M. ➤

Sternothyroideus M. ➤

2-intrinsic muscles:



cricothyroideus M.

N.

Cricoarythenoideus dorsalis M.

Cricoarythenoideus lateralis M.

Thyroarythenoideus M. □

Arythenoideus transversus M □

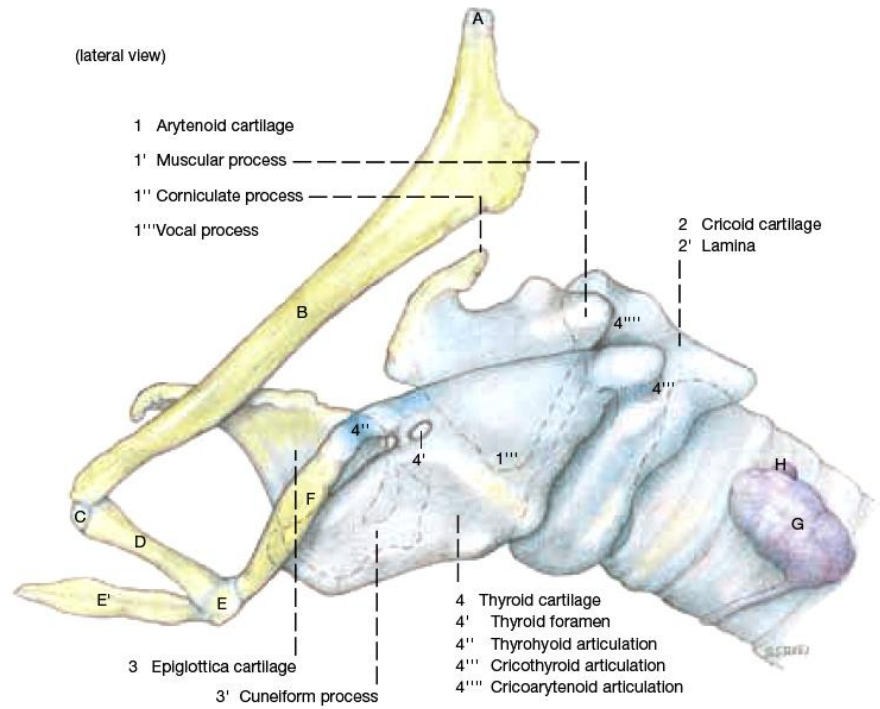
Cranial laryngeal □



Caudal laryngeal N. □

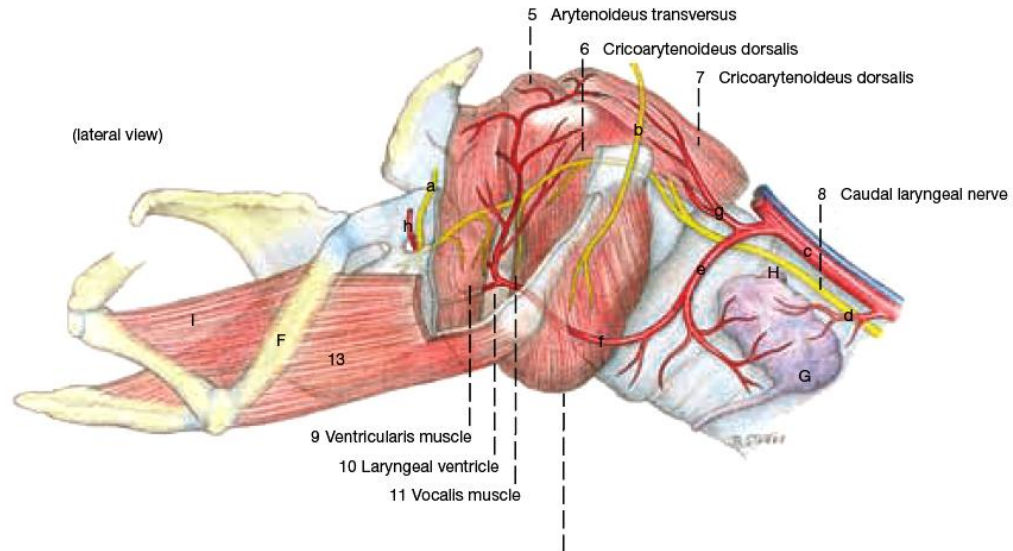
Larynx

(lateral view)



- A Tympanohyoid cartilage
- B Stylohyoid bone
- C Epihyoid bone
- D Ceratohyoid bone
- E Bashyoid bone
- E' Lingual process
- F Thyrohyoid bone
- G Thyroid gland
- H Parathyroid gland

(lateral view)



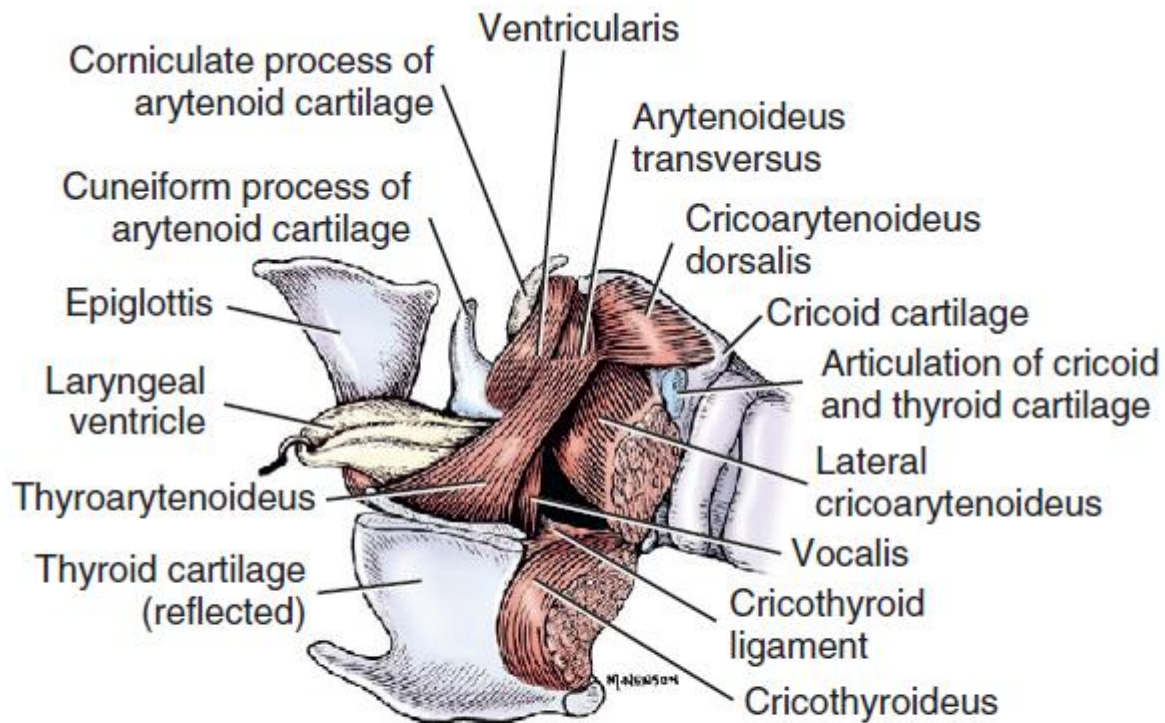


FIGURE 6-18 Laryngeal muscles, lateral aspect. (The thyroid cartilage is cut left of midline and reflected.)

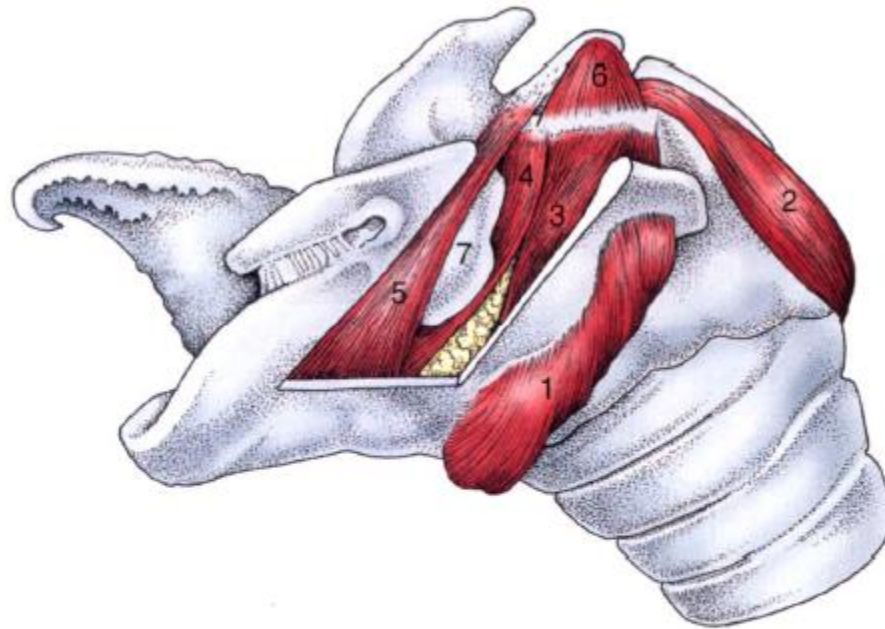
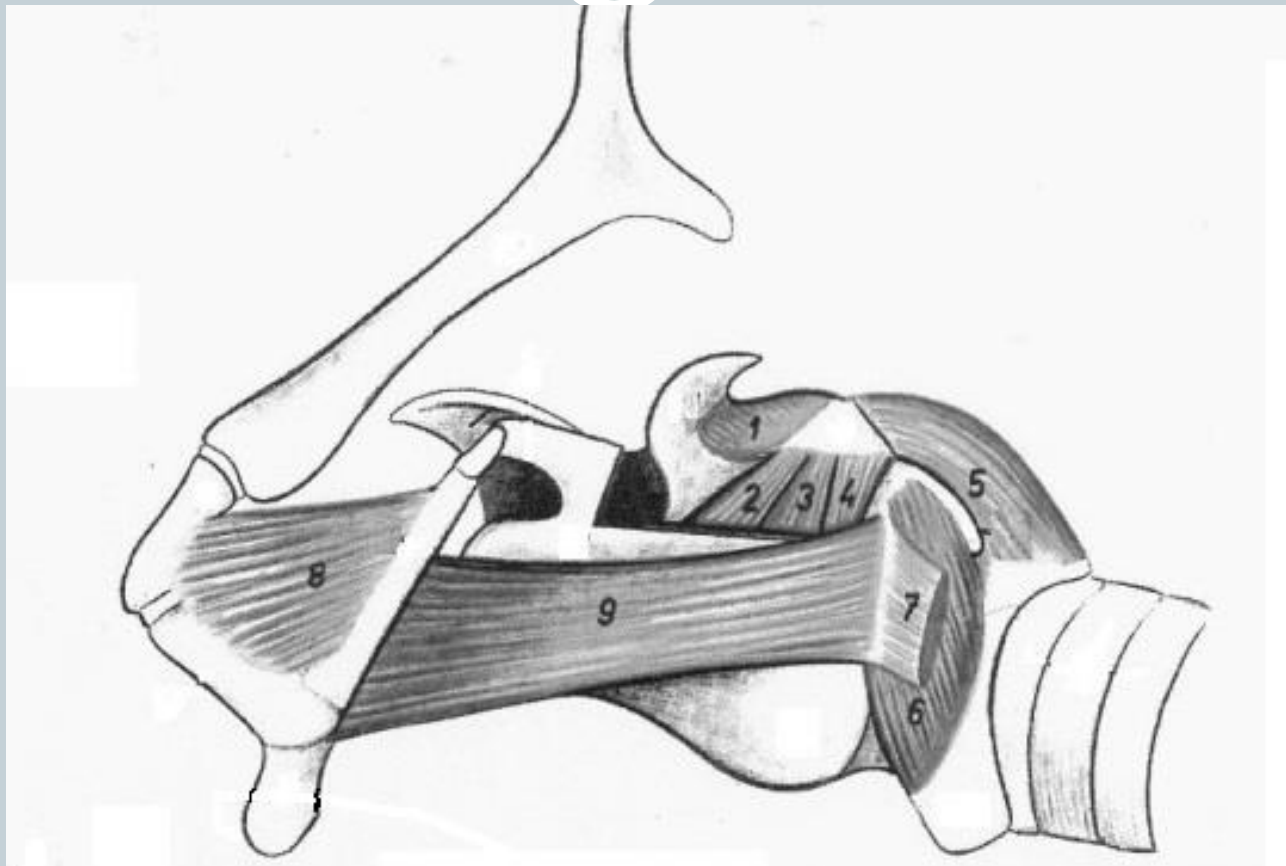


Figure 4–12 Intrinsic muscles of the equine larynx. 1, Cricothyroideus; 2, cricoarytenoideus dorsalis; 3, cricoarytenoideus lateralis; 4, vocalis; 5, ventricularis (4,5: thyroarytenoideus); 6, arytenoideus transversus; 7, laryngeal ventricle.



1) Transverse arytenoid M. 2) Ventricular M. 3) Vocal M. 4) Lateral cricoarytenoid M. 5) Dorsal cricostyloid M. 6) Cricothyroid M. 7) Sternothyroid M. 8) Ceratohyoid M. 9) Thyrohyoid M.

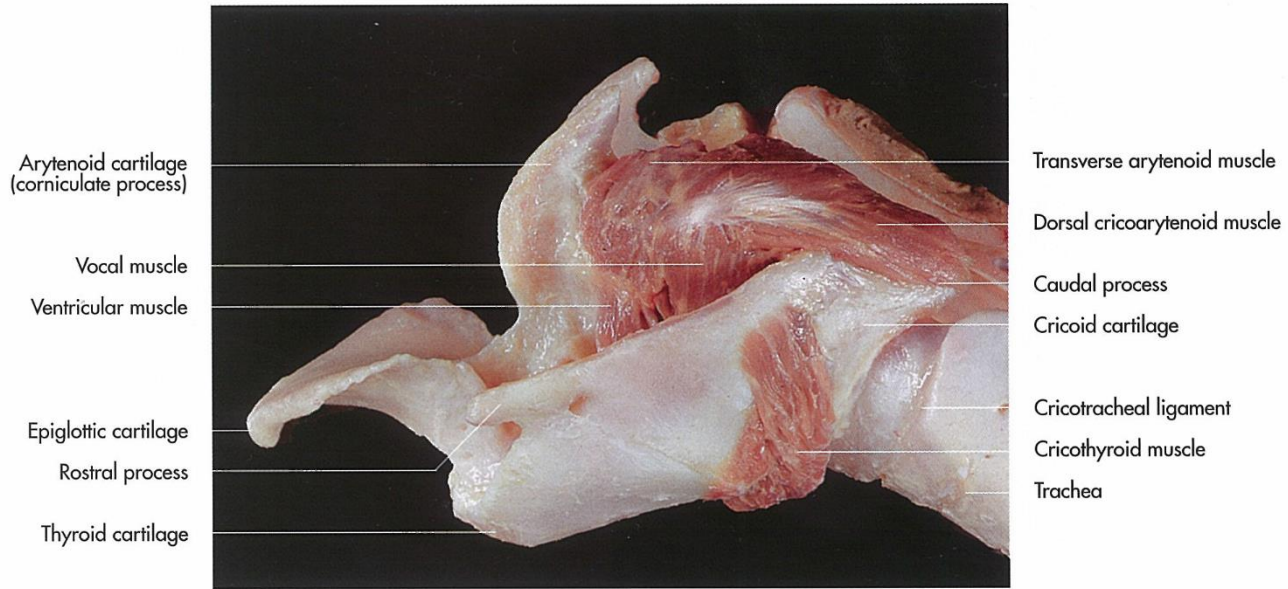


Fig. 8-20. Larynx of a horse, demonstrating the laryngeal muscles (courtesy of Dr. R. Macher, Vienna).

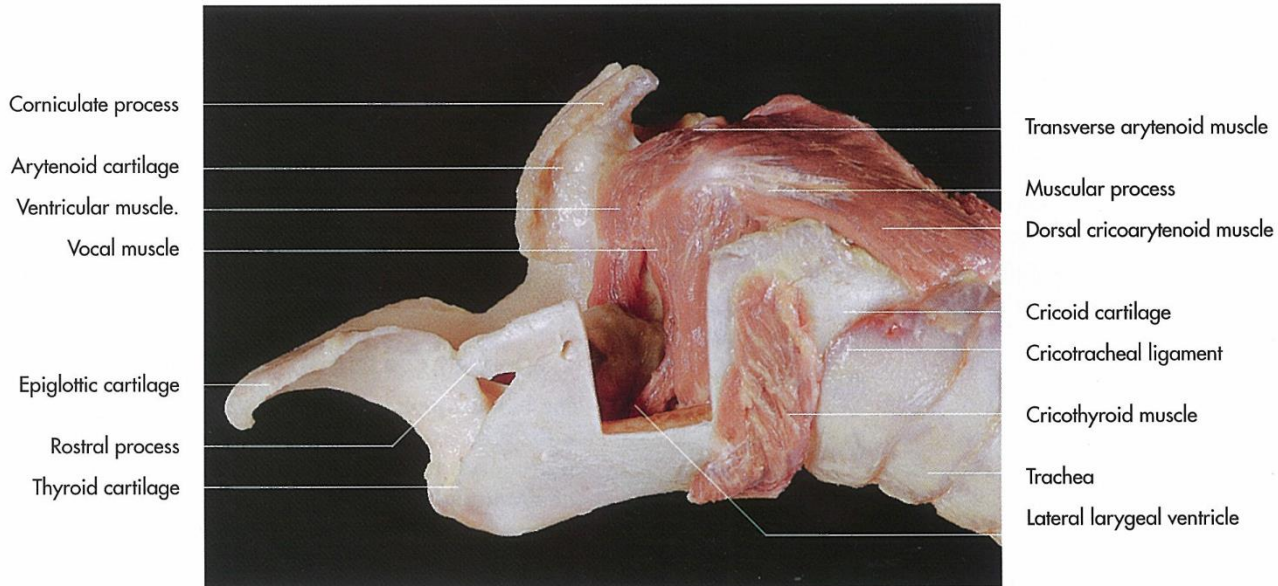
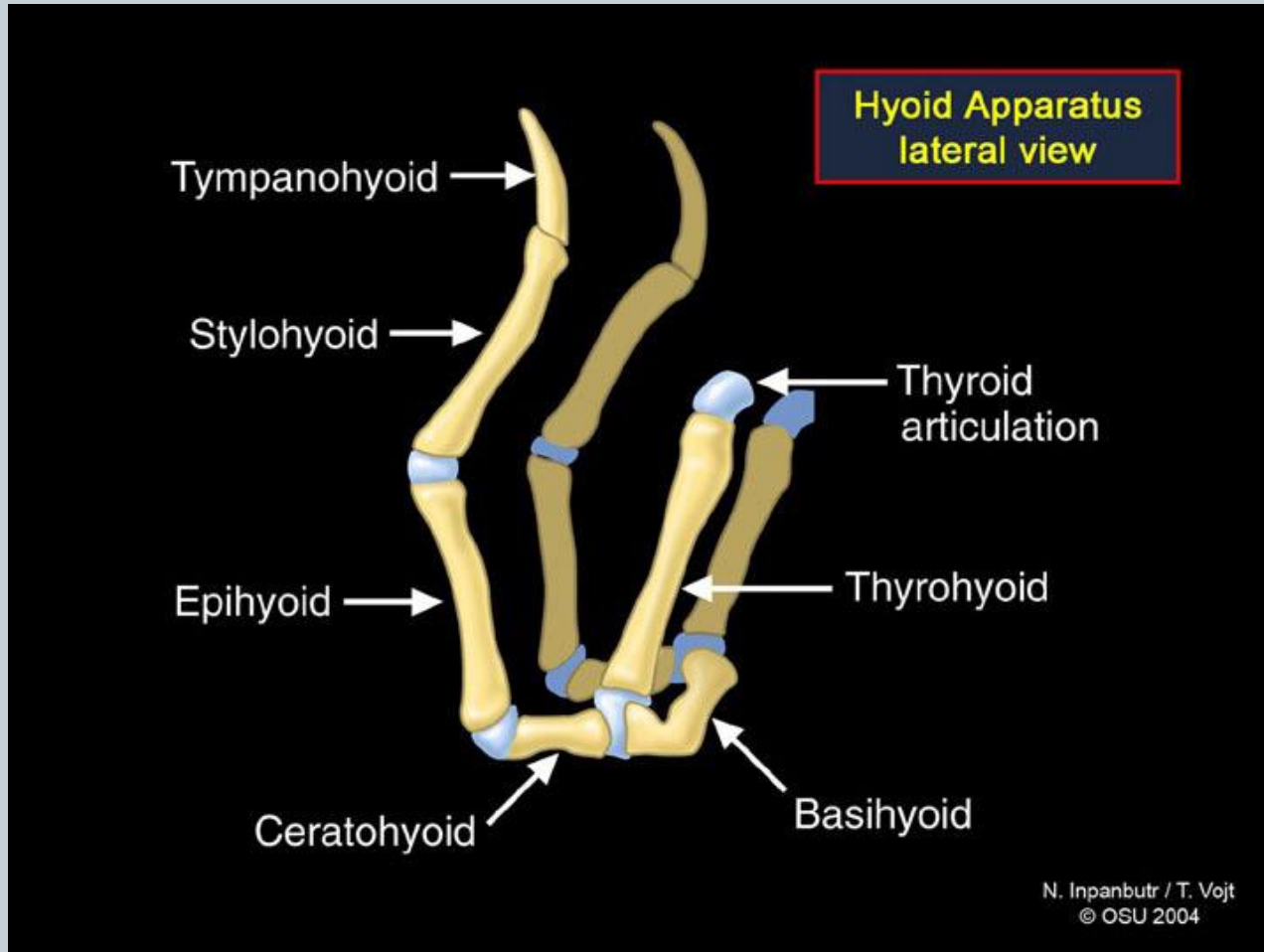


Fig. 8-21. Larynx of a horse, thyroid cartilage partly removed (courtesy of Dr. R. Macher, Vienna).

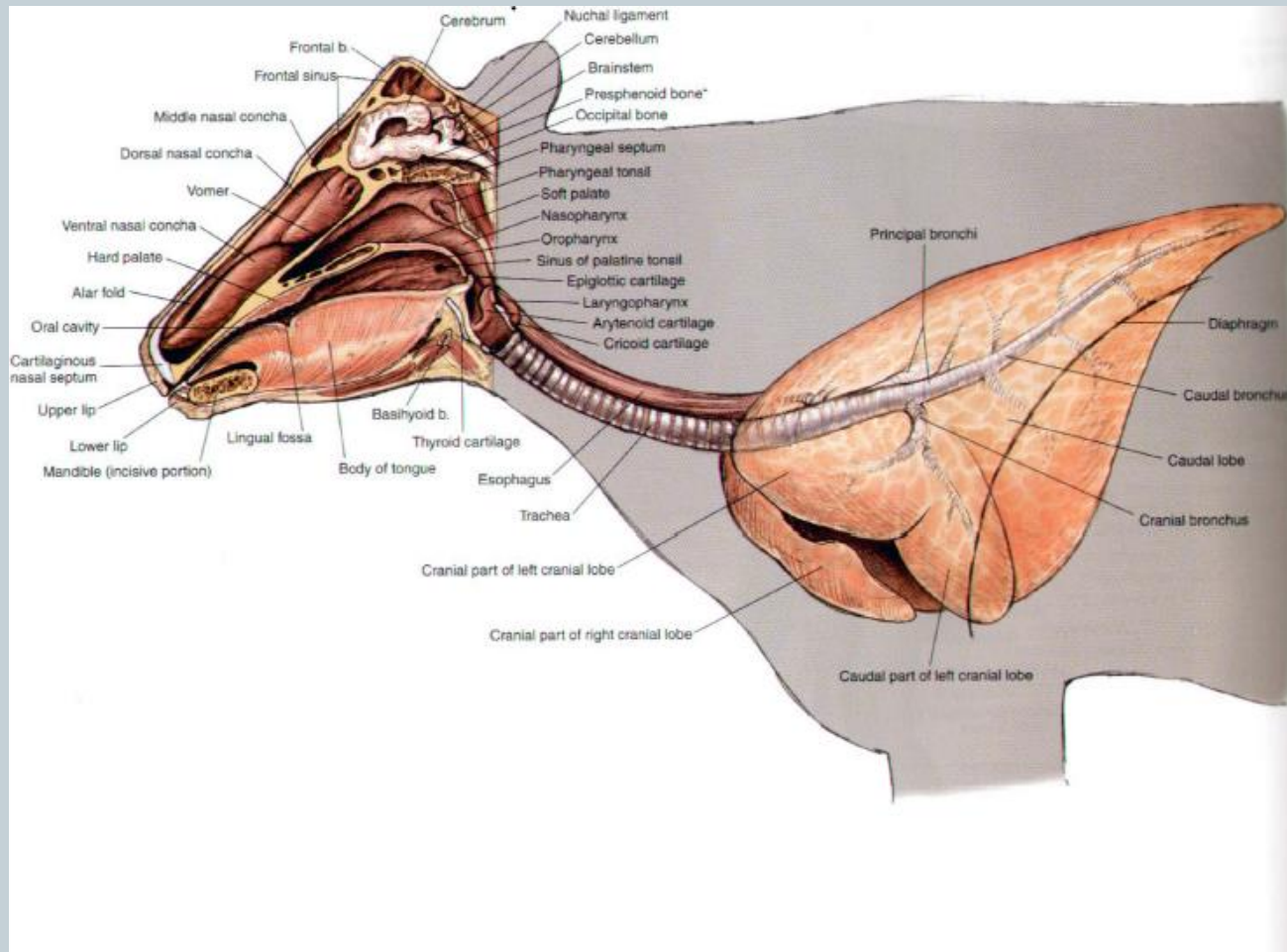
Hyoid apparatus

دستگاه لامی

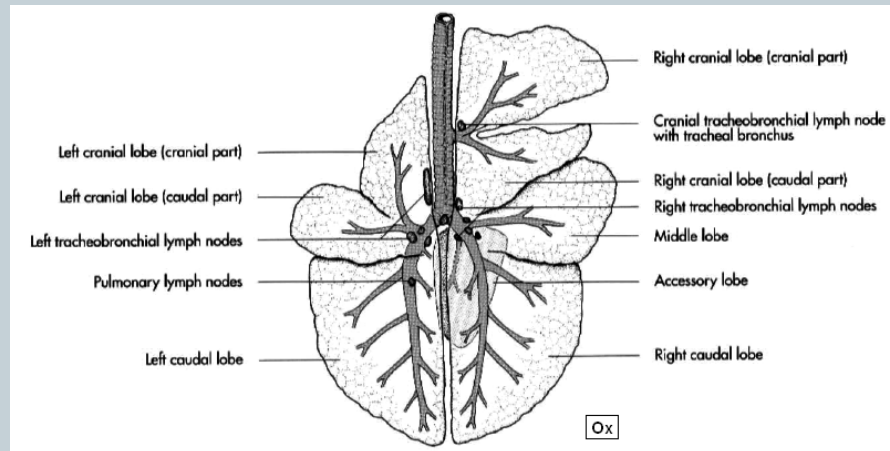
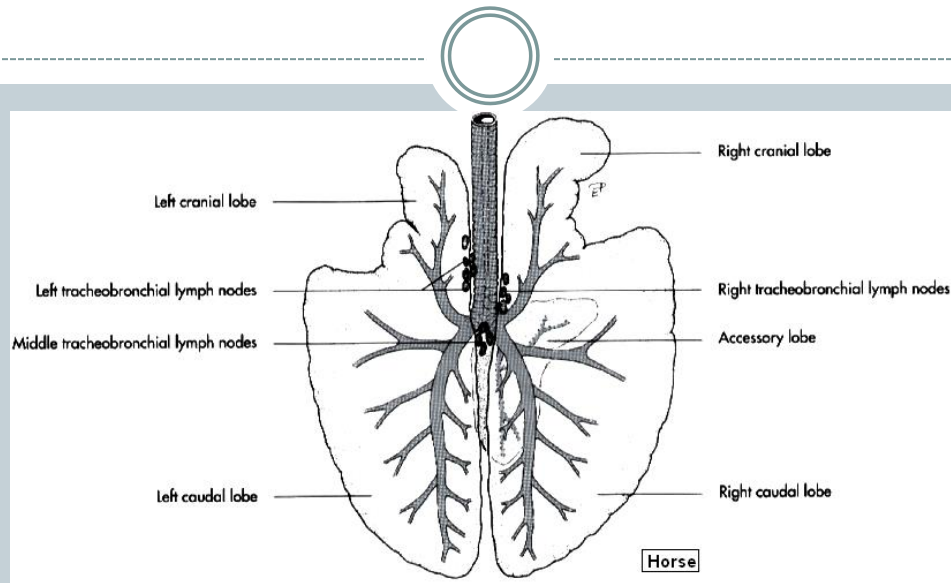


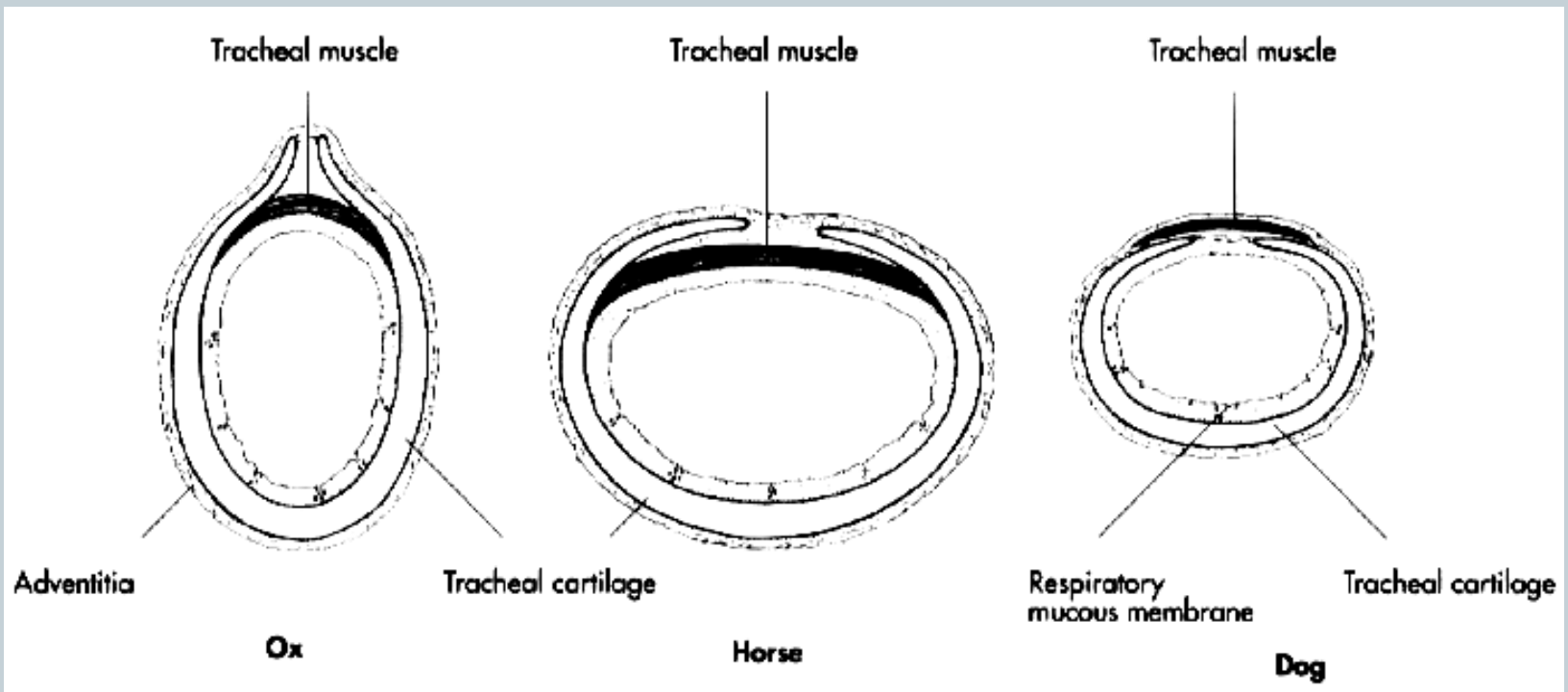
Trachea

نای



Tracheal bronchus





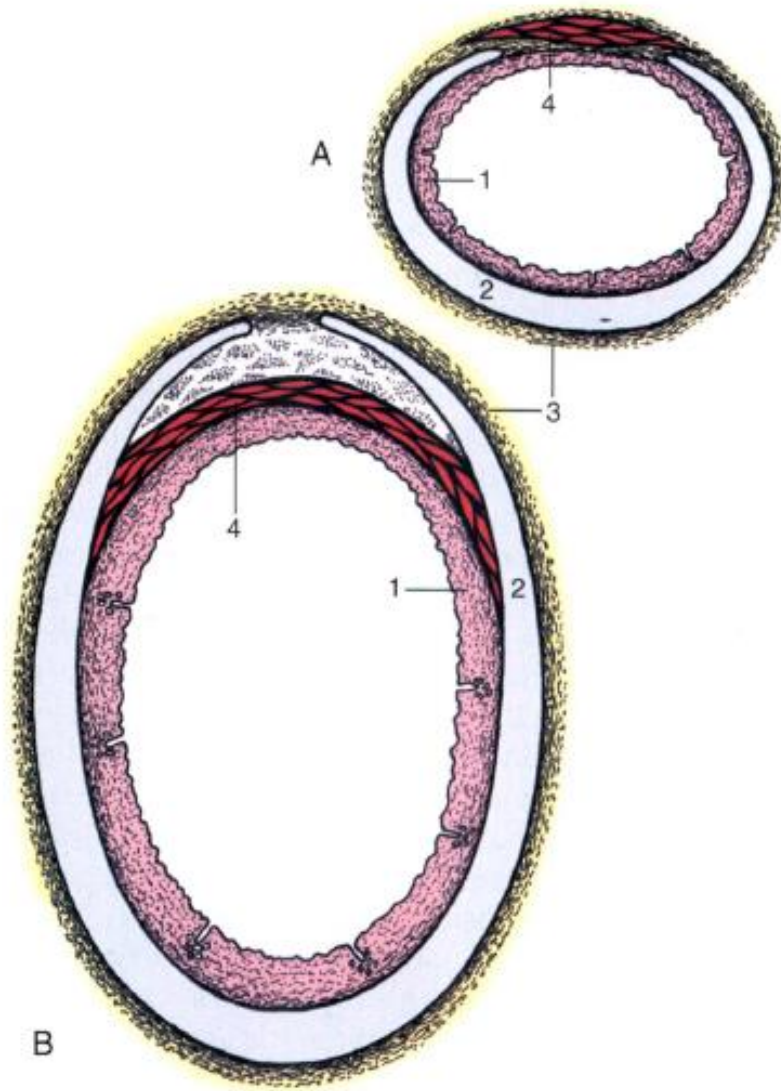
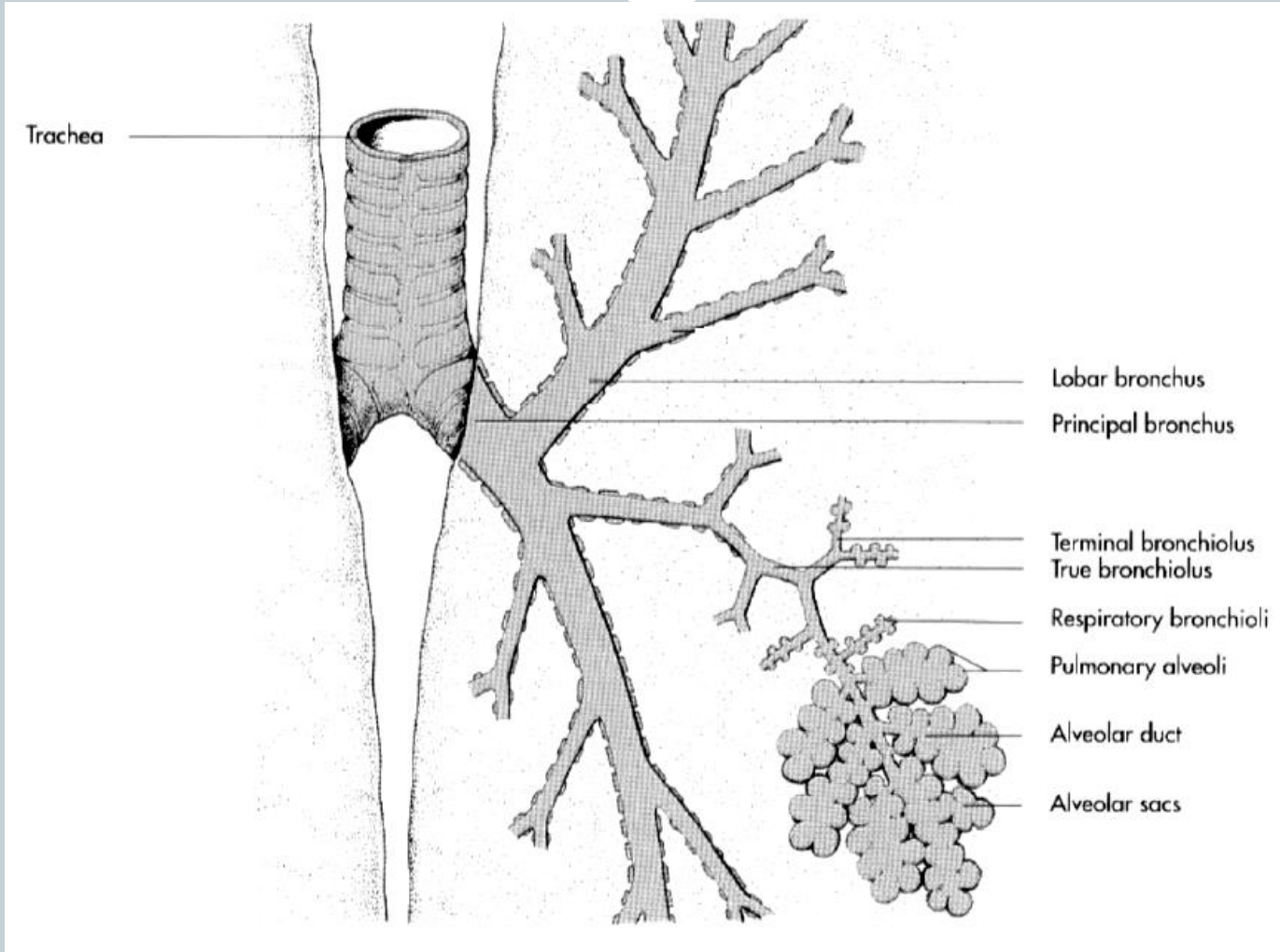
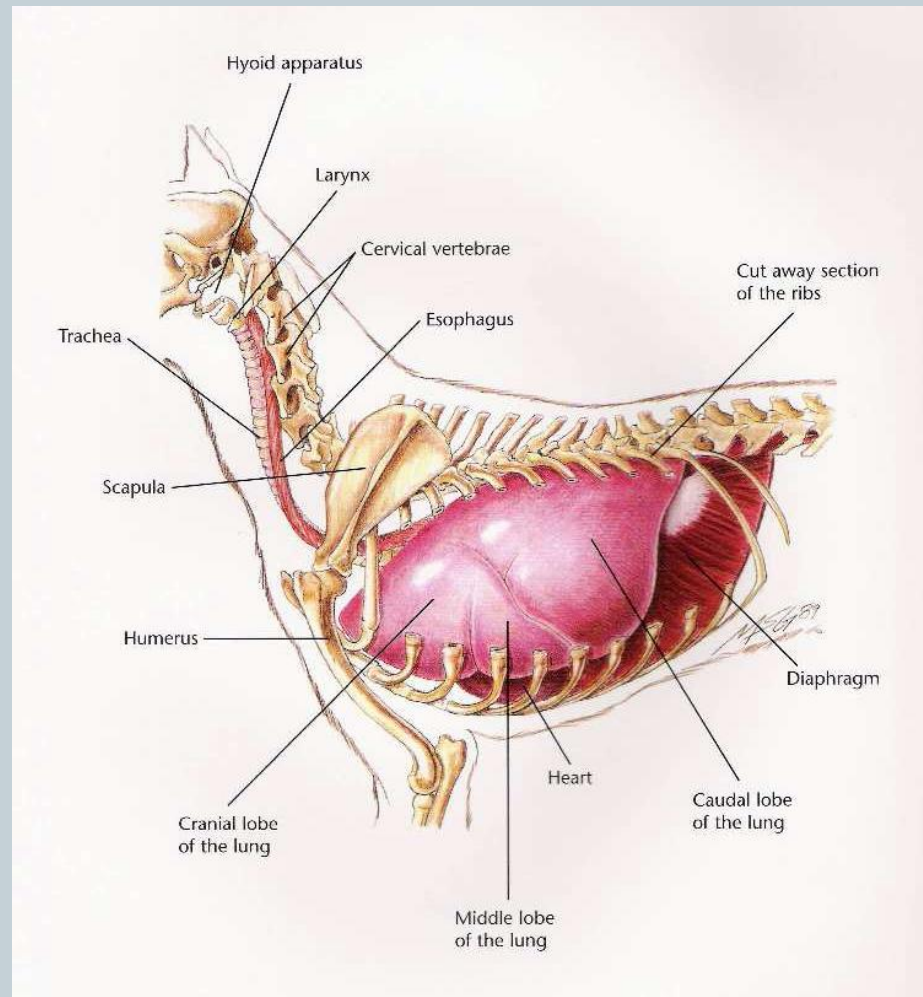


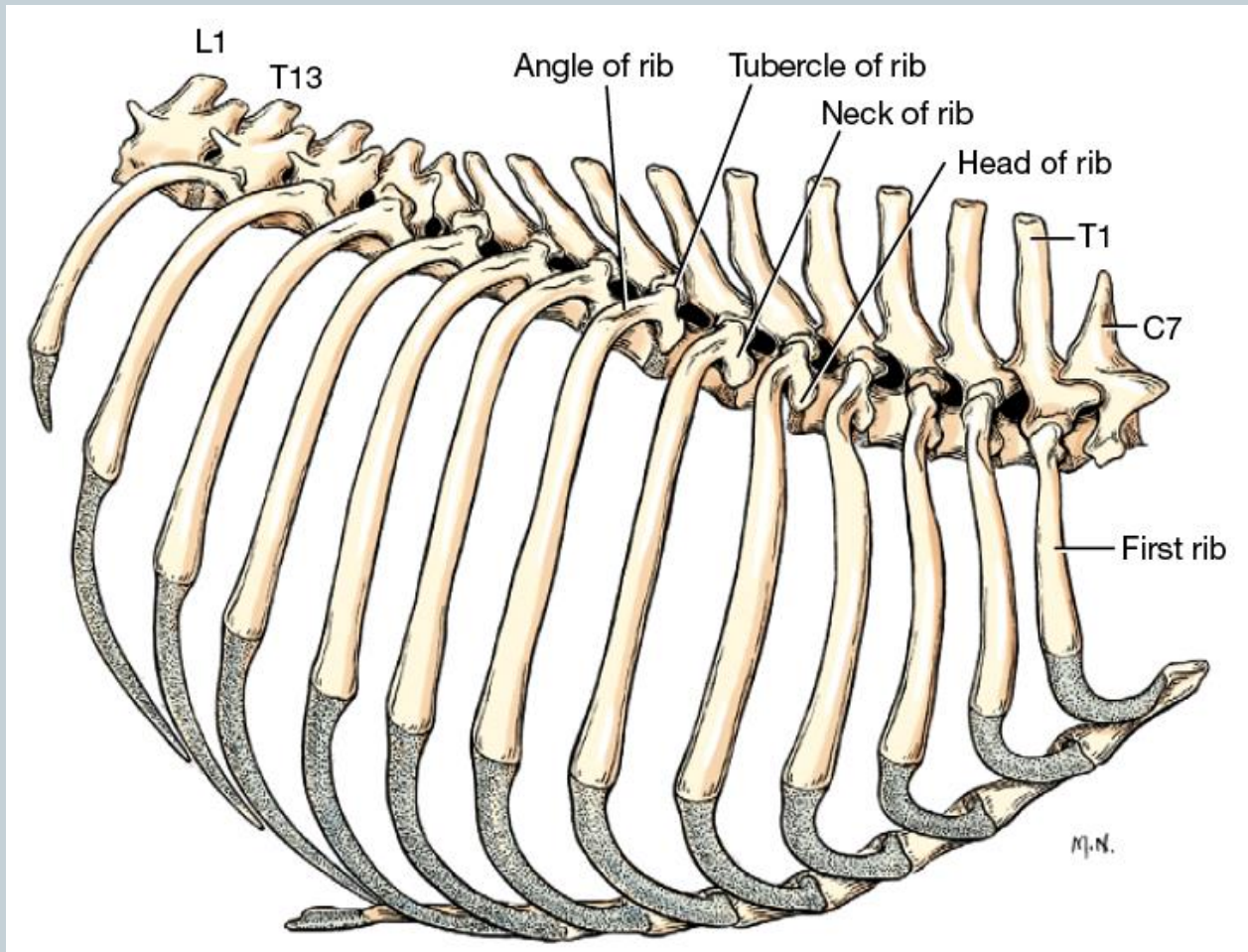
Figure 4-18 Transverse sections of the canine (A) and bovine (B) trachea. 1, Mucous membrane; 2, tracheal cartilage; 3, adventitia; 4, tracheal muscle (external in dogs, internal in cattle).



Thoracic cavity



Thorax



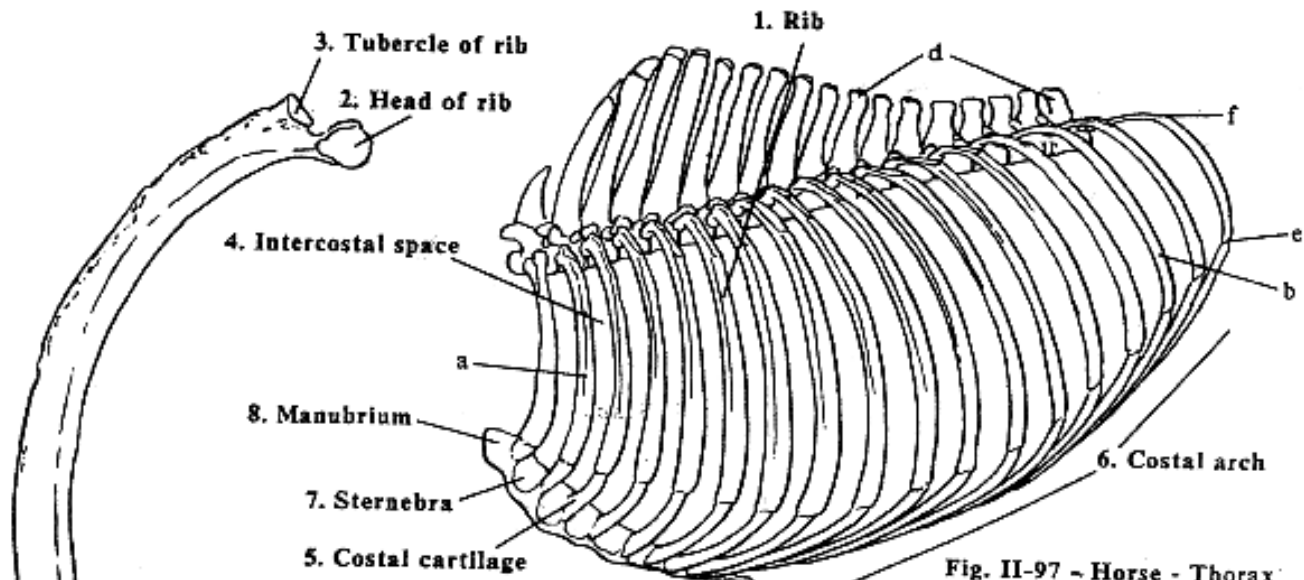


Fig. II-96 - Horse - Rib

Fig. II-97 - Horse - Thorax
lat. view

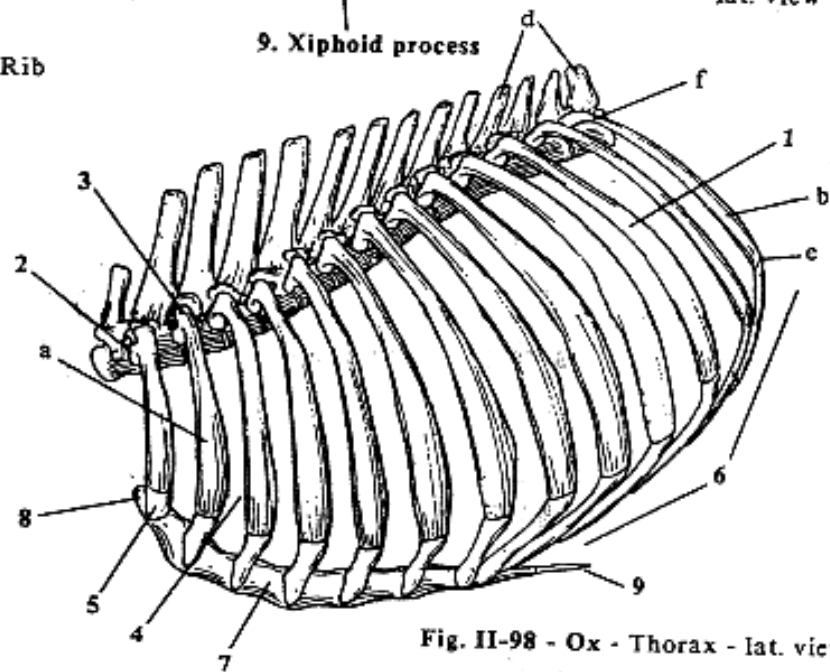
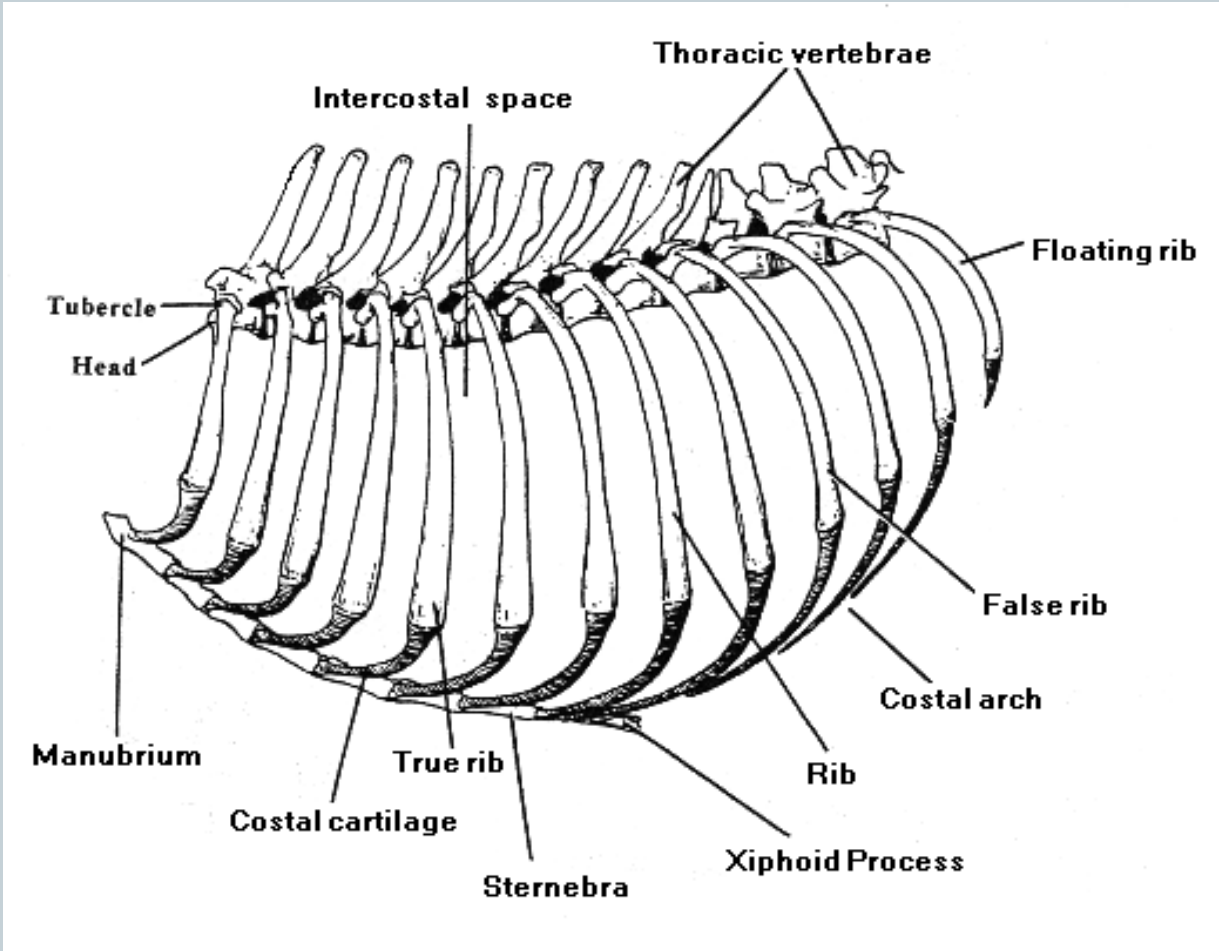


Fig. II-98 - Ox - Thorax - lat. view



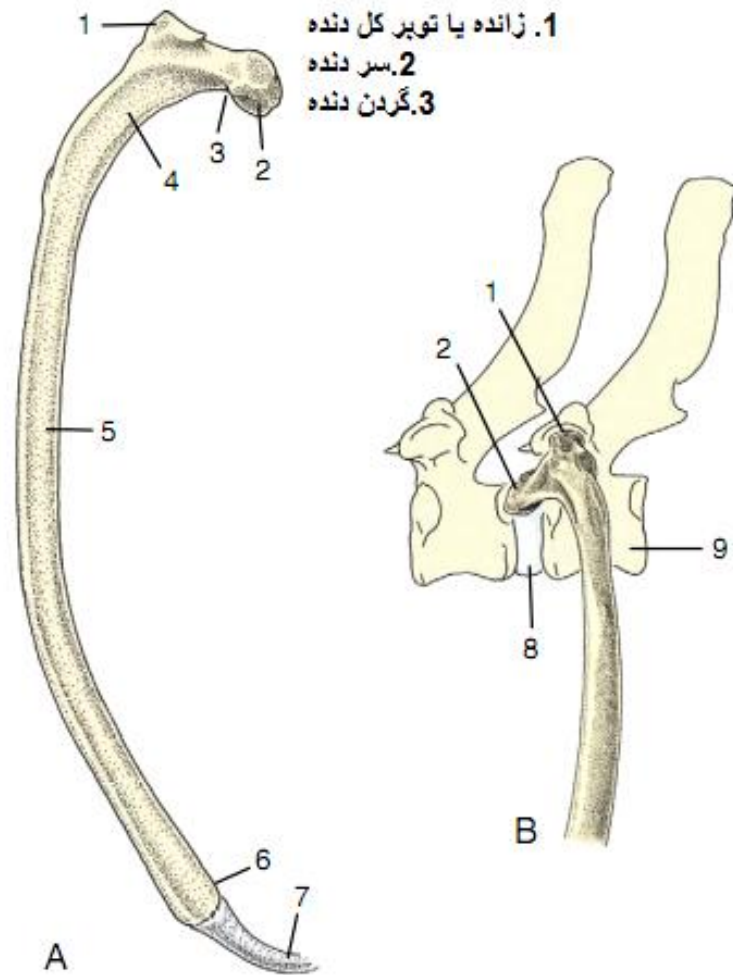
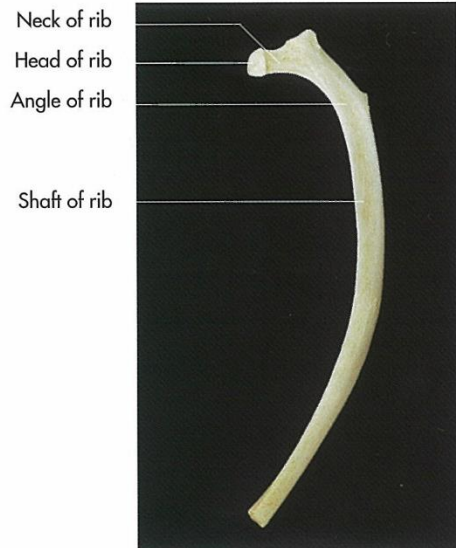


Figure 2-16 A, Left rib of a dog, caudal view. B, Left rib of a dog articulating with two vertebrae, lateral view. 1, Tubercle; 2, head; 3, neck; 4, angle; 5, body; 6, costochondral junction; 7, costal cartilage; 8, intervertebral disk; 9, vertebra of same number as rib.



. Rib of a dog (caudal aspect).

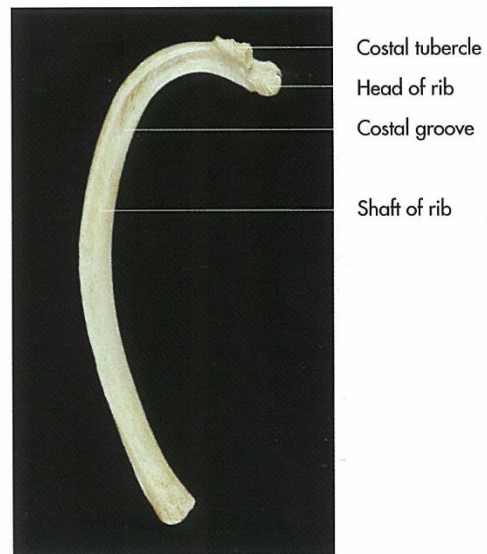
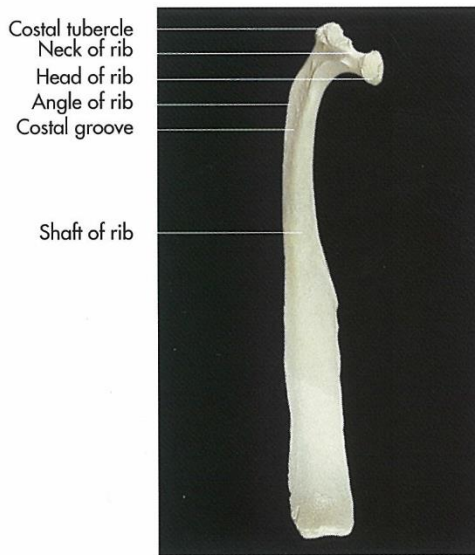


Fig. 1-106. Rib of a pig (caudal aspect).



. Rib of an ox (caudal aspect).

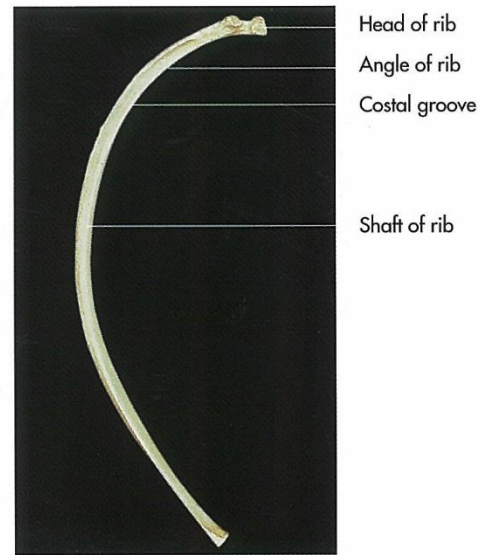


Fig. 1-108. Rib of a horse (caudal aspect).

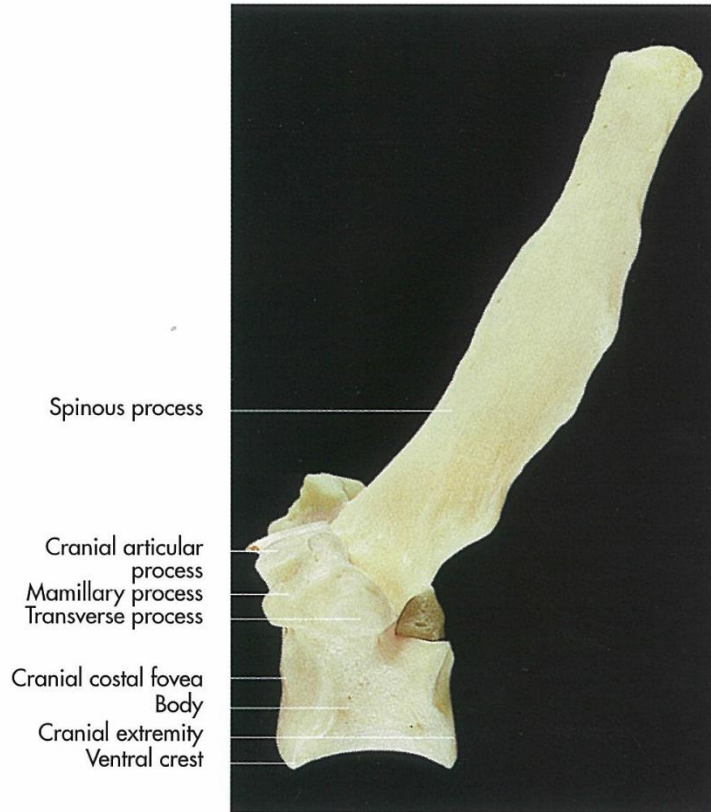


Fig. 1-80. Thoracic vertebra of a pig (left lateral aspect).

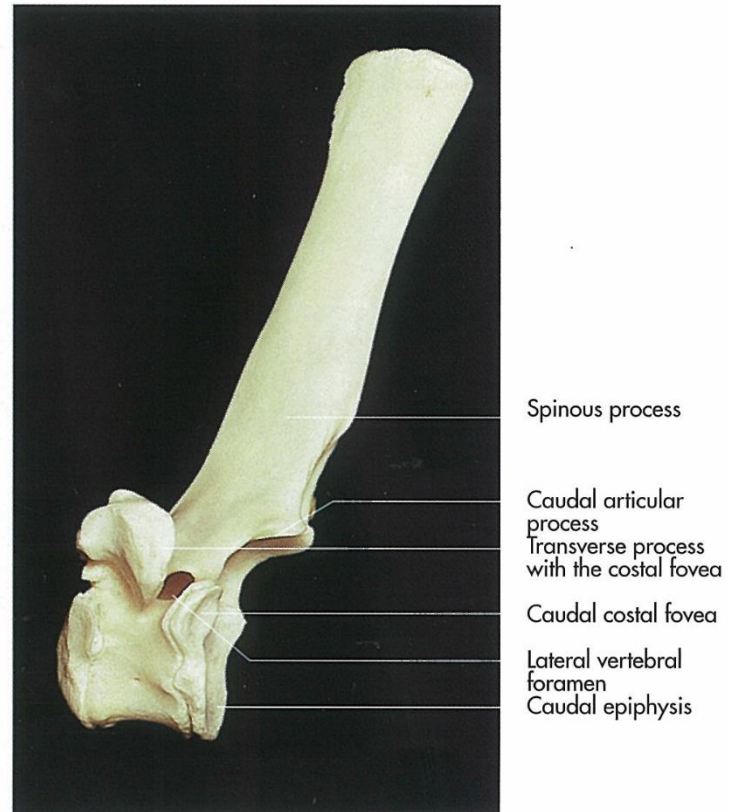
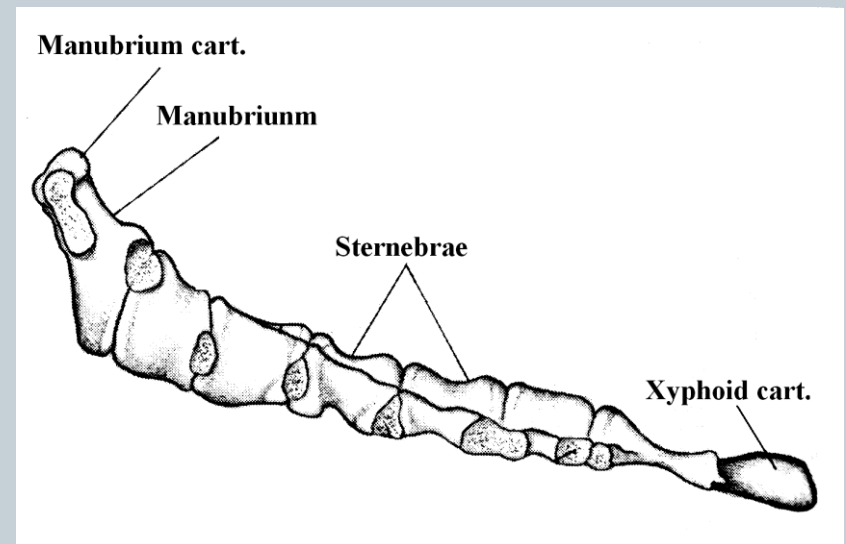
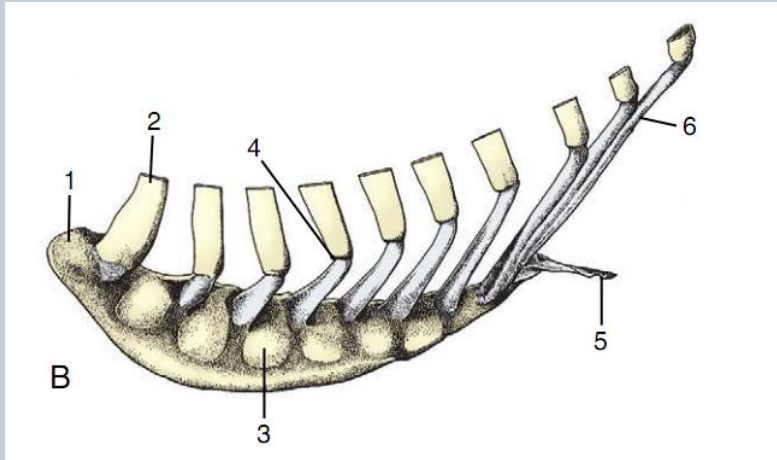
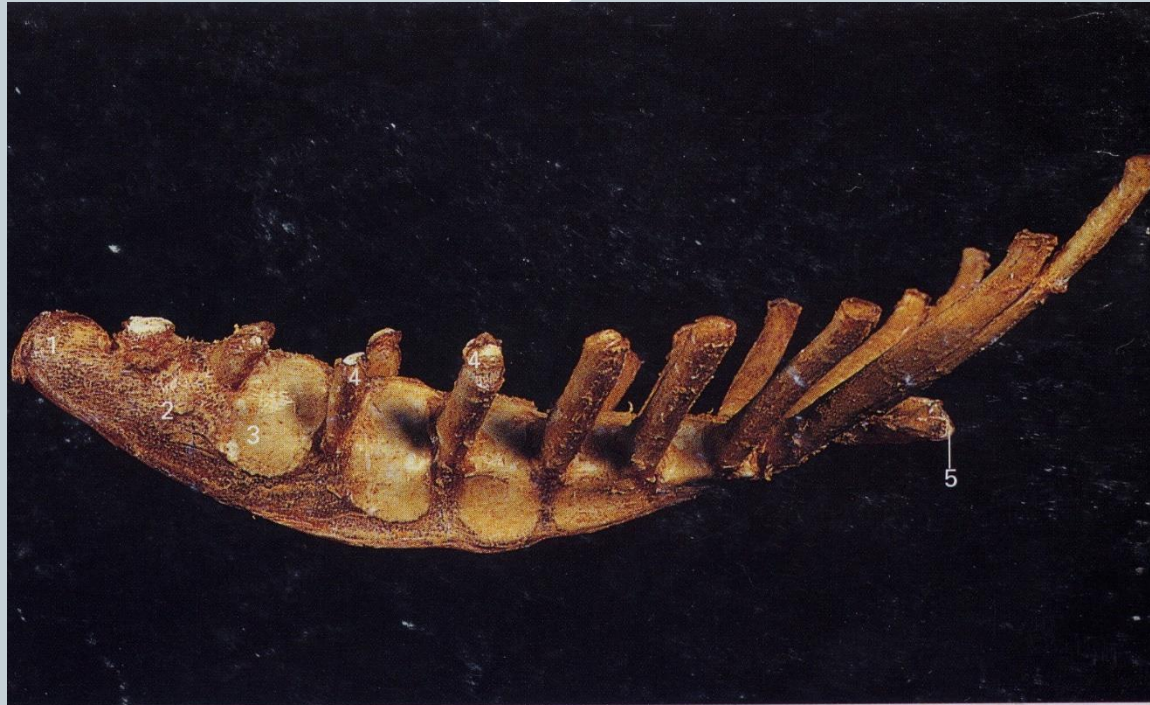


Fig. 1-81. Thoracic vertebra of an ox (craniolateral aspect).

Sternum in horse & ox





68. Sternum of horse, lateral view.

- | | |
|--------------------------|---------------------|
| 1 Cartilage of manubrium | 4 Costal cartilage |
| 2 Manubrium | 5 Xiphoid cartilage |
| 3 Second sternebra | |

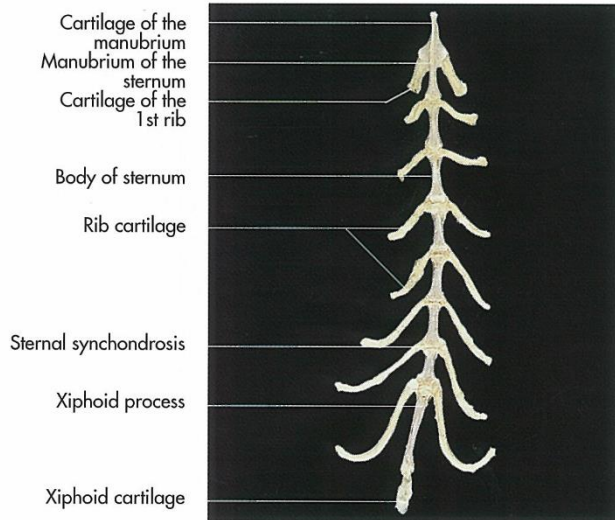


Fig. 1-109. Sternum of a cat (dorsal aspect).

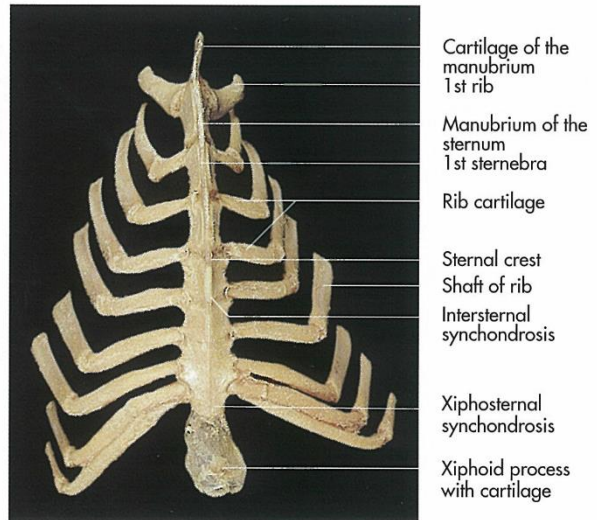


Fig. 1-110. Sternum of a horse (ventral aspect).

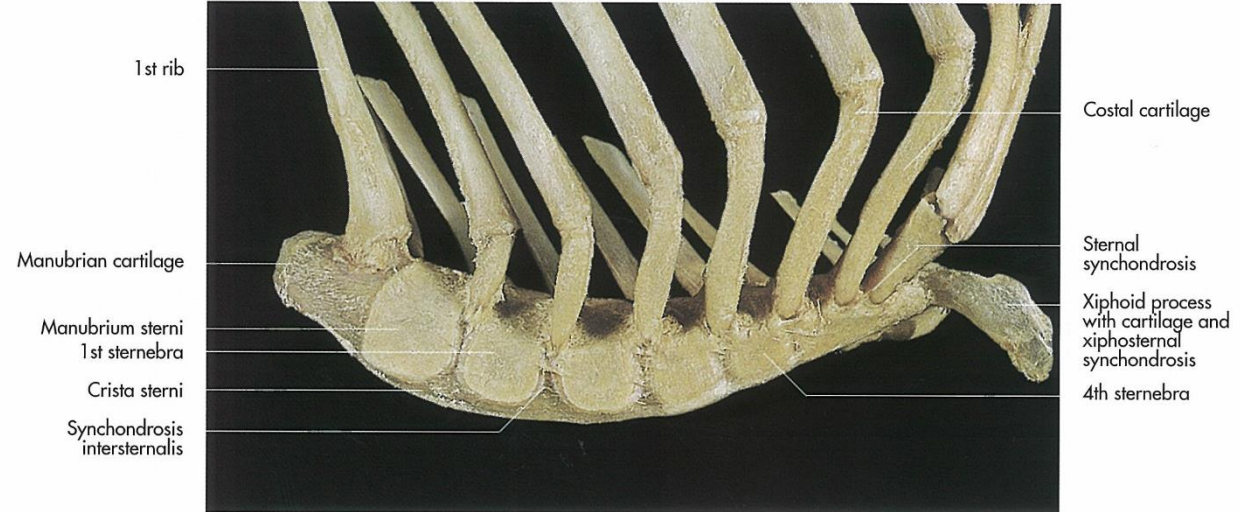
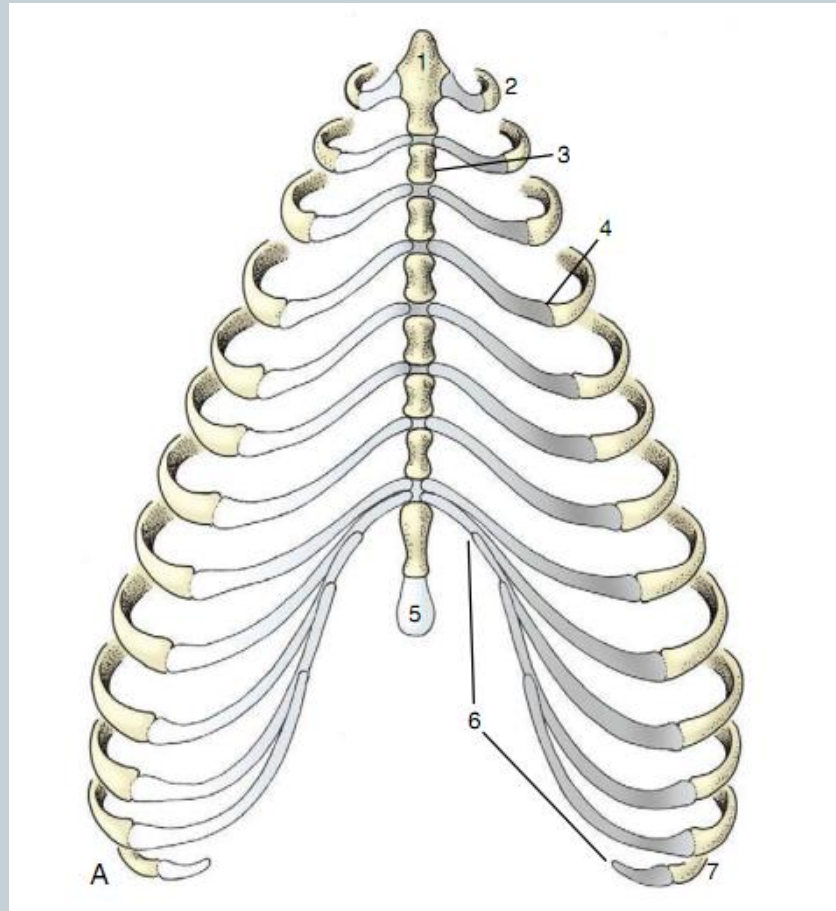
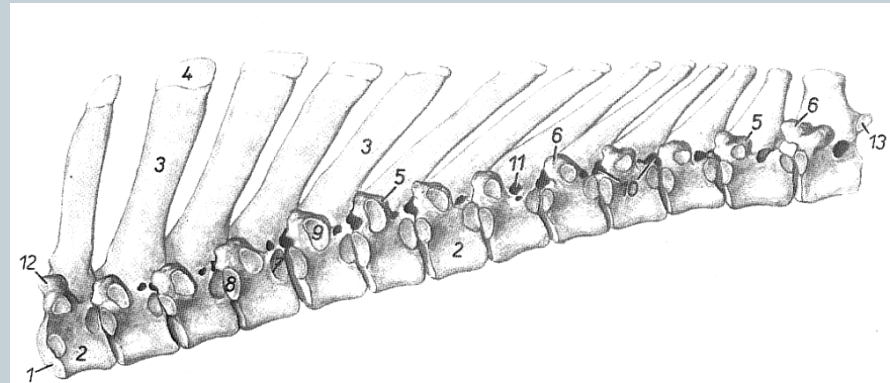
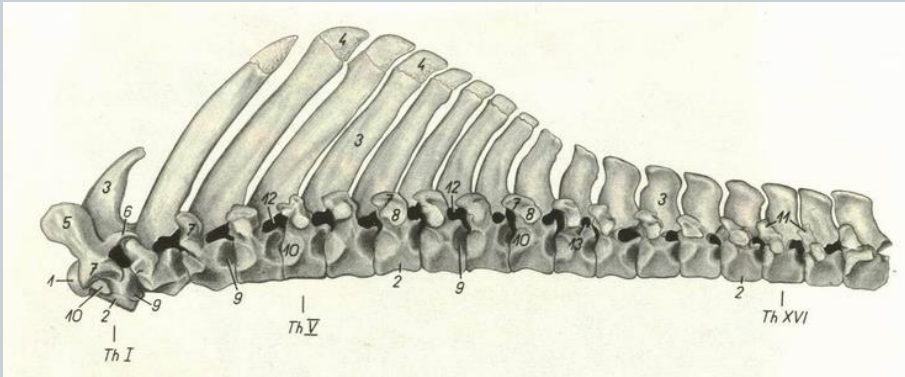


Fig. 1-111. Sternum of a horse (lateral aspect).



Thoracic Vertebrae

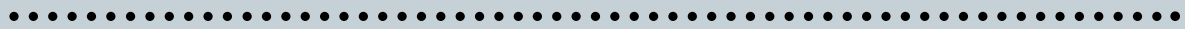


- 1)Cranial extremity of fist thoracic vertebra 2)Body of vertebra 3)Spinous P 4)Tuberosity of spinous P 5)Transverse P
6)Mamillary P 7)Coudal costal facet 8)Cranial costal facet 9)Transverse costal fovea 10)Intervertebral foramina
11)Lateral vertebral foramina 12)Crania articular P. of first vertebra 13)Coudal articular P.Of 13th thoracic vertebra

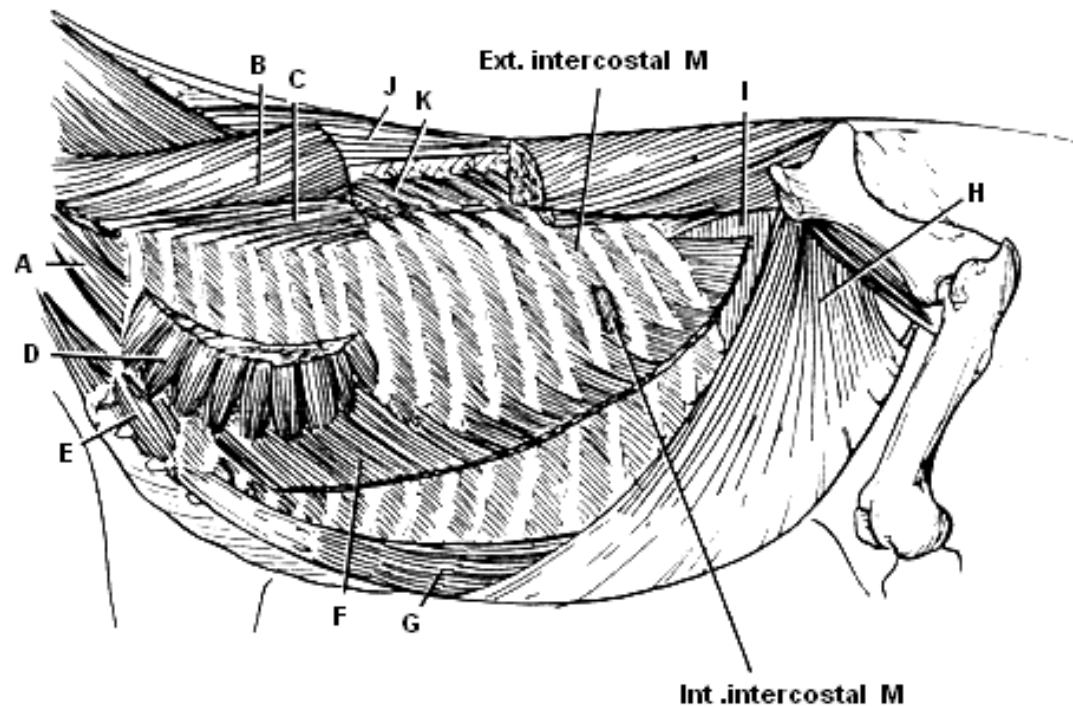
Thoracic Muscle



- 1- External intercostal
- 2- Levator costarum
- 3- Rectus thoracis
- 4- Serratus dorsalis cranialis



- 1. Internal intercostal
- 2. Serratus dorsalis caudalis
- 3. Transverse thoracic

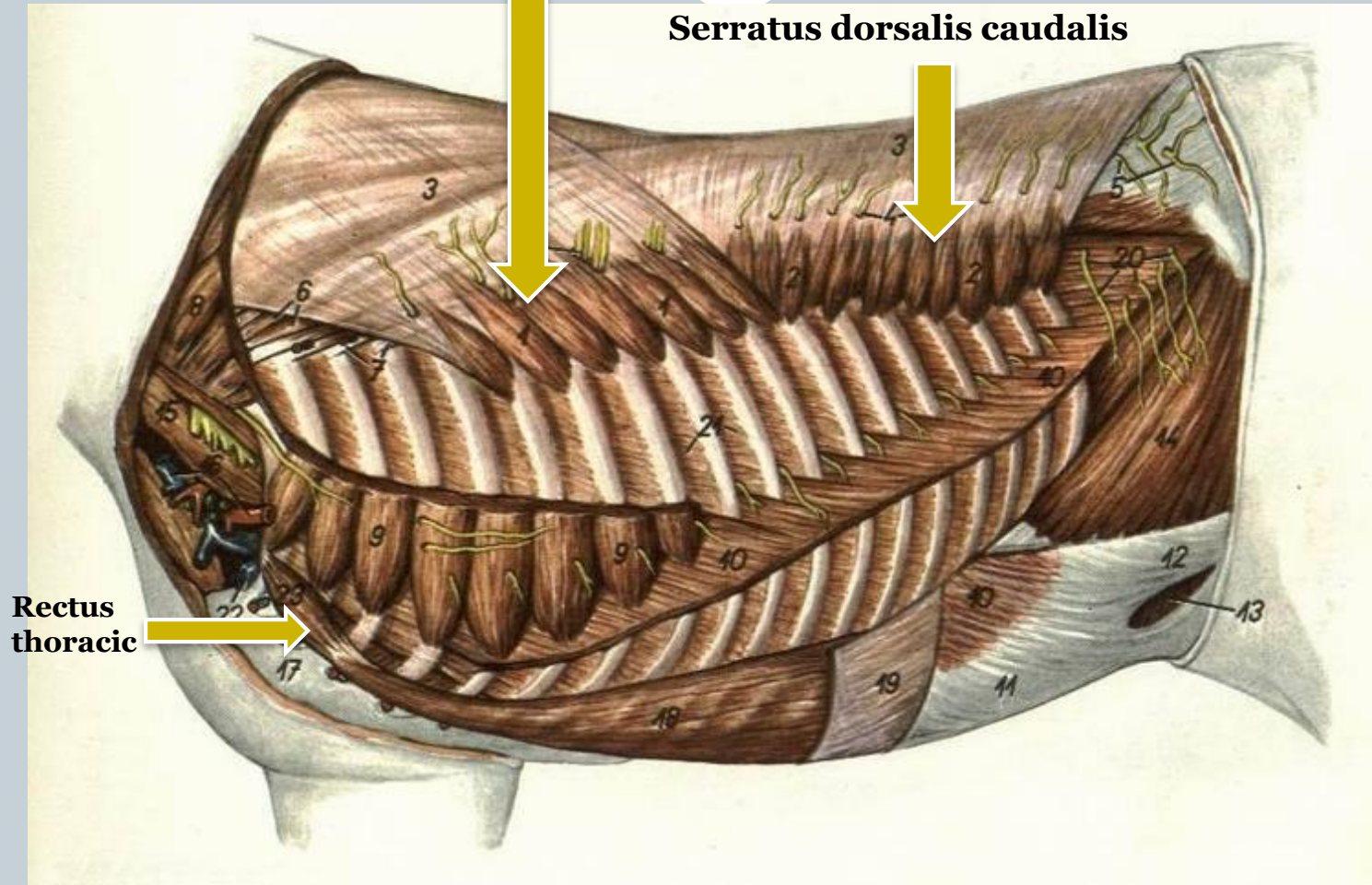


A) Scalenus M B) Longissimus cervicis C) Iliocostalis thoracis D) Serratus ventralis E) Rectus thoracis
F) Ext. abdominal oblique G) Rectus abdominalis H) Internal abdominal oblique I) Transverse abdominis
J) Spinalis K) Multifidus

Serratus dorsalis cranialis



Serratus dorsalis caudalis



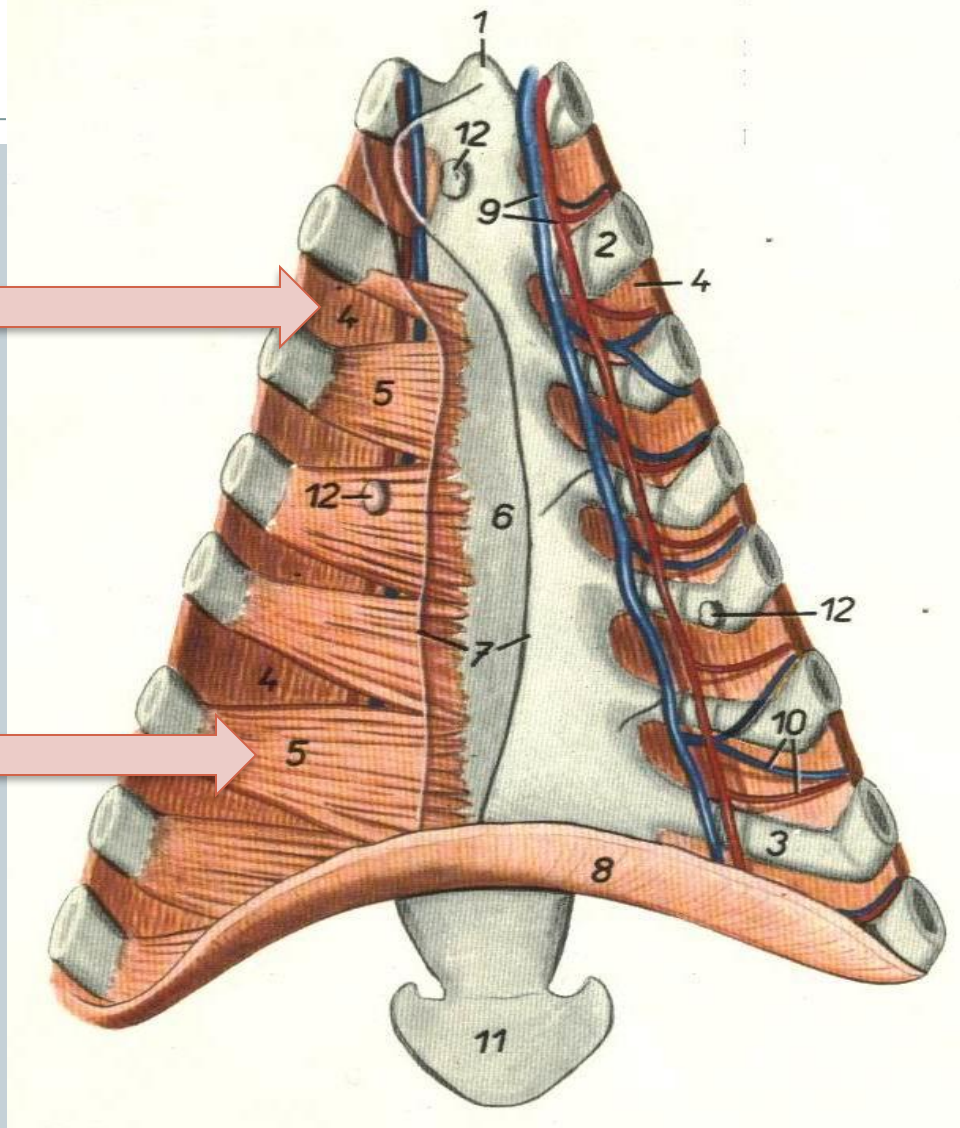
Rectus thoracic

Thoracic Muscle in horse

Internal
intercostal



Transverse
thoracic



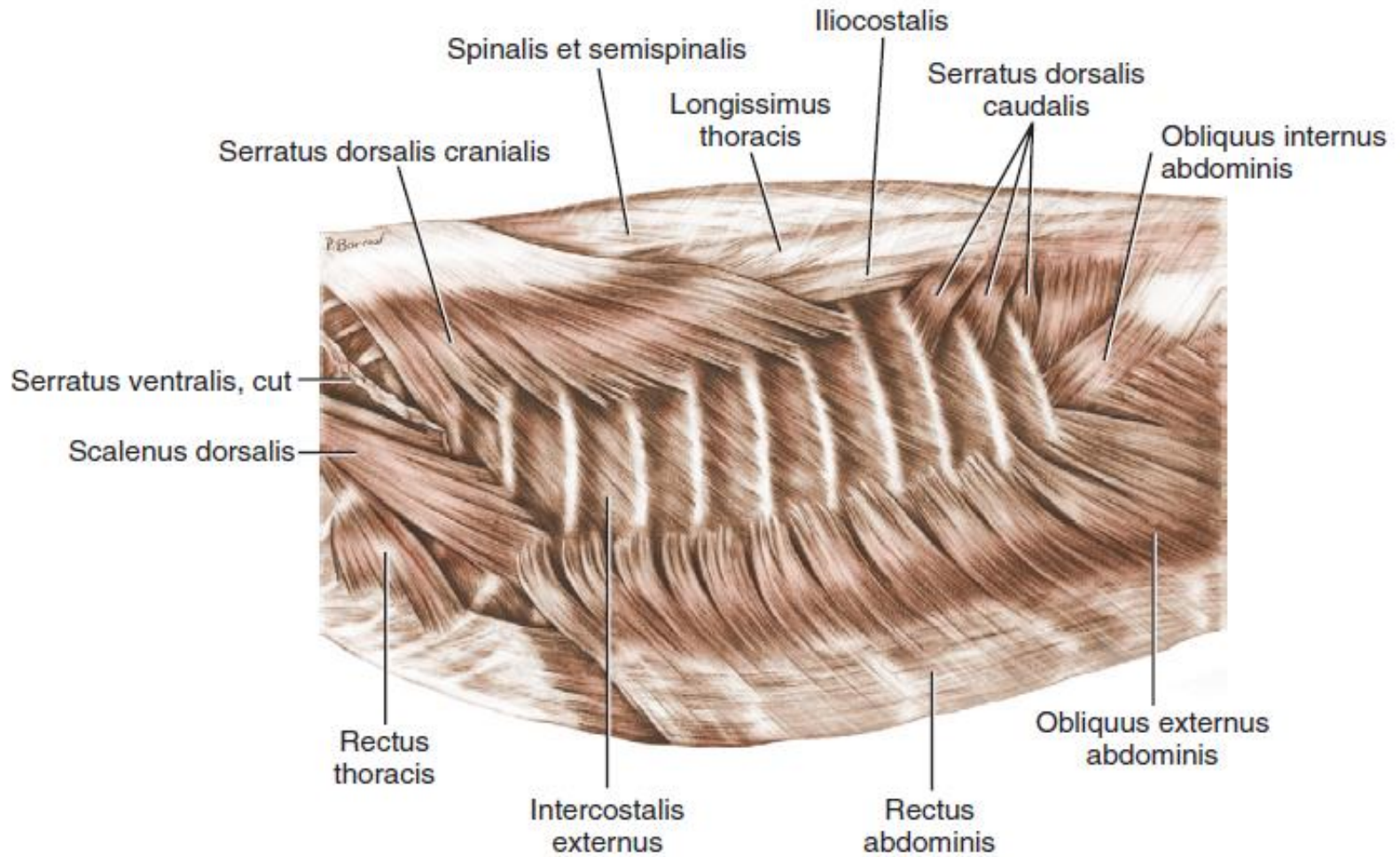
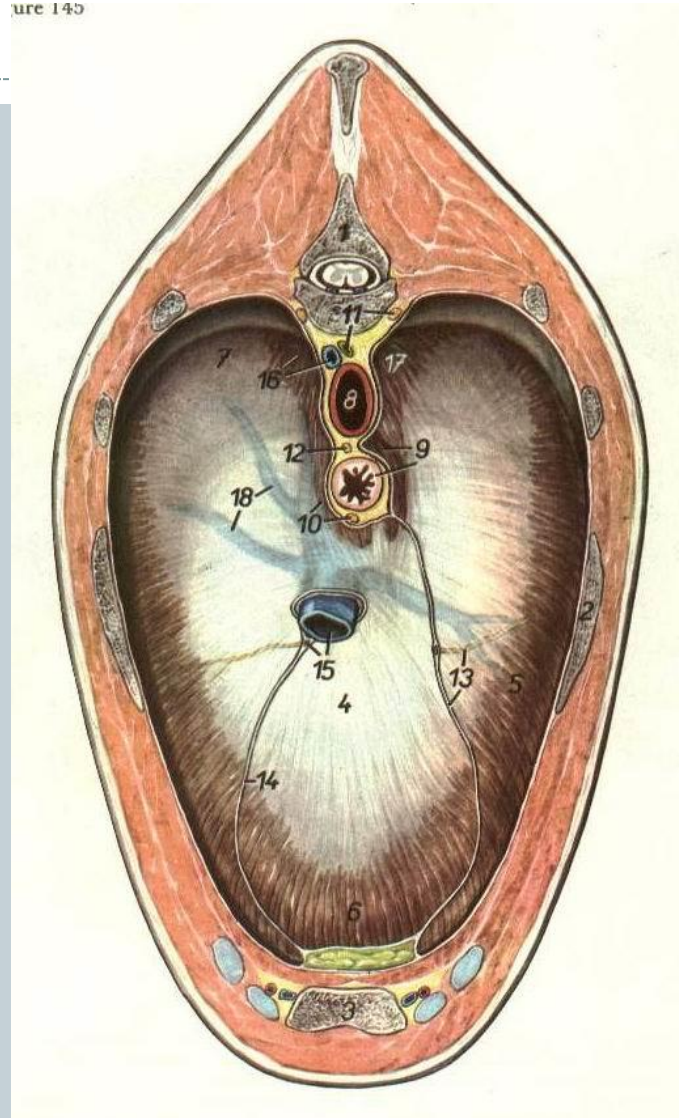


FIGURE 6-33 Superficial muscles of thoracic cage, lateral aspect. (M. serratus ventralis (thoracis) has been removed.)

Diaphragm

Figure 145



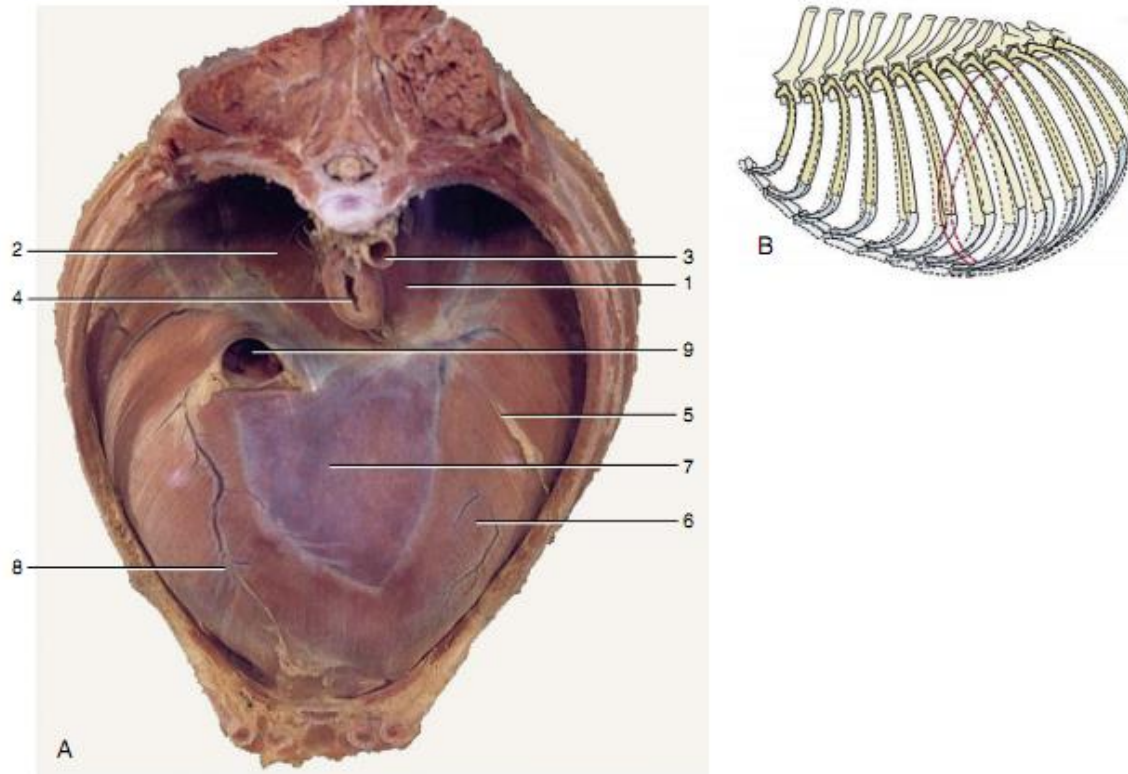
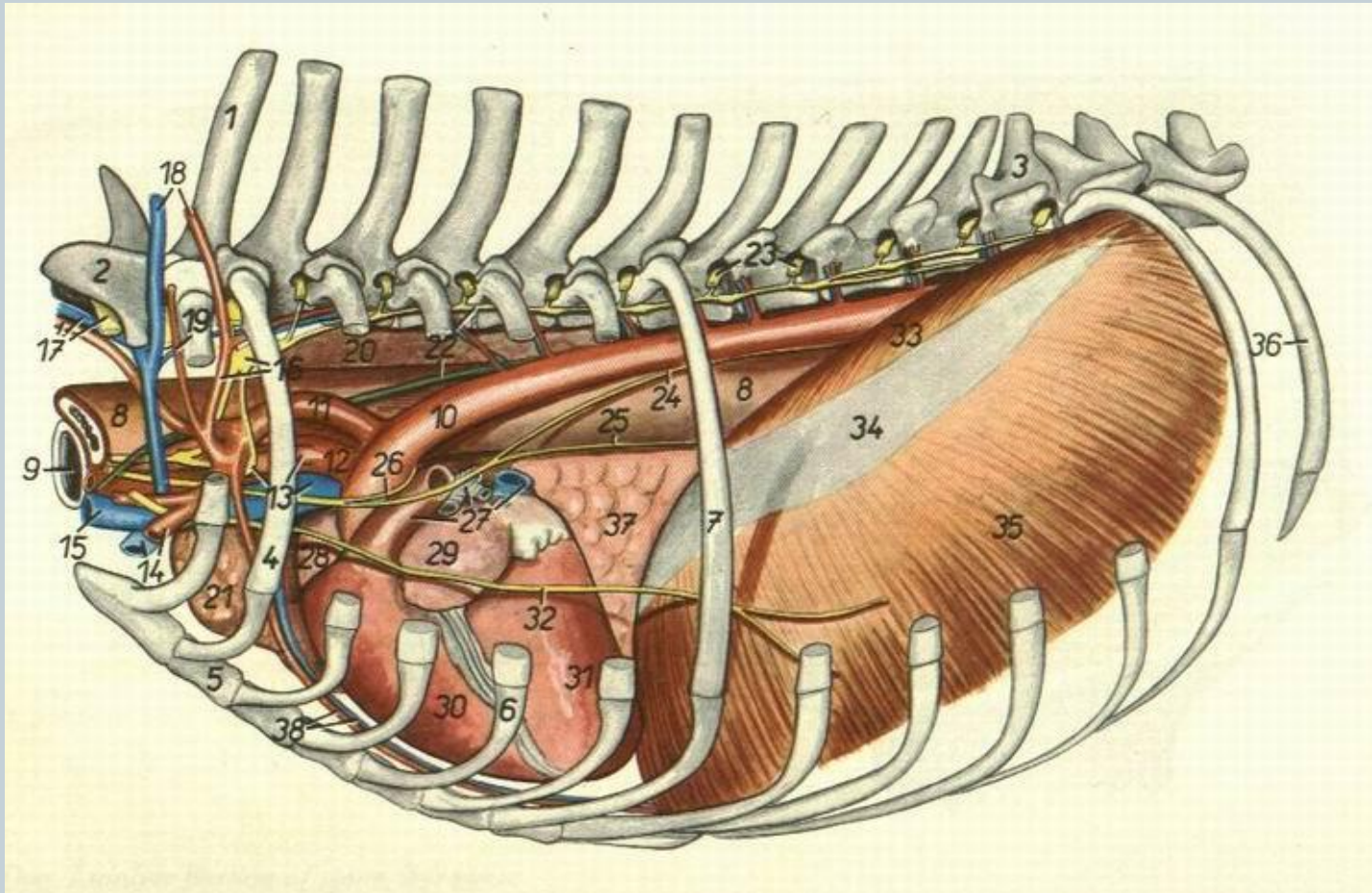
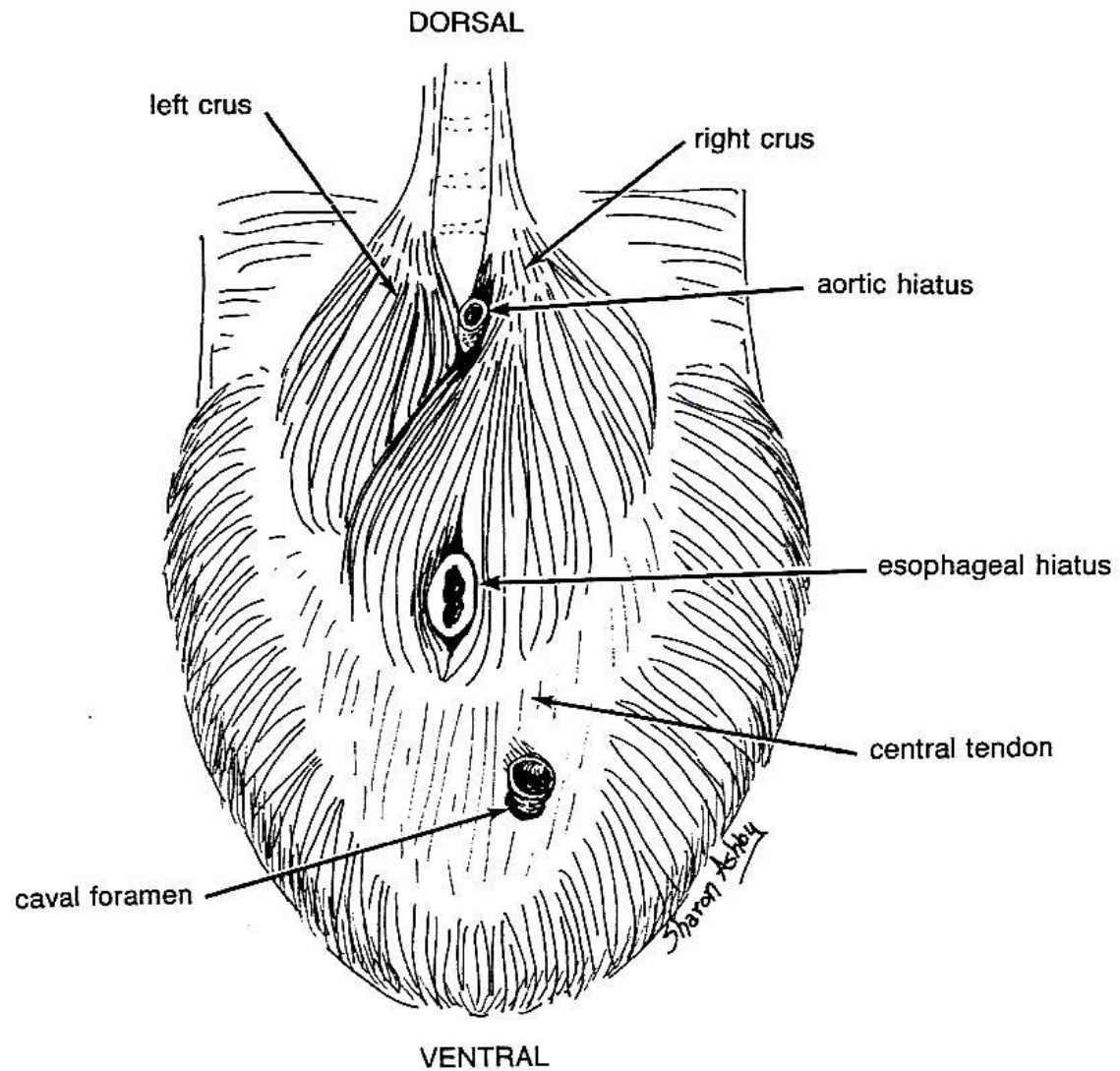


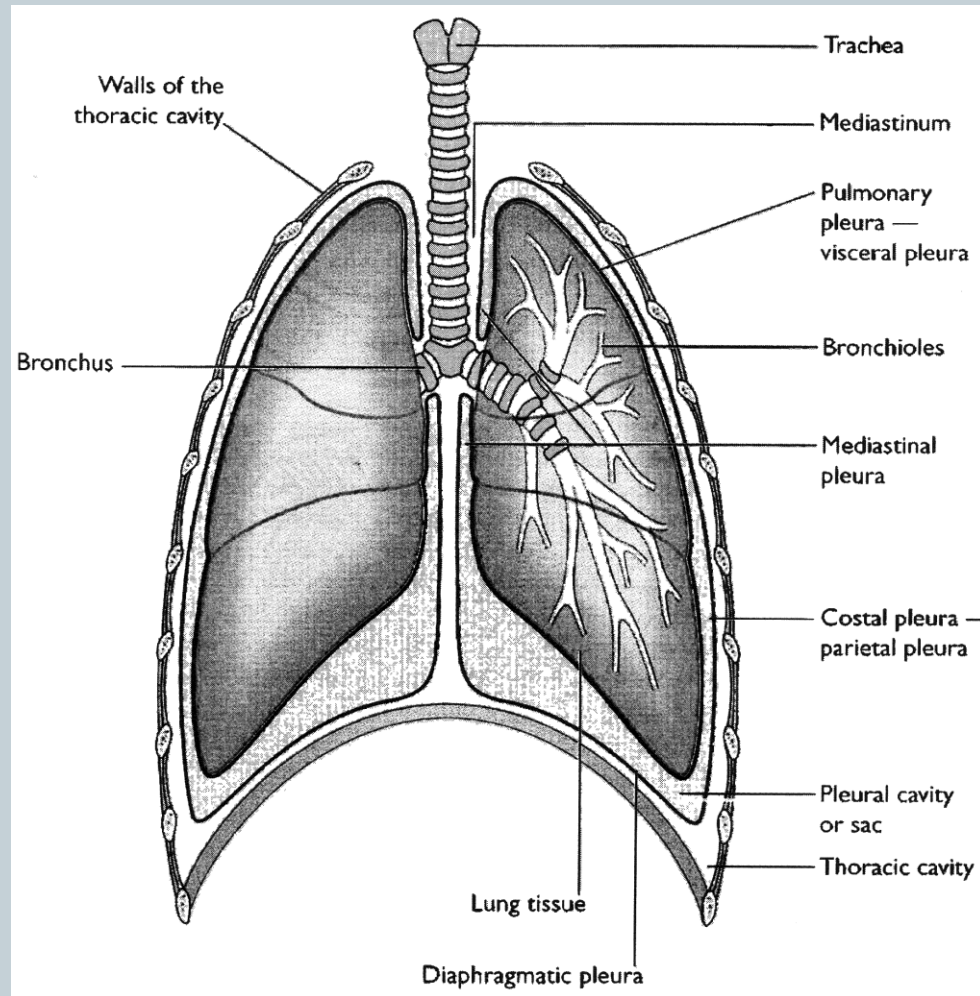
Figure 2-25 A, Cranial view of the canine diaphragm. B, Lateral view of the canine thorax showing ribs and cranial extent of diaphragm in inspiration (*broken lines*) and expiration (*solid lines*). 1, Left crus; 2, right crus; 3, aorta; 4, esophagus; 5, attachment of caudal mediastinum to diaphragm; 6, sternal and costal parts of diaphragm; 7, tendinous center; 8, attachment of plica venae cavae; 9, caudal vena cava.





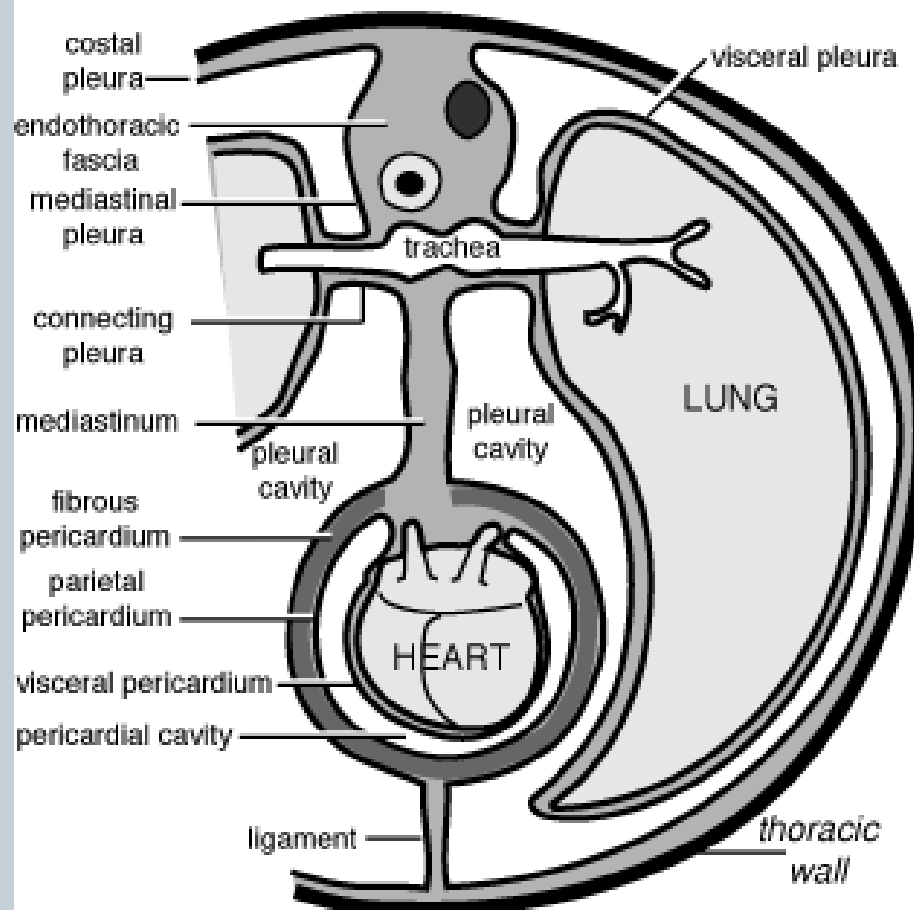
Pleura

پرده ی جنب





Pleural (two) & Pericardial Cavities



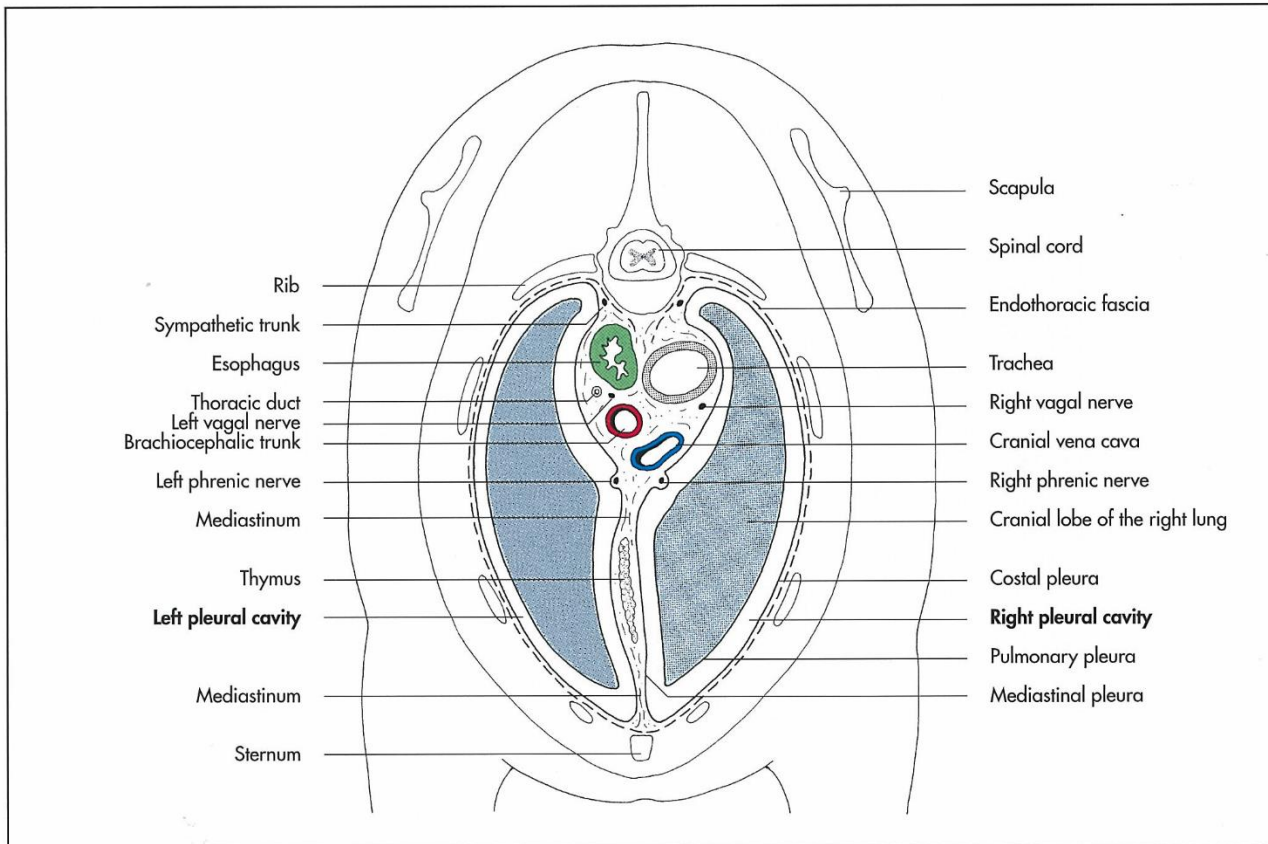


Fig. 6-5. Transverse section of the canine thorax at the level of the cranial mediastinum, caudal aspect, serosal clefts enlarged, schematic.

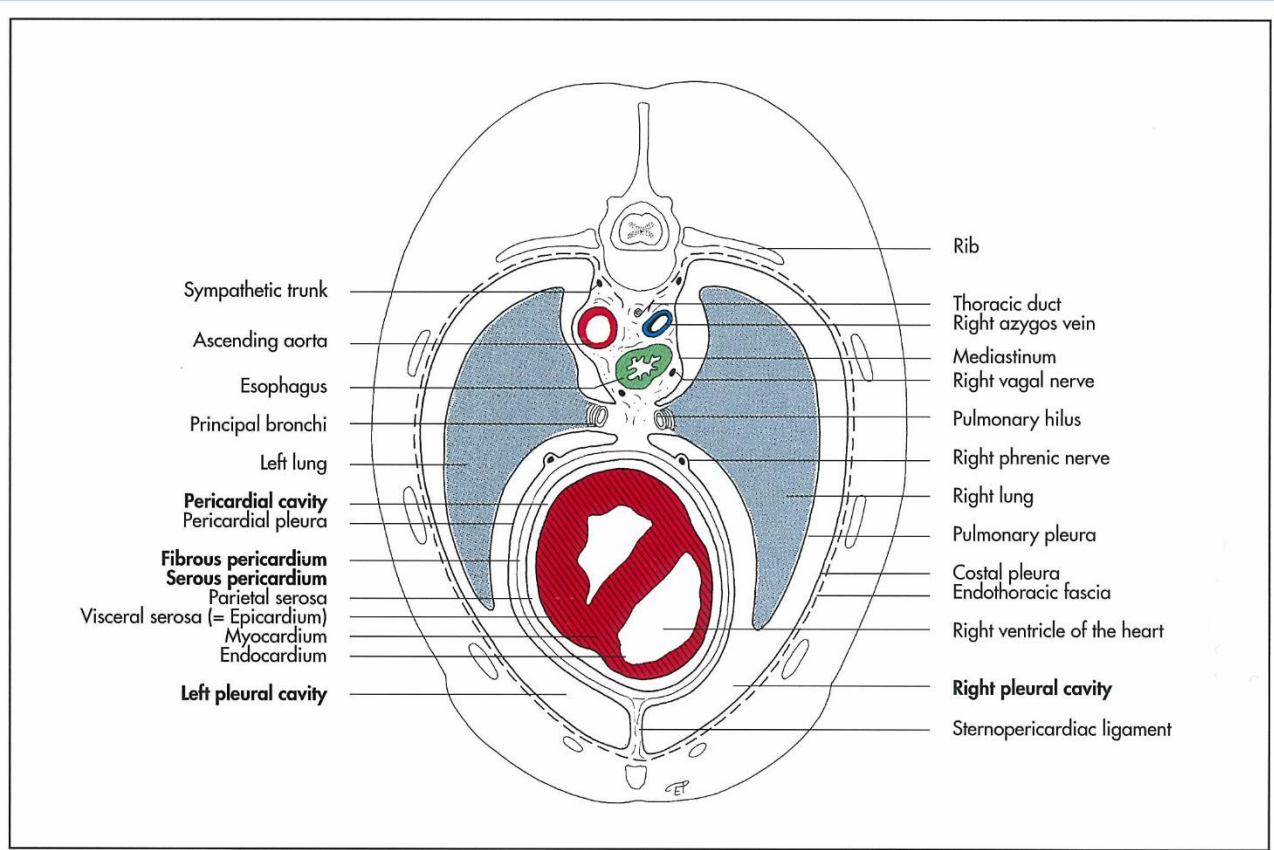


Fig. 6-6. Transverse section of the canine thorax at the level of the medial mediastinum, caudal aspect, serosal clefts enlarged, schematic.

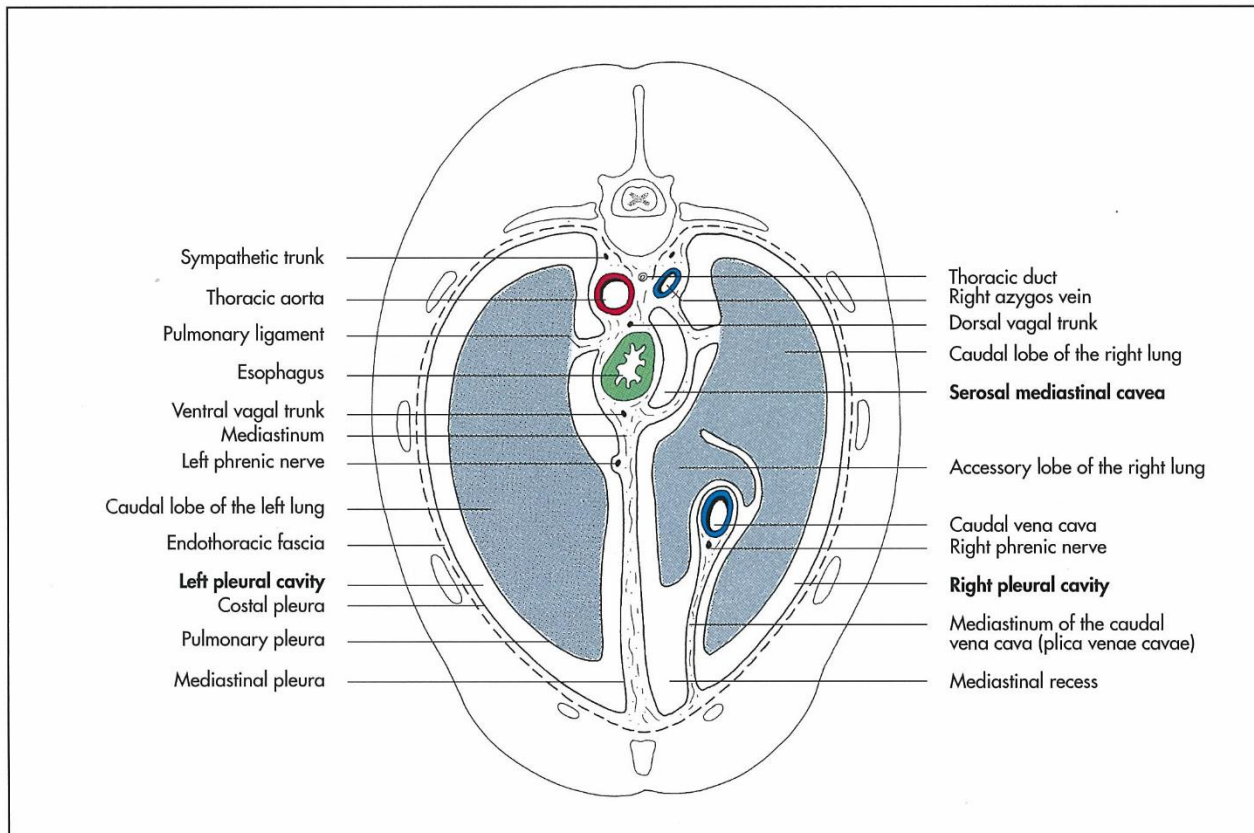
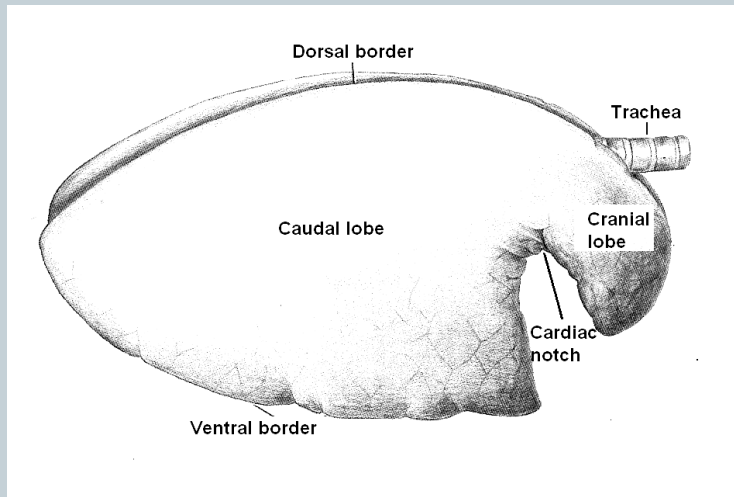
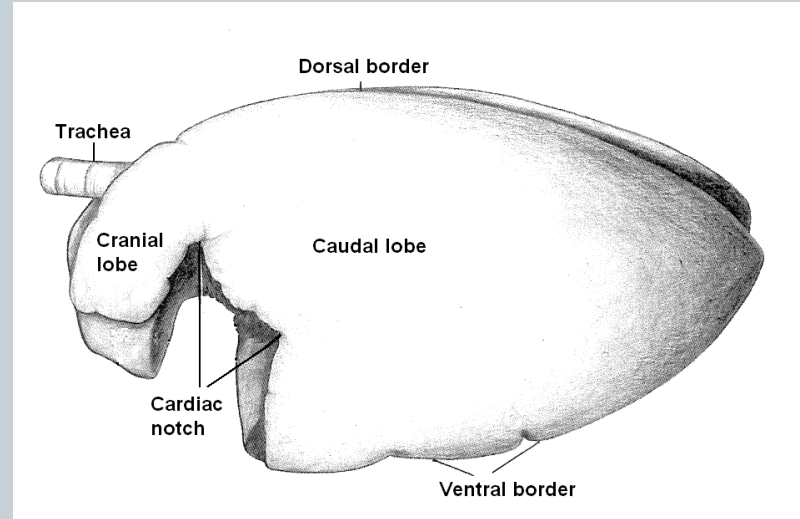
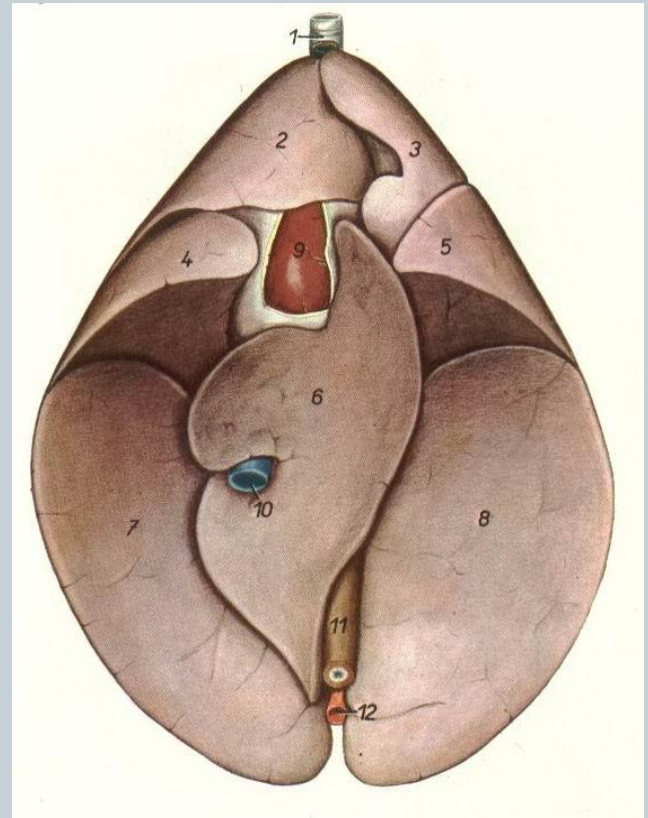
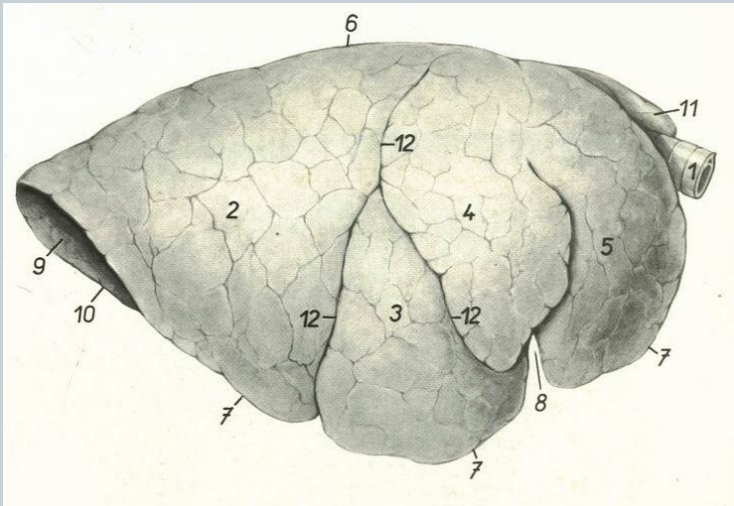
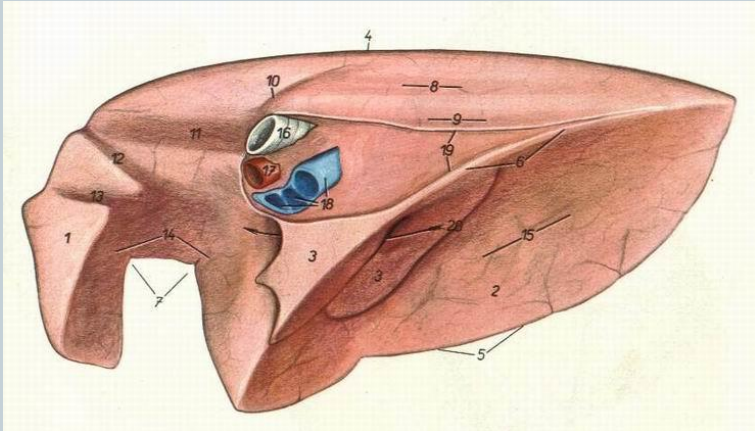


Fig. 6-8. Transverse section of the canine thorax at the level of the caudal mediastinum, caudal aspect, serosal clefts enlarged, schematic.

Lungs

شش ها



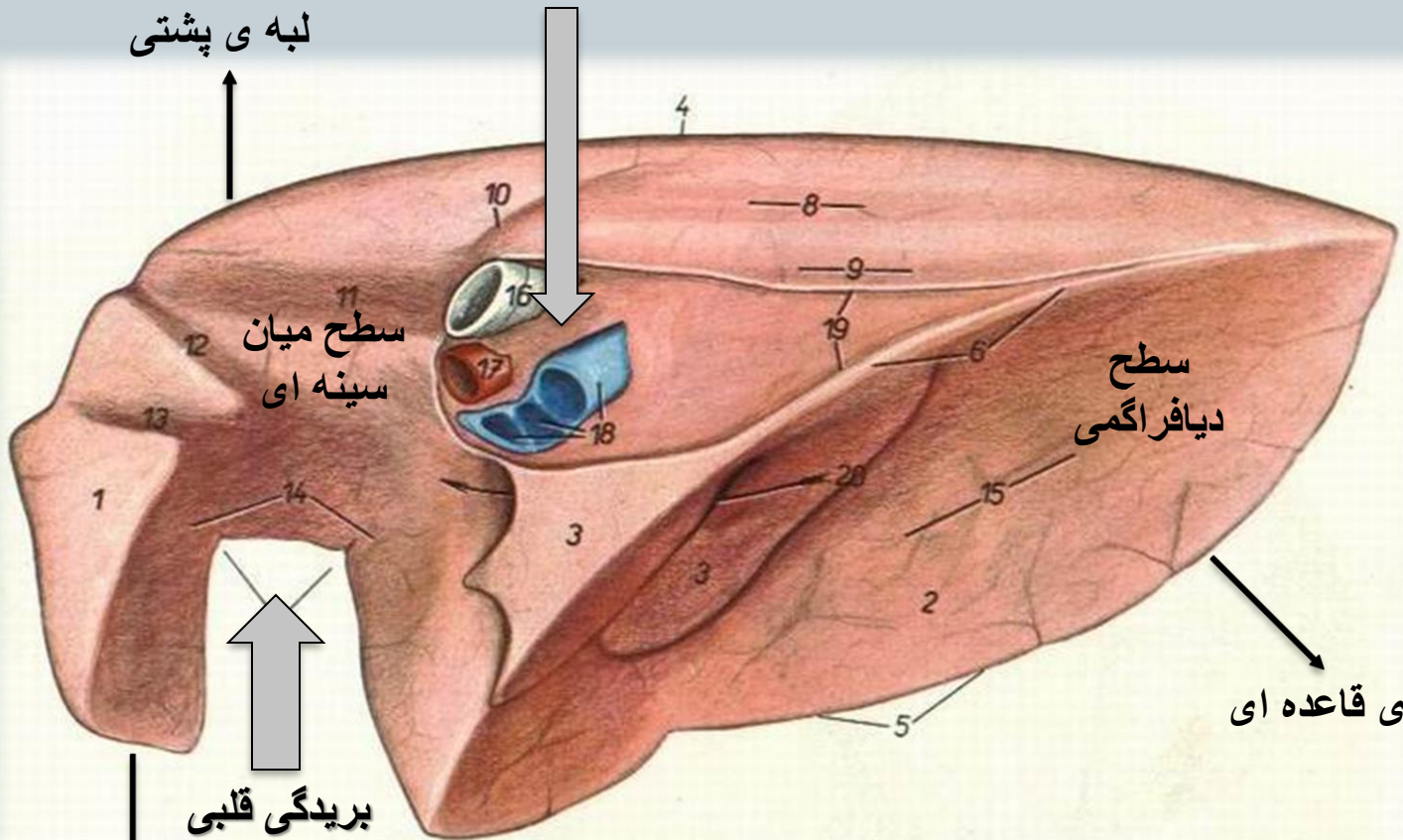




ناف شش

لبه ی پشتی

راس ریه



سطح میان
سینه ای

سطح
دیافراگمی

قاعده
ریه

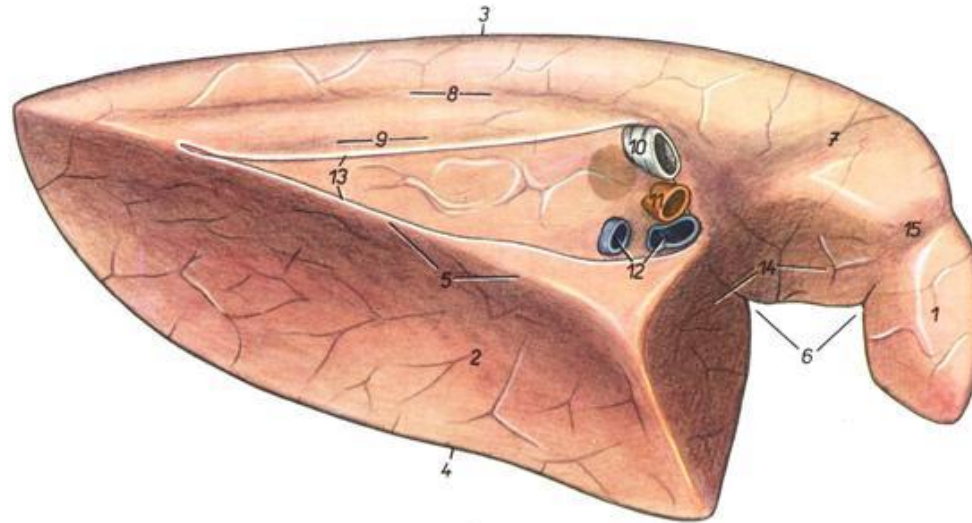
لبه ی قاعده ای

بریدگی قلبی

لبه ی شکمی

Horse. View of mediastinal surface of left lung.

Figure 140



1. *lobus cranialis* – cranial lobe

2. *lobus caudalis* – caudal lobe

3. *margo obtusus (s. dorsalis)* – obtuse margin (same as dorsal)

4, 5. *margo acutus* (4. *margo ventralis*, 5. *margo basalis*) – acute margin (4. ventral margin, 5. basal margin)

6. *incisura cardiaca* – cardiac notch

7. *impressio trachealis* – tracheal impression

8. *impressio aortica* – aortic impression

9. *impressio esophagea* – esophageal impression

10. *bronchus principalis sinister* – left main bronchus

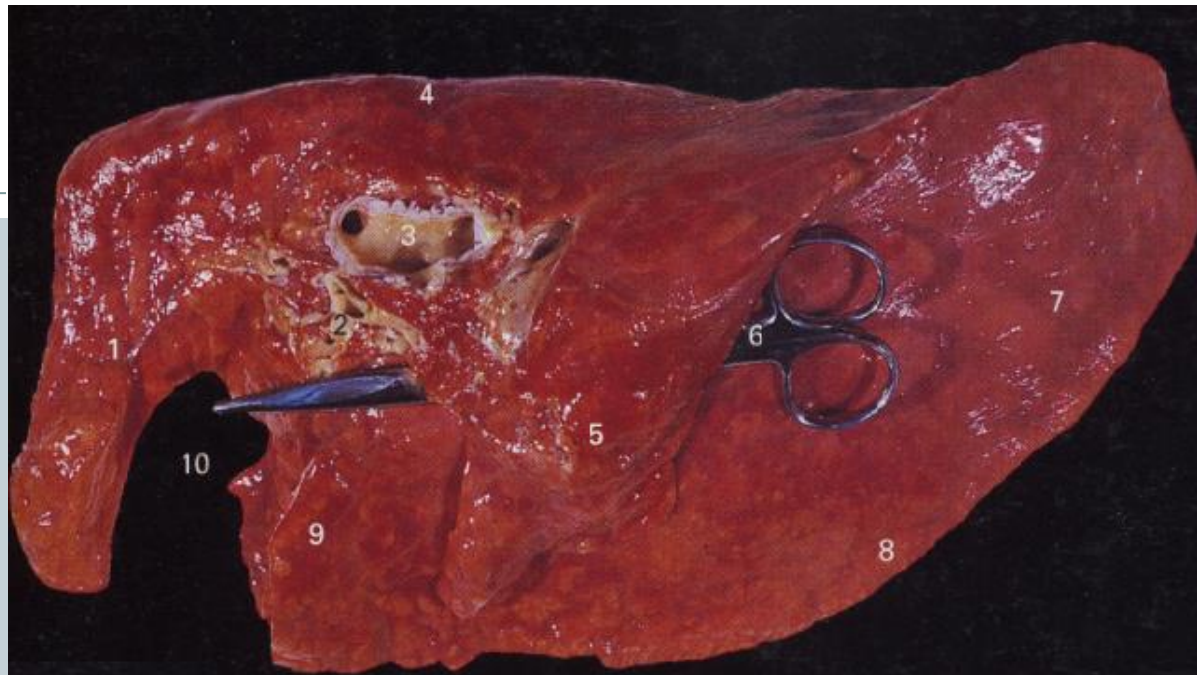
11. *a. pulmonalis sinistra* – left pulmonary artery

12. *vv. pulmonales* – pulmonary veins

13. *insertio pleurae mediastinalis* – insertion of mediastinal pleura

14. *impressio cardiaca* – cardiac impression

15. *impressio vasorum* – vessel impression



251. Medial view of the right lung of the horse.

- | | |
|---|---|
| 1 Cranial lobe | 6 Scissors indicating the course followed by the caudal vena cava |
| 2 Pulmonary arteries | 7 Diaphragmatic surface of the caudal lobe |
| 3 Right principal bronchus with its medial wall removed | 8 Basal border |
| 4 Dorsal border | 9 Middle lobe |
| 5 Accessory lobe | 10 Cardiac notch |

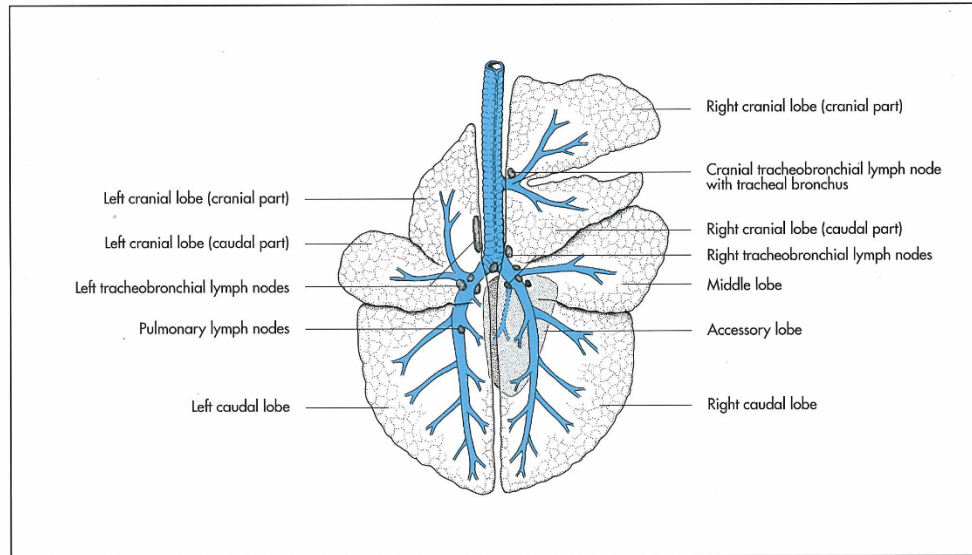


Fig. 8-28. Lung lobes, bronchial tree and lymphnodes of the ox, dorsal aspect, schematic (Ghetie, 1958).

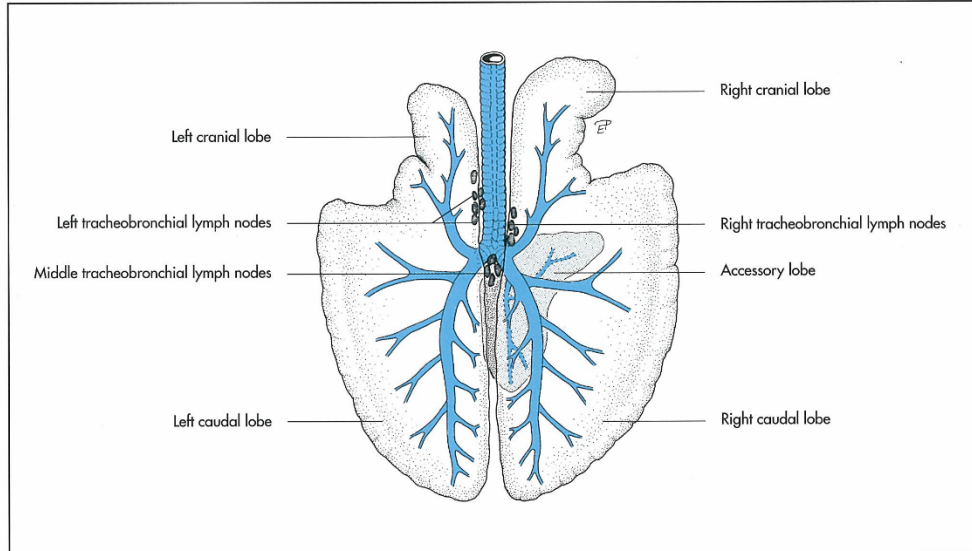


Fig. 8-29. Lung lobes, bronchial tree and lymphnodes of the horse, dorsal aspect, schematic (Ghetie, 1958).

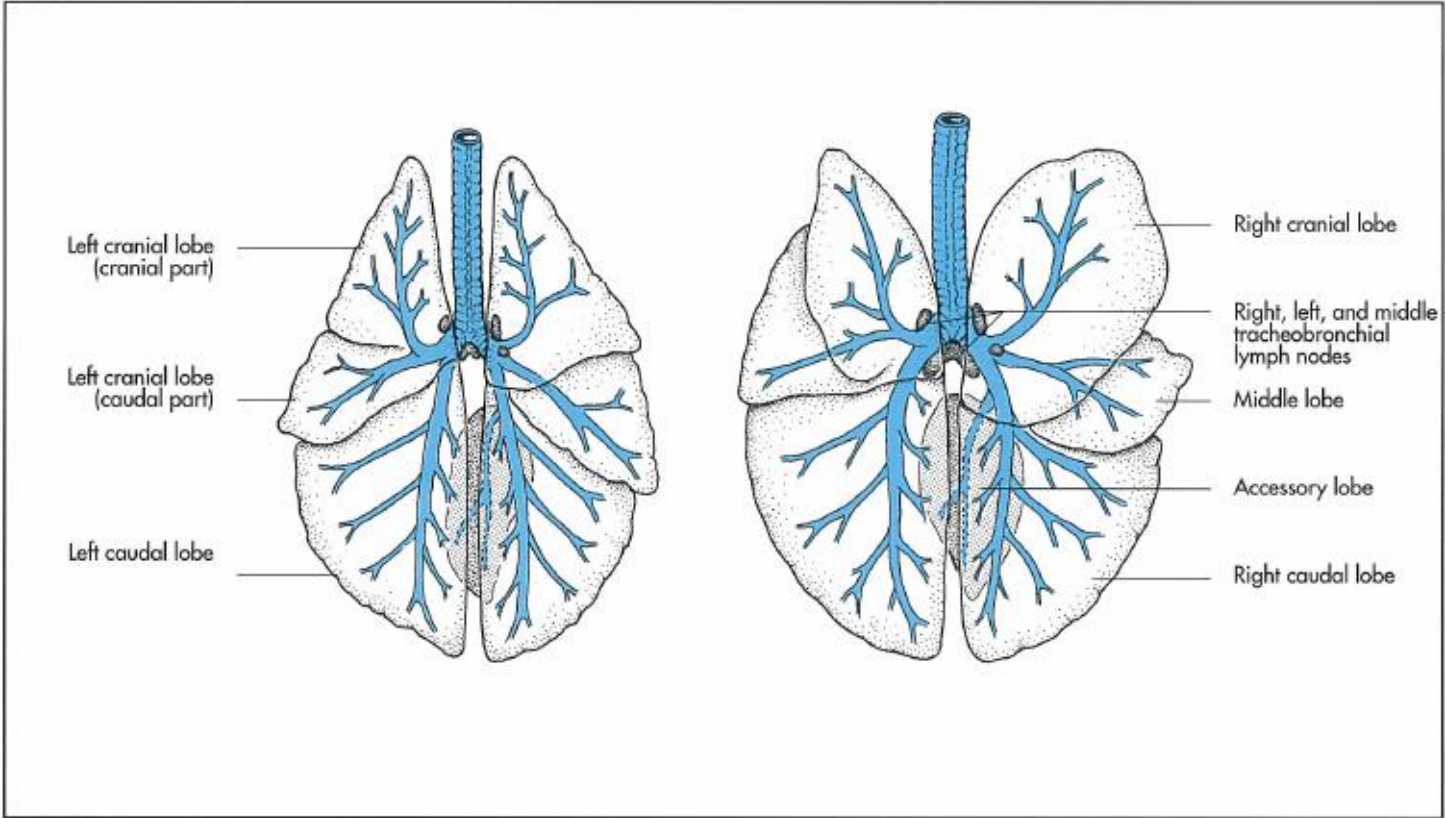
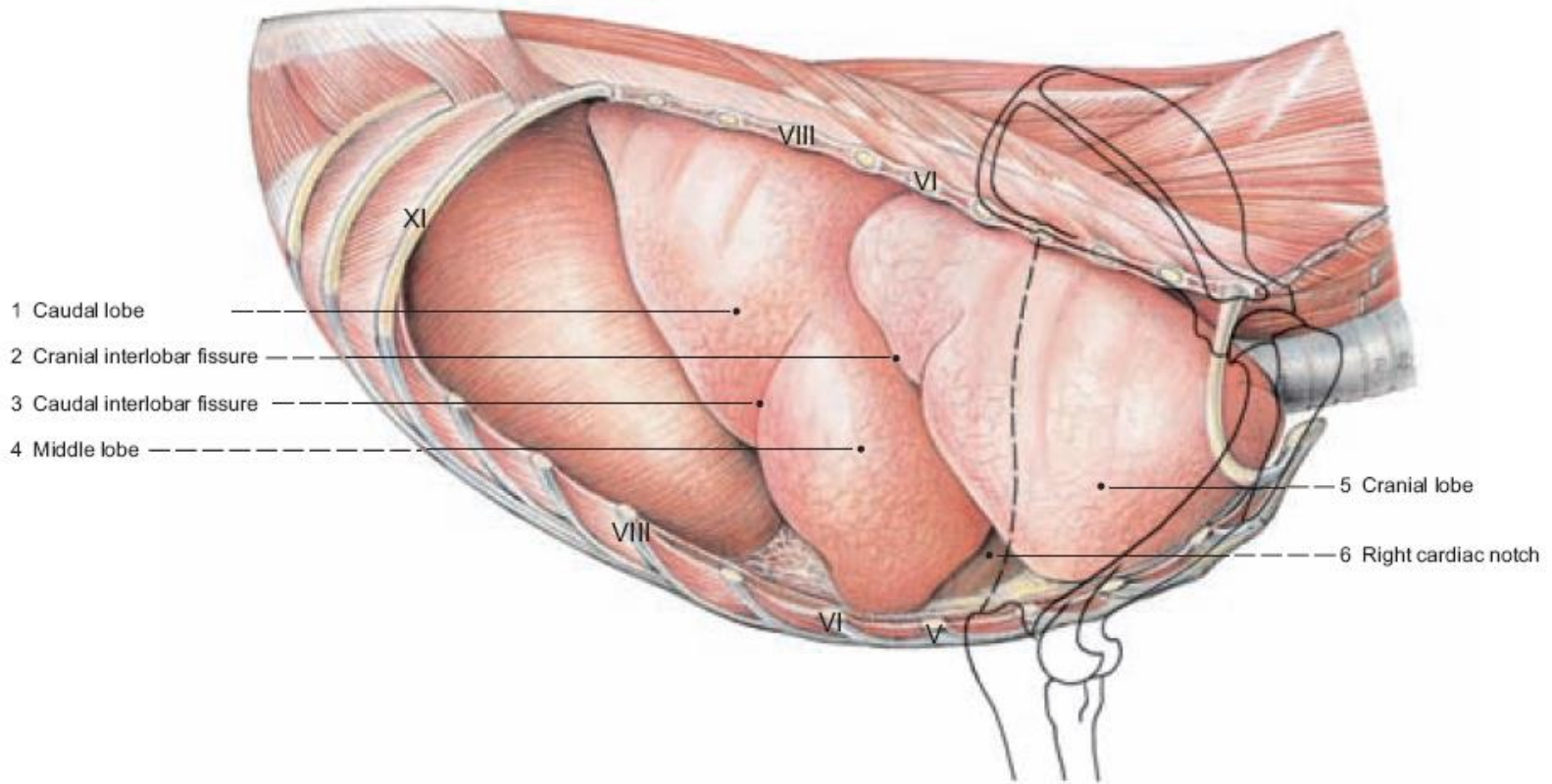


Fig. 8-26. Lung lobes, bronchial tree and lymphnodes of the cat (left) and the dog (right), dorsal aspect, schematic (Ghetie, 1958).

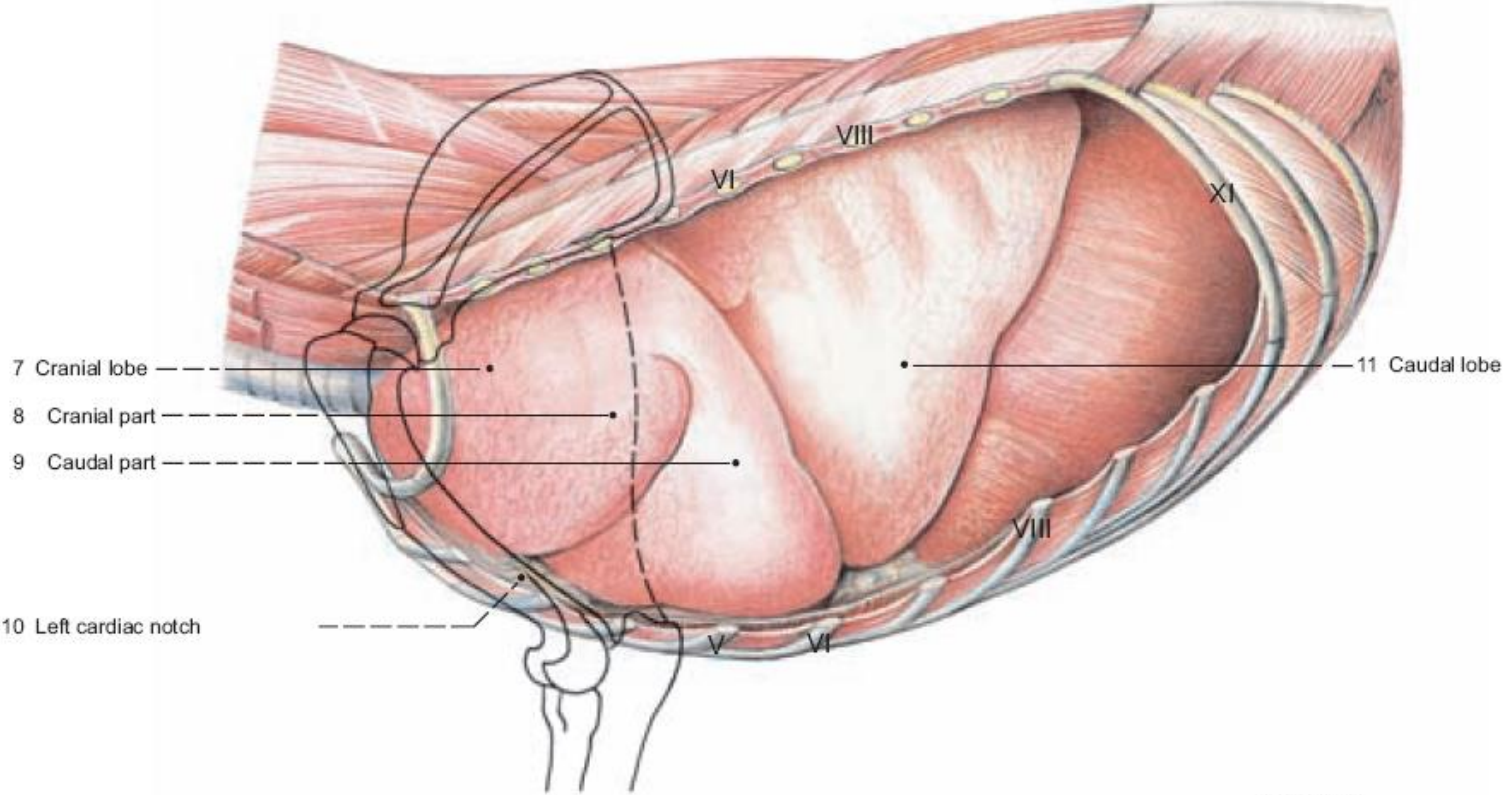


(right lung)





(left lung)



(see p. 29)



