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AN ATLAS

OF

HUMAN ANATOMY

FOR STUDENTS AND PHYSICIANS

BY

CARL TOLDT, M.D.

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF VIENNA

ASSISTED BY

PROFESSOR ALOIS DALLA ROSA, M.D.

Translated from the Third German Edition and adapted to English and American and International Terminology

BY

M. EDEN PAUL, M.D. BRUX., M.R.C.S., L.R.C.P.

FOURTH SECTION

E. SPLANCHNOLOGY

(FIGURES 641 TO 932 AND INDEX)

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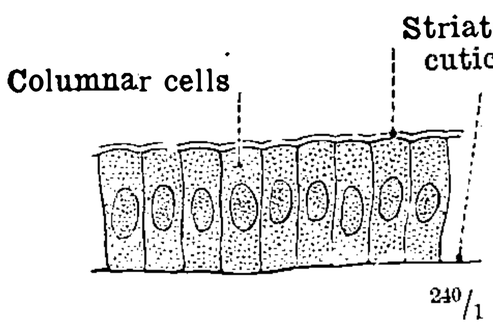


FIG. 641.—COLUMNAR, OR CYLINDER, EPITHELIUM.

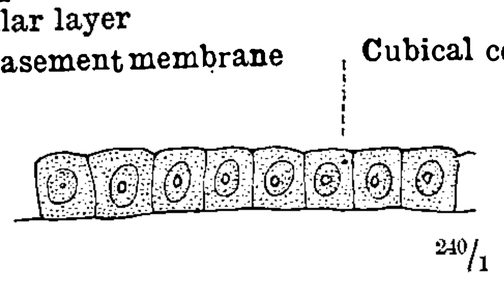


FIG. 642.—CUBICAL EPITHELIUM.

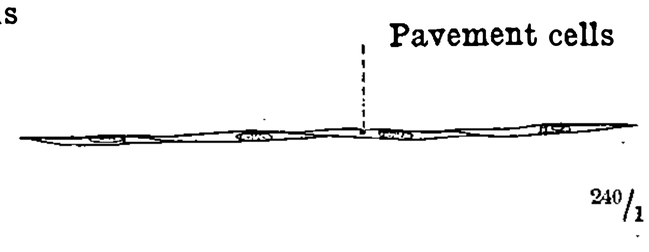


FIG. 643.—PAVEMENT EPITHELIUM.

SIMPLE EPITHELIUM[1] IN VERTICAL SECTION.

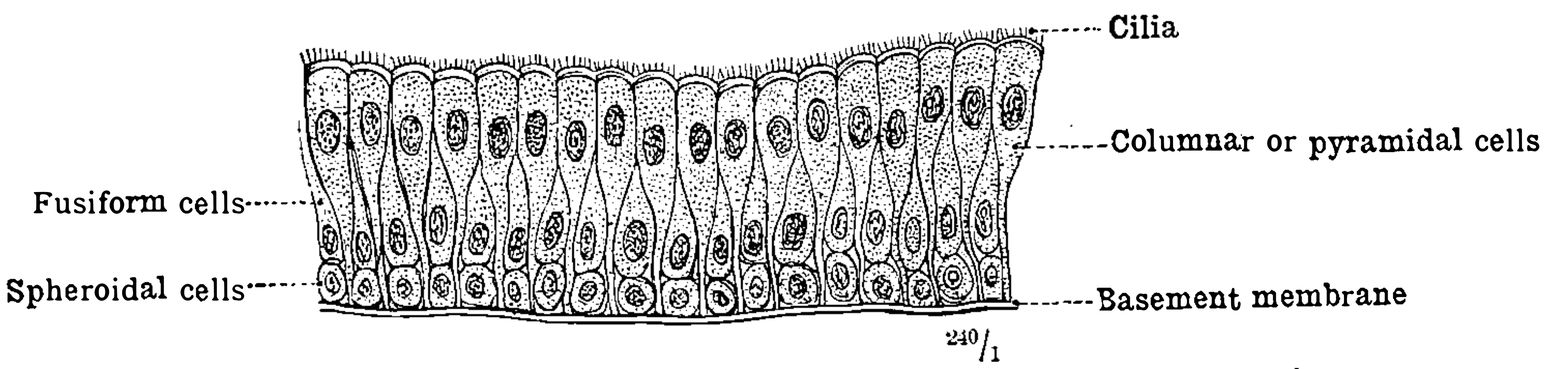


FIG. 644.—TRANSITIONAL[1] COLUMNAR CILIATED EPITHELIUM IN VERTICAL SECTION.

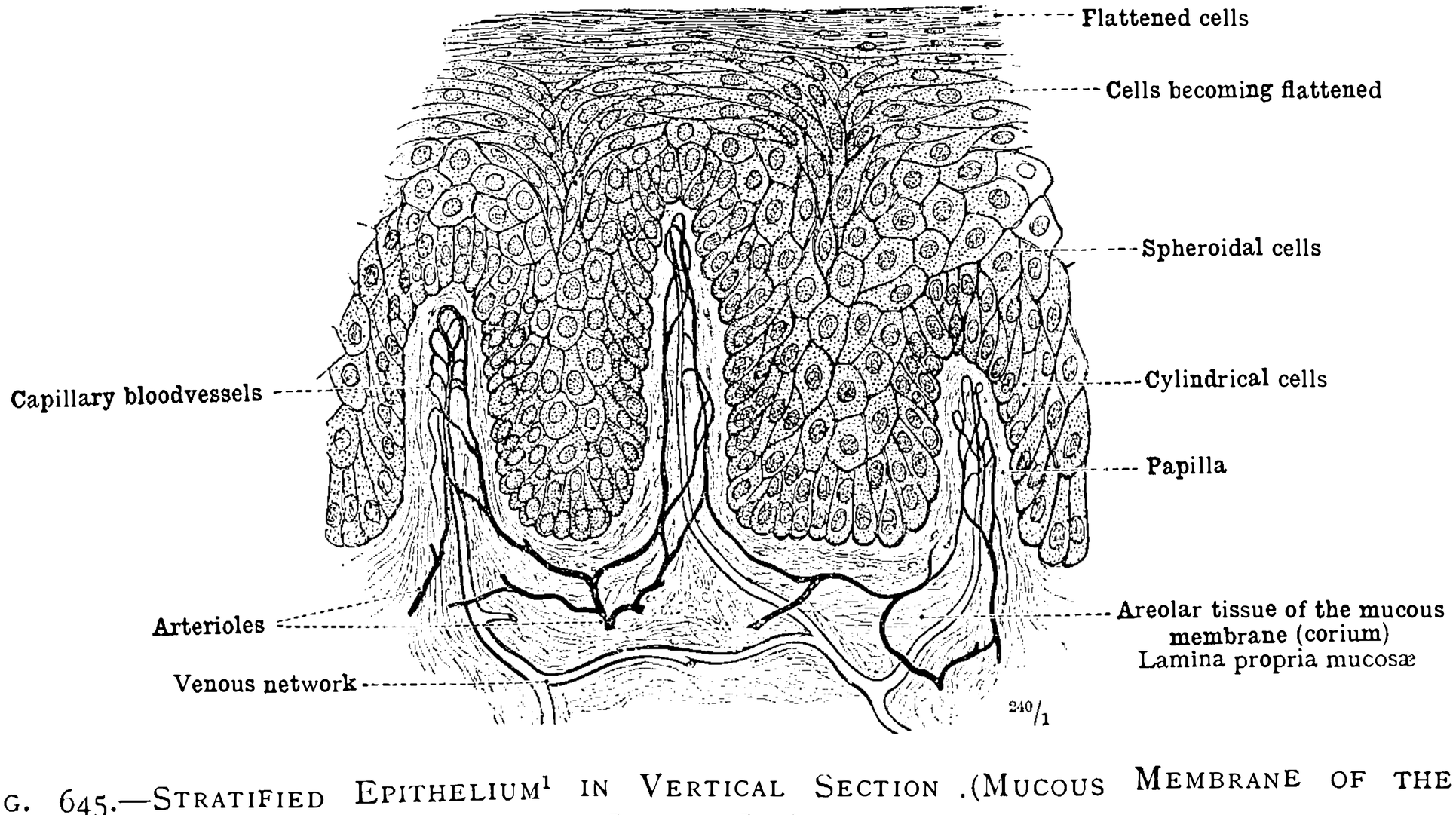


FIG. 645.—STRATIFIED EPITHELIUM[1] IN VERTICAL SECTION .(MUCOUS MEMBRANE OF THE LOWER LIP).

The bloodvessels of the mucous membrane have been artificially injected.

[1] *Classification of Epithelia.*—An epithelium consisting of a single layer of cells is called a *simple* epithelium, in contradistinction to a *stratified* epithelium, which consists of numerous layers of cells. Where two or three layers of cells only are found, the cells nearer the basement membrane being usually smaller, and dovetailed among the bases of the superficial cells, the epithelium is called *transitional*. Transitional and stratified epithelium are grouped together as *compound* epithelia.—TR.

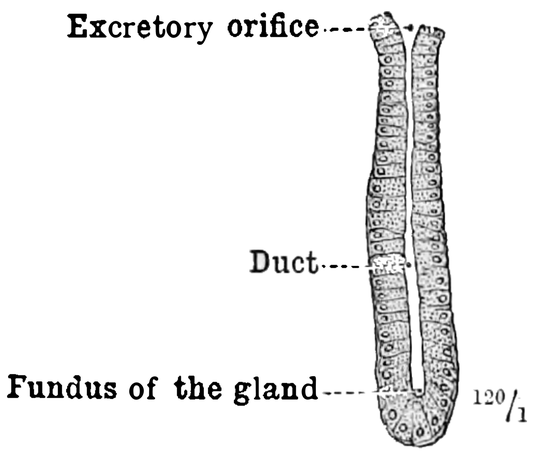


FIG. 646.—SIMPLE TUBULAR GLAND.

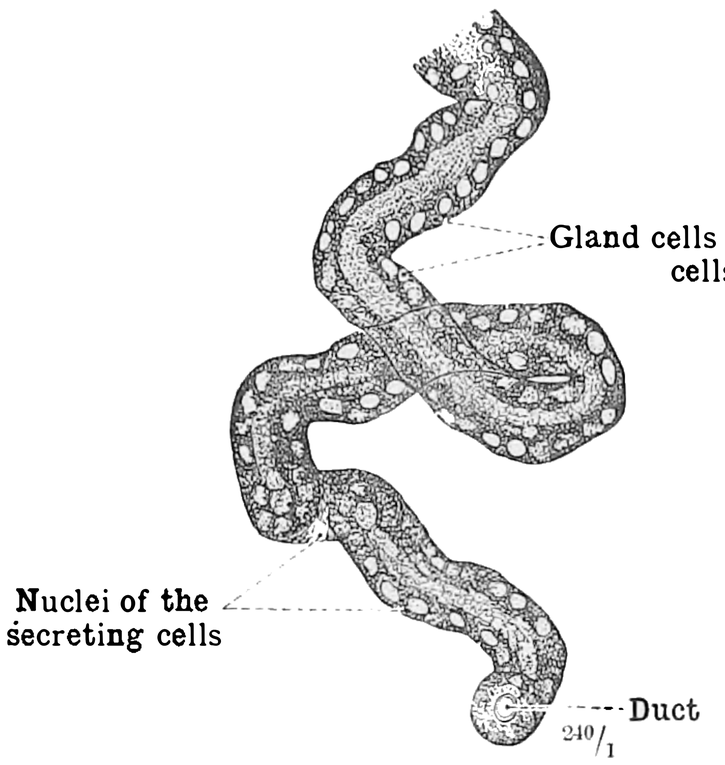


FIG. 647.—CONVOLUTED TUBULAR GLAND.

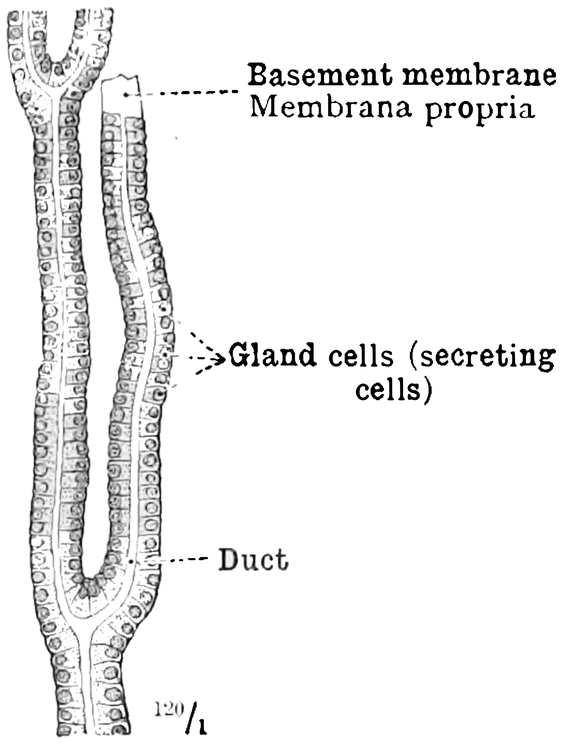


FIG. 648.—BRANCHED TUBULAR GLAND.

GLANDULÆ TUBULOSÆ—TUBULAR GLANDS.

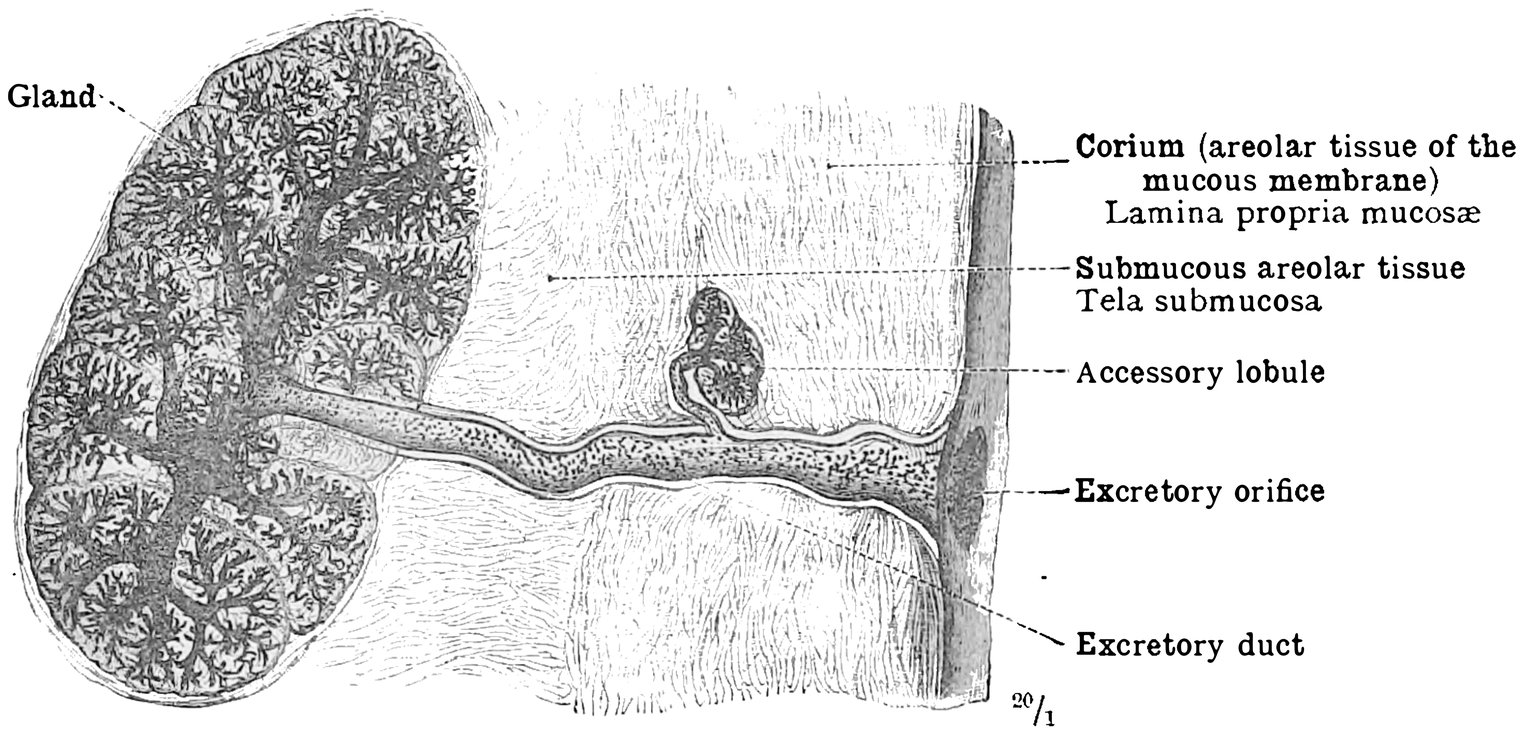


FIG. 649.—RACEMOSE OR ACINOUS GLAND (GLANDULA ALVEOLARIS SIMPLEX[1]), THE DUCTS OF WHICH HAVE BEEN INJECTED (LABIAL GLAND).

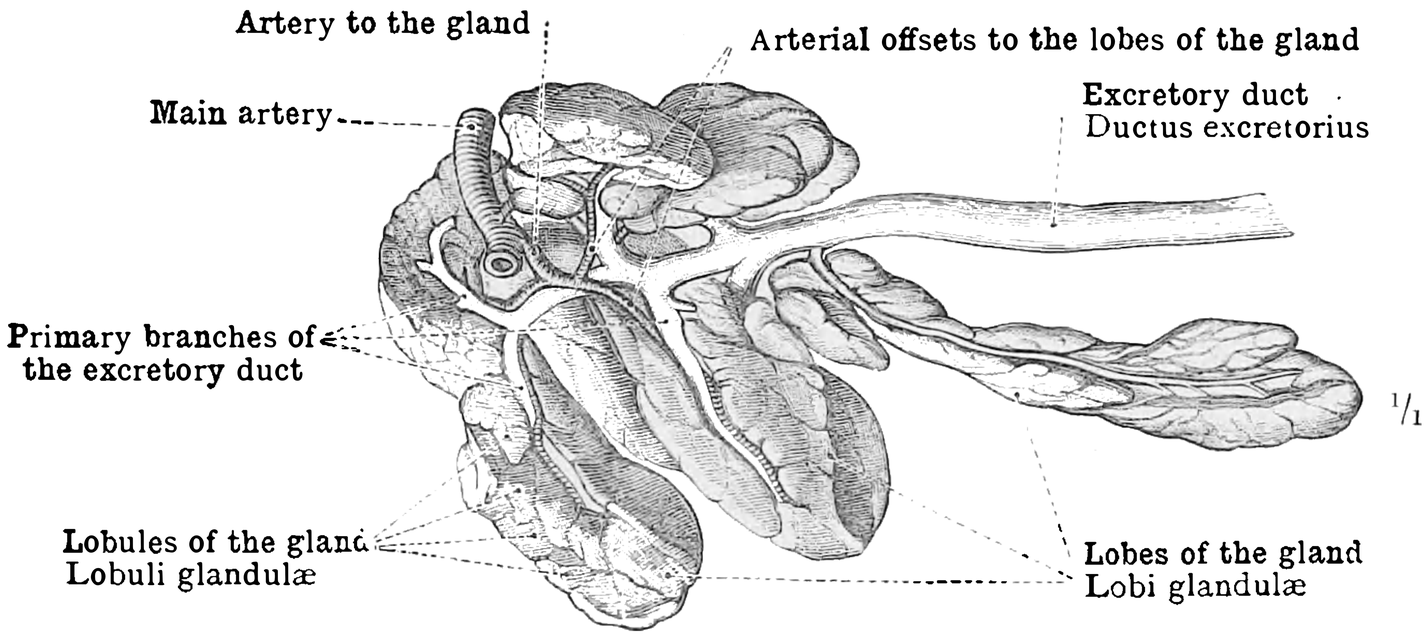


FIG. 650.—RACEMOSE OR ACINOUS GLAND (GLANDULA ALVEOLARIS COMPOSITA[1]), THE LOBES OF WHICH HAVE BEEN ARTIFICIALLY ISOLATED AND DRAWN APART (THE SUBMAXILLARY GLAND).

[1] Though the labial gland shown in Fig. 649 is called by the author glandula alveolaria *simplex*, and the submaxillary gland shown in Fig. 650 glandula alveolaria *composita*, both are *compound glands* according to the English terminology, in which a gland is regarded as *simple* only when it consists of a single, unbranched cavity, tubular or saccular, as the case may be.—TR.

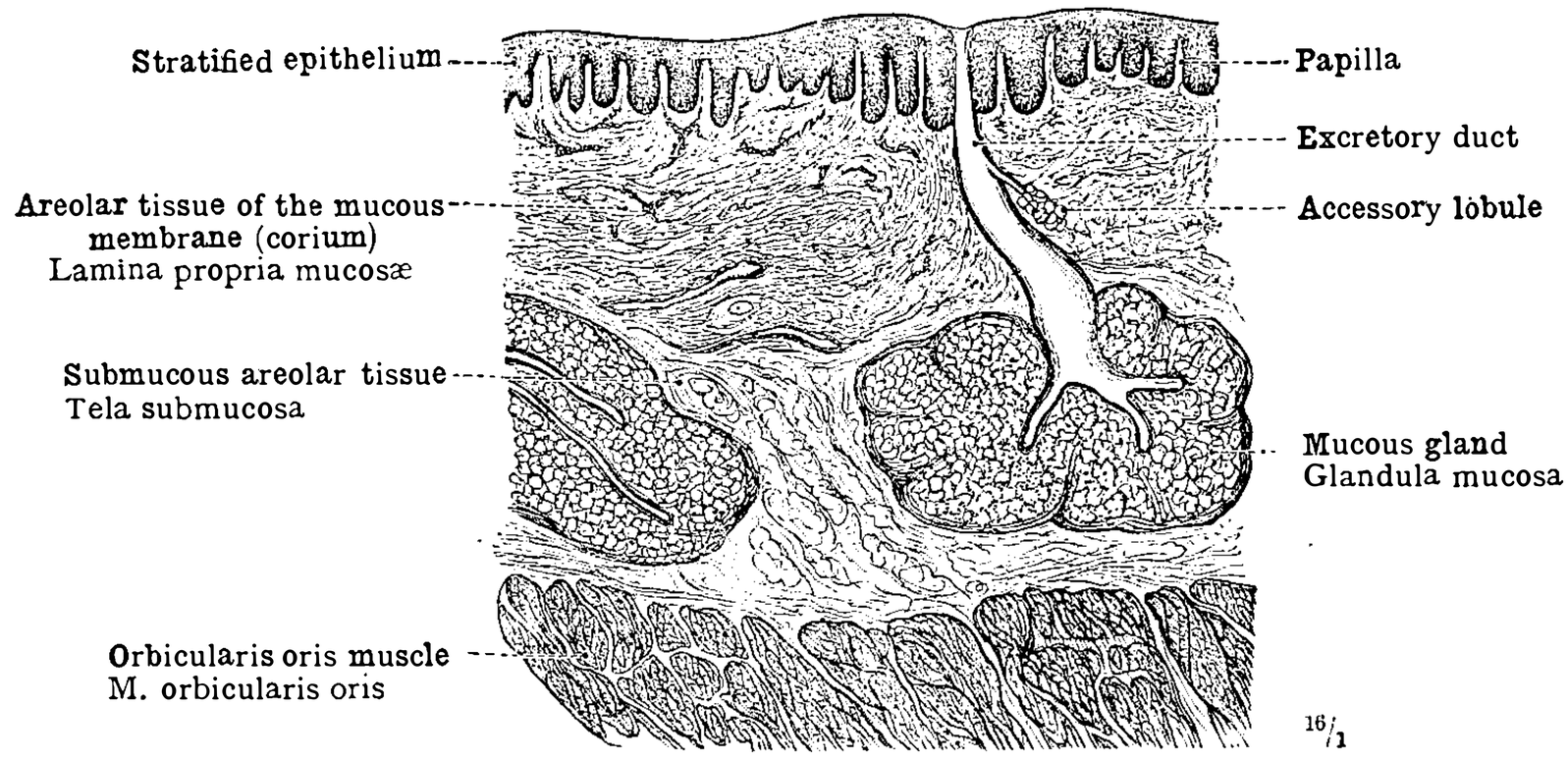


FIG. 651.—MUCOUS MEMBRANE, WITH PAPILLÆ, STRATIFIED EPITHELIUM, AND RACEMOSE GLANDS, IN VERTICAL SECTION (MUCOUS MEMBRANE OF THE LOWER LIP).

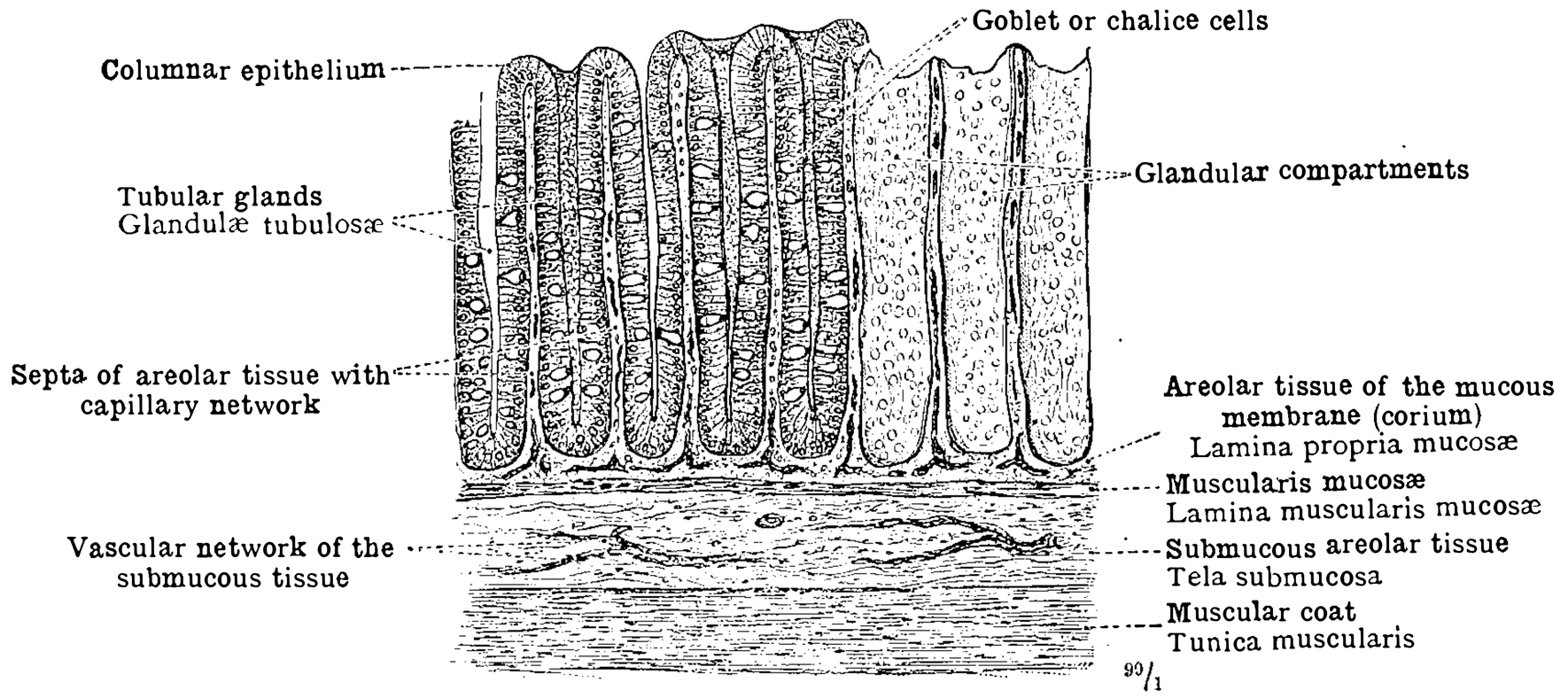


FIG. 652.—MUCOUS MEMBRANE WITH COLUMNAR EPITHELIUM AND TUBULAR GLANDS IN VERTICAL SECTION (MUCOUS MEMBRANE OF THE LARGE INTESTINE).

On the right side of the preparation three of the glands have fallen out, bringing into view the areolar tissue of the mucous membrane (corium) with its compartments for the glands.

Tunica mucosa—Mucous membrane.

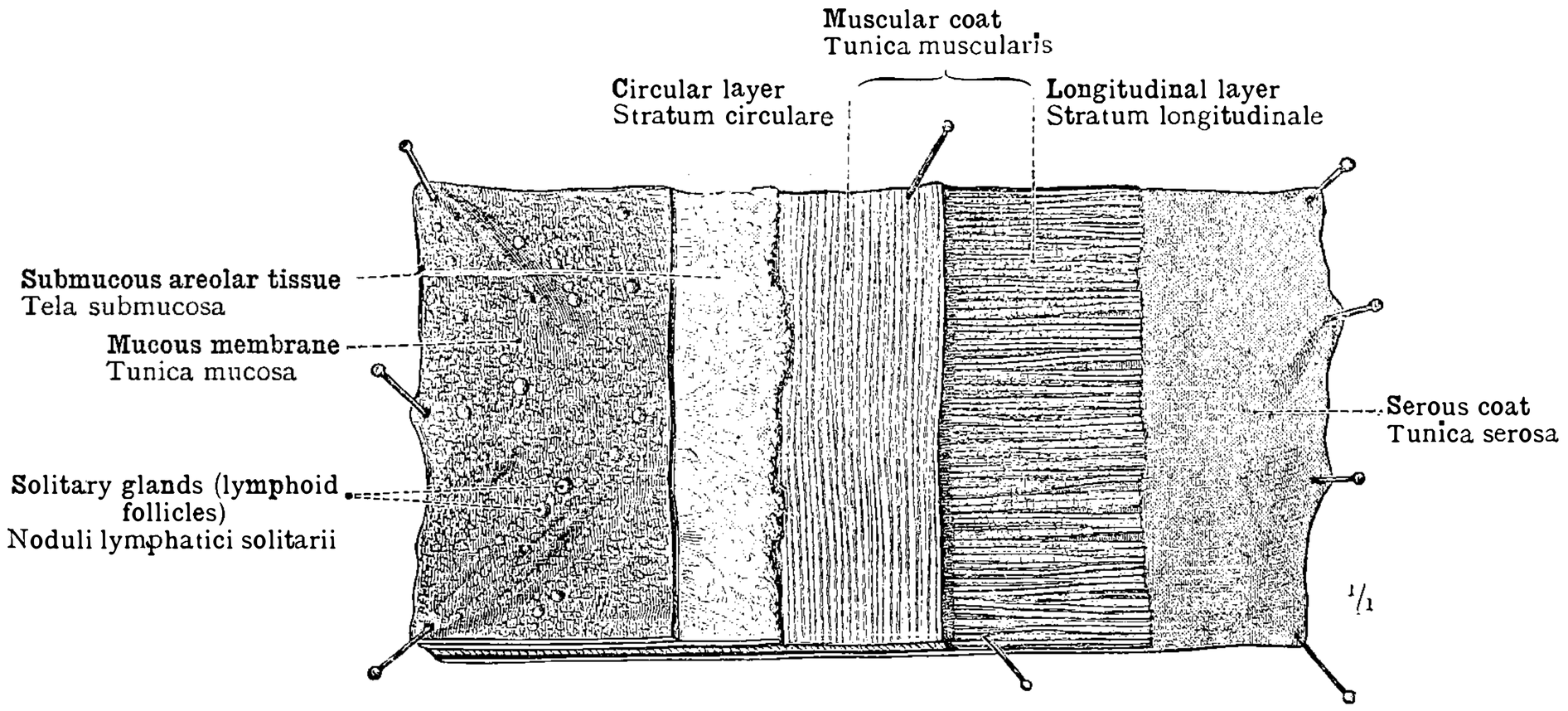


FIG. 653.—THE LAYERS OF THE INTESTINAL WALL SHOWN BY THE REMOVAL OF THE SUCCESSIVE COATS IN A PORTION STRETCHED OUT FLAT.

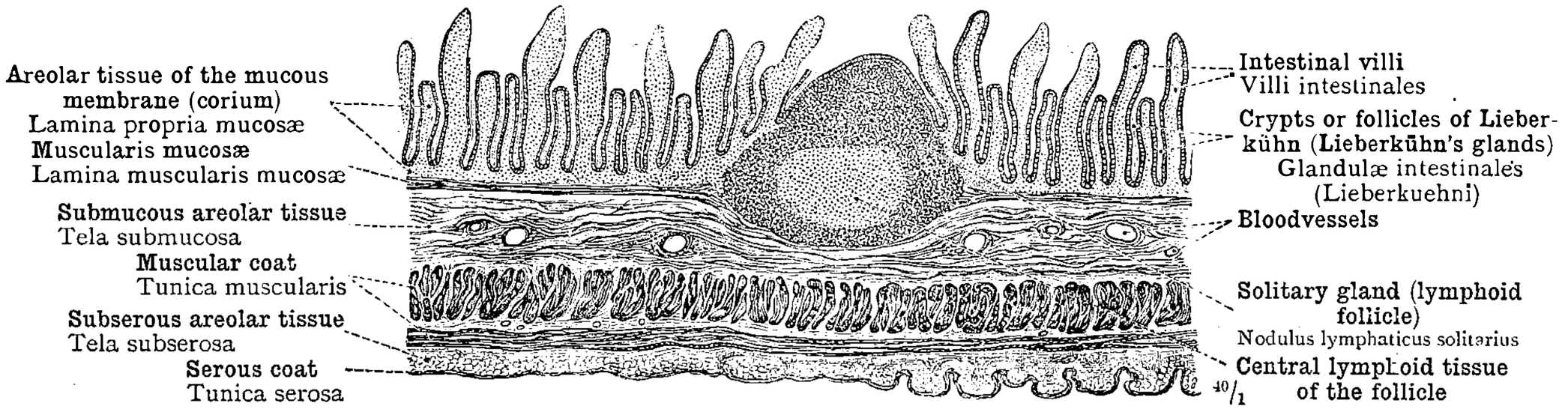


FIG. 654.—VERTICAL SECTION THROUGH THE WALL OF THE SMALL INTESTINE (INTESTINUM ILEUM) IN THE DIRECTION OF ITS LENGTH. NODULUS LYMPHATICUS SOLITARIUS, SOLITARY GLAND (LYMPHOID FOLLICLE). GLANDULÆ INTESTINALES (LIEBERKUEHNI), CRYPTS OR FOLLICLES OF LIEBERKÜHN (LIEBERKÜHN'S GLANDS).

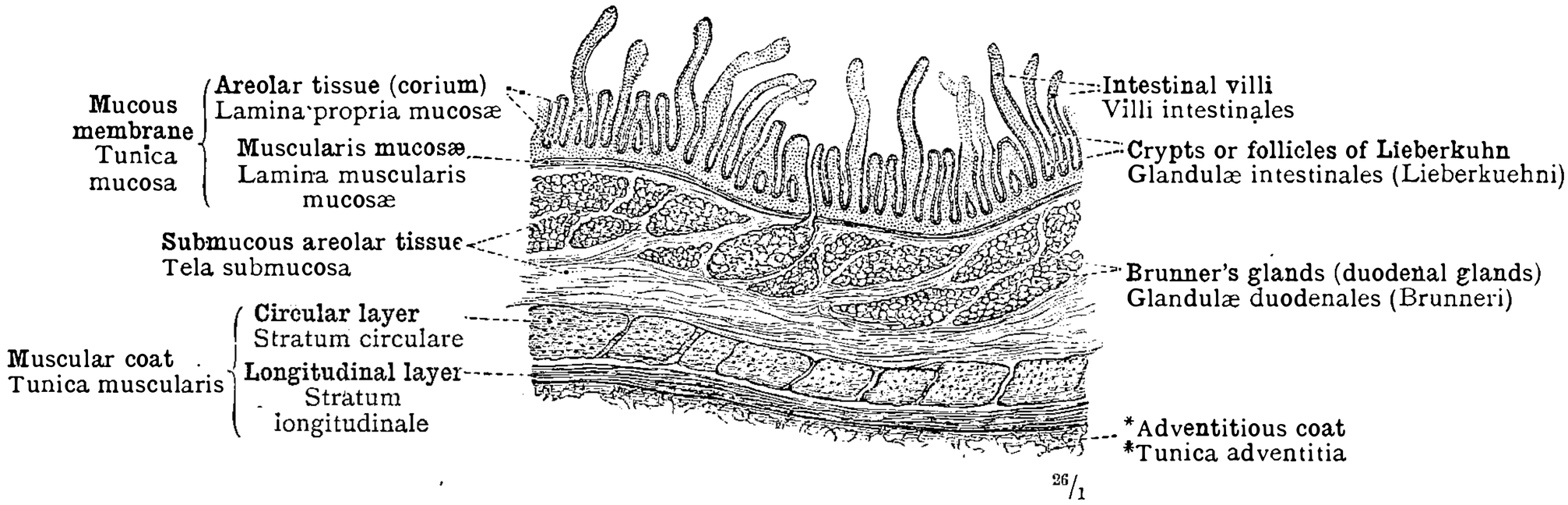


FIG. 655.—VERTICAL SECTION THROUGH THE WALL OF THE DUODENUM IN THE DIRECTION OF ITS LENGTH. GLANDULÆ DUODENALES (BRUNNERI), BRUNNER'S GLANDS (DUODENAL GLANDS).

The Layers of the Intestinal Wall.

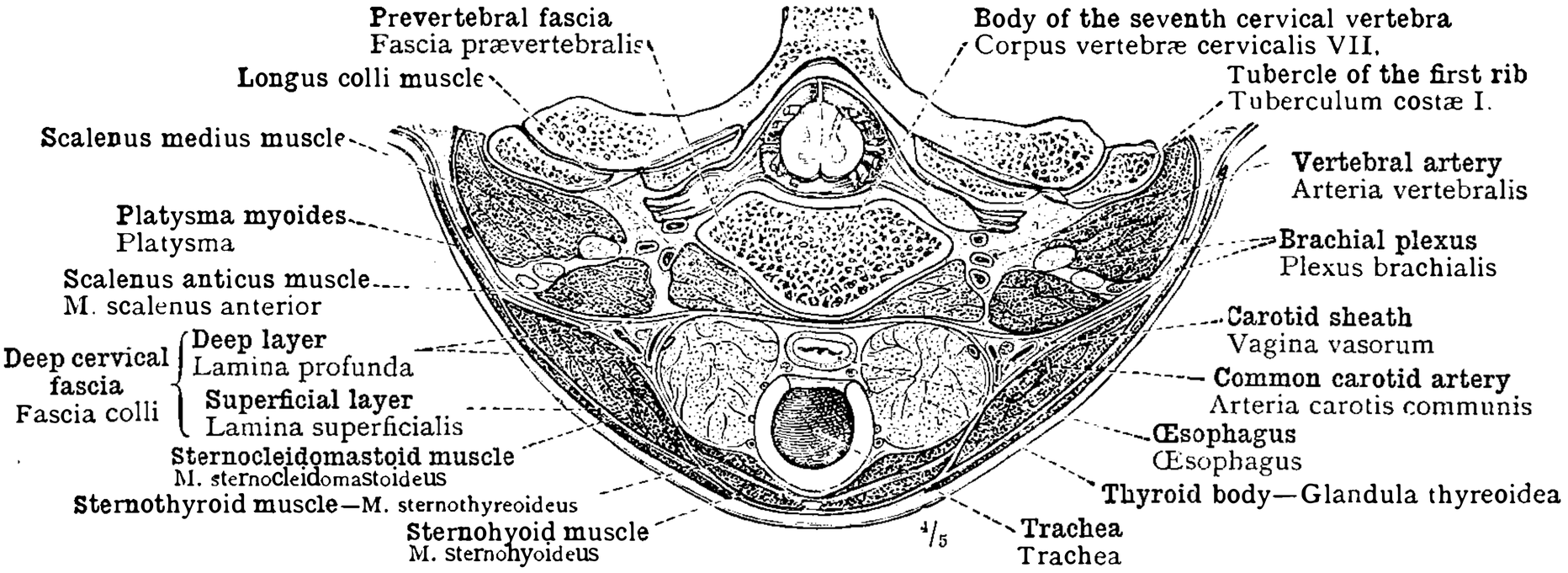


FIG. 656.—VISCUS, THE OUTER SURFACE OF WHICH IS THROUGHOUT CONNECTED WITH THE WALL OF THE BODY-CAVITY (CŒLOM) BY MEANS OF AREOLAR TISSUE. HORIZONTAL SECTION THROUGH THE LOWER PART OF THE NECK. SEMI-DIAGRAMMATIC.

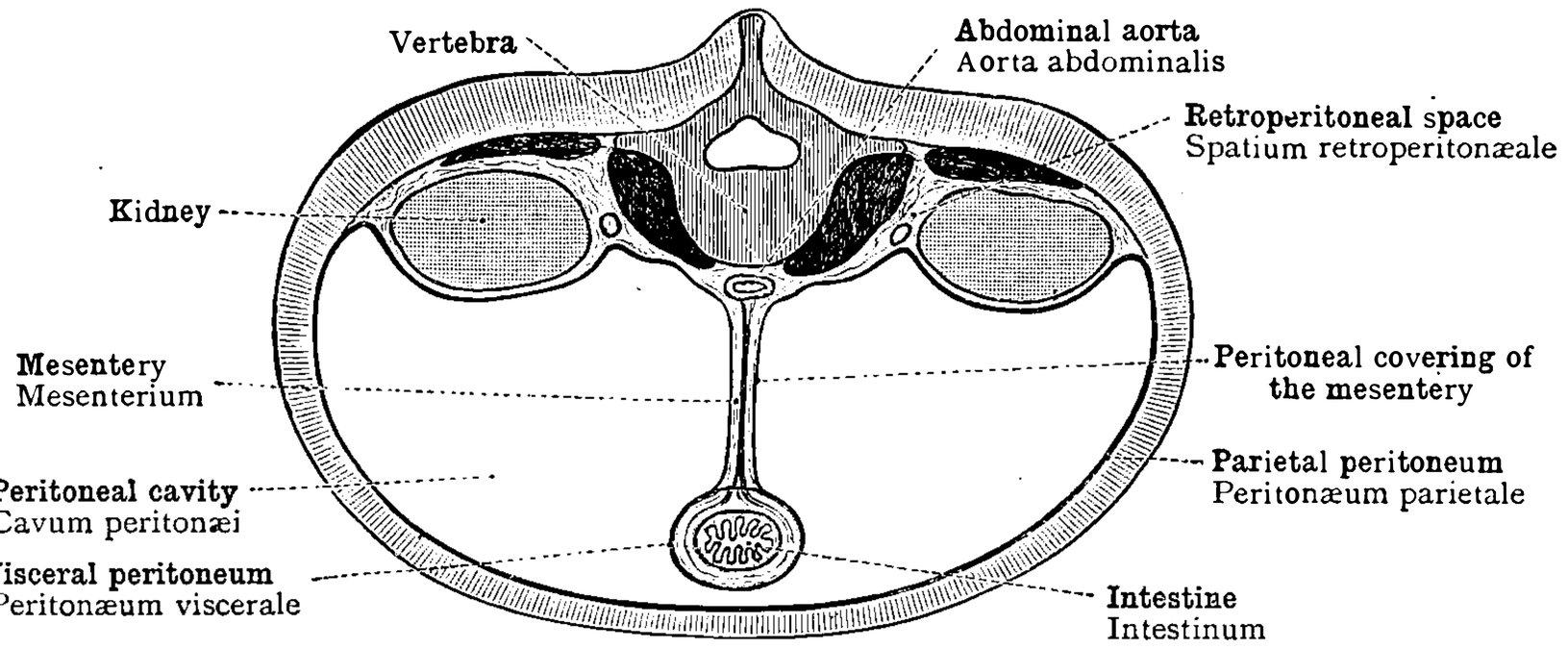


FIG. 657.—PORTION OF INTESTINE, FREELY MOBILE, THE OUTER SURFACE HAVING A SEROUS INVESTMENT (TUNICA SEROSA). CONNECTED WITH THE WALL OF THE BODY-CAVITY (CŒLOM) BY MEANS OF A FREE MESENTERY. PARIETAL AND VISCERAL LAYERS OF THE PERITONEUM. DIAGRAMMATIC.

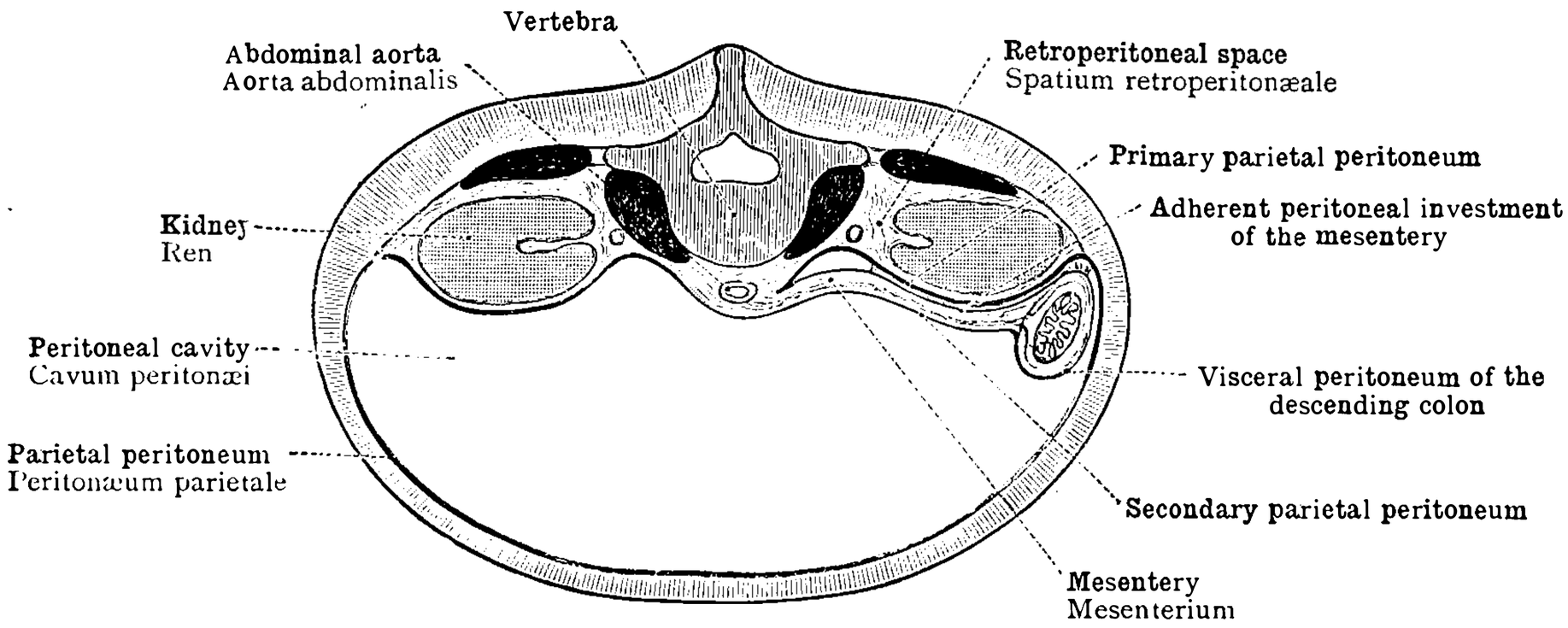


FIG. 658.—SECONDARY ADHESION TO THE BODY-WALL OF A PORTION OF INTESTINE, ORIGINALLY FREELY MOBILE. PRIMARY AND SECONDARY PARIETAL PERITONEUM. DIAGRAMMATIC.

Relations of the Viscera to the Body-Wall.

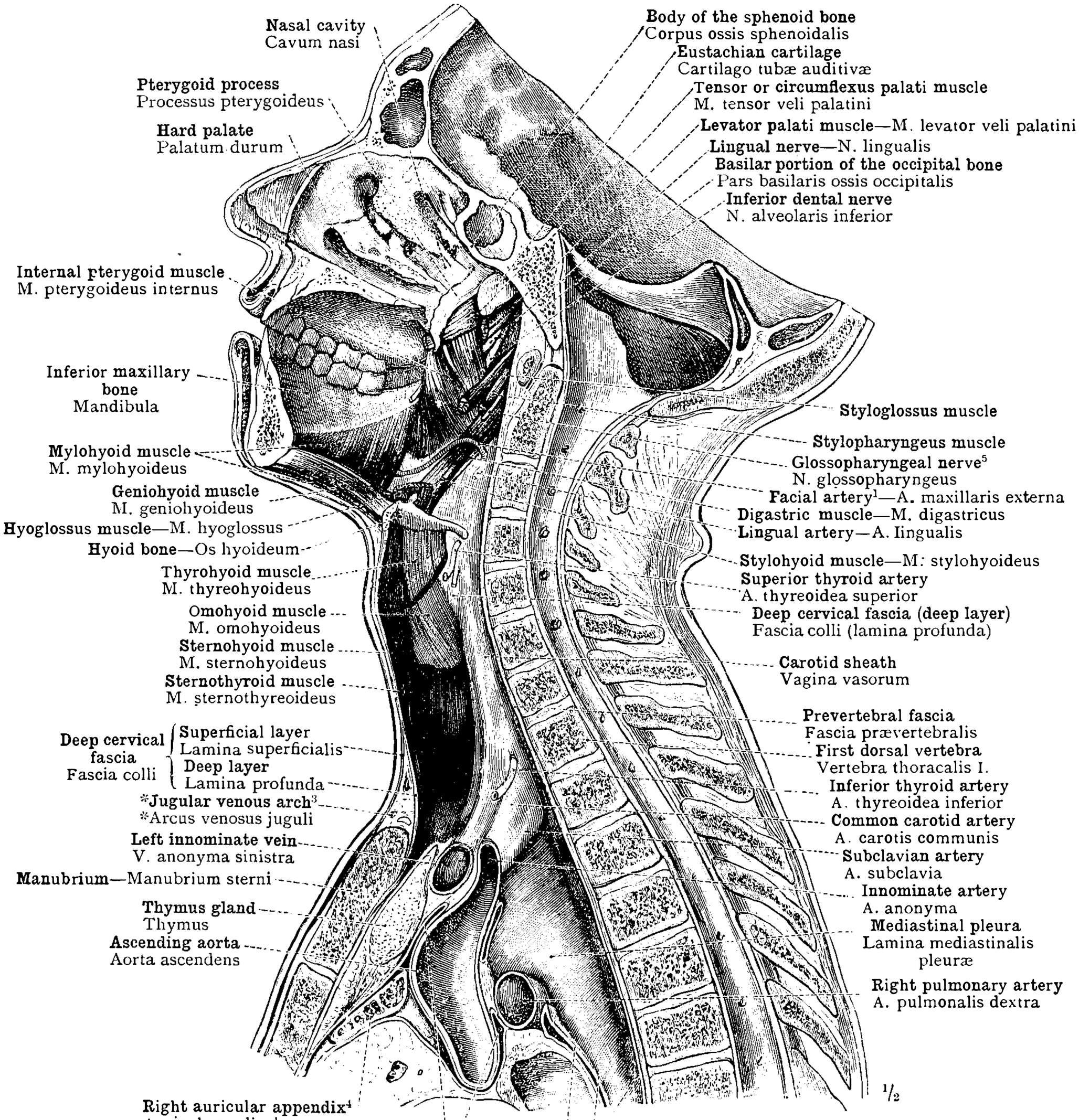
APPARATUS DIGESTORIUS

THE ORGANS OF DIGESTION

CEPHALIC AND CERVICAL PORTIONS

OF THE

DIGESTIVE ORGANS



[1] *Facial Artery.*—Quain gives *external maxillary* and MacAlister *external mandibular* as an alternative name for this artery, but it is so rarely in England called anything but the *facial* artery, that I have not thought it necessary to mention these synonyms in the text.—TR.

[2] *Mediastinum.*—The word *mediastinum* (*per medium tensum*, "stretched through the middle") properly denotes the bilaminar median partition between the right and left pleural cavities; the space between these layers, *cavum mediastinale*, should, strictly, be spoken of as the *mediastinal cavity* or *space*. In England, however, it is customary, when speaking of the various divisions of this cavity, to call them, by metonymy, simply *anterior mediastinum*, *middle mediastinum*, *posterior mediastinum*, and *superior mediastinum*.—TR.

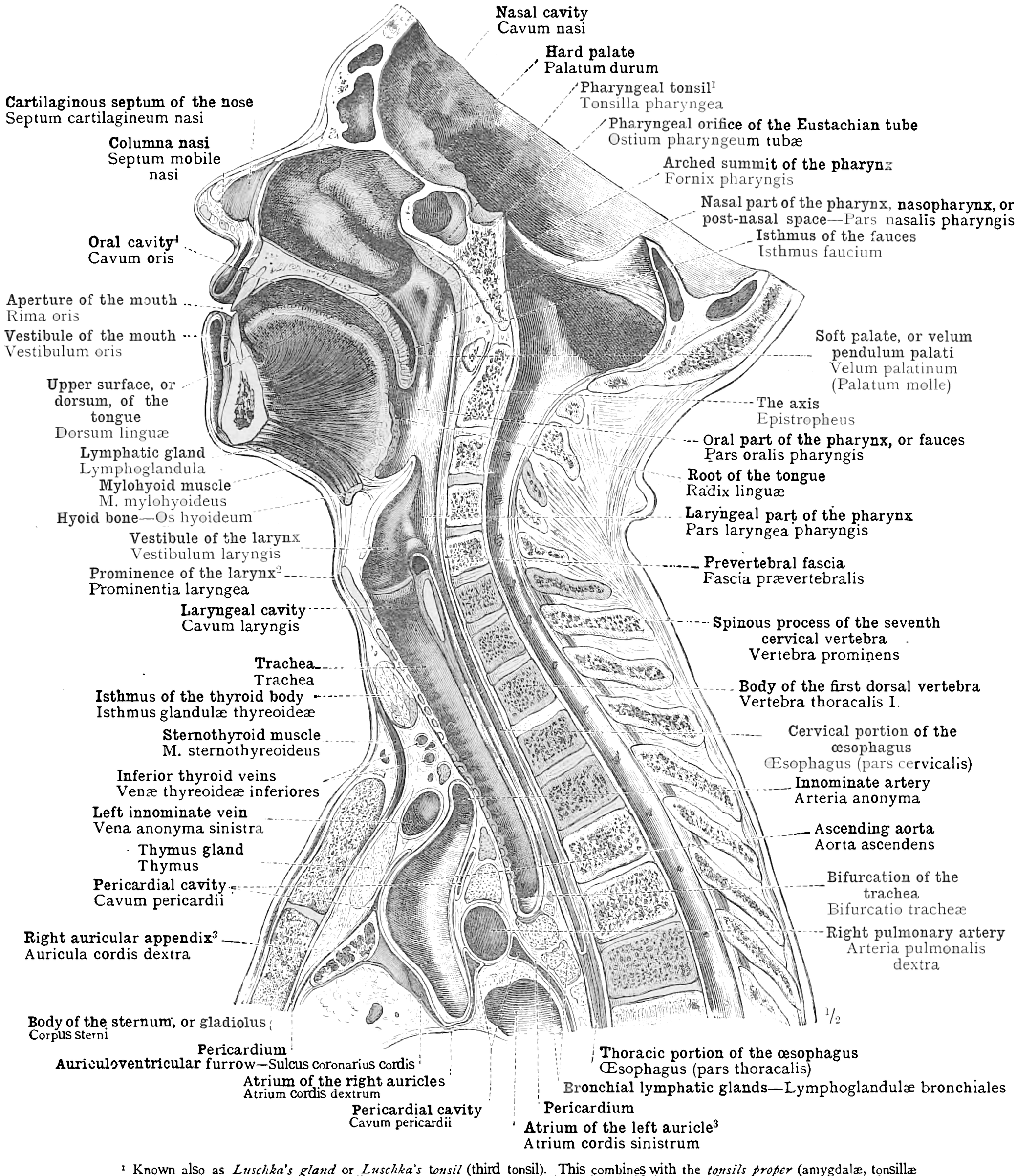
[3] *Jugular Venous Arch.*—This term is not used by English anatomists. It is applied by Toldt to the communicating branch in the suprasternal space (*spatium interaponeuroticum suprasternale*, or Burns's space) between the two anterior jugular veins, and to those portions of the anterior jugular veins below the communicating branch, which run outwards on each side behind the origin of the sterno-cleidomastoid muscle to open into the lower end of the external jugular vein. A transverse venous arch is thus formed at the root of the neck between the external jugular veins.—TR.

[4] See note 3 to p. 411.

[5] Or *ninth cranial nerve*.

FIG. 659.—VISCERAL CAVITY (CŒLOM) OF THE HEAD AND NECK, AND ITS CONNEXION WITH THE VISCERAL CAVITY (CŒLOM) OF THE THORAX, IN MEDIAN SAGITTAL SECTION. FROM A WELL-HARDENED BODY, DIVIDED SAGITTALLY IN THE MEDIAN PLANE, WITH THE VISCERA REMOVED. RIGHT SIDE.

Cavum viscerale capitis et colli—Visceral cavity (cœlom) of the head and neck.



[1] Known also as *Luschka's gland* or *Luschka's tonsil* (third tonsil). This combines with the *tonsils proper* (amygdalæ, tonsillæ palatinæ) and the *lingual tonsil* (fourth tonsil, see note 4 to p. 416) to form a ring of lymphoid tissue round the commencement of the fauces, the continuity of which in the earlier stages of development is almost unbroken. It has been called by Waldeyer the *lymphoid faucial ring*.—TR.

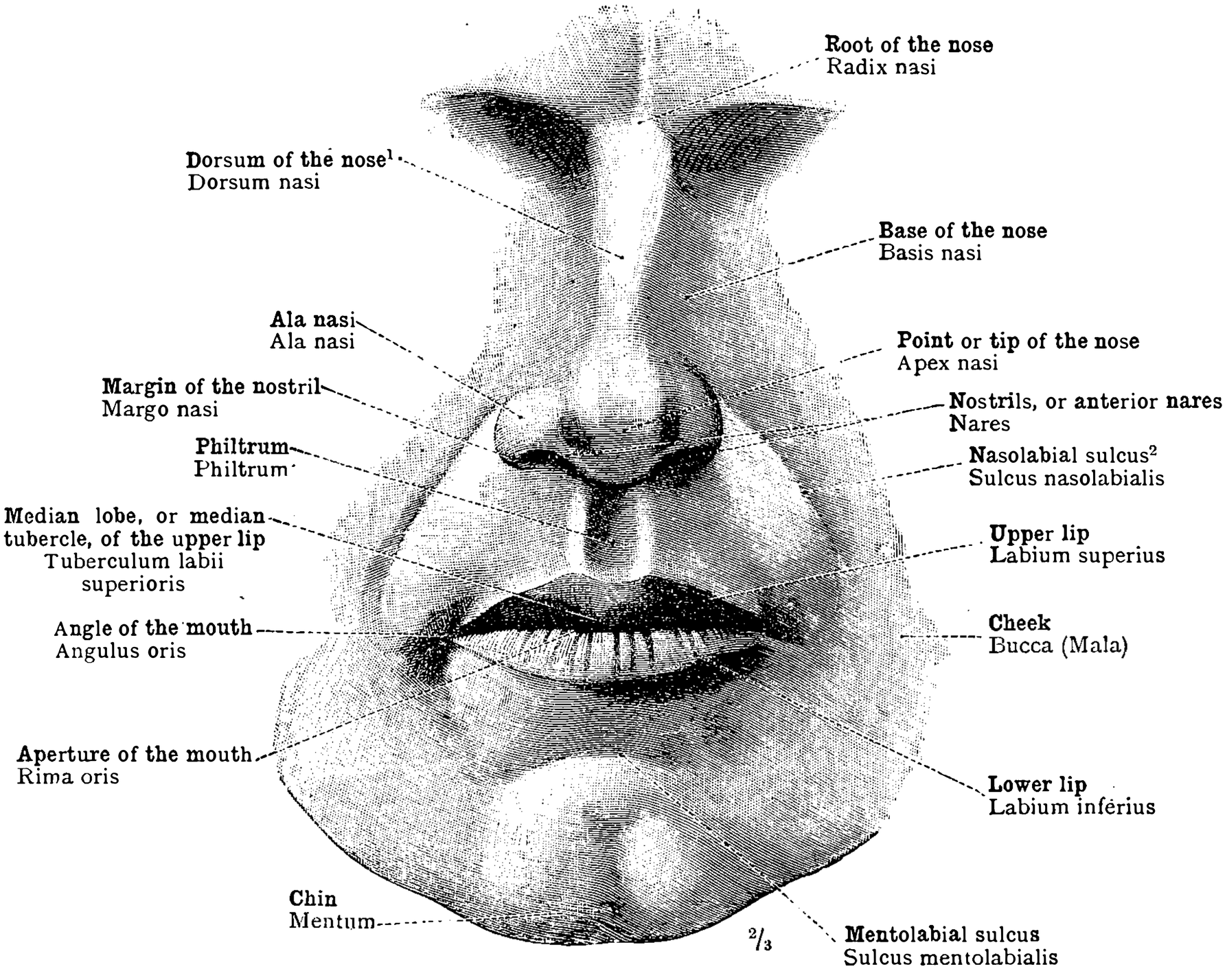
[2] Or *pomum Adami*.

[3] On the Continent, the signification of the term *auricula* is restricted to its proper and primitive meaning, denoting what in England is usually called the *auricular appendix*; whilst the main cavity, in England usually misnamed *auricle*, is by the author called *atrium*. As the name *auricle* was originally given to the *appendix* owing to its resemblance in shape to the triangular external ear with pointed tip of many animals, it is obvious that the Continental usage is to be preferred.—TR.

[4] See note 3 to p. 414.

FIG. 660.—CEPHALIC AND CERVICAL VISCERA, AND THEIR PASSAGE INTO THE THORACIC CAVITY, IN MEDIAN SAGITTAL SECTION.

Viscera capitis et colli—Cephalic and cervical viscera.



[1] The upper or bony part of the dorsum of the nose is often spoken of as the *bridge*.—TR.
[2] At its upper extremity the nasolabial sulcus is continued on to the side of the nose, above the ala, and is here termed the *alar sulcus*.—TR.

FIG. 661.—PARTS OF THE FACE HAVING RELATION TO THE VISCERA. FROM THE PHOTOGRAPH OF A YOUNG MAN.

Facies—The face.

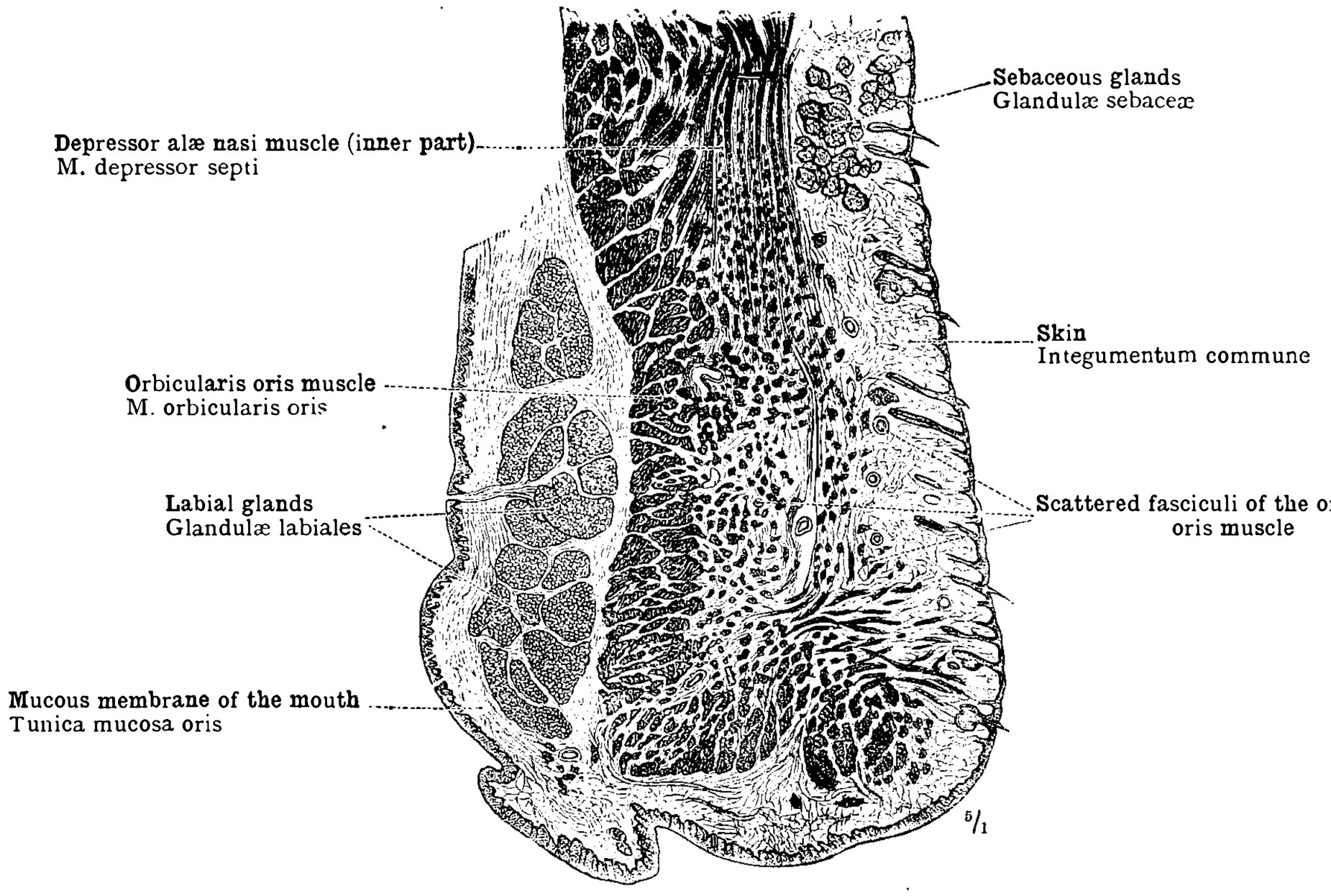
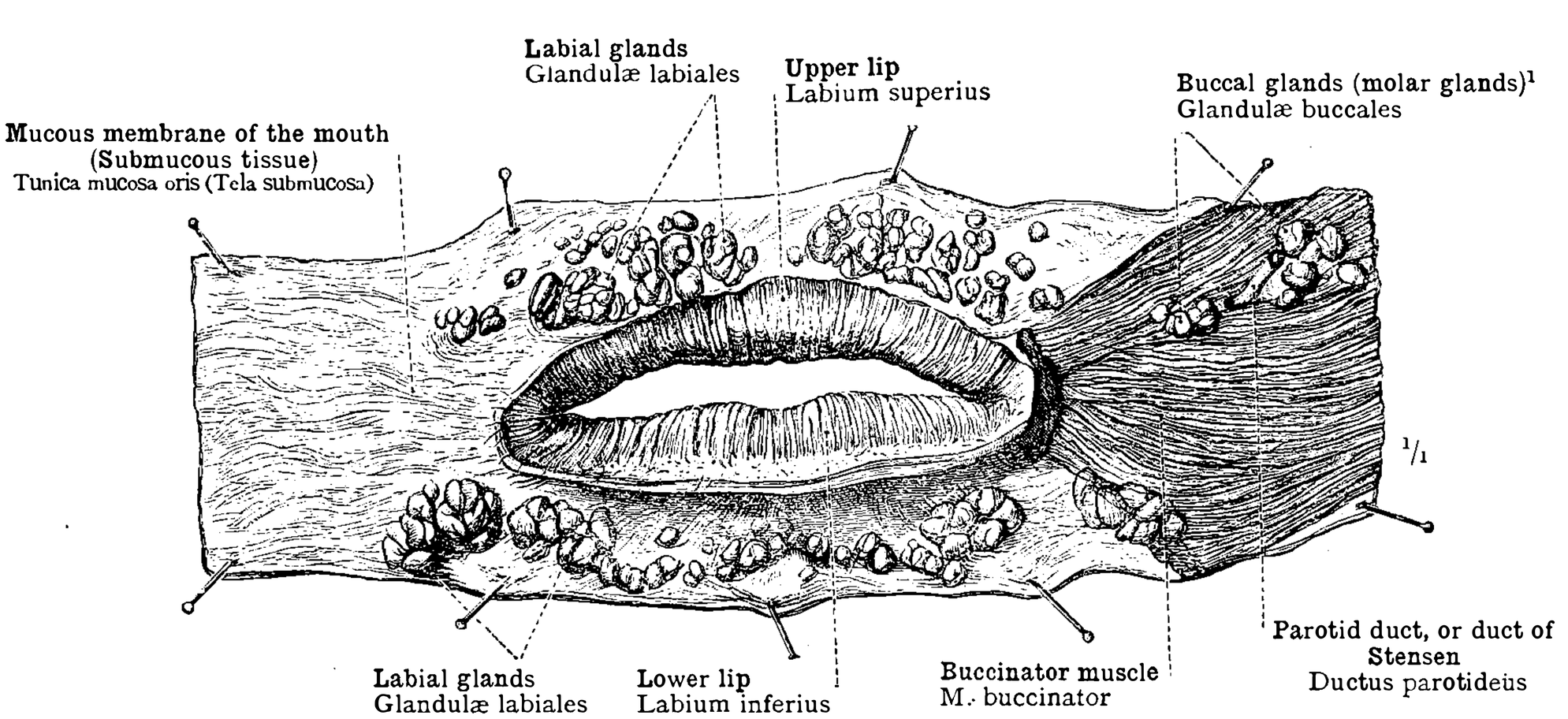


FIG. 662.—SAGITTAL SECTION THROUGH THE MIDDLE OF THE UPPER LIP, SHOWING ITS LAYERS, AND THE TRANSITION OF THE SKIN INTO THE MUCOUS MEMBRANE OF THE MOUTH.

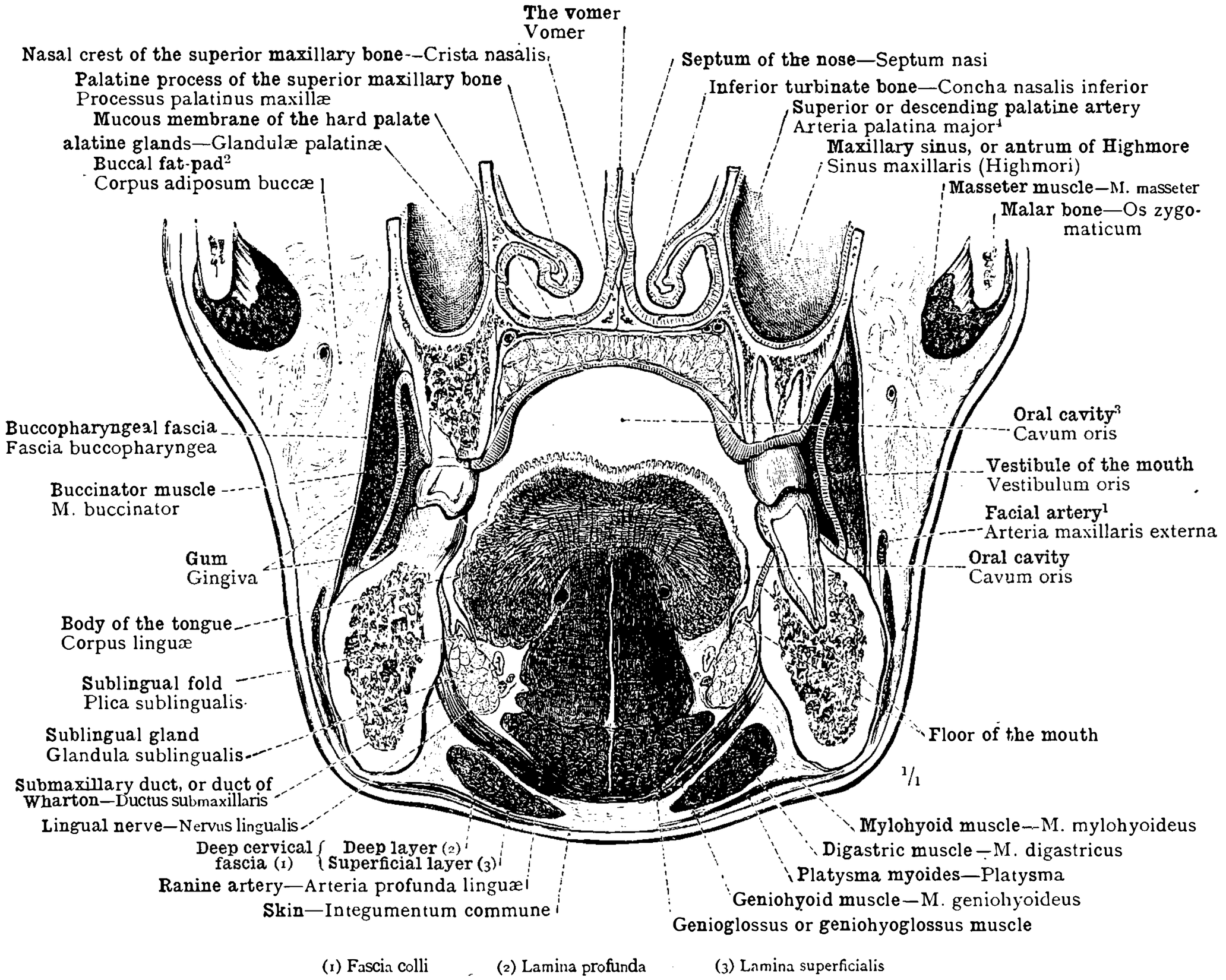


[1] Some of the *buccal glands* lie between the buccinator muscle and the mucous membrane and the cheek. Those here figured, however, larger than the rest, are between the buccinator and masseter muscles. They open by separate ducts near the last molar tooth, and are distinguished as *molar glands*.—TR.

FIG. 663.—MUCOUS GLANDS OF THE LIPS AND THE CHEEKS, LABIAL AND BUCCAL (MOLAR) GLANDS, LAID BARE BY THE REMOVAL OF THE SKIN, THE ORBICULARIS ORIS, AND THE ADJACENT MUSCLES. THE MUCOUS MEMBRANE IS SEEN FROM BEFORE.

[1] On the left side the buccinator muscle has not been removed.

Labia oris—The lips.



1 See note 1 to p. 410.
2 Sometimes, but inappropriately, named the *sucking-pad*.—TR.
3 A large cavity, such as is here represented, does not usually exist in the mouth. Normally when the mouth is closed the dorsum of the tongue is almost in apposition with the palate, being separated from it only by a narrow slit.—TR.
4 *Arteria Palatina Major*.—This name is given by the author to the *superior* or *descending palatine artery*, *arteria palatina descendens*, after its emergence on to the inferior surface of the hard palate.—TR.

FIG. 664.—CORONAL SECTION THROUGH THE FACE BETWEEN THE FIRST AND SECOND MOLAR TEETH. WALLS OF THE ORAL CAVITY: UPPER WALL, OR ROOF OF THE MOUTH, CONSISTING OF THE HARD PALATE, PALATUM DURUM; LOWER WALL, OR FLOOR OF THE MOUTH, WITH THE SUBLINGUAL GLAND; LATERAL WALLS OF THE MOUTH, FORMED BY THE MUCOUS MEMBRANE OF THE CHEERS. CAVUM ORIS, ORAL CAVITY, THE INTERIOR OF THE MOUTH (*see note 3 above*); VESTIBULUM ORIS, THE VESTIBULE OF THE MOUTH. THE DIAPHRAGMA ORIS, FORMED BY THE TWO MYLOHYOID MUSCLES AND STRENGTHENED BY THE TWO GENIOHYOID MUSCLES. SEEN FROM BEFORE.

Cavum oris—The oral cavity.

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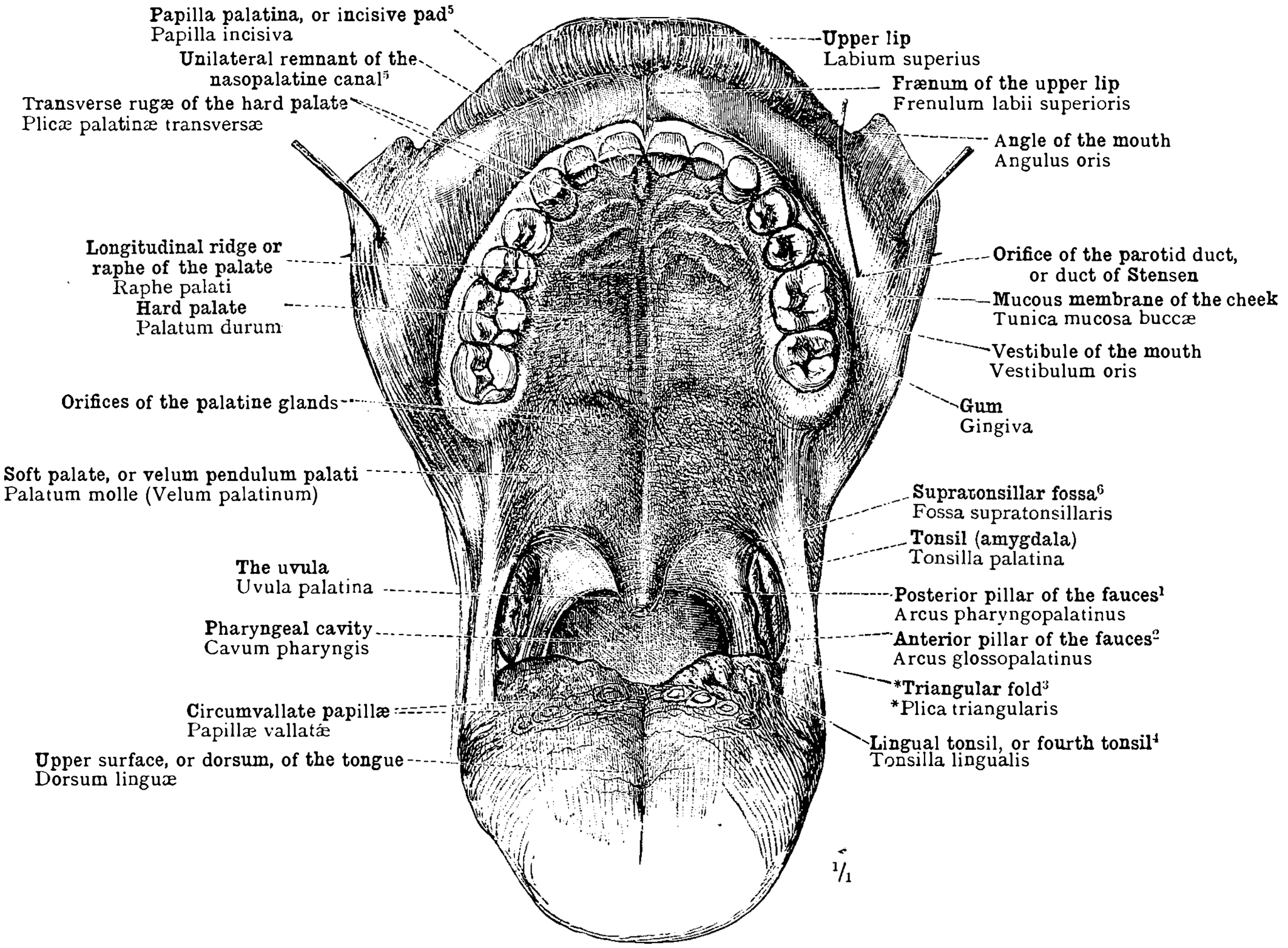


[1] Also known as the *posterior palatine*, or *pharyngopalatine, arch.*

[2] Also known as the *anterior palatine*, or *glossopalatine, arch.*

[3] **Triangular Fold.*—This is included between the two limbs into which the anterior pillar of the fauces divides as it approaches the side of the tongue. It should be noted that the name *plica triangularis* has been applied to another fold of mucous membrane, viz., to that covering the *fossa supratonsillaris*.—TR.

[4] *Lingual Tonsil.*—This name is sometimes given to the group of lymphoid follicles found on each side of the dorsum of the tongue at its base, behind the row of circumvallate papillæ. See also note [1] to p. 411.—TR.

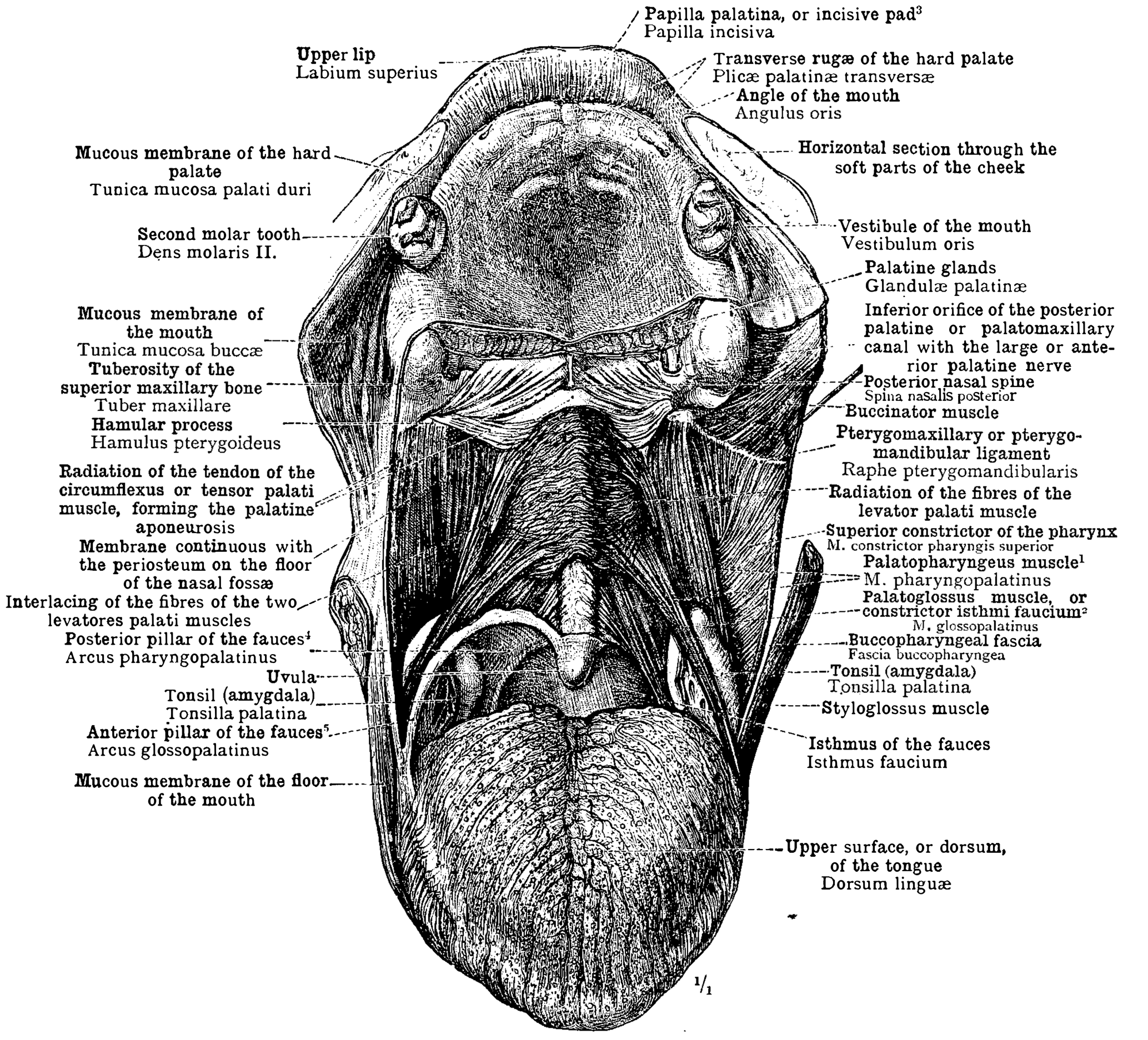
[5] On the *papilla palatina* or *incisive pad* may be found on one or both sides a blind recess, constituting the remnant of the canal which in many animals in this situation leads from the mouth to the nose, and known variously as the *incisor canal, nasopalatine canal, canal of Stensen*, or *ductus incisivus*. In man this canal is usually represented by a strand of connective tissue which runs from the recess in the incisive pad upwards through the incisor or anterior palatine canal (canal of Stensen) of the superior maxillary bone to the floor of the nasal fossæ.—TR.

[6] See note [4] to p. 415.

FIG. 666.—UPPER WALL OF THE ORAL CAVITY, OR ROOF OF THE MOUTH, WITH THE UPPER LIP, AND THE PASSAGE (ISTHMUS FAUCIUM) FROM THE MOUTH INTO THE ORAL PORTION OF THE PHARYNX (THE FAUCES). PALATUM DURUM, THE HARD PALATE; PALATUM MOLLE, THE SOFT PALATE, OR VELUM PENDULUM PALATI, WITH THE UVULA; ARCUS GLOSSOPALATINUS, THE ANTERIOR PILLAR OF THE FAUCES, KNOWN ALSO AS THE ANTERIOR PALATINE OR GLOSSOPALATINE ARCH; ARCUS PHARYNGOPALATINUS, THE POSTERIOR PILLAR OF THE FAUCES, KNOWN ALSO AS THE POSTERIOR PALATINE OR PHARYNGOPALATINE ARCH; TONSILLA PALATINA, THE TONSIL (AMYGDALA).

After the removal of the lower jawbone, the palate was placed in an almost vertical position, and the tongue drawn downwards as far as possible; hence the anterior pillar of the fauces is much stretched.

Cavum oris—The oral cavity.



1 This muscle occupies the posterior pillar of the fauces.—Tr.
2 This muscle occupies the anterior pillar of the fauces.—Tr.
3 See note 5 to p. 416.
4 Known also as the *posterior palatine*, or *pharyngopalatine*, *arch.*
5 Known also as the *anterior palatine*, or *glossopalatine*, *arch.*

FIG. 667.—MUSCLES OF THE SOFT PALATE AND OF THE PILLARS OF THE FAUCES OR PALATINE ARCHES, SEEN FROM BEFORE. APONEUROTIC EXPANSION OF THE TENDON OF THE CIRCUMFLEXUS OR TENSOR PALATI MUSCLE (ATTACHED IN FRONT TO THE TRANSVERSE RIDGE ON THE LOWER SURFACE OF THE PALATE BONE, AND FORMING POSTERIORLY THE PALATINE APONEUROSIS); RETIFORM INTERLACEMENT OF THE FIBRES OF THE TWO LEVATORES PALATI MUSCLES.

On the left side the mucous membrane has been removed to show the connexion of the buccinator muscle with the superior constrictor of the pharynx through the intermediation of the pterygomaxillary or pterygomandibular ligament. The parts were prepared as in Fig. 666.

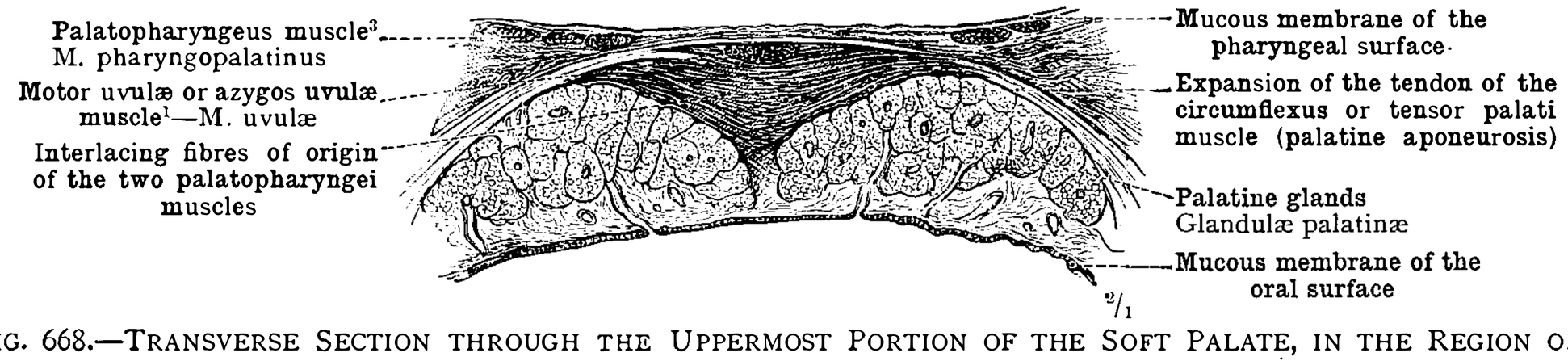


FIG. 668.—TRANSVERSE SECTION THROUGH THE UPPERMOST PORTION OF THE SOFT PALATE, IN THE REGION OF THE APONEUROTIC EXPANSION OF THE CIRCUMFLEXUS OR TENSOR PALATI MUSCLE.

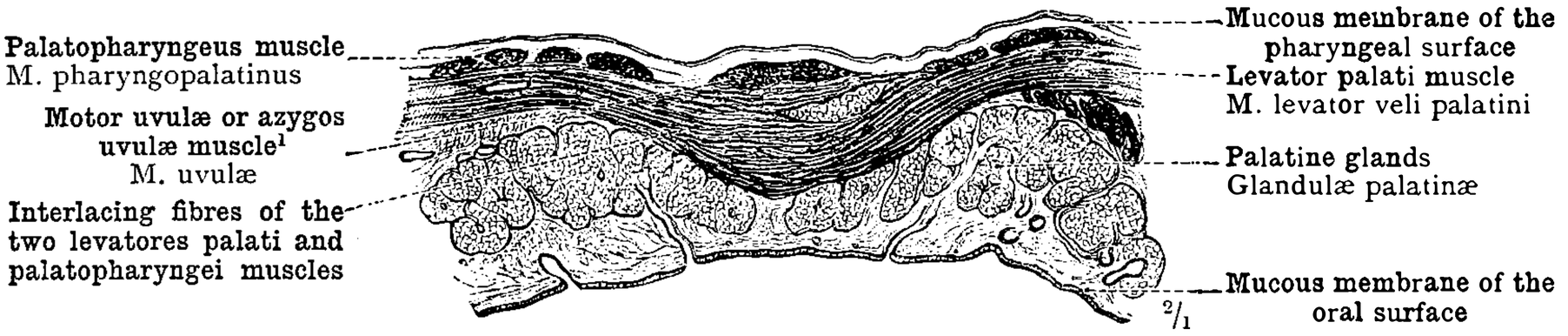


FIG. 669.—TRANSVERSE SECTION THROUGH THE SOFT PALATE MIDWAY BETWEEN ITS ATTACHED AND FREE EXTREMITIES, IN THE REGION OF THE LEVATOR PALATI MUSCLE.

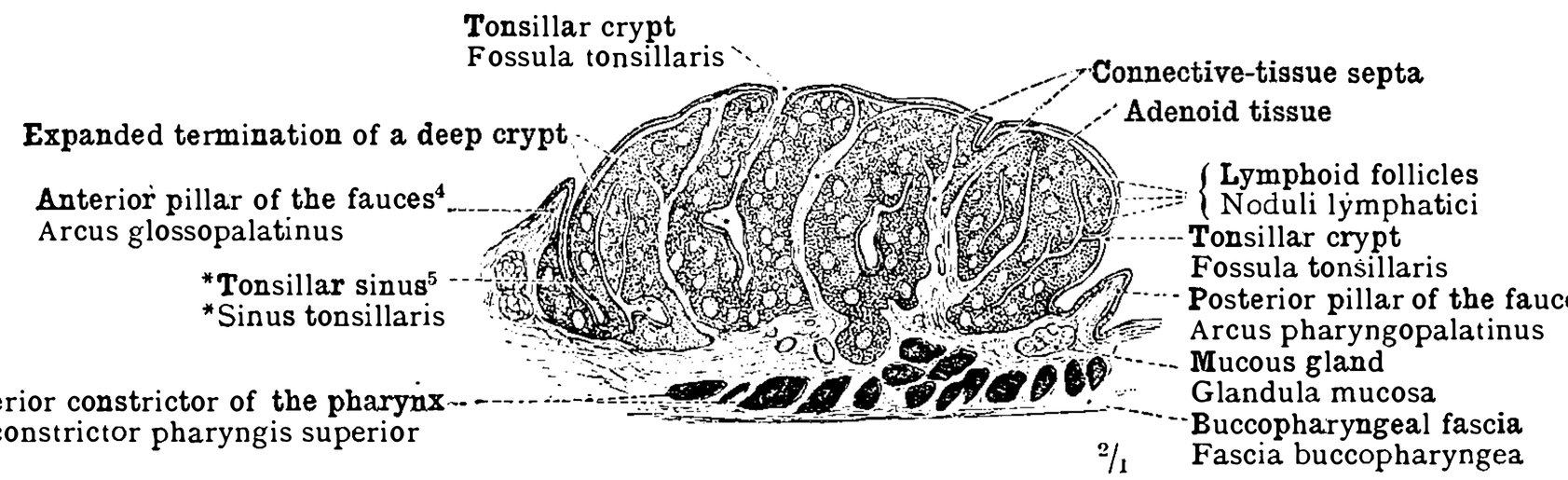


FIG. 670.—HORIZONTAL SECTION THROUGH A LARGE PROJECTING TONSIL (TONSILLA PALATINA) AND THROUGH THE PILLARS OF THE FAUCES. (FROM AN EXECUTED MALE CRIMINAL, AGED TWENTY-TWO YEARS.)

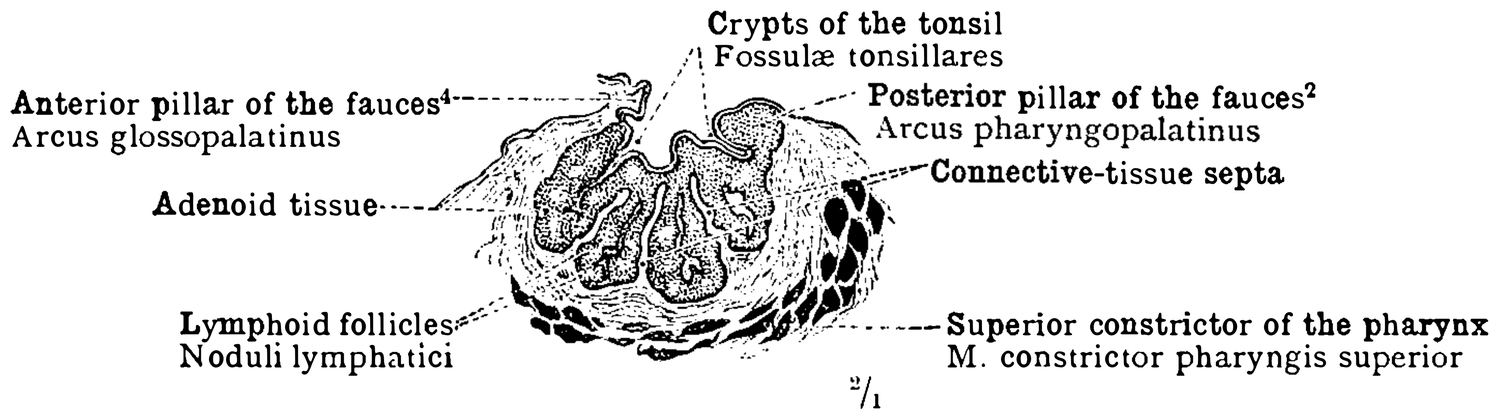


FIG. 671.—HORIZONTAL SECTION THROUGH A SMALL SUNKEN TONSIL (TONSILLA PALATINA) AND THROUGH THE PILLARS OF THE FAUCES. (FROM A FEMALE, AGED FIFTY-TWO YEARS.)

The posterior pillar is united with the tonsil.s

[1] The name *motor uvulæ*, suggested by Macalister, is to be preferred to the old and more familiar name *azygos uvulæ*, which was given to the muscle when it was erroneously supposed to be a single median muscle.—TR.
[2] Known also as the *posterior palatine*, or *pharyngopalatine*, *arch*.
[3] See note [1] to p. 417.
[4] Known also as the *anterior palatine*, or *glossopalatine*, *arch*.
[5] See note [4] to p. 415.

Cavum oris—The oral cavity.

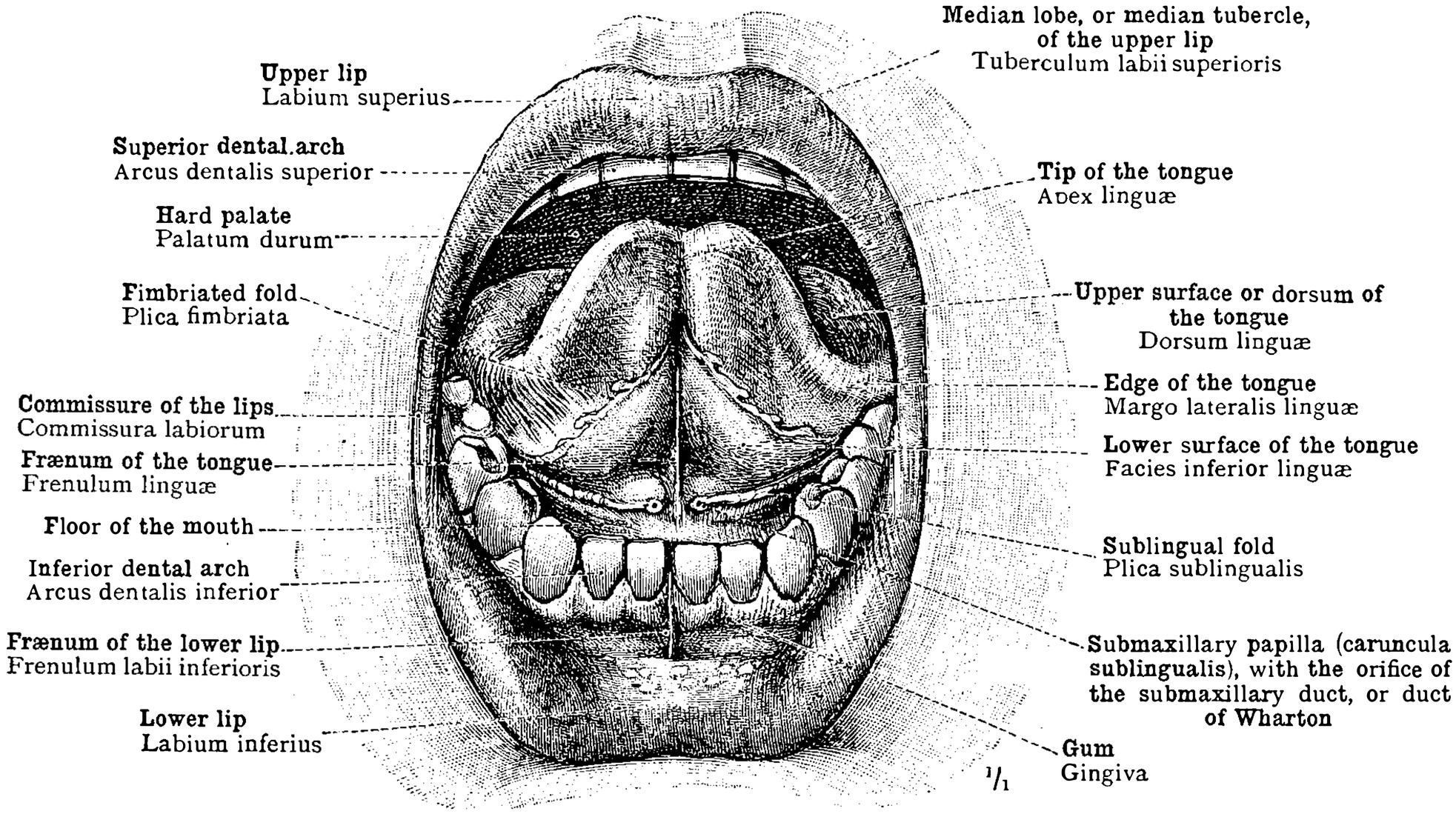
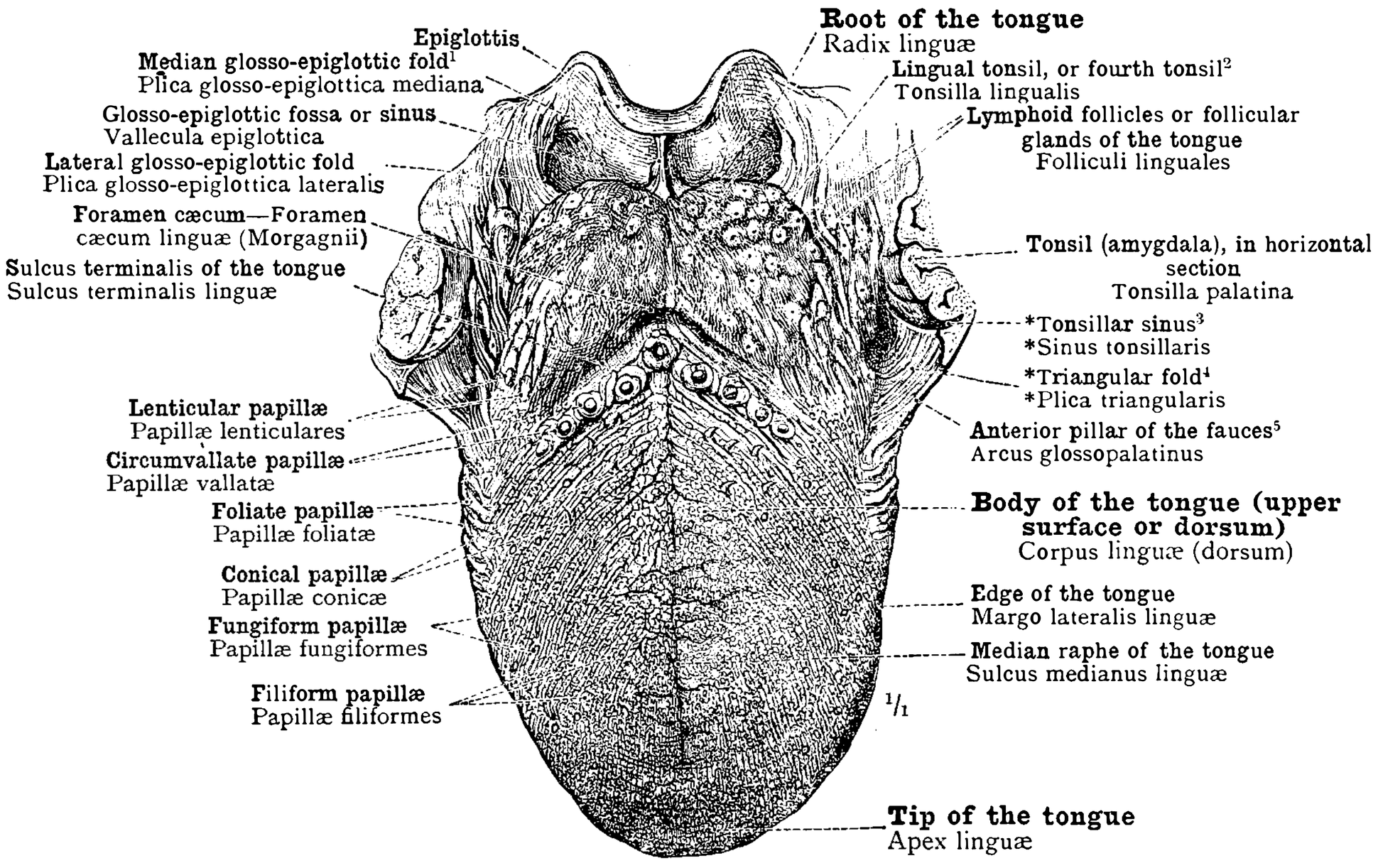
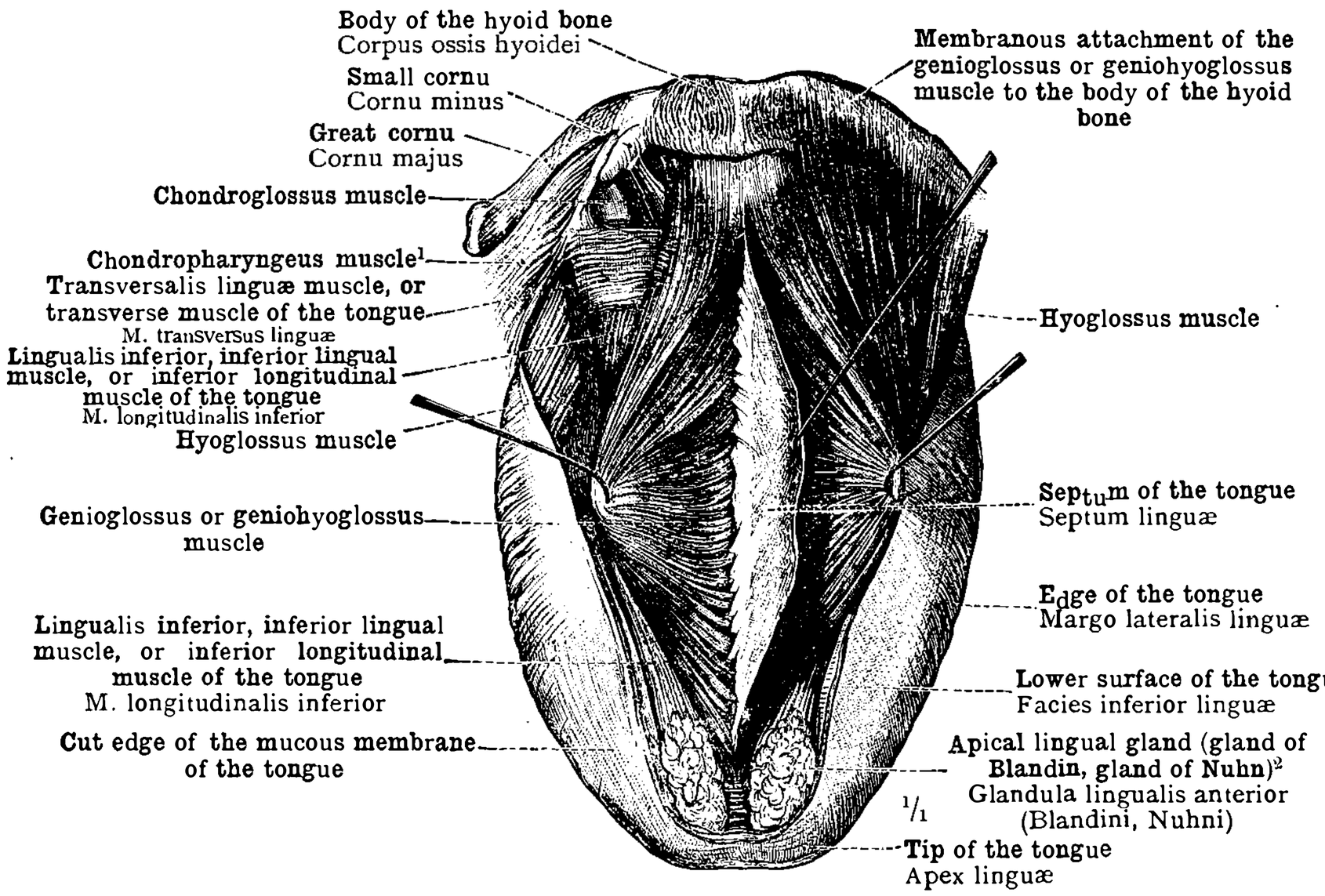


FIG. 672.—THE MOUTH, WIDELY OPENED, WITH THE TIP OF THE TONGUE DRAWN UPWARDS, TO SHOW THE FRÆNUM LINGUÆ, THE SUBLINGUAL FOLD, THE SUBMAXILLARY PAPILLA (CARUNCULA SUBLINGUALIS), AND THE FIMBRIATED FOLD.



1 Or *frænum epiglottidis*. 2 See note 4 to p. 416, and note 1 to p. 411. 3 See note 4 to p. 415.
4 See note 8 to p. 416. 5 Known also as the *anterior palatine*, or *glossopalatine*, *arch*.

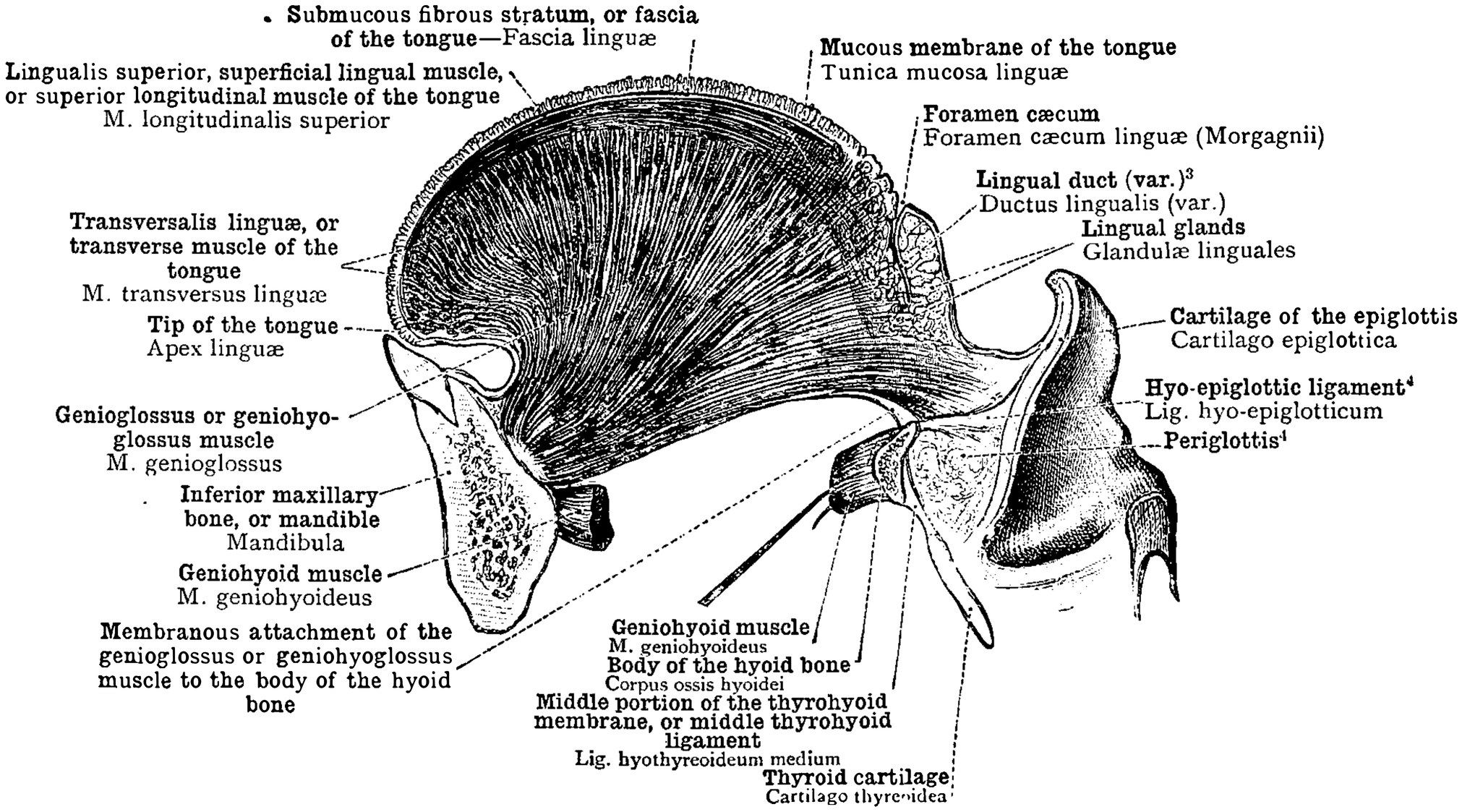
FIG. 673.—THE TONGUE, LINGUA, WITH THE EPIGLOTTIS: RADIX LINGUÆ, THE ROOT OF THE TONGUE; DORSUM LINGUÆ, THE UPPER SURFACE OF THE TONGUE; APEX LINGUÆ, THE TIP OF THE TONGUE.



[1] *Chondropharyngeus Muscle.*—See Fig. 706, p. 433, and note [1] to same page.
[2] This is not a single gland on each side, but a group of glands aggregated into a small oblong mass. Most of the glands are acinotubular.—Tr.

FIG. 674.—MUSCLES OF THE TONGUE WITH THE SEPTUM LINGUÆ AND THE APICAL LINGUAL GLANDS (GLANDS OF BLANDIN OR NUHN, GLANDULÆ LINGUALES ANTERIORES).

On the left side the hyoglossus muscle has been removed, to display the chondroglossus and transversalis linguæ muscles.



3 See Appendix, note [1].
4 See Appendix, note [2].

FIG. 675.—THE TONGUE, WITH THE INFERIOR MAXILLARY BONE, THE HYOID BONE, AND THE EPIGLOTTIS, IN SAGITTAL SECTION. MUSCLES AND MUCOUS MEMBRANE OF THE TONGUE; GLANDULÆ LINGUALES, LINGUAL GLANDS; DUCTUS LINGUALIS, LINGUAL DUCT.

The larynx has been drawn somewhat away from the tongue.

Cavum oris—The oral cavity.

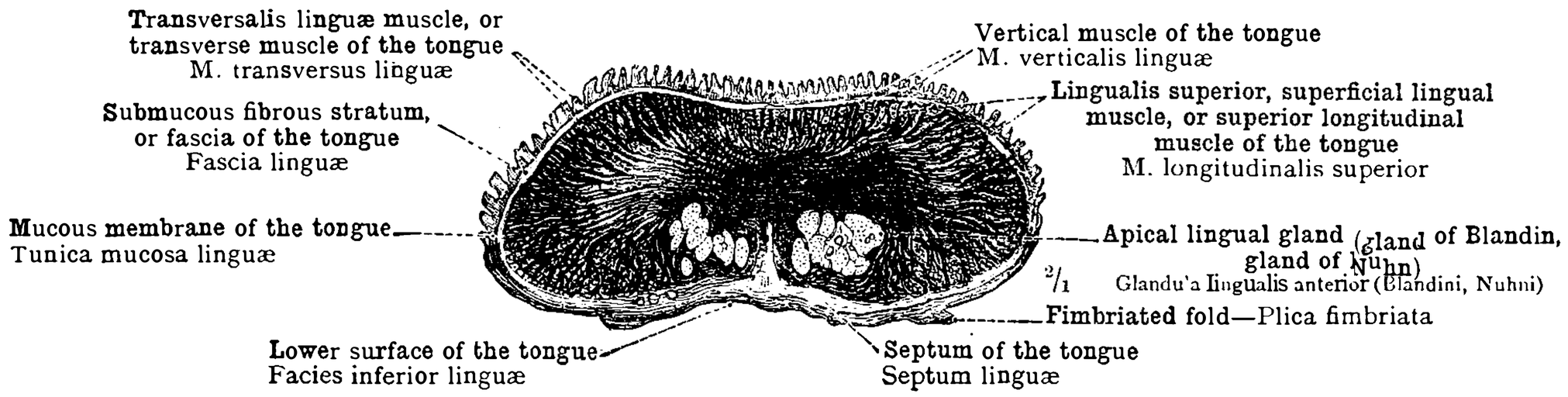


FIG. 676.—CORONAL SECTION THROUGH THE TIP OF THE TONGUE. GLANDULA LINGUALIS ANTERIOR, APICAL LINGUAL GLAND (GLAND OF BLANDIN, GLAND OF NUHN).

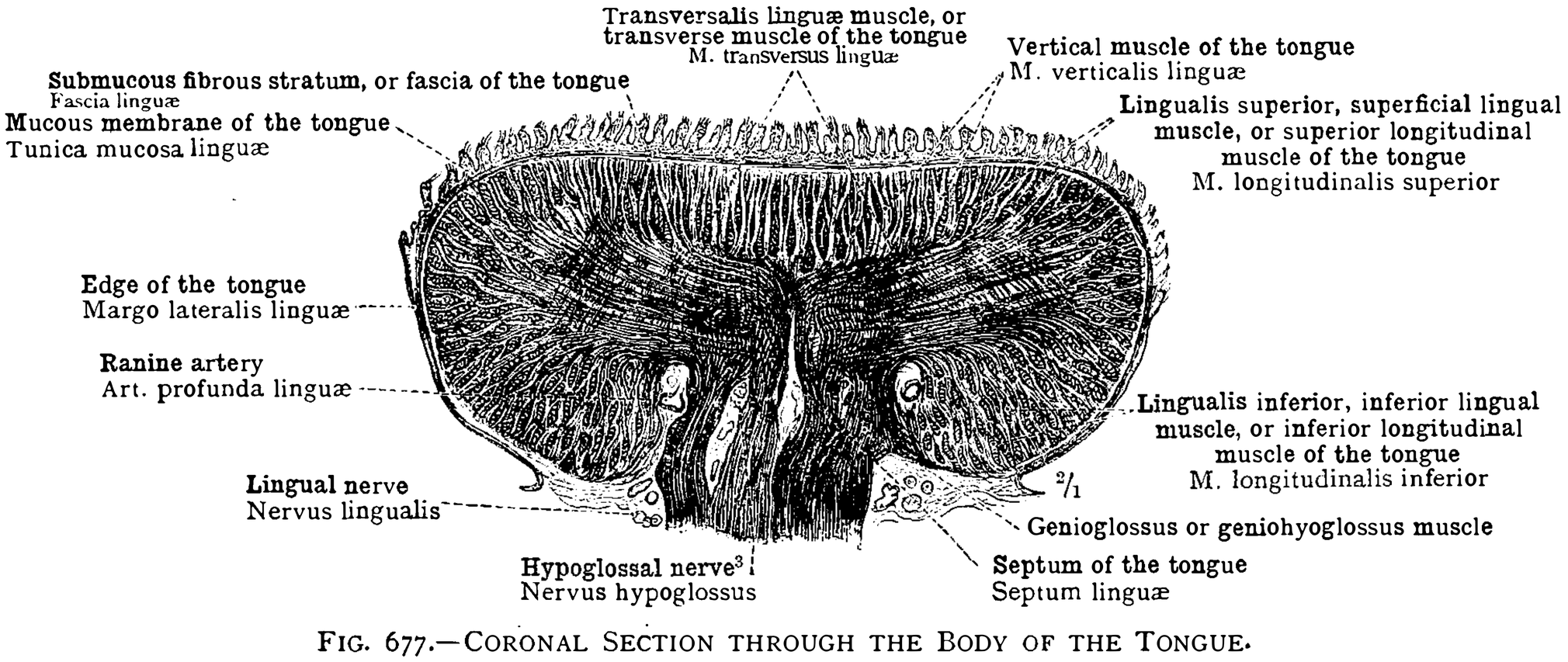


FIG. 677.—CORONAL SECTION THROUGH THE BODY OF THE TONGUE.

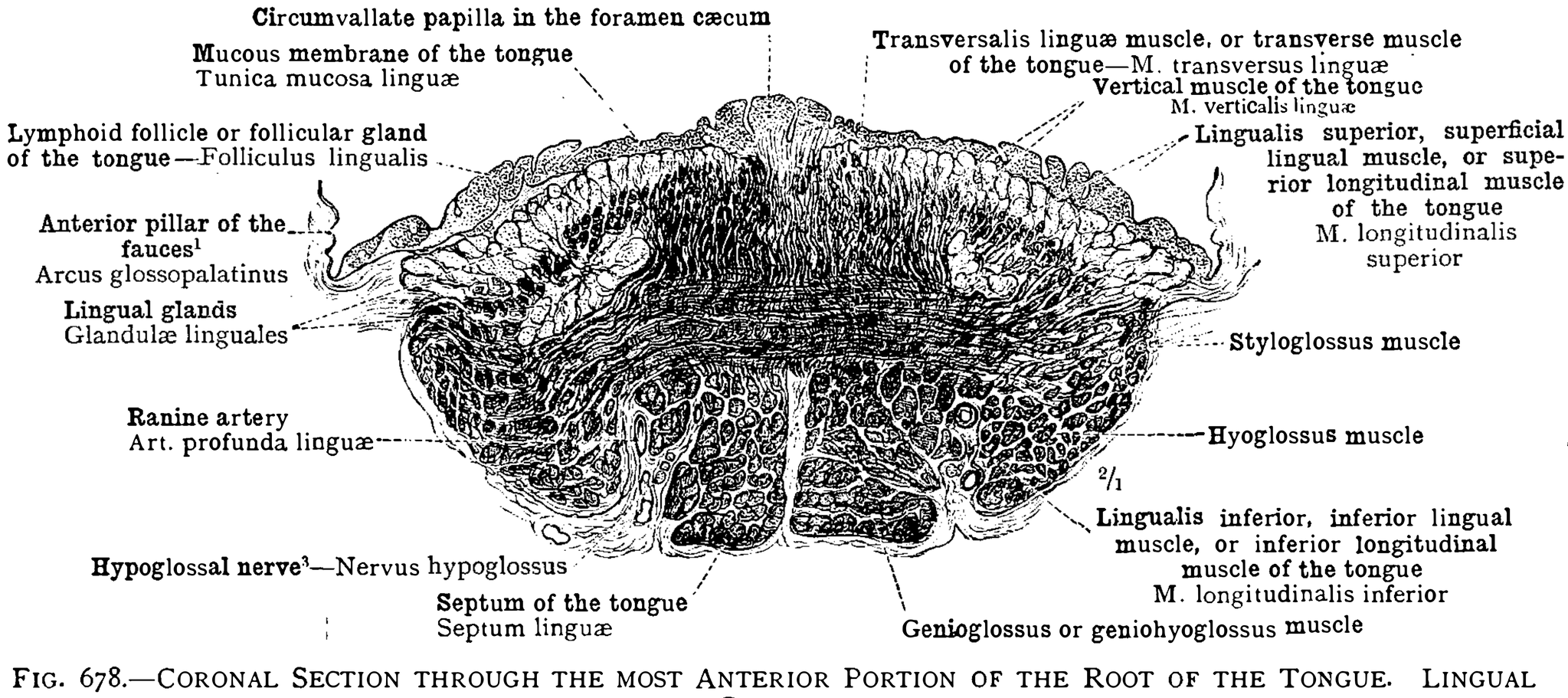


FIG. 678.—CORONAL SECTION THROUGH THE MOST ANTERIOR PORTION OF THE ROOT OF THE TONGUE. LINGUAL GLANDS.

The section passes through a circumvallate papilla which in this specimen occupies the site of the foramen cæcum.

THE ARRANGEMENT OF THE MUSCLES OF THE TONGUE, AS DISPLAYED BY CORONAL SECTIONS THROUGH THE ORGAN.[2]

[1] Known also as the *anterior palatine*, or *glossopalatine*, *arch*.

[2] Macalister speaks of the intrinsic muscles of the tongue as *strata*, four in number, viz., *stratum longitudinale inferius*, *stratum longitudinale superius*, *stratum transversum*, and *stratum perpendiculare*.—TR.

[3] Or *twelfth cranial nerve*, in Sœmerring's enumeration; *ninth cranial nerve*, in that of Willis. Sometimes known as the *lingual motor nerve*.—TR.

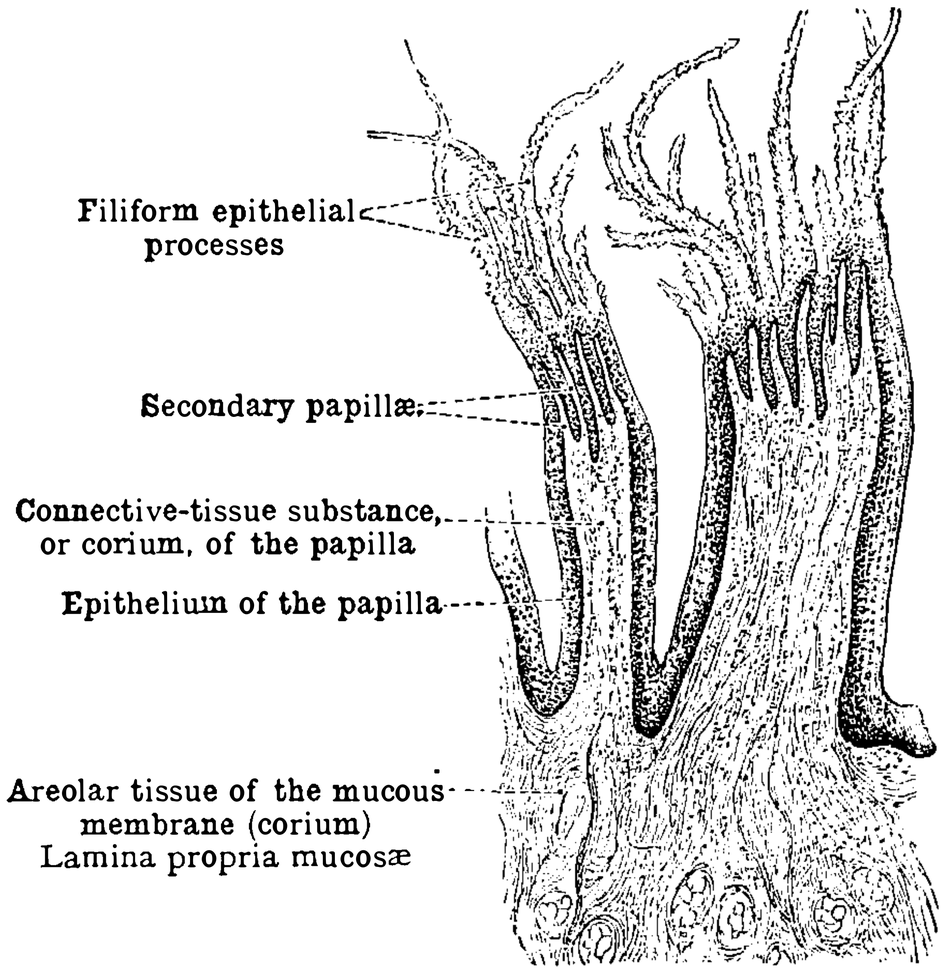


FIG. 679.—PAPILLÆ FILIFORMES, FILIFORM PAPILLÆ OF THE TONGUE. VERY LARGE FORM, WHICH PROJECTS MARKEDLY FROM THE SURFACE. LONGITUDINAL SECTION.

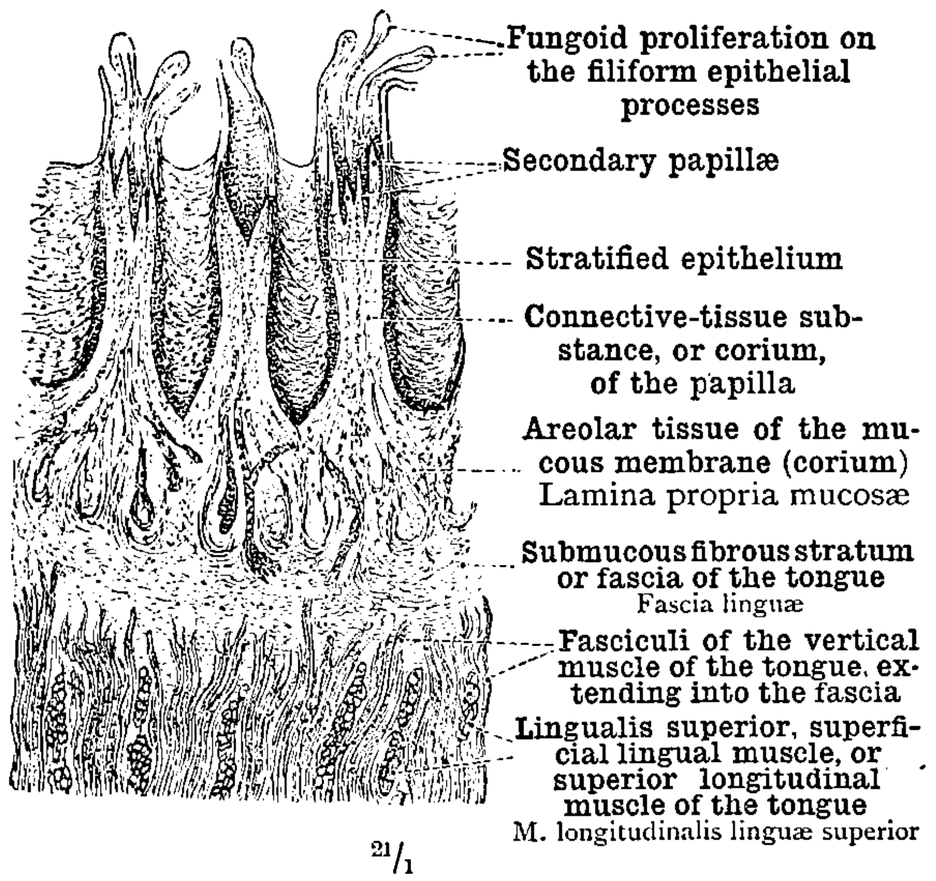


FIG. 680.—PAPILLÆ FILIFORMES, FILIFORM PAPILLÆ OF THE TONGUE. SMALL FORM, WHICH PROJECTS BUT SLIGHTLY FROM THE SURFACE. LONGITUDINAL SECTION.

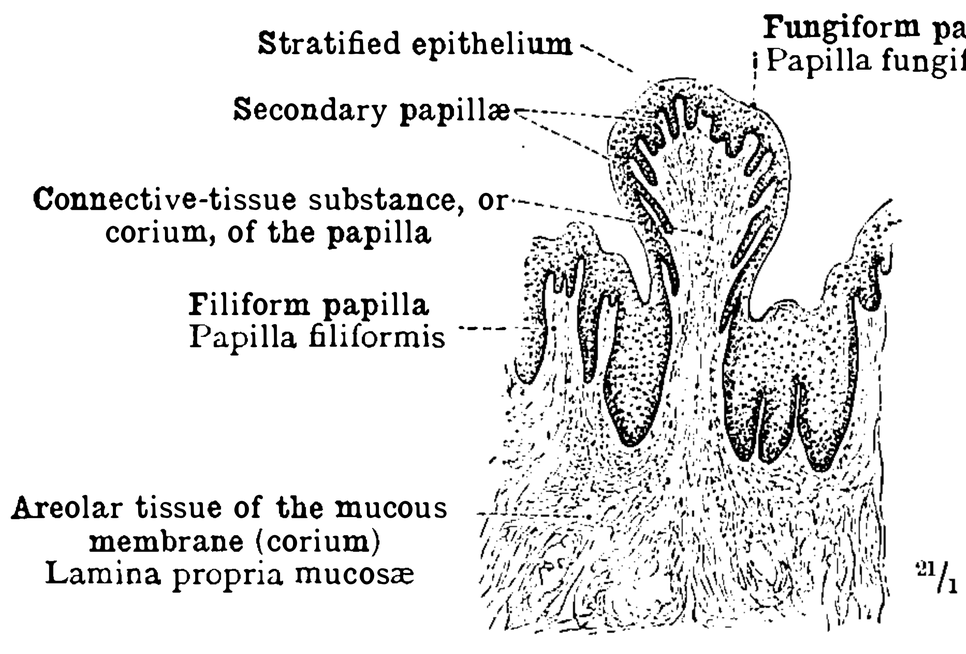


FIG. 681.—PAPILLA FUNGIFORMIS, FUNGIFORM PAPILLA OF THE TONGUE, IN LONGITUDINAL SECTION.

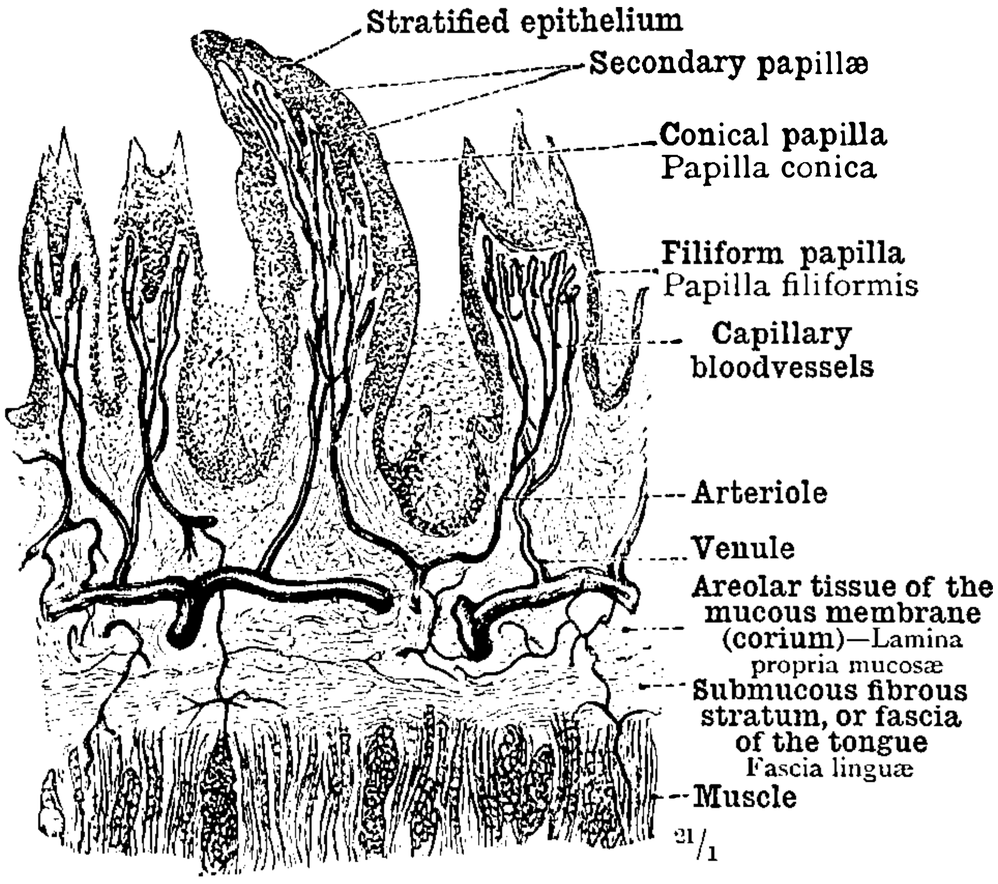
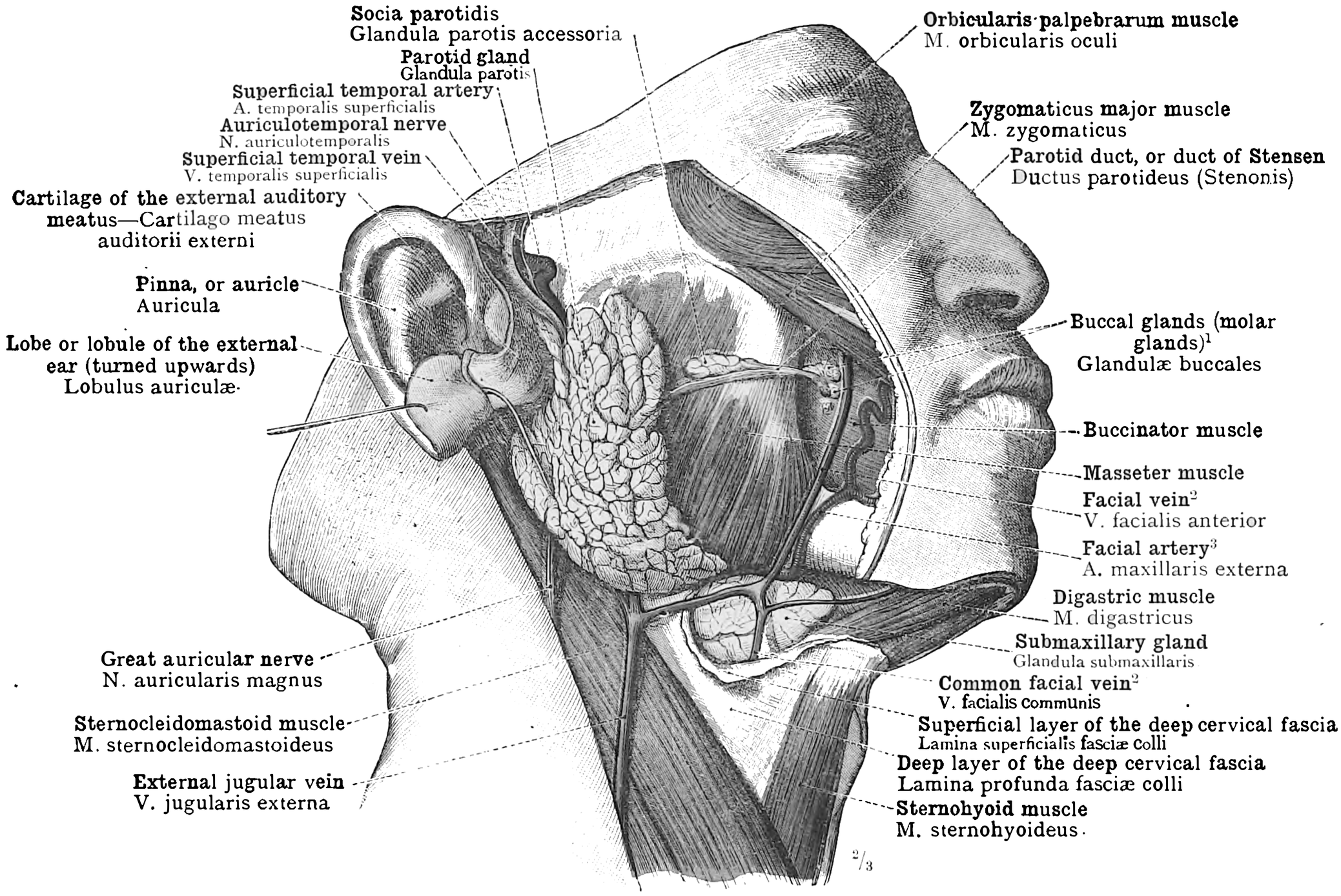


FIG. 682.—PAPILLA CONICA, CONICAL PAPILLA OF THE TONGUE, AMONG FILIFORM PAPILLÆ, IN LONGITUDINAL SECTION.

The bloodvessels of the mucous membrane have been injected: the arteries, red; the veins, blue.

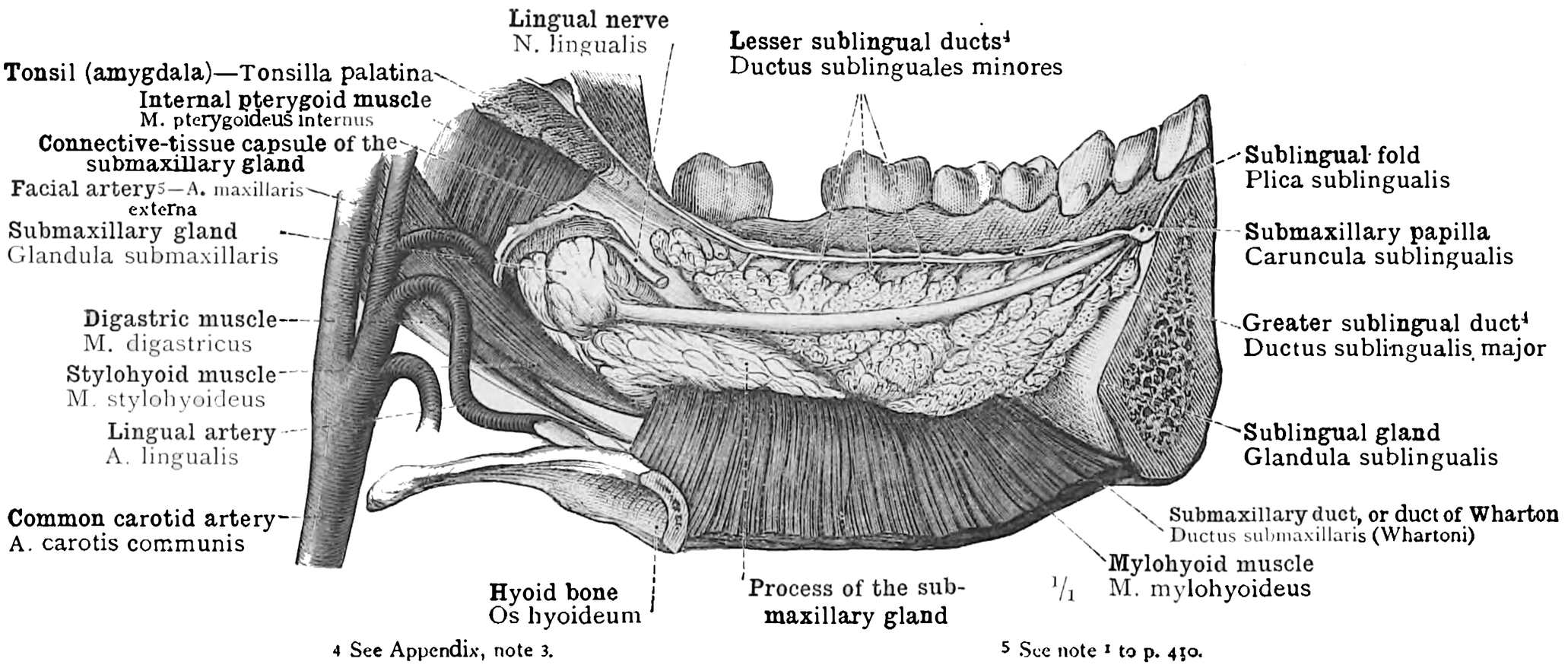


[1] See note [1] to p. 413.

[2] In the author's nomenclature, the *facial* vein and the *temporomaxillary* vein of English anatomists are termed *anterior* and *posterior facial*, respectively, and the short trunk formed by the union of the facial vein with the anterior division of the temporomaxillary vein is termed the *common facial* vein.—TR.

[3] See note [1] to p. 410.

FIG. 686.—GLANDULA PAROTIS, THE PAROTID GLAND; GLANDULA SUBMAXILLARIS, THE SUBMAXILLARY GLAND. RIGHT SIDE.

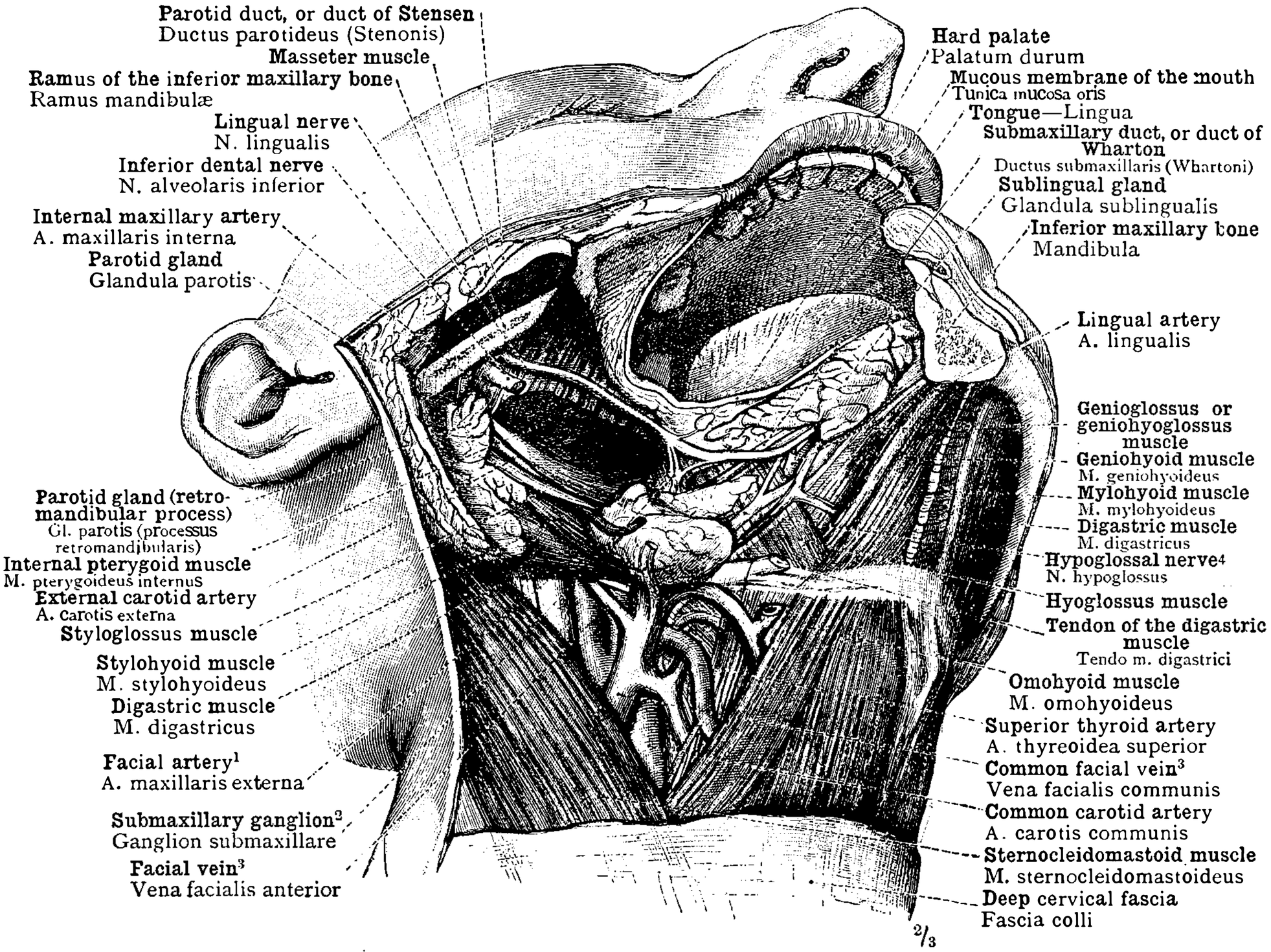


[4] See Appendix, note 3.

[5] See note [1] to p. 410.

FIG. 687.—GLANDULA SUBLINGUALIS, THE SUBLINGUAL GLAND, WITH A PORTION OF THE SUBMAXILLARY GLAND, SEEN FROM THE INNER (ORAL) SIDE. EXCRETORY DUCTS OF THESE GLANDS. LEFT SIDE.

Glandulæ salivales—Salivary glands.



[1] See note [1] to p. 410. [2] Sometimes known as the *lingual* ganglion. [3] See note [2] to p. 424.
[4] Or *twelfth cranial nerve*, in Sœmerring's enumeration; *ninth cranial nerve*, in that of Willis. Sometimes known as the *lingual motor nerve*.—Tr.

FIG. 688.—GLANDULA SUBLINGUALIS, THE SUBLINGUAL GLAND; GLANDULA SUBMAXILLARIS, THE SUBMAXILLARY GLAND; GLANDULA PAROTIS, THE PAROTID GLAND: DISPLAYED ON THE RIGHT SIDE OF THE BODY AFTER THE REMOVAL OF A PORTION OF THE INFERIOR MAXILLARY BONE. RELATIONS OF THESE GLANDS TO MUSCLES, VESSELS, AND NERVES.

The anterior edge of the parotid gland with the adjoining portion of the parotid duct has been removed.

Glandulæ salivales—Salivary glands.

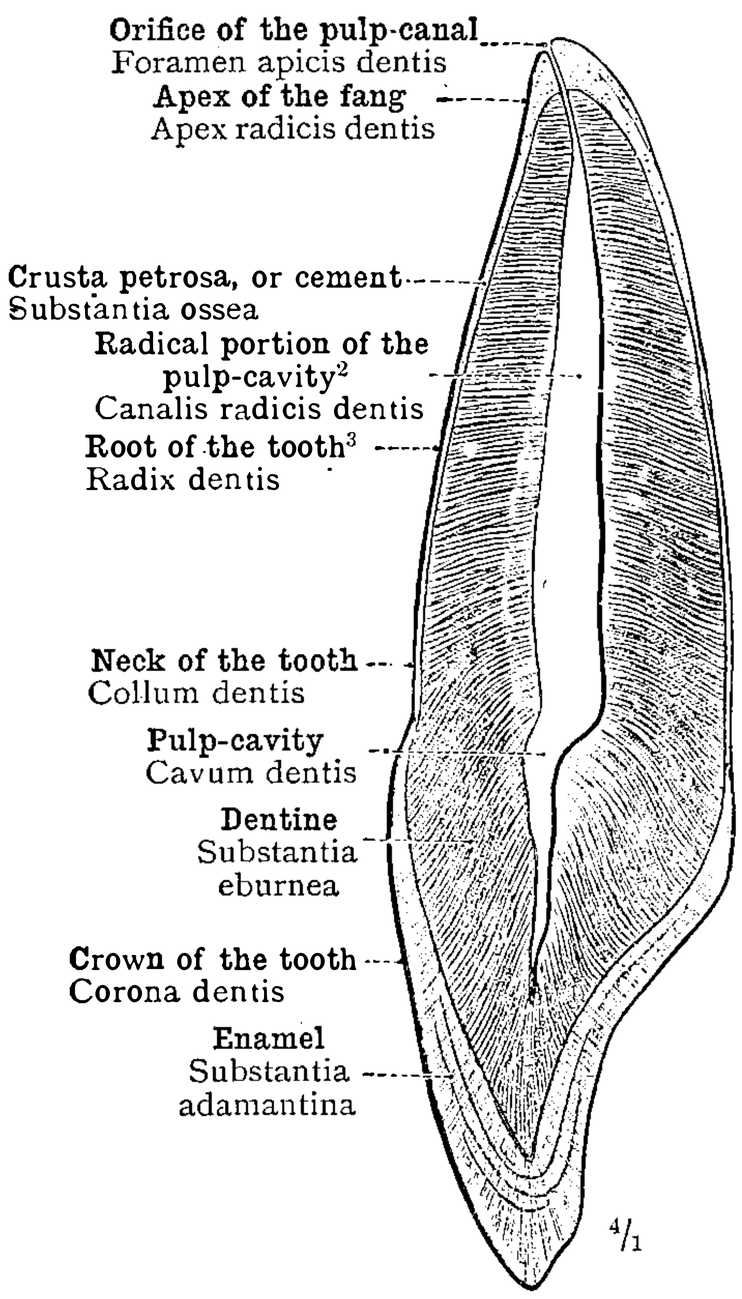


FIG. 689.—DENS INCISIVUS SUPERIOR MEDIALIS, UPPER CENTRAL OR MESIAL INCISOR TOOTH, IN SAGITTAL SECTION. SUBSTANTIA EBURNEA, THE DENTINE; SUBSTANTIA ADAMANTINA, THE ENAMEL; SUBSTANTIA OSSEA, THE CEMENT OR CRUSTA PETROSA; CAVUM DENTIS, THE PULP-CAVITY; CANALIS RADICIS DENTIS, THE PULP-CANAL.[2]

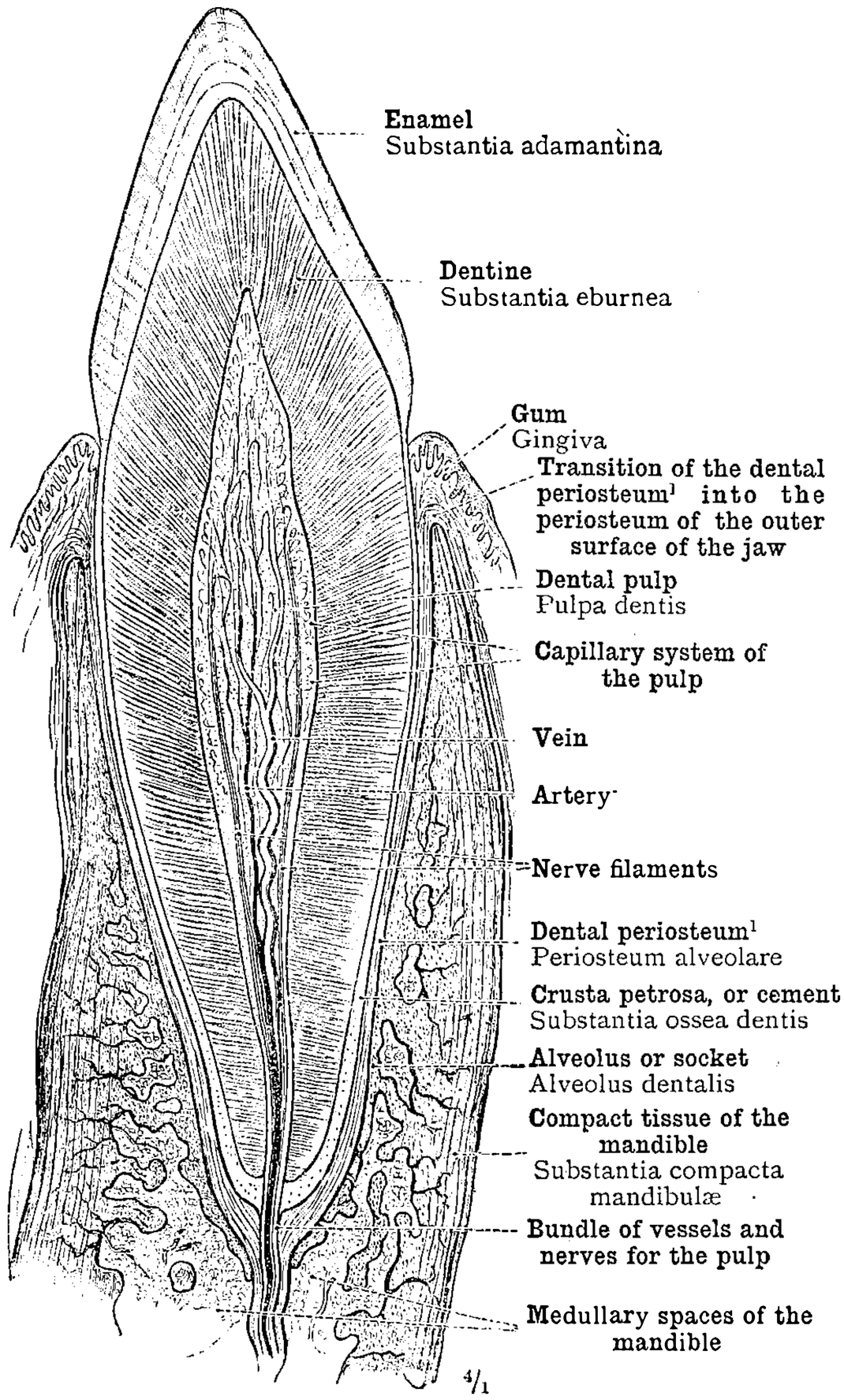


FIG. 690.—DENS CANINUS INFERIOR, LOWER CANINE TOOTH, WITH THE ALVEOLAR PORTION OF THE MANDIBLE, THE GUM, THE DENTAL PERIOSTEUM, AND THE DENTAL PULP, IN LONGITUDINAL SECTION.

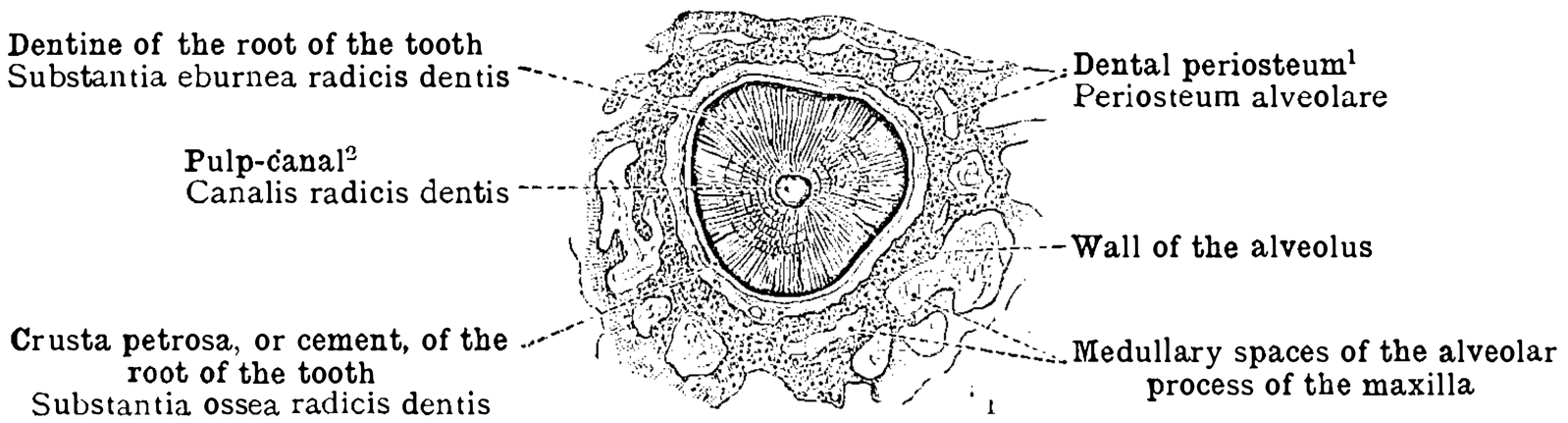


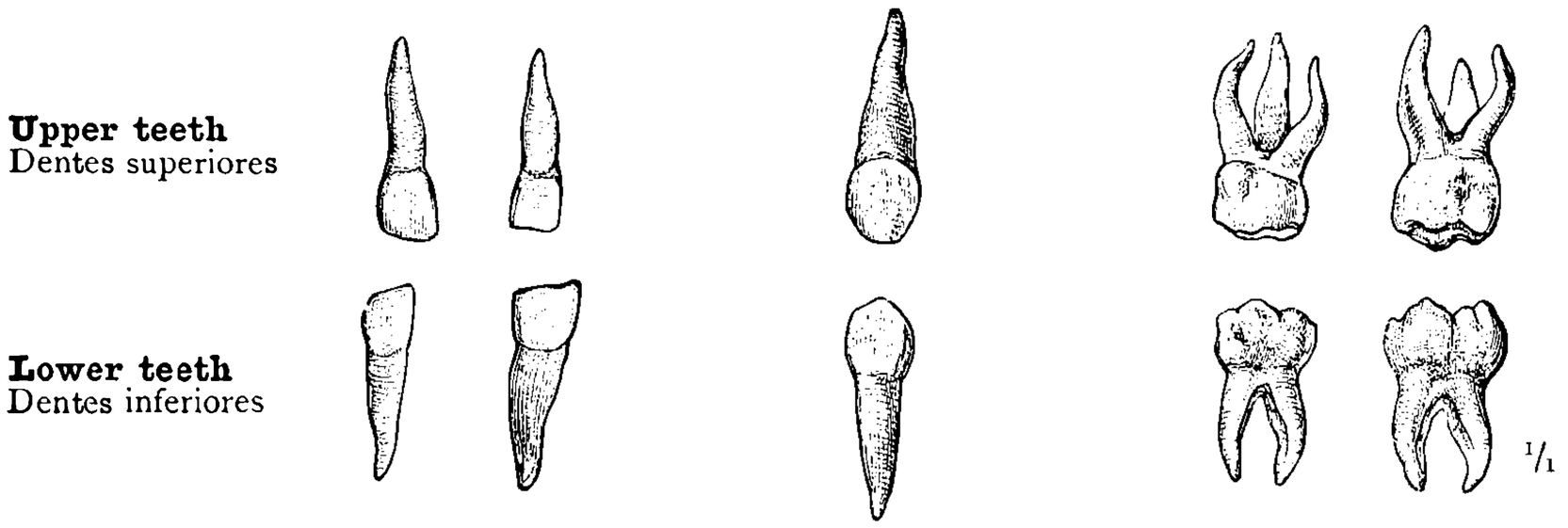
FIG. 691.—THE ROOT OF THE UPPER CENTRAL OR MESIAL INCISOR TOOTH WITH THE ALVEOLUS AND THE DENTAL PERIOSTEUM, IN TRANSVERSE SECTION.

[1] The soft vascular tissue between the crusta petrosa or cement of the root and the bone, called here simply *dental periosteum*, is sometimes divisible into two layers: an outer, the *alveolar periosteum*, and an inner, the *peri-odontal membrane*. By some, also, the dental periosteum is named the *pericemental membrane*.—TR.

[2] The term *pulp-canal*, which is in England applied to the minute canal by which the pulp-cavity is entered through the root of the tooth, does not appear to correspond strictly to the author's term *canalis radicis dentis*, which is applied by him alike to the *pulp-canal* and to the *radical portion of the pulp-cavity*.—TR.

[3] The term *root* is applied to all that portion of a tooth which is sunk in the alveolus. This root may consist of one or more *fangs*.—TR.

Dentes—Teeth.

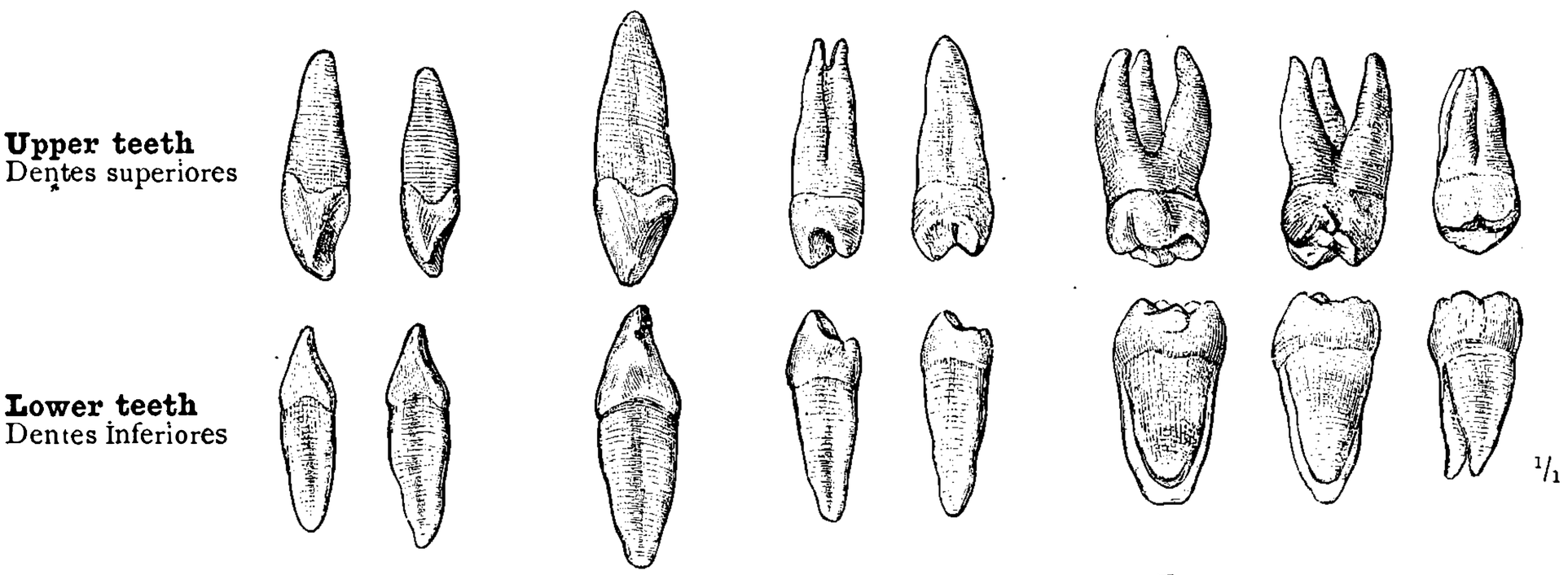


CENTRÁL OR MESIAL AND LATERAL INCISOR TEETH—DENTES INCISIVI, MEDIALIS ET LATERALIS

CANINE TOOTH—DENS CANINUS

FIRST AND SECOND MOLAR TEETH[1]—DENTES MOLARES I., II.

FIG. 692.—DENTES DECIDUI, TEMPORARY OR DECIDUOUS TEETH, OR MILK-TEETH, SEEN FROM THEIR OUTER (LABIAL AND BUCCAL) SIDES.



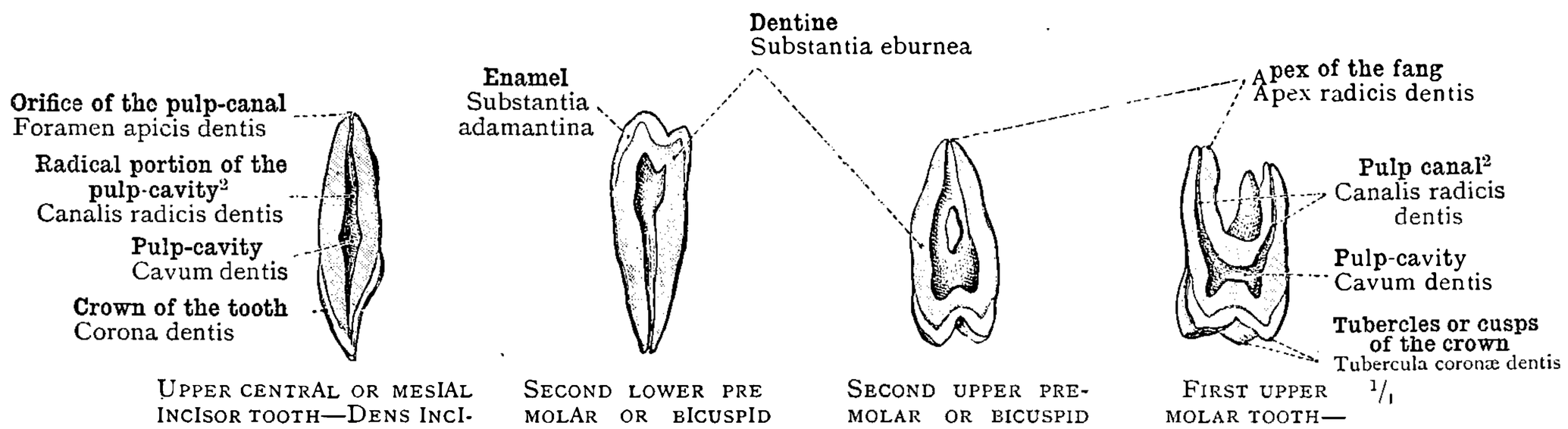
CENTRAL OR MESIAL AND LATERAL INCISOR TEETH—DENTES INCISIVI, MEDIALIS ET LATERALIS

CANINE TOOTH—DENS CANINUS

FIRST AND SECOND BICUSPID OR PREMOLAR TEETH—DENTES PRÆMOLARES I., II.

FIRST, SECOND, AND THIRD MOLAR TEETH[1]—DENTES MOLARES I., II., III.

FIG. 693.—DENTES PERMANENTES, PERMANENT TEETH, SHOWING THE OUTER EDGE OF THE INCISORS AND CANINES, AND THE POSTERIOR SURFACE OF THE PREMOLARS AND MOLARS.



UPPER CENTRAL OR MESIAL INCISOR TOOTH—DENS INCISIVUS, SUPERIOR MEDIALIS

SECOND LOWER PREMOLAR OR BICUSPID TOOTH—DENS PRÆMOLARIS INFERIOR II.

SECOND UPPER PREMOLAR OR BICUSPID TOOTH—DENS PRÆMOLARIS SUPERIOR II.

FIRST UPPER MOLAR TOOTH—DENS MOLARIS SUPERIOR I.

FIG. 694.—PULP-CAVITY AND PULP-CANAL AS SEEN IN TEETH DIVIDED LONGITUDINALLY.

[1] Known also as *grinders* or *multicuspids*.

[2] See note [2] to p. 426.

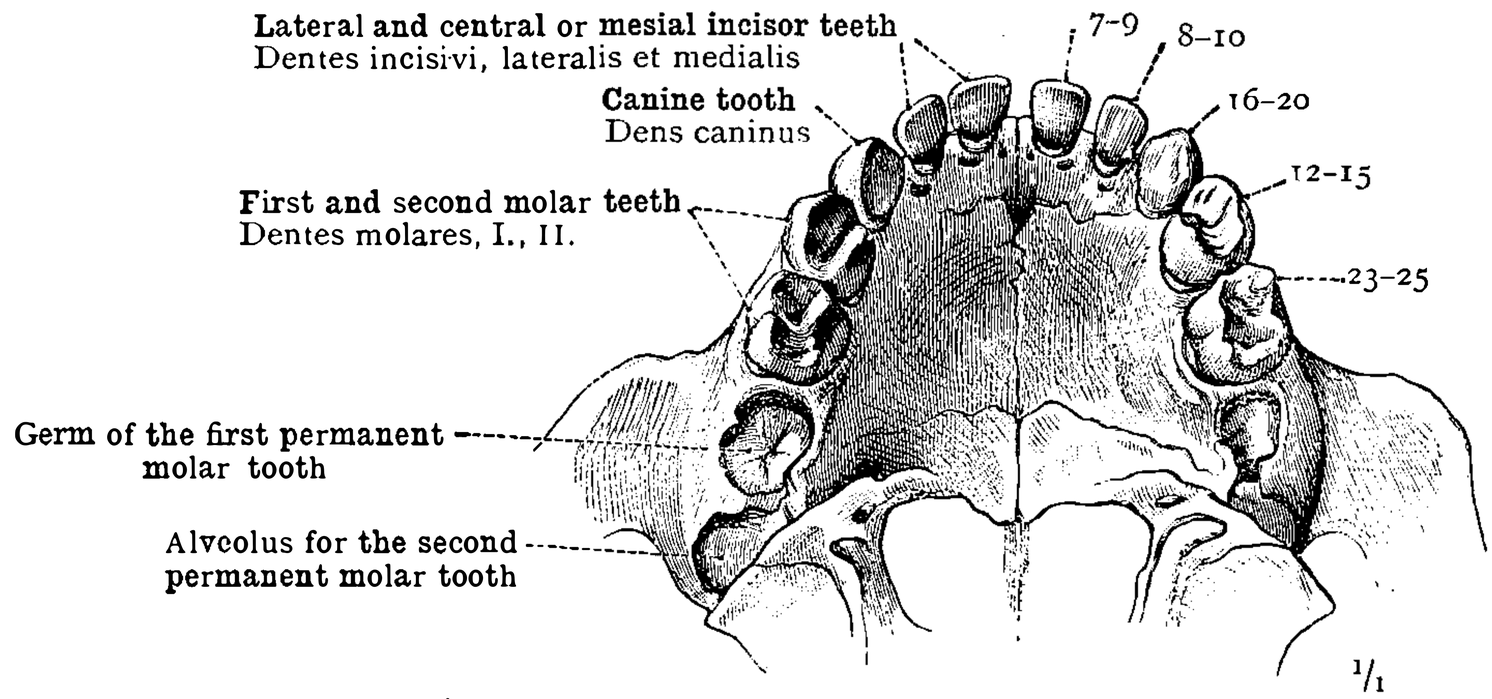


FIG. 695.—DENTES DECIDUI, TEMPORARY OR DECIDUOUS TEETH, OR MILK-TEETH, OF THE UPPER JAW OF A BOY AGED THREE YEARS.

The Arabic numerals indicate the months of life in which the eruption of the individual teeth usually occurs.

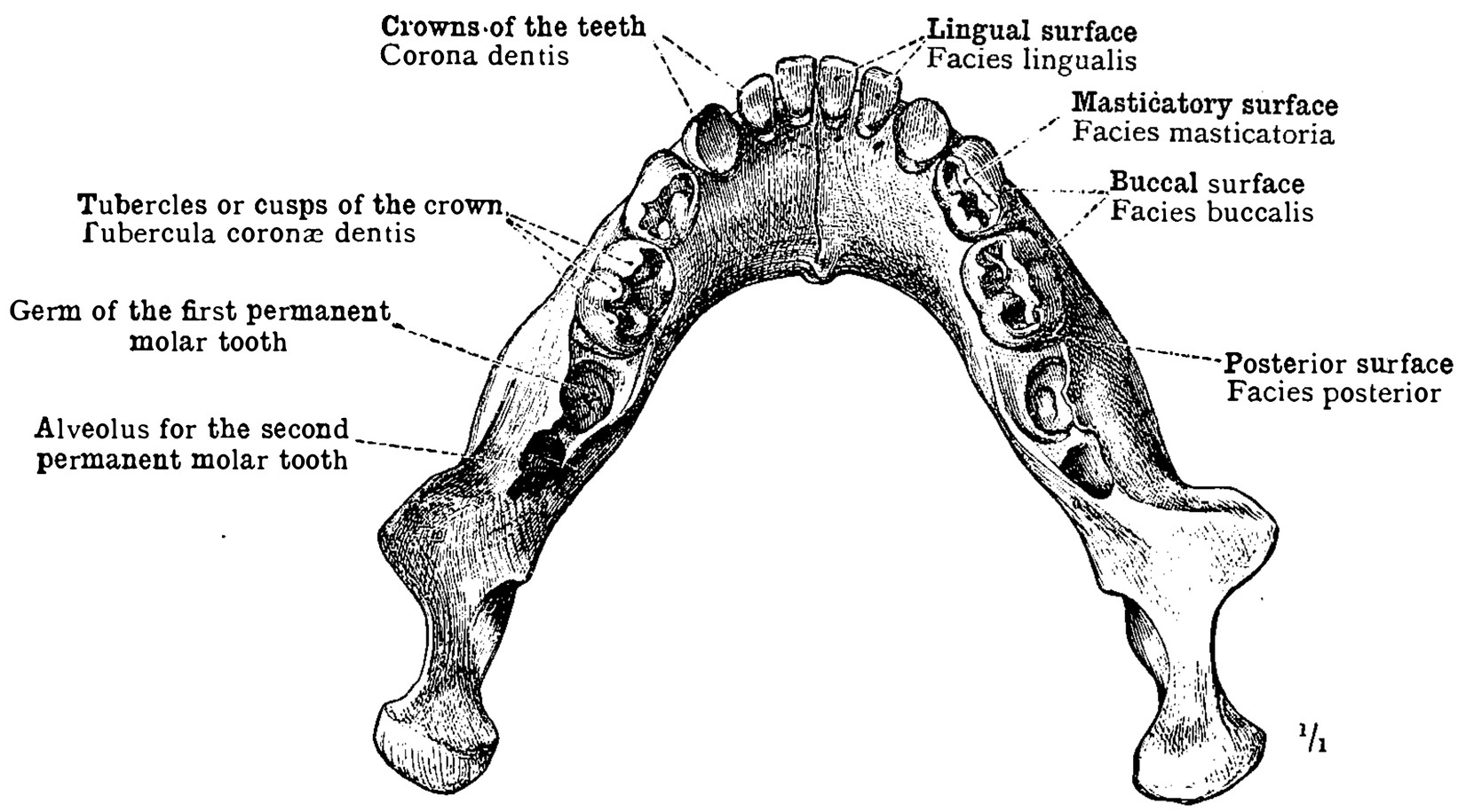
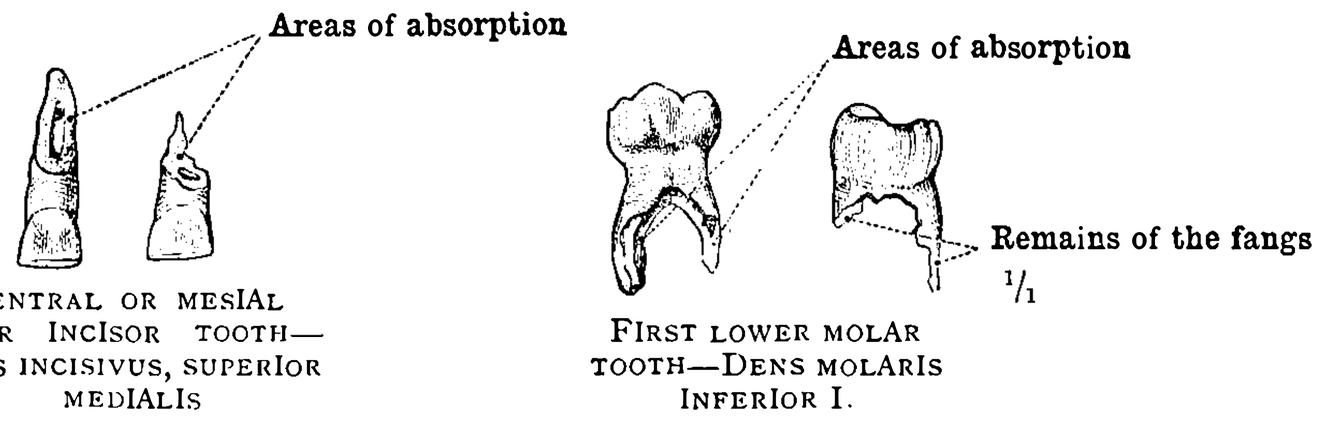


FIG. 696.—DENTES DECIDUI, TEMPORARY OR DECIDUOUS TEETH, OR MILK-TEETH, OF THE LOWER JAW OF A BOY AGED THREE YEARS.



CENTRAL OR MESIAL UPPER INCISOR TOOTH—DENS INCISIVUS, SUPERIOR MEDIALIS

FIRST LOWER MOLAR TOOTH—DENS MOLARIS INFERIOR I.

FIG. 697.—DENTES DECIDUI, TEMPORARY OR DECIDUOUS TEETH, OR MILK-TEETH, IN VARIOUS STAGES OF ABSORPTION, PREPARATORY TO THEIR BEING SHED AND REPLACED BY THE PERMANENT TEETH.

Dentes—Teeth.

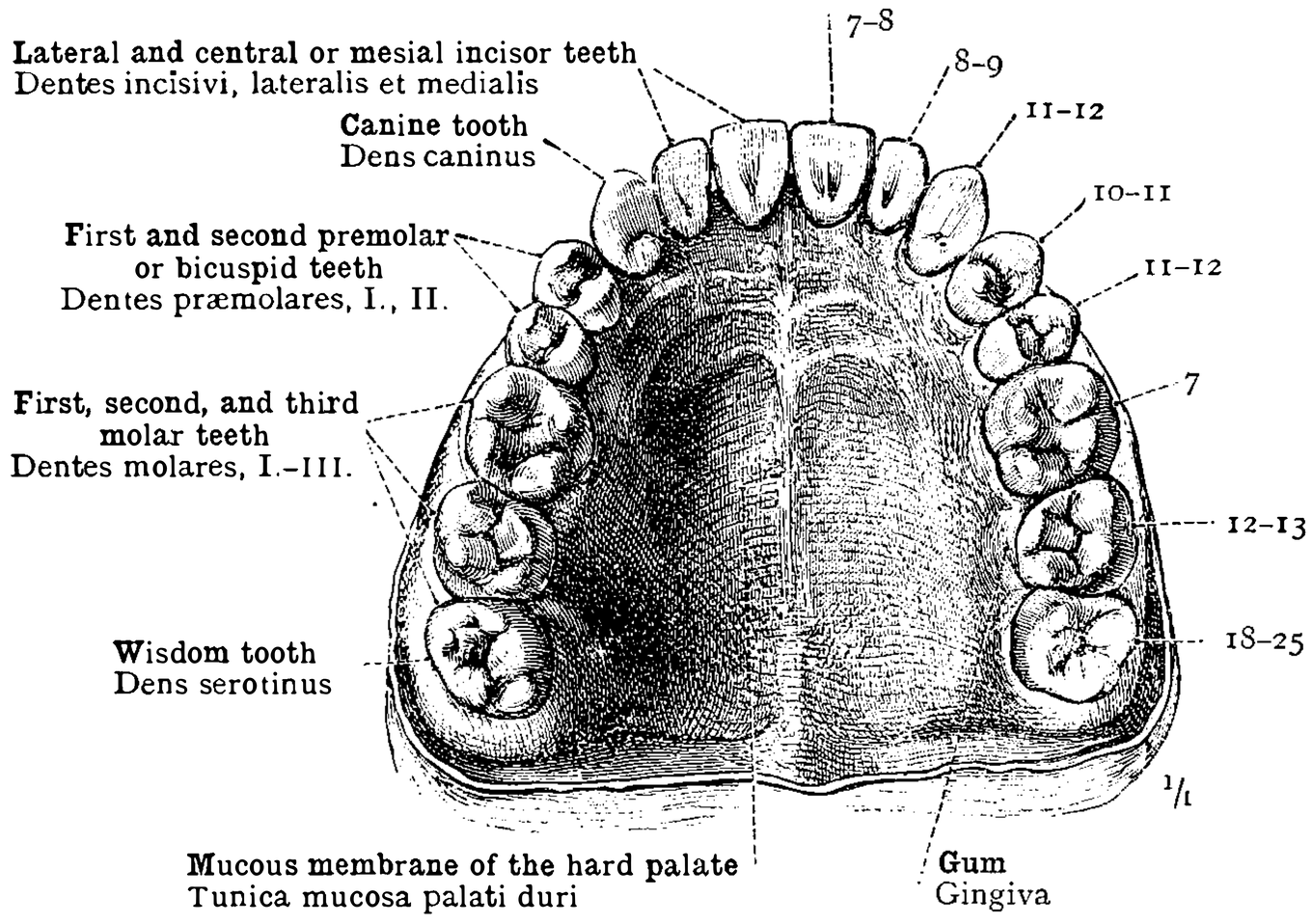


FIG. 698.—DENTES PERMANENTES, PERMANENT TEETH, OF THE UPPER JAW OF A MAN AGED TWENTY-SIX YEARS, WITH THE GUMS. FACIES MASTICATORIÆ, MASTICATORY SURFACES.

The Arabic numerals indicate the years of life in which the eruption of the individual teeth usually occurs.

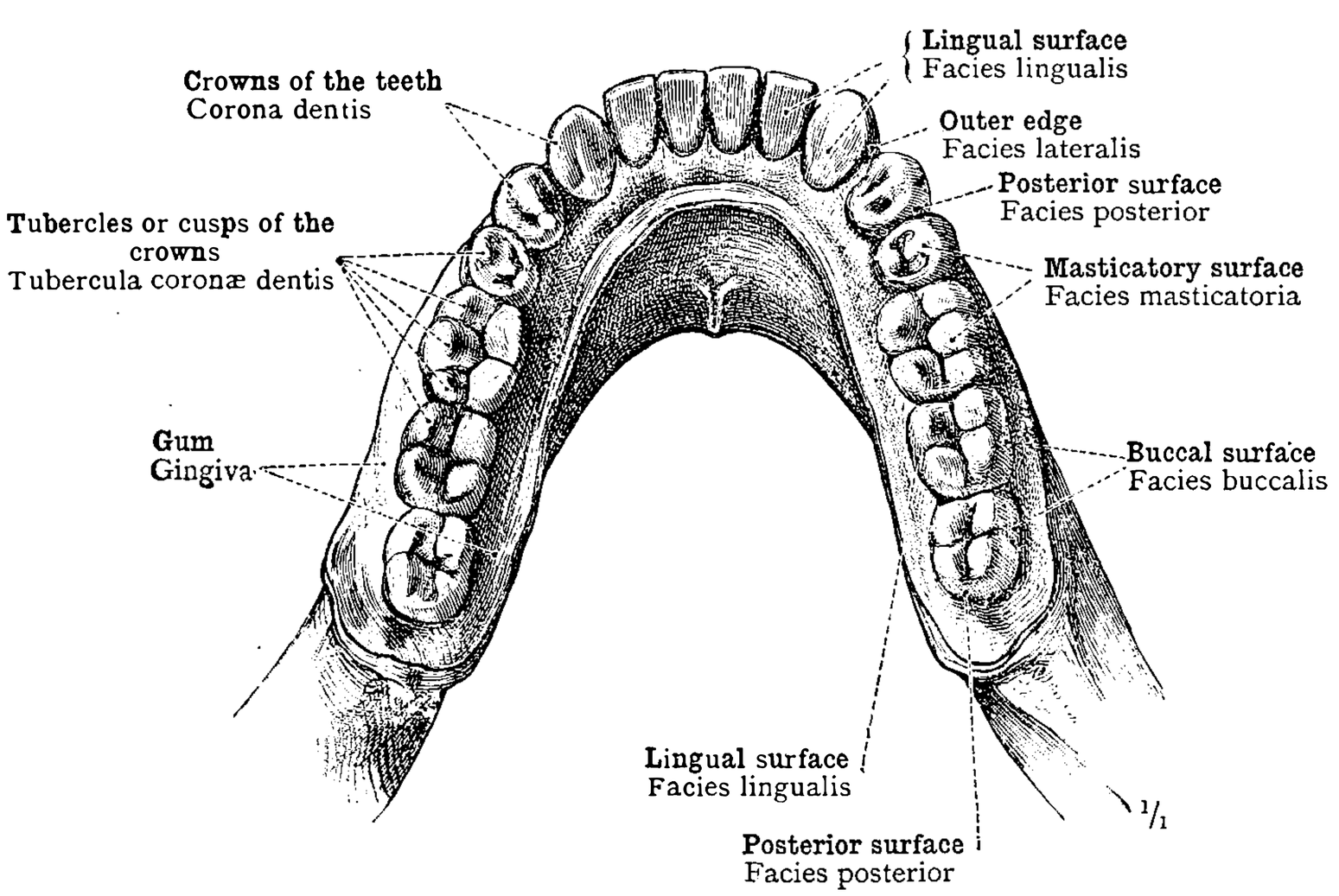


FIG. 699.—DENTES PERMANENTES, PERMANENT TEETH, OF THE LOWER JAW OF A MAN AGED TWENTY-SIX YEARS, WITH THE GUMS. FACIES MASTICATORIÆ, MASTICATORY SURFACES.

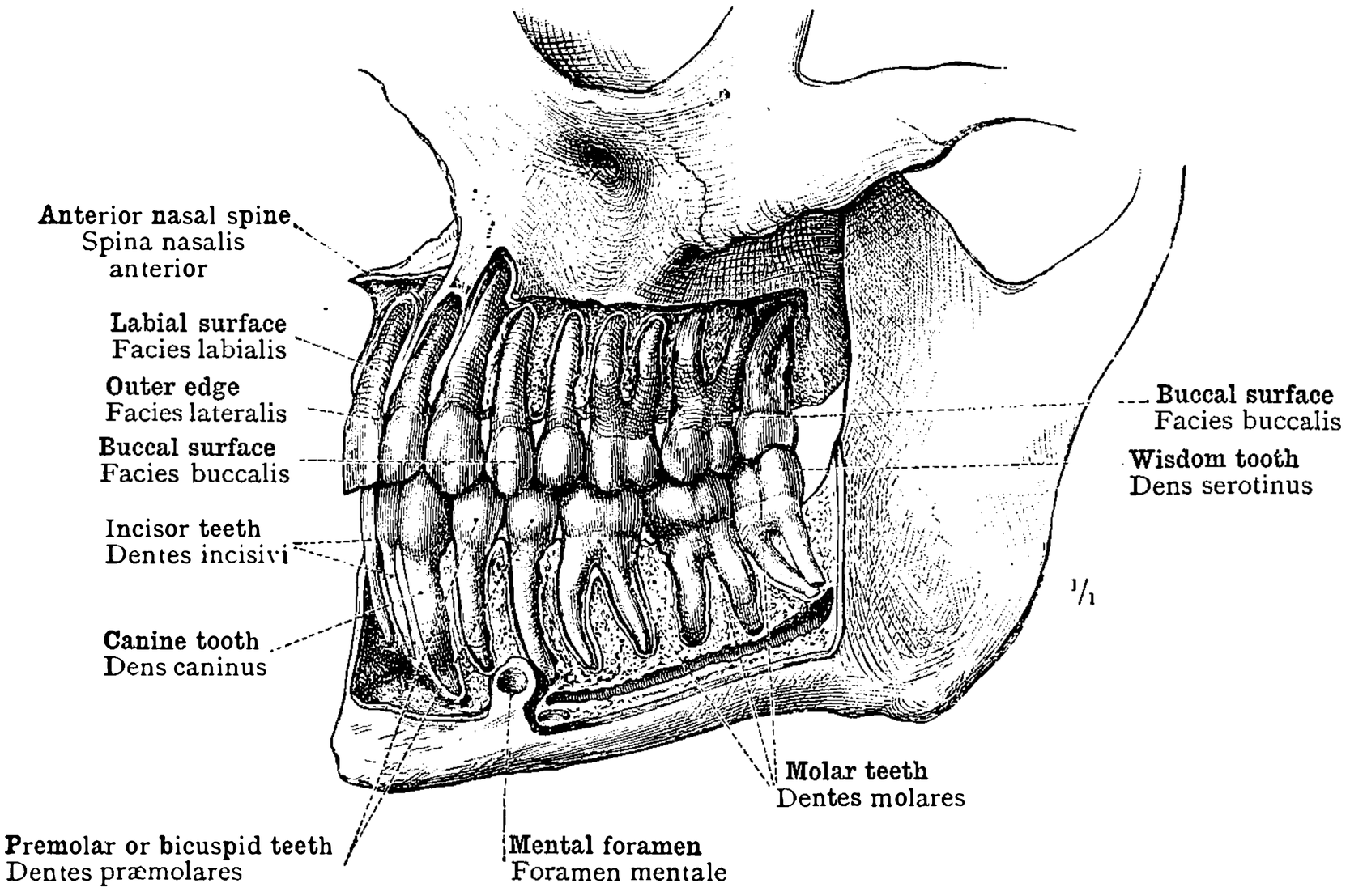


FIG. 700.—LEFT HALF OF THE PERMANENT TEETH, WITH THE ROOTS LAID BARE, SEEN FROM THEIR OUTER (LABIAL AND BUCCAL) SIDES. NORMAL RELATIVE POSITIONS OF UPPER AND LOWER ROWS.

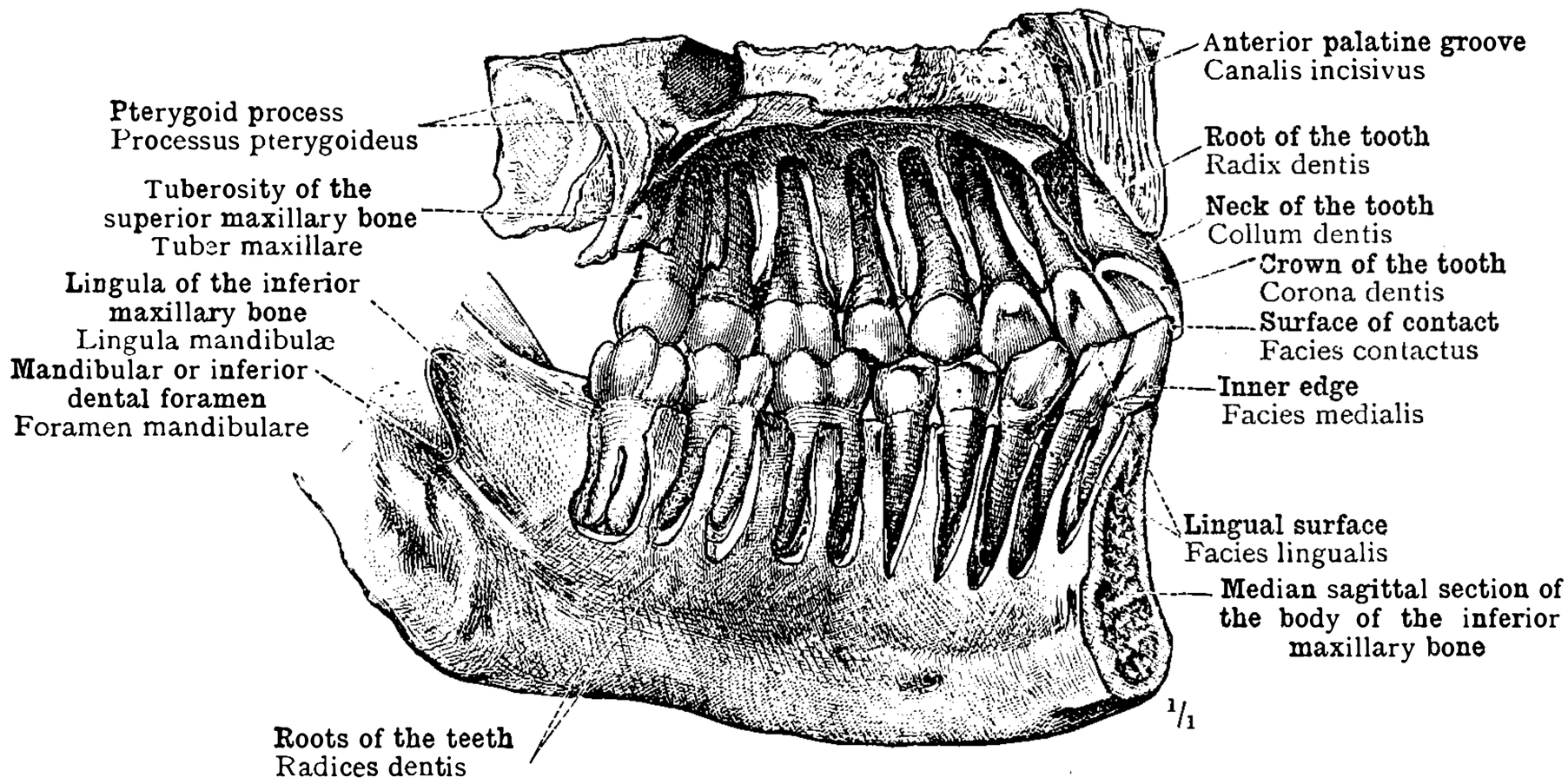


FIG. 701.—LEFT HALF OF THE PERMANENT TEETH, WITH THE ROOTS LAID BARE, SEEN FROM THEIR INNER (LINGUAL) SIDES. NORMAL RELATIVE POSITIONS OF UPPER AND LOWER ROWS.

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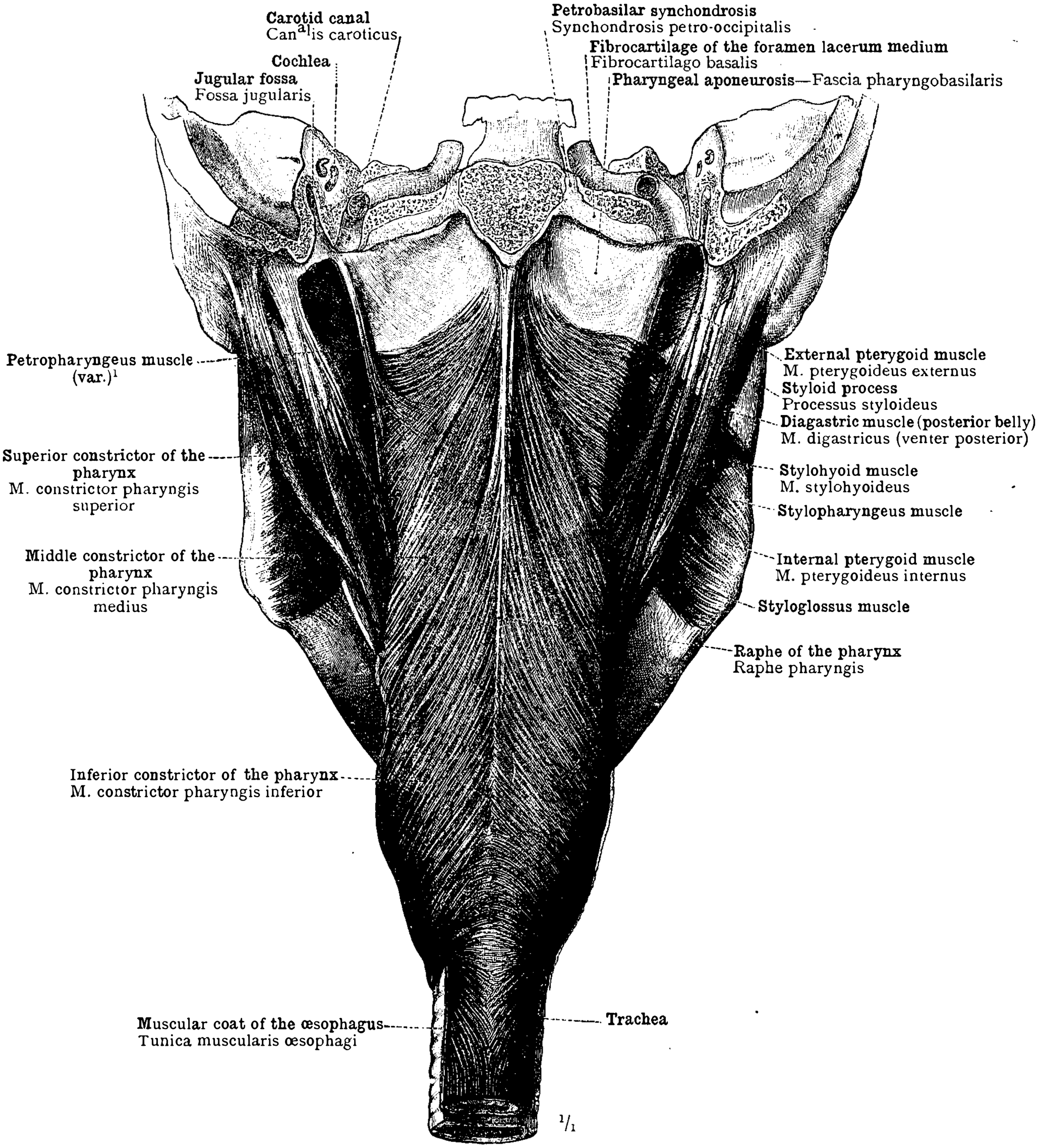
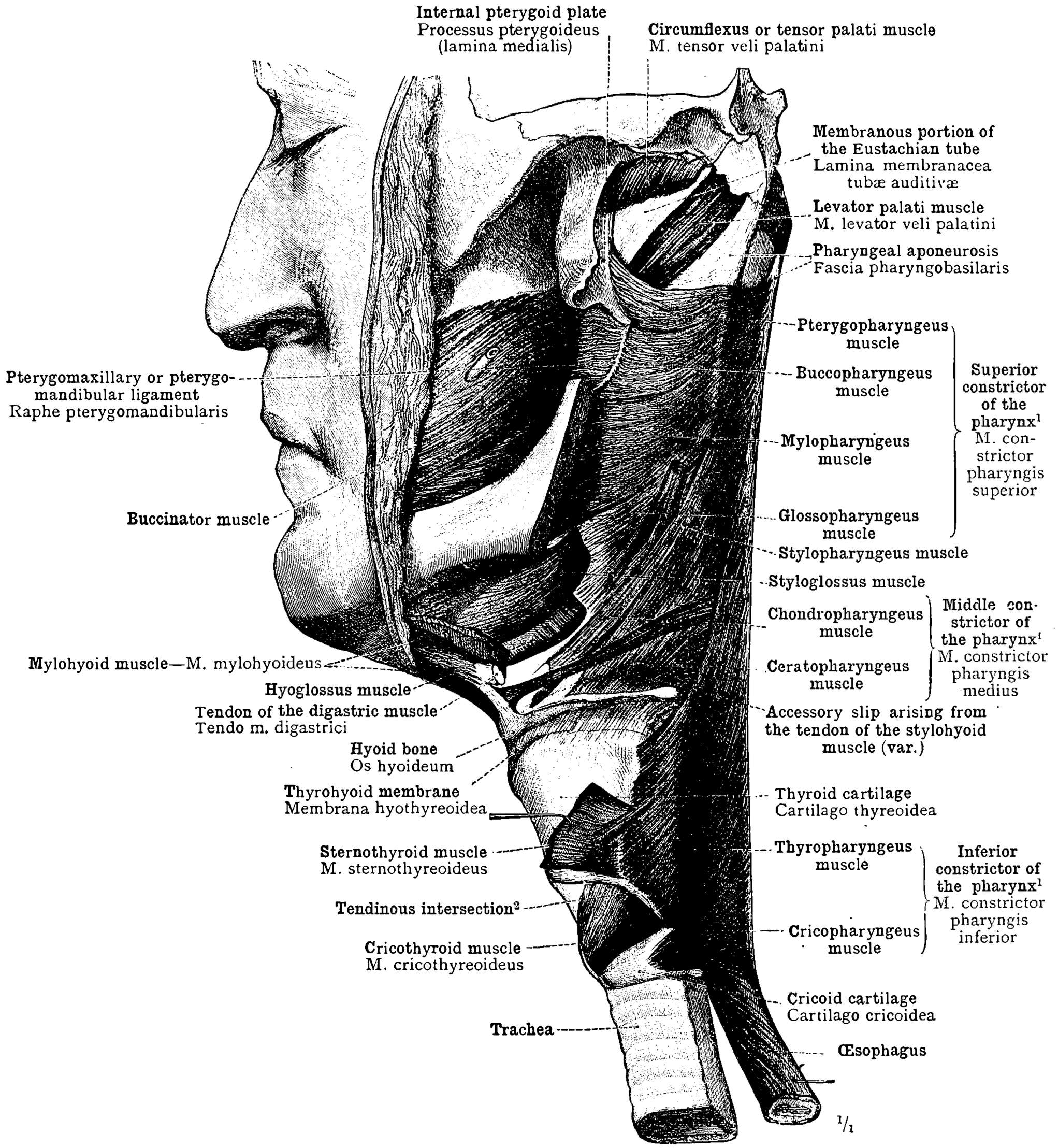


FIG. 705.—THE PHARYNX, AND ITS TRANSITION INTO THE ŒSOPHAGUS, SEEN FROM BEHIND. BY THE REMOVAL OF THE TUNICA ADVENTITIA PHARYNGIS,[2] THE OUTER MUSCULAR LAYER OF THE PHARYNX HAS BEEN LAID BARE: MUSCULI CONSTRICTORES PHARYNGIS, SUPERIOR, MEDIUS, ET INFERIUS; THE SUPERIOR, MIDDLE, AND INFERIOR CONSTRICTORS OF THE PHARYNX. THE MUSCLES ARISING FROM THE STYLOID PROCESS, AND THE POSTERIOR BELLY OF THE DIGASTRIC MUSCLE. THE PHARYNGEAL APONEUROSIS.

[1] *Petropharyngeus Muscle.*—This, the commonest of the supernumerary elevators of the pharynx, arises from the under surface of the petrous bone in front of the carotid canal, or from the vaginal process of the temporal bone. Others, less often met with, are the *sphenopharyngeus*, arising from the spine of the sphenoid; *petropharyngeus externus*, arising from the hamular process; *occipitopharyngeus*, arising from the basilar process; and the *mastopharyngeus* (very rare), arising from the mastoid process. They are inserted variably into one or other of the constrictors, or, passing between these muscles, directly into the fibrous layer of the pharynx (pharyngeal aponeurosis). Another occasional accessory slip is the *azygos pharyngis*, passing from the pharyngeal tubercle of the occipital bone to the raphe or to the posterior wall of the pharynx.—TR.

[2] See note [1] to p. 466.

The Pharynx.

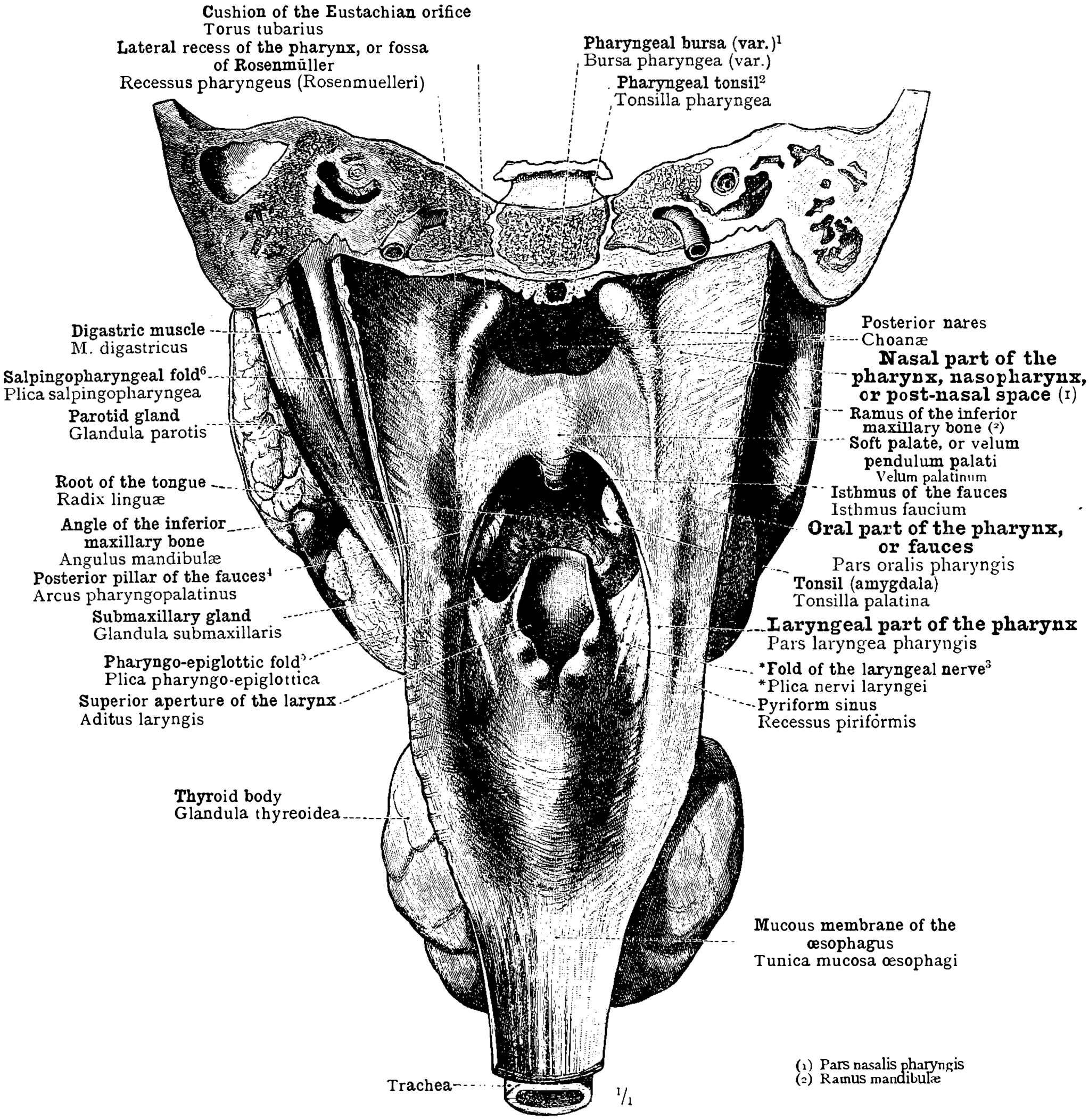


[1] *Constrictors of the Pharynx.*—As the names given by the author to the different portions of these muscles are not often used in England, it seems expedient to explain their signification. Of the *superior constrictor:* the *pterygopharyngeus* is that portion which arises from the lower third of the hinder edge of the internal pterygoid plate and from the hamular process; the *buccopharyngeus* is that portion which arises from the pterygomaxillary ligament, by means of which it is connected with the origin of the buccinator muscle; the *mylopharyngeus* is that portion which arises from the posterior fifth of the internal oblique line or mylohyoid ridge of the inferior maxillary bone; and the *glossopharyngeus* is that portion which arises from the side of the tongue. Of the *middle constrictor:* the *chondropharyngeus* is that portion which arises from the small cornu of the hyoid bone and the stylohyoid ligament; and the *ceratopharyngeus* is that portion which arises from the great cornu of the hyoid bone. Of the *inferior constrictor:* the *thyropharyngeus* is that portion which arises from the inferior cornu, oblique line or ligament, and superior tubercle of the thyroid cartilage; and the *cricopharyngeus* is that portion which arises from a flat ridge on the side of the cricoid cartilage.—Tr.

[2] *Tendinous Intersection.*—Some of the superficial fibres of the cricothyroid muscle are almost always continuous with those of the inferior constrictor of the pharynx. Commonly, however, as here, a tendinous intersection across these fibres marks the boundary between the two muscles.—Tr.

FIG. 706.—OUTER MUSCULAR LAYER OF THE PHARYNX, LAID BARE ON THE LEFT SIDE, BY THE REMOVAL OF THE RAMUS OF THE INFERIOR MAXILLARY BONE, THE MUSCLES ARISING FROM THE STYLOID PROCESS, THE POSTERIOR BELLY OF THE DIGASTRIC MUSCLE, AND THE MYLOHYOID MUSCLE: MUSCULI CONSTRICTORES PHARYNGIS, THE THREE CONSTRICTORS OF THE PHARYNX, WITH THEIR VARIOUS SUBDIVISIONS (*see note* [1] *above*). CONNEXION OF THE BUCCINATOR MUSCLE WITH THE SUPERIOR CONSTRICTOR OF THE PHARYNX BY MEANS OF THE PTERYGOMAXILLARY OR PTERYGOMANDIBULAR LIGAMENT.

The Pharynx.



[1] The *pharyngeal bursa*, or *mesial recess of the pharynx*, is a flask-shaped pit in the mucous membrane, constant in the fœtus and the infant, and occasionally persistent in the adult. Its narrow orifice is on the posterior wall of the nasopharynx, immediately beneath the pharyngeal tonsil, and looks downwards and forwards. Widening within, the cavity passes upwards and then curves forwards through the substance of the pharyngeal tonsil, and terminates blindly in the median line immediately above the summit of the pharynx, its fundus being just below the pharyngeal tubercle.—TR.

[2] See note [1] to p. 411.

[3] **Fold of the Laryngeal Nerve.*—"Within the pyriform sinus a fold of mucous membrane running obliquely downwards and inwards is occasionally to be seen. This fold is occupied by the superior laryngeal nerve, and is therefore called *plica nervi laryngei*—the *fold of the laryngeal nerve*."—Von Langer and Toldt's "Anatomy," 7th ed., p. 301

[4] Known also as the *posterior palatine*, or *pharyngopalatine, arch.*

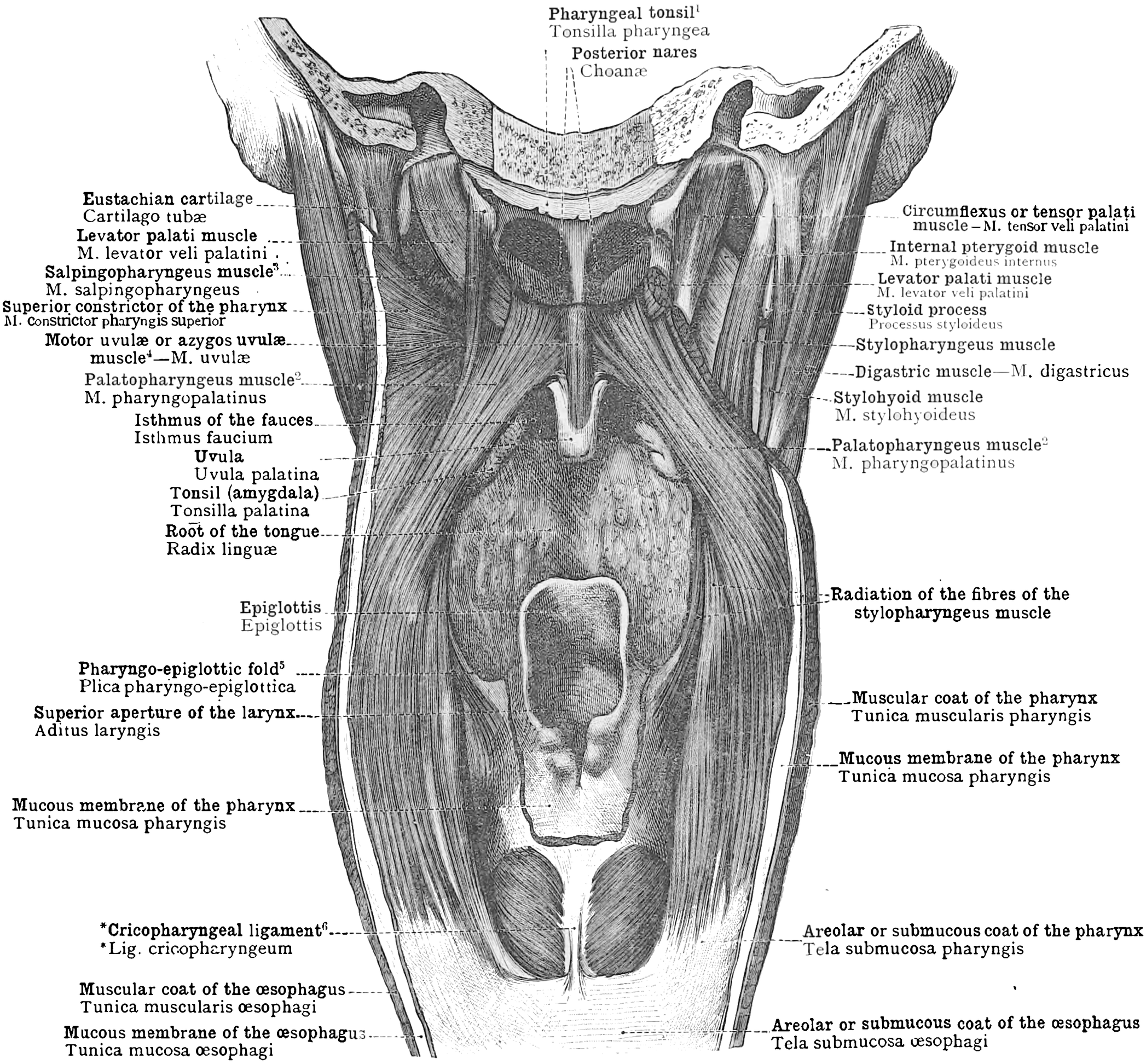
[5] See note [7] to p. 415.

[6] See Appendix, note 4.

FIG. 707.—CAVUM PHARYNGIS, THE PHARYNGEAL CAVITY, SEEN FROM BEHIND. TUNICA MUCOSA PHARYNGIS, THE MUCOUS MEMBRANE OF THE PHARYNX. THE THREE DIVISIONS OF THE PHARYNX: PARS NASALIS PHARYNGIS, THE NASAL PART OF THE PHARYNX, NASOPHARYNX, OR POST-NASAL SPACE; PARS ORALIS PHARYNGIS, THE ORAL PART OF THE PHARYNX, OR FAUCES; PARS LARYNGEA PHARYNGIS, THE LARYNGEAL PART OF THE PHARYNX. THE OPENINGS INTO THE PHARYNGEAL CAVITY.

The posterior wall of the pharynx was divided throughout in the median line, separated from its attachments to the base of the skull, and then turned outwards on each side.

The Pharynx.



1/1

[1] See note [1] to p. 411. [2] See note [1] to p. 417.

[3] *Salpingopharyngeus Muscle.*—This consists of a few slender fasciculi which descend from the lower and anterior part of the Eustachian cartilage to the wall of the pharynx. It is usually regarded as an accessory portion of the palatopharyngeus muscle.—Tr.

[4] See note [1] to p. 418. [5] See note [7] to p. 415. [6] See Fig. 771, p. 459, and note [1] on same page.

FIG. 708.—MUSCLES OF THE SOFT PALATE (VELUM PENDULUM PALATI), AND THE VERTICAL MUSCLES (ELEVATORS) OF THE PHARYNX, DISPLAYED BY OPENING THE PHARYNX FROM BEHIND BY A MEDIAN LONGITUDINAL INCISION AND REMOVING THE MUCOUS MEMBRANE.

On the right side, the levator palati muscle and a small portion of the wall of the pharynx have been removed, in order to display the circumflexus or tensor palati muscle and a great part of the stylopharyngeus muscle. In the immediate neighbourhood of the superior aperture of the larynx (aditus laryngis), the mucous membrane of the pharynx has not been removed; also along the borders of the median longitudinal incision a narrow strip of the mucous membrane has been left.

The Pharynx.

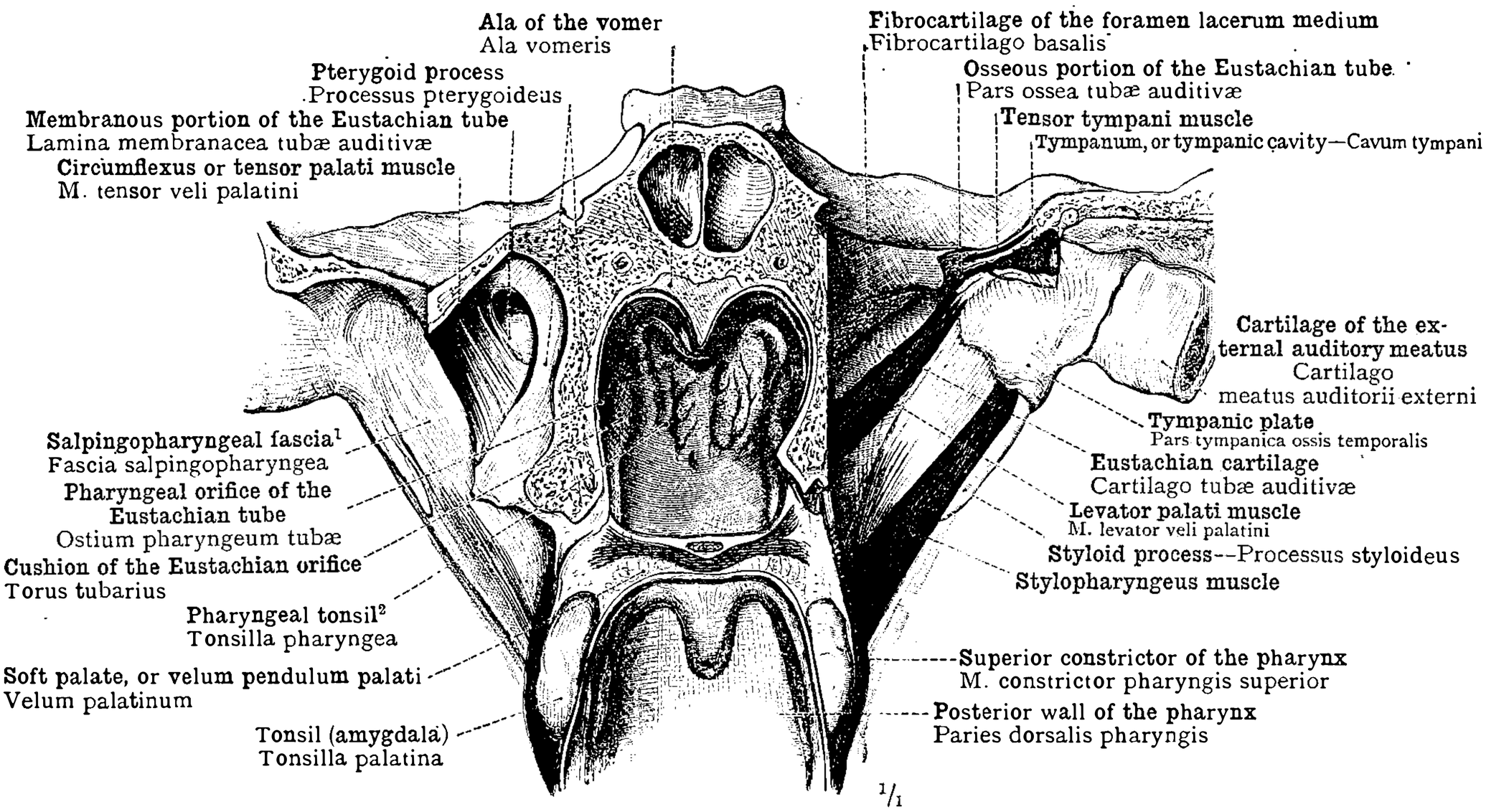


FIG. 709.—PARS NASALIS PHARYNGIS, THE NASAL PART OF THE PHARYNX, NASOPHARYNX, OR POST-NASAL SPACE, SEEN FROM BEFORE. CORONAL SECTION THROUGH THE HEAD. TONSILLA PHARYNGEA, THE PHARYNGEAL TONSIL.

On the left side, the greater part of the pterygoid process, the anterior wall of the tympanum, and the outer wall of the Eustachian tube, have been removed.

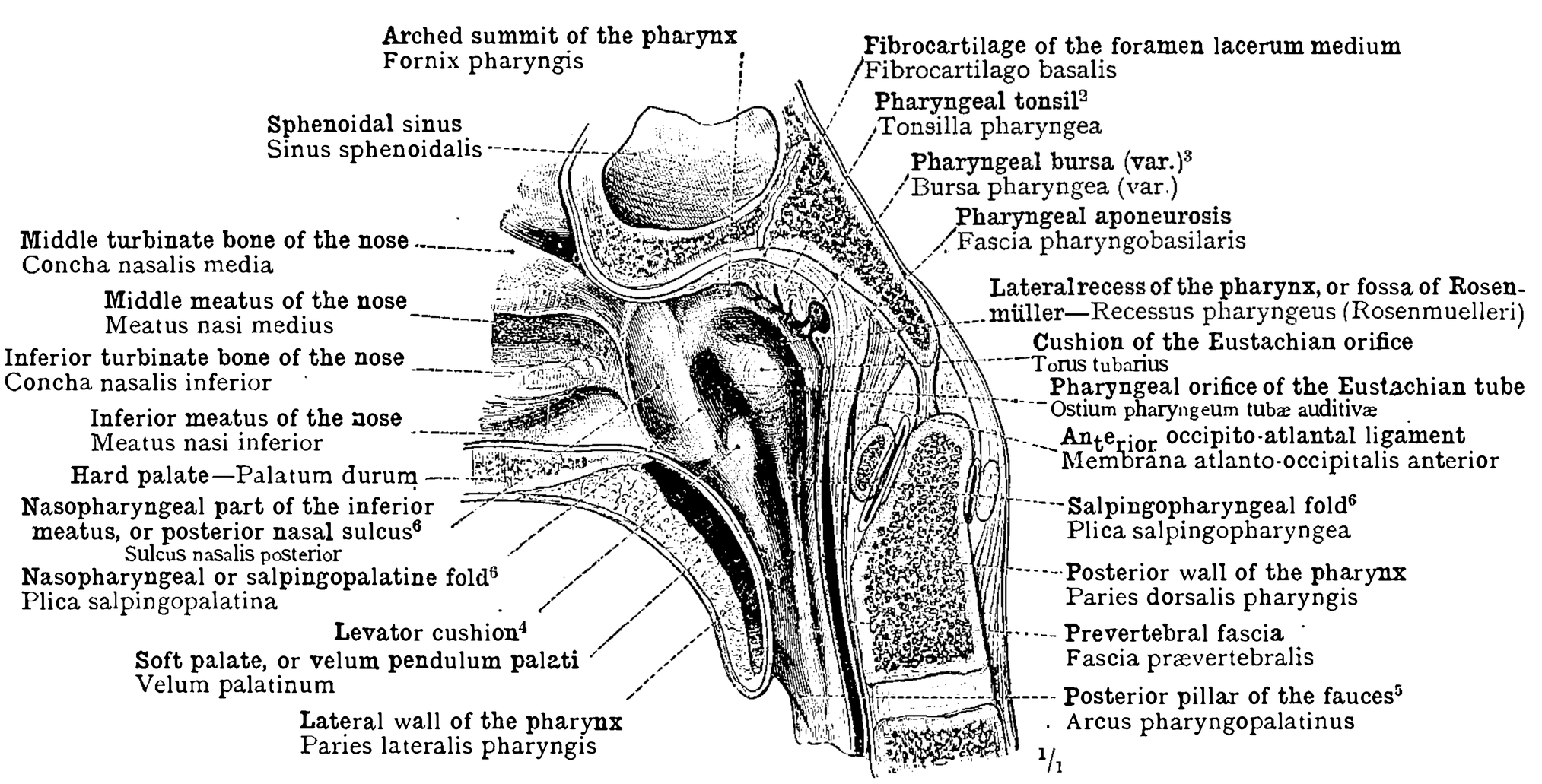


FIG. 710.—PARS NASALIS PHARYNGIS, THE NASAL PART OF THE PHARYNX, NASOPHARYNX, OR POST-NASAL SPACE, AND ITS CONNEXION WITH THE NASAL FOSSÆ, IN MEDIAN SAGITTAL SECTION. VIEW OF THE RIGHT LATERAL WALL OF THE NASOPHARYNX, WITH THE PHARYNGEAL ORIFICE OF THE EUSTACHIAN TUBE. TONSILLA PHARYNGEA, THE PHARYNGEAL TONSIL; BURSA PHARYNGEA, THE PHARYNGEAL BURSA. SULCUS NASALIS POSTERIOR, THE NASOPHARYNGEAL PART OF THE INFERIOR MEATUS OF THE NOSE, OR *POSTERIOR NASAL SULCUS, CORRESPONDING TO THE NASOPHARYNGEAL MEATUS (*see Part I., p.* 90, *Fig.* 203); PLICA SALPINGOPALATINA, THE NASOPHARYNGEAL OR SALPINGOPALATINE FOLD; PLICA SALPINGOPHARYNGEA, THE SALPINGOPHARYNGEAL FOLD.[4]

[1] *Salpingopharyngeal Fascia.*—Quain applies this name to the membranous portion of the Eustachian tube itself, but the author uses it to denote strands of fibrous tissue passing from the Eustachian cartilage to the submucous areolar tissue of the pharynx.—TR.

[2] See note [1] to p. 411.

[3] See note [1] to p. 434.

[4] —"When the levatores palati are contracted, the upper surface of the soft palate presents a convex eminence behind each posterior naris, called the *levator cushion*. This is occasionally seen in the dead body."—Quain's "Anatomy," vol. iii., part iv., p. 57. See also Appendix, note 4.

[5] Known also as the *posterior palatine*, or *pharyngopalatine, arch*.

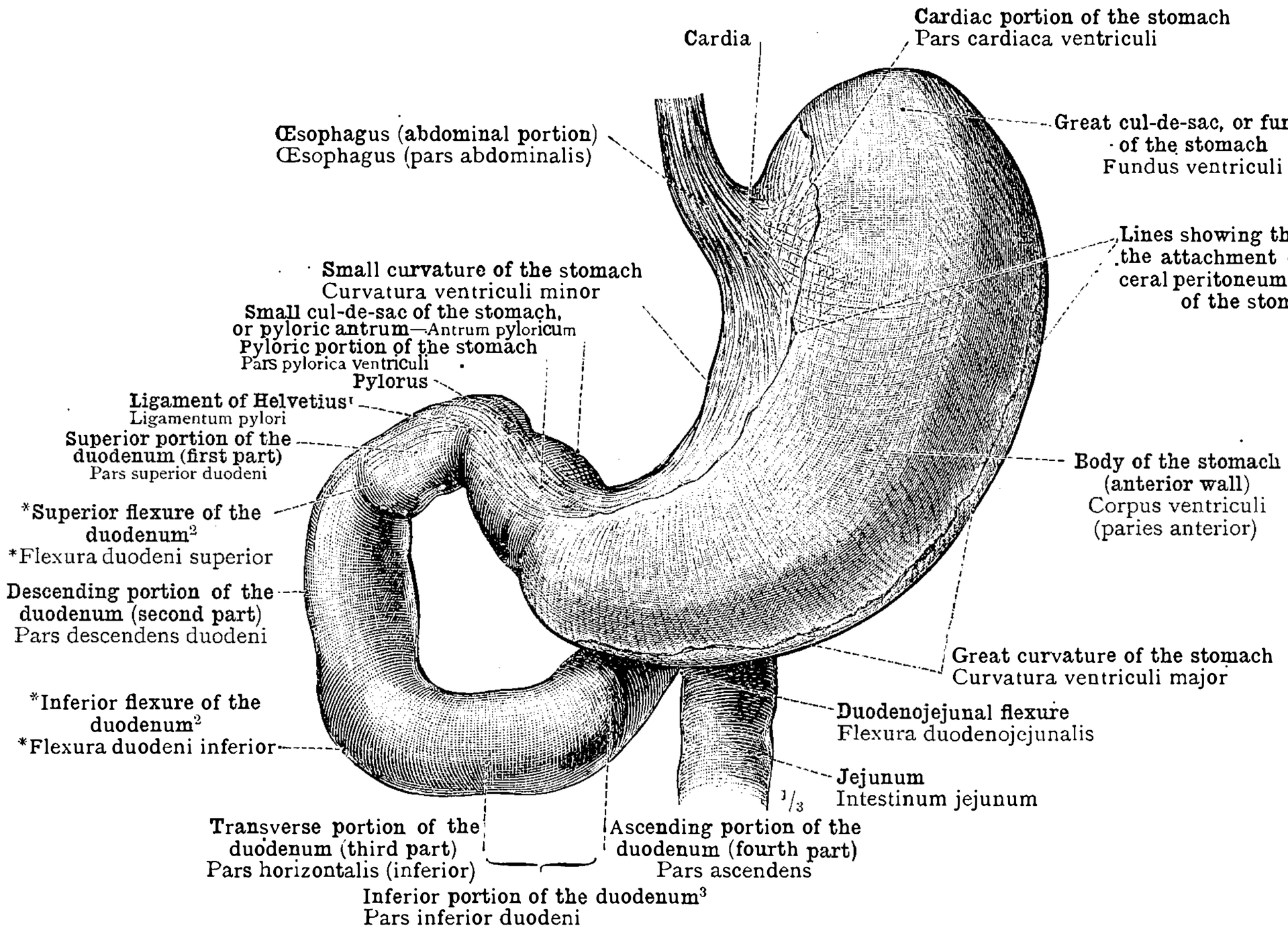
[6] See Appendix, note 4.

The Pharynx.

ABDOMINAL AND PELVIC PORTIONS

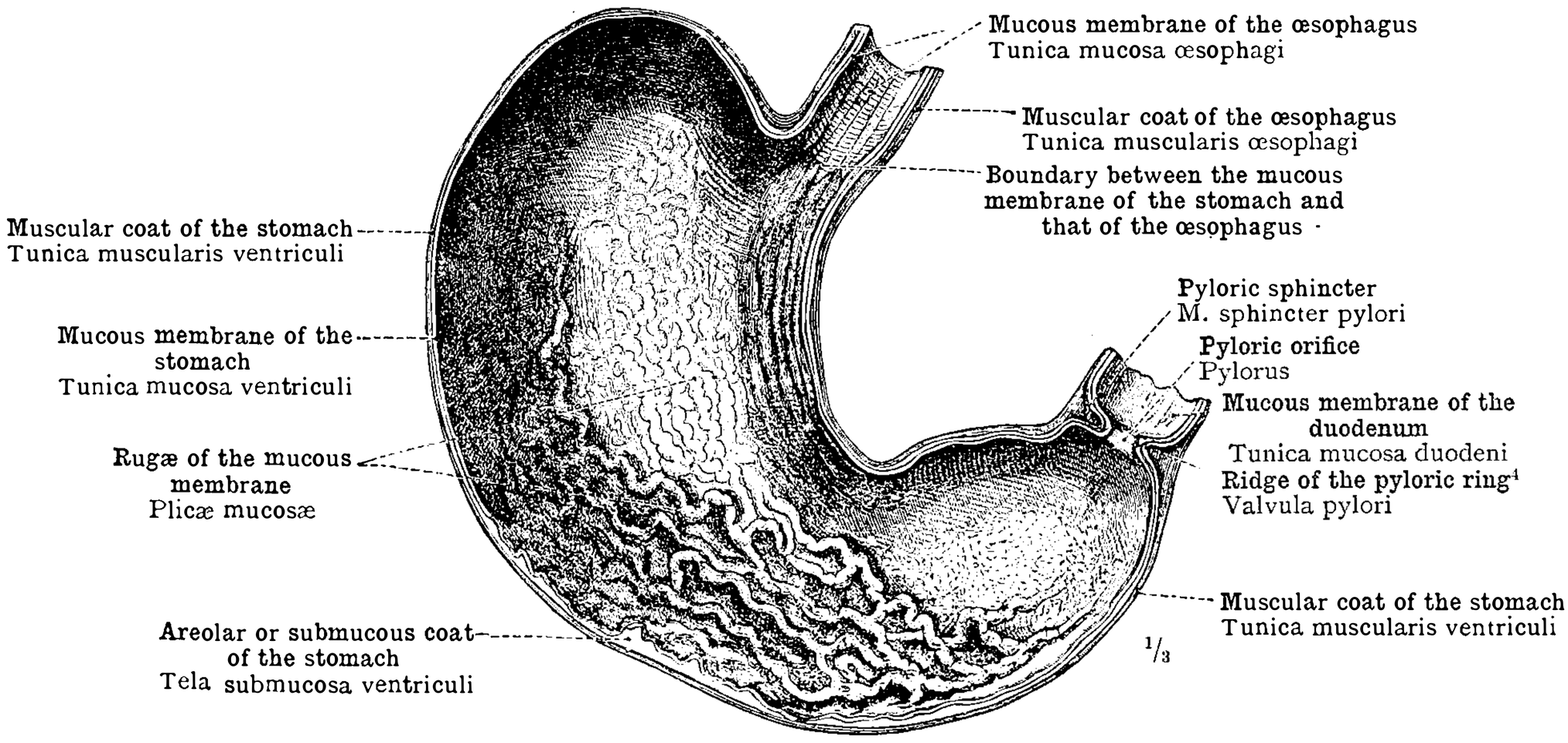
OF THE

DIGESTIVE ORGANS



[1] See Appendix, note 5. [2] See Appendix, note 6. [3] See Appendix, note 7.

FIG. 711.—VENTRICULUS, THE STOMACH, MODERATELY DISTENDED, WITH THE LOWEST PORTION OF THE ŒSOPHAGUS, AND THE DUODENUM. SEEN FROM BEFORE.



[4] See Appendix, note 8.

FIG. 712.—ANTERIOR HALF OF THE STOMACH, WHICH HAS BEEN DIVIDED IN TWO BY INCISIONS ALONG THE GREAT AND SMALL CURVATURES; SEEN FROM THE INSIDE. TRANSITION OF THE MUCOUS MEMBRANE OF THE ŒSOPHAGUS INTO THAT OF THE CARDIA. PYLORUS, OR PYLORIC ORIFICE. PLICÆ MUCOSÆ VENTRICULI, RUGÆ OF THE MUCOUS MEMBRANE OF THE STOMACH.

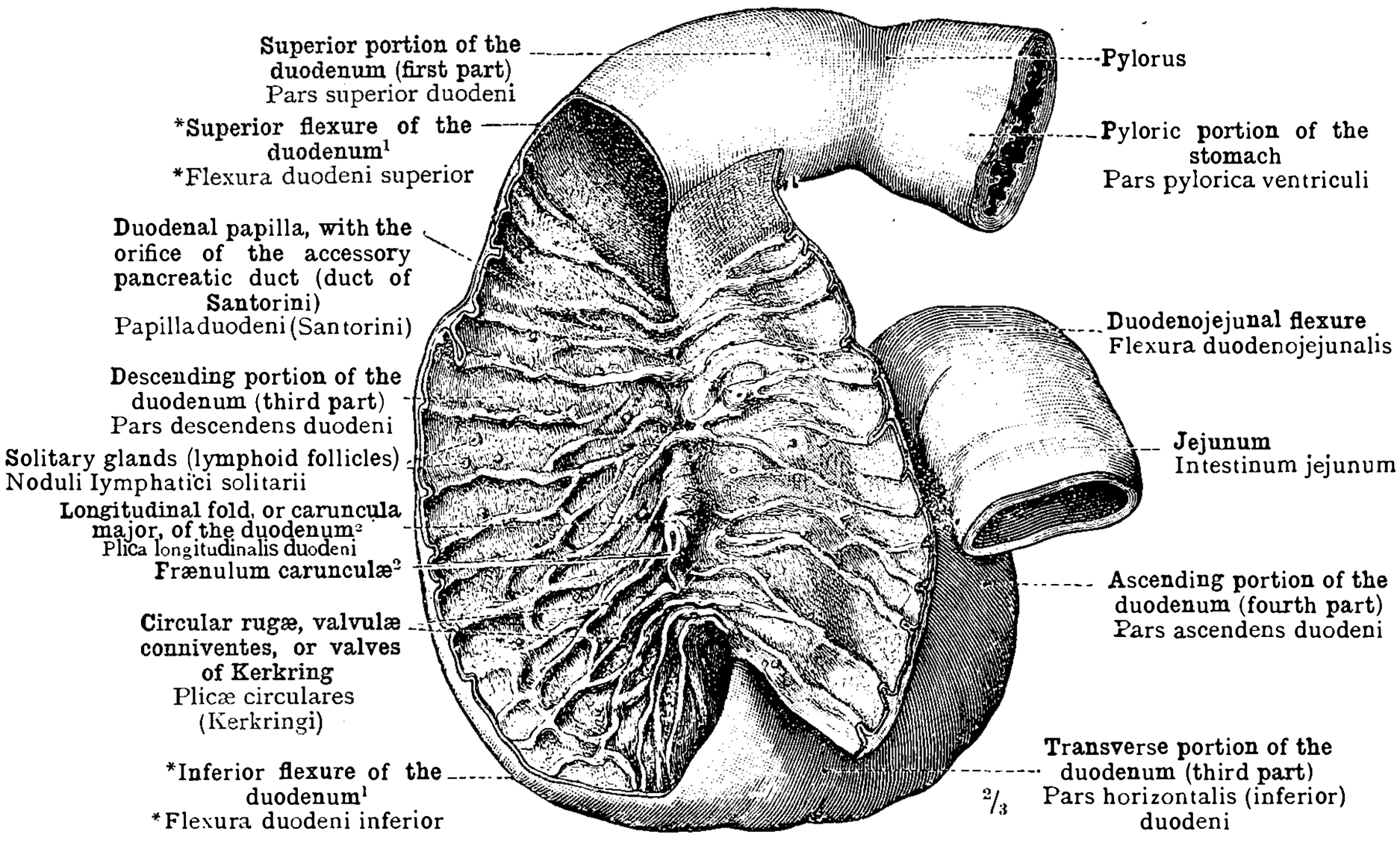


FIG. 718.—DUODENUM, SEEN FROM BEFORE. THE DESCENDING PORTION HAS BEEN OPENED, AND THE ANTERIOR WALL TURNED TO THE LEFT. PLICA LONGITUDINALIS DUODENI, THE LONGITUDINAL FOLD, OR CARUNCULA MAJOR, OF THE DUODENUM, AT THE LOWER END OF WHICH IS THE ORIFICE OF THE DUODENAL DIVERTICULUM, DIVERTICULUM DUODENALE (VATERI).[2] PAPILLA DUODENI, THE DUODENAL PAPILLA, WITH THE ORIFICE OF THE ACCESSORY PANCREATIC DUCT, OR DUCT OF SANTORINI.

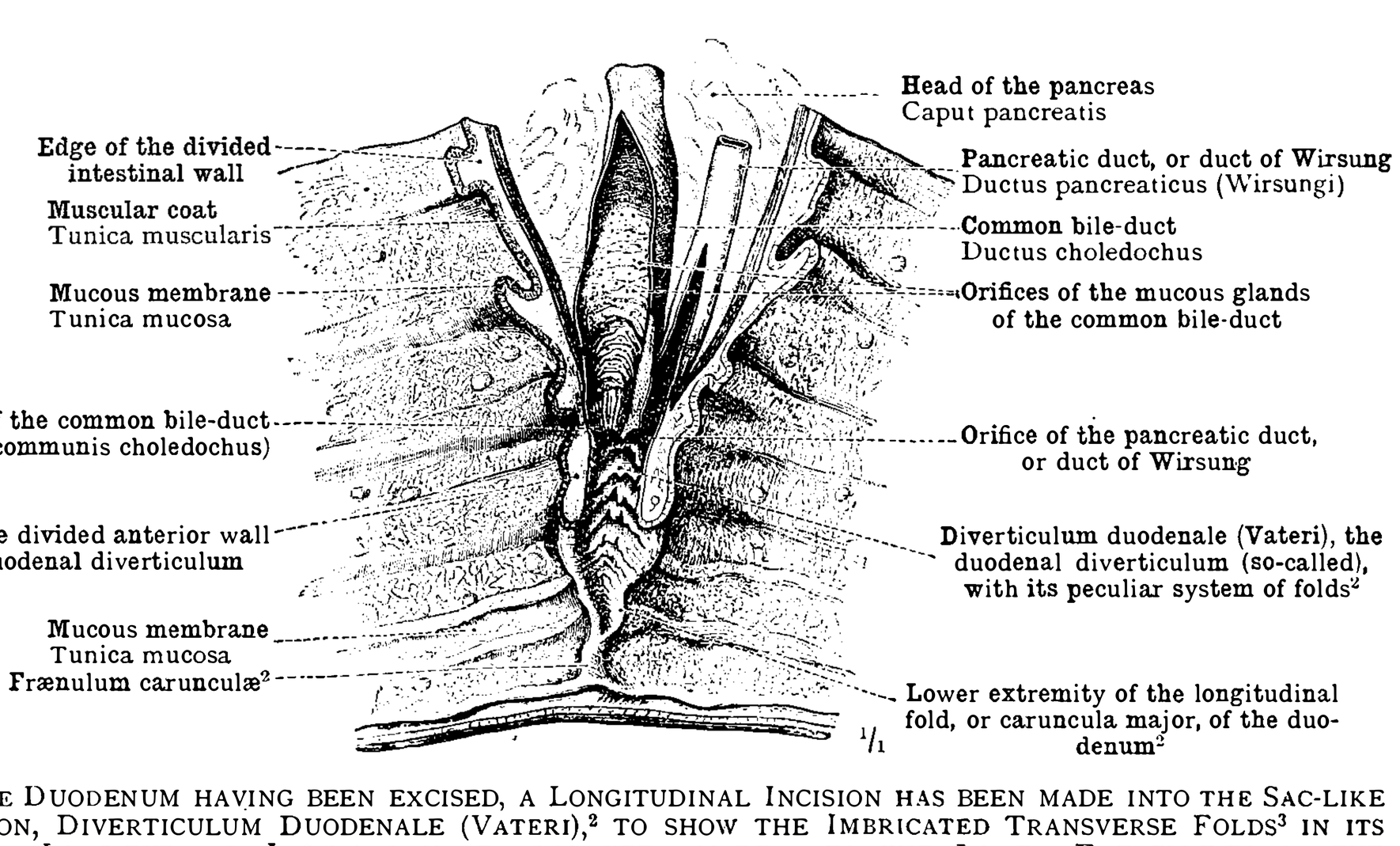


FIG. 719.—THE DUODENUM HAVING BEEN EXCISED, A LONGITUDINAL INCISION HAS BEEN MADE INTO THE SAC-LIKE DILATATION, DIVERTICULUM DUODENALE (VATERI),[2] TO SHOW THE IMBRICATED TRANSVERSE FOLDS[3] IN ITS INTERIOR. LONGITUDINAL INCISIONS HAVE ALSO BEEN MADE INTO THE LOWER EXTREMITIES OF THE COMMON BILE-DUCT AND THE PANCREATIC DUCT, OR DUCT OF WIRSUNG, WHICH OPEN INTO THE DUODENAL DIVERTICULUM.

[1] See Appendix, note 6. [2] See Appendix, note 9. [3] See Appendix, note 10.

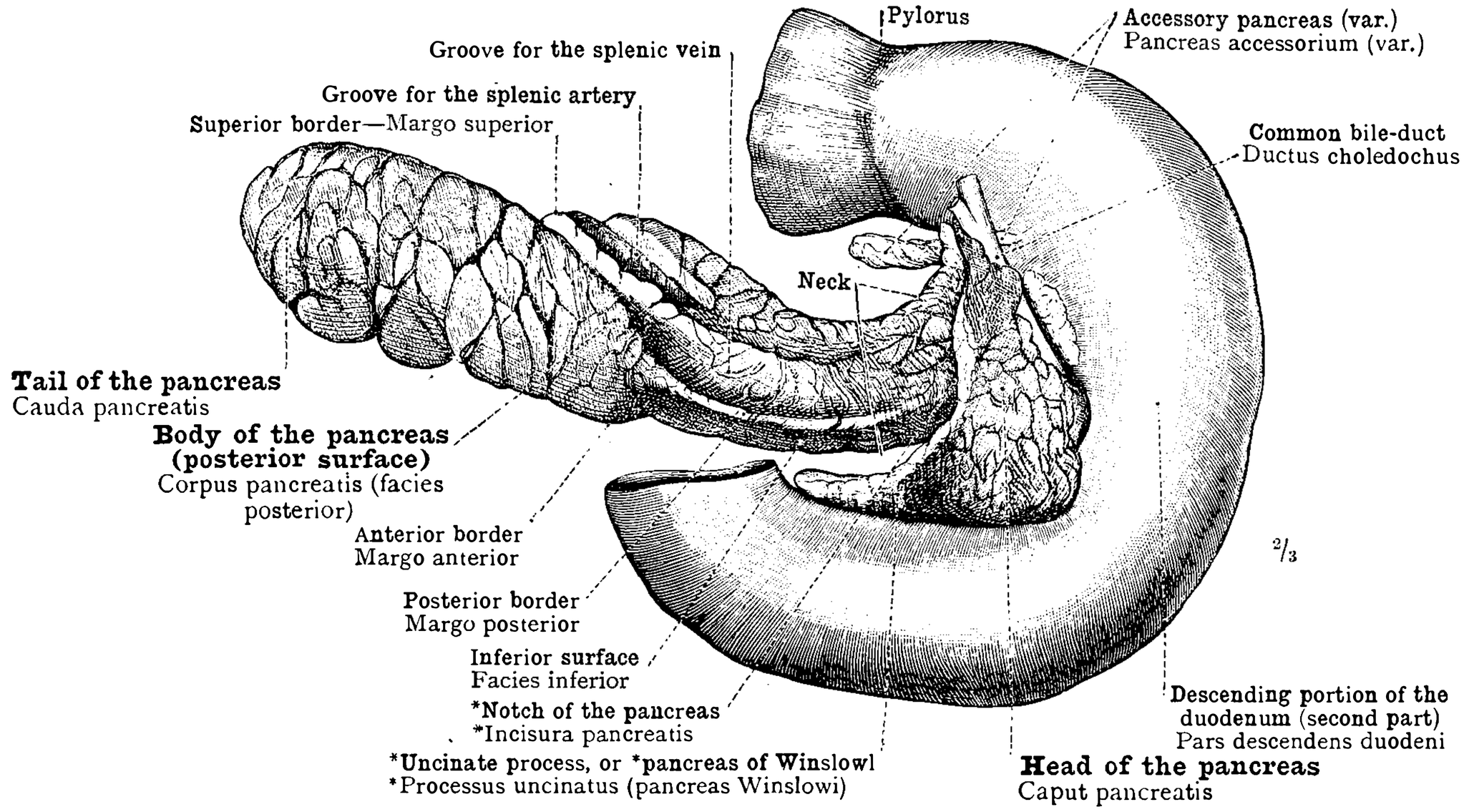


FIG. 720.—THE PANCREAS; ITS RELATIONS TO THE DUODENUM AND TO THE COMMON BILE-DUCT. ACCESSORY PANCREAS. SEEN FROM BEHIND.

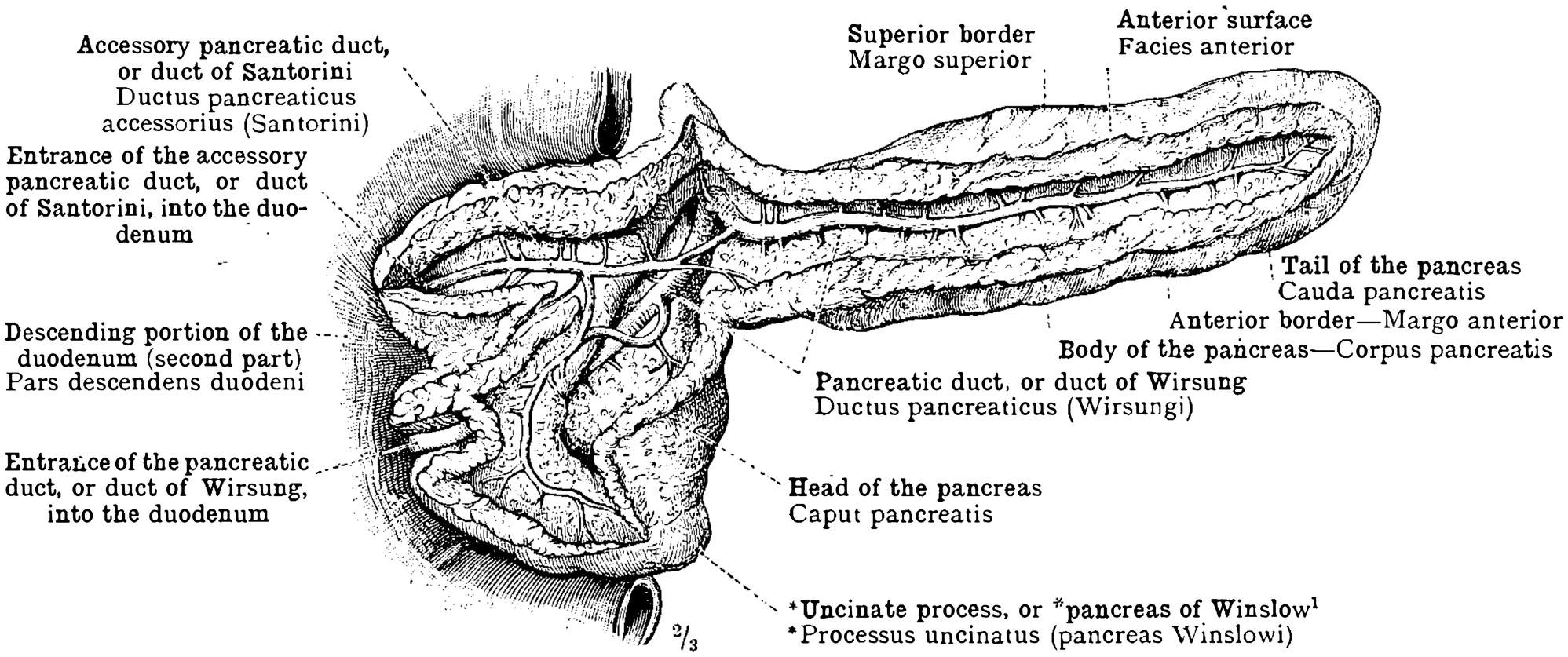


FIG. 721.—THE PANCREAS, WITH ITS DUCTS DISSECTED OUT, SEEN FROM BEFORE. PANCREATIC DUCT, OR DUCT OF WIRSUNG; ACCESSORY PANCREATIC DUCT, OR DUCT OF SANTORINI.

[1] That portion of the head of the pancreas which extends to the left in a hook-like manner behind the mesenteric vessels, called by the author the **uncinate process*, or **pancreas of Winslow*, is sometimes completely separate from the rest of the gland, and is then termed the *lesser pancreas*.—TR.

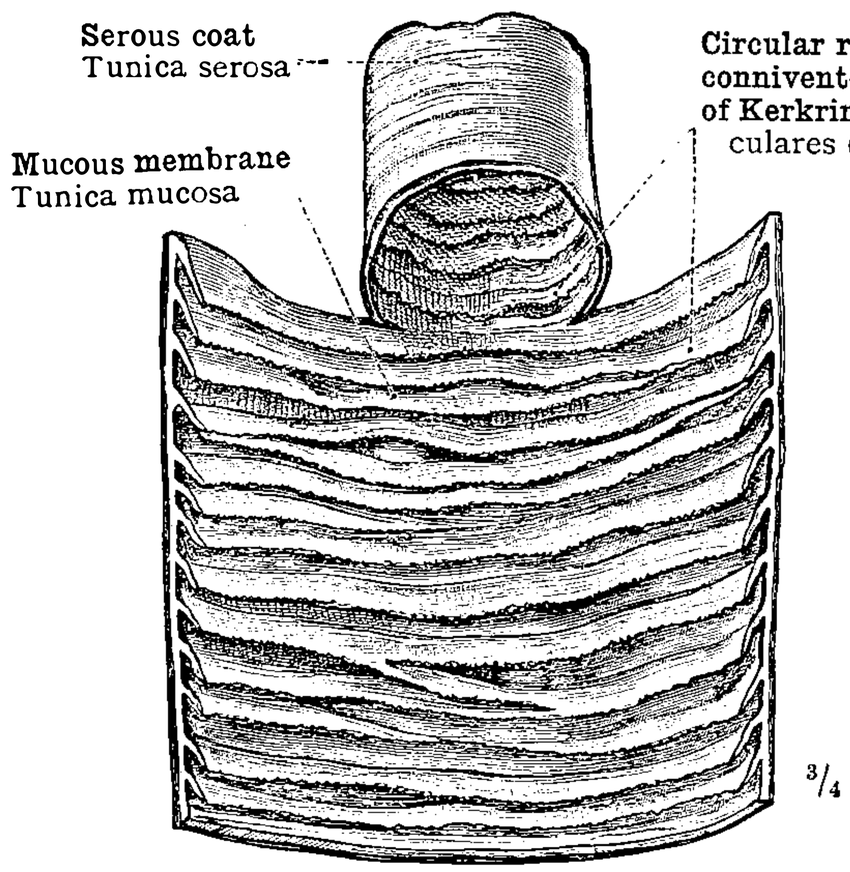


FIG. 722.—THE JEJUNUM, IN PART OPENED.

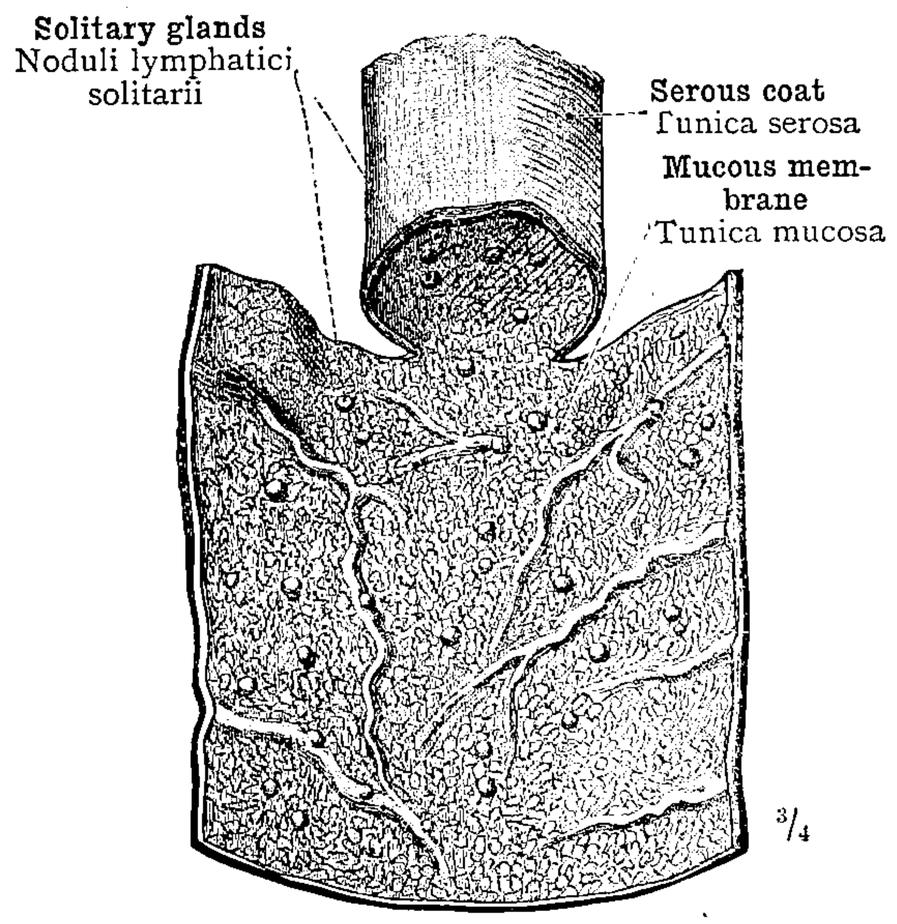
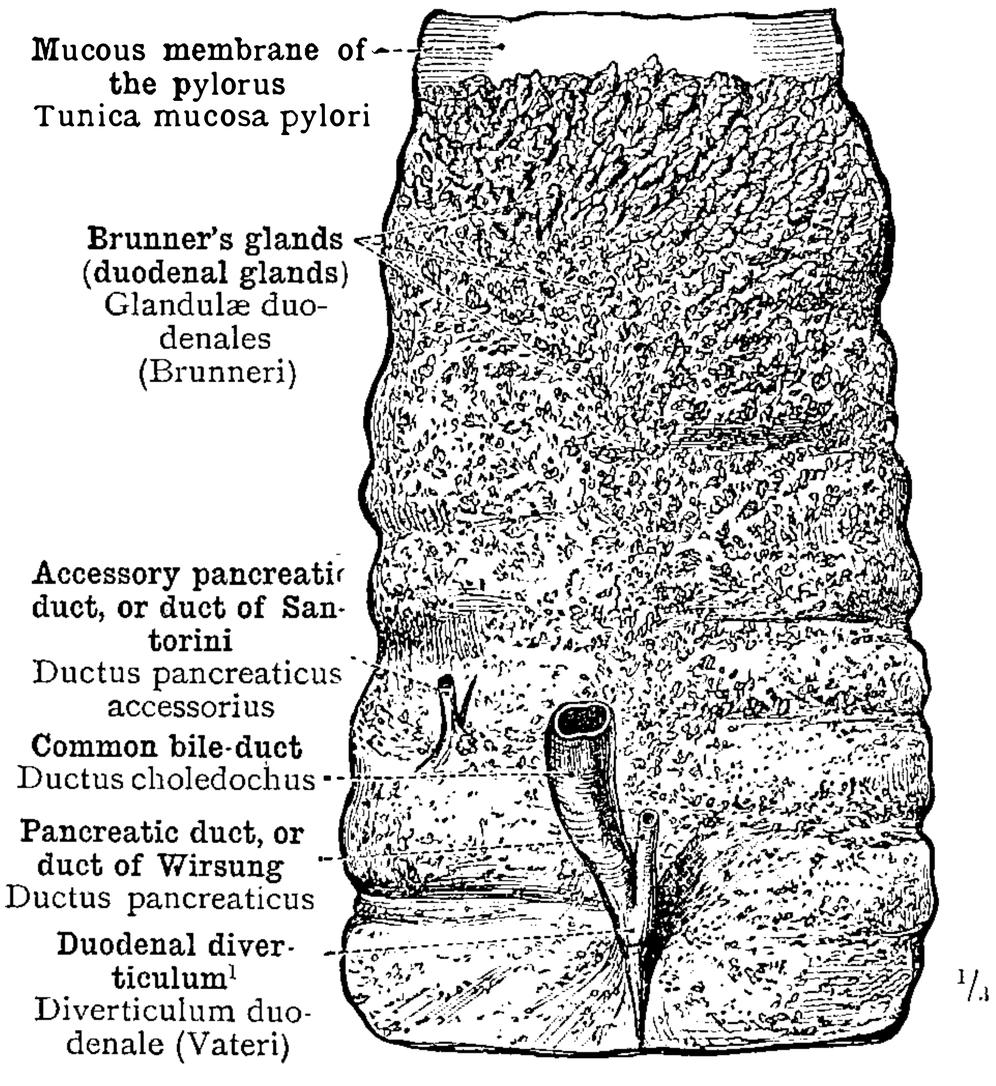


FIG. 723.—THE ILEUM, IN PART OPENED.

INTESTINUM TENUE—THE SMALL INTESTINE.



[1] See Appendix, note

FIG. 724.—OUTER SURFACE OF THE MUCOUS MEMBRANE OF THE DUODENUM, WITH BRUNNER'S GLANDS (DUODENAL GLANDS), DISPLAYED BY THE REMOVAL OF THE MUSCULAR COAT.

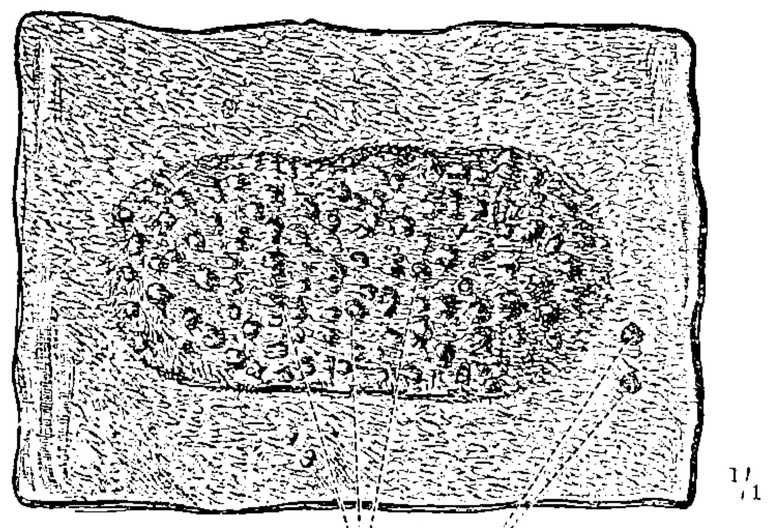


FIG. 725.—NODULI LYMPHATICI AGGREGATI, AGMINATED GLANDS, OR PEYER'S PATCHES, FROM THE ILEUM.

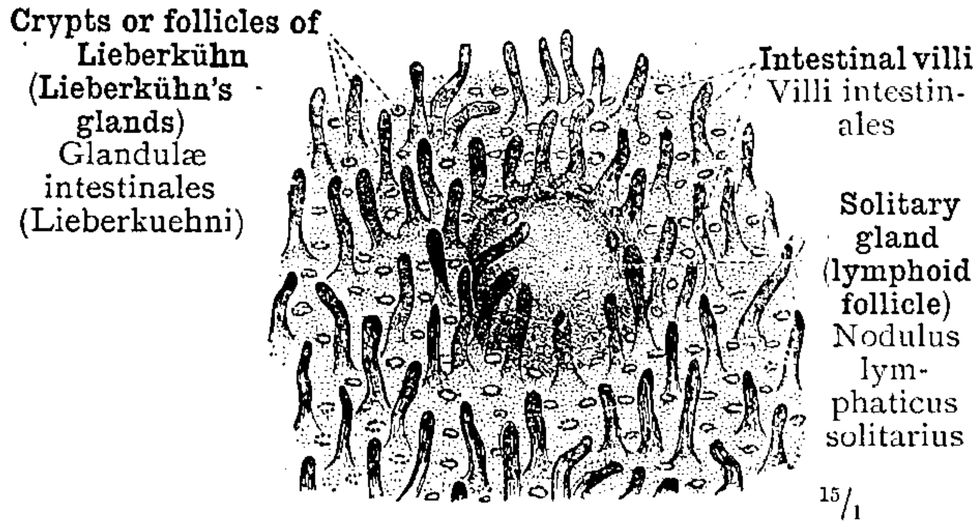


FIG. 726.—MUCOUS MEMBRANE OF THE ILEUM, WITH A SOLITARY GLAND (LYMPHOID FOLLICLE).

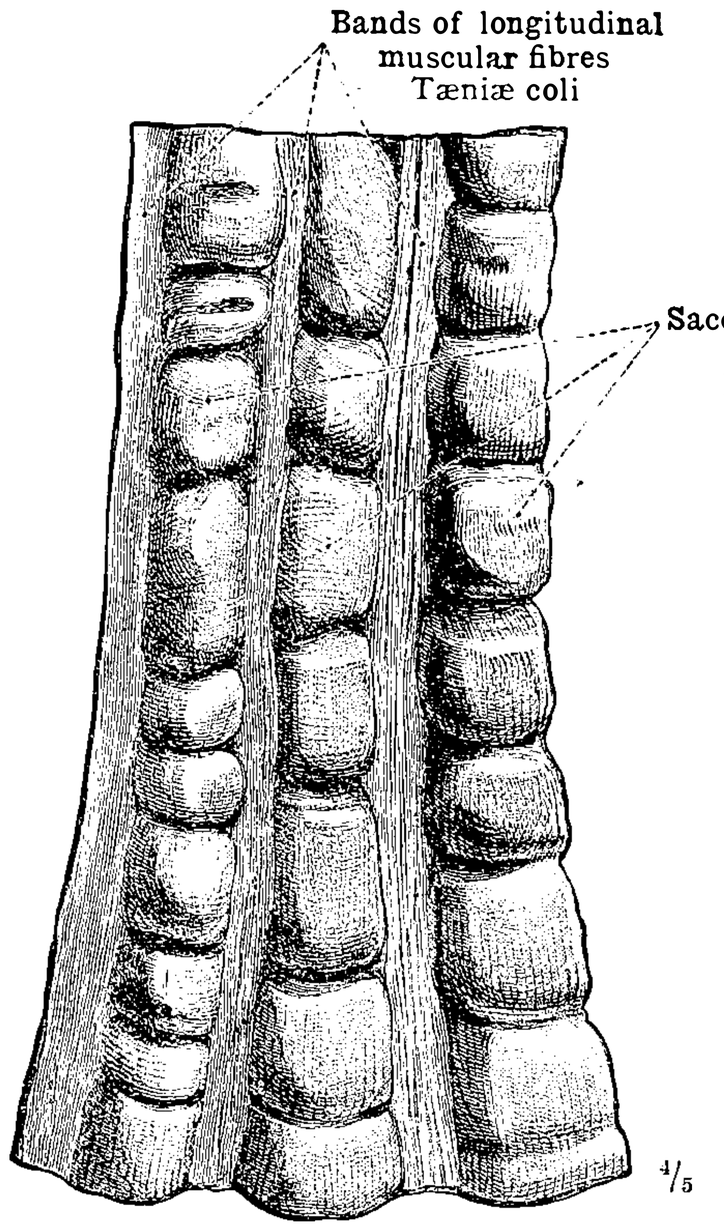


FIG. 727.—TUNICA MUSCULARIS, THE MUSCULAR COAT, OF THE OPENED LARGE INTESTINE (TRANSVERSE COLON), DISPLAYED FROM THE OUTER SIDE BY THE REMOVAL OF THE SEROUS COAT.

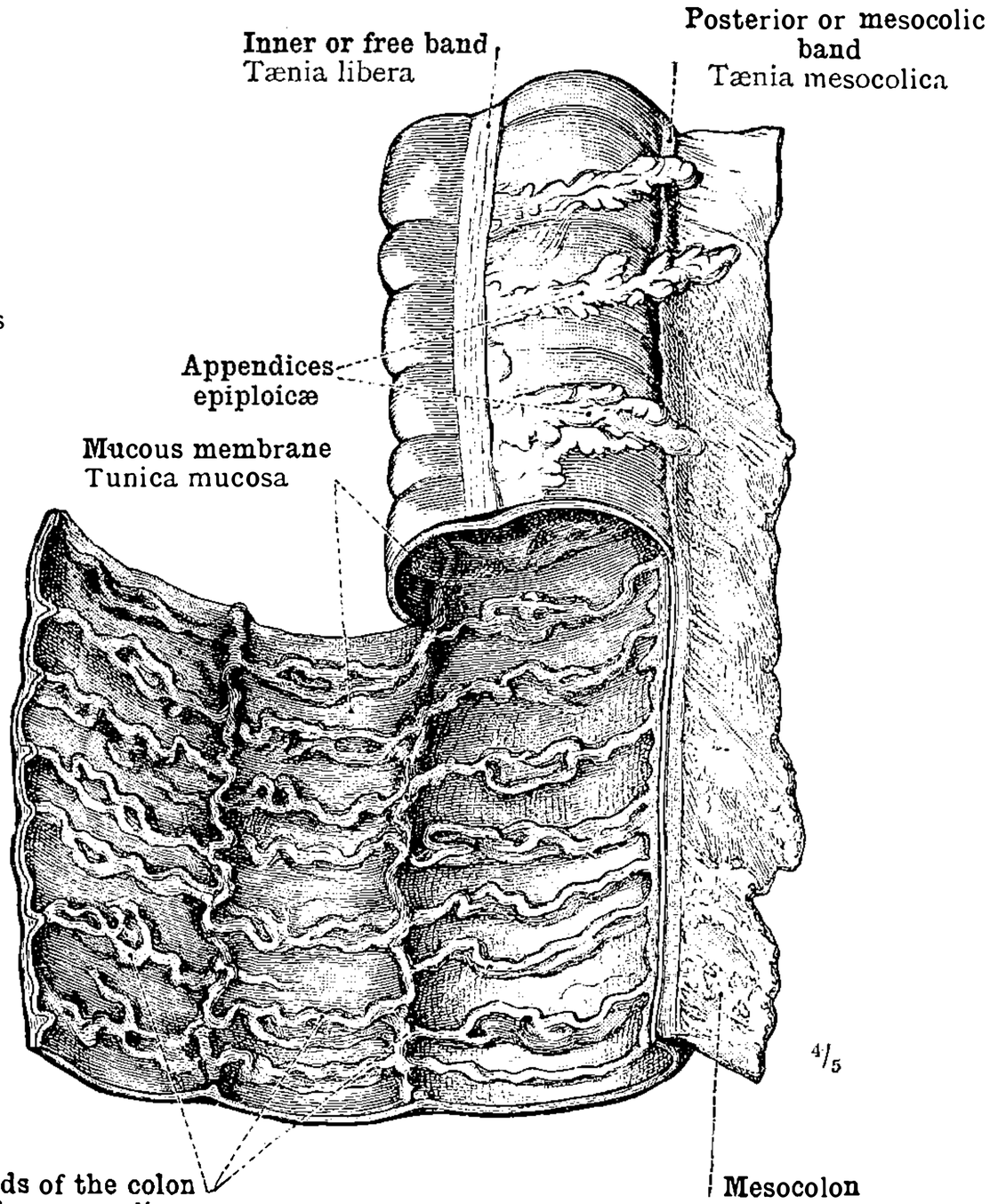


FIG. 728.—INTESTINUM CRASSUM, THE LARGE INTESTINE, IN PART OPENED ALONG THE LINE OF ATTACHMENT OF THE MESENTERY.

The piece of intestine is in the contracted state.

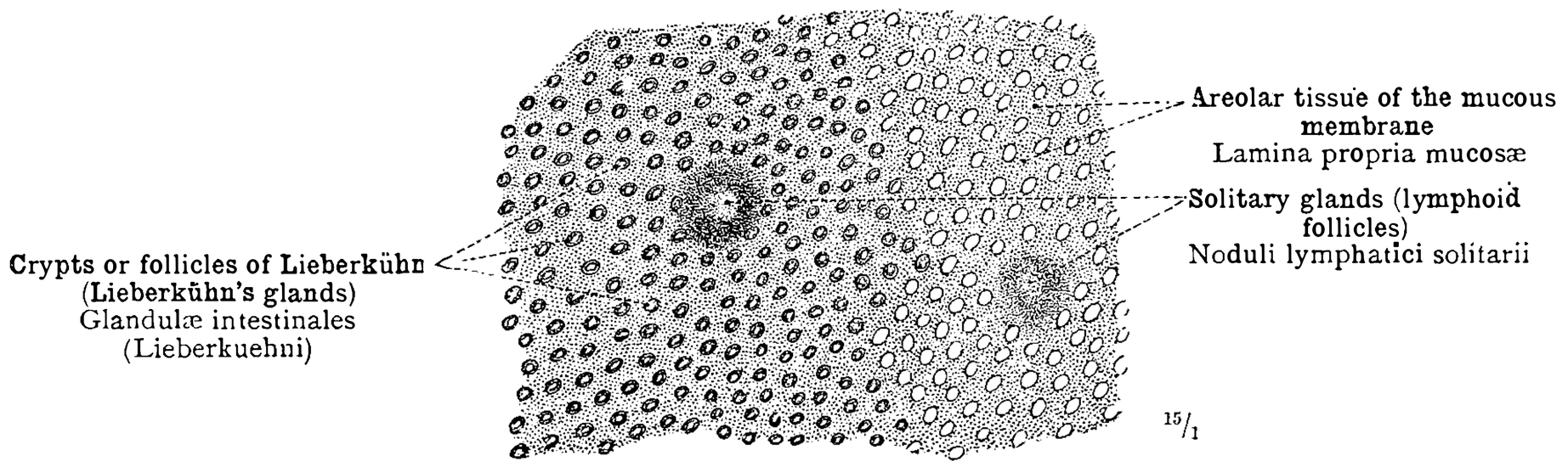


FIG. 729.—MUCOUS MEMBRANE OF THE LARGE INTESTINE (TRANSVERSE COLON), MODERATELY MAGNIFIED, SEEN FROM WITHIN.

On the right side of the preparation the gland cells of the crypts or follicles of Lieberkühn (glandulæ intestinales, Lieberkühn's glands) have been removed by gentle friction.

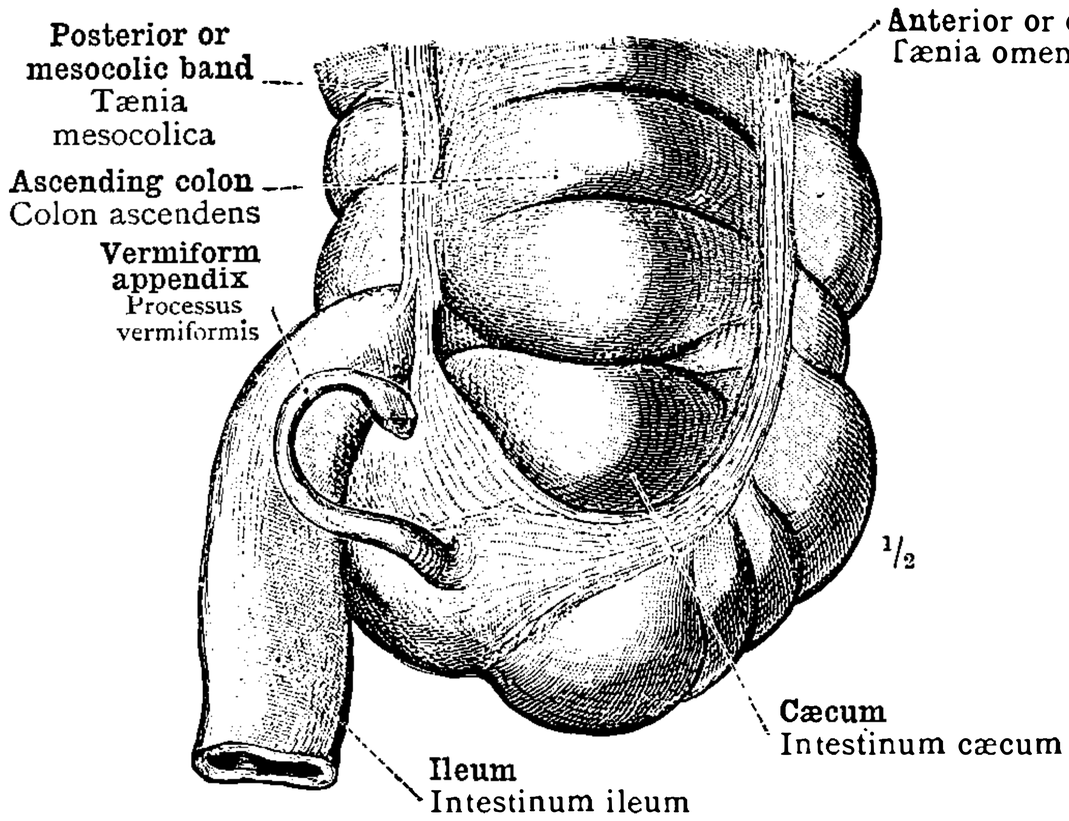


FIG. 730.—INTESTINUM CÆCUM, THE CÆCUM, IN THE DISTENDED STATE, SEEN FROM BEHIND, THE SEROUS COAT HAVING BEEN REMOVED.

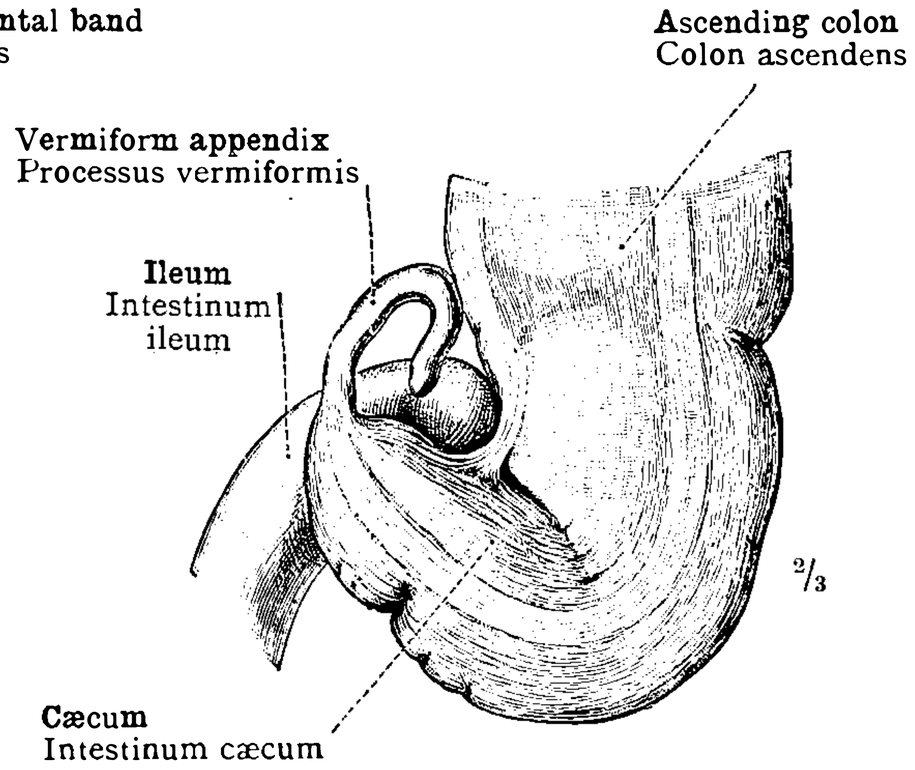


FIG. 731.—INTESTINUM CÆCUM, THE CÆCUM, OF AN ADULT MALE, IN THE FULLY-CONTRACTED STATE, SEEN FROM BEHIND, THE SEROUS COAT HAVING BEEN REMOVED.

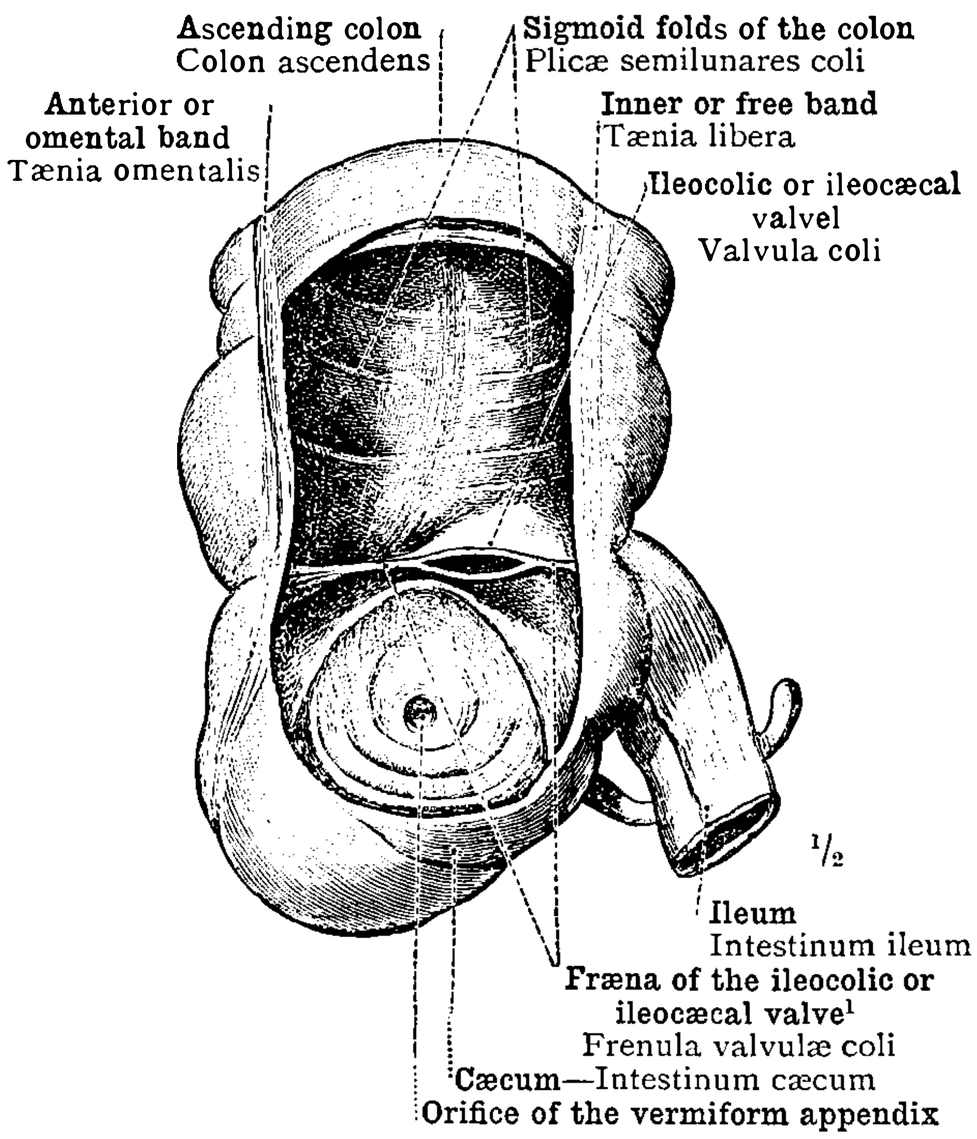


FIG. 732.—THE CÆCUM, DISTENDED AND DRIED, SEEN FROM THE OUTER SIDE.

A portion of the outer wall has been removed, in order to display the ileocolic or ileocæcal valve[1] and the orifice of the vermiform appendix.

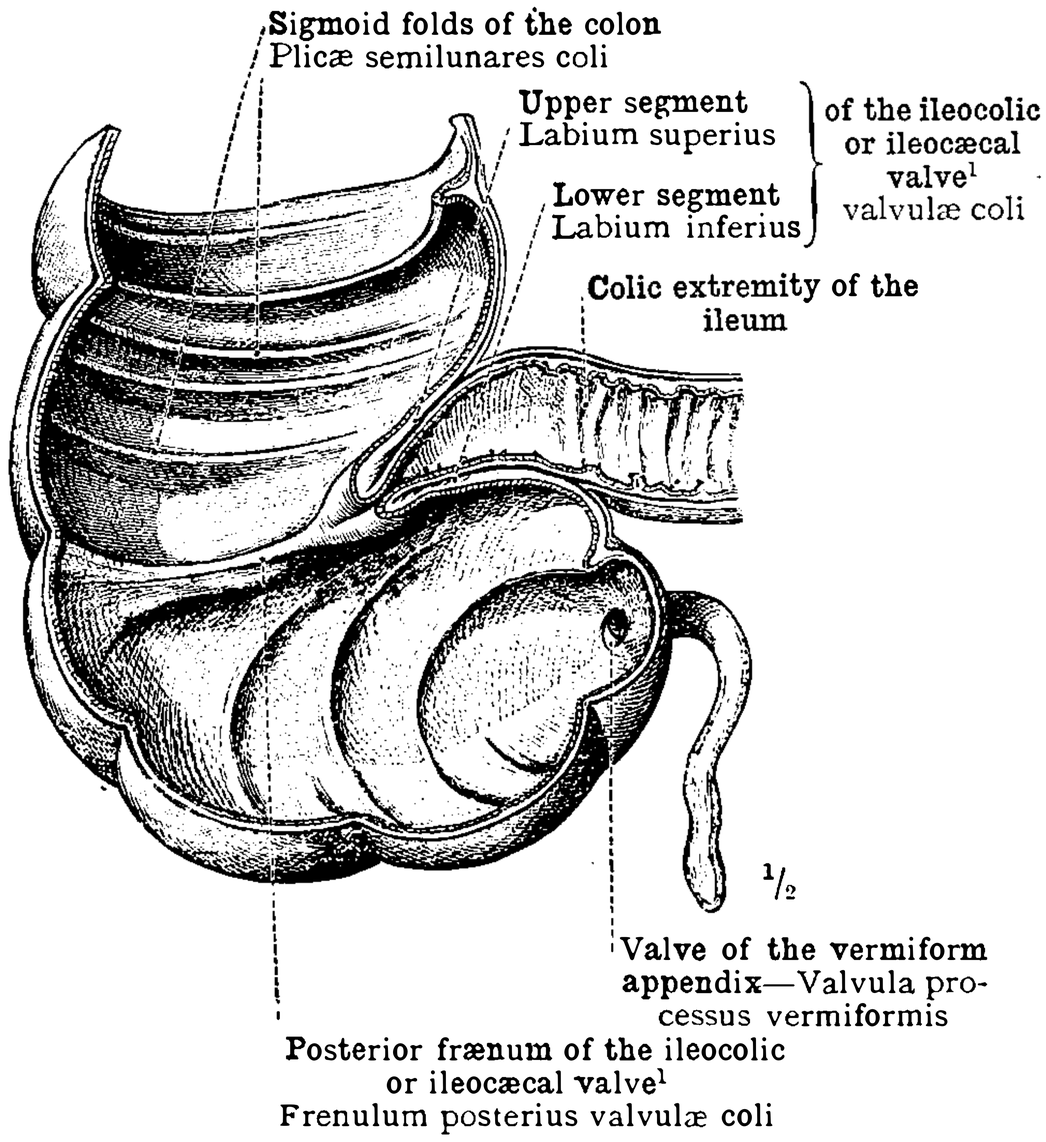


FIG. 733.—THE CÆCUM, HARDENED IN FORMALIN, AND DIVIDED BY AN INCISION PASSING THROUGH THE ILEOCOLIC OR ILEOCÆCAL ORIFICE. THE ILEOCOLIC OR ILEOCÆCAL VALVE[1] (VALVULA COLI) IS SEEN CLOSED, IN CORONAL SECTION.

[1] *Ileocolic or Ileocæcal Valve.*—This is known also as the *valve of Bauhin* and as the *valve of Tulpius*, but was described by Fallopius at an earlier date than by either of these anatomists. Macalister distinguishes the upper or colic lip or segment as the *ileocolic valve*, and the lower or cæcal lip or segment as the *ileocæcal valve*. The *fræna* or *retinacula* of the valve are prominent folds in front and behind the orifice formed by the union of the two segments; they pass round the gut to unite opposite the orifice, forming a shelf which separates the cæcum from the ascending colon. This shelf is sometimes called the *frænum of Morgagni*.—TR.

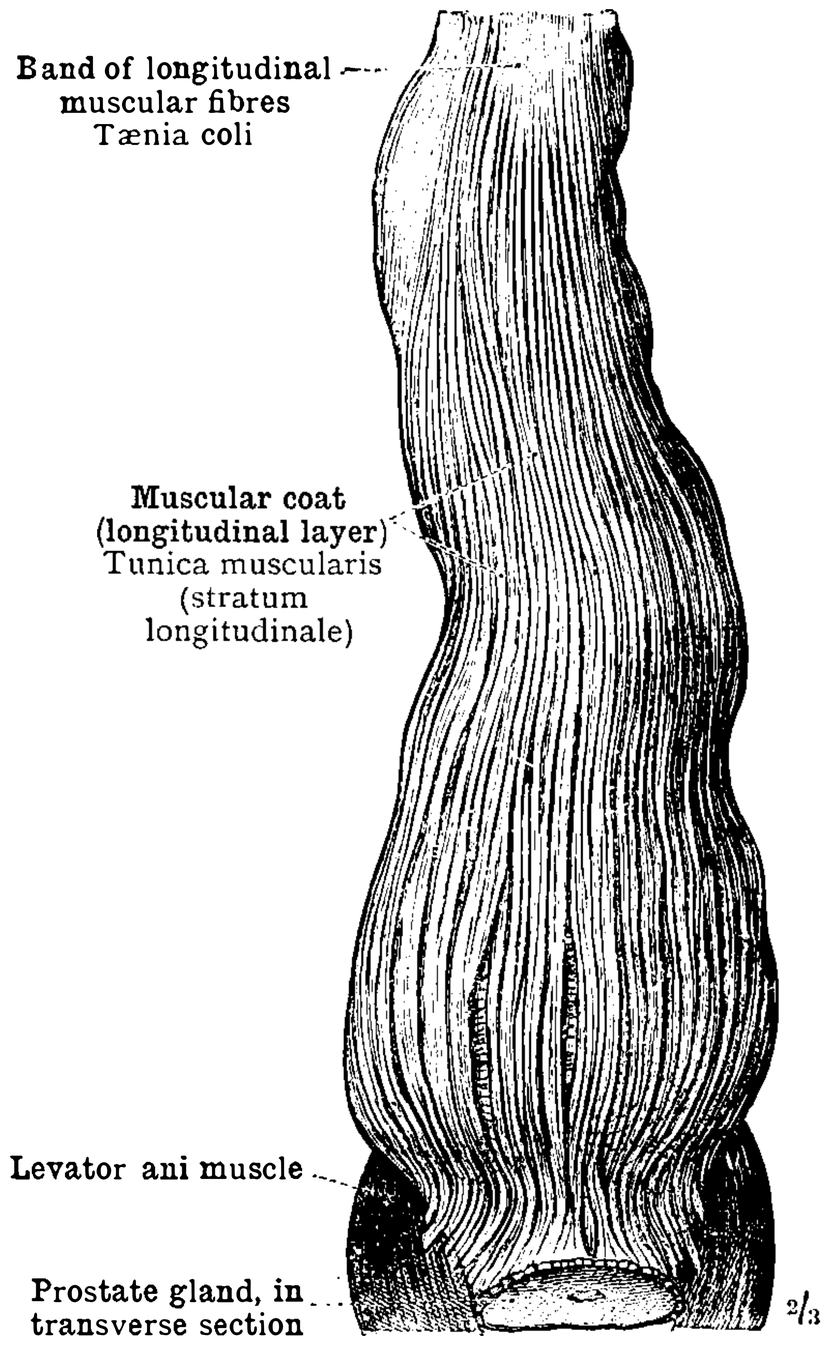


FIG. 734.—INTESTINUM RECTUM, THE RECTUM, THE LONGITUDINAL LAYER OF MUSCULAR FIBRES HAVING BEEN EXPOSED. SEEN FROM BEFORE.

Some of the longitudinal fibres are seen to pass on to the surface of the prostate gland, and others between the fasciculi of the levator ani muscle.

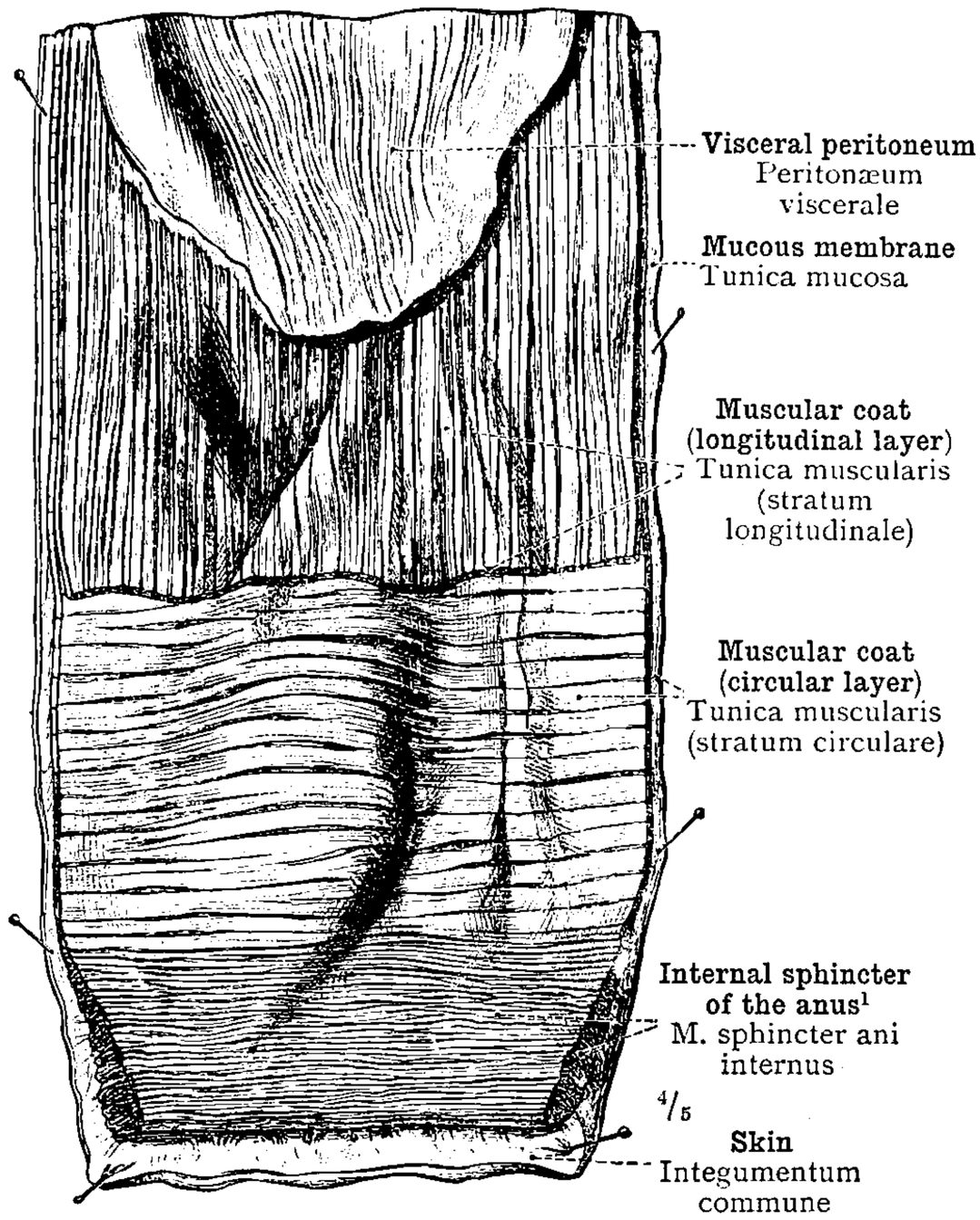


FIG. 735.—OUTER SURFACE OF THE RECTUM, WHICH HAS BEEN ISOLATED AND OPENED FROM BEHIND.

In the lower half the longitudinal layer of the muscular coat has been removed, in order to display the circular layer and the continuity of this latter with the internal or circular sphincter of the anus.

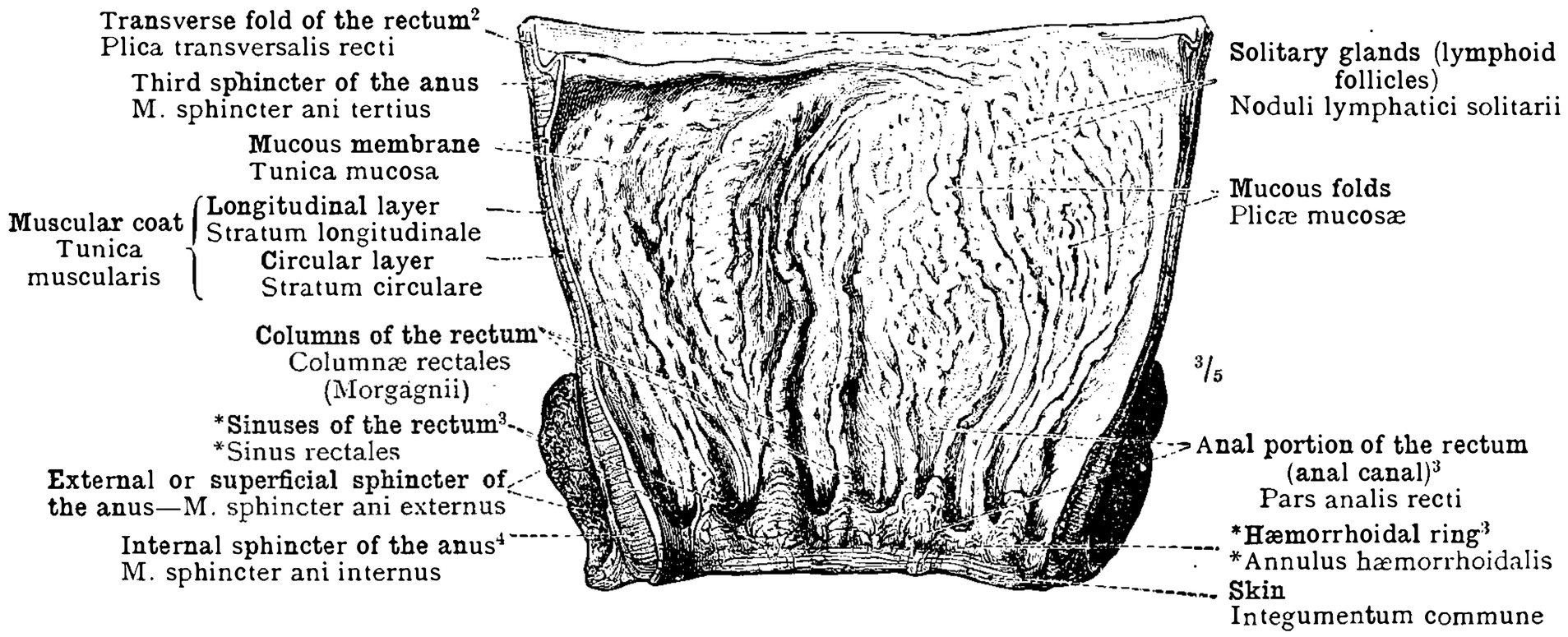


FIG. 736.—MUCOUS MEMBRANE OF THE LOWER PART OF THE RECTUM AND ITS CONTINUITY WITH THE SKIN.

[1] Known also as the *deep* or *circular sphincter of the anus*.
[2] See Appendix, note [11].
[3] See Appendix, note [12].
[4] Known also as the *deep* or *circular sphincter of the anus*.

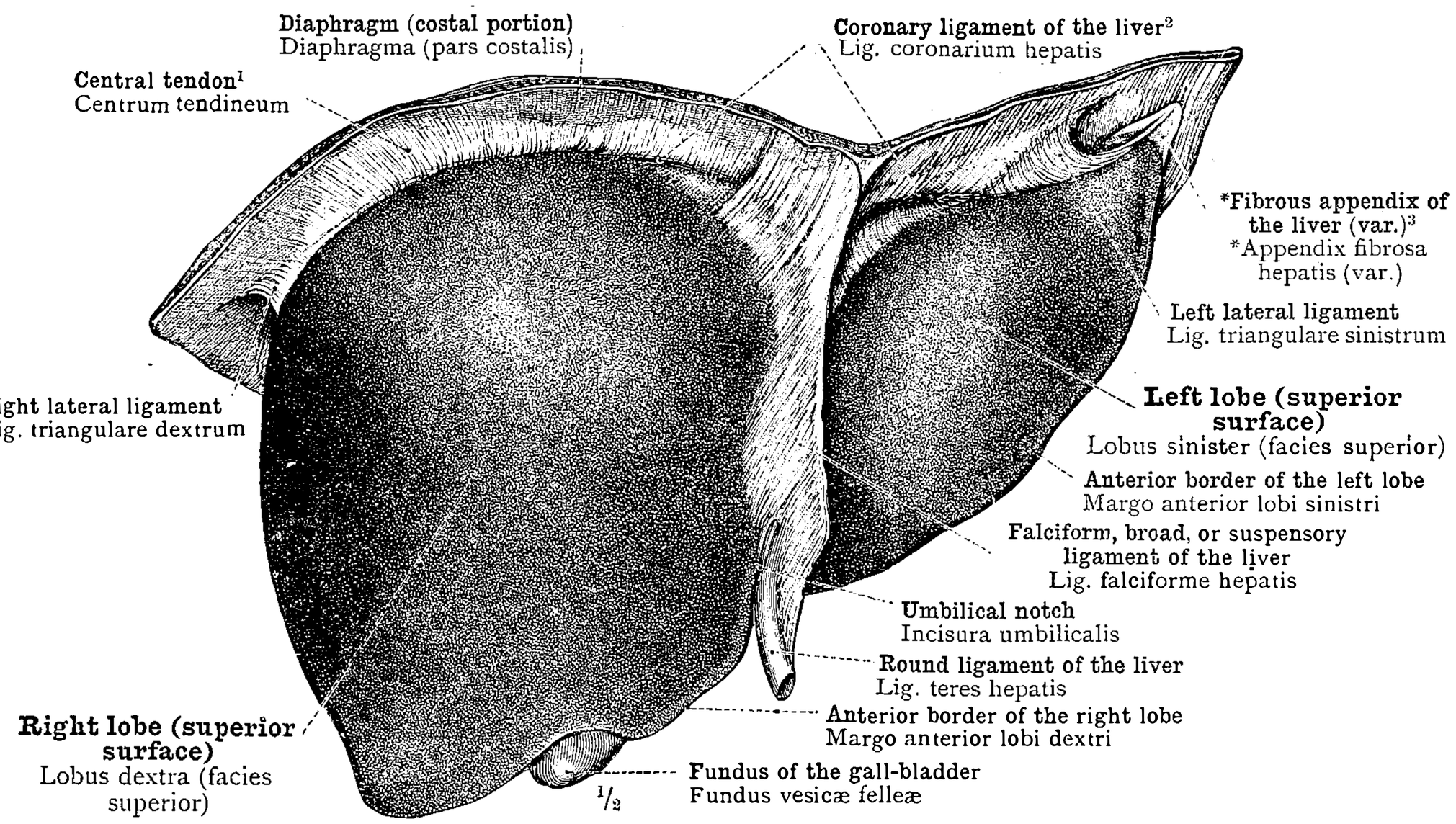


FIG. 737.—SUPERIOR SURFACE OF THE LIVER AND ITS ATTACHMENTS TO THE DIAPHRAGM.

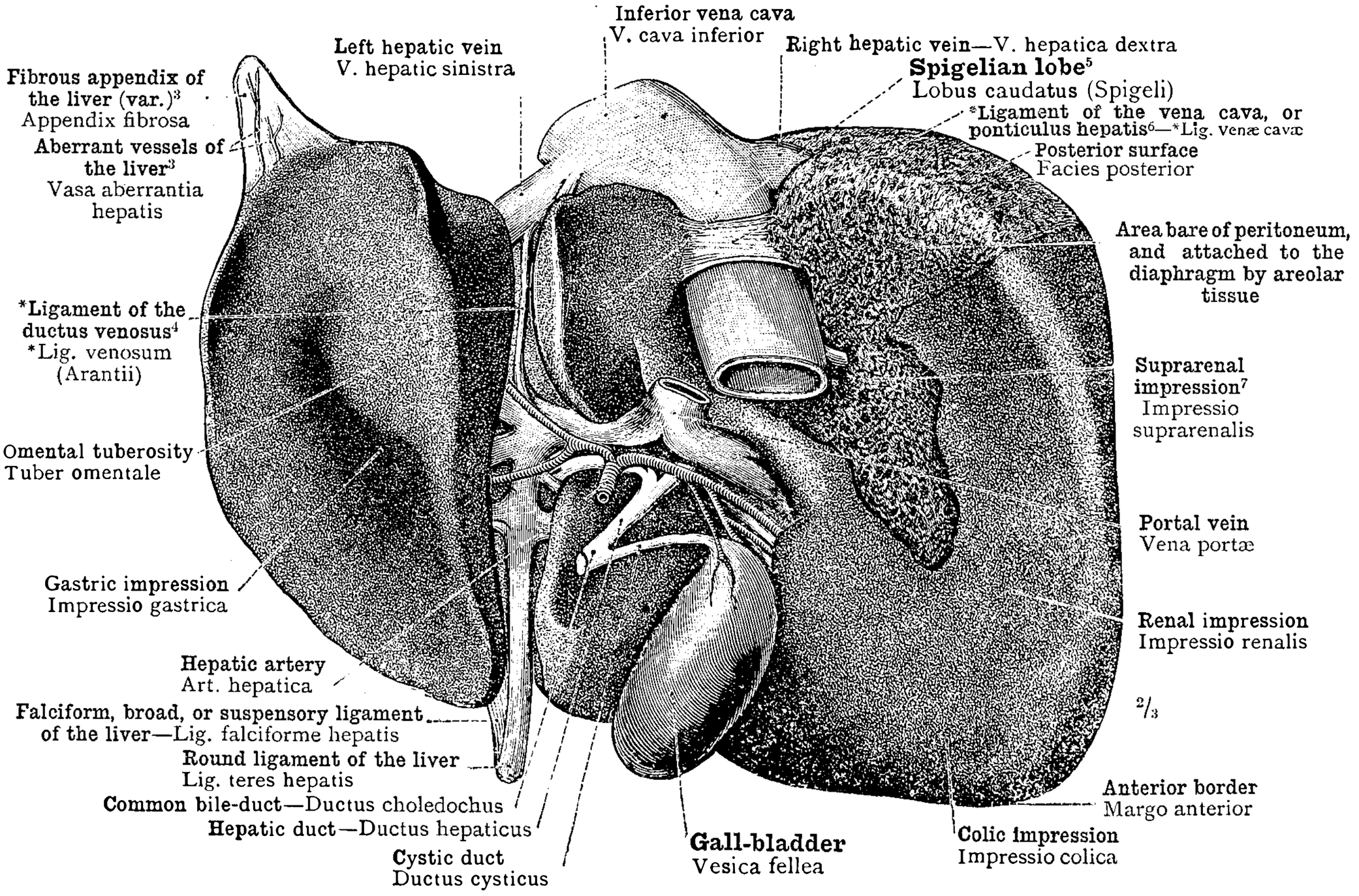


FIG. 738.—INFERIOR SURFACE OF THE LIVER; THE STRUCTURES OCCUPYING THE FISSURES OF THE ORGAN.

[1] Called also the *trefoil* or *cordiform tendon* of the diaphragm. [2] See Appendix, note 13.
[3] See Appendix, note 14. [4] See Appendix, note 15. [5] See Appendix, note 16.
[6] See Appendix, note 17. [7] Or *adrenal impression*.

Hepar—The liver.

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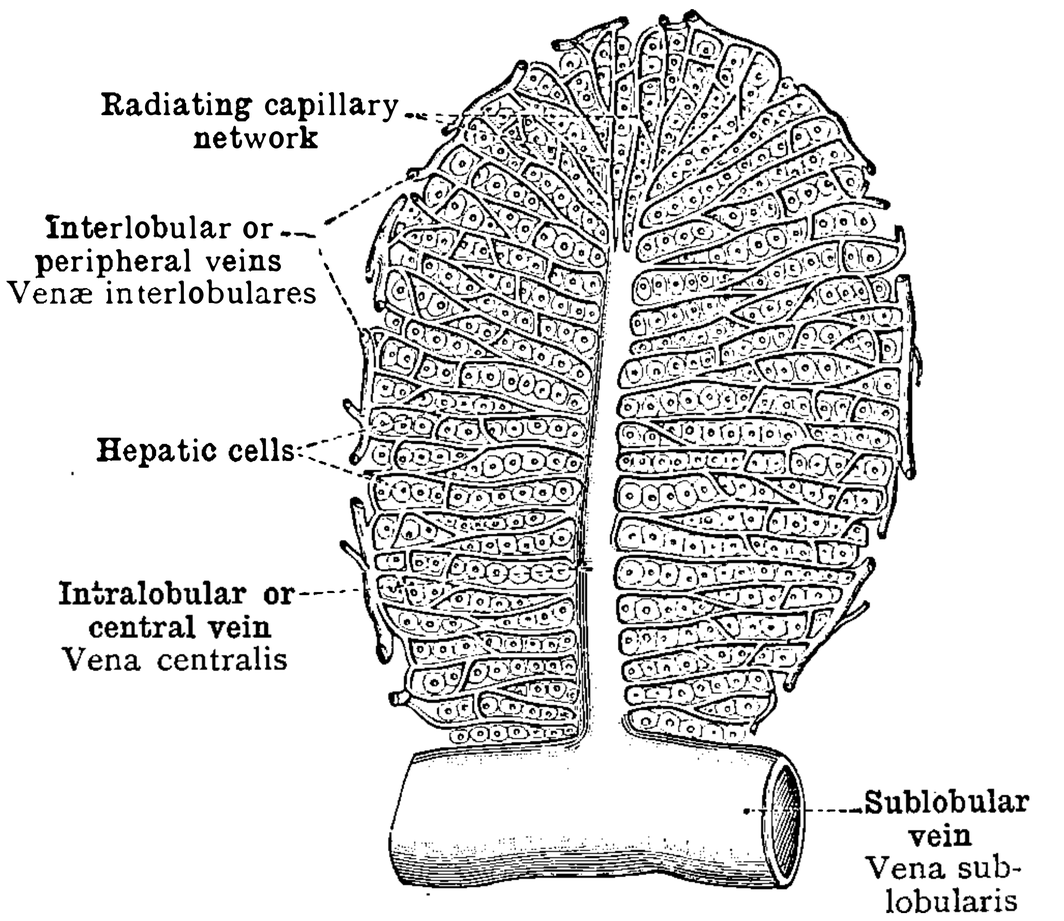


FIG. 741.—DIAGRAMMATIC REPRESENTATION OF A LONGITUDINALLY DIVIDED HEPATIC LOBULE, LOBULUS HEPATICUS. VENA CENTRALIS, INTRALOBULAR OR CENTRAL VEIN; VENÆ INTERLOBULARES, INTERLOBULAR OR PERIPHERAL VEINS; VENA SUBLOBULARIS, SUBLOBULAR VEIN.

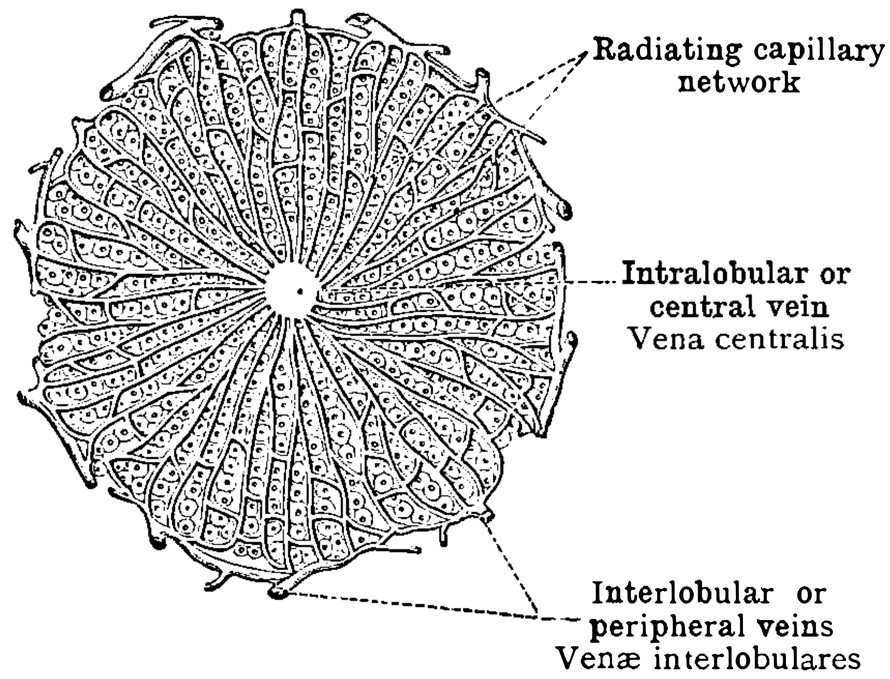
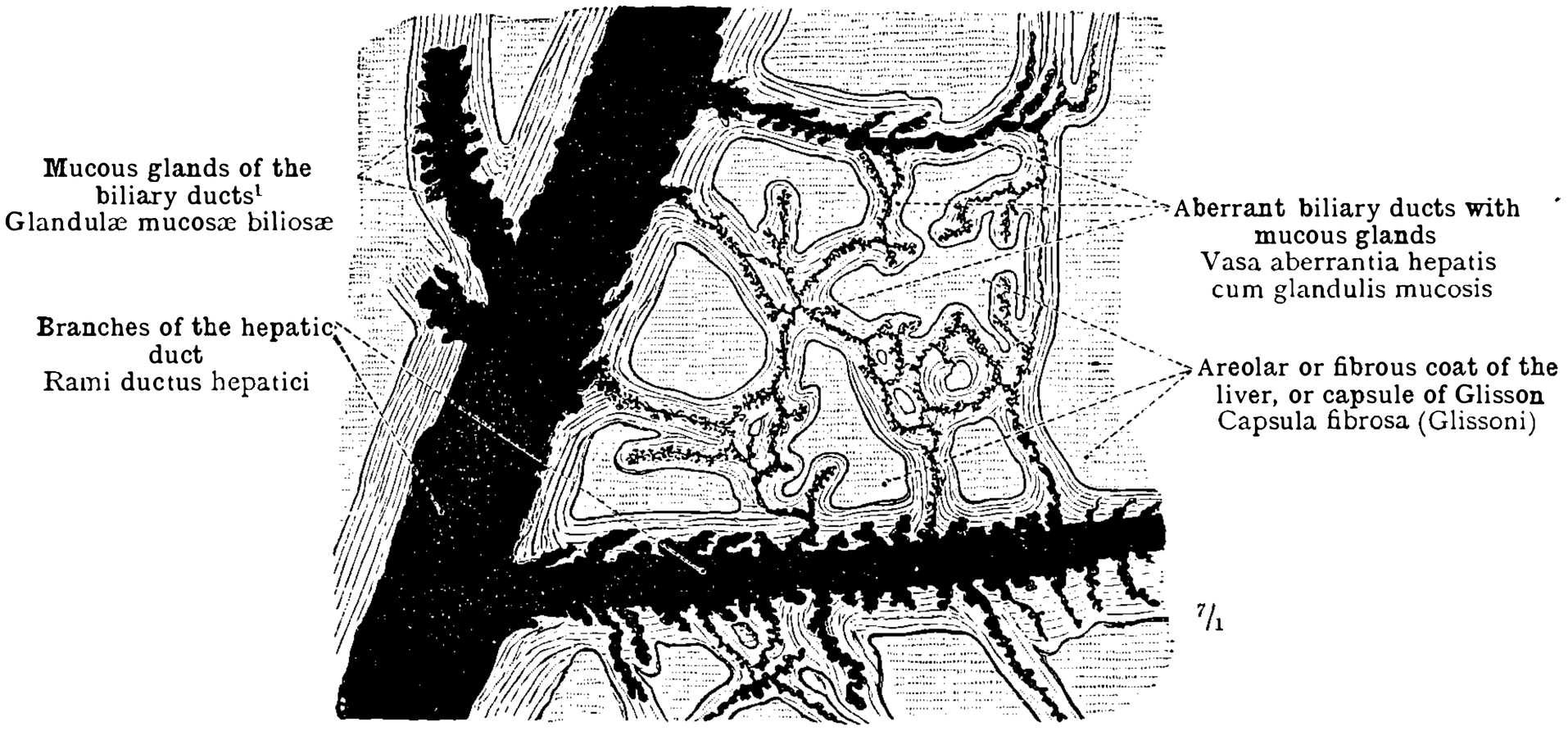


FIG. 742.—DIAGRAMMATIC REPRESENTATION OF A TRANSVERSELY-DIVIDED HEPATIC LOBULE. VENA CENTRALIS, INTRALOBULAR OR CENTRAL VEIN; VENÆ INTERLOBULARES, INTERLOBULAR VEINS.



[1] *Mucous Glands of the Biliary Ducts.*—Quain writes ("Anatomy," tenth ed., vol. iii., part iv., p. 135): "In the portal canals . . . the ducts present numerous openings on the inner surface which are scattered irregularly in the larger ducts, but in the subdivisions are arranged in two longitudinal rows, one at each side of the vessel. These openings were formerly supposed to be the orifices of mucous glands; but, while the main ducts are studded with true mucous glands of lobulated form and with minute orifices, the openings now referred to belong to saccular and tubular recesses, which are often branched and anastomosing, and may be beset all over with tubular projections (Theile)."—TR.

FIG. 743.—VASA ABERRANTIA HEPATIS, ABERRANT BILIARY DUCTS, WITH MUCOUS GLANDS (GLANDULÆ MUCOSÆ BILIOSÆ), FROM ONE OF THE PORTAL CANALS, INJECTED WITH PRUSSIAN BLUE.

Hepar—The liver.

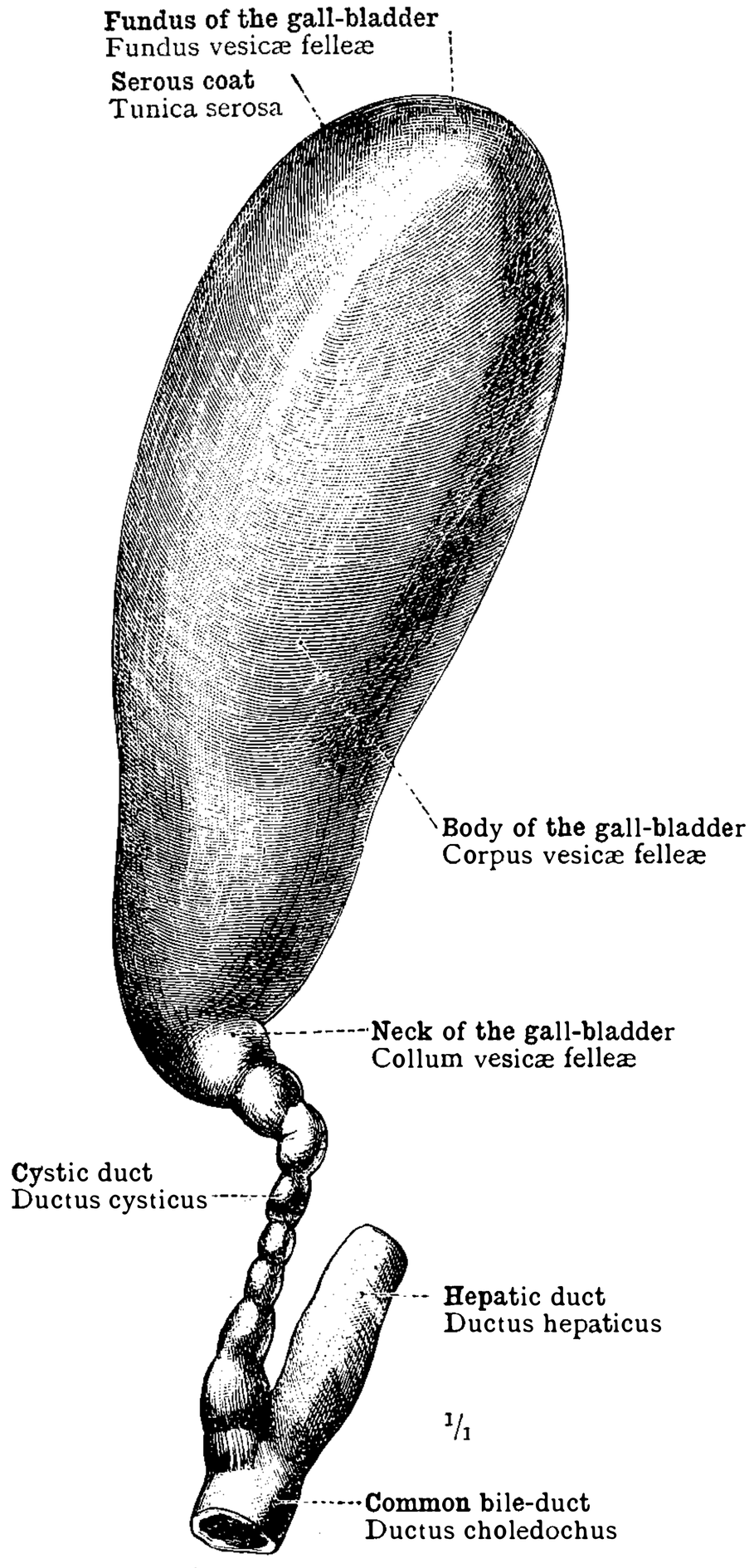


FIG. 744.—VESICA FELLEA, THE GALL-BLADDER, MODERATELY DISTENDED, WITH THE CYSTIC DUCT (DUCTUS CYSTICUS) AND THE JUNCTION OF THE LATTER WITH THE HEPATIC DUCT (DUCTUS HEPATICUS) TO FORM THE COMMON BILE-DUCT (DUCTUS COMMUNIS CHOLEDOCHUS).

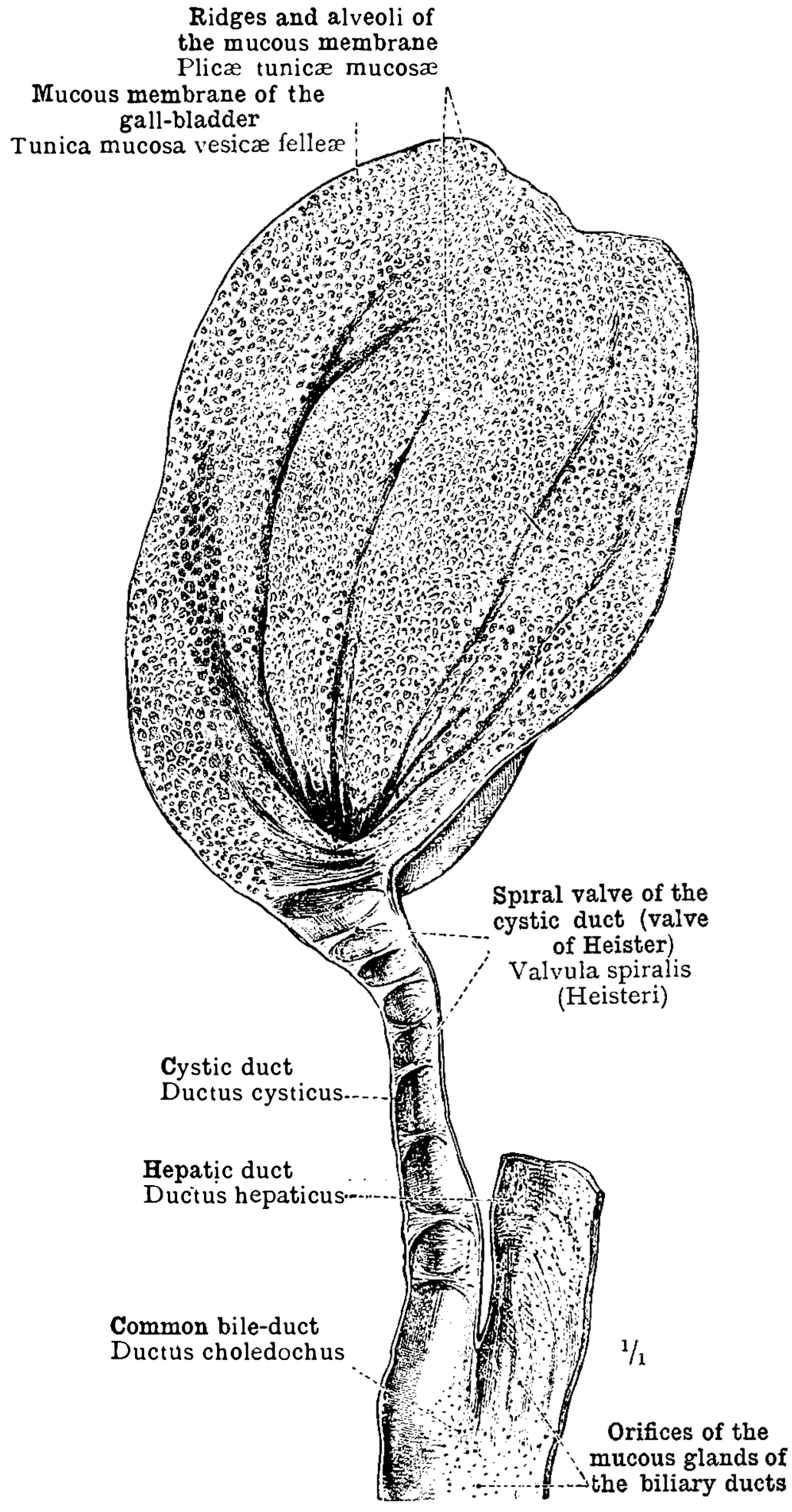


FIG. 745.—THE GALL-BLADDER AND THE CYSTIC DUCT, OPENED LONGITUDINALLY. VALVULA SPIRALIS (HEISTERI), THE SPIRAL VALVE OF THE CYSTIC DUCT, OR HEISTER'S VALVE.

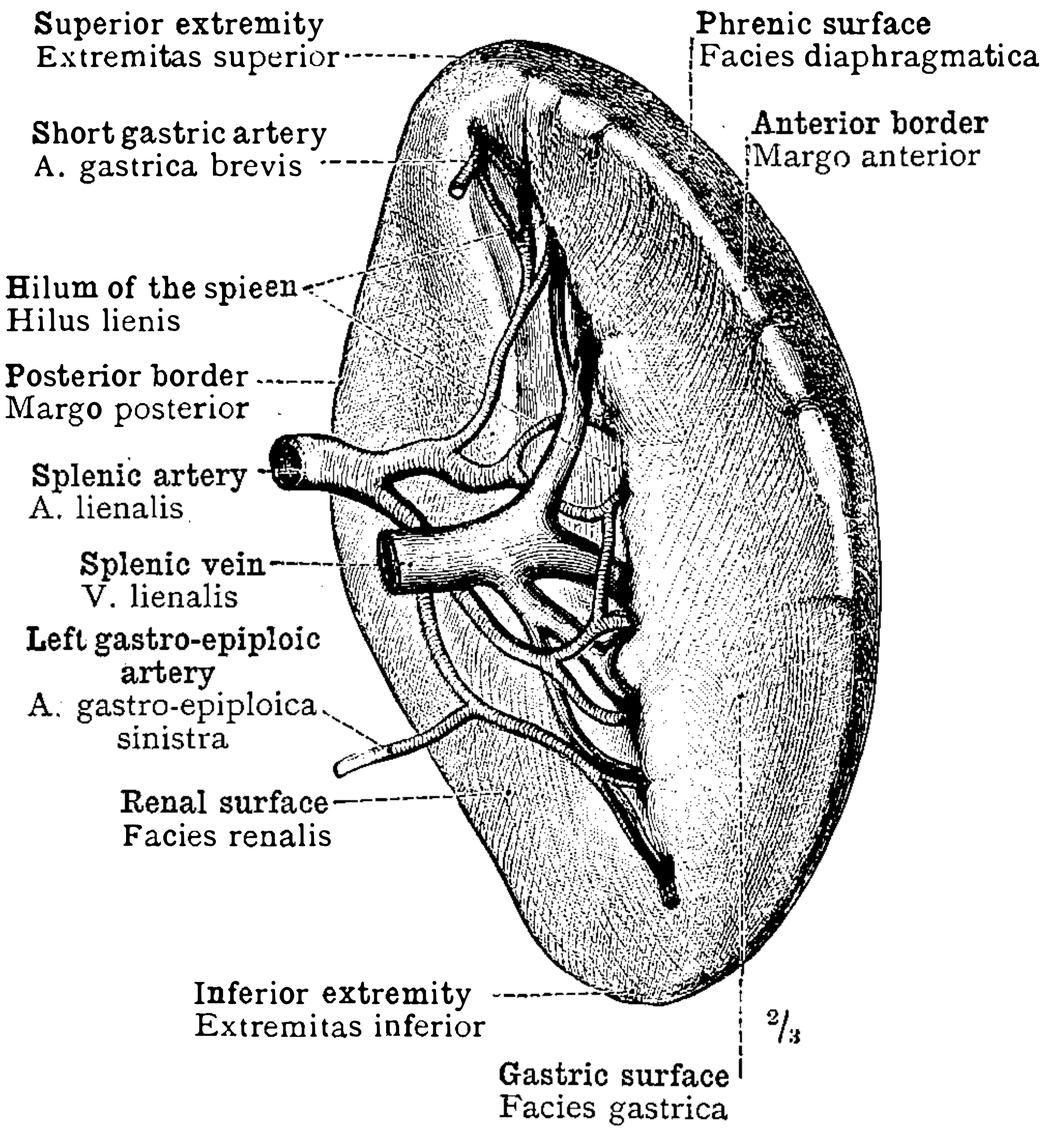


FIG. 746.—LIEN, THE SPLEEN, INNER OR GASTRIC ASPECT, WITH THE BRANCHING TERMINATION OF THE SPLENIC ARTERY AND VEIN LAID BARE.[2]

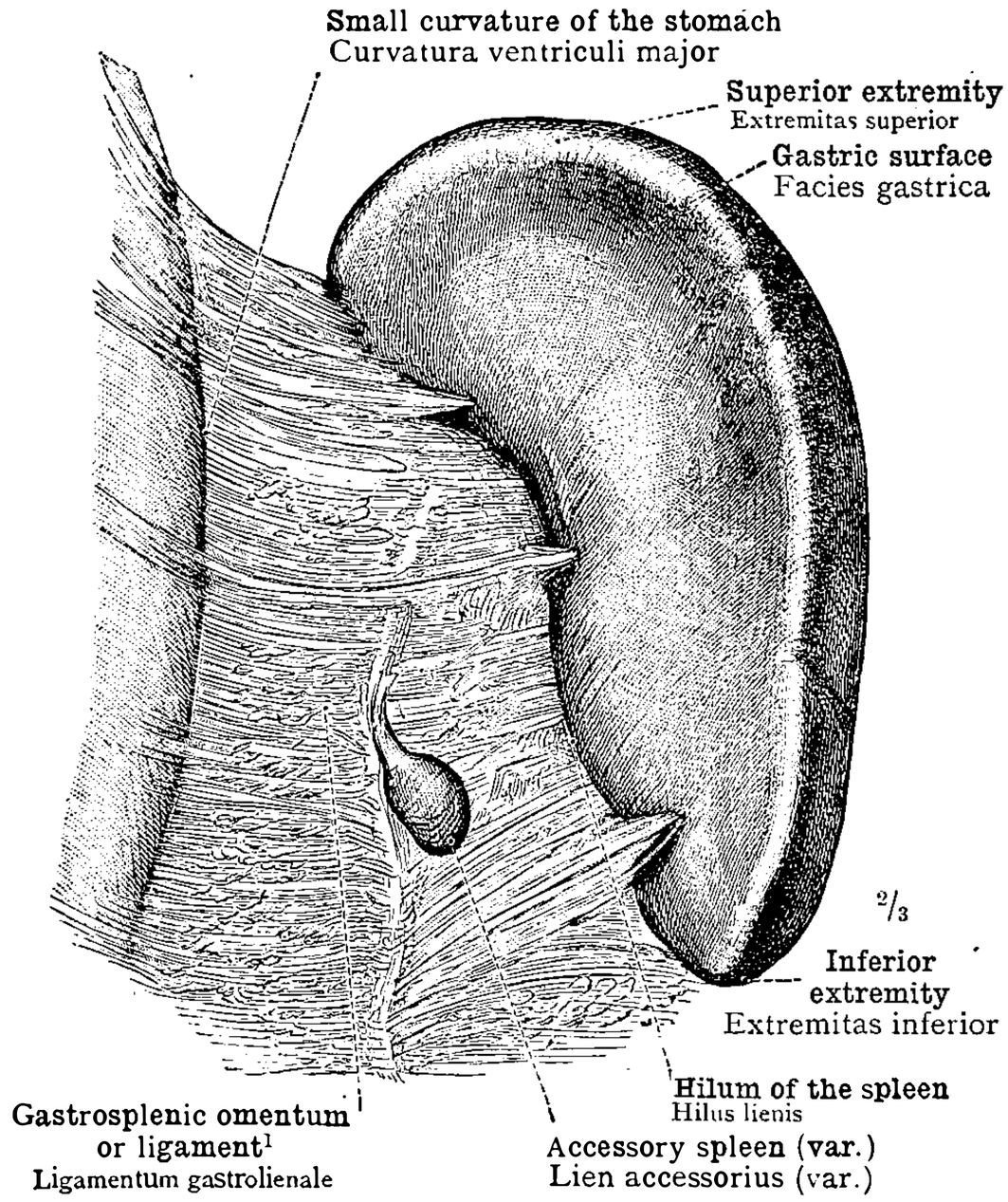


FIG. 747.—THE SPLEEN, WITH THE GASTRO-SPLENIC OMENTUM LEFT ATTACHED, SEEN FROM BEFORE. LIEN ACCESSORIUS, AN ACCESSORY SPLEEN.

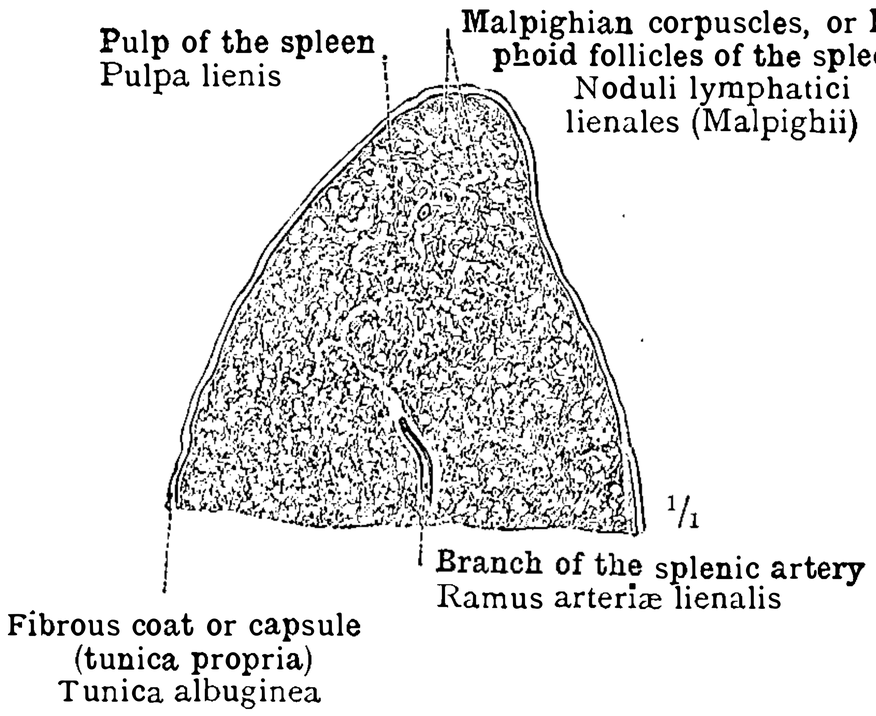


FIG. 748.—A PORTION OF THE CUT SURFACE OF THE SPLEEN OF A YOUNG MALE SUICIDE, IN WHICH THE MALPIGHIAN CORPUSCLES OR LYMPHOID FOLLICLES OF THE SPLEEN (NODULI LYMPHATICI LIENALES MALPIGHII) ARE VERY ABUNDANT.

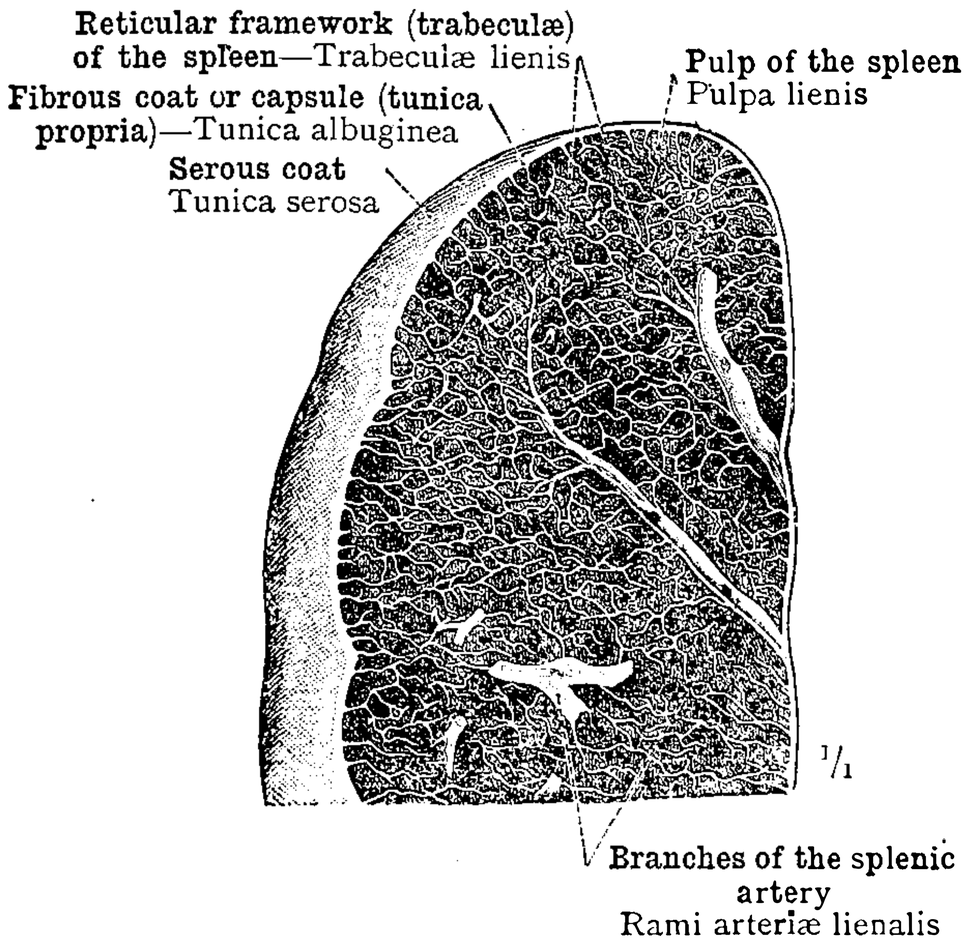
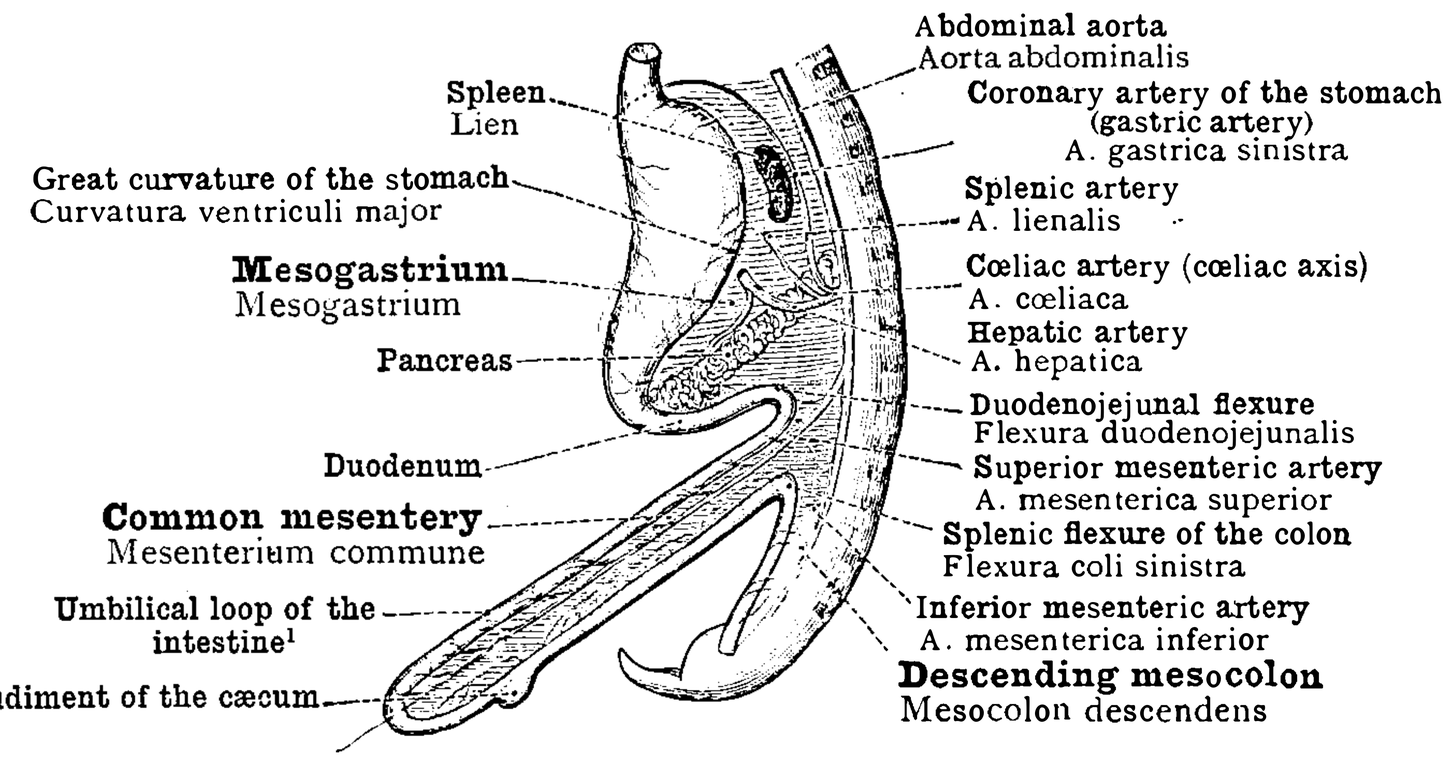


FIG. 749.—A PORTION OF THE CUT SURFACE OF A SPLEEN FROM WHICH THE PULP HAS BEEN PARTIALLY REMOVED BY LONG-CONTINUED AFFUSION WITH WATER, SO THAT THE FIBROUS FRAMEWORK OF THE ORGAN HAS BEEN ISOLATED.

[1] See Appendix, note 18.

[2] See Appendix, note 19.



1 *Umbilical Loop of the Intestine.*—"The small intestine is . . . at first quite short and straight, with a wide aperture to the yolk-sac, but gradually lengthens as the communication with the yolk-sac becomes more contracted, and . . . develops a long V-shaped loop opposite the attachment of the vitalline duct."—Quain, *op. cit.*, vol. i., part i., p. 104.

FIG. 750.—CONDITION OF THE HUMAN ALIMENTARY CANAL AND MESENTERY IN THE SIXTH WEEK OF INTRA-UTERINE LIFE. DIAGRAMMATIC.

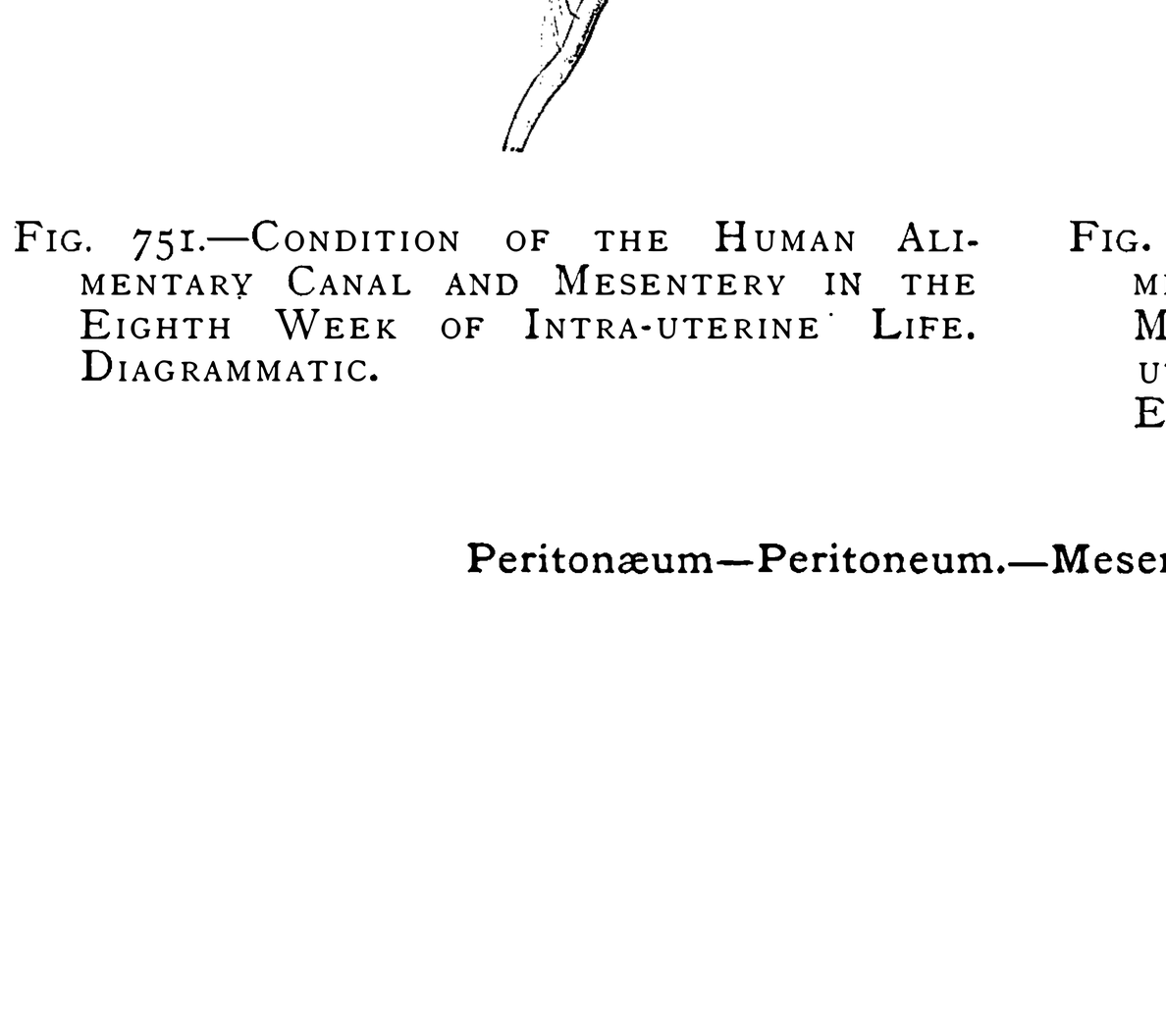
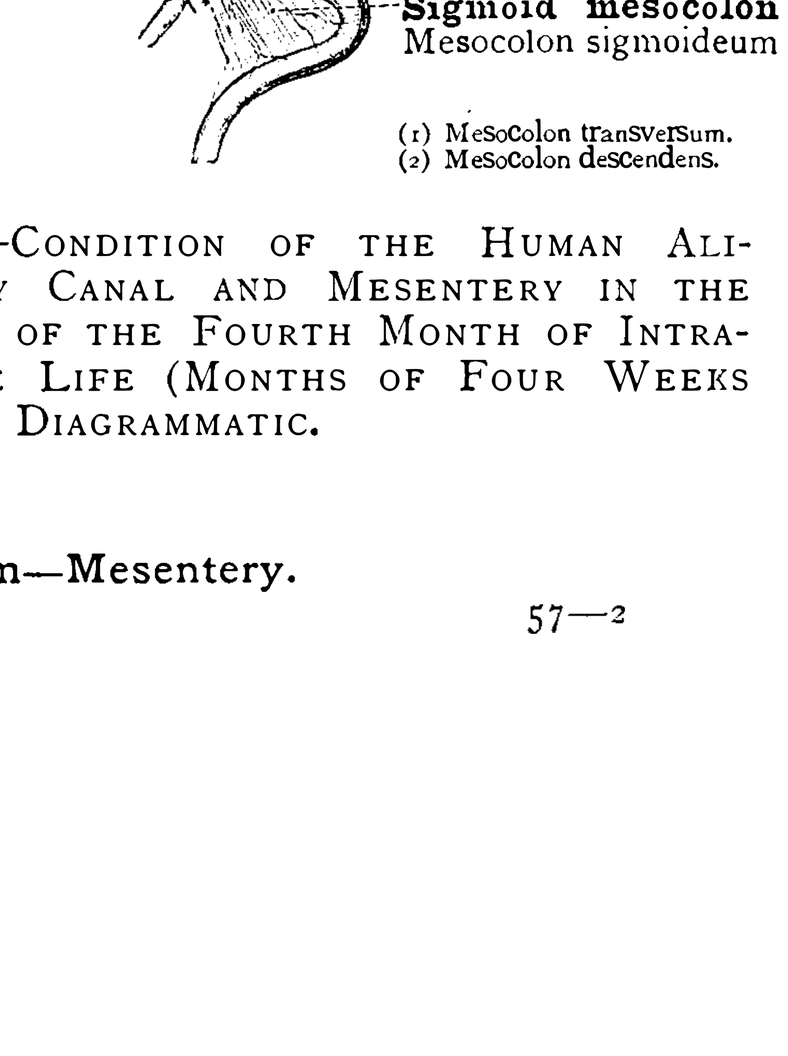


FIG. 751.—CONDITION OF THE HUMAN ALIMENTARY CANAL AND MESENTERY IN THE EIGHTH WEEK OF INTRA-UTERINE LIFE. DIAGRAMMATIC.



(1) Mesocolon transversum.
(2) Mesocolon descendens.

FIG. 752.—CONDITION OF THE HUMAN ALIMENTARY CANAL AND MESENTERY IN THE MIDDLE OF THE FOURTH MONTH OF INTRA-UTERINE LIFE (MONTHS OF FOUR WEEKS EACH). DIAGRAMMATIC.

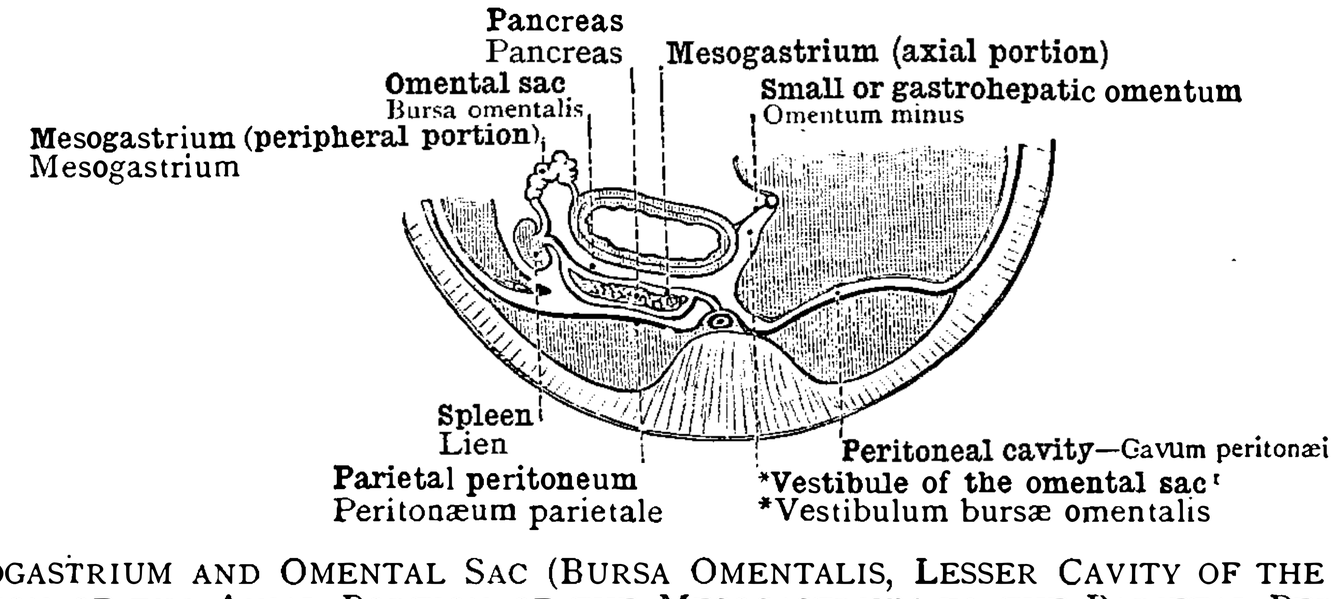


FIG. 753.—MESOGASTRIUM AND OMENTAL SAC (BURSA OMENTALIS, LESSER CAVITY OF THE PERITONEUM) *BEFORE* THE ADHESION OF THE AXIAL PORTION OF THE MESOGASTRIUM TO THE PARIETAL PERITONEUM. BEGINNING OF THE THIRD MONTH OF INTRA-UTERINE LIFE (MONTHS OF FOUR WEEKS EACH). TRANSVERSE SECTION. DIAGRAMMATIC.

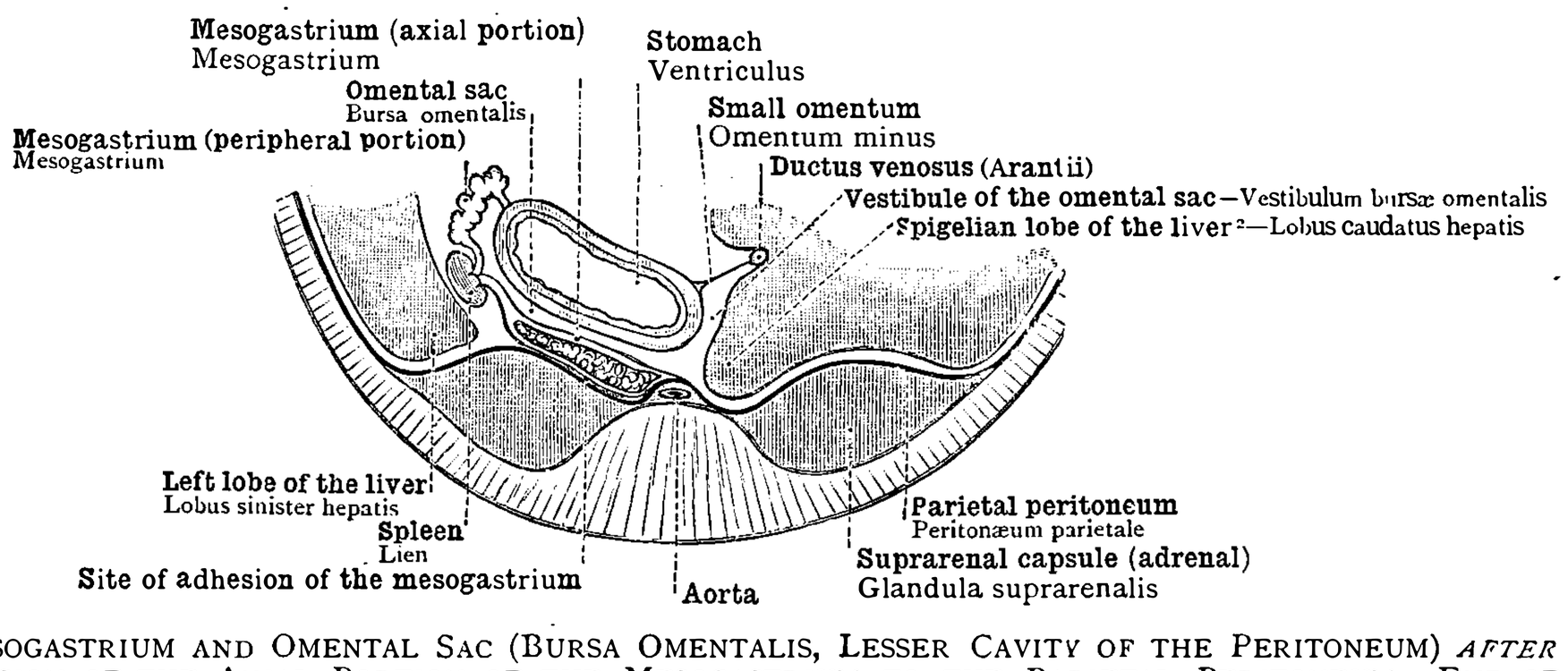


FIG. 754.—MESOGASTRIUM AND OMENTAL SAC (BURSA OMENTALIS, LESSER CAVITY OF THE PERITONEUM) *AFTER* THE ADHESION OF THE AXIAL PORTION OF THE MESOGASTRIUM TO THE PARIETAL PERITONEUM. END OF THE FOURTH MONTH OF INTRA-UTERINE LIFE (MONTHS OF FOUR WEEKS EACH). TRANSVERSE SECTION. DIAGRAMMATIC.

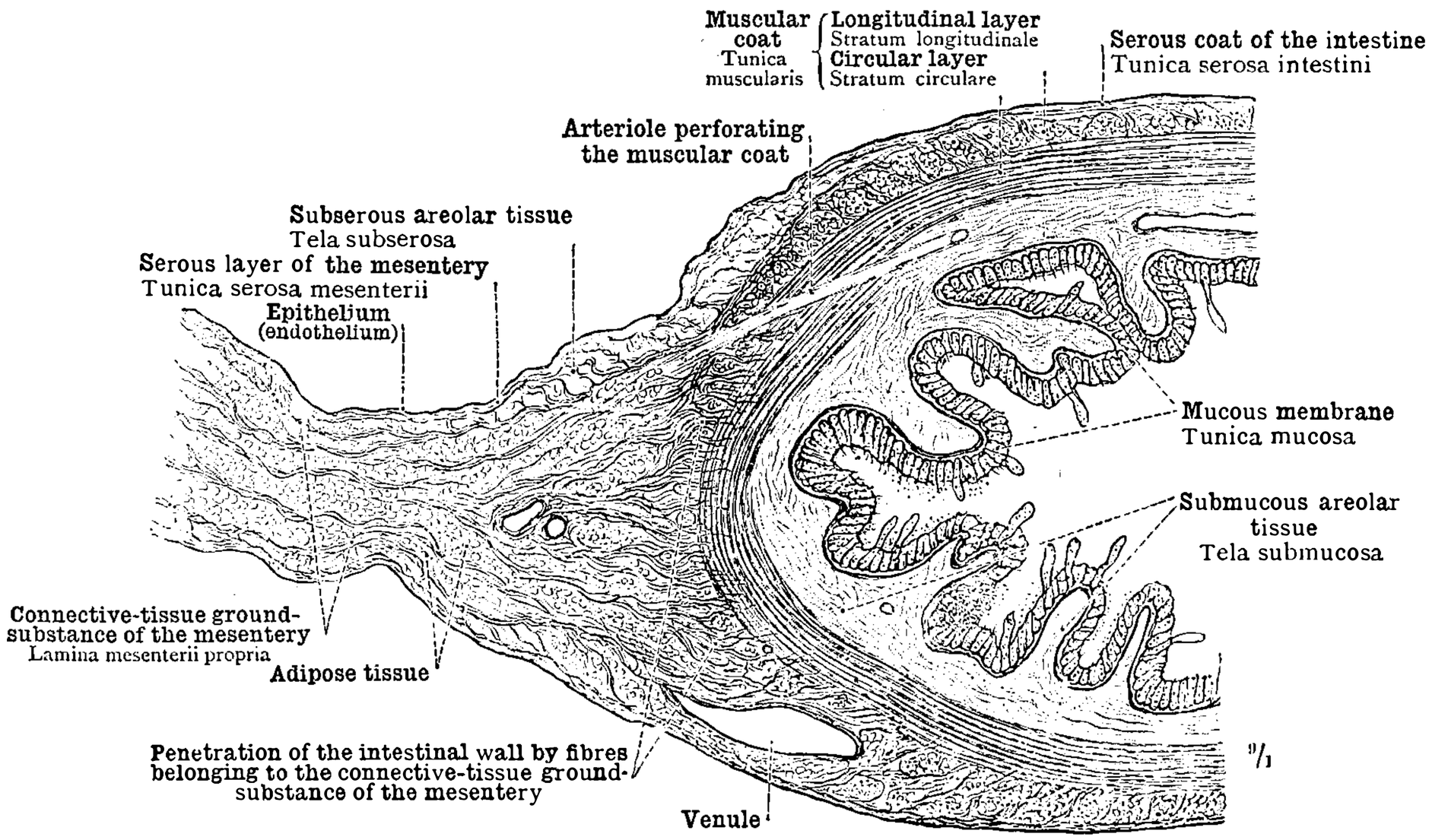
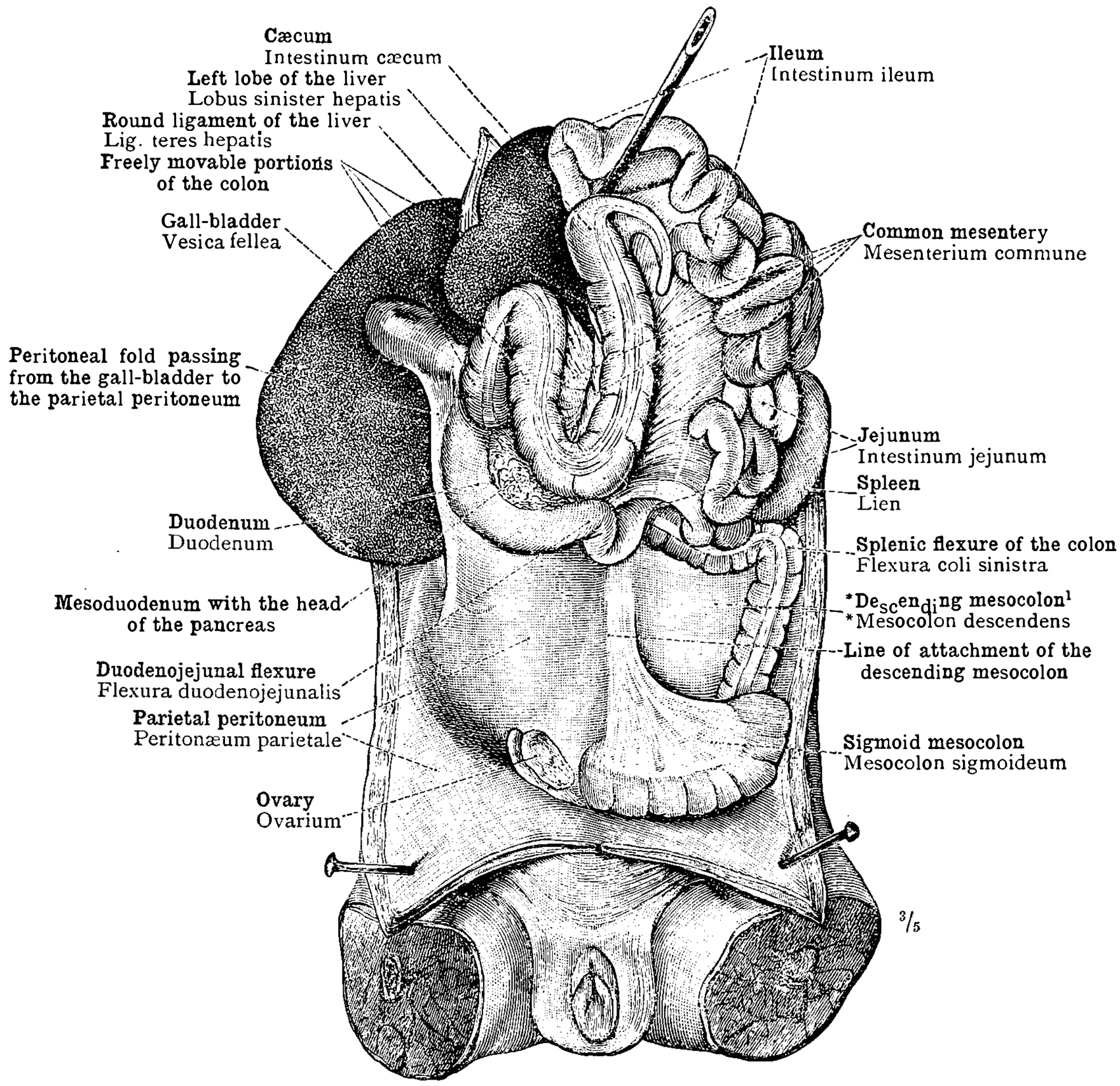


FIG. 755.—THE MESENTERY OF THE SMALL INTESTINE AND ITS ATTACHMENT TO THE INTESTINE. TRANSVERSE SECTION.

[1] See note [2] to p. 479.

[2] See Appendix, note [16].



1 **Descending Mesocolon.*—I follow the author in the use of this term for the peritoneum internal to the descending colon. In England, however, the use of the term *mesentery* is usually restricted to the peritoneal folds suspending *freely movable* portions of the alimentary canal, and is no longer applied in cases in which, as here in the case of the descending mesocolon, the originally free mesentery has become adherent to the parietal peritoneum. The existence of a distinct *descending mesocolon* (in the English sense of the term) is rare.—TR.

FIG. 756.—MESENTERIUM COMMUNE, COMMON MESENTERY, OF AN INFANT AGED THREE WEEKS (VARIETY).

The adhesion of the duodenum to the parietal peritoneum of the posterior wall of the abdominal cavity has taken place after the normal manner; but the adhesion of the colon and of the ascending mesocolon to the anterior surface of the duodenum and to the posterior wall of the abdominal cavity has failed to take place, so that the ascending colon is freely movable, and has been turned upwards with the cæcum and the coils of the jejunum and ileum; the delimitation of the ascending colon from the transverse colon is lacking. The ascending mesocolon combines with the transverse mesocolon and the mesentery of the small intestine to form a freely movable common mesentery, which corresponds to the mesentery of the primitive umbilical loop of the intestine (*see Fig.* 750 *on page* 451, *and note* 1 *to that page*). In the right half of the lower part of the abdominal cavity the primary parietal peritoneum remains exposed; whereas in the left half the parietal peritoneum is, as is normally the case, represented by the anterior layer of the adherent descending mesocolon (*see note* 1 *above*).

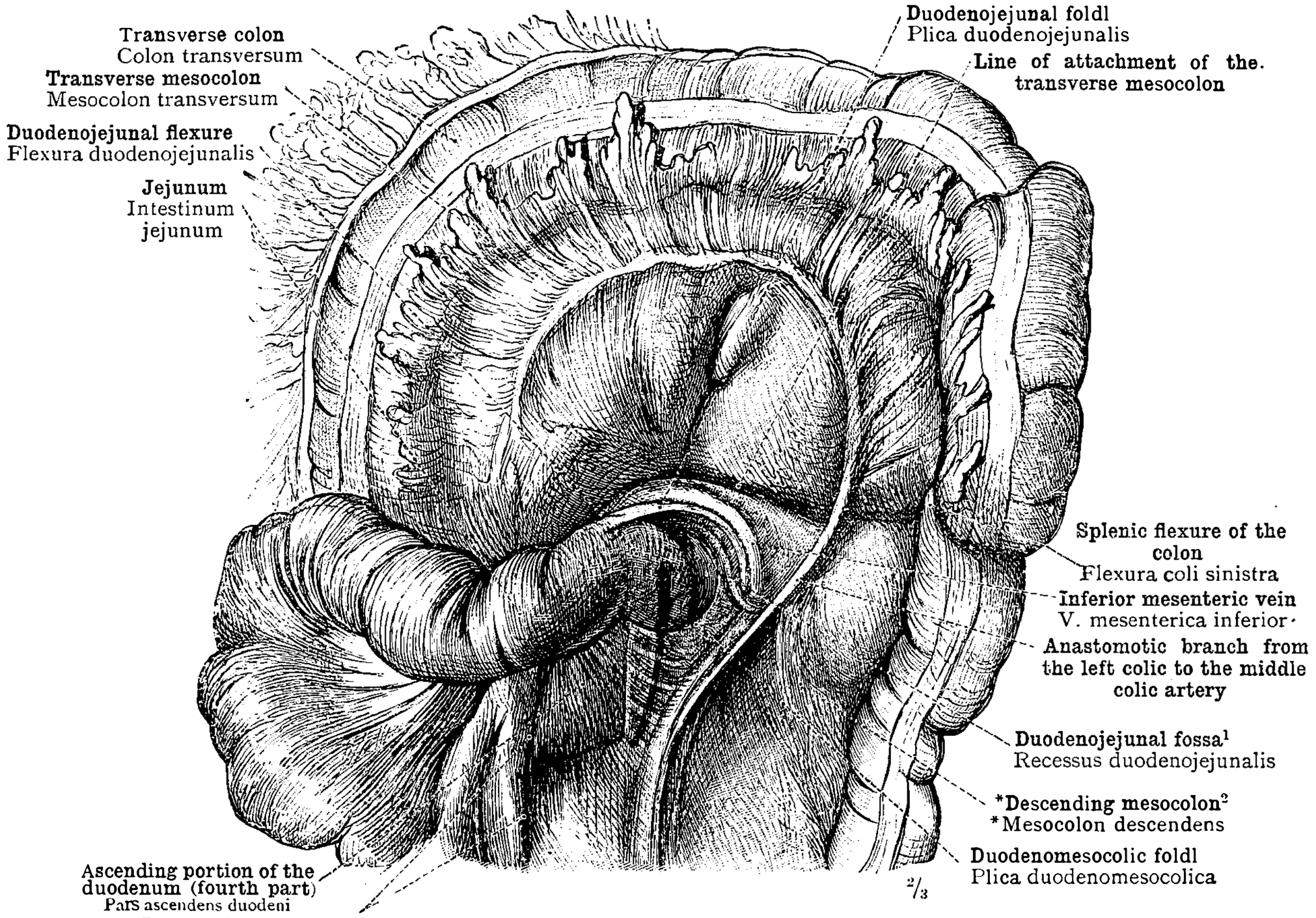


FIG. 757.—RECESSUS DUODENOJEJUNALIS, DUODENOJEJUNAL FOSSA.[3]

The transverse colon has been turned upwards; the jejunum and ileum have been pushed as far to the right as possible, to expose the duodenojejunal flexure, the lower (posterior) surface of the transverse mesocolon, and the *descending mesocolon. A sound has been passed into the lower part of the duodenojejunal fossa (*i.e.*, the inferior duodenal fossa—*see Appendix, note* [20]), which extends beside the ascending portion of the duodenum for its whole length, and is bounded in front by the duodenomesocolic fold (inferior duodenal fold).

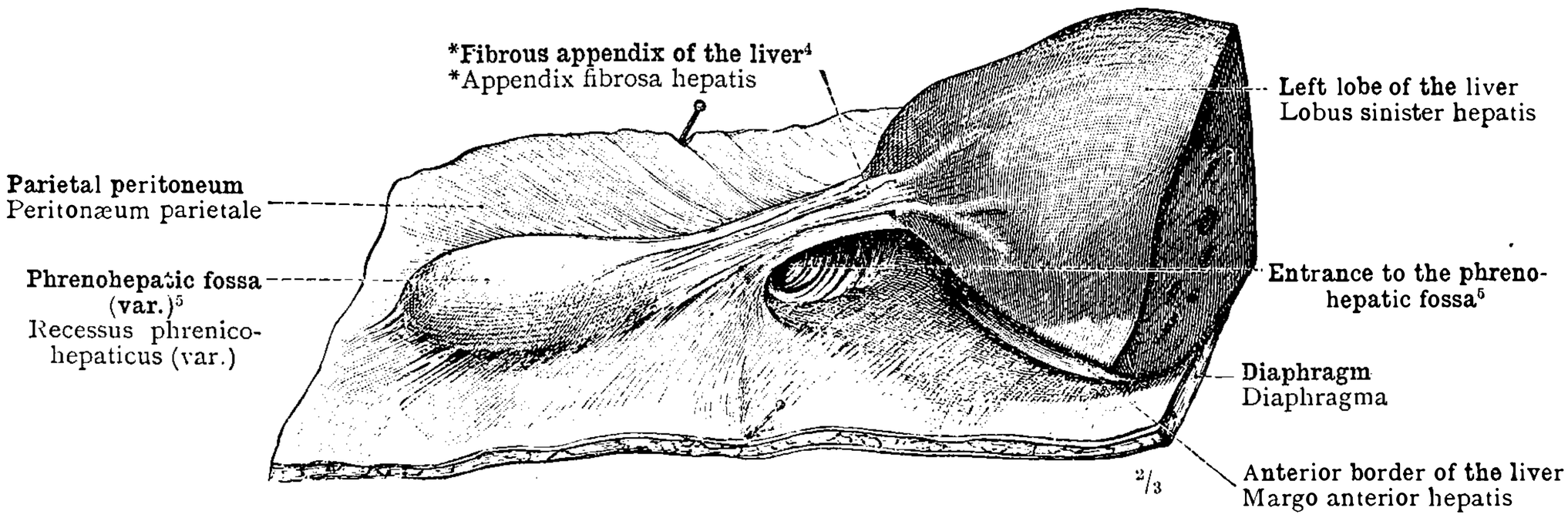
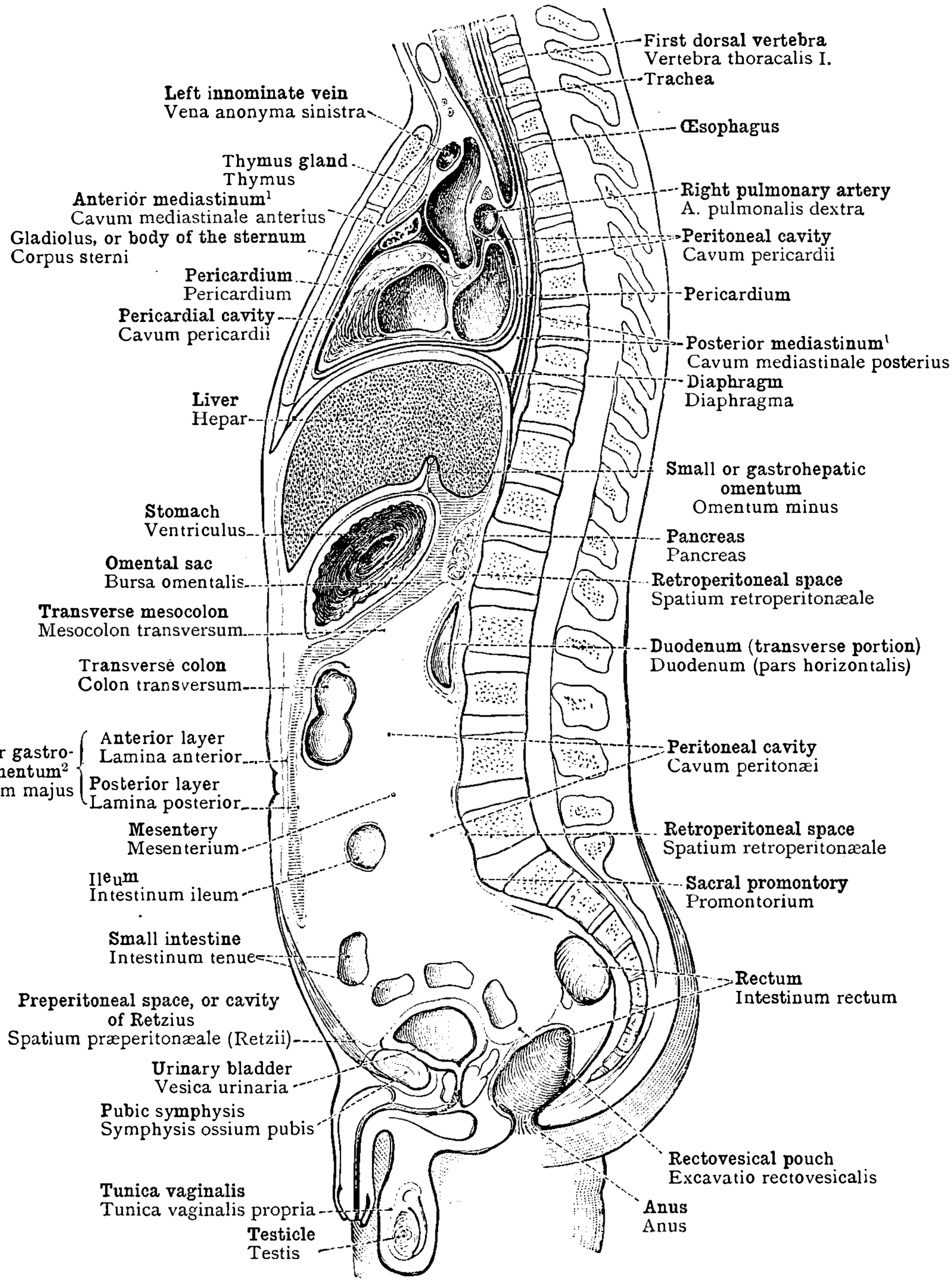


FIG. 758.—RECESSUS PHRENICOHEPATICUS, PHRENOHEPATIC FOSSA.[5] A PORTION OF THE LEFT LOBE OF THE LIVER, WITH THE FIBROUS APPENDIX OF THE LIVER, AND A PORTION OF THE DIAPHRAGM.

[1] See Appendix, note [20]. [2] See note [1] to p. 453. [3] See Appendix, note [21]. [4] See Appendix, note [14]. [5] See Appendix, note [22].



[1] See Appendix, note [24].
[2] *Epiploon*, the Greek word for omentum, is occasionally used to denote the great omentum.—Tr.
[3] The visceral layer of peritoneum covering the liver is not indicated in the diagram by a coloured line.—Tr.

FIG. 761.—DIAGRAMMATIC REPRESENTATION OF THE NORMAL COURSE AND ARRANGEMENT OF THE PERITONEUM, THE MESENTERY, AND THE OMENTAL SAC.

The blue lines indicate the primary parietal peritoneum ; the red lines, the mesogastrium ; and the yellow lines, the visceral peritoneum, including the peritoneal layers of the mesentery. The continuous lines indicate the free surfaces of the peritoneum ; the dotted lines, those parts of the peritoneum in which, owing to secondary adhesion, the free surfaces have disappeared (*see note* [3] *above*).

Peritonæum—Peritoneum.—Mesenterium—Mesentery.

APPARATUS RESPIRATORIUS

RESPIRATORY ORGANS

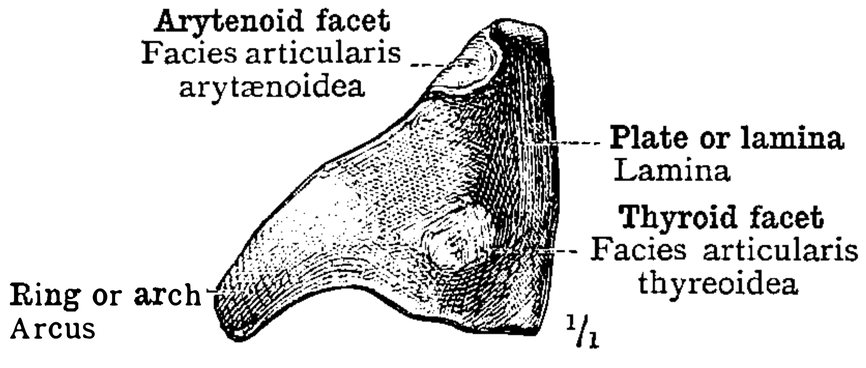


FIG. 762.—SEEN FROM THE LEFT SIDE.

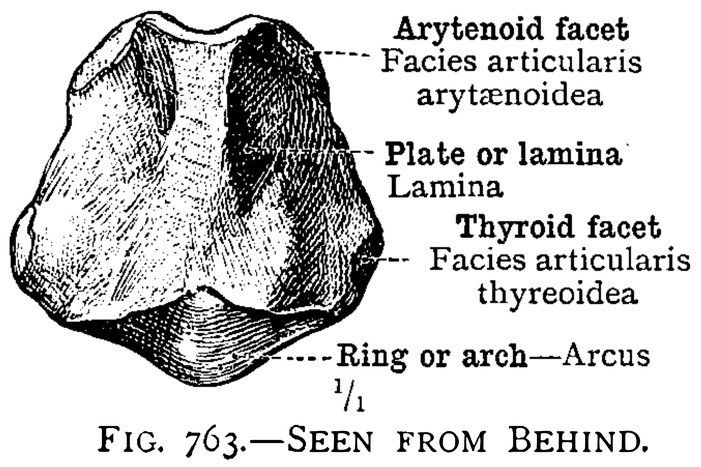


FIG. 763.—SEEN FROM BEHIND.

CARTILAGO CRICOIDEA, THE CRICOID CARTILAGE.

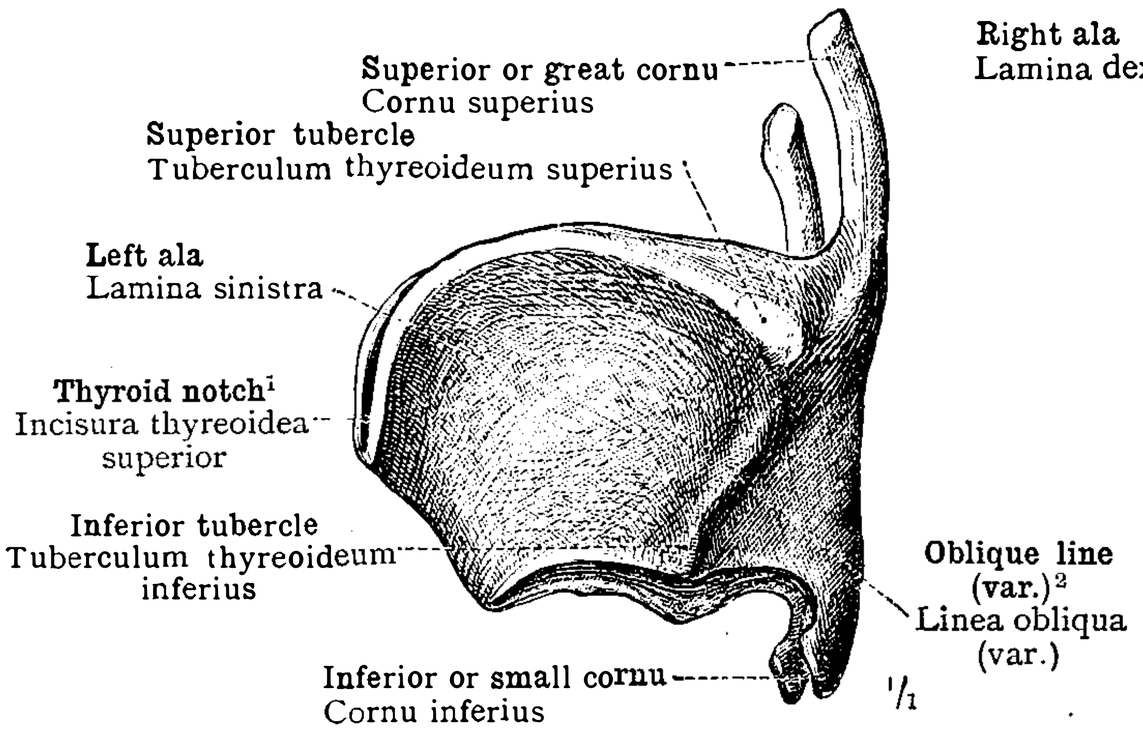


FIG. 764.—SEEN FROM THE LEFT SIDE.

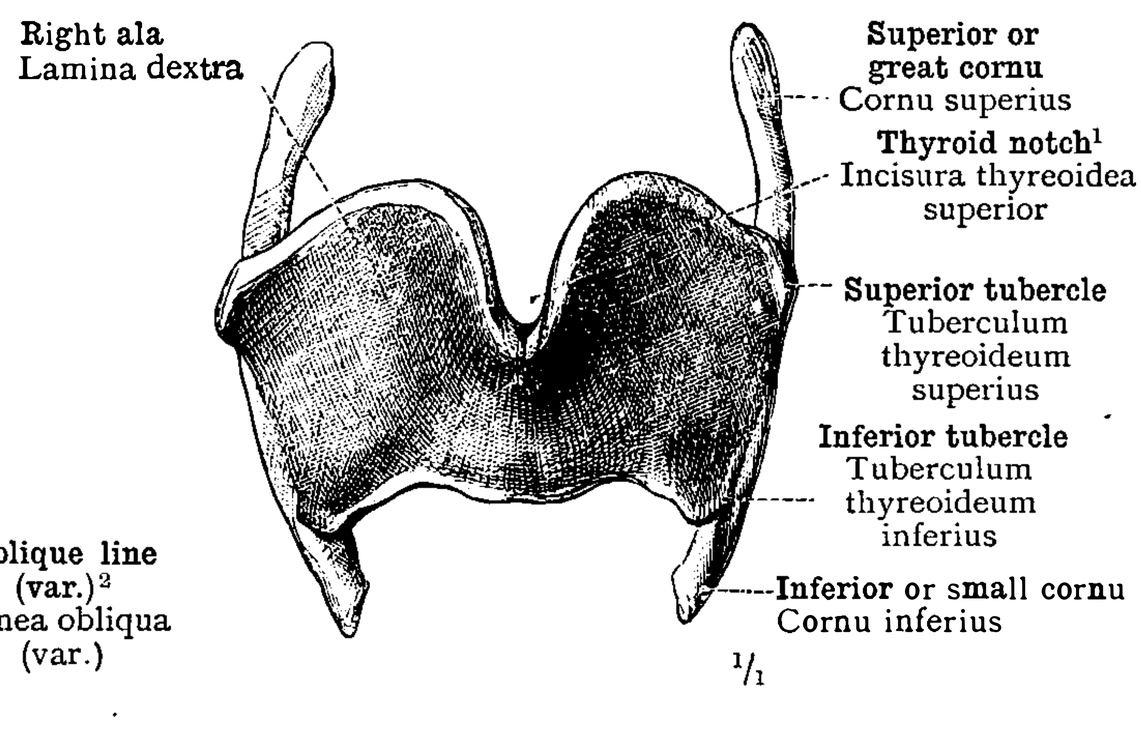


FIG. 765.—SEEN FROM BEFORE.

CARTILAGO THYREOIDEA, THE THYROID CARTILAGE.

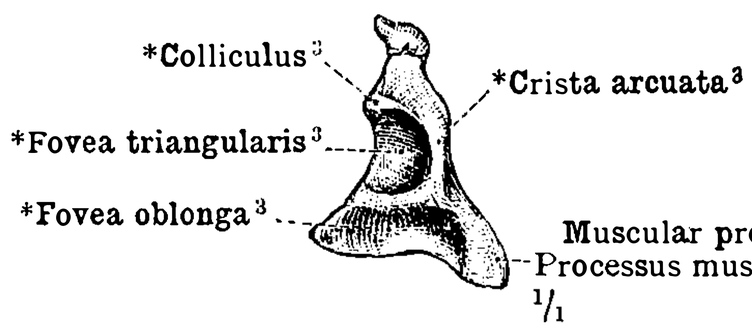


FIG. 766.—SEEN FROM THE OUTER SIDE.

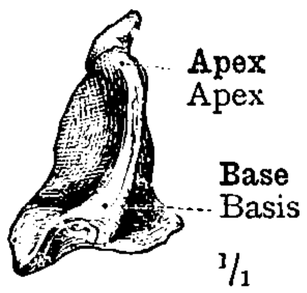


FIG. 767.—SEEN FROM BEHIND.

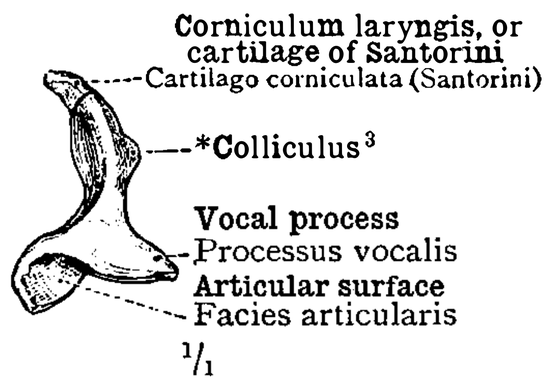


FIG. 768.—SEEN FROM THE INNER SIDE.

CARTILAGO ARYTÆNOIDEA SINISTRA, THE LEFT ARYTENOID CARTILAGE,[3] WITH THE CORNICULUM LARYNGIS, OR CARTILAGE OF SANTORINI.

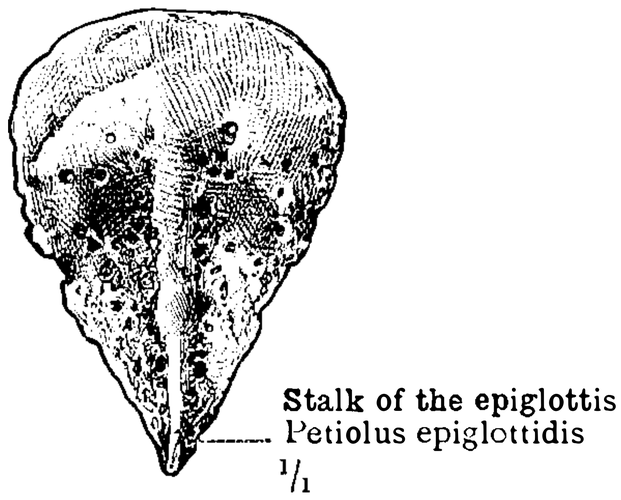


FIG. 769.—CARTILAGO EPIGLOTTICA, CARTILAGE OF THE EPIGLOTTIS. SEEN FROM BEHIND.

[1] Or *great median notch* of the thyroid cartilage.
[2] See Appendix, note [25].
[3] See Appendix, note [26].

The Larynx.

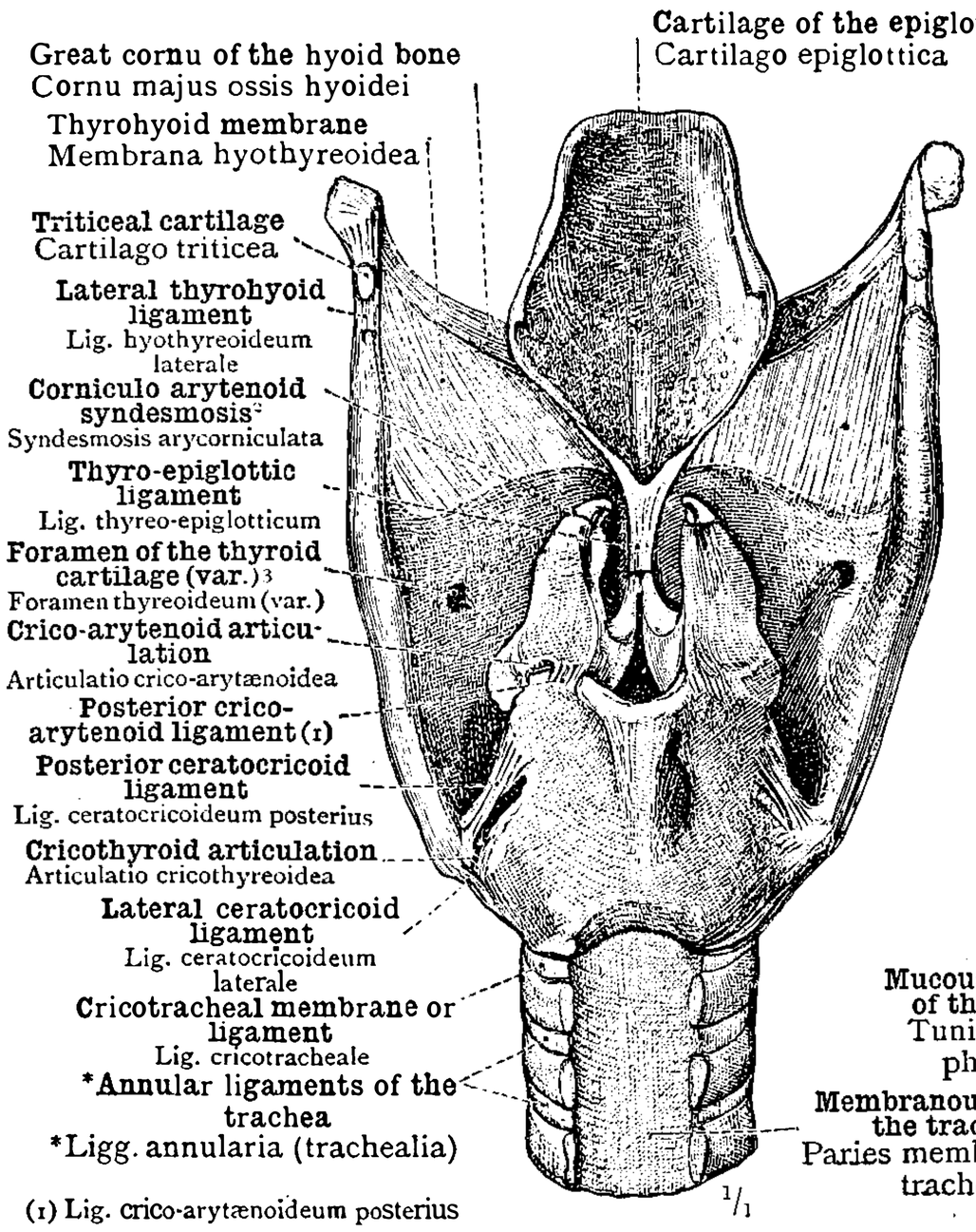


FIG. 770.—LIGAMENTS OF THE LARYNX, AND THE THYROHYOID MEMBRANE, SEEN FROM BEHIND.

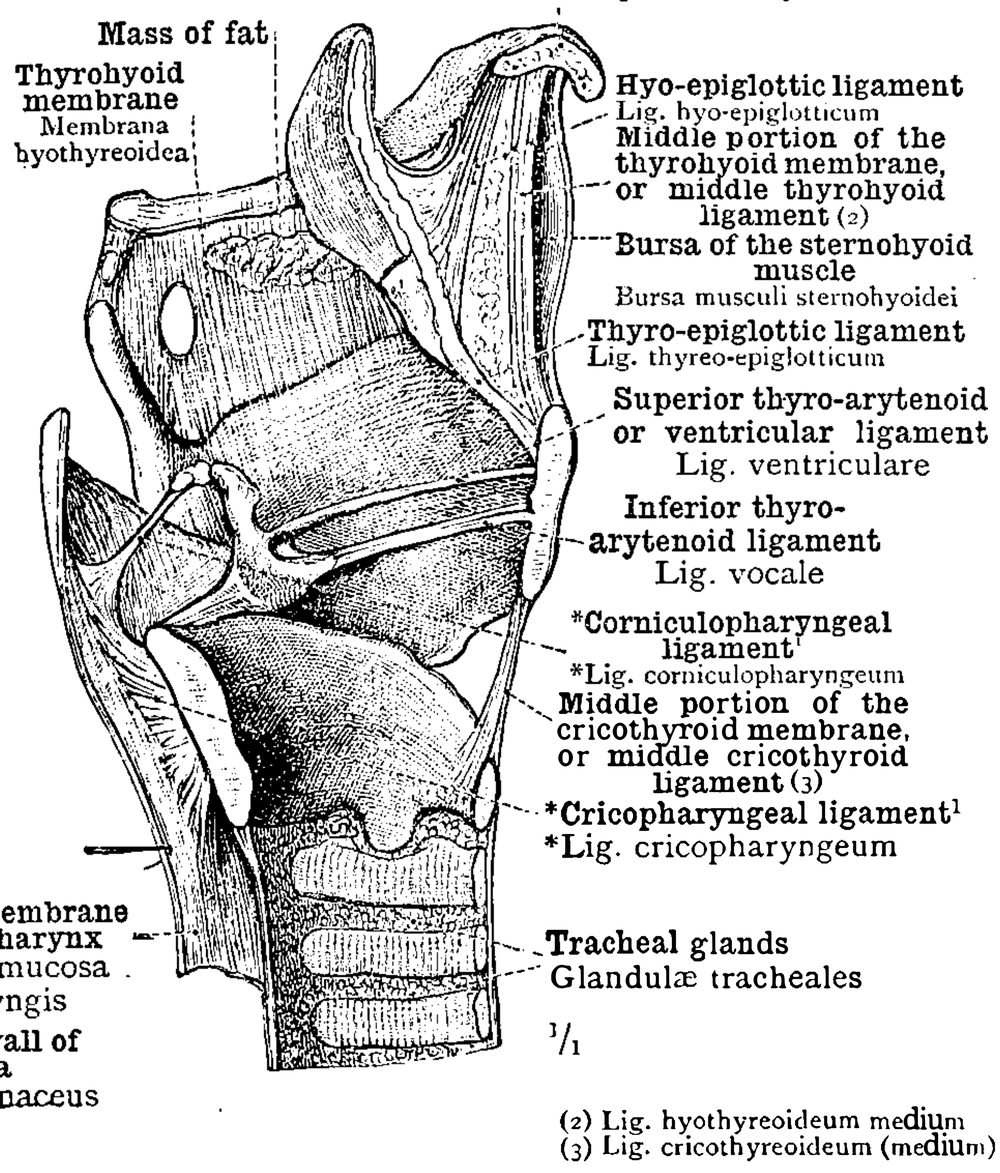


FIG. 771.—LIGAMENTS OF THE LARYNX, AND THE THYROHYOID MEMBRANE, SHOWN IN THE LEFT HALF OF A SAGITTALLY-HEMISECTED LARYNX. SEEN FROM WITHIN.

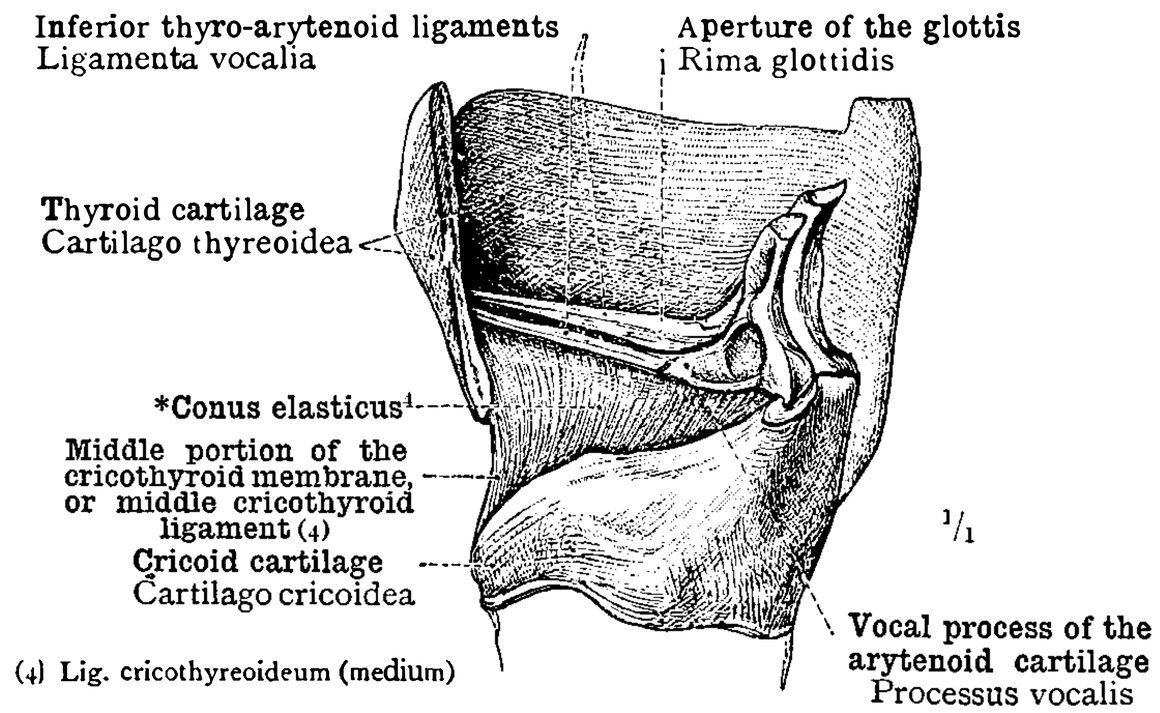


FIG. 772.—*CONUS ELASTICUS,[4] WITH THE INFERIOR THYRO-ARYTENOID LIGAMENTS, WHICH LATTER FORM THE ELASTIC ELEMENTS OF THE TRUE VOCAL CORDS (PLICÆ VOCALES). SEEN FROM THE LEFT SIDE.

The parts have been laid bare by the removal of the greater part of the left ala of the thyroid cartilage.

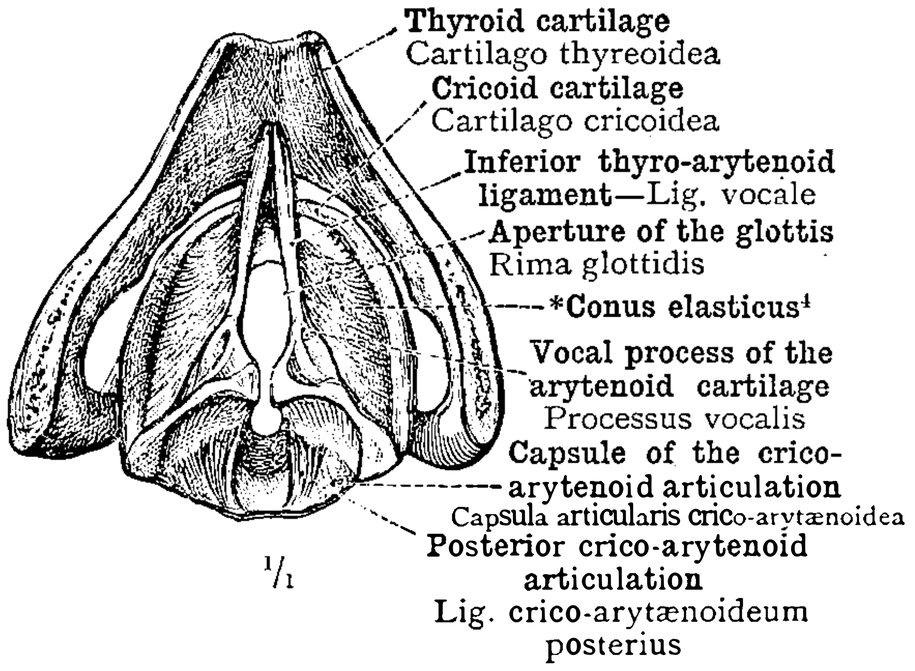


FIG. 773.—*CONUS ELASTICUS,[4] WITH THE INFERIOR THYRO-ARYTENOID LIGAMENTS, DISPLAYED FROM ABOVE BY THE REMOVAL OF THE UPPER PORTIONS OF THE ALÆ OF THE THYROID CARTILAGE AND THE SOFT PARTS INTERNAL TO THE ALÆ.

[1] See Appendix, note 27. [2] See Appendix, note 28. [3] See Appendix, note 29. [4] See Appendix, note 30.

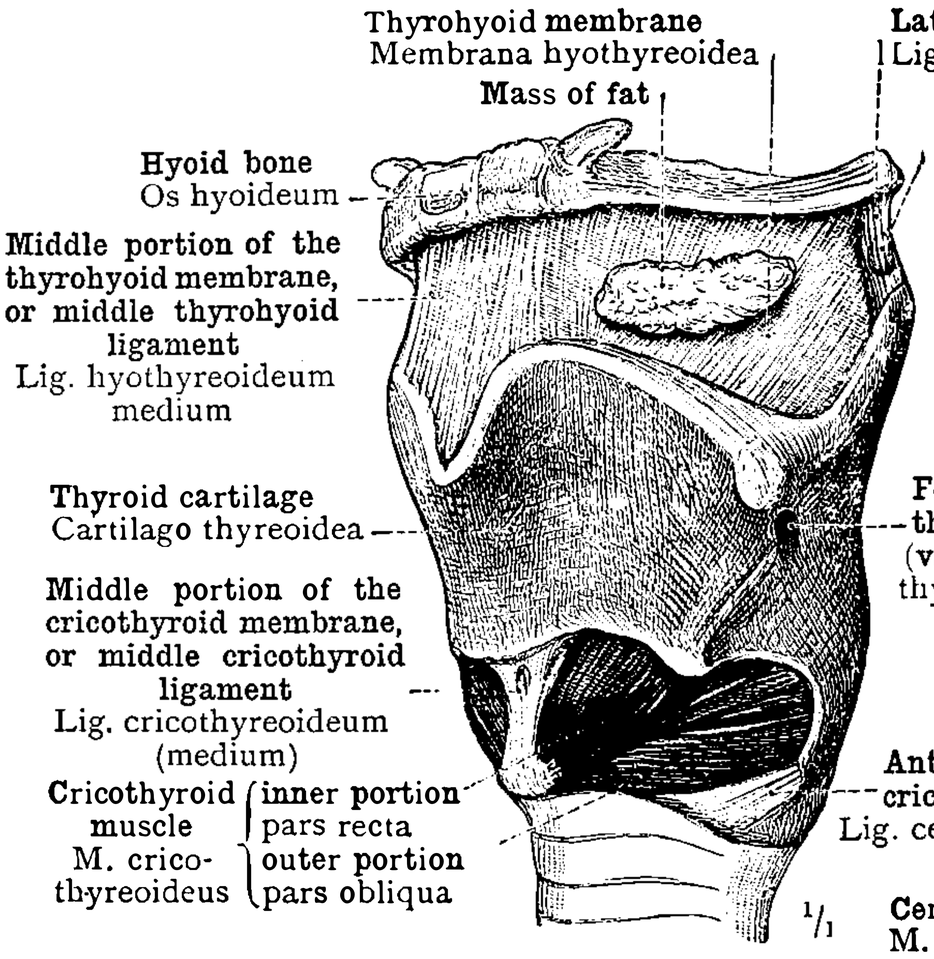


FIG. 774.—THE LARYNX WITH THE THYROHYOID MEMBRANE AND THE CRICOTHYROID MUSCLE, SEEN OBLIQUELY FROM THE LEFT SIDE AND BEFORE.

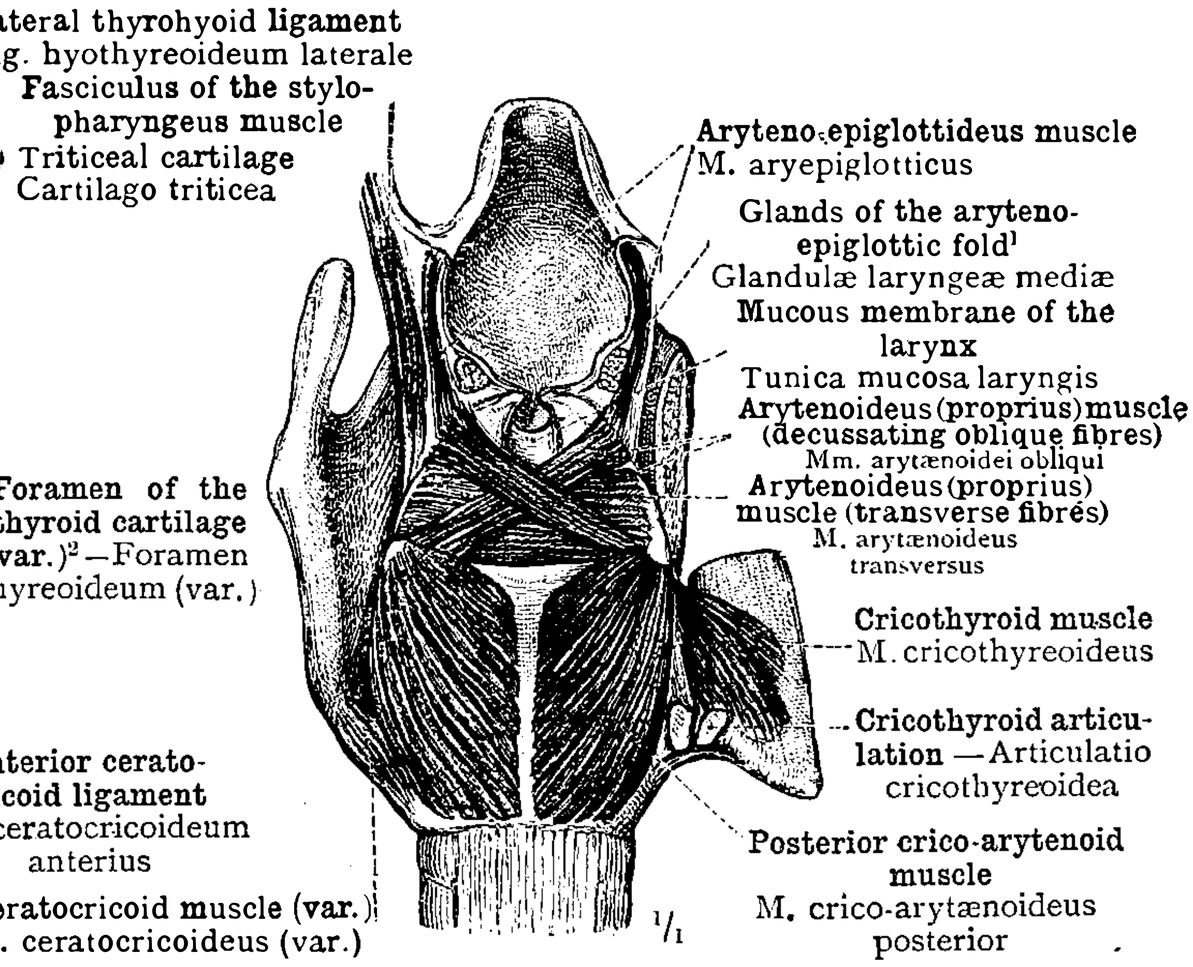


FIG. 775.—THE MUSCLES OF THE LARYNX SEEN FROM BEHIND.

The right ala of the thyroid cartilage has been in part removed.

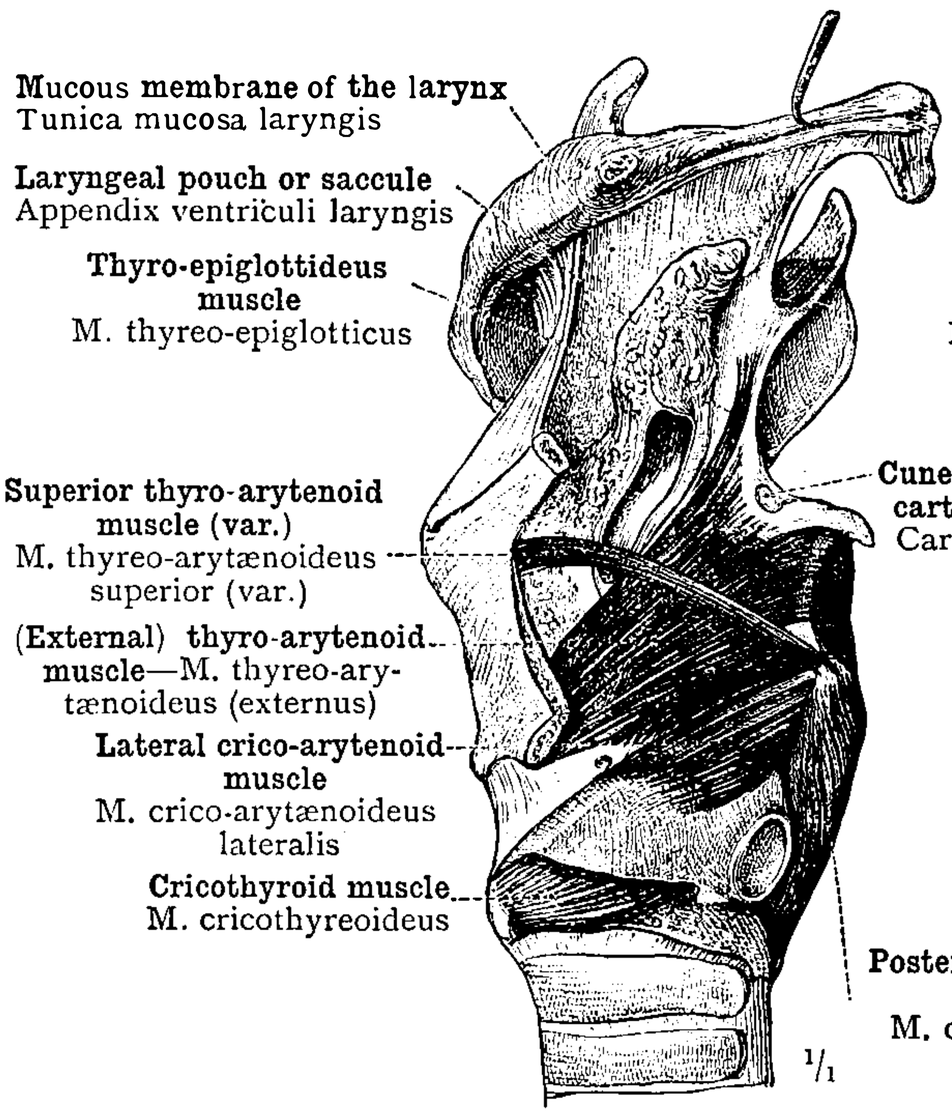


FIG. 776.—THE MUSCLES OF THE LARYNX AS SEEN FROM THE LEFT SIDE AFTER THE REMOVAL OF THE GREATER PART OF THE LEFT ALA OF THE THYROID CARTILAGE.

The laryngeal pouch or saccule (the recess leading upward from the anterior part of the ventricle) is unusually large.

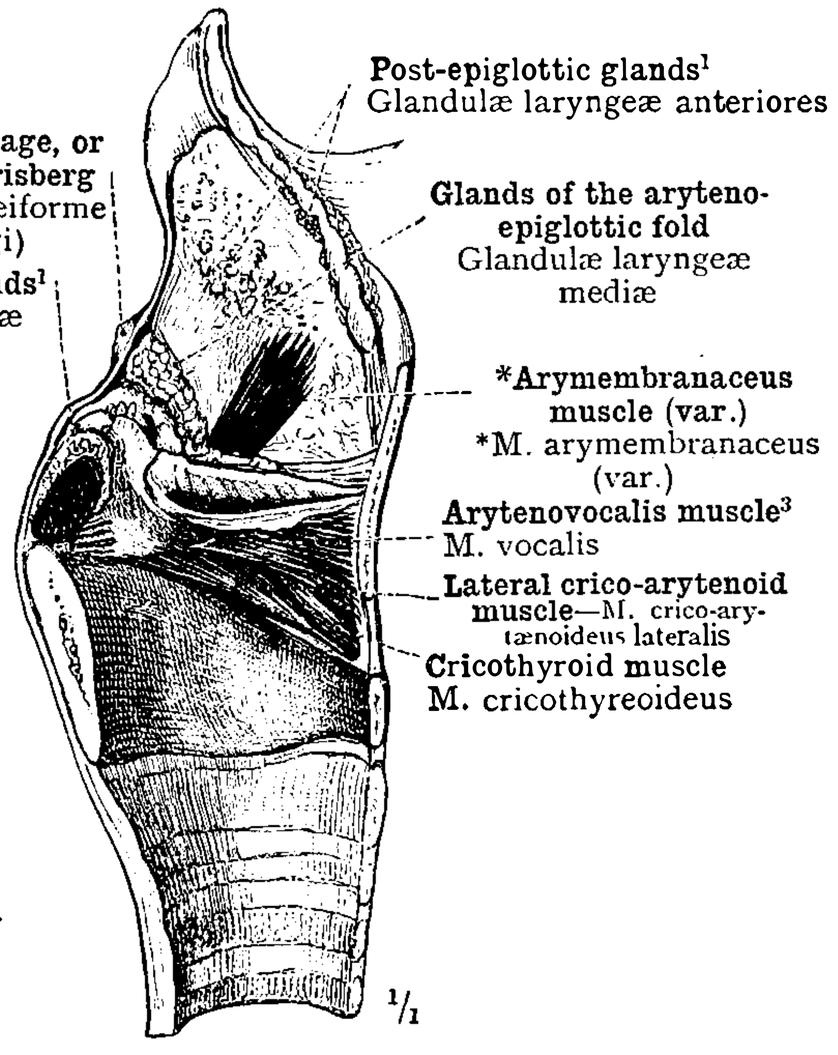


FIG. 777.—THE MUSCLES AND MUCOUS GLANDS OF THE LARYNX, AS SEEN FROM WITHIN IN THE LEFT HALF OF A SAGITTALLY-HEMISECTED LARYNX.

Part of the mucous membrane covering the true and false vocal cords has been left *in situ*.

[1] See Appendix, note [31].
[2] See Appendix, note [29].
[3] *Arytenovocalis Muscle.*—This is called by Ludwig *portio arytvocalis musculi thyreo-arytenoidei.*—TR.

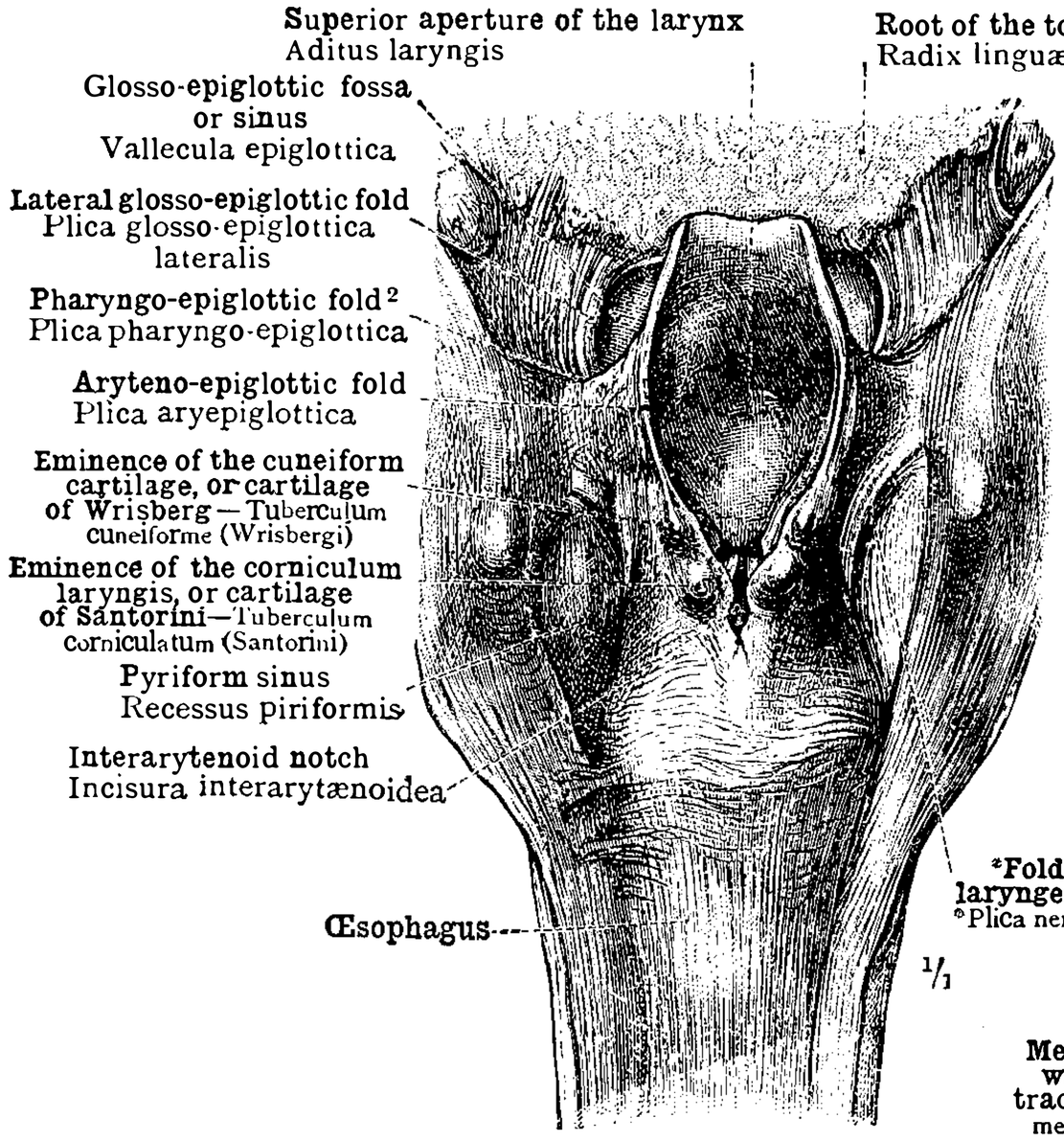


FIG. 778.—ANTERIOR WALL OF THE LARYNGEAL PART OF THE PHARYNX WITH THE SUPERIOR APERTURE OF THE LARYNX.

The posterior wall of the pharynx has been divided along the median line, and the lateral walls have been turned outwards.

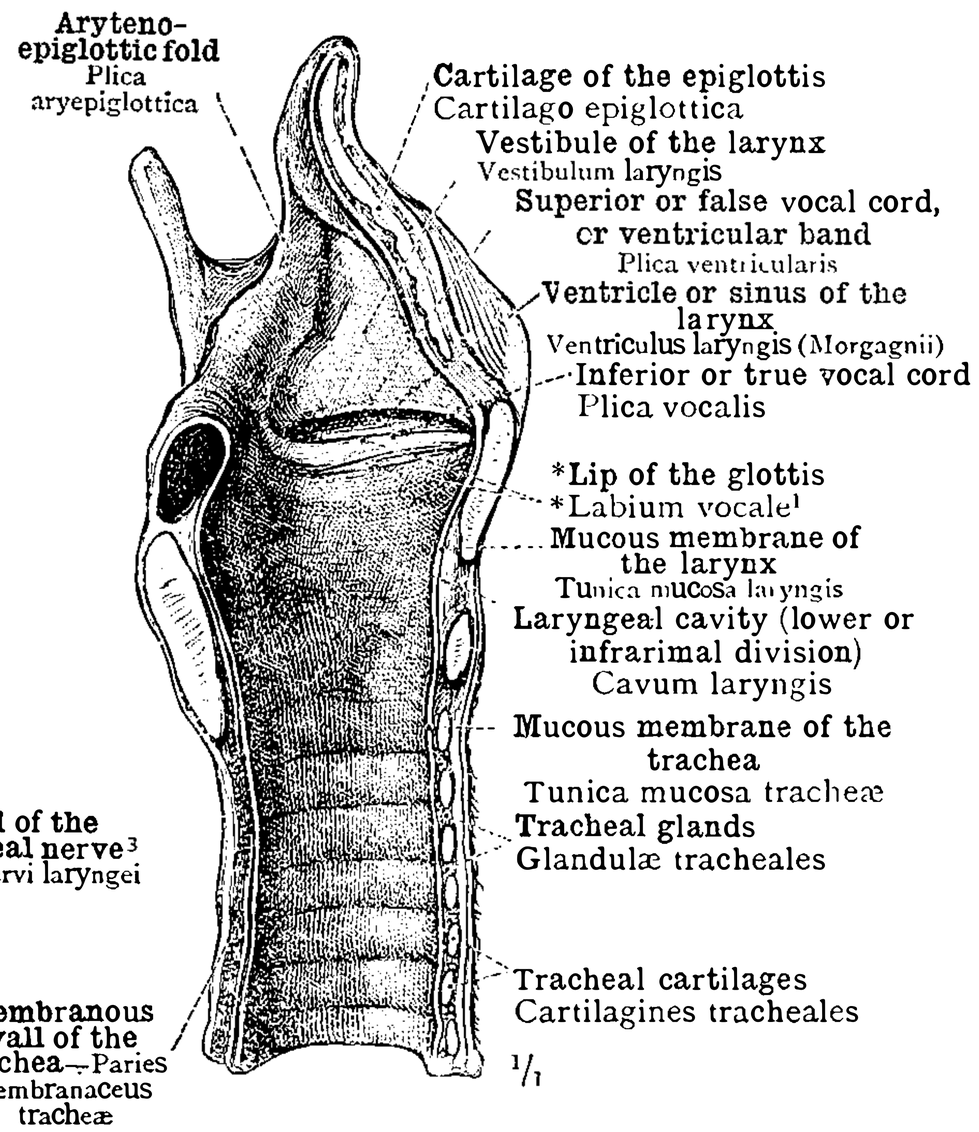
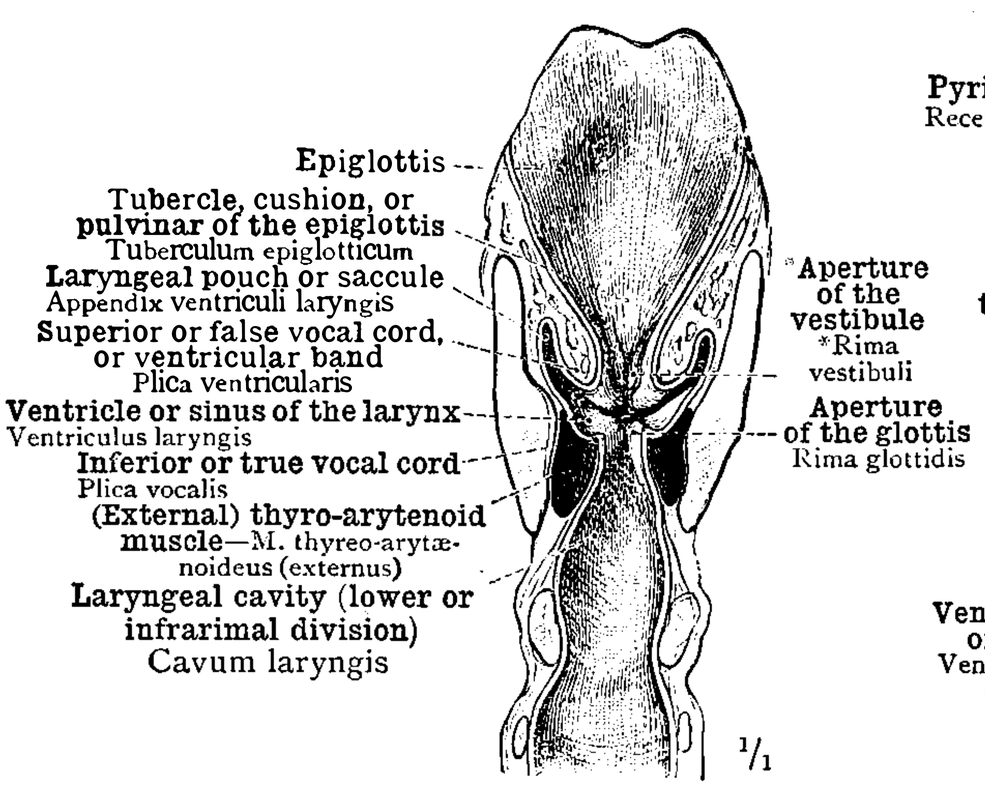
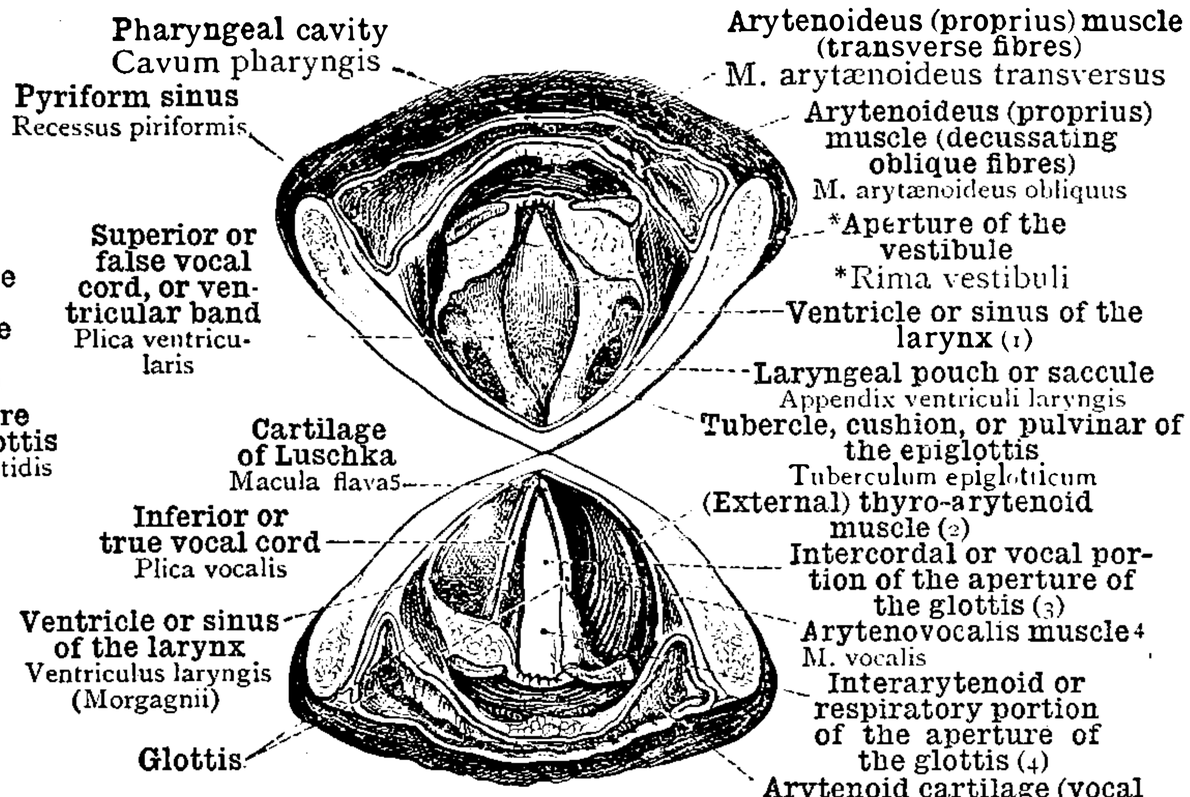


FIG. 779.—LEFT HALF OF A SAGITTALLY-HEMISECTED LARYNX. PLICA VOCALIS, INFERIOR OR TRUE VOCAL CORD; PLICA VENTRICULARIS, SUPERIOR OR FALSE VOCAL CORD, OR VENTRICULAR BAND; VENTRICULUS LARYNGIS, VENTRICLE OR SINUS OF THE LARYNX.





(1) Ventriculus laryngis (Morgagnii) (2) M. thyreo-arytænoideus (externus) (3) Pars intermembranacea rimæ glottidis
(4) Pars intercartilaginea rimæ glottidis (5) Cartilago arytænoidea (processus vocalis)

FIG. 780.—ANTERIOR HALF OF A CORONALLY-DIVIDED LARYNX. THE VOCAL APPARATUS, OR GLOTTIS; THE APERTURE OF THE GLOTTIS, RIMA GLOTTIDIS; THE INFERIOR OR TRUE VOCAL CORD, PLICA VOCALIS, WITH THE LABIUM VOCALE; THE SUPERIOR OR FALSE VOCAL CORD, OR VENTRICULAR BAND, PLICA VENTRICULARIS; THE VENTRICLE OR SINUS OF THE LARYNX, VENTRICULUS LARYNGIS, AND THE LARYNGEAL POUCH OR SACCULE, APPENDIX VENTRICULI LARYNGIS.

FIG. 781.—UPPER AND LOWER HALVES OF A LARYNX, DIVIDED INTO TWO PARTS BY A HORIZONTAL SECTION PASSING THROUGH THE VENTRICLES OF THE LARYNX, WITH THE ADJACENT PART OF THE PHARYNX.

In the lower half on the right side the mucous membrane of the ventricle of the larynx has been removed, to show the arytenovocalis[4] and (external) thyro-arytenoid muscles.

[1] See Appendix, note 32. [2] See note 7 to p. 415. [3] See note 3 to p. 434. [4] See note 3 to p. 460. [5] See Appendix, note 33.

The Larynx.

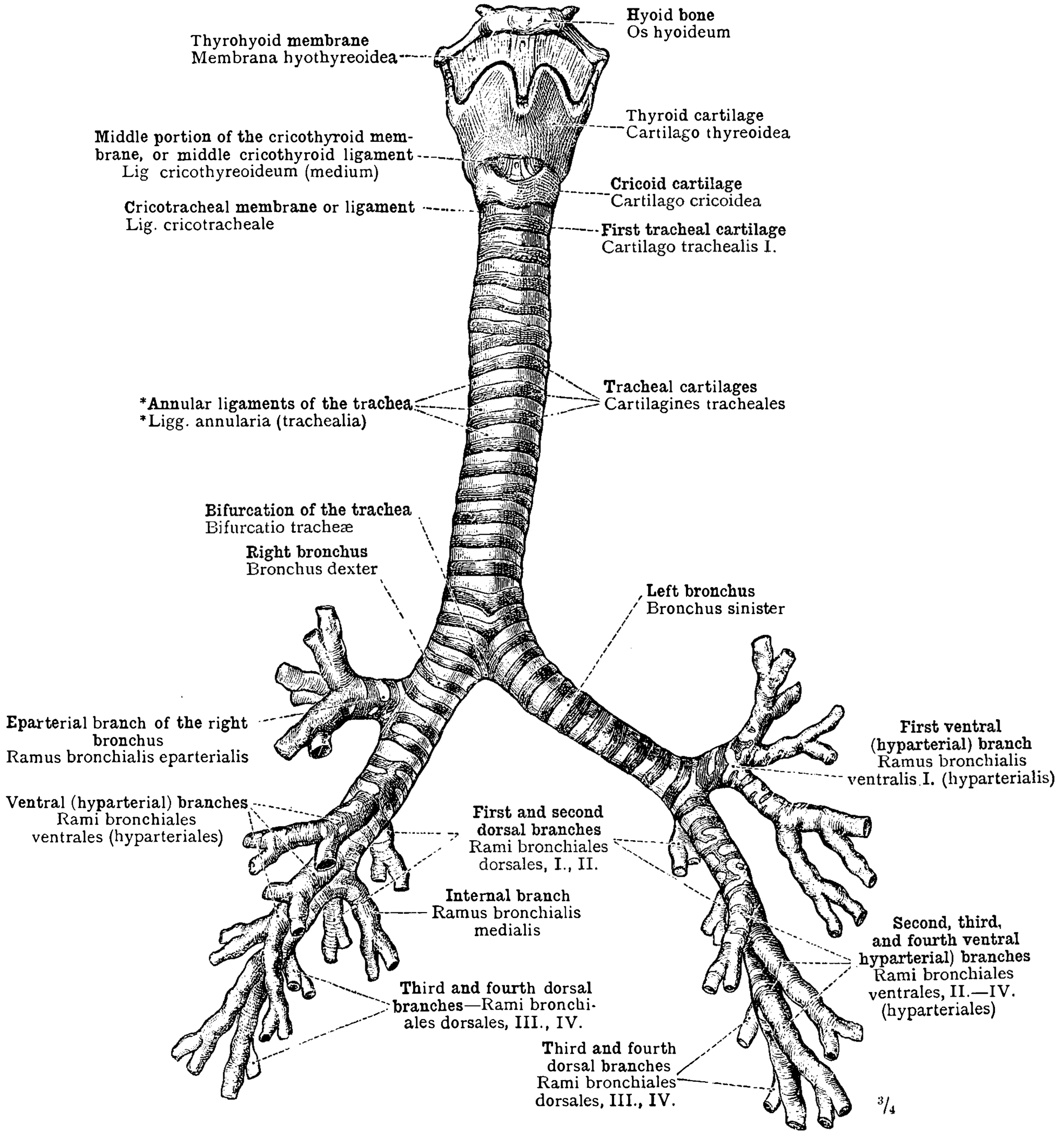


FIG. 782.—THE TRACHEA, ITS BIFURCATION INTO THE RIGHT AND LEFT BRONCHIAL TRUNKS (BRONCHI), AND THE LARGER SUBDIVISIONS OF THESE (RAMI BRONCHIALES). SEEN FROM BEFORE.

The air-passages were filled with tallow before opening the thorax. Subsequently the parts were dissected out and dried.

The Trachea and the Bronchial Ramification.

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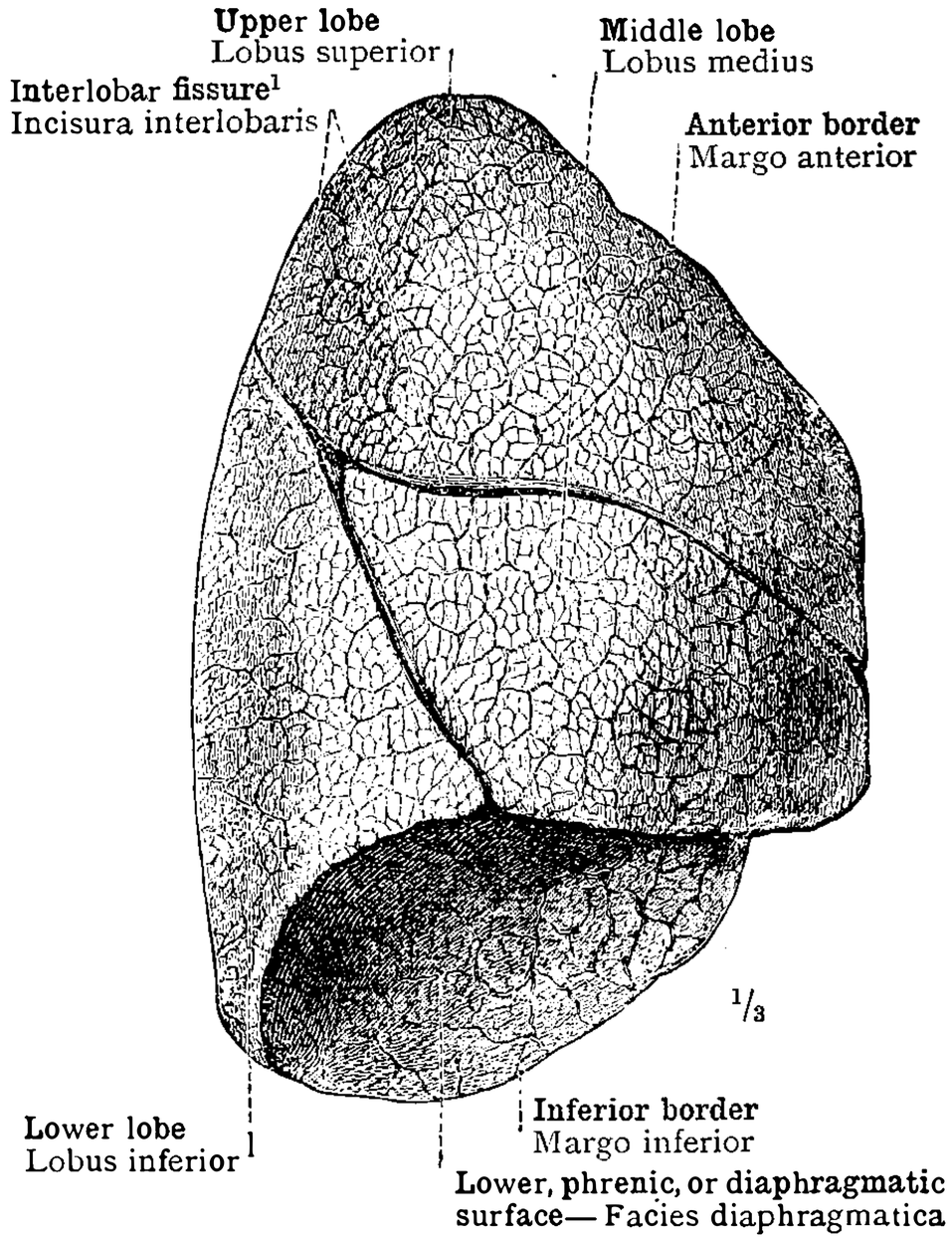


FIG. 784.—RIGHT LUNG. OUTER OR COSTAL SURFACE.

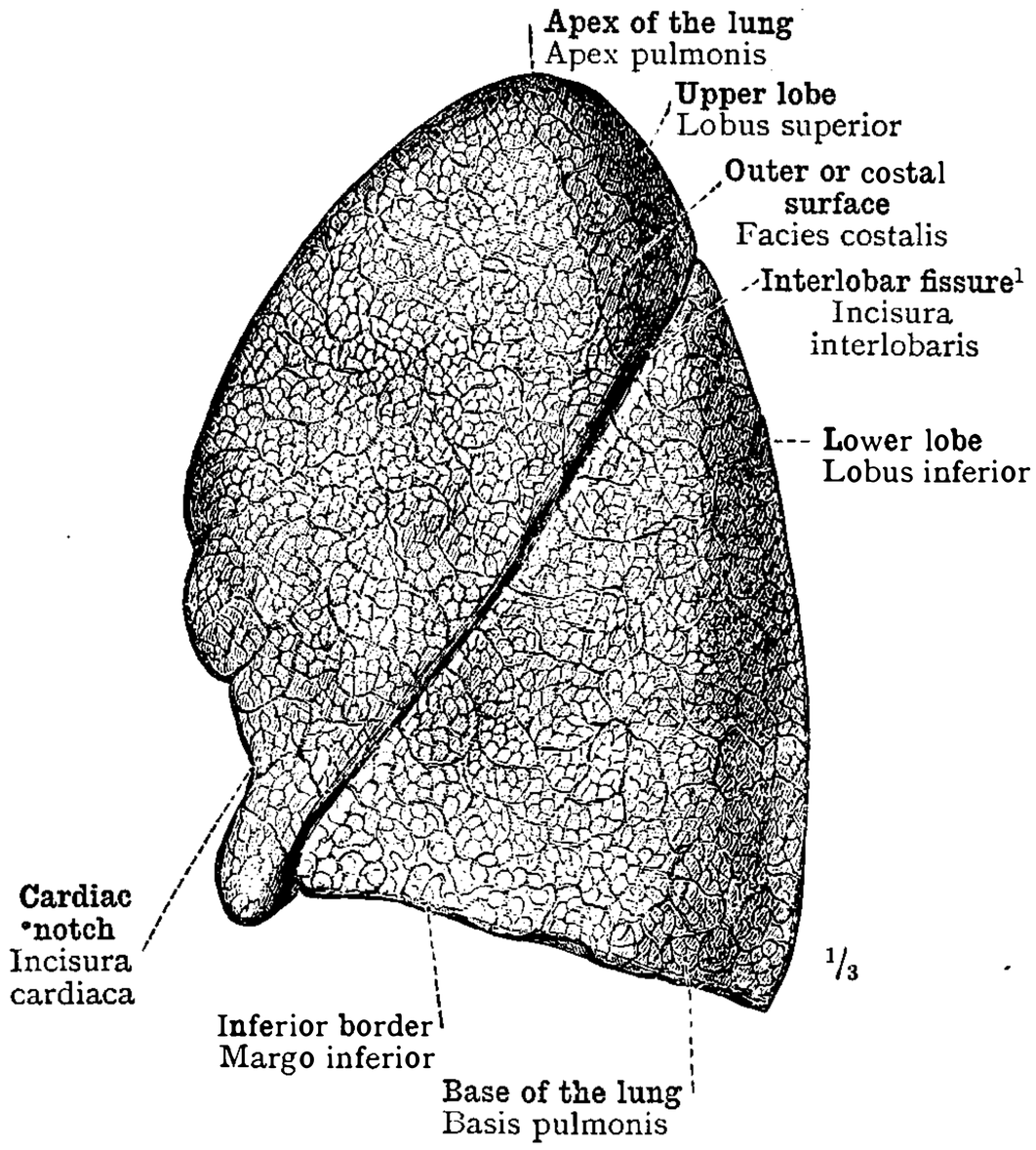


FIG. 785.—LEFT LUNG. OUTER OR COSTAL SURFACE.

[1] *Fissures of the Lung.*—The single fissure of the left lung, and the lower, more oblique, of the two fissures of the right lung, are sometimes distinguished as *great fissures* from the upper, nearly horizontal fissure of the right lung, which may be called the *supplementary fissure.*—TR.

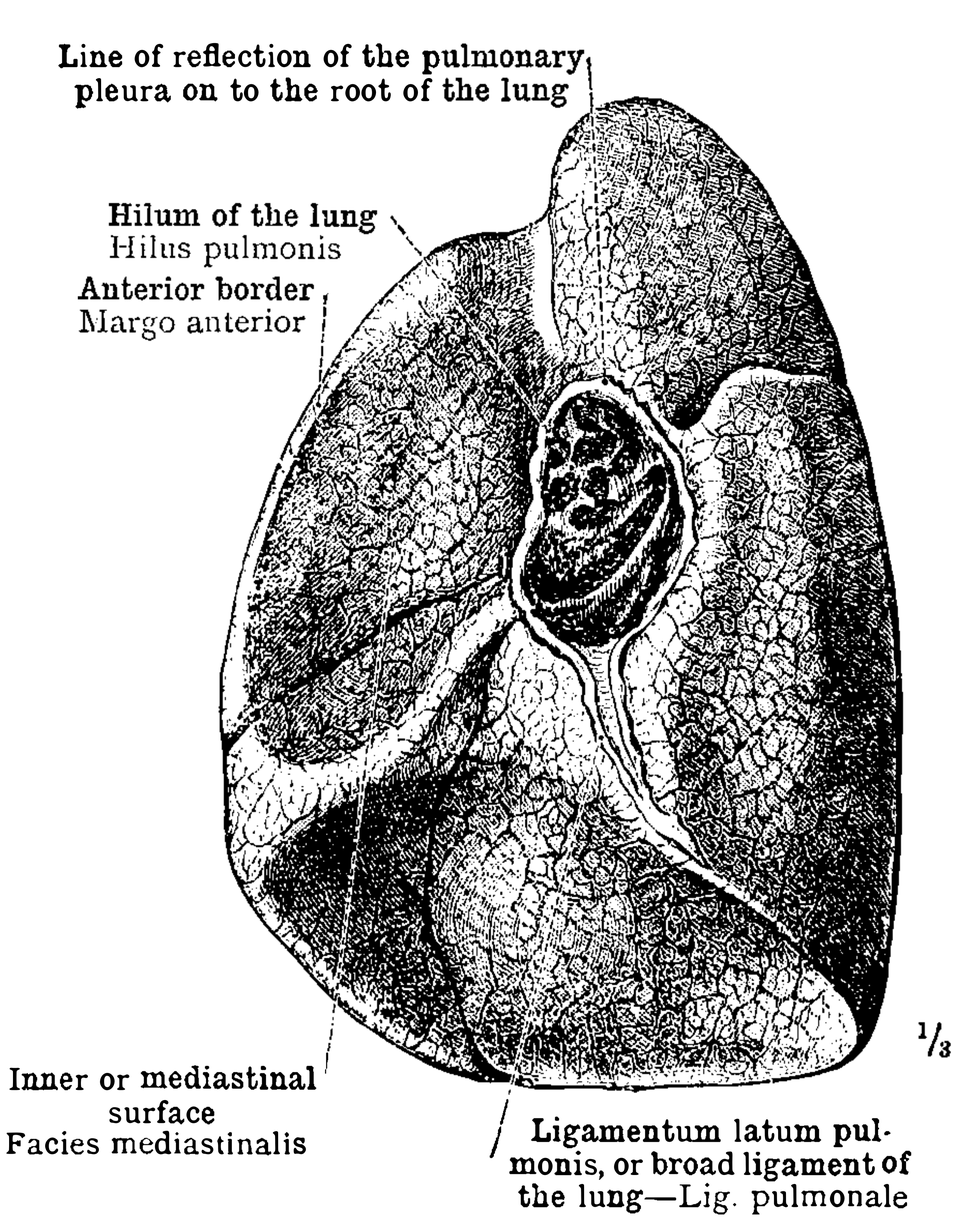


FIG. 786.—RIGHT LUNG. INNER OR MEDIASTINAL SURFACE, WITH THE HILUM LAID BARE BY THE REMOVAL OF THE STRUCTURES FORMING THE ROOT OF THE LUNG.

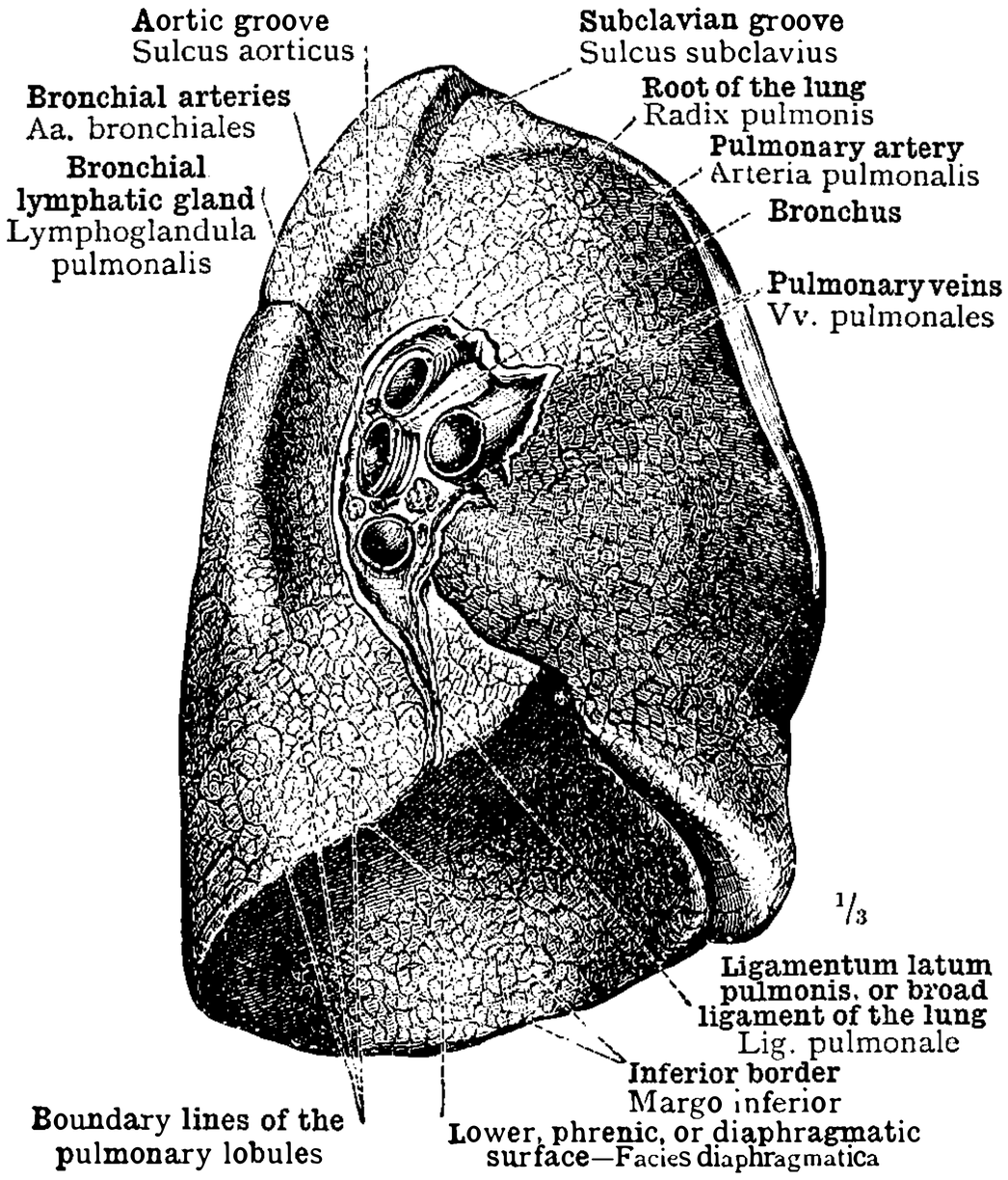
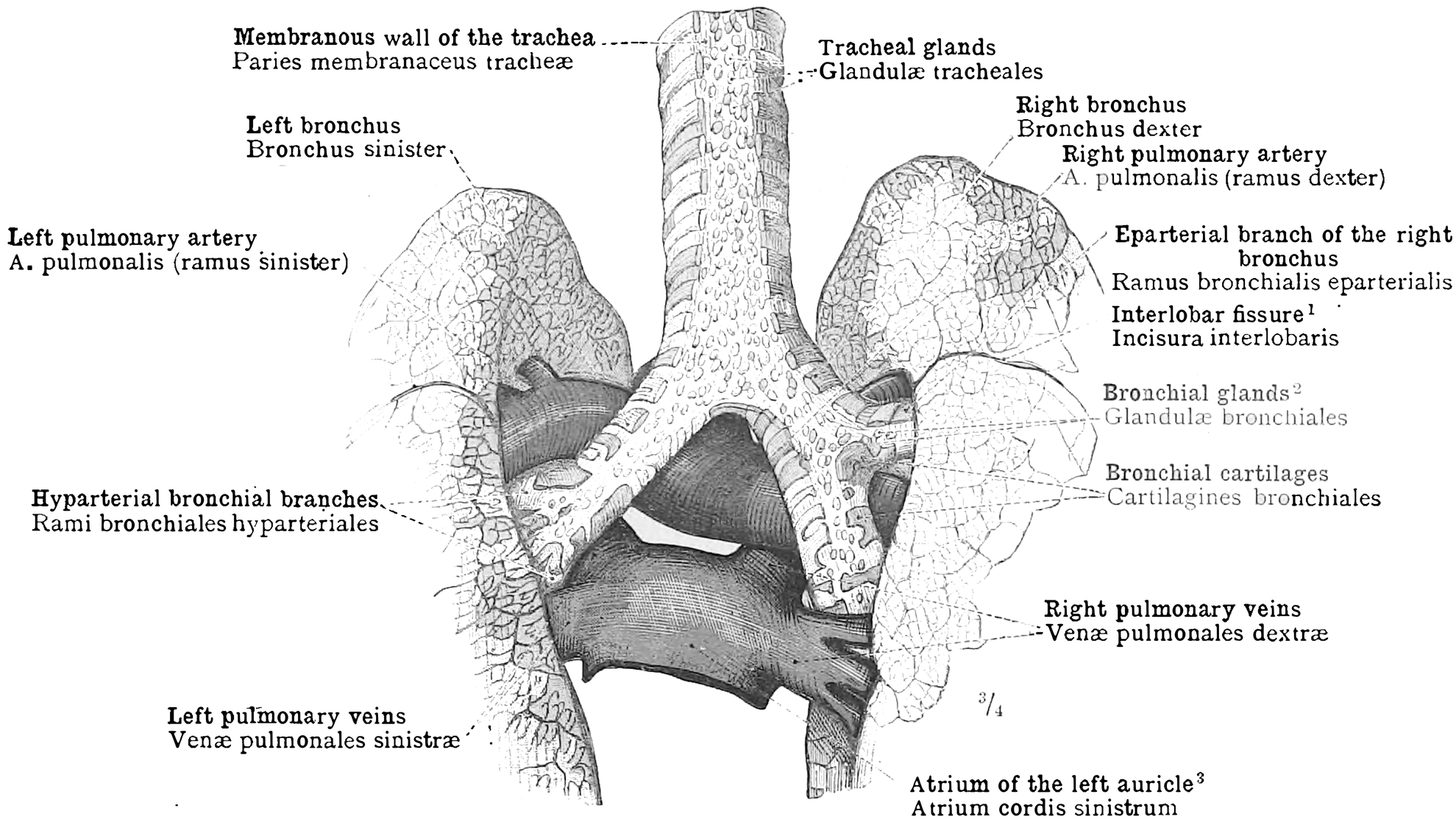


FIG. 787.—LEFT LUNG. INNER OR MEDIASTINAL SURFACE, WITH THE ROOT OF THE LUNG CUT ACROSS.

Pulmo—The lung.



[1] See note [1] to p. 464.
[2] *Bronchial Glands.*—These are small mucous glands in the walls of the bronchi, and must not be confounded with the *bronchial lymphatic glands.*—TR.
[3] See note 3 to p. 411.

FIG. 788.—ROOTS OF THE LUNGS, RADICES PULMONUM, SEEN FROM BEHIND. MUTUAL RELATIONS OF THE PULMONARY ARTERY, THE PULMONARY VEINS, THE MAIN BRONCHIAL TRUNK, AND THE PRIMARY BRONCHIAL BRANCHES; AS THEY ENTER THE HILUM OF EACH LUNG.

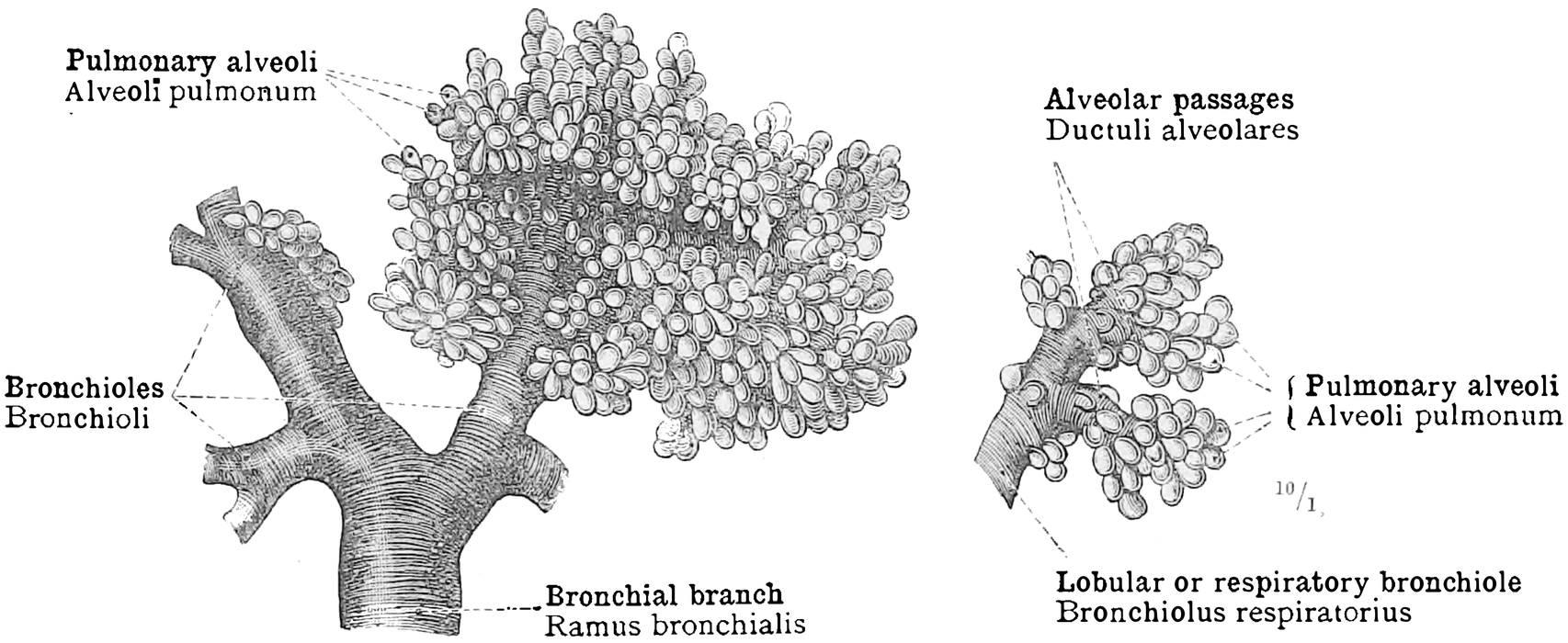


FIG. 789.—ULTIMATE EXTREMITIES OF THE AIR-PASSAGES.

After filling the bronchial ramification with resin, the lung tissue surrounding the air-passages was removed by maceration in hydrochloric acid.

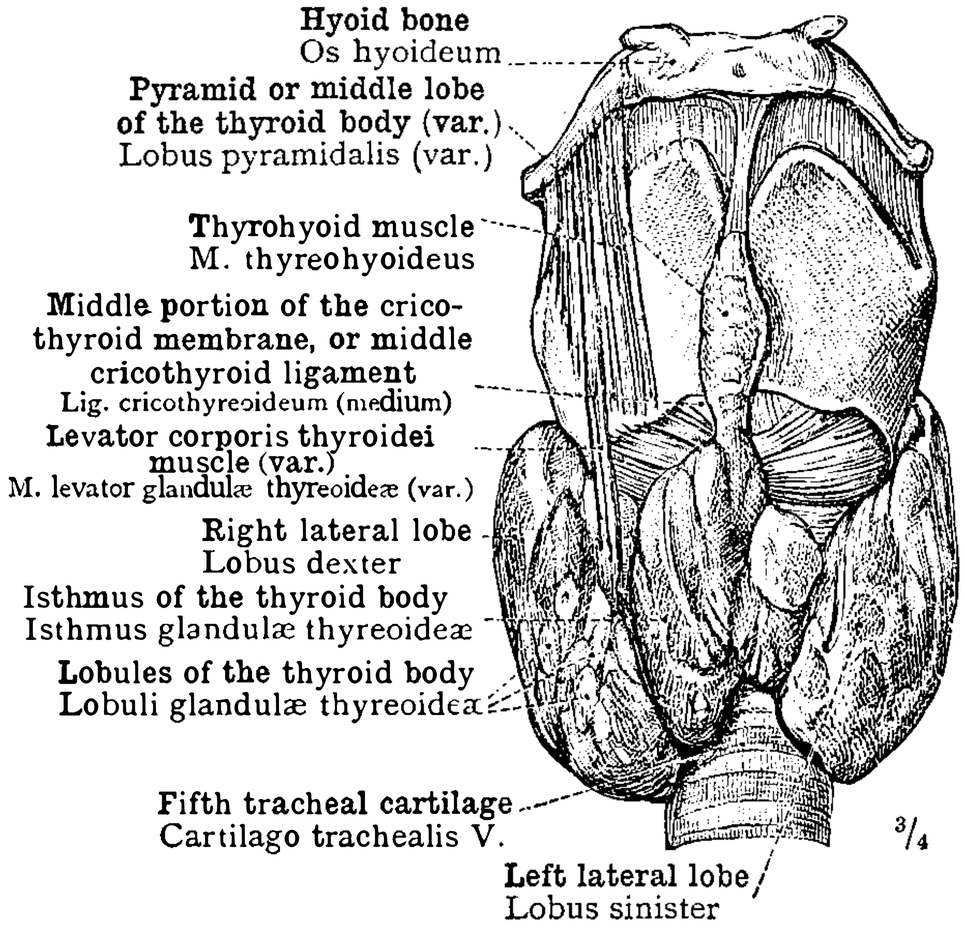


FIG. 790.—GLANDULA THYREOIDEA, THE THYROID BODY, WITH THE LARYNX AND TRACHEA, SEEN FROM BEFORE.

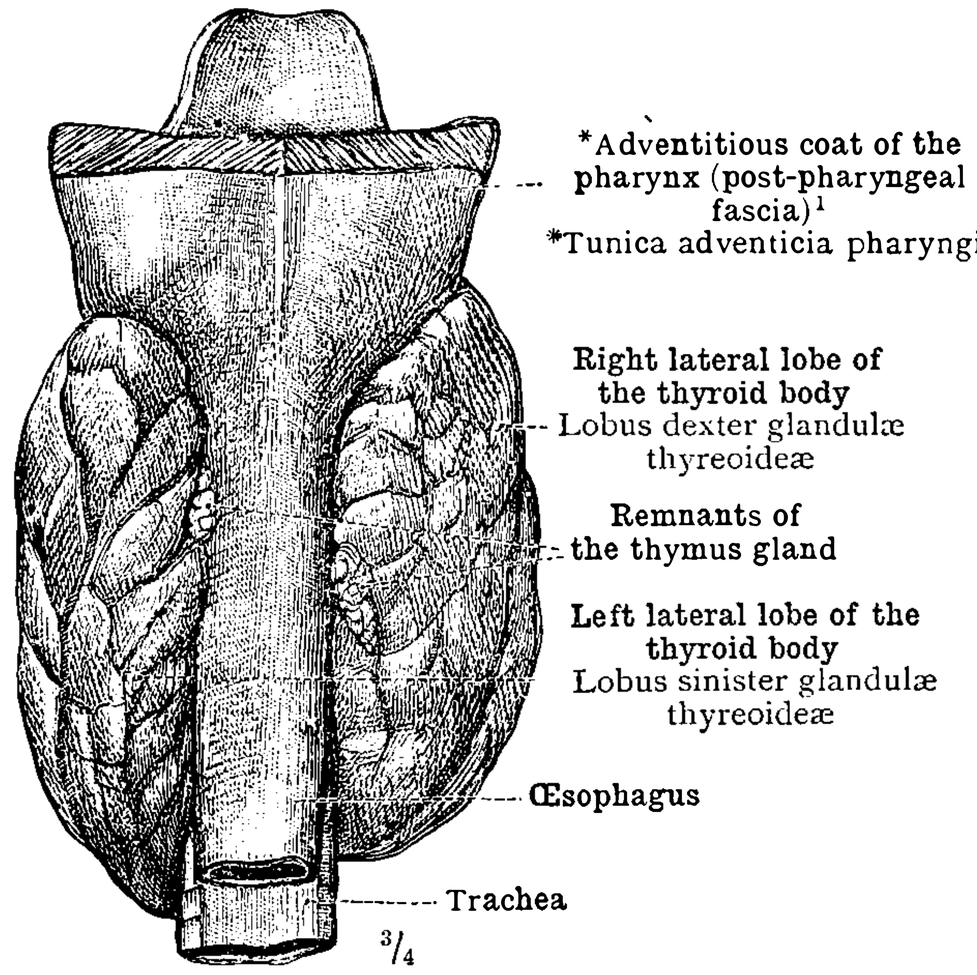


FIG. 791.—THE THYROID BODY, WITH THE ŒSOPHAGUS, SEEN FROM BEHIND.

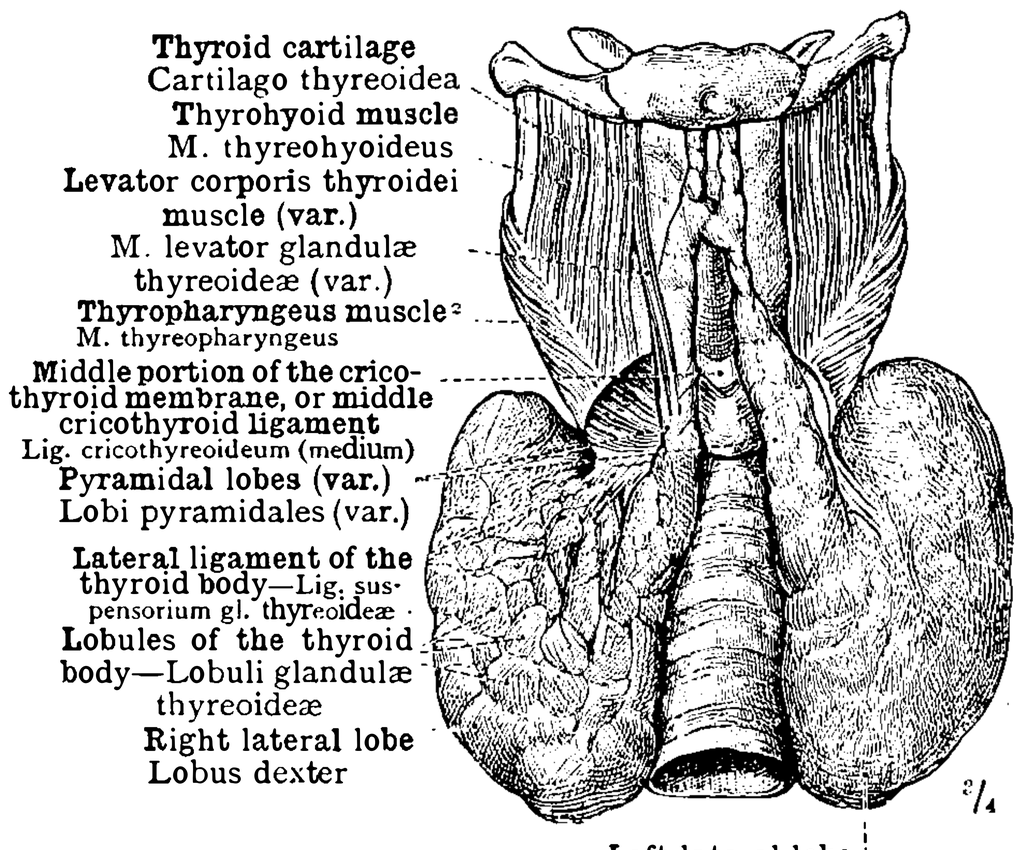


FIG. 792.—GLANDULA THYREOIDEA, THE THYROID BODY, WITH THE ISTHMUS WANTING, AND WITH BILATERAL PYRAMIDAL LOBES (VARIETY).

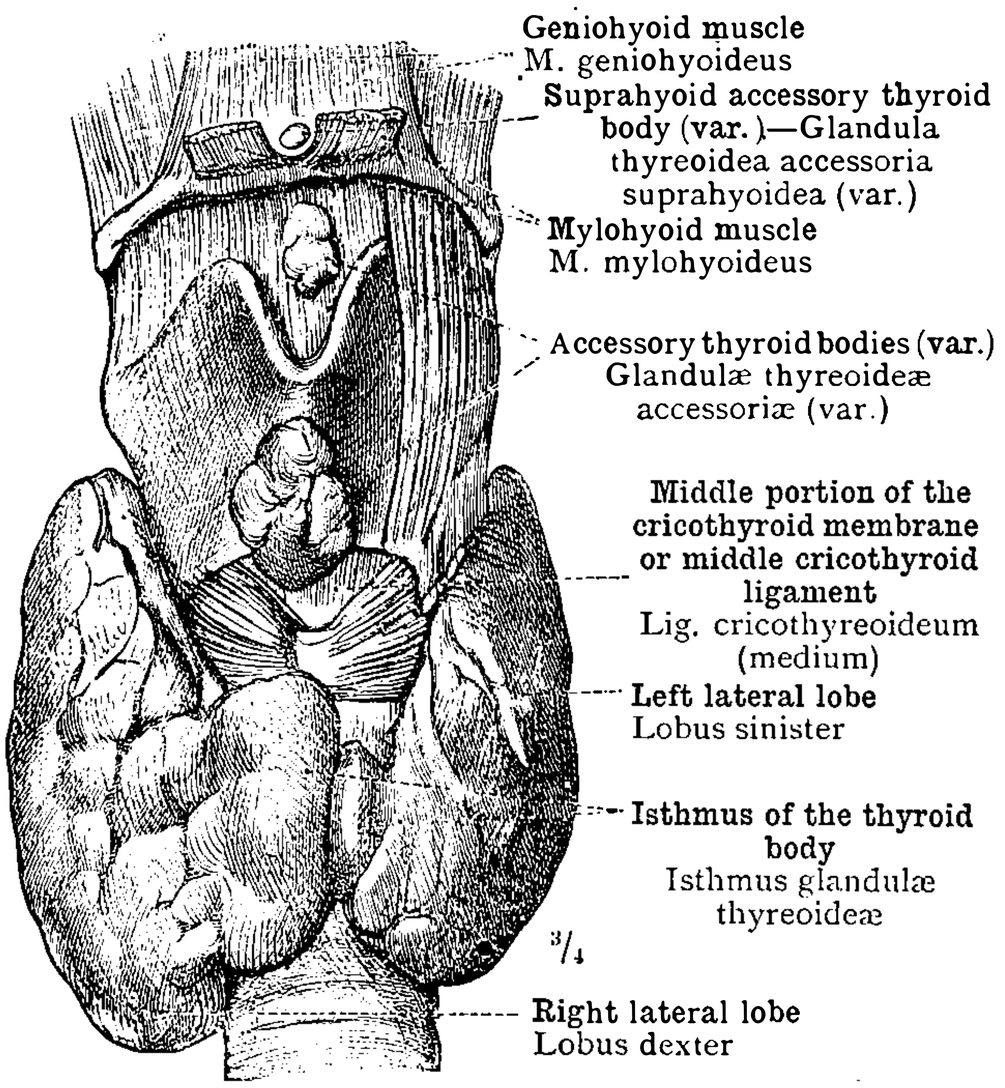


FIG. 793.—THYROID BODY WITH SEVERAL ACCESSORY THYROIDS; ONE OF THE LATTER IS SITUATE ABOVE THE HYOID BONE, BEHIND THE MYLOHYOID MUSCLE.

[1] See Appendix, note 34

[2] See note [1] to p. 433.

Glandula thyreoidea—Thyroid body.

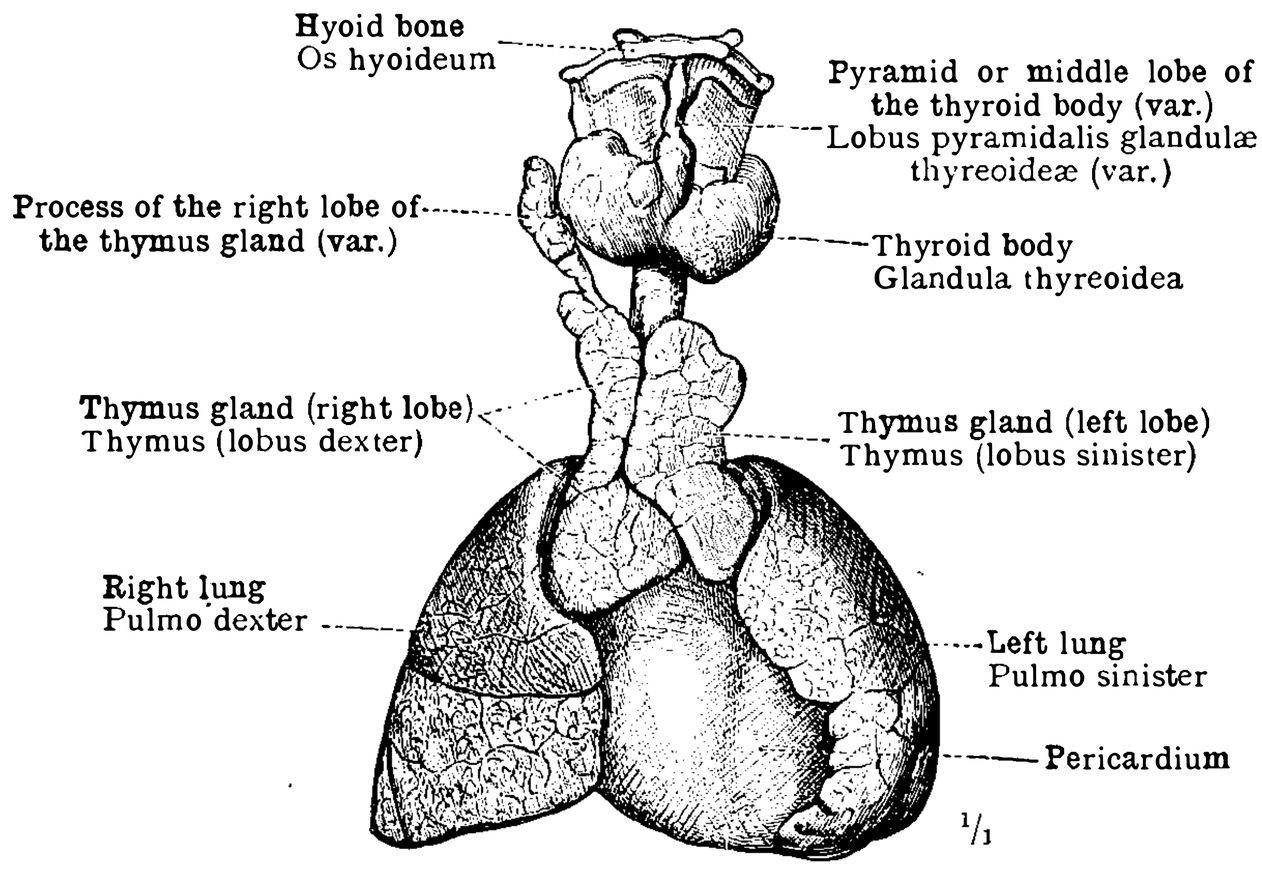
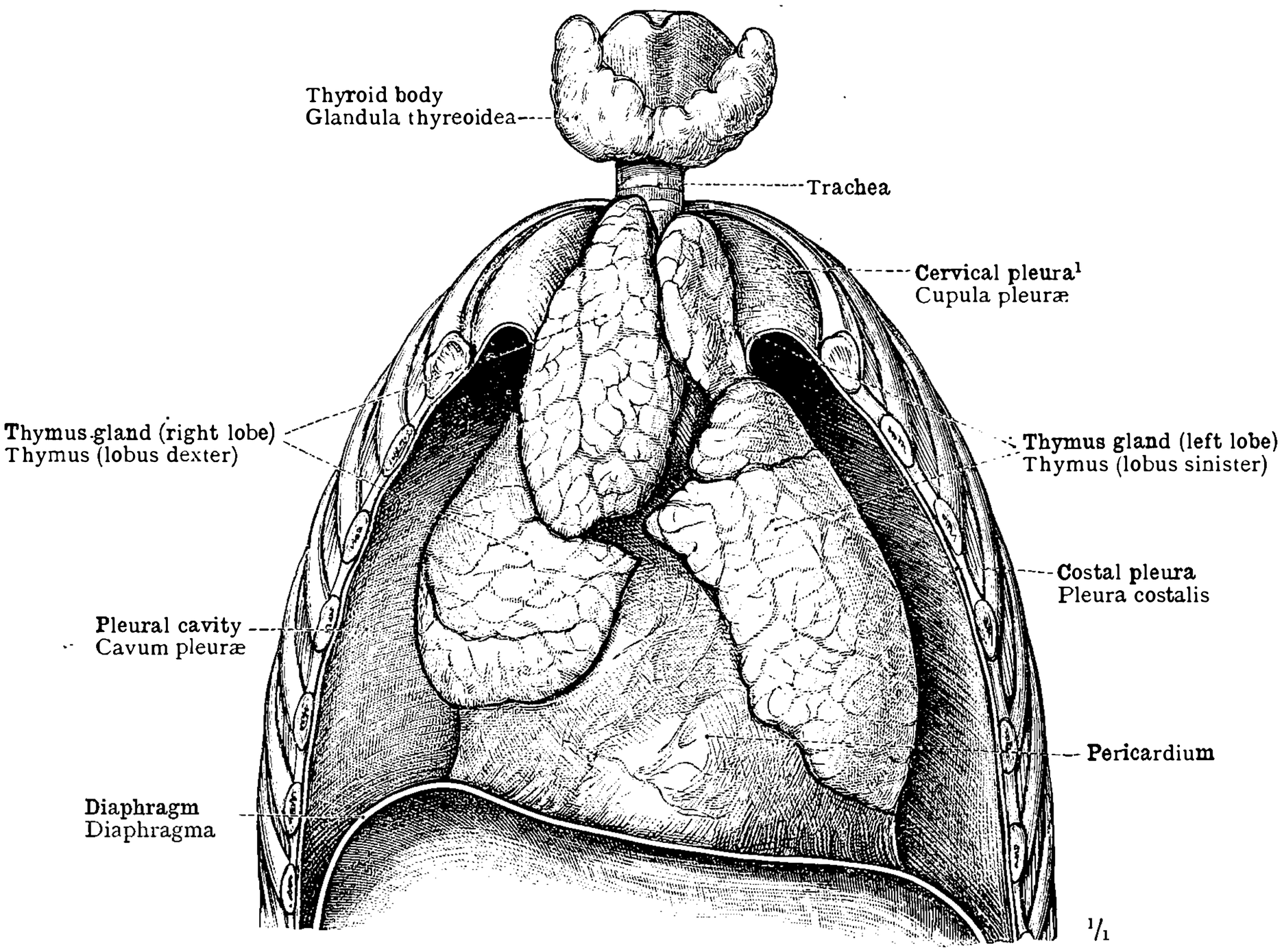


FIG. 794.—THE THYMUS GLAND, WITH THE THYROID BODY, THE PERICARDIUM, AND THE LUNGS, OF A HUMAN FŒTUS IN THE SIXTH MONTH OF INTRA-UTERINE LIFE (MONTHS OF FOUR WEEKS EACH). SEEN FROM BEFORE.



[1] *Cupula Pleuræ.*—This term is applied by the author to the dome-shaped summit of the pleura, but as this portion of the pleura projects through the superior aperture of the thorax into the root of the neck, it is generally known in England as the *cervical pleura.*—TR.

FIG. 795.—THE THYMUS GLAND, WITH THE PERICARDIUM, AS SEEN FROM BEFORE AFTER THE LUNGS HAVE BEEN ENTIRELY REMOVED. FROM A BOY AGED FIVE WEEKS.

The Thymus Gland.

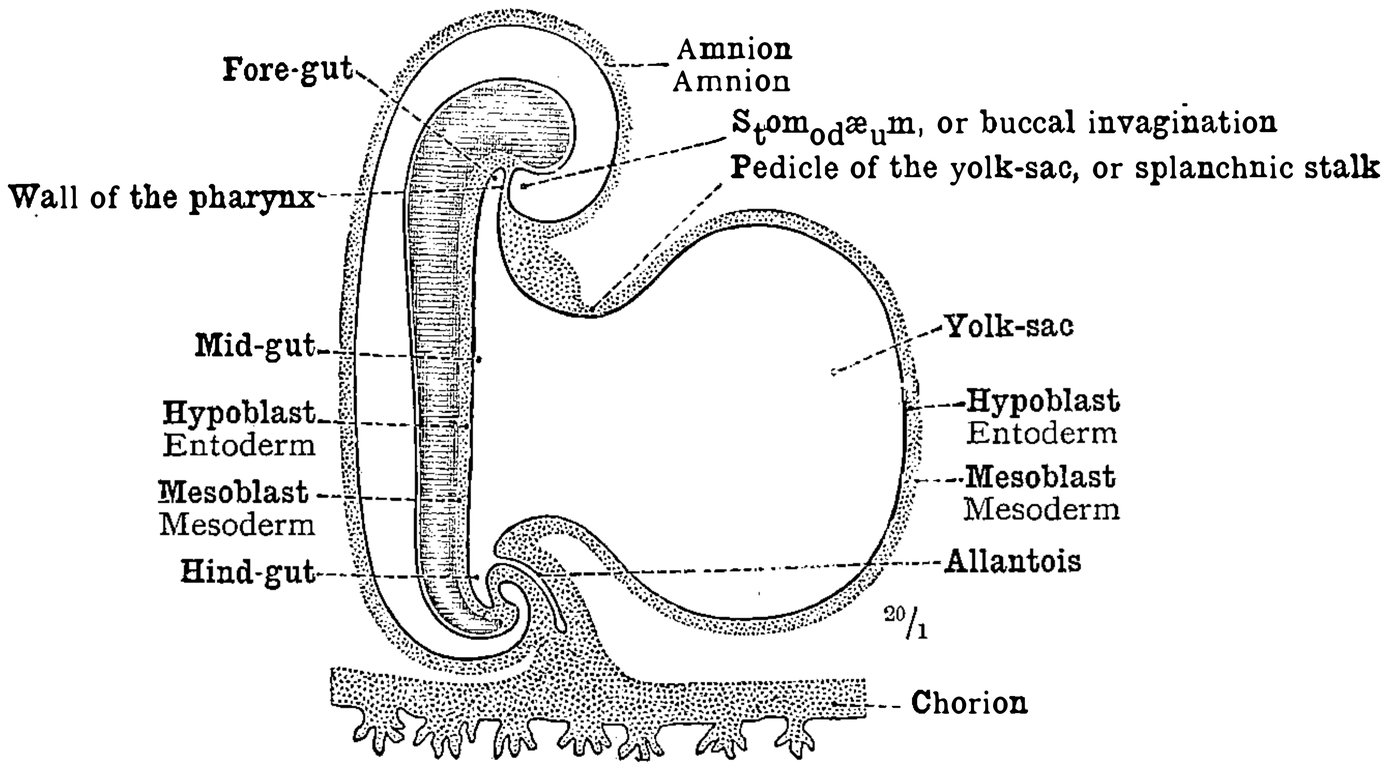


FIG. 796.—HUMAN EMBRYO IN THE BEGINNING OF THE THIRD WEEK (DIAGRAMMATIC).

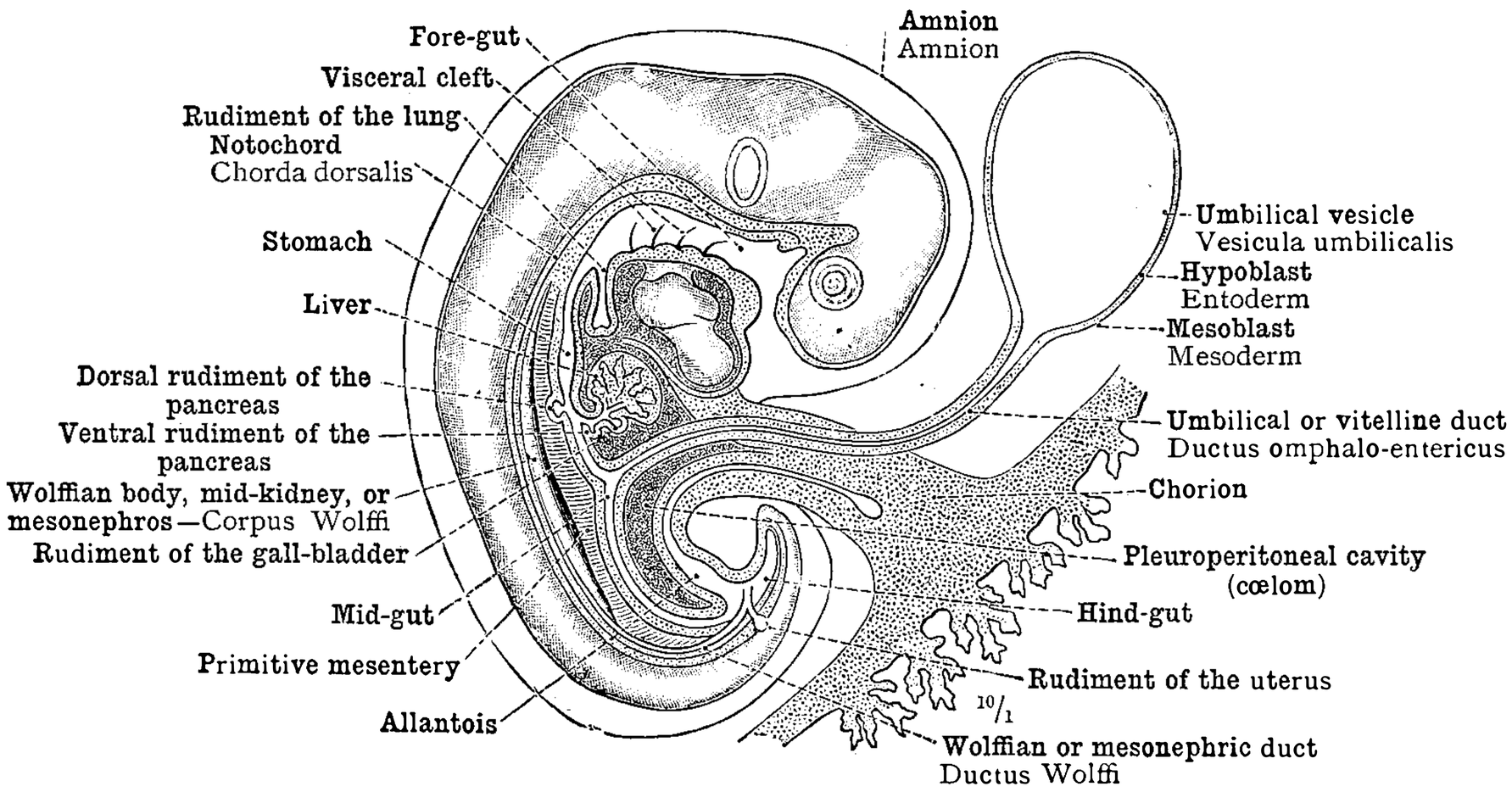


FIG. 797.—HUMAN EMBRYO IN THE BEGINNING OF THE FIFTH WEEK (DIAGRAMMATIC).

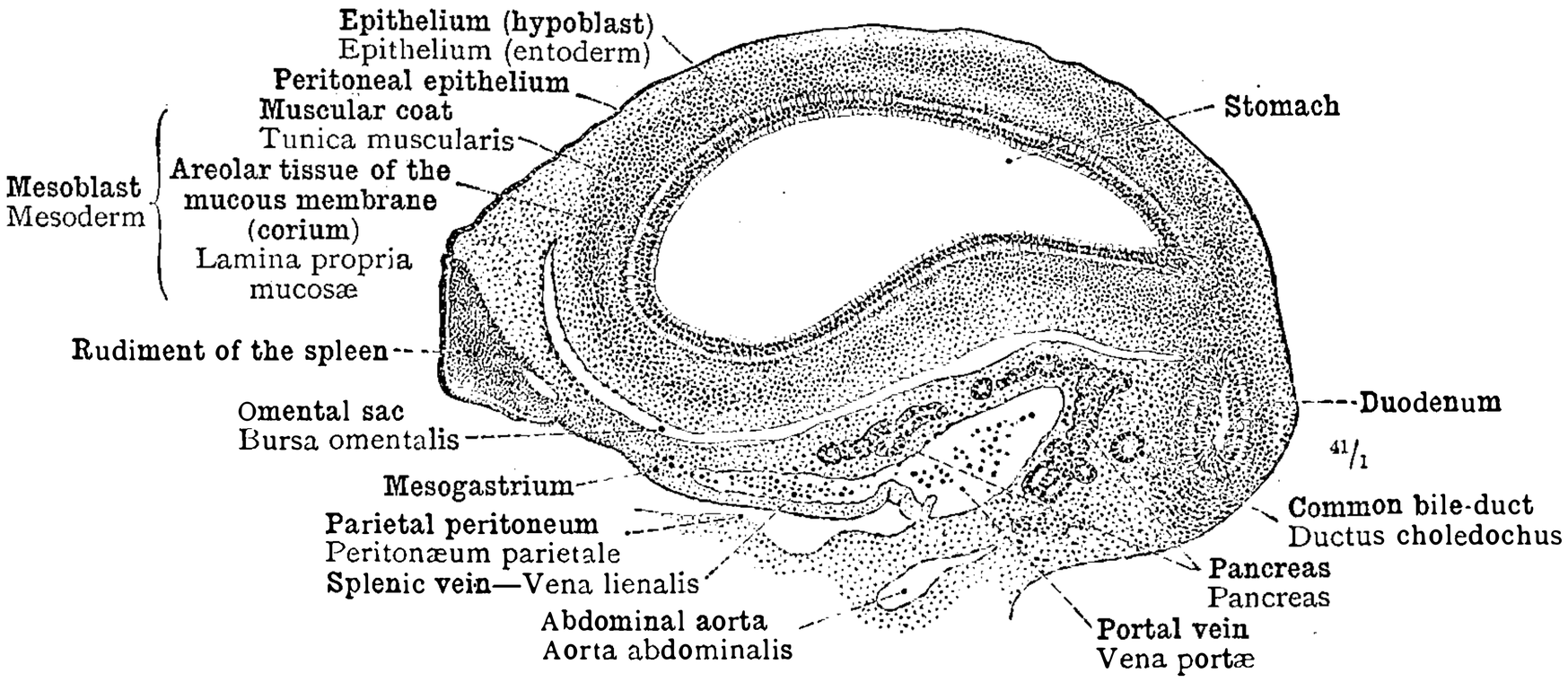


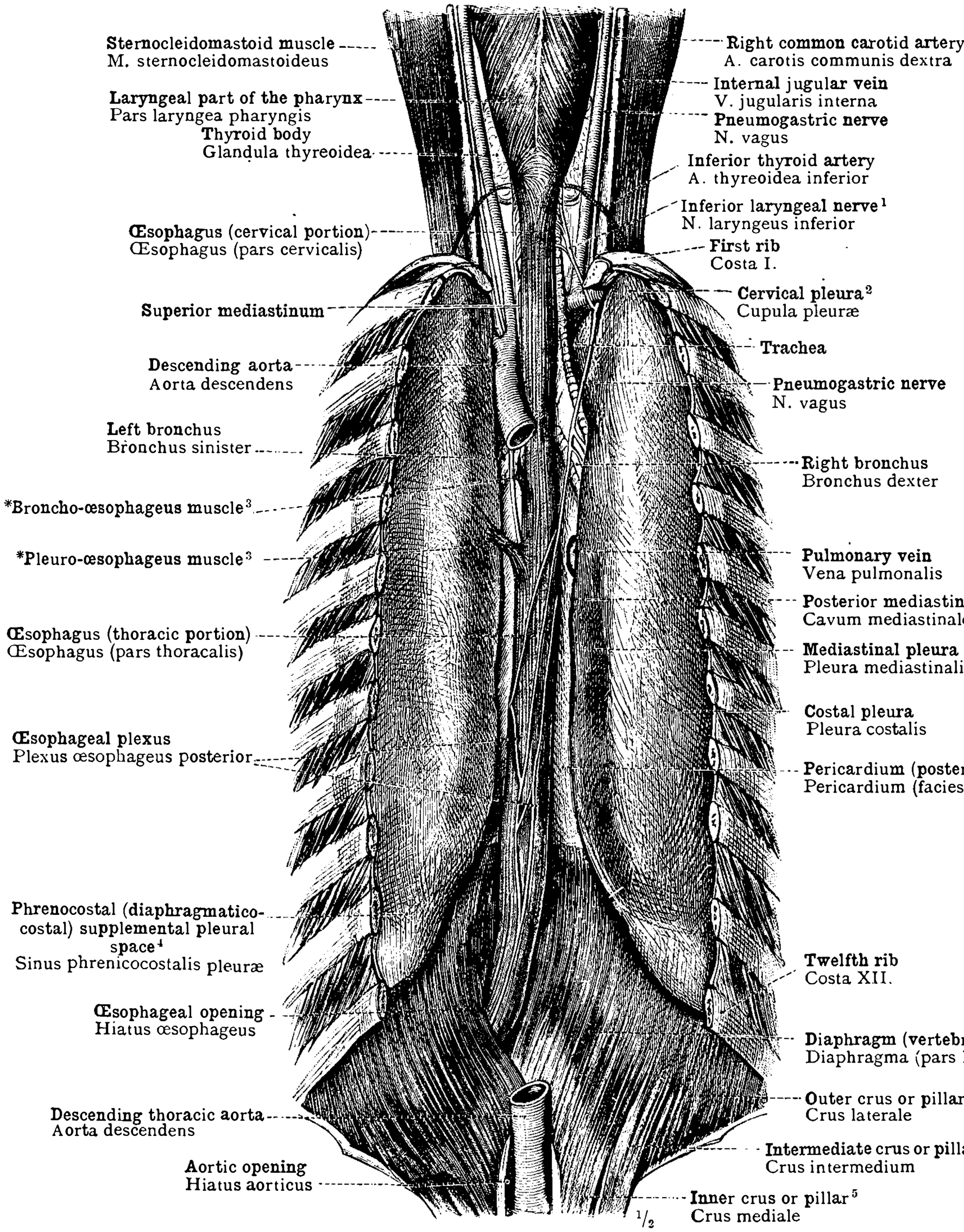
FIG. 798.—RUDIMENT OF THE SPLEEN. HUMAN EMBRYO IN THE SIXTH WEEK. TRANSVERSE SECTION.

Rudiments of the Viscera.

TOPOGRAPHICAL ANATOMY

OF THE

THORACIC AND ABDOMINAL VISCERA

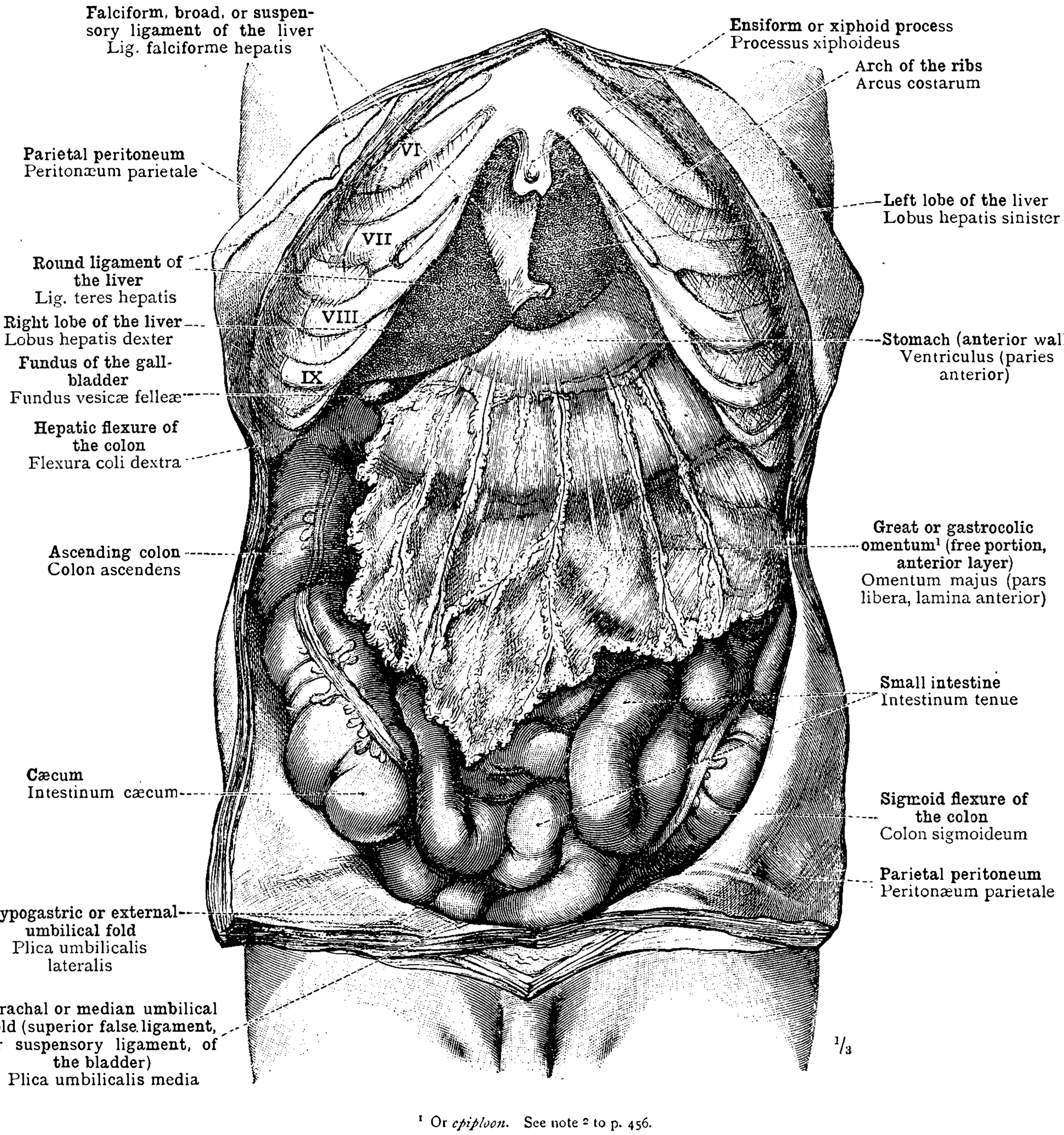


[1] Known also as the *recurrent laryngeal nerve*.
[2] See note 1 to p. 467.
[3] See Appendix, note 35.
[4] See Appendix, note 36.
[5] See Appendix, note 37.

FIG. 799.—COURSE OF THE THORACIC PORTION OF THE ŒSOPHAGUS IN THE POSTERIOR MEDIASTINUM, AND ITS PASSAGE THROUGH THE ŒSOPHAGEAL OPENING IN THE DIAPHRAGM. THE ŒSOPHAGUS IS SEEN FROM BEHIND, HAVING BEEN EXPOSED BY THE REMOVAL OF THE VERTEBRAL COLUMN, THE POSTERIOR EXTREMITIES OF THE RIBS, AND THE GREATER PART OF THE DESCENDING THORACIC AORTA. BRONCHO-ŒSOPHAGEUS AND PLEURO-ŒSOPHAGEUS MUSCLES.

The pleura has been left intact.

Topographical Anatomy of the Œsophagus.

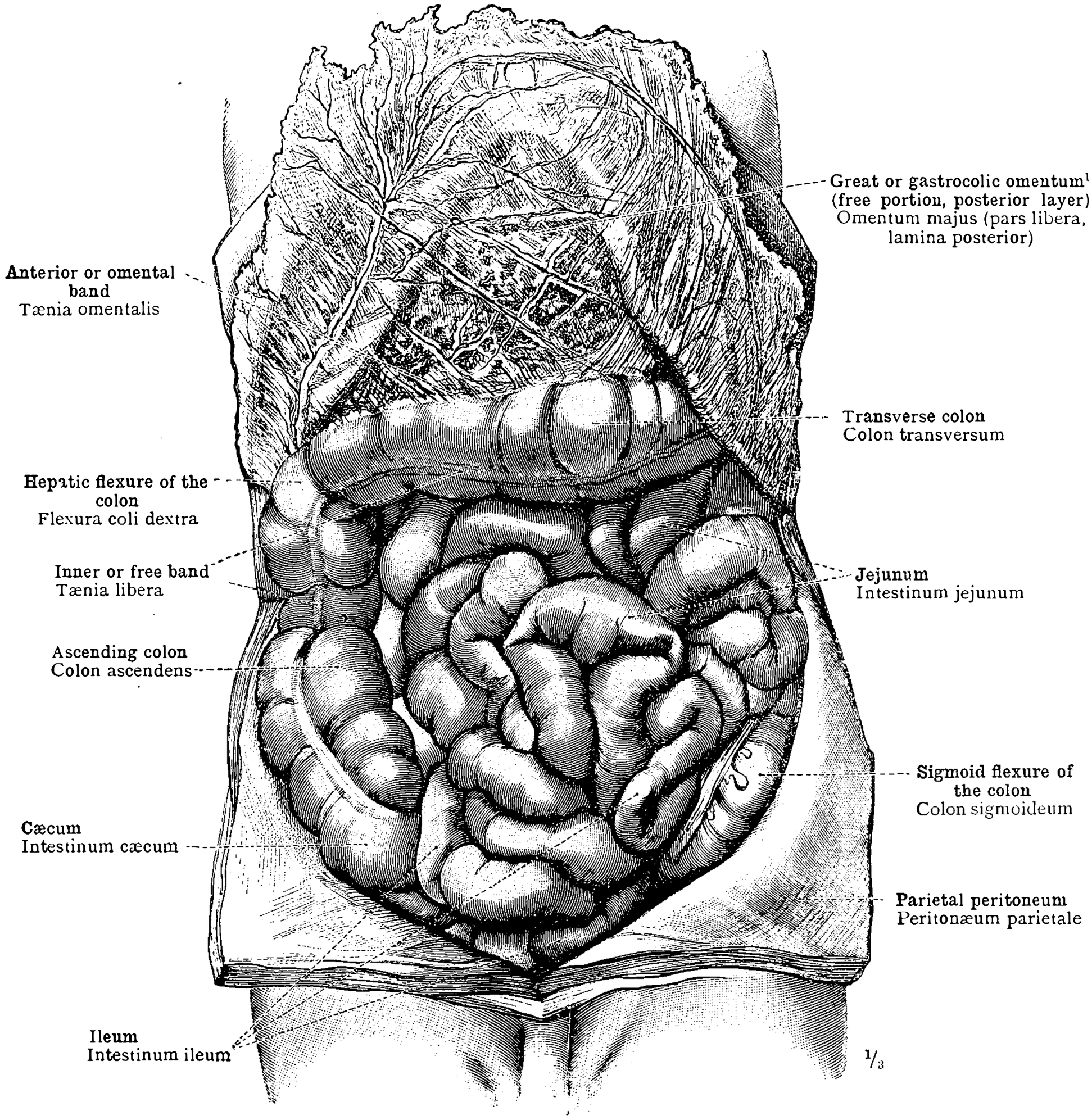


[1] Or *epiploon*. See note [2] to p. 456.

FIG. 802.—POSITION OF THE ABDOMINAL VISCERA AS SEEN AFTER THE ABDOMINAL CAVITY HAS BEEN OPENED IN THE USUAL MANNER AND THE COSTAL ARCHES HAVE BEEN LAID BARE.

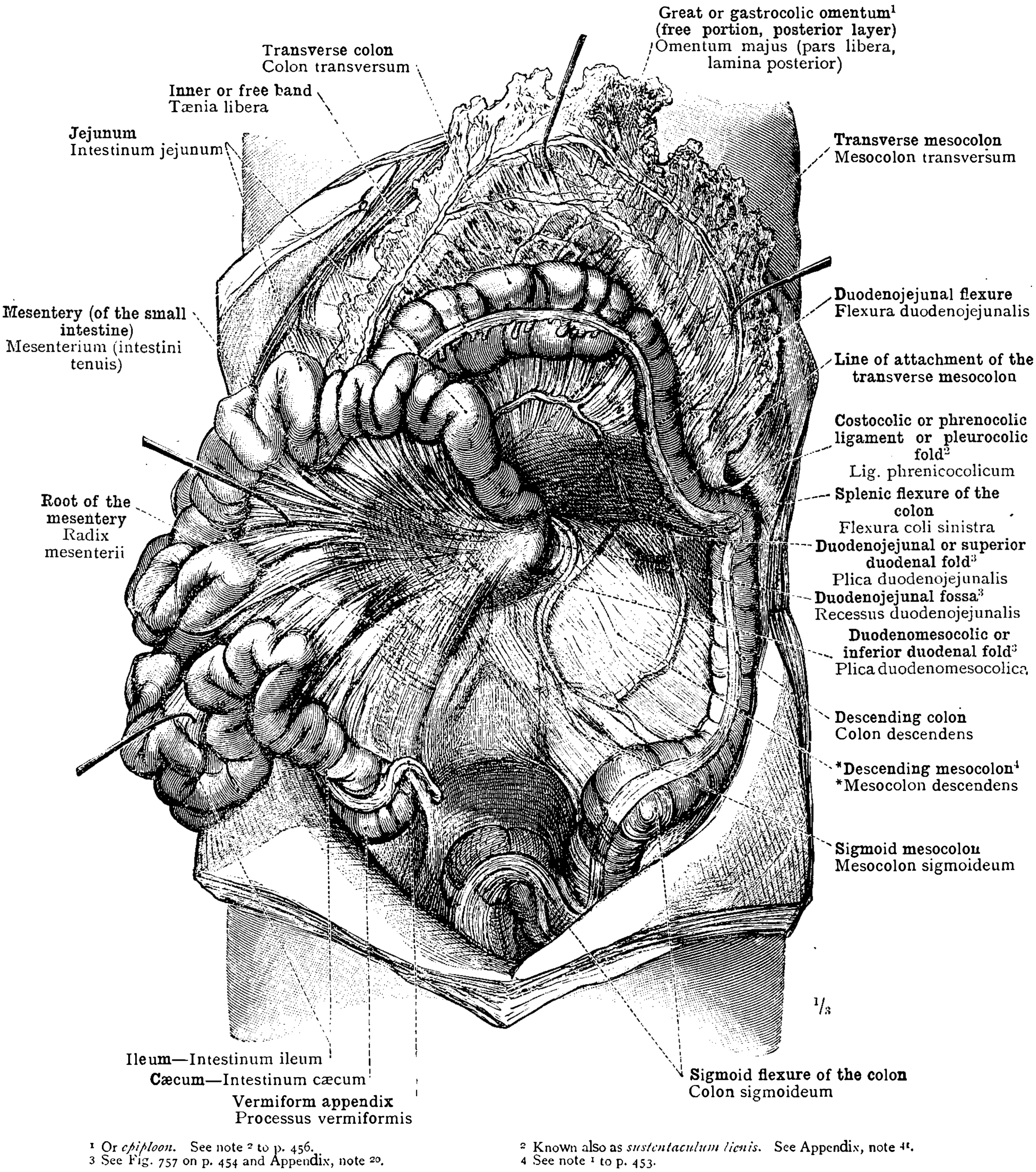
The visible portions of the large intestine (colon) are moderately distended with gas ; the great or gastrocolic omentum (omentum majus) is in its natural position.

Topographical Anatomy of the Abdominal Viscera.



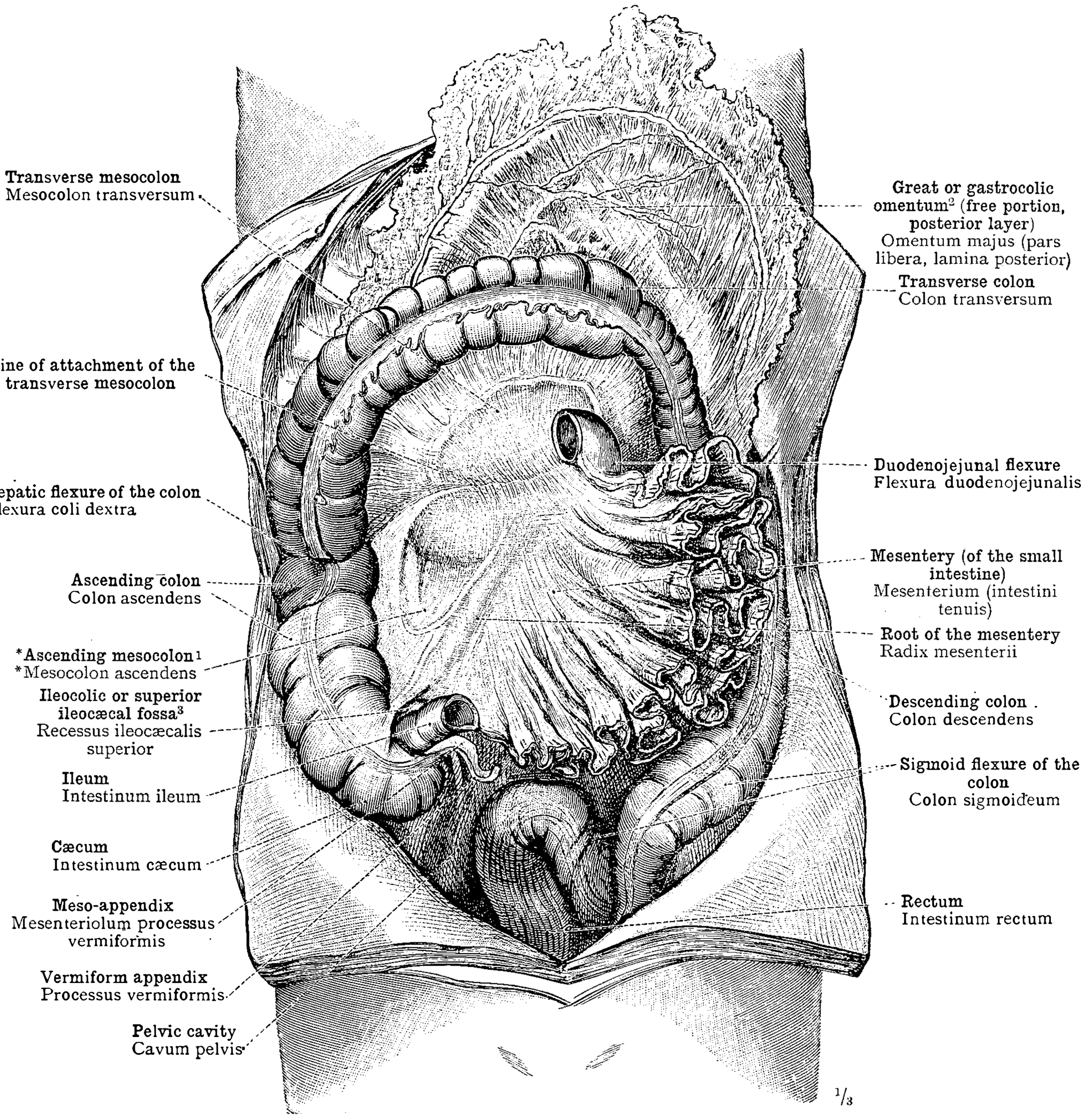
[1] Or *epiploon*. See note [2] to p. 456.

FIG. 803.—POSITION OF THE VISCERA IN THE LOWER PORTION OF THE ABDOMINAL CAVITY, AFTER THE GREAT OR GASTROCOLIC OMENTUM HAS BEEN TURNED UPWARDS. RELATION OF THE GREAT OMENTUM TO THE TRANSVERSE COLON (COLON TRANSVERSUM); POSITION OF THE CÆCUM (INTESTINUM CÆCUM) AND OF THE ASCENDING COLON (COLON ASCENDENS) IN RELATION TO THE LOOPS OF THE FREE PORTIONS OF THE SMALL INTESTINE (INTESTINUM TENUE): JEJUNUM (INTESTINUM JEJUNUM) AND ILEUM (INTESTINUM ILEUM).



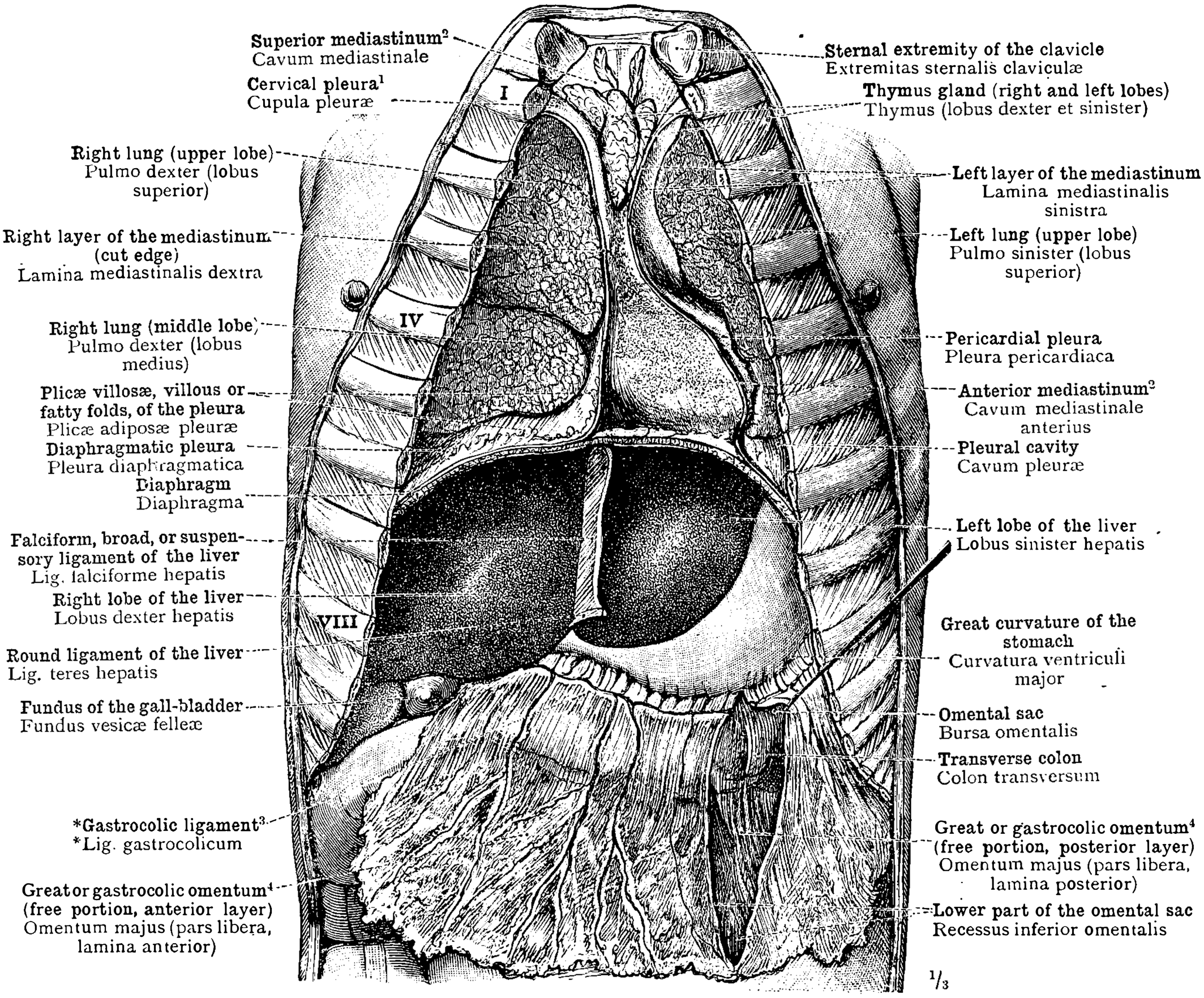
[1] Or *epiploon*. See note [2] to p. 456.
[2] Known also as *sustentaculum lienis*. See Appendix, note [41].
[3] See Fig. 757 on p. 454 and Appendix, note [20].
[4] See note [1] to p. 453.

FIG. 804.—THE FREE PORTIONS OF THE SMALL INTESTINE (INTESTINUM TENUE), THE JEJUNUM (INTESTINUM JEJUNUM), AND THE ILEUM (INTESTINUM ILEUM); HAVE BEEN TURNED AS FAR AS POSSIBLE TO THE RIGHT, AND THE TRANSVERSE COLON (COLON TRANSVERSUM) HAS BEEN DRAWN UPWARDS, TO SHOW THE TRANSITION OF THE LATTER INTO THE DESCENDING COLON (COLON DESCENDENS), AND OF THE DESCENDING COLON INTO THE SIGMOID FLEXURE OF THE COLON (COLON SIGMOIDEUM). THE MESENTERY AND ITS ROOT (MESENTERIUM ET RADIX MESENTERII) ARE SEEN FROM THE LEFT SIDE. OF THE MESENTERY OF THE LARGE INTESTINE, OR MESOCOLON, THE LEFT HALF OF THE TRANSVERSE MESOCOLON WITH ITS LINE OF ATTACHMENT, THE *DESCENDING MESOCOLON (*see note* [4] *above*), AND THE SIGMOID MESOCOLON ARE VISIBLE. RECESSUS DUODENOJEJUNALIS, DUODENOJEJUNAL FOSSA (*see note* [3] *above*).



[1] See Appendix, note 39. [2] Or *epiploon*. See note [2] to p. 456. [3] See Appendix, note [23].

FIG. 805.—THE FREELY-MOVABLE PORTION OF THE SMALL INTESTINE HAS, WITH THE EXCEPTION OF THE COMMENCEMENT OF THE JEJUNUM AND THE TERMINATION OF THE ILEUM, BEEN CUT AWAY FROM THE MESENTERY, AND THIS LATTER HAS BEEN TURNED TO THE LEFT. THE MESENTERY AND ITS ROOT (MESENTERIUM ET RADIX MESENTERII) ARE SEEN FROM THE RIGHT SIDE. OF THE MESENTERY OF THE LARGE INTESTINE, OR MESOCOLON, THE RIGHT PORTION OF THE TRANSVERSE MESOCOLON WITH ITS LINE OF ATTACHMENT, AND THE *ASCENDING MESOCOLON (*see Appendix, note* [39]) ARE VISIBLE. RECESSUS ILEOCÆCALIS SUPERIOR, ILEOCOLIC OR SUPERIOR ILEOCÆCAL FOSSA (*see Appendix, note* [23]). INTESTINUM CÆCUM, THE CÆCUM; COLON ASCENDENS, THE ASCENDING COLON; COLON TRANSVERSUM, THE TRANSVERSE COLON; COLON SIGMOIDEUM, THE SIGMOID FLEXURE OF THE COLON, AND ITS TRANSITION INTO THE RECTUM (INTESTINUM RECTUM).



[1] See note [1] to p. 467. [2] See note [2] to p. 410 and Appendix, note [24]. [3] See Appendix, note [40]. [4] Or *epiploon*. See note [2] to p. 456.

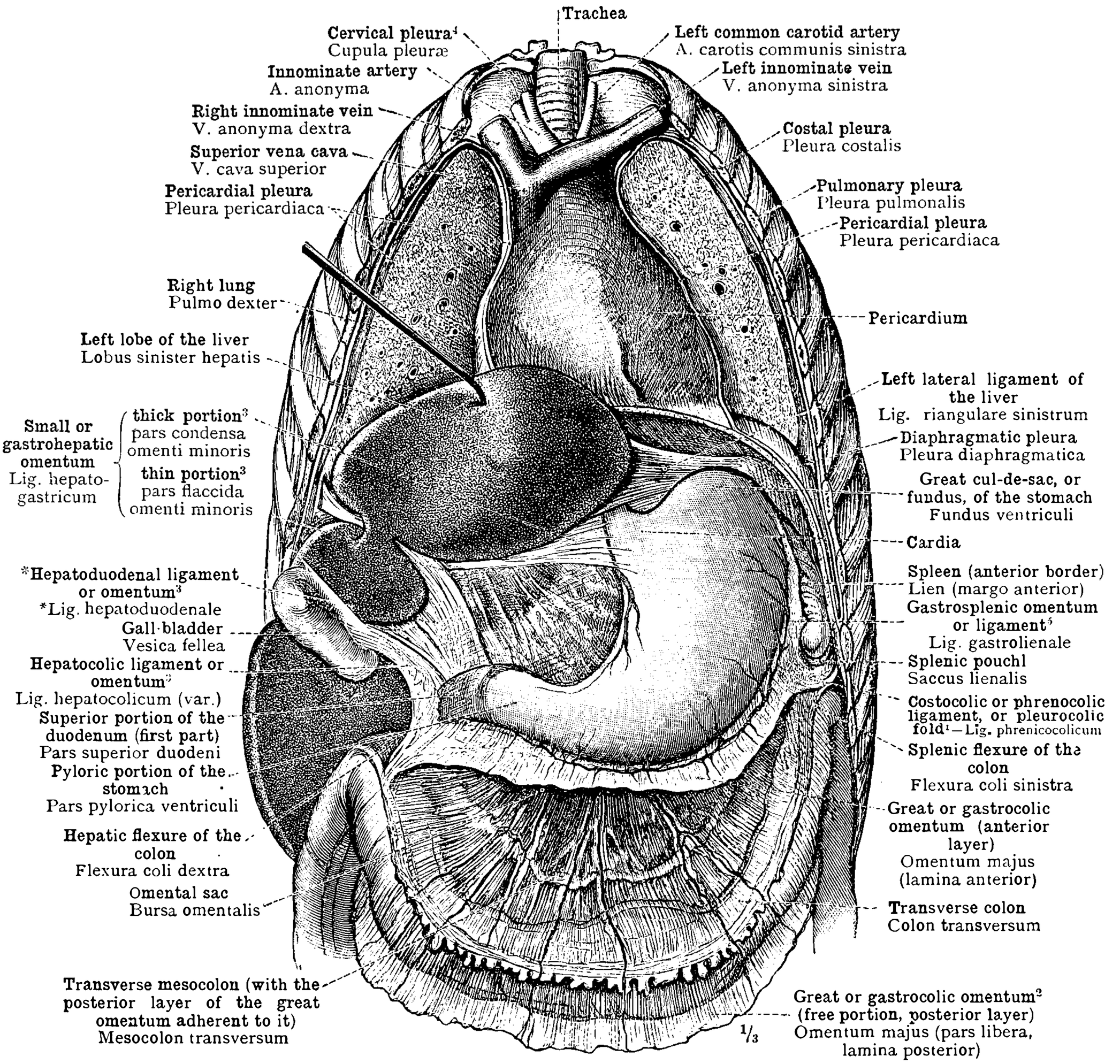
FIG. 806.—POSITION OF THE VISCERA IN THE THORACIC CAVITY AND THE UPPER PORTION OF THE ABDOMINAL CAVITY, AS SEEN AFTER THE REMOVAL OF THE ANTERIOR WALLS OF THE THORAX AND ABDOMEN.

The sternum, the costal cartilages, and the anterior extremities of the bodies or shafts of the ribs, have been removed.

CAVUM MEDIASTINALE ANTERIUS, THE ANTERIOR MEDIASTINUM—ANTERIOR AND SUPERIOR MEDIASTINA OF ENGLISH ANATOMISTS (*see note [2] above*)—WITH THE REMAINS OF THE THYMUS GLAND AND THE ANTERIOR WALL OF THE PERICARDIUM. LAMINÆ MEDIASTINALES, THE TWO LAYERS OF THE MEDIASTINUM. THE ANTERIOR BORDER AND A PORTION OF THE OUTER OR COSTAL SURFACE OF BOTH LUNGS. POSITION OF THE STOMACH IN RELATION TO THE LIVER AND THE TRANSVERSE COLON. GREAT OR GASTROCOLIC OMENTUM (OMENTUM MAJUS) SEEN FROM BEFORE.

The anterior layer of the great omentum, attached above to the great curvature of the stomach, has been divided by a vertical incision to the left of the middle line, and the margins of the incision have been drawn a little apart, in order to show the interior of the lower part of the omental sac (recessus inferior omentalis). Through the aperture thus made, a small portion of the transverse colon, and the posterior layer of the great omentum, are visible.

Topographical Anatomy of the Thoracic Organs and of the Viscera in the Upper Part of the Abdominal Cavity.

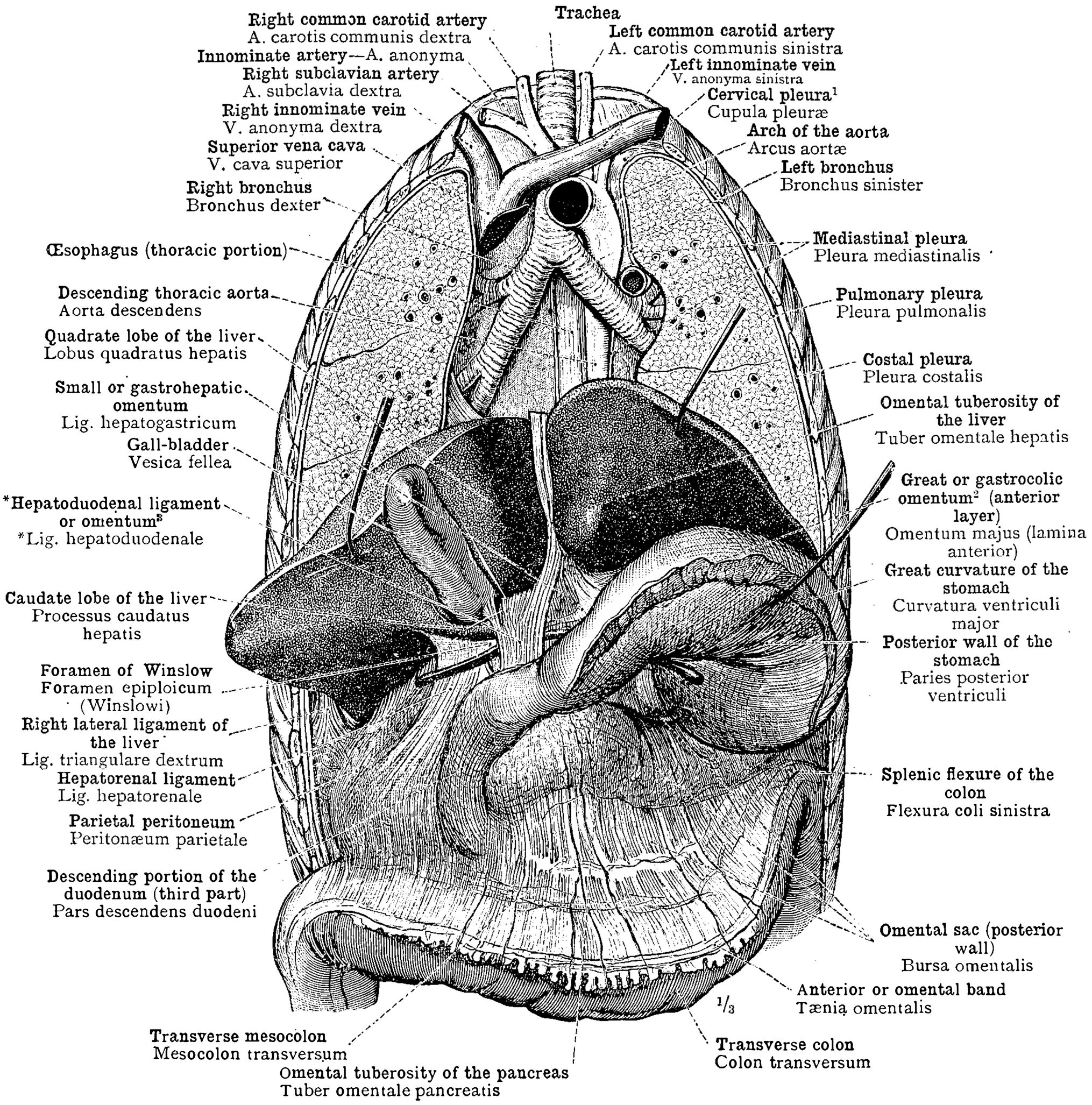


[1] See Appendix, note 41.
[2] Or *epiploon*. See note [2] to p. 456.
[3] See Appendix, note 42.
[4] See note [1] to p. 467.
[5] This is connected below with the great omentum, and is often regarded as a part of it.—TR.

FIG. 807.—THE THORACIC ORGANS AND THE VISCERA IN THE UPPER PART OF THE ABDOMINAL CAVITY AS SEEN AFTER THE REMOVAL OF THE WHOLE OF THE ANTERIOR WALL OF THE THORAX AND ABDOMEN.

By means of a coronal section, the anterior portions of both lungs and of the two layers of the mediastinum have been removed, so that the greater part of the anterior surface of the pericardium is exposed to view. The various parts of the diaphragm and the pleura are seen in section. The liver has been drawn as far as possible to the right, in order to show the stomach in its natural position, and the small omentum, consisting of three portions (*see Appendix*, *note* [42]); the Spigelian lobe of the liver (*lobus caudatus* according to Toldt—*see Appendix*, *note* [16]) is visible through the thin portion of the small omentum. By the removal of the greater part of the anterior layer of the great or gastrocolic omentum, the posterior wall of the lower part of the omental sac has been exposed; this posterior wall is constituted by the posterior layer of the great omentum, and in part by the transverse mesocolon, adherent thereto.

Topographical Anatomy of the Thoracic Organs and of the Viscera in the Upper Part of the Abdominal Cavity.



[1] See note [1] to p. 467. [2] Or *epiploon*. See note [2] to p. 456. [3] See Appendix, note [42]. [4] See Appendix, note [16]. [5] See note [2] to p. 410 and Appendix, note [24].

FIG. 808.—THE THORACIC AND ABDOMINAL WALLS HAVE BEEN REMOVED AS FAR BACK AS THE AXILLARY LINE (*see Fig.* 818, *p.* 488). THE ANTERIOR PORTIONS OF BOTH LUNGS HAVE BEEN REMOVED IN FRONT OF THE HILUM, AND THE PERICARDIAL SAC AND THE HEART HAVE BEEN TAKEN AWAY, SO THAT THE HINDER PART OF THE MIDDLE AND SUPERIOR MEDIASTINA AND THE POSTERIOR MEDIASTINUM (*see note* [5] *above*) ARE SEEN FROM THE FRONT, AND THE BRONCHIAL RAMIFICATION, THE ŒSOPHAGUS, AND THE DESCENDING THORACIC AORTA, ARE PARTIALLY DISPLAYED.

THE FREE PORTION OF THE GREAT OR GASTROCOLIC OMENTUM HAVING BEEN CUT AWAY BY INCISIONS PASSING ALONG ITS ATTACHMENTS TO THE GREAT CURVATURE OF THE STOMACH AND TO THE TRANSVERSE COLON, THE LIVER AND THE STOMACH WERE DRAWN UPWARDS AS FAR AS POSSIBLE, IN ORDER TO SHOW THE ENTRANCE TO THE OMENTAL SAC BY MEANS OF THE FORAMEN OF WINSLOW (FORAMEN EPIPLOICUM WINSLOWI), AND THE INTERIOR OF THE OMENTAL SAC (BURSA OMENTALIS), THE POSTERIOR WALL OF WHICH IS TO A LARGE EXTENT LAID BARE; IN THIS AREA, AND COVERED BY THE POSTERIOR LAYER OF THE GREAT OMENTUM, THE PANCREAS IS VISIBLE.

A sound has been passed through the foramen of Winslow into the omental sac.

Topographical Anatomy of the Thoracic Organs and of the Viscera in the Upper Part of the Abdominal Cavity.

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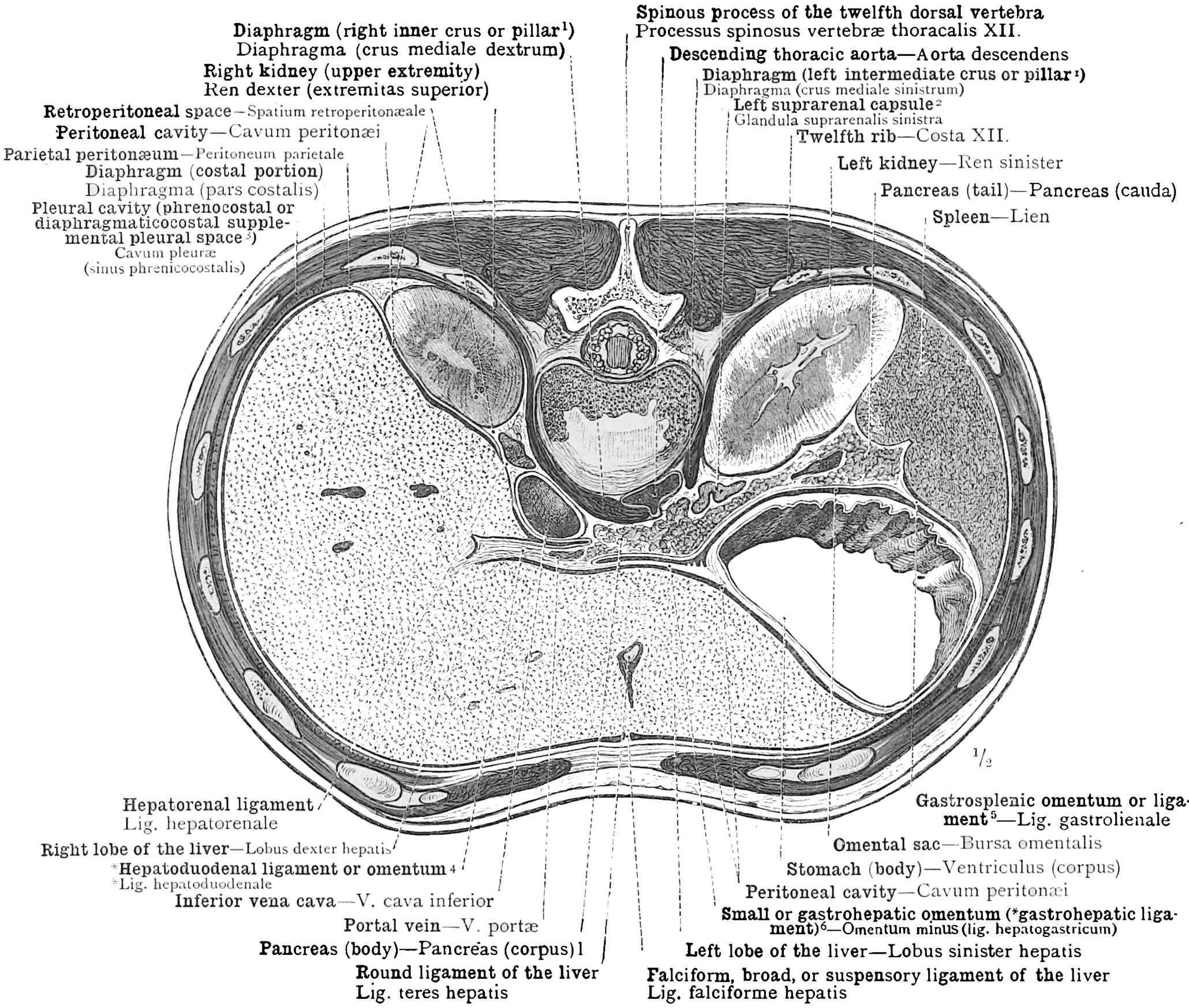
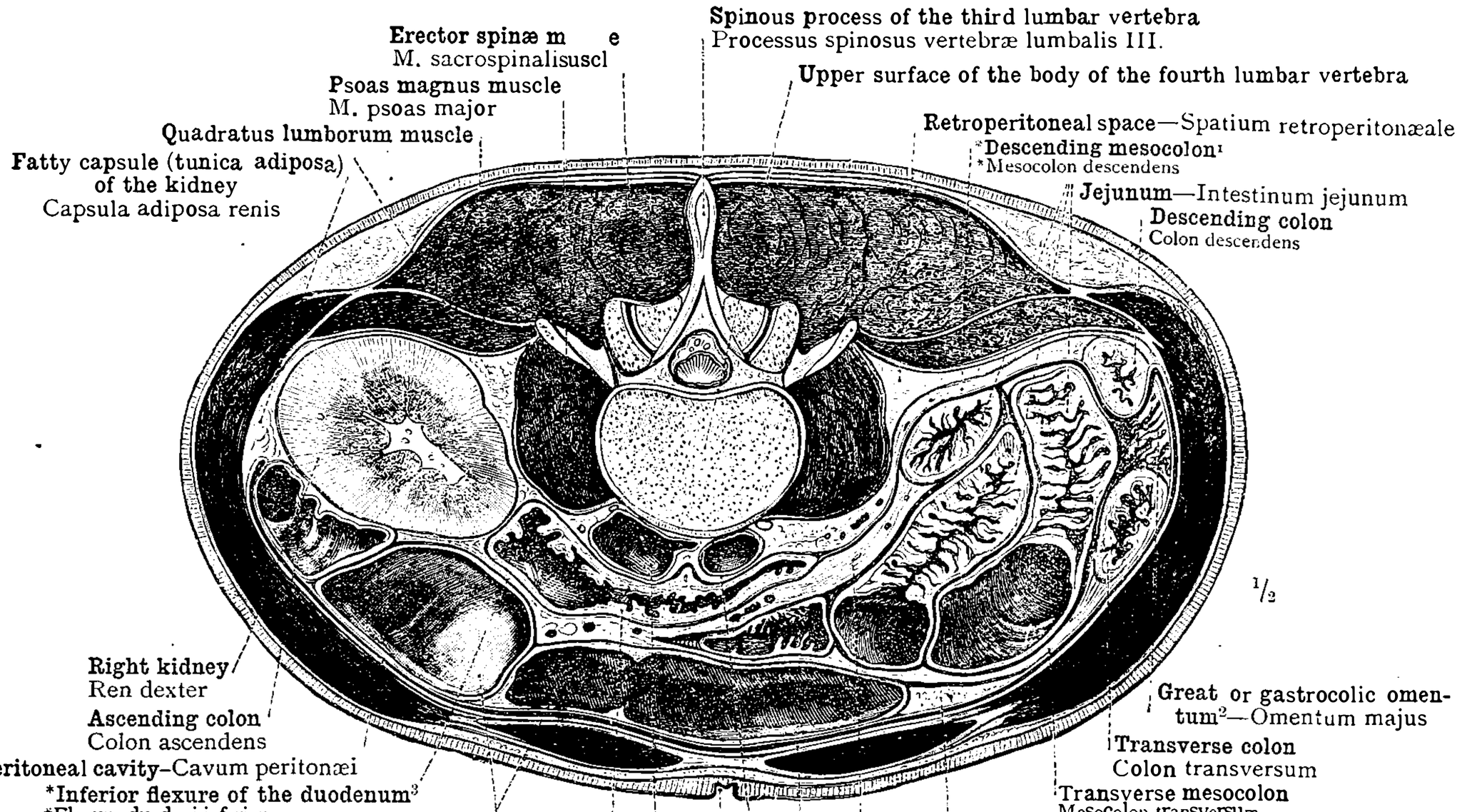


[1] See Appendix, note 37. [2] Called also *suprarenal body*, or *adrenal*. [3] See Appendix, note 36. [4] See Appendix, note 42.
[5] The *gastrosplenic omentum* is connected below with the *great omentum*, and is often regarded as a part of it.—TR.
[6] See Appendix, note 42.

FIG. 810.—HORIZONTAL SECTION THROUGH THE TRUNK PASSING BETWEEN THE BODIES OF THE TWELFTH DORSAL AND FIRST LUMBAR VERTEBRÆ.

The section cuts the liver almost through its greatest transverse (horizontal) dimension, the stomach above the middle of its body, the spleen about the middle of its vertical extent, the body and tail of the pancreas near the upper border of that organ, the right kidney near its upper extremity, the left kidney above its middle ; both suprarenal capsules also appear in the section. Between the vena cava inferior and the *hepatoduodenal ligament (*see Appendix*, *note* 42), the section passes through the foramen of Winslow (foramen epiploicum Winslowi), into which the caudate lobe of the liver (*processus caudatus hepatis—see Appendix*, *note* 16) projects ; behind the small or gastrohepatic omentum (*see Appendix*, *note* 42) the *vestibule of the omental sac (*see Appendix*, *note* 44) is cut across. The aorta is divided as it passes through the aortic opening in the diaphragm, the vena cava inferior below its entrance into the fissure or fossa of the vena cava, and the portal vein just after it has passed between the layers of the small or gastrohepatic omentum.

Topographical Anatomy of the Abdominal Viscera.

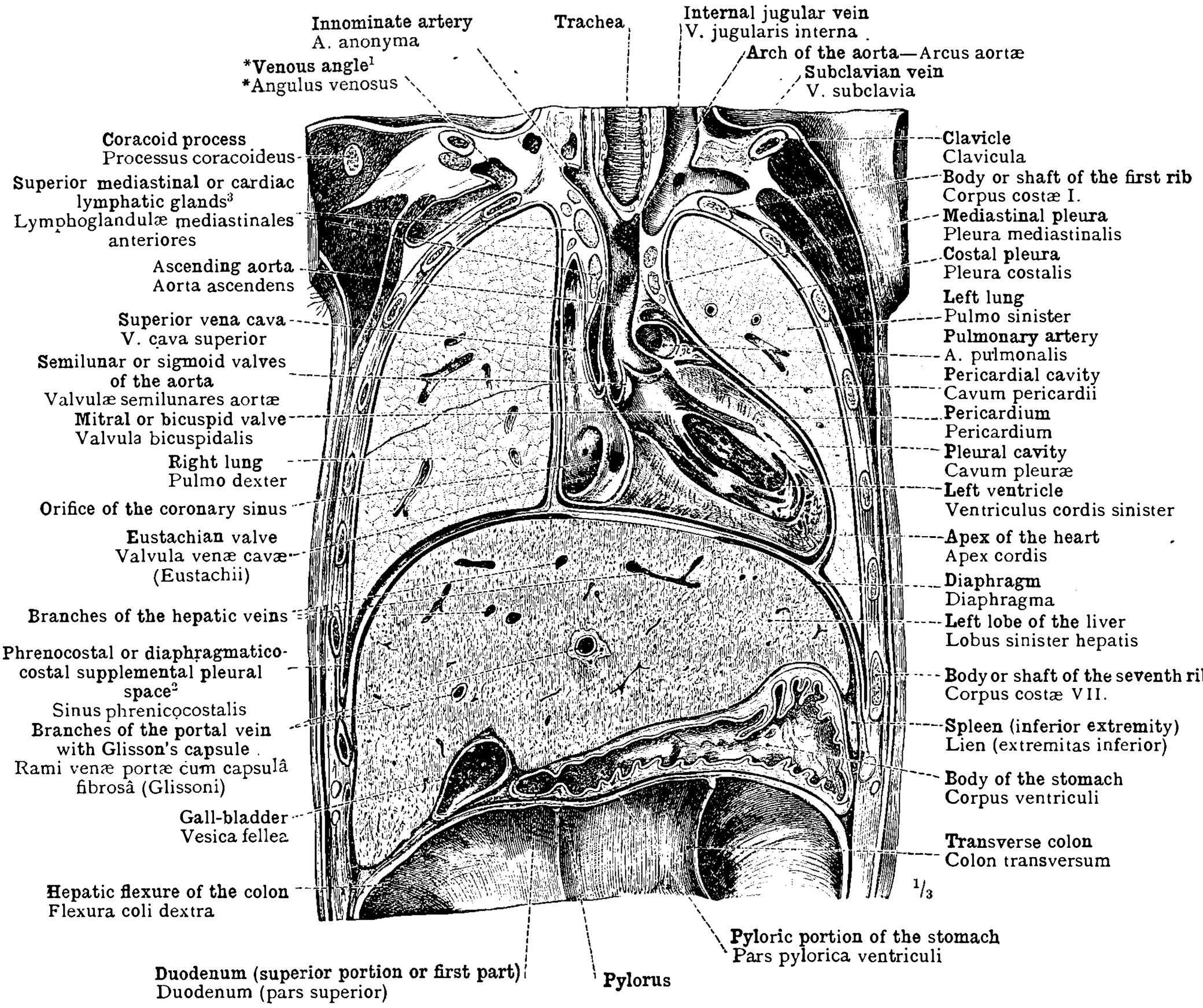


1/2

[1] See note [1] to p. 453. [2] Or *epiploon*. See note [2] to p 456. [3] See Appendix, note 6.

FIG. 811.—HORIZONTAL SECTION THROUGH THE TRUNK AT THE LEVEL OF THE UMBILICUS, PASSING BETWEEN THE BODIES OF THE THIRD AND FOURTH LUMBAR VERTEBRÆ.

The right kidney is divided near its inferior extremity, but the left kidney is entirely above the plane of section. As regards the small intestine, the whole length of the transverse portion of the duodenum appears in the section, in addition to several coils of the jejunum. The ascending colon is divided close to the commencement of the hepatic flexure. The greater part of the transverse colon is distended, and is divided nearly in the direction of its long axis; in the neighbourhood of the splenic flexure, however, it is contracted, and is divided transversely; the descending colon is also seen in transverse section. The section further shows portions of the great or gastrocolic omentum, of the mesentery of the small intestine, and of the *descending mesocolon (*see note* [1] *above*).



[1] *Angulus venosus*, the **venous angle*, is the name given by the author to the junction of the internal jugular and subclavian veins to form the innominate vein. The term is not used by English anatomists.—TR.

[2] See Appendix, note 36.

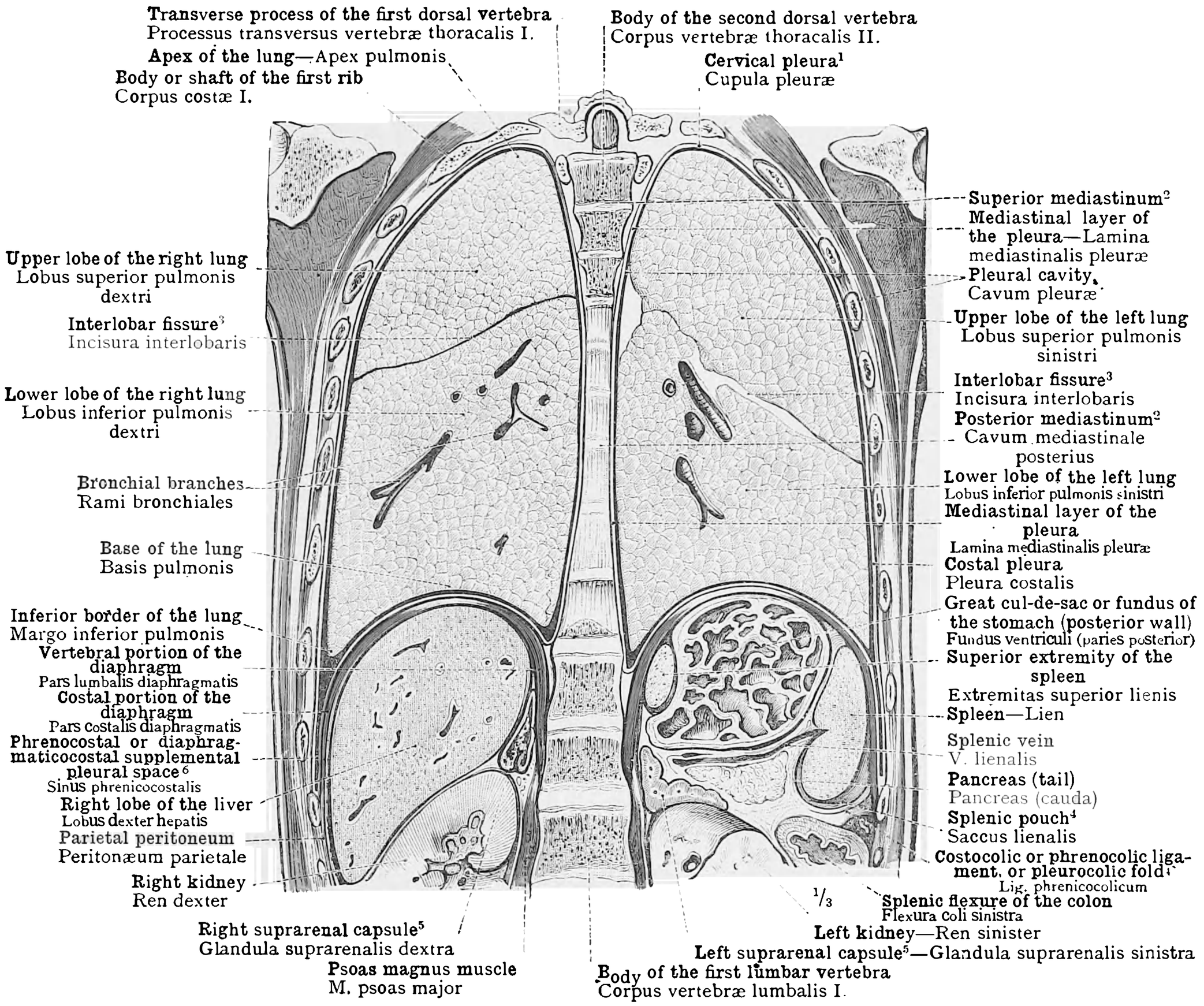
[3] There are three or four lymphatic glands behind the lower part of the body of the sternum, between that bone and the pericardium, known as the *anterior mediastinal lymphatic glands*. Those figured here are, however, in the *superior mediastinum* of English anatomists, and are, therefore, *superior mediastinal lymphatic glands* (see note [1] to p. 456). As they receive the lymphatics of the heart in addition to those of the greater part of the pericardium and of the thymus gland, they are often called the *cardiac lymphatic glands*.—TR.

FIG. 812.—CORONAL SECTION THROUGH THE TRUNK; ON THE RIGHT SIDE OF THE BODY THE SECTION PASSES THROUGH THE ANTERIOR AXILLARY FOLD, ON THE LEFT SIDE A LITTLE IN FRONT OF THIS FOLD.

The left ventricle, the ascending aorta, and the superior vena cava are divided longitudinally, while the pulmonary artery is divided transversely. The right auricle is divided in front of the orifices of the inferior vena cava and the coronary sinus. The liver is cut across almost in its greatest transverse (vertical) dimension. The situation of the contracted stomach and of the superior or first part of the duodenum in relation to the liver and to the greatly distended transverse colon is to be noted.

[The superior and middle mediastina of English anatomists are seen in coronal section; the plane between them is at the level of the reflection of the pericardium on the ascending aorta, above the transversely divided pulmonary artery. *See note [2] to p.* 410 *and Appendix, note* [24].—TR.]

Topographical Anatomy of the Thoracic Organs and of the Viscera in the Upper Part of the Abdominal Cavity.

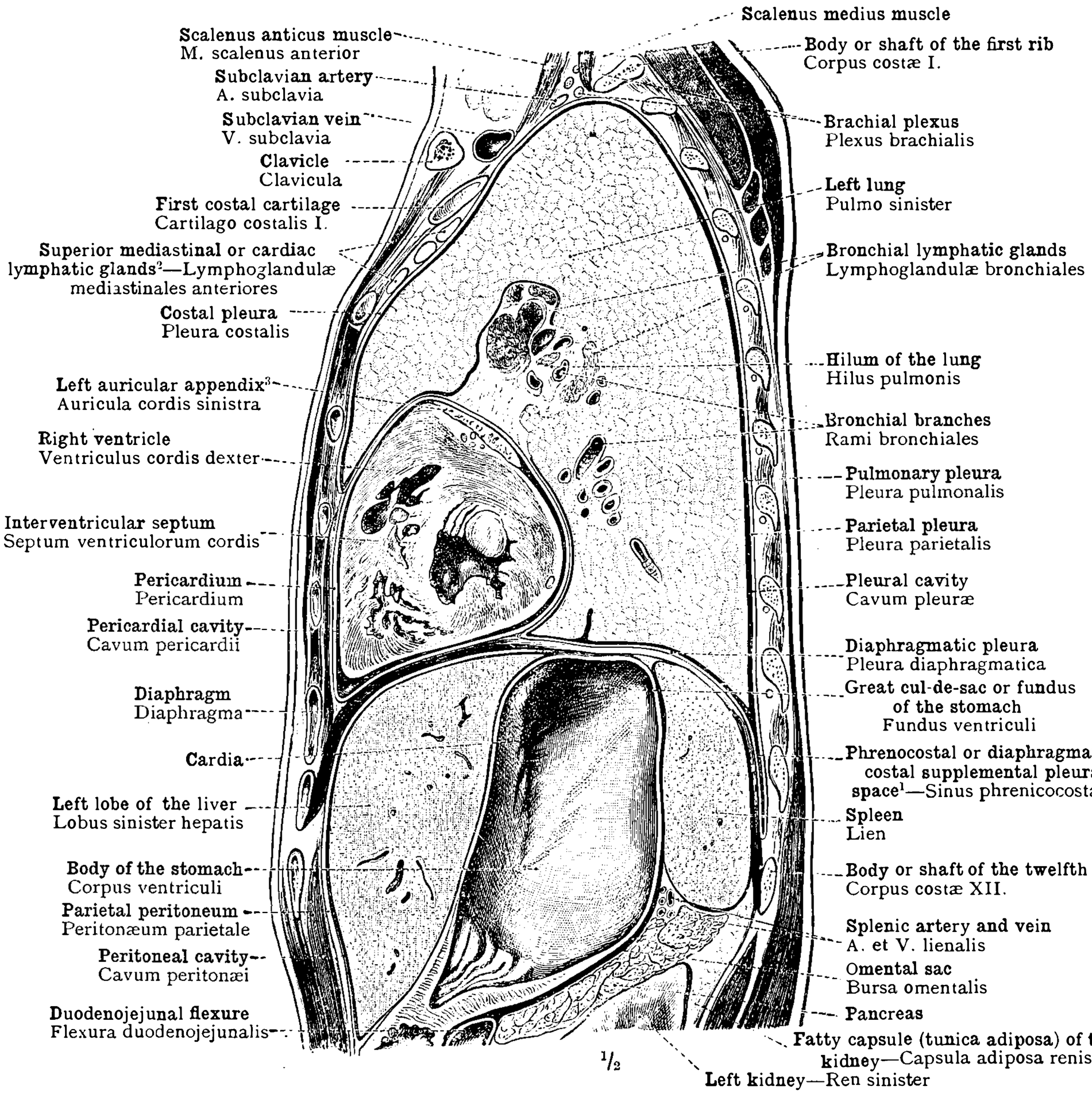


1 See note 1 to p. 467. 2 See note 2 to p. 410 and Appendix, note 24. 3 See note 1 to p. 464.
4 See Appendix, note 41. 5 Called also *suprarenal body*, or *adrenal*. 6 See Appendix, note 36.

FIG. 813.—CORONAL SECTION THROUGH THE TRUNK, A LITTLE BEHIND THE AXILLARY LINE (*see Fig.* 818, *p.* 488).

The section passes *through* the bodies of the uppermost and lowermost dorsal vertebræ, but passes *in front of* the bodies of the fifth to the tenth dorsal vertebræ; hence those portions of the viscera that lie in the posterior portions of the thoracic and abdominal cavities on either side of the spinal column appear in the section. The lungs are divided very nearly in their greatest vertical dimension. In the right side of the abdominal cavity, the relations of the kidney and the suprarenal capsule (*see note* 5 *above*) to the liver are shown; in the left side, the relations of the spleen to the great cul-de-sac or fundus of the stomach, to the tail of the pancreas, and to the splenic flexure of the colon.

Topographical Anatomy of the Thoracic Organs and of the Viscera in the Upper Part of the Abdominal Cavity.



[1] See Appendix, note 36.

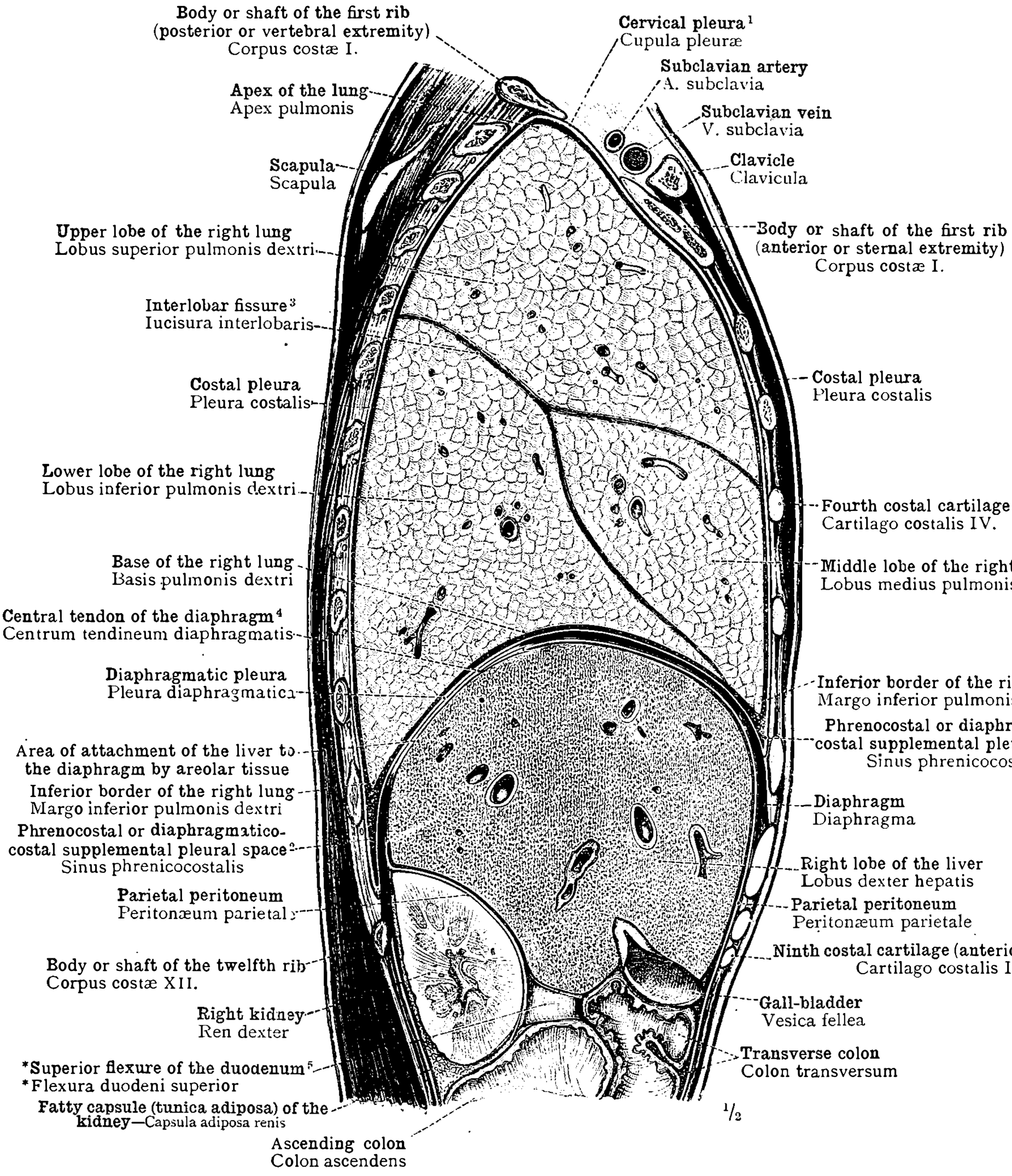
[2] See note 3 to p. 482.

[3] See note [3] to p. 411.

FIG. 814.—SAGITTAL SECTION THROUGH THE TRUNK, 4 CENTIMETRES (1·575 INCHES) TO THE LEFT OF THE MEDIAN PLANE.

The section passes through the hilum of the left lung, and divides the lung itself very nearly in its greatest vertical dimension; the two ventricles are divided obliquely. The body and the great cul-de-sac or fundus of the moderately distended stomach are divided approximately in their long axis, so that the position of the cardia at the upper end of the small curvature of the stomach is well shown. The relations of the stomach to the left lobe of the liver, to the spleen, to the pancreas, and to the duodenojejunal flexure, are to be noted.

Topographical Anatomy of the Thoracic Organs and of the Viscera in the Upper Part of the Abdominal Cavity.

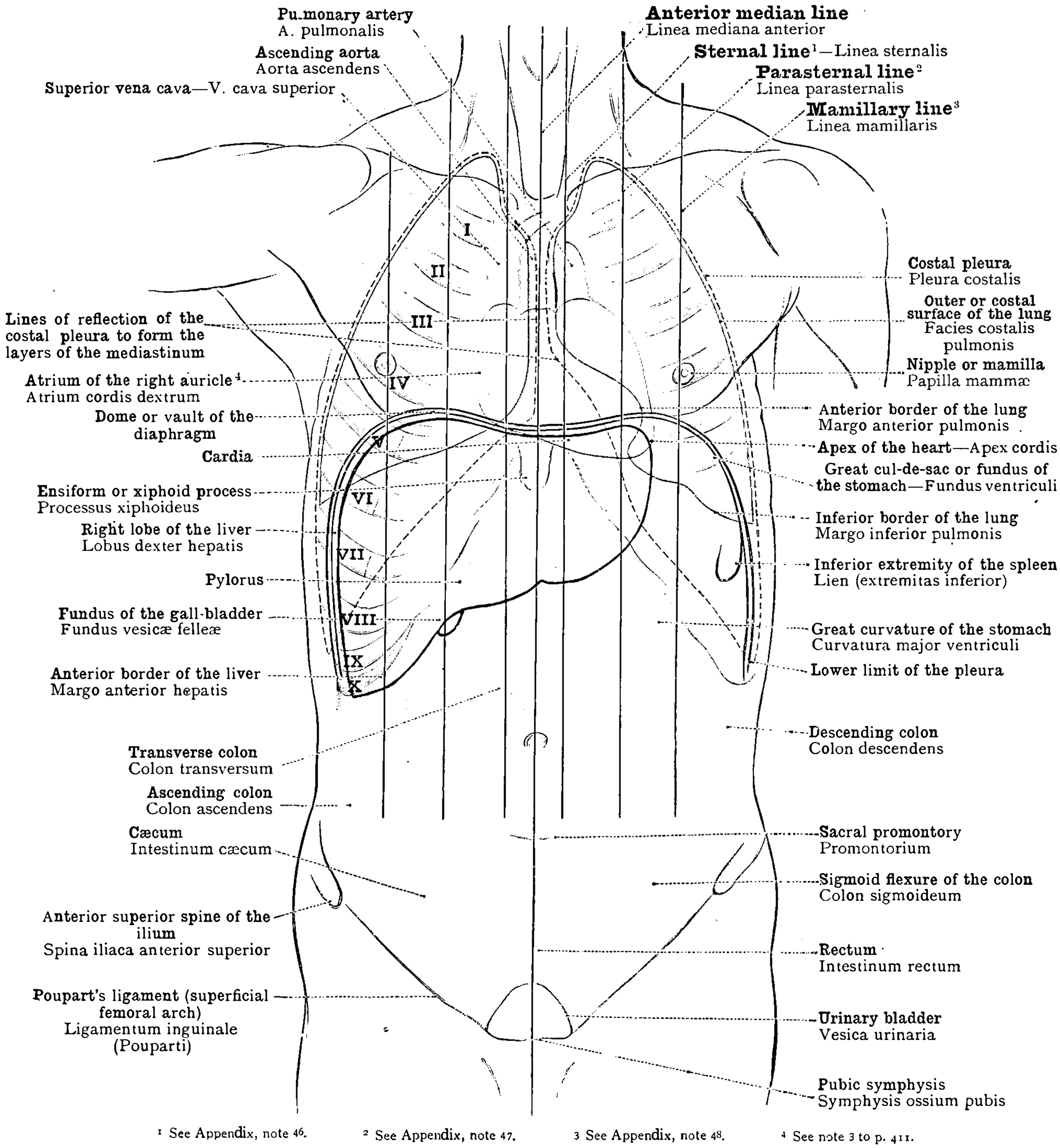


[1] See note [1] to p. 467. [2] See Appendix. note 36. [3] See note [1] to p. 464.
[4] Called also the *trefoil* or *cordiform tendon* of the diaphragm. [5] See Appendix note 6

FIG. 815.—SAGITTAL SECTION THROUGH THE TRUNK, 6 CENTIMETRES (2·362 INCHES) TO THE RIGHT OF THE MEDIAN PLANE.

The section passes to the right of the hilum of the lung, and divides all three lobes of the organ. The other organs seen in the section are: The right lobe of the liver, the gall-bladder, the right kidney, and portions of the ascending and transverse colon, which latter is moderately distended. The *superior flexure of the duodenum is also shown, its right (convex) wall appearing in the section.

Topographical Anatomy of the Right Lung and of the Viscera in the Upper Part of the Abdominal Cavity.



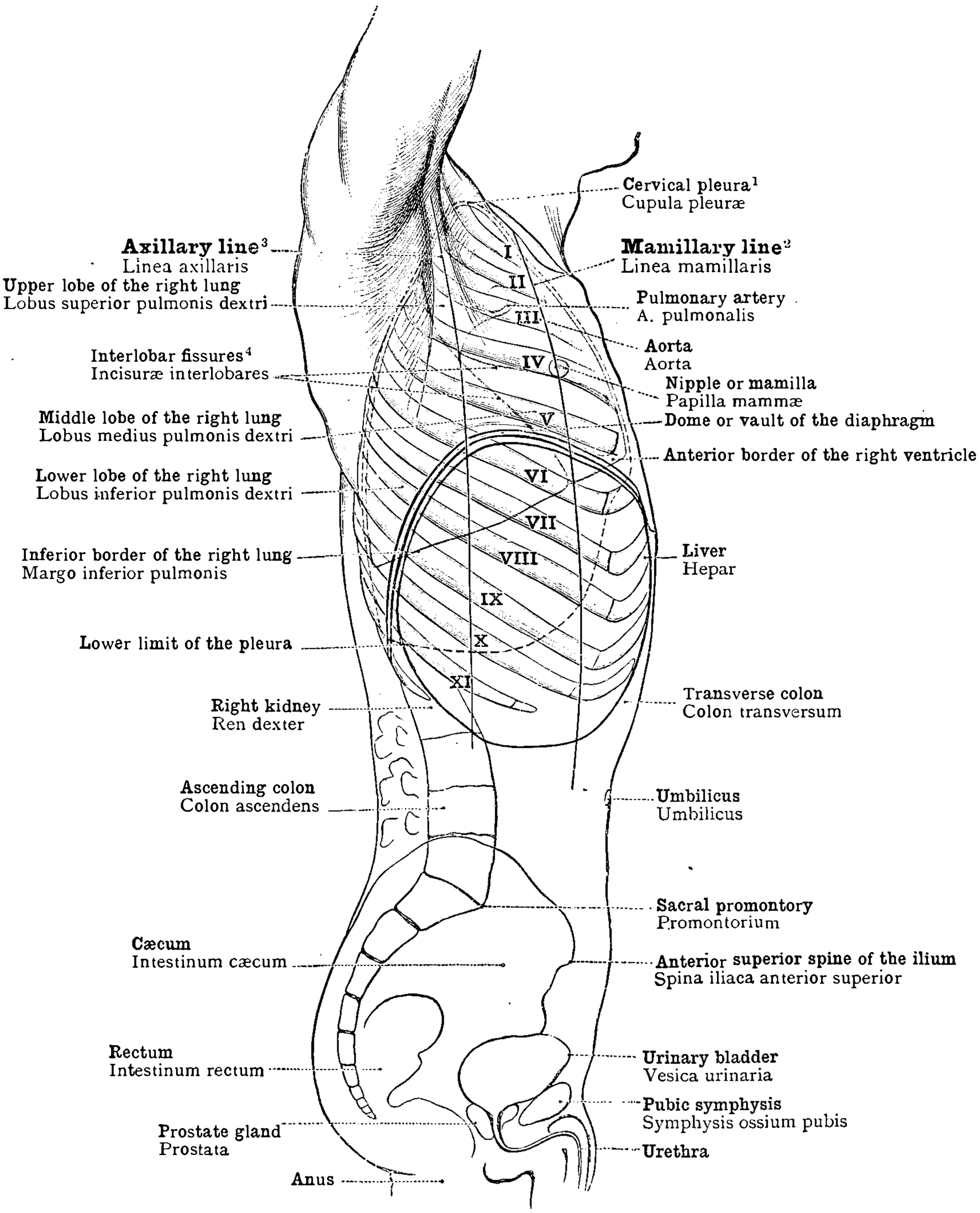
[1] See Appendix, note 46. [2] See Appendix, note 47. [3] See Appendix, note 48. [4] See note 3 to p. 411.

FIG. 816.—PROJECTION-OUTLINES OF THE THORACIC AND ABDOMINAL ORGANS ON THE ANTERIOR SURFACE OF THE TRUNK.

The red line indicates the outline of the heart and the great vessels (superior vena cava, ascending aorta, and pulmonary artery); the continuous blue lines indicate the outlines of the two lungs; the dotted blue lines, the boundaries of the pleural cavities. The violet line indicates the projection-outline of the liver and the fundus of the gall-bladder; the yellow lines indicate the projection-outline of the stomach and the different sections of the large intestine. The projection-outlines of the dome or vault of the diaphragm and of the inferior extremity of the spleen are black.

GUIDE-LINES FOR THE DETERMINATION OF THE POSITION OF THE THORACIC ORGANS: ANTERIOR MEDIAN LINE, STERNAL LINE (*see Appendix, note* [46]), PARASTERNAL LINE (*see Appendix, note* [47]), AND MAMILLARY LINE (*see Appendix, note* [48]). THE RIBS ARE DISTINGUISHED BY ROMAN NUMERALS.

Projection-Outlines of the Thoracic and Abdominal Viscera.



[1] See note [1] to p. 467. [2] See Appendix, note [48]. [3] See Appendix, note [49]. [4] See note [1] to p. 464.

FIG. 818.—PROJECTION-OUTLINES OF THE THORACIC AND ABDOMINAL ORGANS ON THE RIGHT SIDE OF THE TRUNK.

The red line indicates the outline of the heart and the pulmonary artery; the continuous blue lines indicate the outlines of the right lung and its three lobes; the dotted blue line indicates the boundaries of the pleural cavity. The violet line indicates the projection-outline of the right lobe of the liver; the yellow lines indicate the projection-outlines of the right kidney and the different sections of the large intestine.

GUIDE-LINES FOR THE DETERMINATION OF THE POSITION OF THE THORACIC ORGANS: AXILLARY LINE (*see Appendix, note* [49]) AND MAMILLARY LINE (*see Appendix, note* [48]). THE RIBS ARE DISTINGUISHED BY ROMAN NUMERALS.

Projection-Outlines of the Thoracic and Abdominal Viscera.

APPARATUS UROGENITALIS

GENITO-URINARY APPARATUS

ORGANA UROPOËTICA

URINARY ORGANS

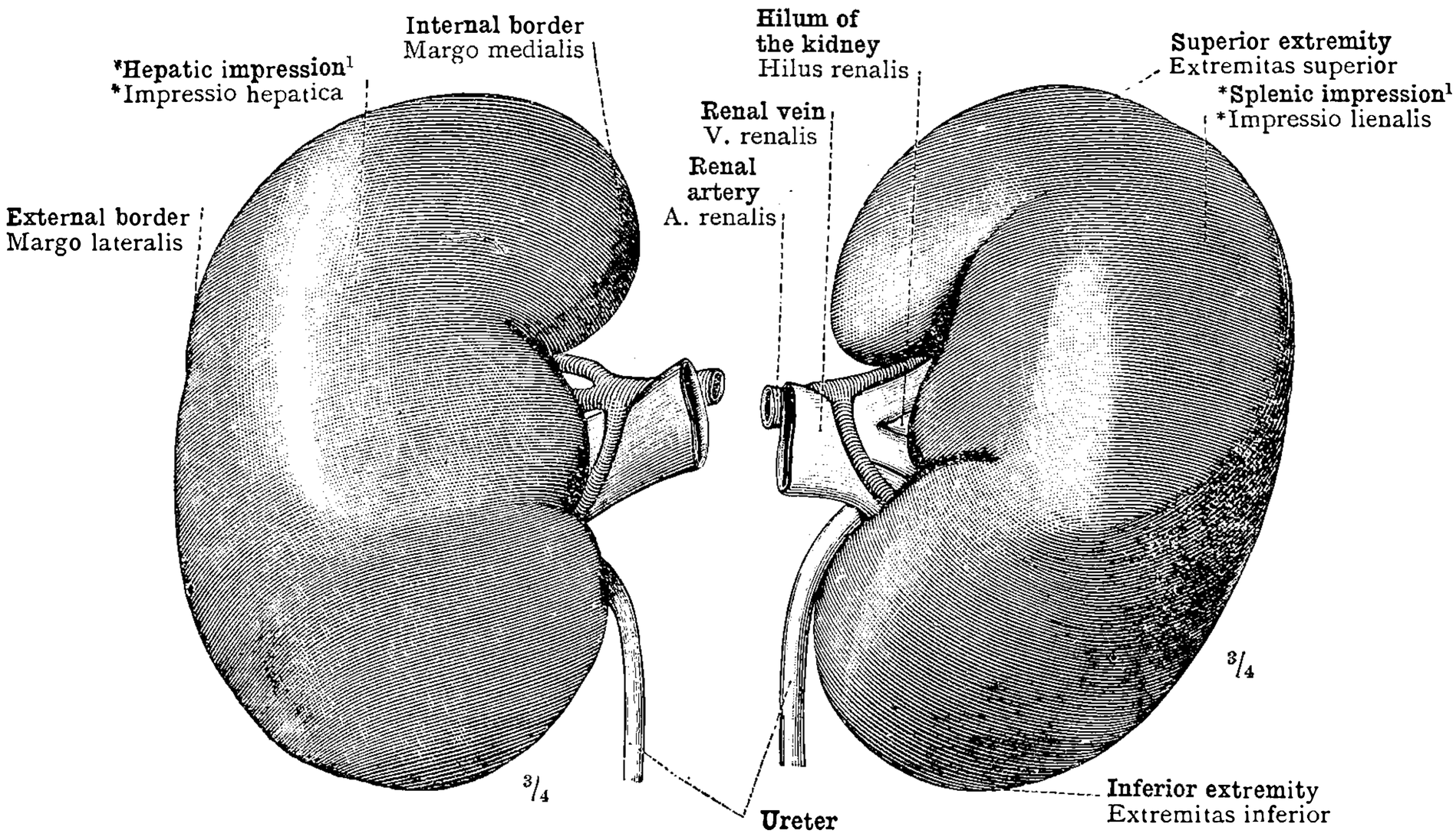


FIG. 819.—REN DEXTER, THE RIGHT KIDNEY. FACIES ANTERIOR, ANTERIOR SURFACE.

FIG. 820.—REN SINISTER, THE LEFT KIDNEY. FACIES ANTERIOR, ANTERIOR SURFACE.

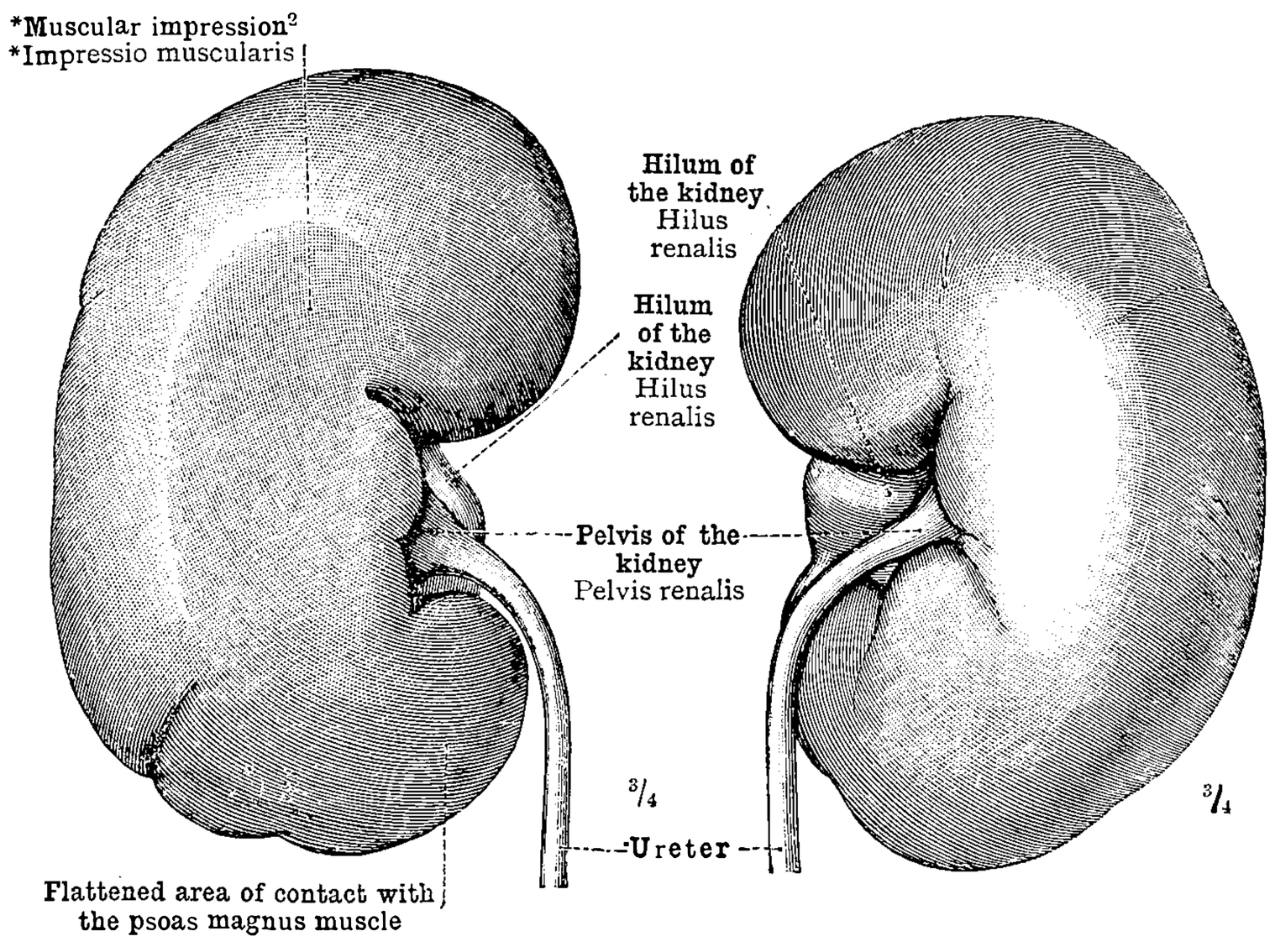


FIG. 821.—REN SINISTER, THE LEFT KIDNEY. FACIES POSTERIOR, POSTERIOR SURFACE.

FIG. 822.—REN DEXTER, THE RIGHT KIDNEY. FACIES POSTERIOR, POSTERIOR SURFACE.

[1] *Impressions.*—When the solid viscera are hardened *in situ*, their surface presents facets corresponding to the areas of contact with one another and with the structures forming the wall of the abdominal cavity. Such facets are termed *impressions*. The word is used most frequently in connexion with the *impressions* of the liver.—TR.

[2] The *muscular impression* is a flattening, very variable in extent, indicating the area of contact of the kidney with the anterior surface of the quadratus lumborum muscle (see also note [1]).—TR.

Ren—The kidney.

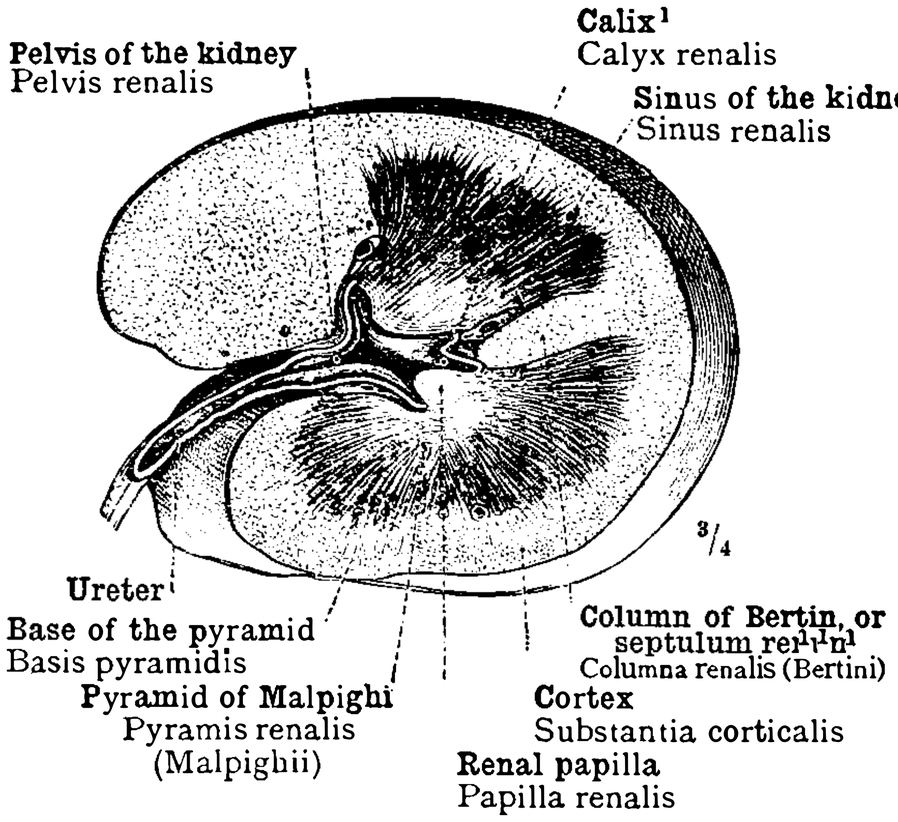


FIG. 823.—HORIZONTAL SECTION THROUGH THE MIDDLE OF THE RIGHT KIDNEY AND THE RENAL PELVIS.

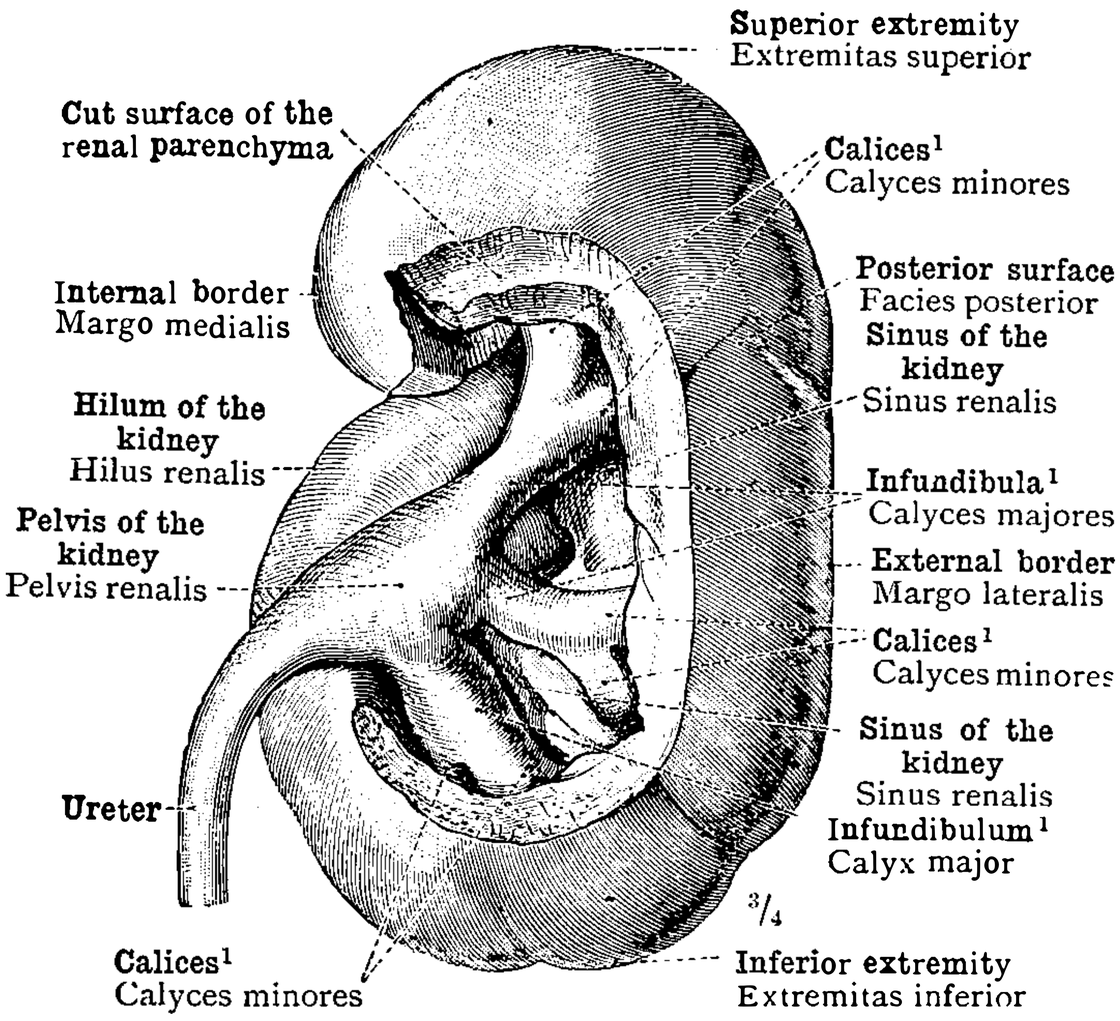


FIG. 824.—PELVIS RENALIS, THE PELVIS OF THE KIDNEY WITH THE CALICES AND INFUNDIBULA (CALYCES RENALES MINORES ET MAJORES) LAID BARE BY THE REMOVAL OF A PORTION OF THE RENAL PARENCHYMA FROM BEHIND.

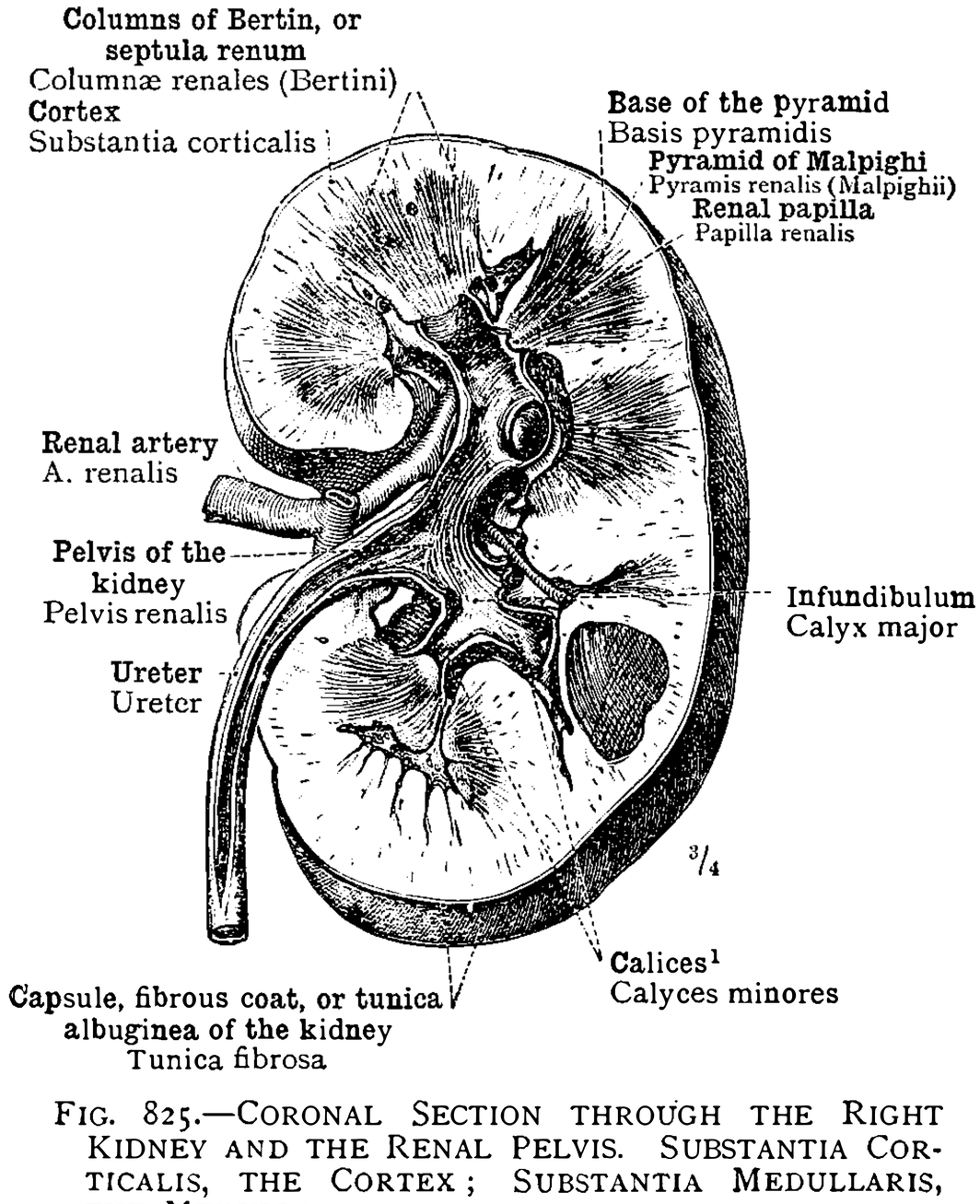


FIG. 825.—CORONAL SECTION THROUGH THE RIGHT KIDNEY AND THE RENAL PELVIS. SUBSTANTIA CORTICALIS, THE CORTEX; SUBSTANTIA MEDULLARIS, THE MEDULLA.

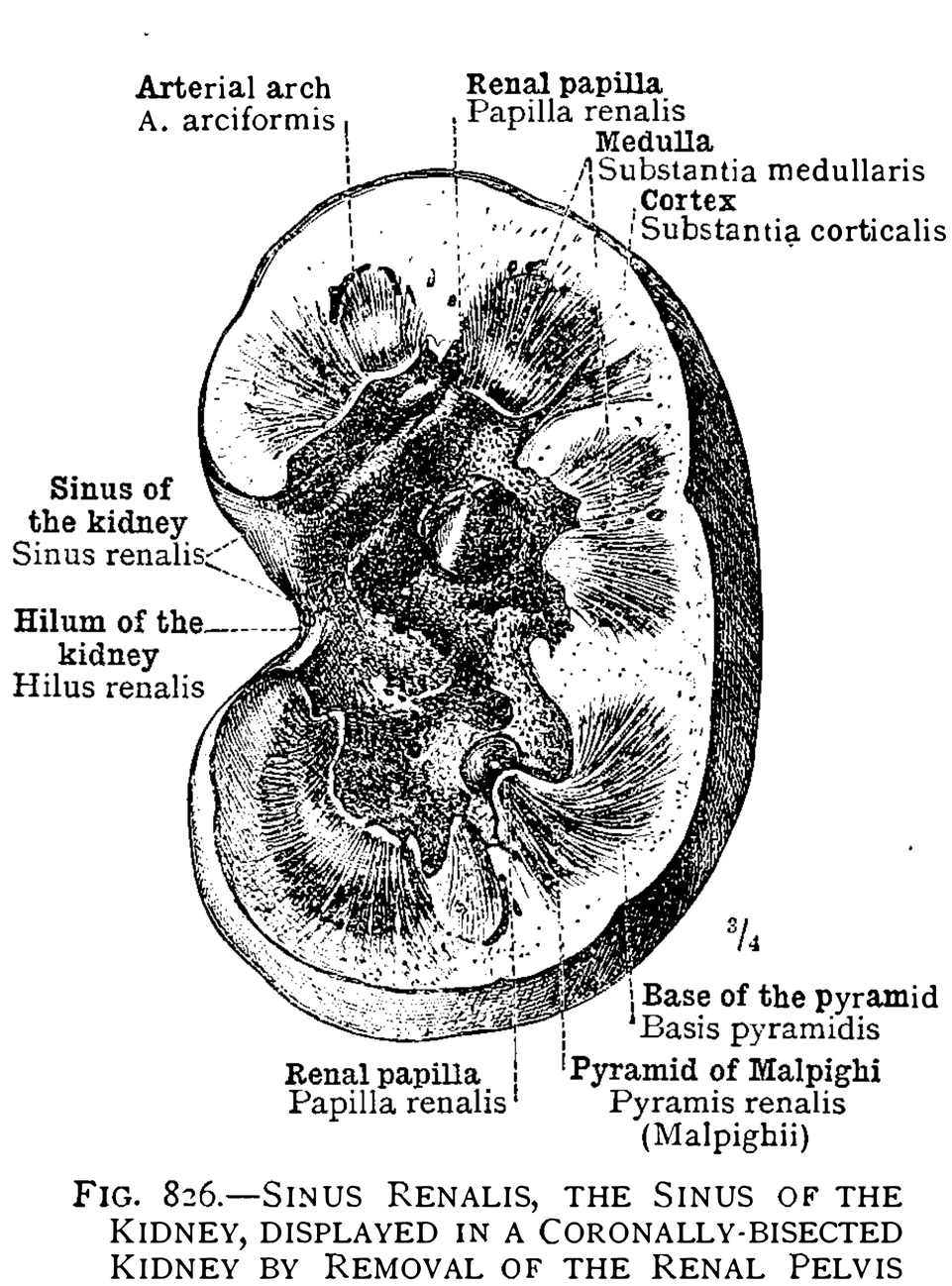


FIG. 826.—SINUS RENALIS, THE SINUS OF THE KIDNEY, DISPLAYED IN A CORONALLY-BISECTED KIDNEY BY REMOVAL OF THE RENAL PELVIS AND THE BLOODVESSELS. POSTERIOR HALF.

[1] See Appendix, note 50.

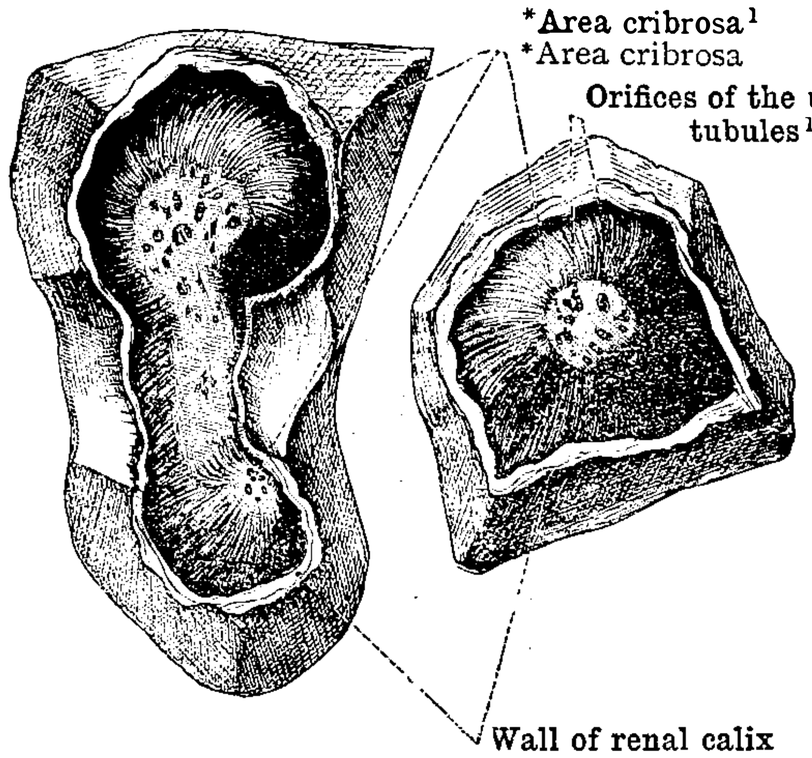


FIG. 827.—*AREA CRIBROSA[1] OF THE RENAL PAPILLA.

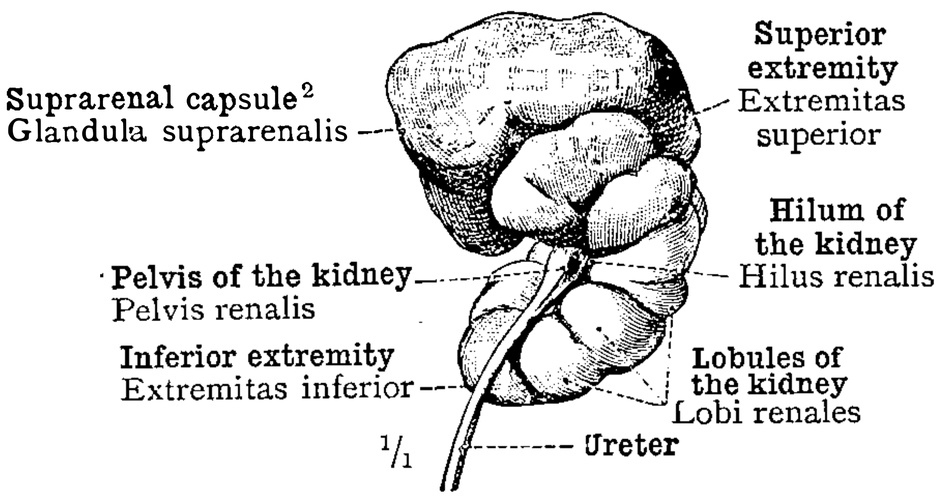


FIG. 828.—RIGHT KIDNEY AND SUPRARENAL CAPSULE[2] FROM A HUMAN FŒTUS IN THE MIDDLE OF THE SEVENTH MONTH (MONTHS OF FOUR WEEKS EACH). SEEN FROM BEHIND.

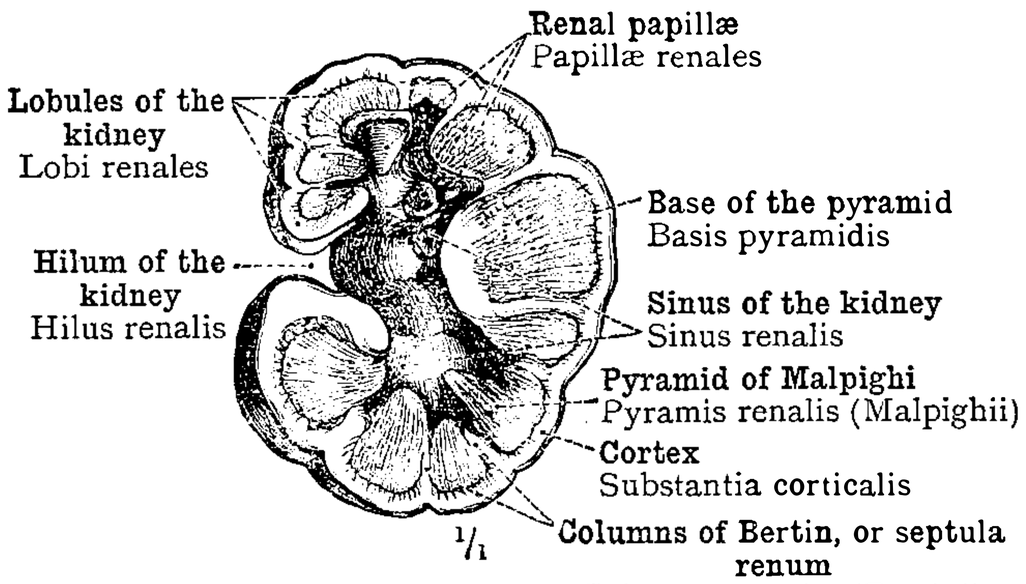


FIG. 829.—SINUS OF THE KIDNEY, DISPLAYED IN THE CORONALLY-BISECTED KIDNEY OF AN INFANT AGED THREE WEEKS

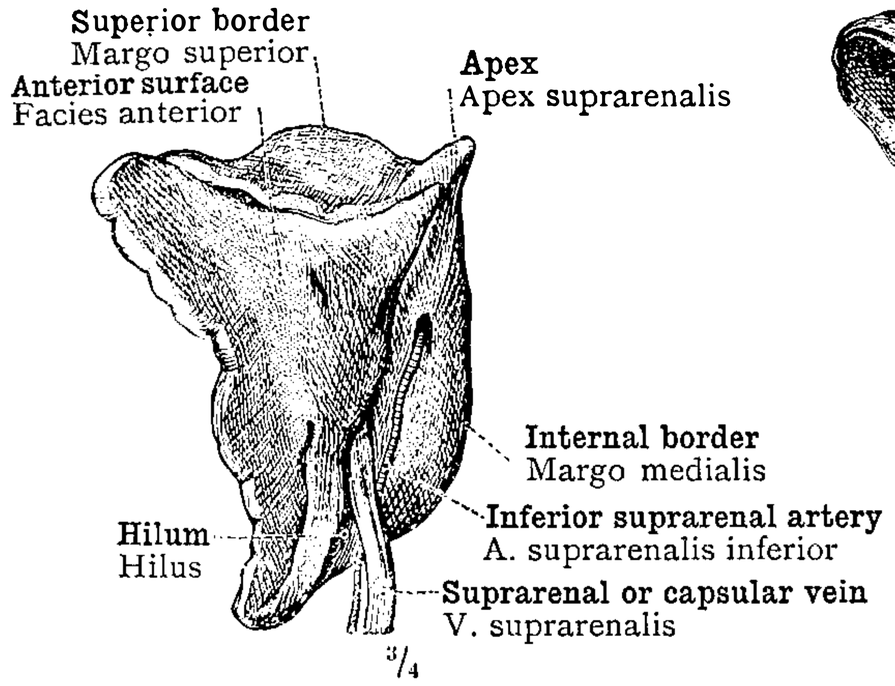


FIG. 830.—RIGHT SUPRARENAL CAPSULE,[2] SEEN FROM BEFORE.

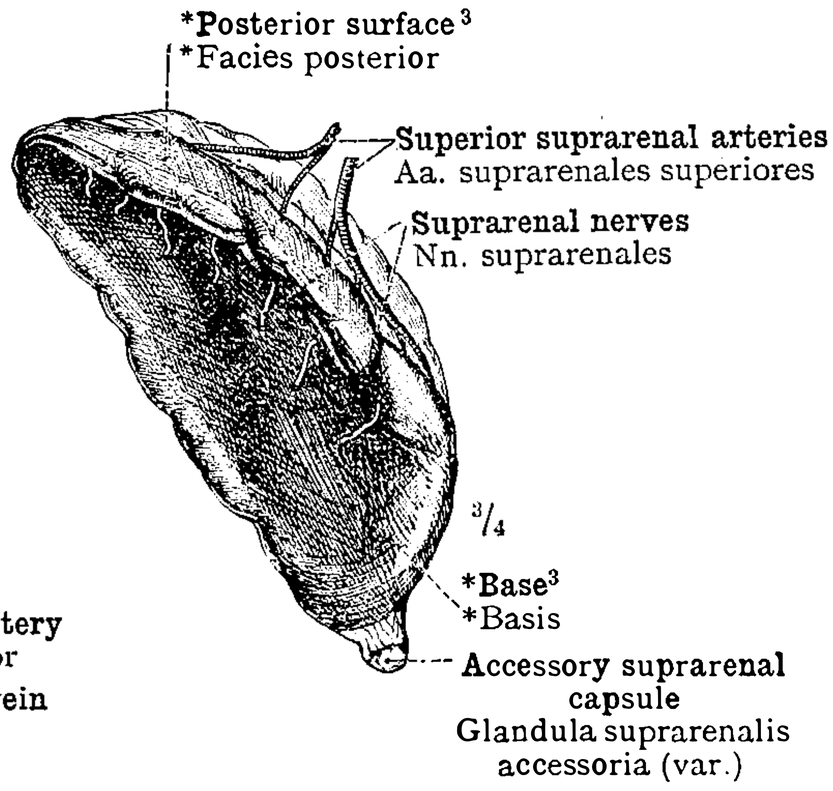


FIG. 831.—LEFT SUPRARENAL CAPSULE,[2] SEEN FROM BEHIND.

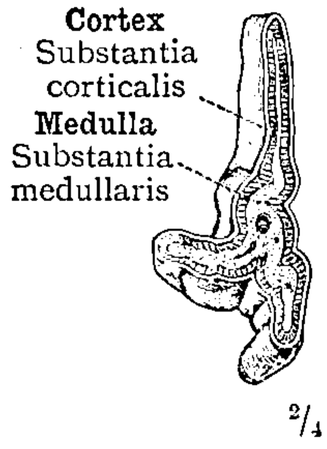


FIG. 832.—HORIZONTAL SECTION THROUGH THE LEFT SUPRARENAL CAPSULE.[2]

[1] See Appendix, note 51. [2] Called also *suprarenal body*, or *adrenal*. [3] See Appendix, note 52.

Ren—The kidney.—Glandula suprarenalis—The suprarenal capsule (*see note* [2] *above*).

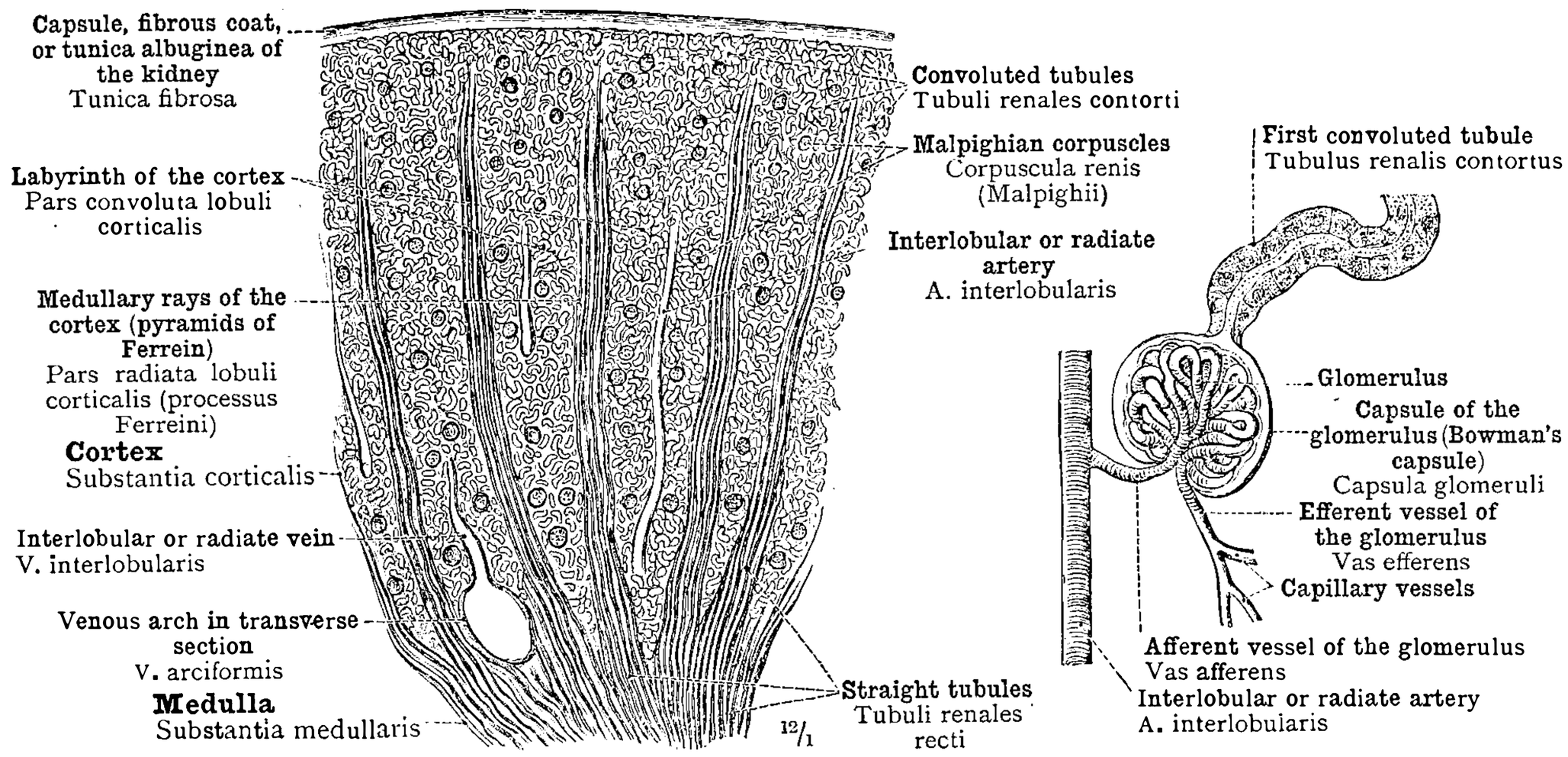
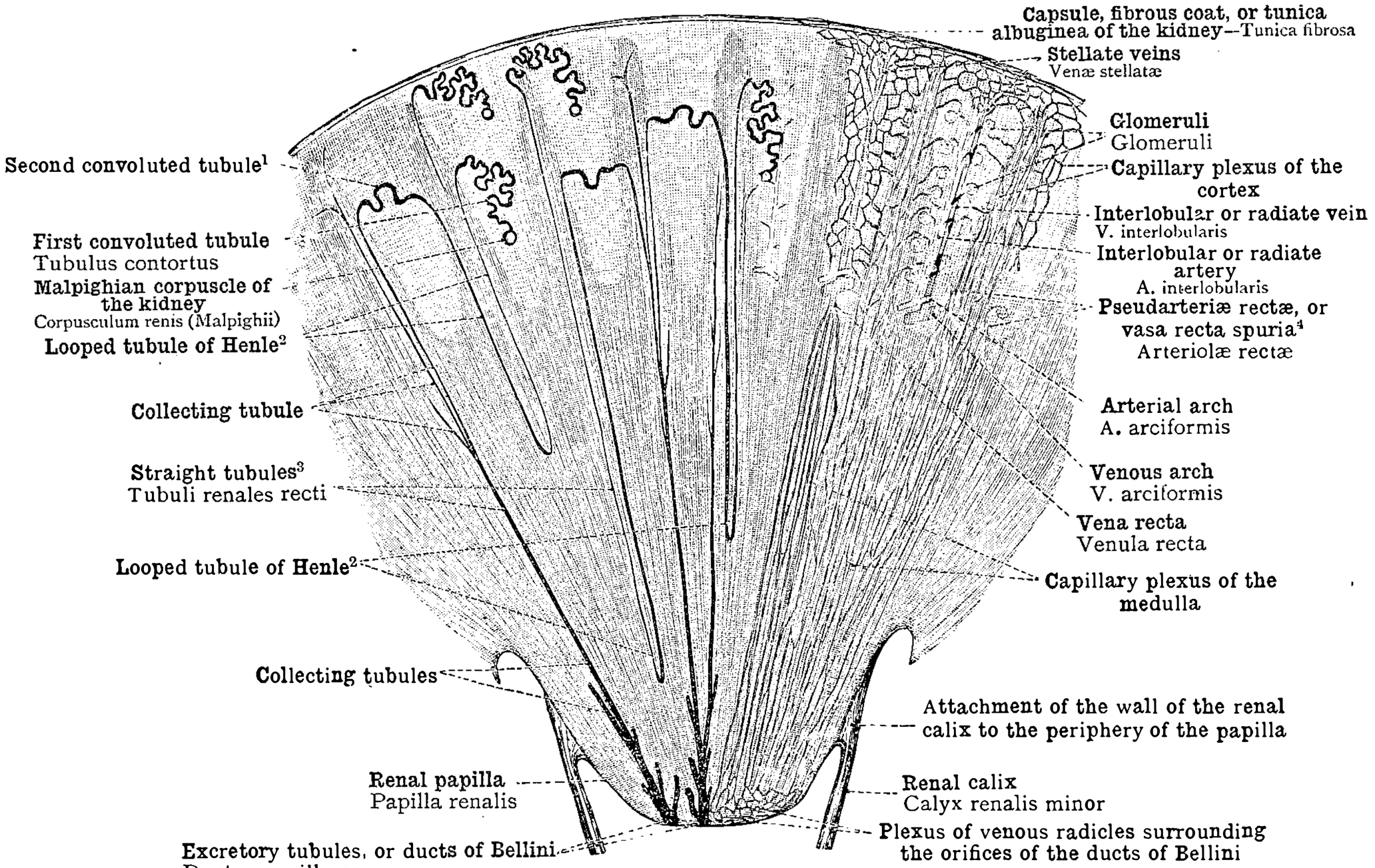


FIG. 833.—PART OF A SECTION THROUGH THE CORTEX OF THE KIDNEY IN THE DIRECTION OF THE STRAIGHT TUBULES.

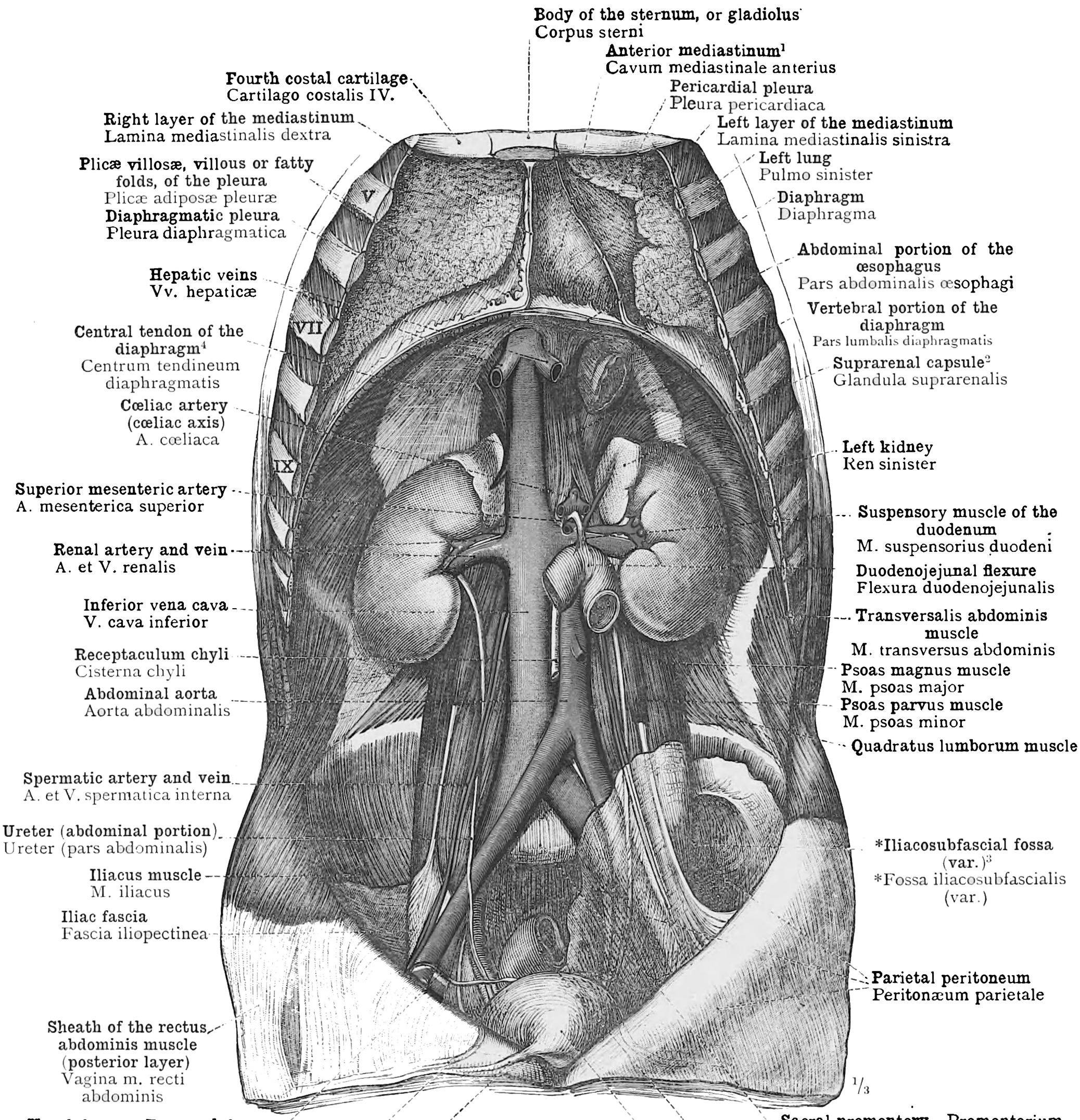
FIG. 834.—CORPUSCULUM RENIS (MALPIGHII), MALPIGHIAN CORPUSCLE OF THE KIDNEY. DIAGRAMMATIC.



[1] See Appendix, note 53. [2] See Appendix, note 54. [3] See Appendix, note 55. [4] See Appendix, note 56.

FIG. 835.—DIAGRAMMATIC REPRESENTATION OF THE ARRANGEMENT OF THE URINIFEROUS TUBULES AND THE BLOODVESSELS IN THE KIDNEY.

Ren—The kidney.



[1] See note [2] to p. 410 and Appendix, note 24.
[2] Called also *suprarenal body*, or *adrenal*.
[3] See Appendix, note 57.
[4] Called also the *trefoil* or *cordiform tendon* of the diaphragm.
[5] Also called the *superior false ligament*, or *suspensory ligament*, *of the bladder*.

FIG. 836.—POSTERIOR WALL OF THE ABDOMINAL CAVITY, AS SEEN AFTER THE REMOVAL OF THE PARIETAL PERITONEUM; SPATIUM RETROPERITONEALE, THE RETROPERITONEAL SPACE. POSITION OF THE KIDNEYS AND THE SUPRARENAL CAPSULES (*see note* [2] *above*). ABDOMINAL PORTION OF THE ŒSOPHAGUS. MUSCULUS SUSPENSORIUS DUODENI, THE SUSPENSORY MUSCLE OF THE DUODENUM.

In the left iliac fossa the parietal peritoneum has been left attached, in order to display the *iliacosubfascial fossa of the peritoneum, which exists in this specimen. (Compare with this figure Fig. 809, p. 479.)

Retroperitoneal Space and Topographical Anatomy of the Kidney.

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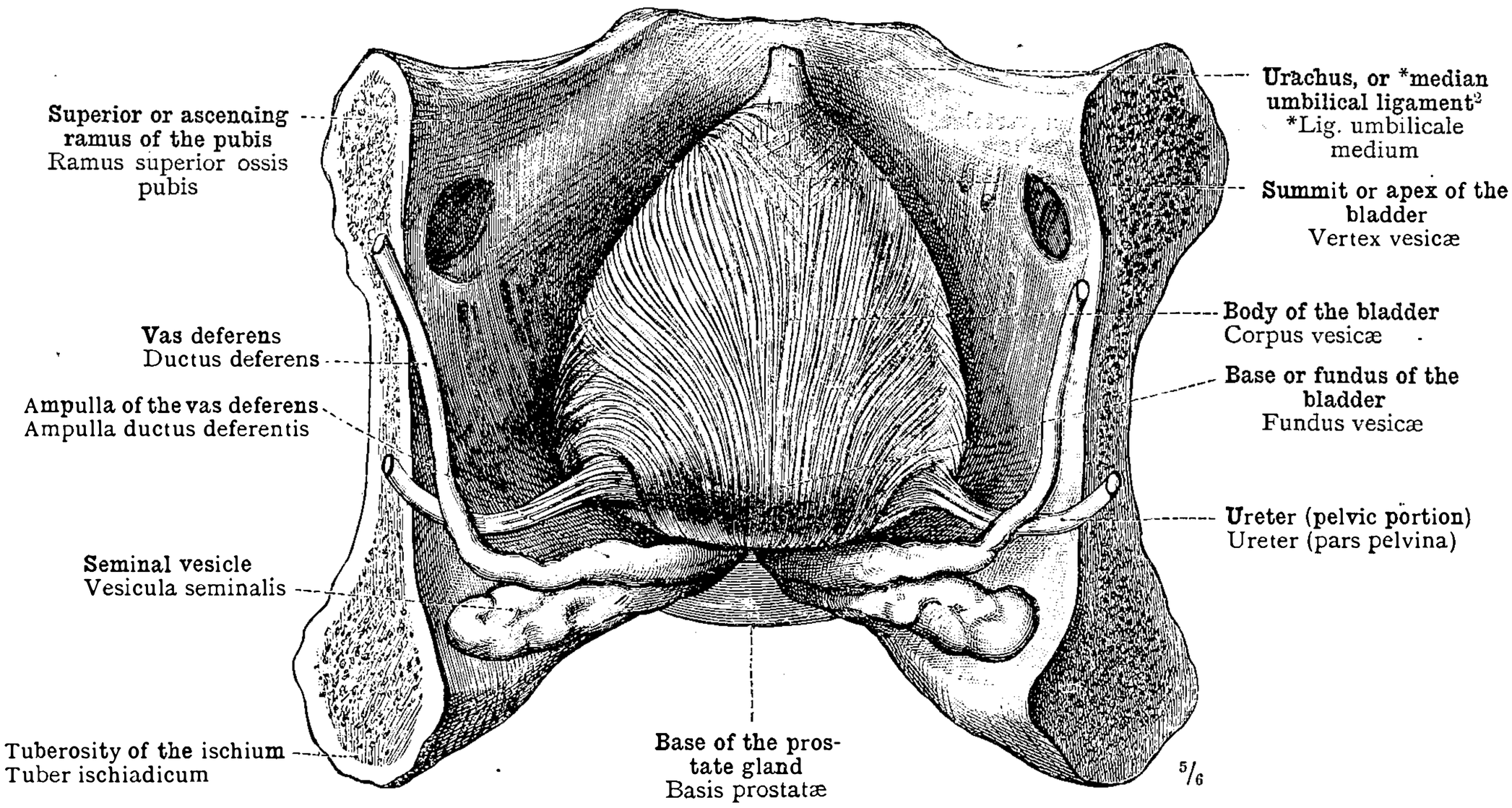


FIG. 838.—EXTERNAL LAYER OF THE MUSCULAR COAT OF THE BLADDER (STRATUM EXTERNUM TUNICÆ MUSCULARIS VESICÆ URINARIÆ). THE CONTRACTED MALE BLADDER IN ITS NATURAL POSITION, WITH THE PELVIC PORTION OF THE URETER, THE VAS DEFERENS, AND THE SEMINAL VESICLE. SEEN FROM BEHIND.

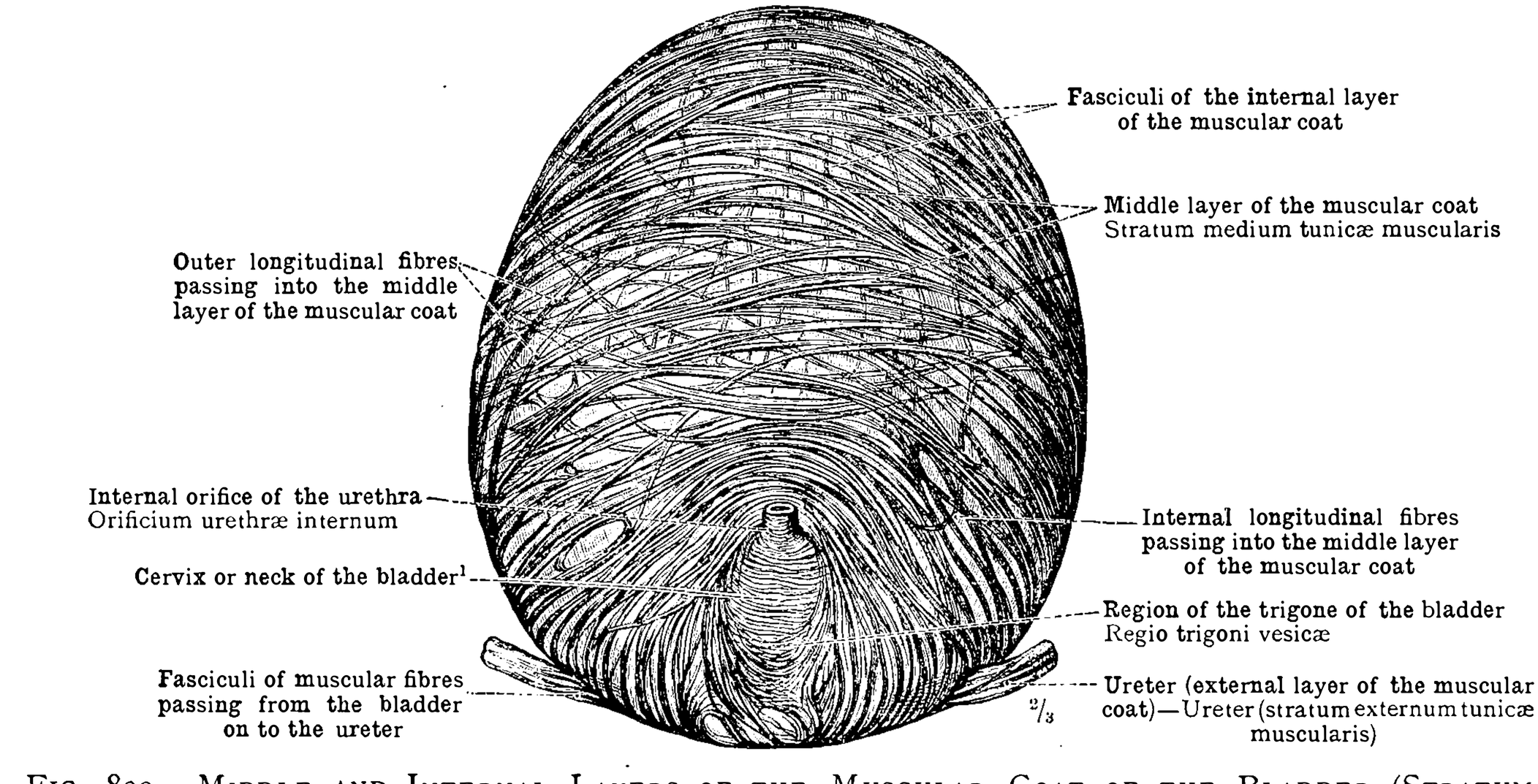


FIG. 839.—MIDDLE AND INTERNAL LAYERS OF THE MUSCULAR COAT OF THE BLADDER (STRATUM MEDIUM ET STRATUM INTERNUM TUNICÆ MUSCULARIS VESICÆ URINARIÆ), SEEN FROM BEFORE AND BELOW IN THE MODERATELY-DISTENDED BLADDER.

[1] See Appendix, note 58.

[2] See note 3 to p. 387 in Part III.

Vesica urinaria—Urinary bladder.

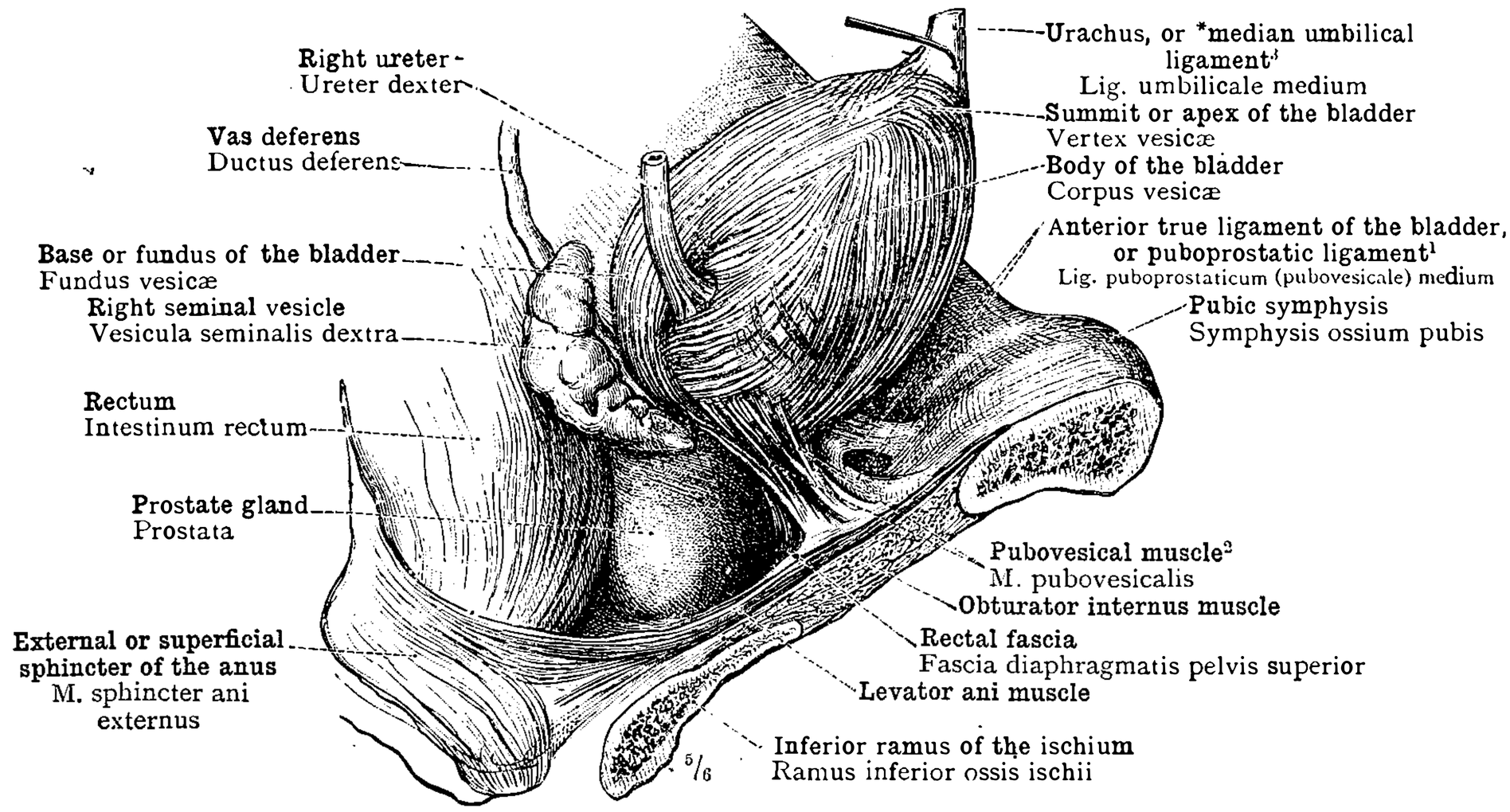


FIG. 840.—EXTERNAL LAYER OF THE MUSCULAR COAT (STRATUM EXTERNUM TUNICÆ MUSCULARIS) OF THE CONTRACTED BLADDER. RELATIONS OF THE SEMINAL VESICLE AND THE PROSTATE GLAND TO THE BLADDER AND THE RECTUM. SEEN FROM THE RIGHT SIDE.

The prostate gland is hypertrophied.

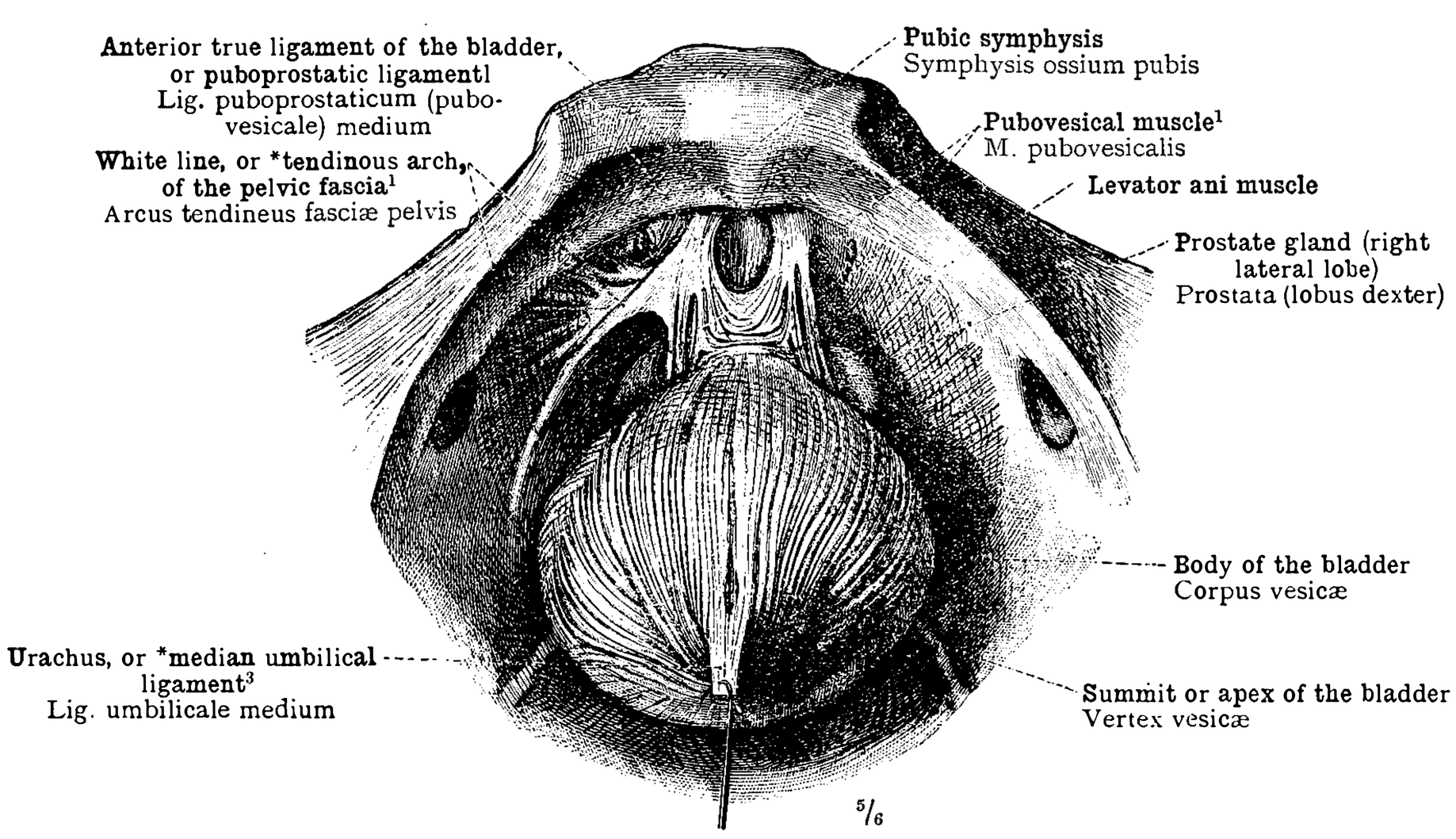


FIG. 841.—EXTERNAL LAYER OF THE MUSCULAR COAT (STRATUM EXTERNUM TUNICÆ MUSCULARIS) OF THE CONTRACTED BLADDER, SEEN FROM BEFORE AND ABOVE.

The bladder has been drawn as far as possible backwards away from the pubes. On the right side the levator ani muscle is exposed; on the left side the rectal fascia[1] covering upper or pelvic surface has been left intact.

[1] See Appendix, note 59. [2] See Appendix, note 60. [3] See note 3 to p. 387 in Part III.

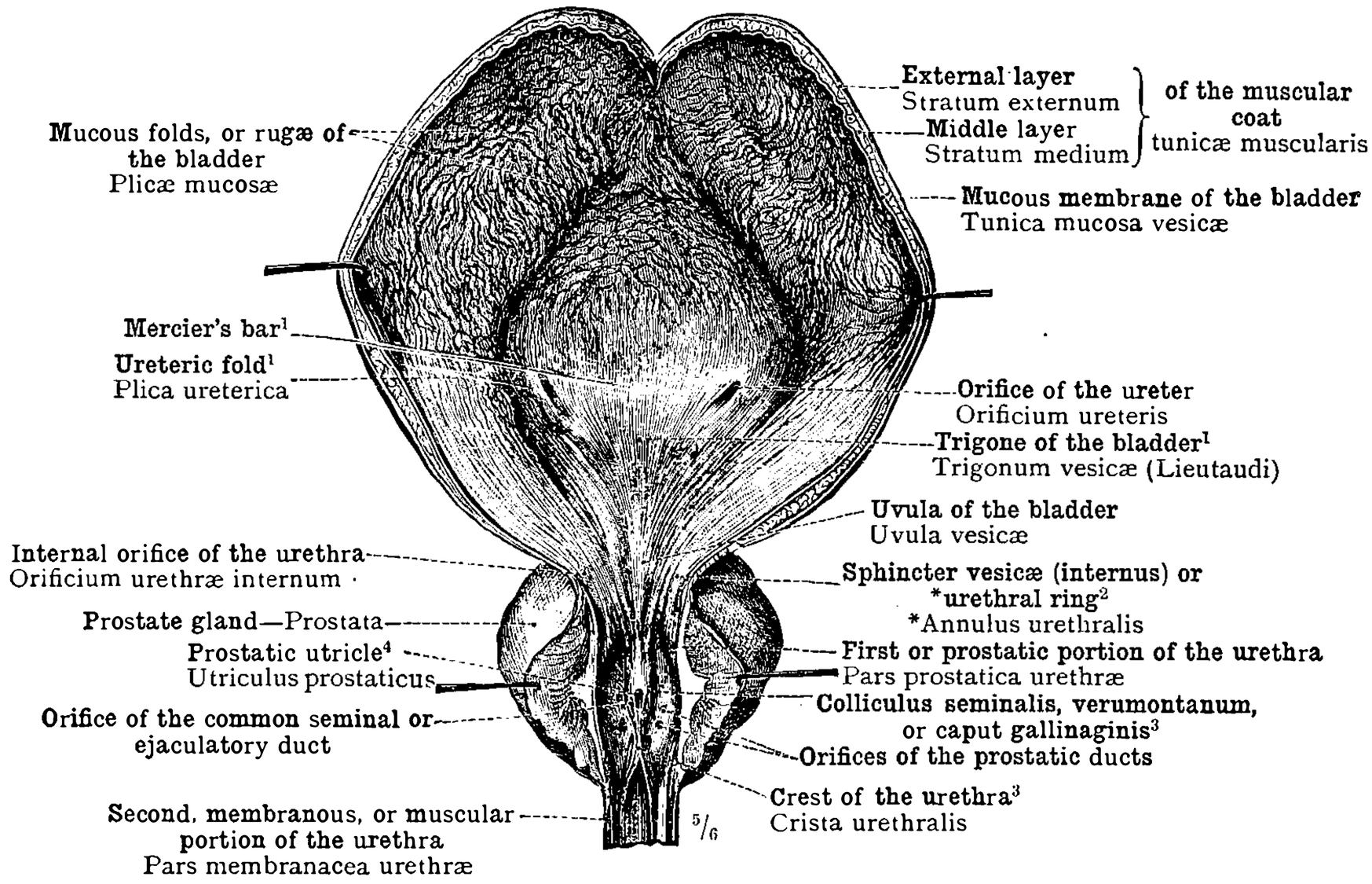


FIG. 842.—THE MALE BLADDER AND THE FIRST OR PROSTATIC PORTION OF THE URETHRA, WITH THE PROSTATE GLAND, OPENED FROM BEFORE.

The bladder was in a moderately distended state.

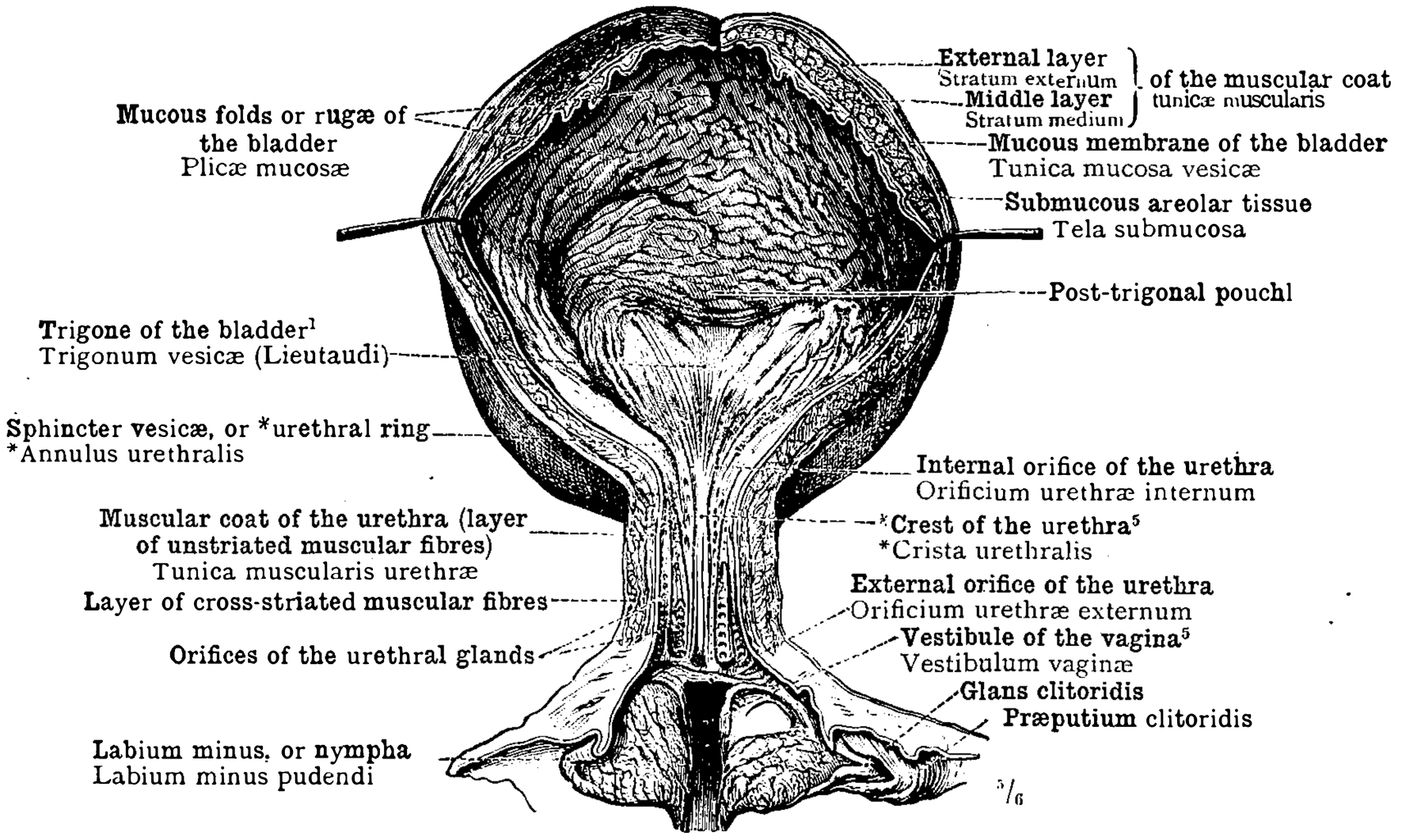
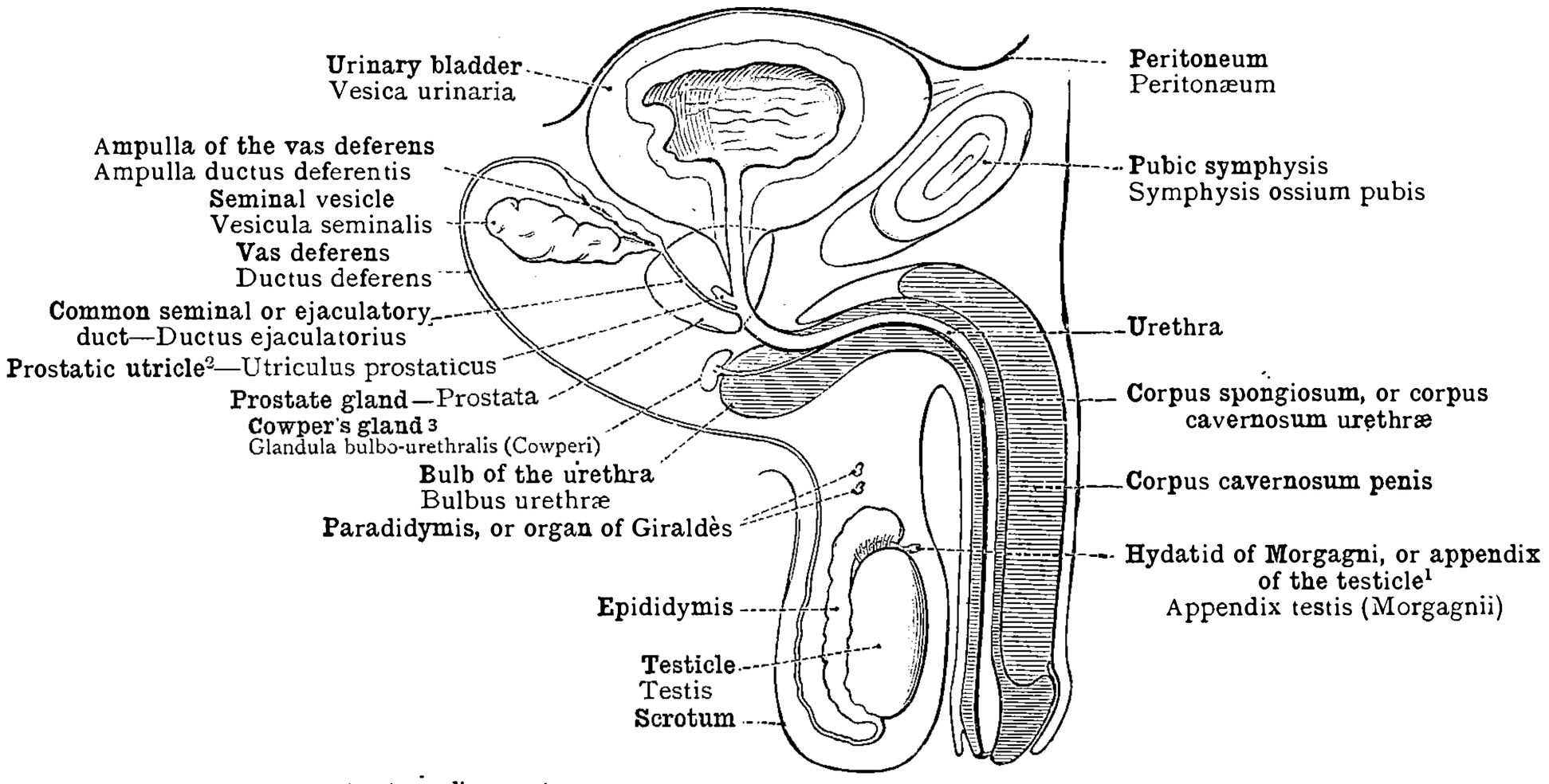


FIG. 843.—THE FEMALE BLADDER AND URETHRA, OPENED FROM BEFORE.

The bladder was nearly empty, and contracted.

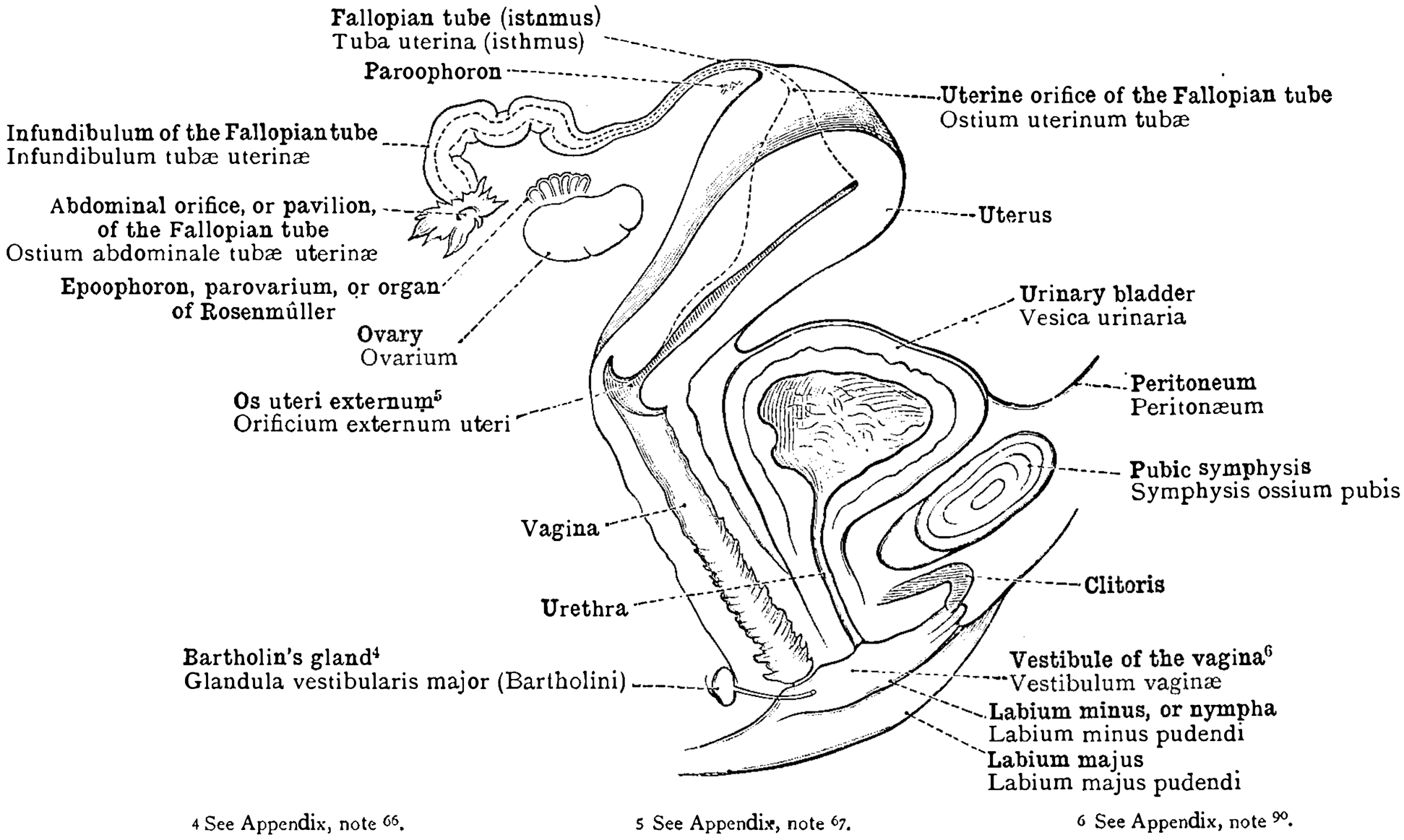
[1] See Appendix, note 61. [2] See Appendix, note 62. [3] See Appendix, note 63.
[4] See Appendix, note 64. [5] See Appendix, note 65.

Vesica urinaria—Urinary bladder.



1 See Appendix, note 69.
2 Known also as the *prostatic sinus*, *prostatic vesicle*, *sinus pocularis*, and *uterus masculinus*.
3 Known also as the *suburethral gland*.

FIG. 844.—DIAGRAMMATIC REPRESENTATION OF THE MALE REPRODUCTIVE ORGANS AND THEIR RELATIONS TO THE BLADDER AND THE URETHRA. LATERAL VIEW.



4 See Appendix, note 66. 5 See Appendix, note 67. 6 See Appendix, note 90.

FIG. 845.—DIAGRAMMATIC REPRESENTATION OF THE FEMALE REPRODUCTIVE ORGANS AND THEIR RELATIONS TO THE BLADDER AND URETHRA. LATERAL VIEW.

Comparative Diagrams of the Male and Female Reproductive Organs.

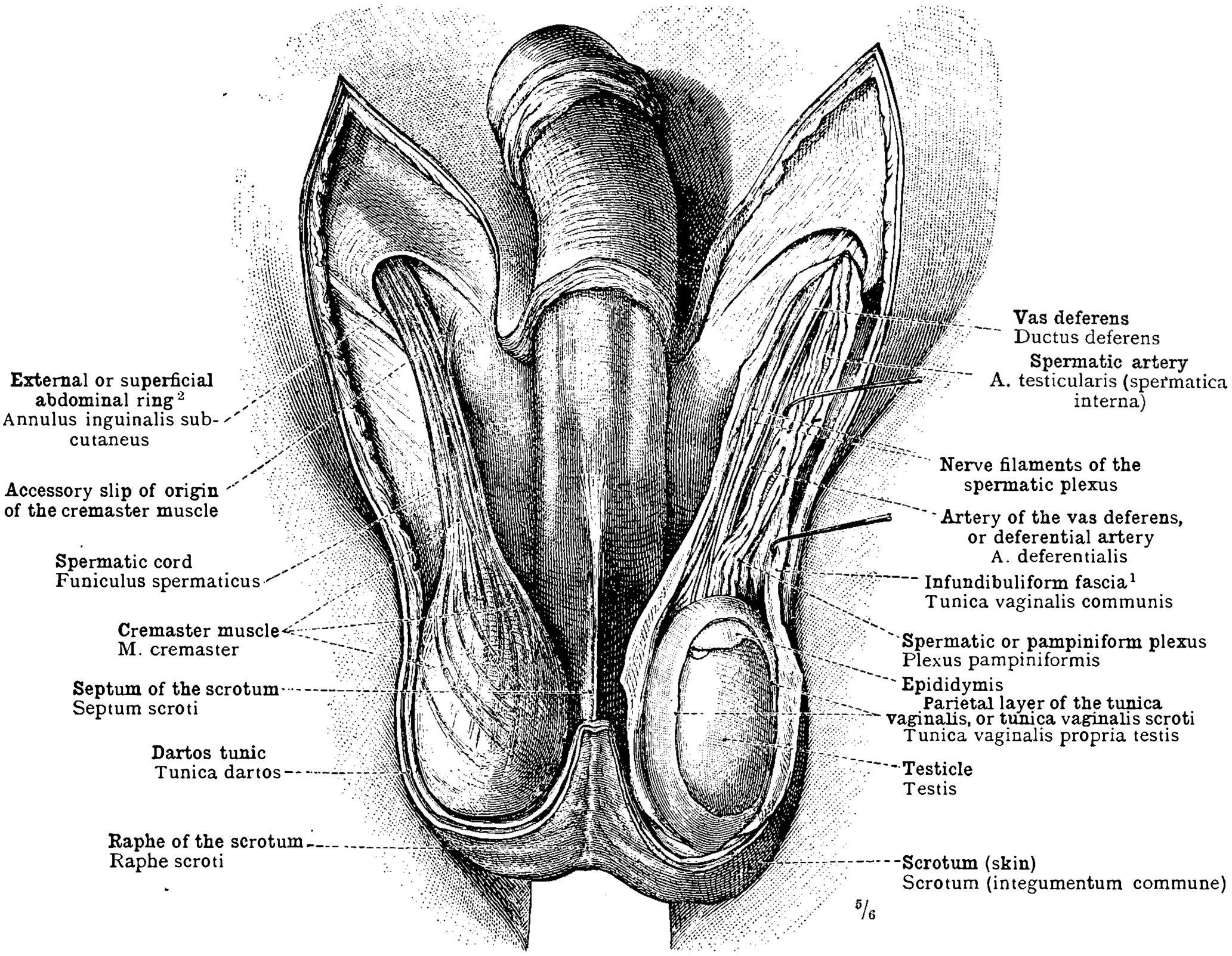


FIG. 846.—THE SCROTUM. THE PENIS HAS BEEN TURNED UPWARDS, AND THE ANTERIOR WALL OF THE SCROTUM HAS BEEN REMOVED. ON THE RIGHT SIDE, THE SPERMATIC CORD, THE INFUNDIBULIFORM FASCIA, AND THE CREMASTER MUSCLE, ARE DISPLAYED; ON THE LEFT SIDE, THE INFUNDIBULIFORM FASCIA HAS BEEN DIVIDED BY A LONGITUDINAL INCISION PASSING ALONG THE FRONT OF THE CORD AND THE TESTICLE, AND A PORTION OF THE TUNICA VAGINALIS SCROTI (PARIETAL LAYER OF THE TUNICA VAGINALIS) HAS BEEN REMOVED, TO DISPLAY THE TESTICLE AND A PORTION OF THE HEAD OR GLOBUS MAJOR OF THE EPIDIDYMIS, WHICH ARE COVERED BY THE TUNICA VAGINALIS TESTIS, OR VISCERAL LAYER OF THE TUNICA VAGINALIS.

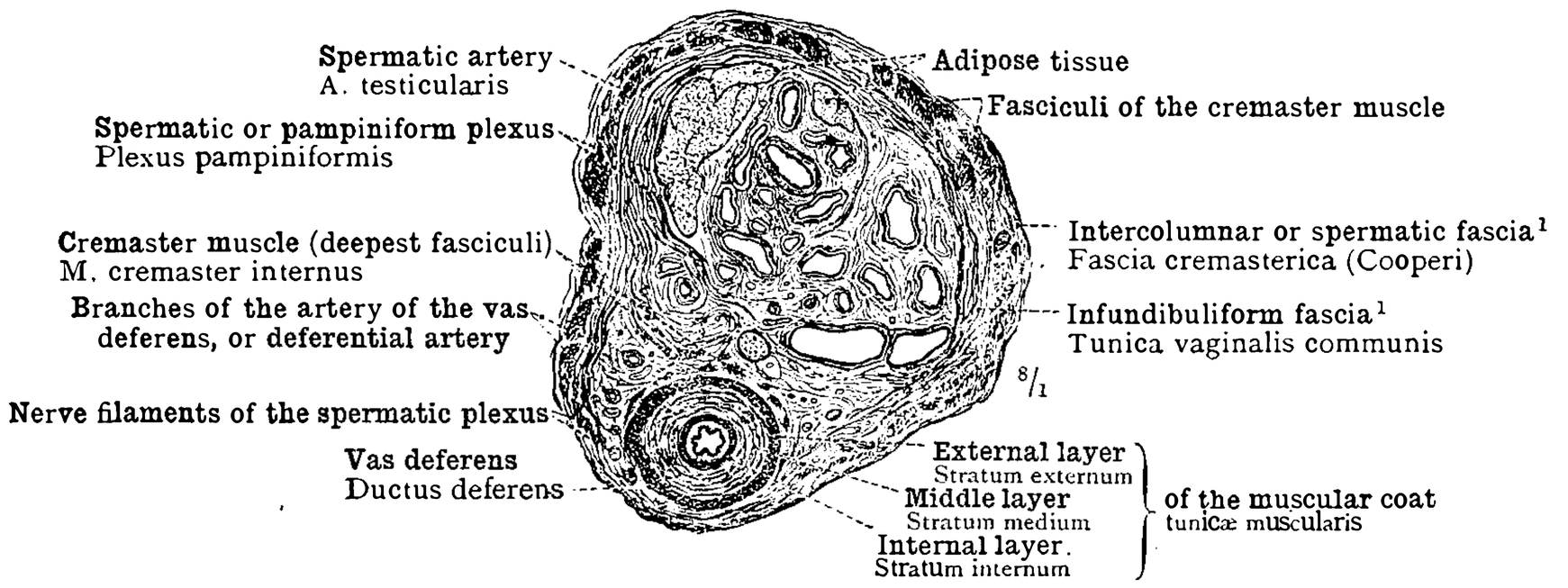


FIG. 847.—TRANSVERSE SECTION THROUGH THE SPERMATIC CORD NOT FAR FROM ITS EMERGENCE FROM THE INGUINAL CANAL.

[1] See Appendix, note 68.

[2] Known also as the *external inguinal aperture*.

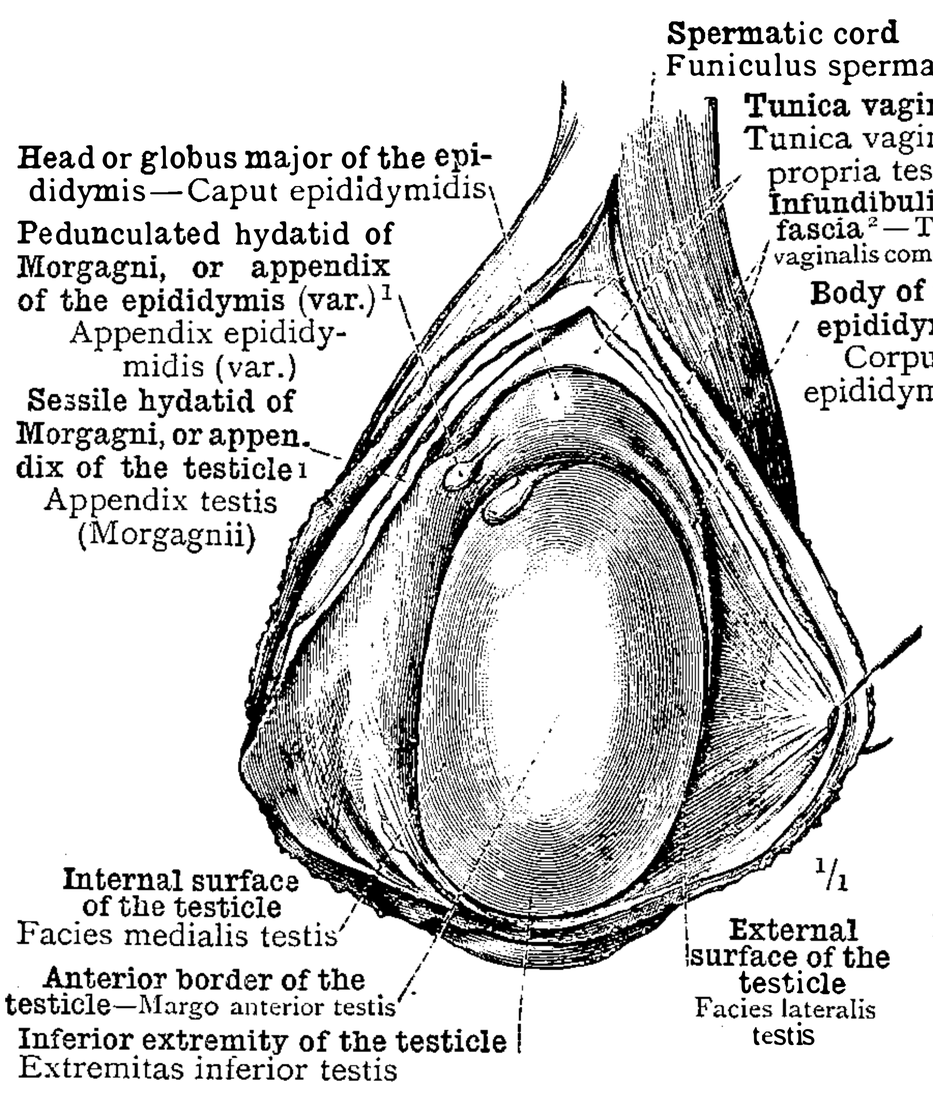


FIG. 848.—THE LEFT TESTICLE WITH THE EPIDIDYMIS, THE INFUNDIBULIFORM FASCIA AND THE PARIETAL LAYER OF THE TUNICA VAGINALIS (TUNICA VAGINALIS SCROTI) HAVING BEEN DIVIDED. SEEN FROM BEFORE.

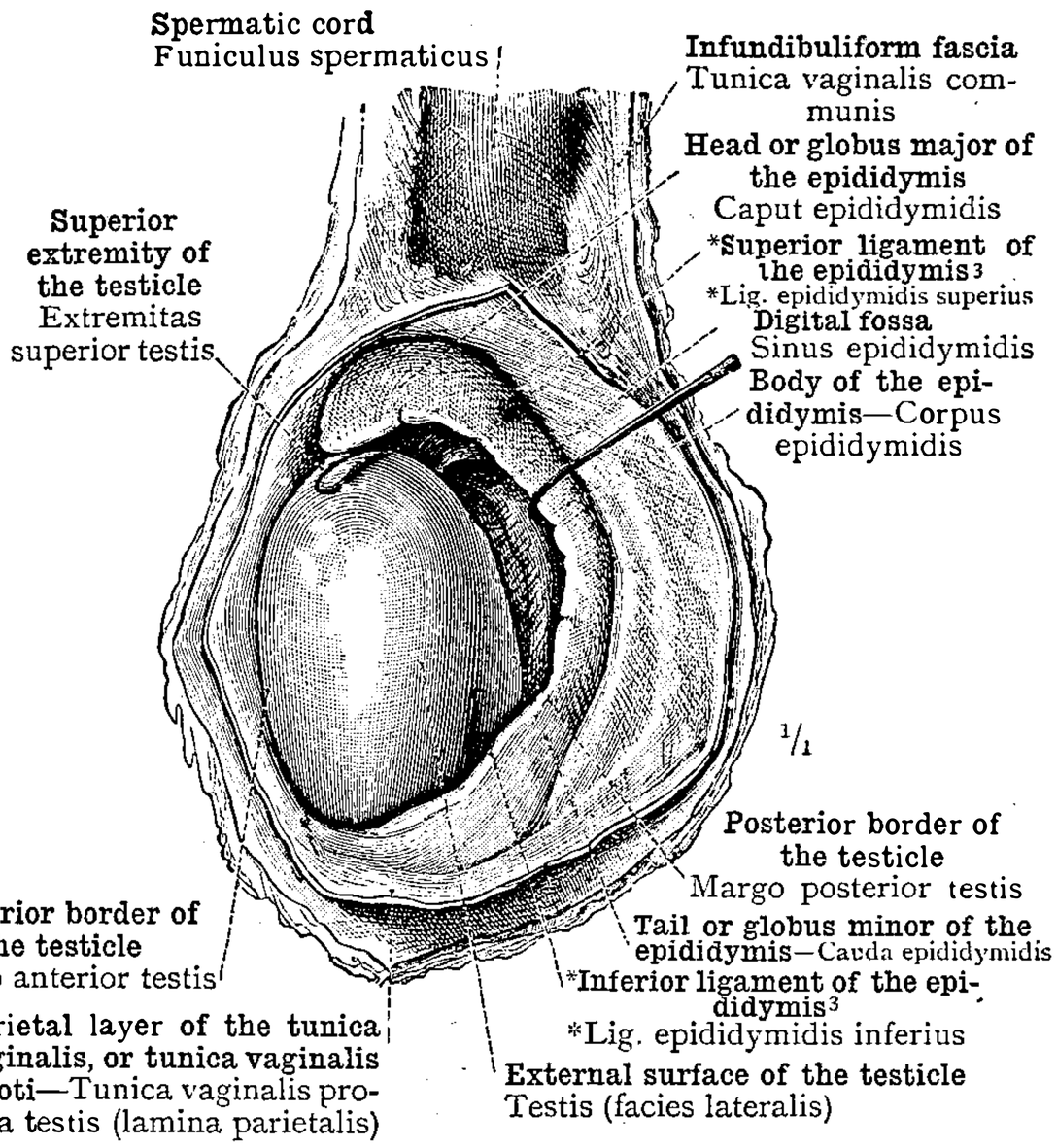


FIG. 849.—THE LEFT TESTICLE WITH THE EPIDIDYMIS, THE LATTER BEING DRAWN A LITTLE BACKWARDS. THE INFUNDIBULIFORM FASCIA AND THE PARIETAL LAYER OF THE TUNICA VAGINALIS (TUNICA VAGINALIS SCROTI) HAVE BEEN DIVIDED. SEEN FROM THE OUTER SIDE.

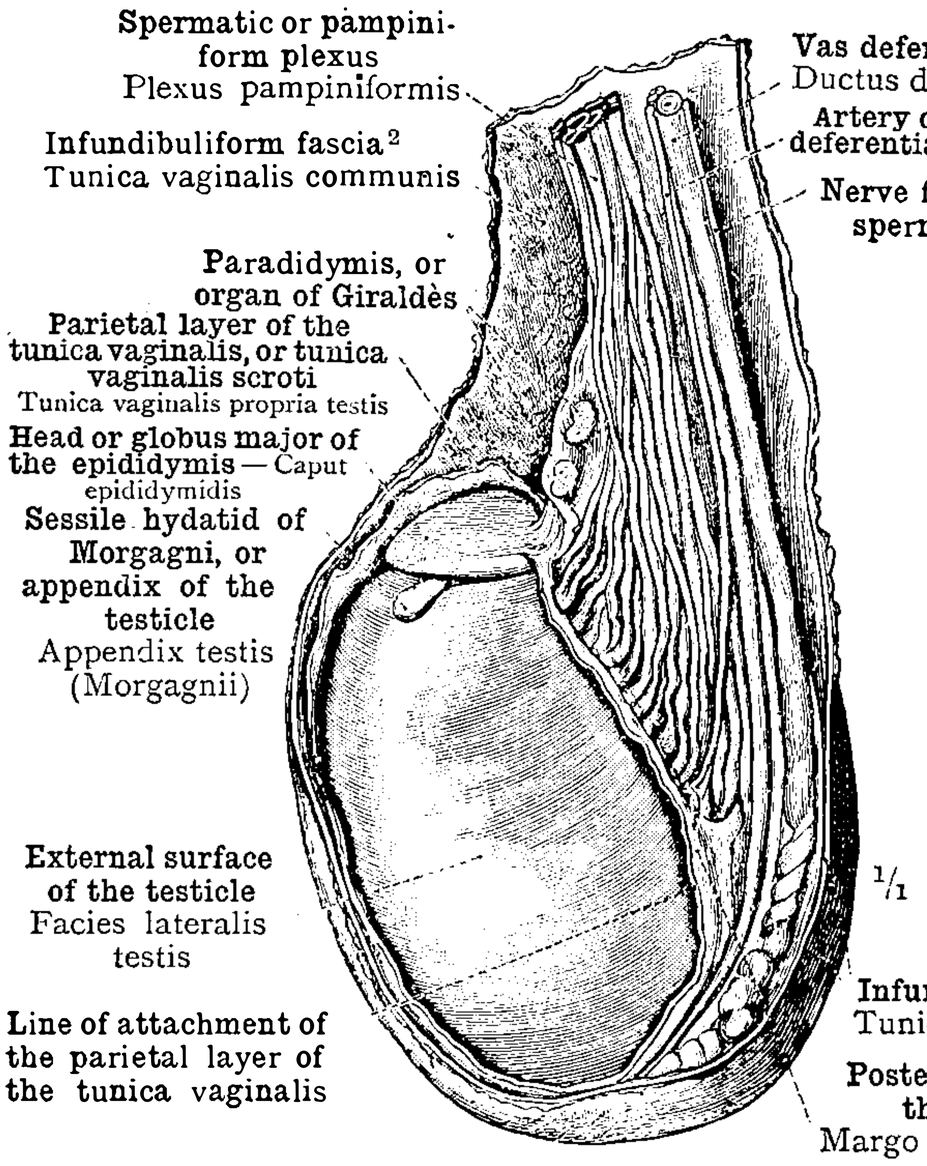


FIG. 850.—THE TESTICLE WITH THE PAMPINIFORM PLEXUS, THE SEROUS SAC OF THE TESTICLE (TUNICA VAGINALIS) HAVING BEEN OPENED FROM THE INNER SIDE.

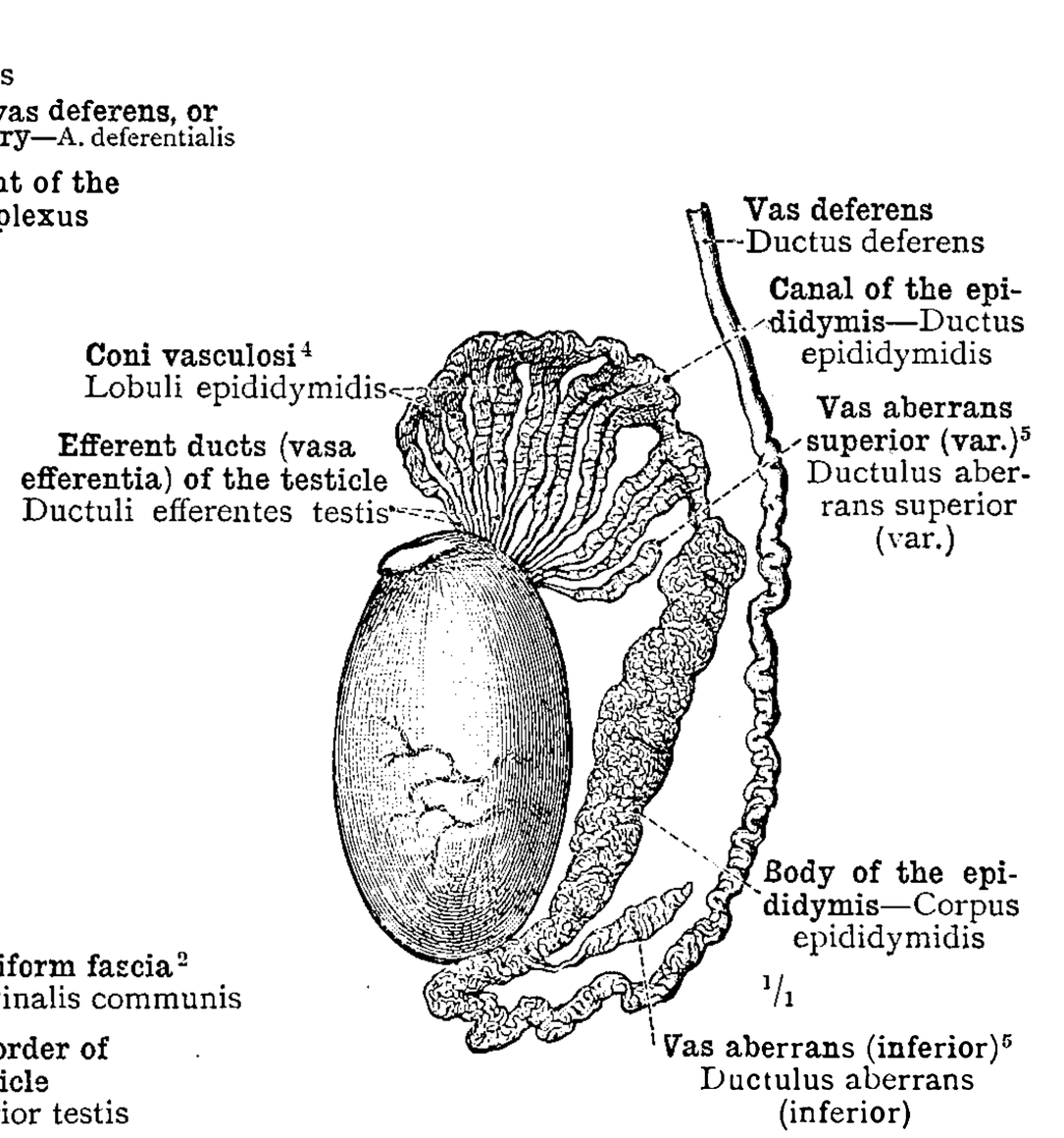


FIG. 851.—THE TESTICLE WITH ITS EFFERENT DUCTS AND THE CANAL OF THE EPIDIDYMIS DISSECTED OUT. SEEN FROM THE OUTER SIDE.

[1] See Appendix, note 69. [2] See Appendix, note 68. [3] See Appendix, note 70.
[4] See Appendix, note 73. [5] See Appendix, note 71.

Testis—The testicle.—Epididymis—The epididymis.

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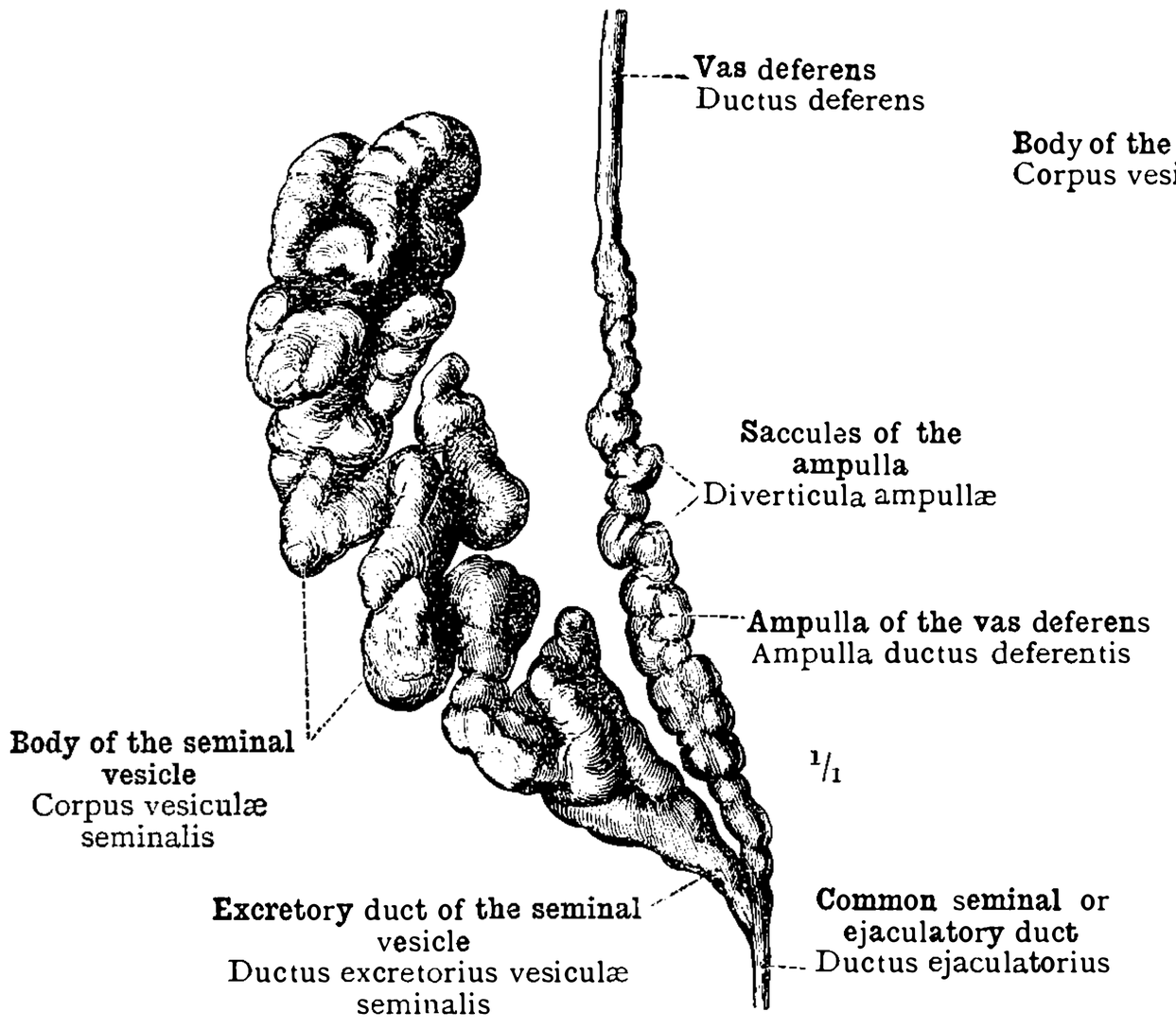


FIG. 856.—CAST OF THE INTERIOR OF THE RIGHT SEMINAL VESICLE, THE AMPULLA OF THE VAS DEFERENS, AND THE COMMON SEMINAL OR EJACULATORY DUCT.

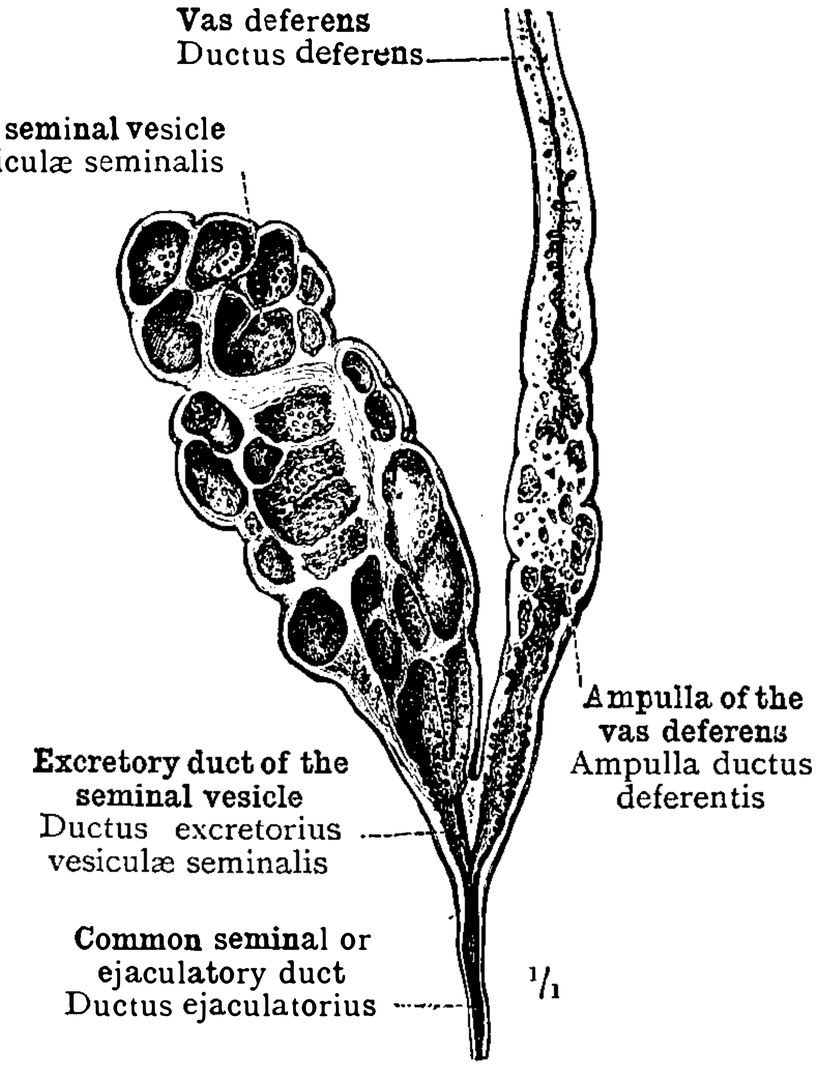
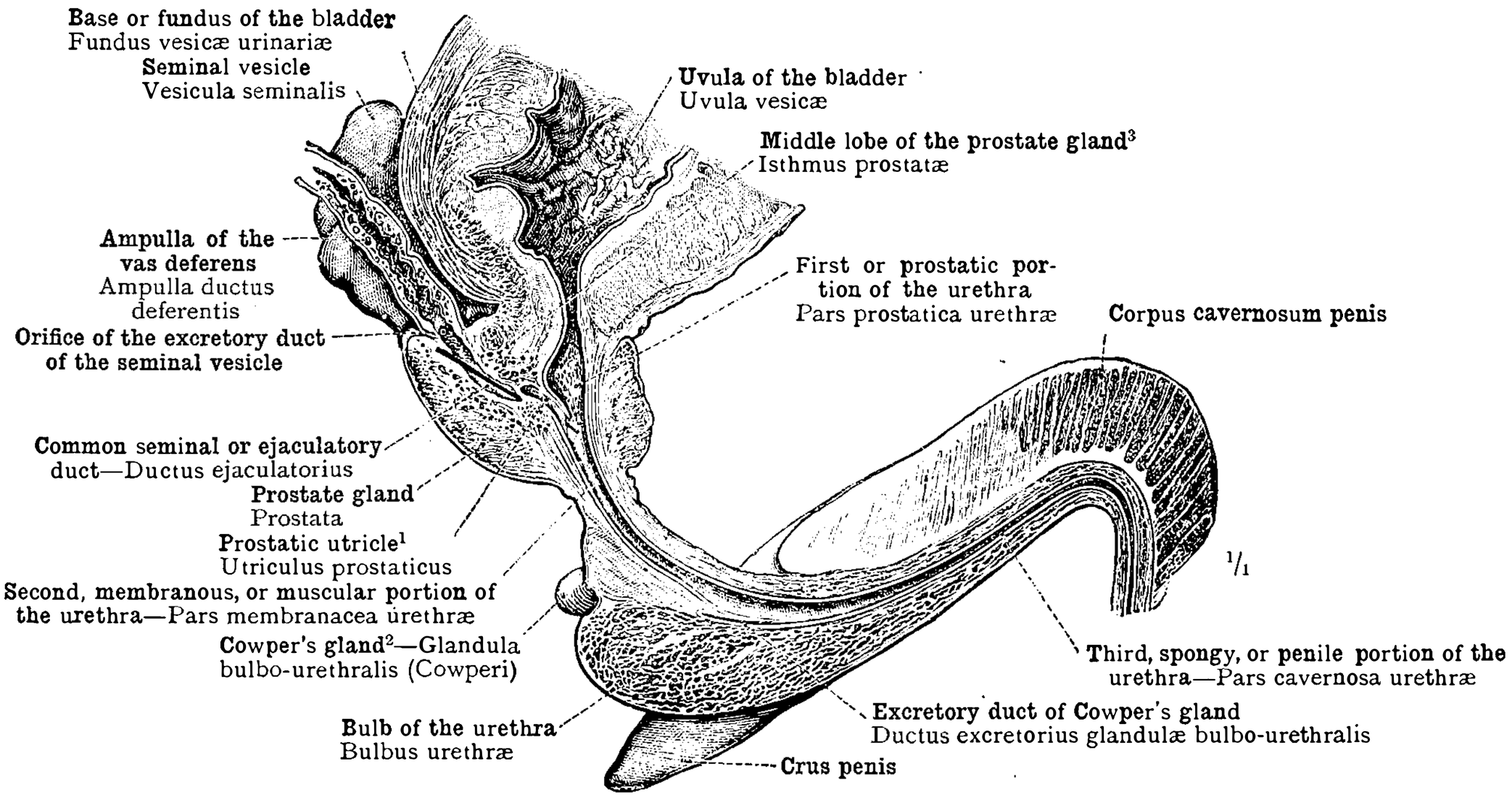


FIG. 857.—LONGITUDINAL SECTION THROUGH THE RIGHT SEMINAL VESICLE, THE AMPULLA OF THE VAS DEFERENS, AND THE COMMON SEMINAL OR EJACULATORY DUCT.



[1] Known also as the *prostatic sinus*, *prostatic vesicle*, *sinus pocularis*, and *uterus masculinus*.
[2] Known also as the *suburethral gland*. [3] See Appendix, note 73.

FIG. 858.—SAGITTAL SECTION THROUGH THE MALE URETHRA. LEFT HALF. URETHRAL ORIFICES OF THE COMMON SEMINAL OR EJACULATORY DUCT AND THE EXCRETORY DUCT OF COWPER'S GLAND (*see note* [2] *above*). THE PROSTATIC UTRICLE (*see note* [1] *above*).

Vesicula seminalis—The seminal vesicle.—Ductus deferens—The vas deferens.—Ductus ejaculatorius—The common seminal or ejaculatory duct.

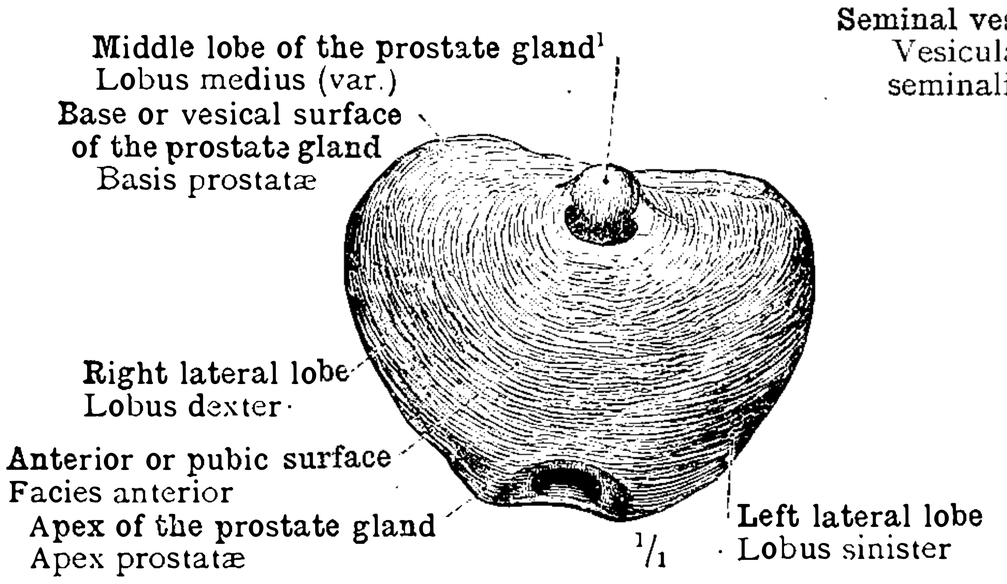


FIG. 859.—THE PROSTATE GLAND, ISOLATED AND SEEN FROM BEFORE.

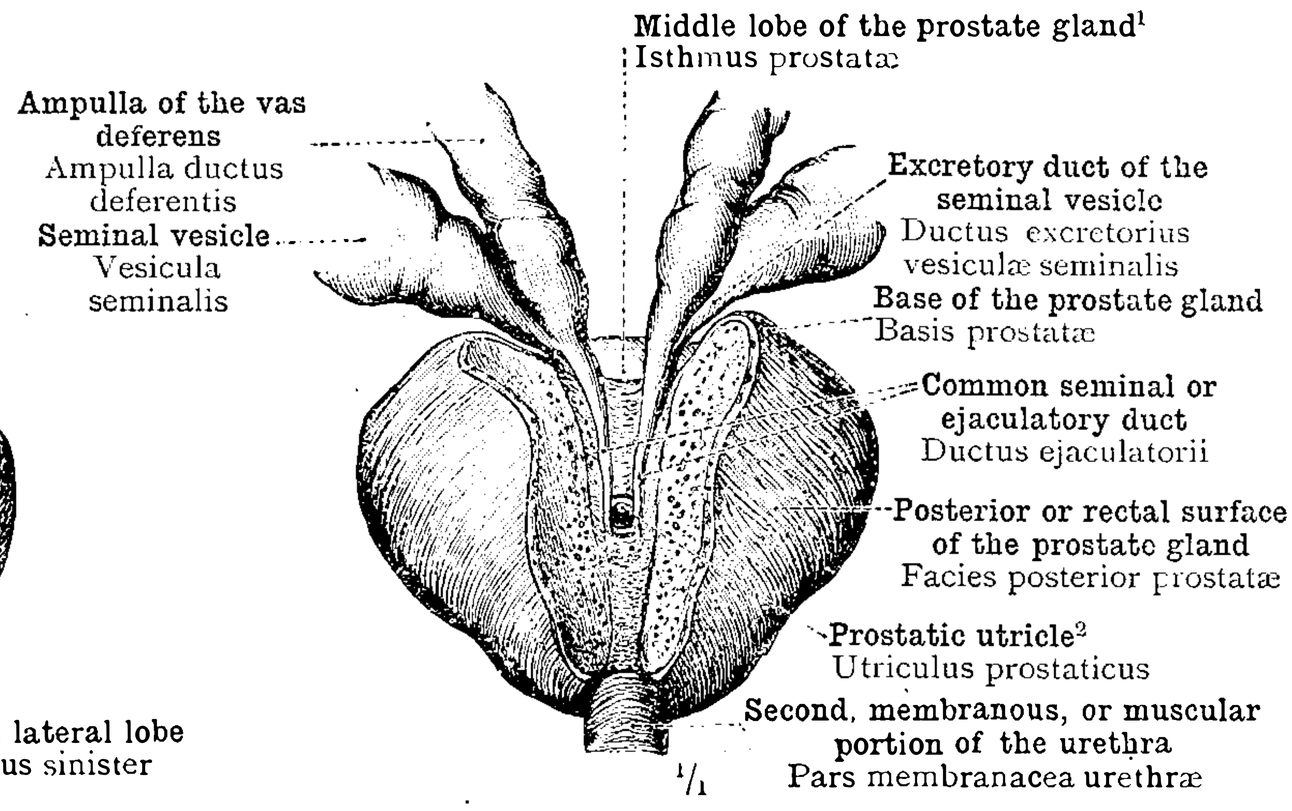


FIG. 860.—THE COMMON SEMINAL OR EJACULATORY DUCTS AND THE BLIND EXTREMITY OF THE PROSTATIC UTRICLE, LAID BARE FROM BEHIND BY THE REMOVAL OF A PORTION OF THE PROSTATE GLAND.

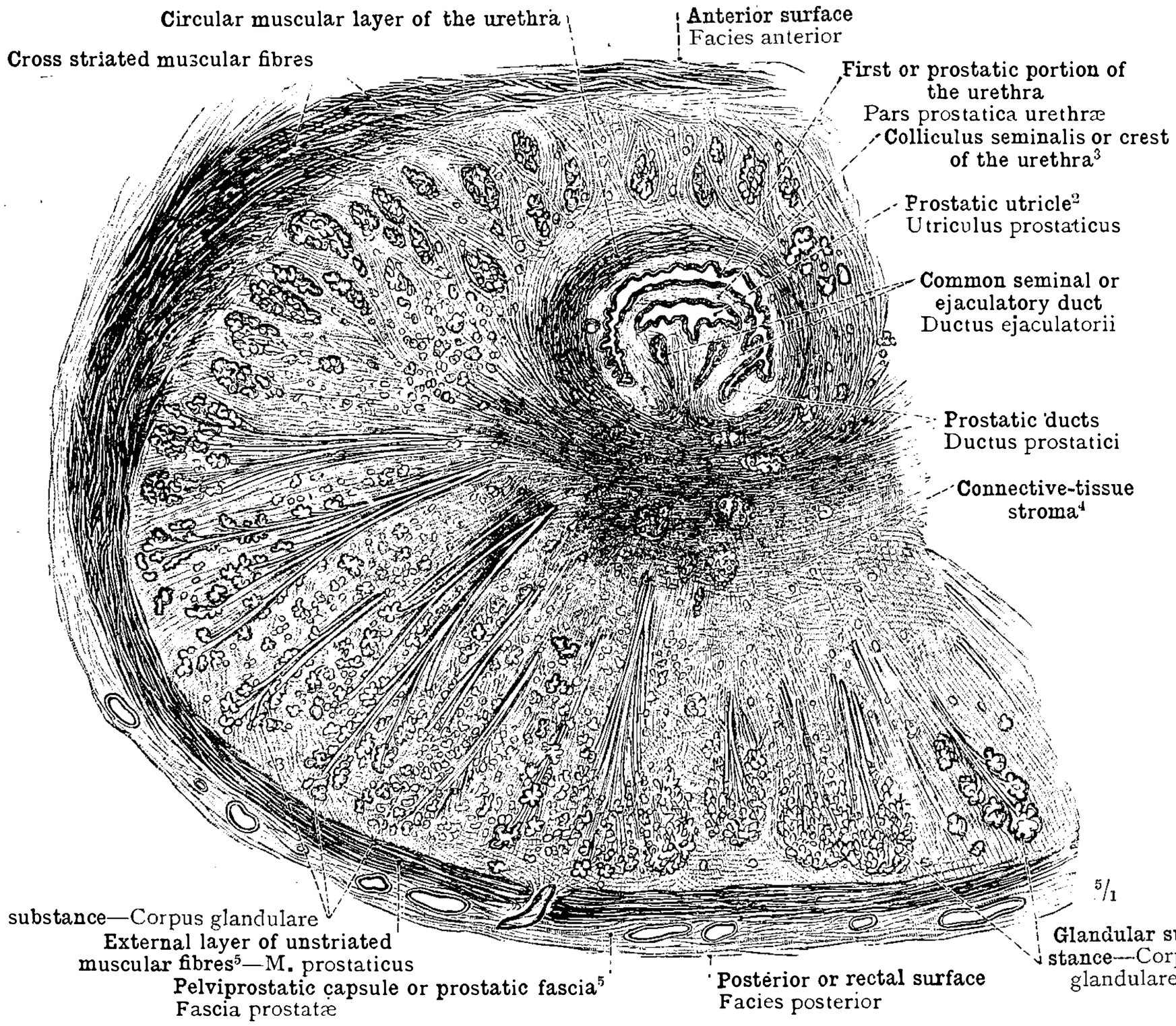
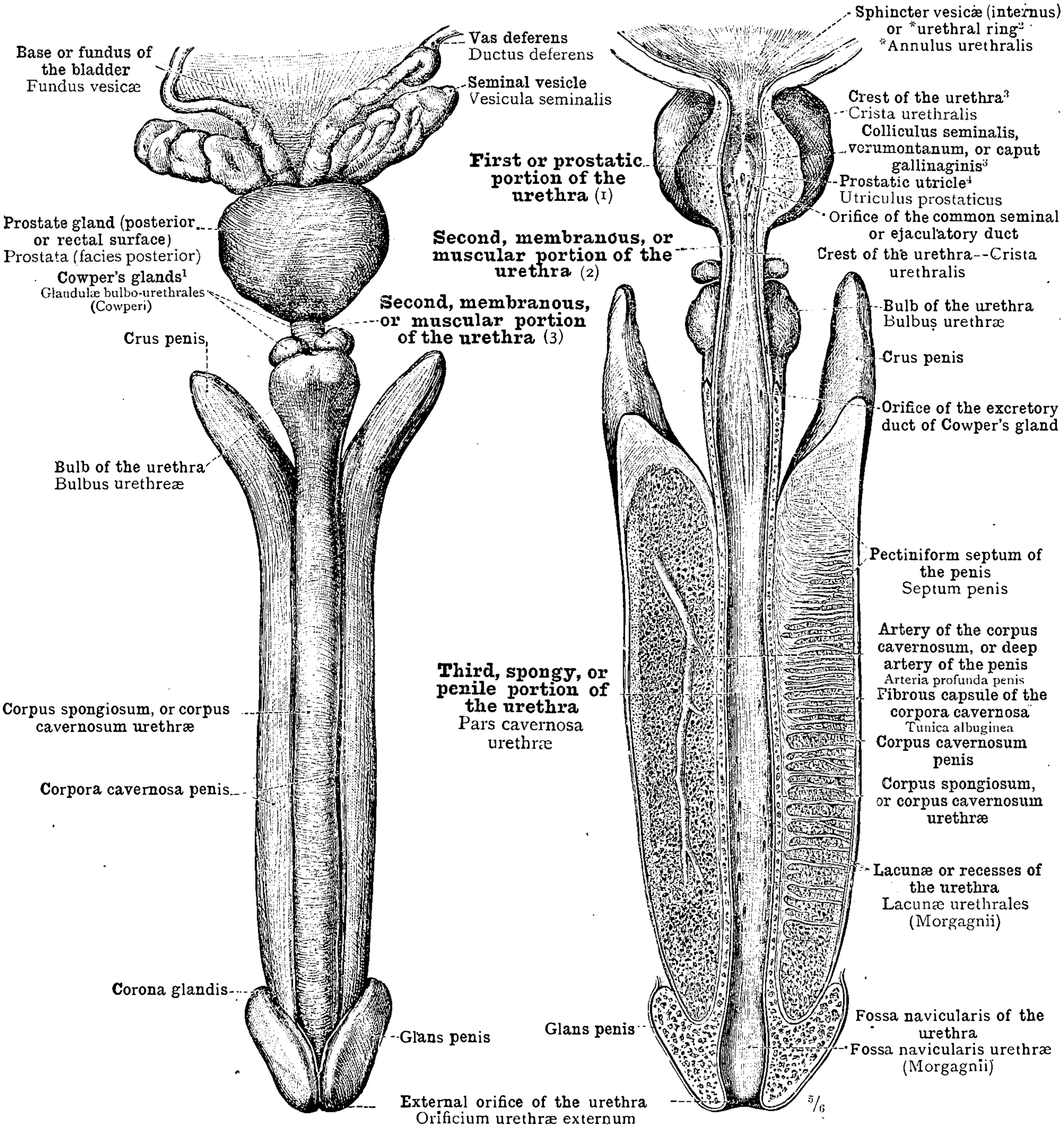


FIG. 861.—HORIZONTAL SECTION THROUGH THE MIDDLE OF THE PROSTATE GLAND OF A MUSCULAR MAN TWENTY-FOUR YEARS OF AGE TRANSVERSE SECTION OF THE COLLICULUS SEMINALIS OR CREST OF THE URETHRA.[3]

[1] See Appendix, note 73.
[2] Known also as the *prostatic sinus*, *prostatic vesicle*, *sinus pocularis*, and *uterus masculinus*.
[3] Known also as the *verumontanum* or *caput gallinaginis*. See Appendix, note 63.
[4] This so-called connective-tissue stroma (*Bindgewebsstroma*, Toldt) of the prostate gland consists chiefly of unstriated muscular fibres.—TR.
[5] See Appendix, note 74.

Prostata—The prostate gland.—Ductus ejaculatorii—The common seminal or ejaculatory ducts.



(1) Pars prostatica urethræ. (2) Pars membranacea urethræ (3) Pars membranacea urethræ

FIG. 862.—THE PENIS, WITH THE URETHRA, COWPER'S GLANDS,[1] THE PROSTATE GLAND, AND THE SEMINAL VESICLES, SEEN FROM BELOW AND BEHIND.

FIG. 863.—THE MALE URETHRA, OPENED FROM ABOVE AND BEFORE BY A SAGITTAL SECTION CLOSE TO THE PECTINIFORM SEPTUM OF THE PENIS.

[1] Known also as the *suburethral glands*. [2] See Appendix, note 62. [3] See Appendix, note 63.
[4] Known also as the *prostatic sinus*, *prostatic vesicle*, *sinus pocularis*, and *uterus masculinus*.

Penis—The penis.—Urethra virilis—The male urethra.

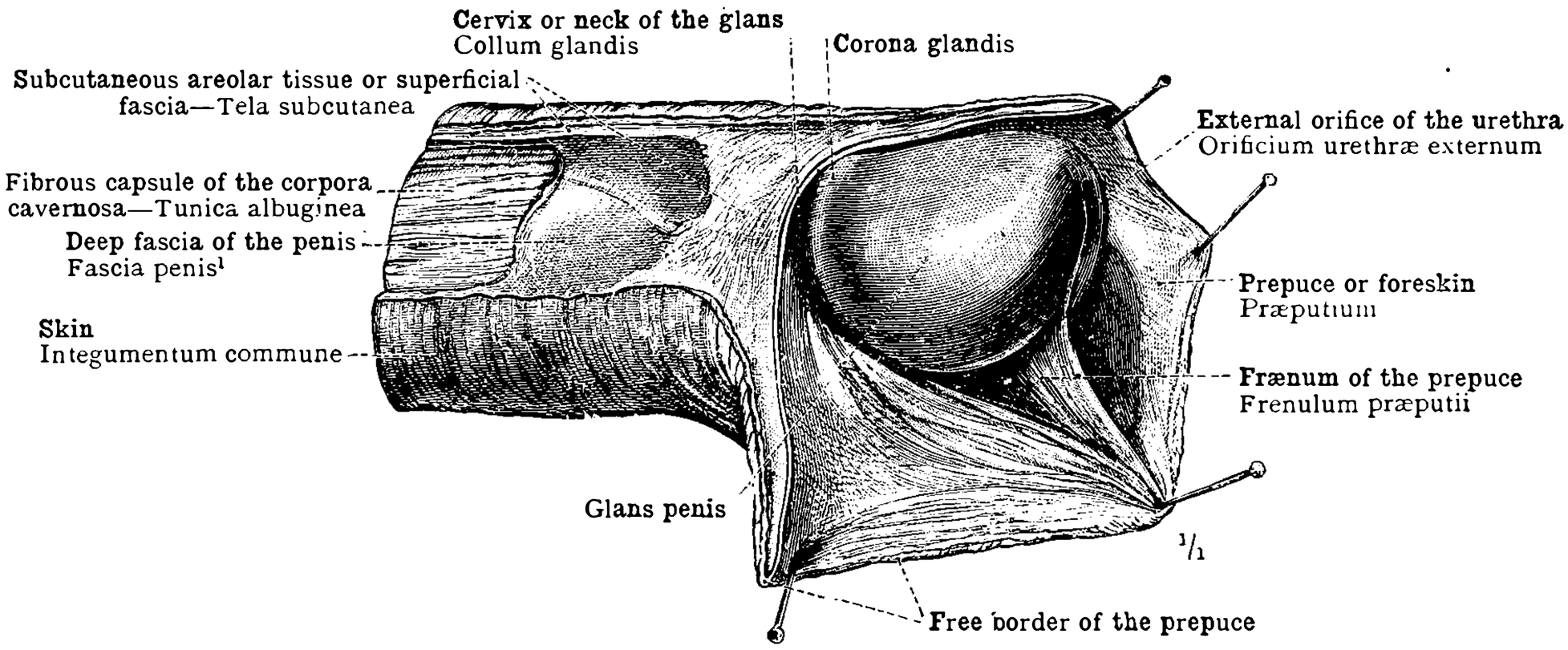


FIG. 866.—FREE PORTION, OR BODY, OF THE PENIS SEEN FROM THE RIGHT SIDE.

The skin has been divided along the dorsum of the penis, and the right half of the prepuce or foreskin has been turned downwards. The subcutaneous areolar tissue or superficial fascia and the deep fascia have been partially removed.

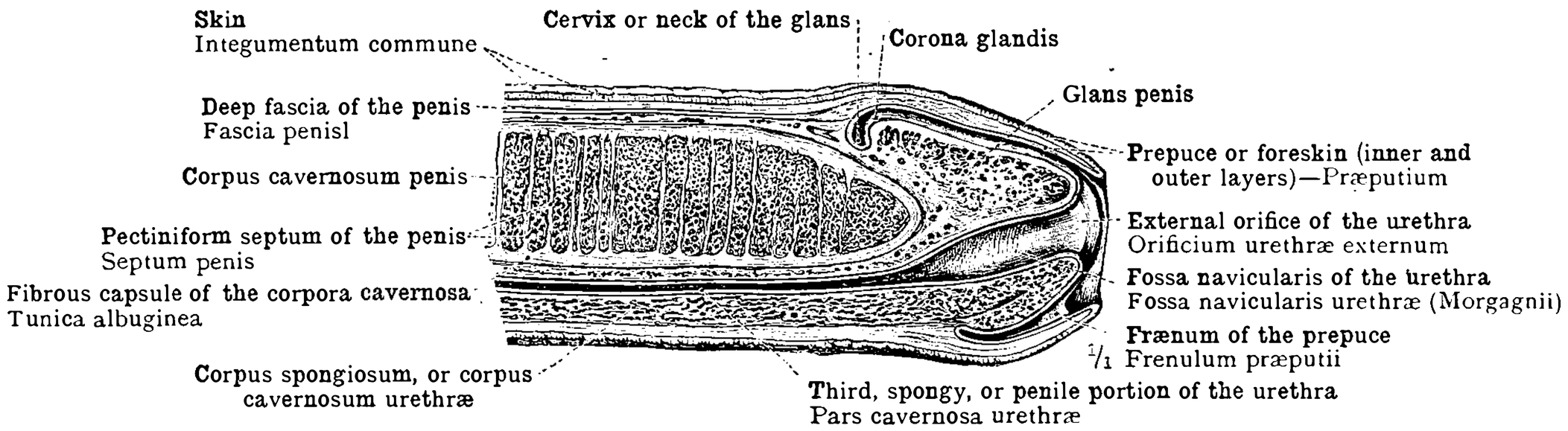
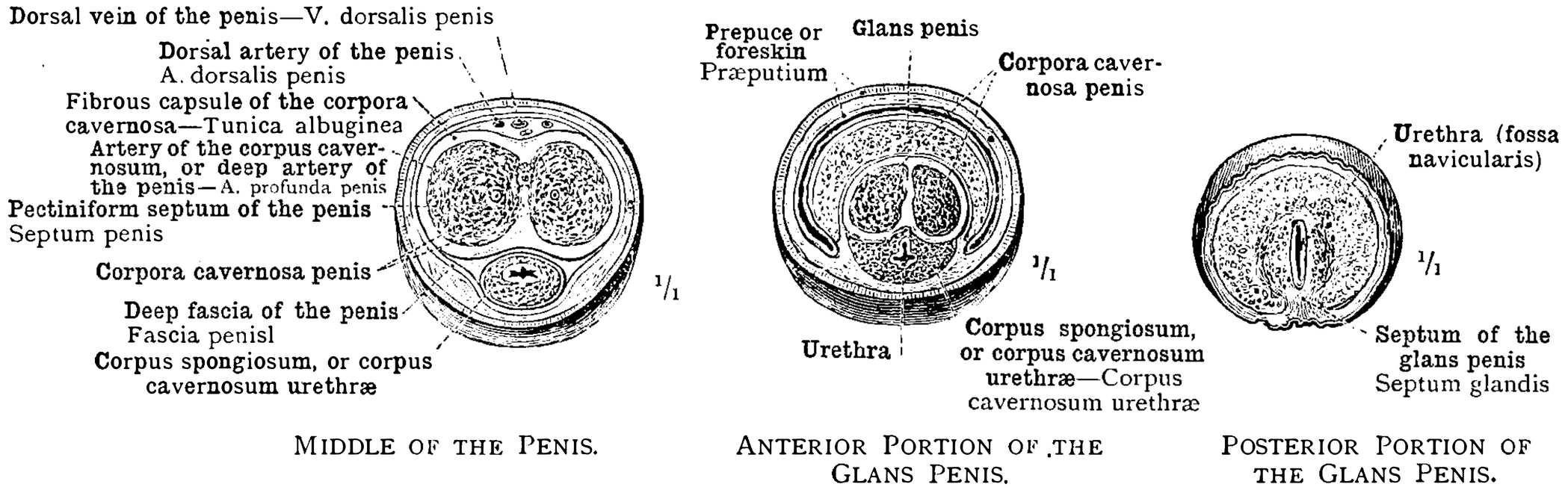


FIG. 867.—MEDIAN SAGITTAL SECTION THROUGH THE FREE PORTION, OR BODY, OF THE PENIS.



MIDDLE OF THE PENIS. ANTERIOR PORTION OF THE GLANS PENIS. POSTERIOR PORTION OF THE GLANS PENIS.

FIG. 868.—TRANSVERSE SECTIONS THROUGH THE PENIS.

[1] *Fascia Penis.*—This term, as used by the author, denotes not only the *deep fascia of the penis* of English anatomists, which forms a sheath for the free portion or *body* of the penis, but also the fascial layer (structurally continuous with the deep fascia of the penis) which covers the root of the organ, and belongs to the perineum. This latter is usually known in England by the name of *Colles's fascia*. See Fig. 914, p. 526, and note [2] on that page.—TR.

The Penis.

ORGANA GENITALIA MULIEBRIA

FEMALE REPRODUCTIVE ORGANS

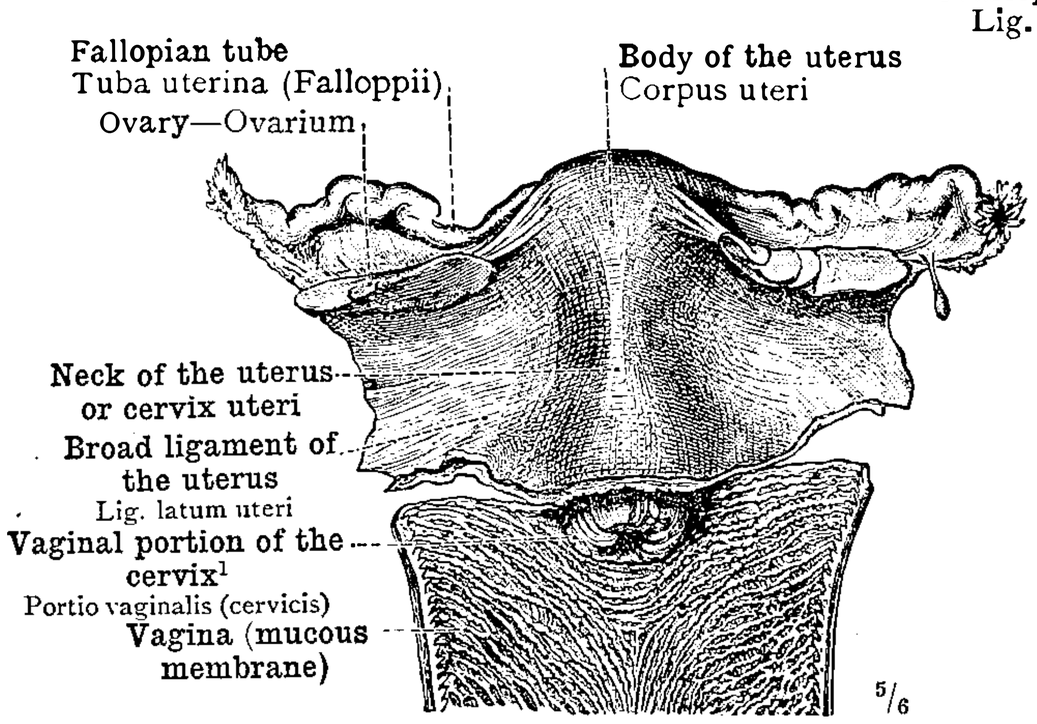


FIG. 869.—INTERNAL GENITAL ORGANS OF A NEWBORN, POWERFULLY-DEVELOPED FEMALE INFANT. SEEN FROM BEHIND.

The posterior wall of the vagina has been divided by a median longitudinal incision and the segments turned to the right and the left.

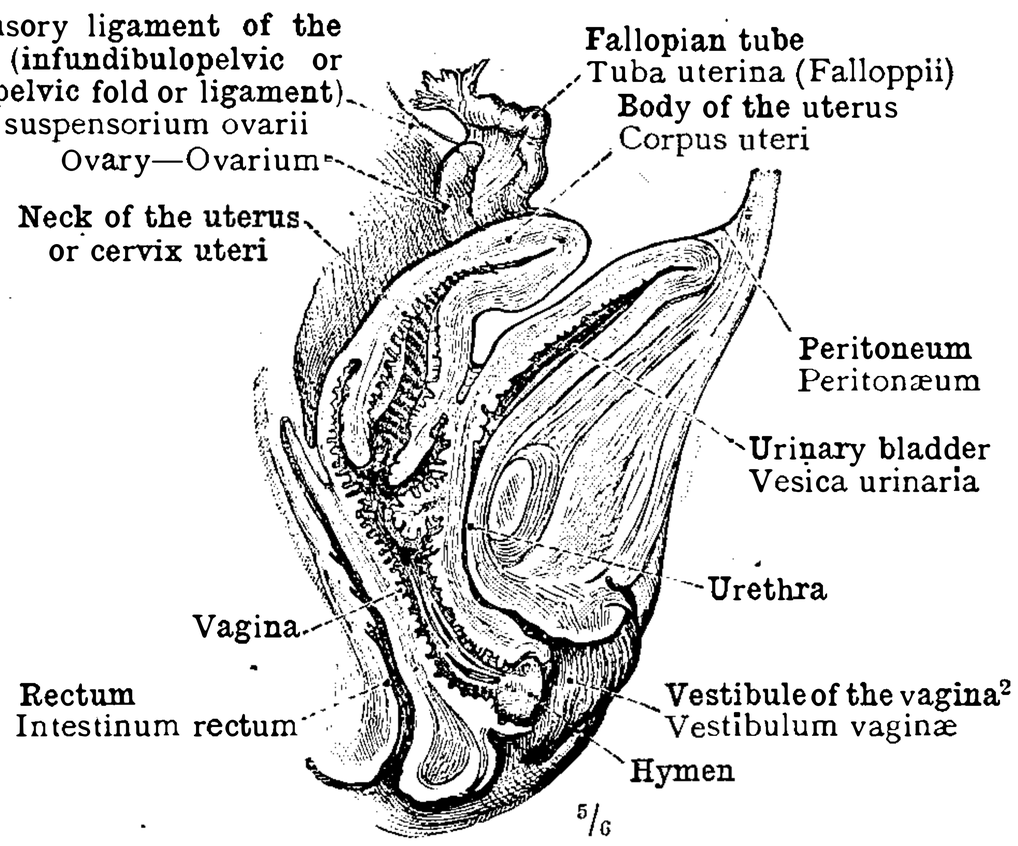


FIG. 870.—REPRODUCTIVE ORGANS OF A NEWBORN, POWERFULLY-DEVELOPED FEMALE INFANT IN MEDIAN SAGITTAL SECTION. LEFT HALF.

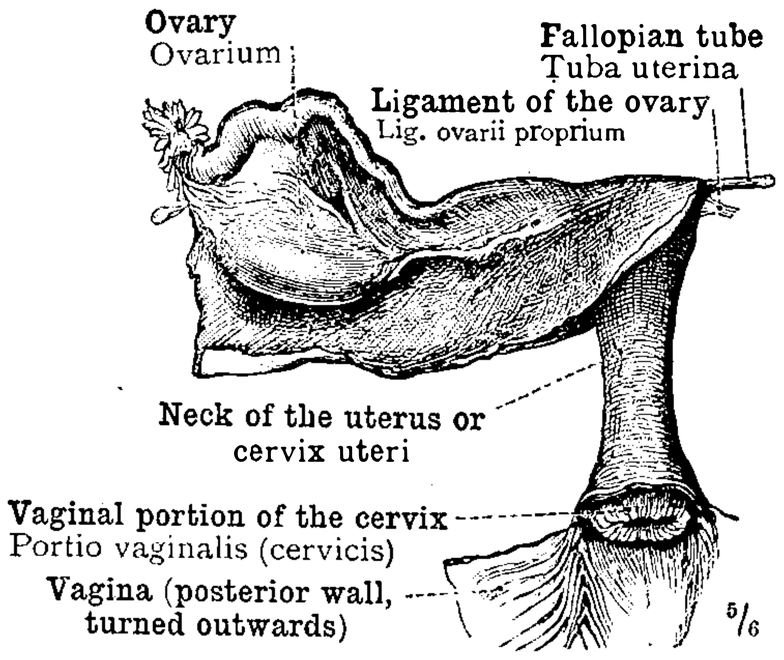


FIG. 871.—INTERNAL GENITAL ORGANS OF A GIRL AGED EIGHT YEARS. SEEN FROM BEHIND.

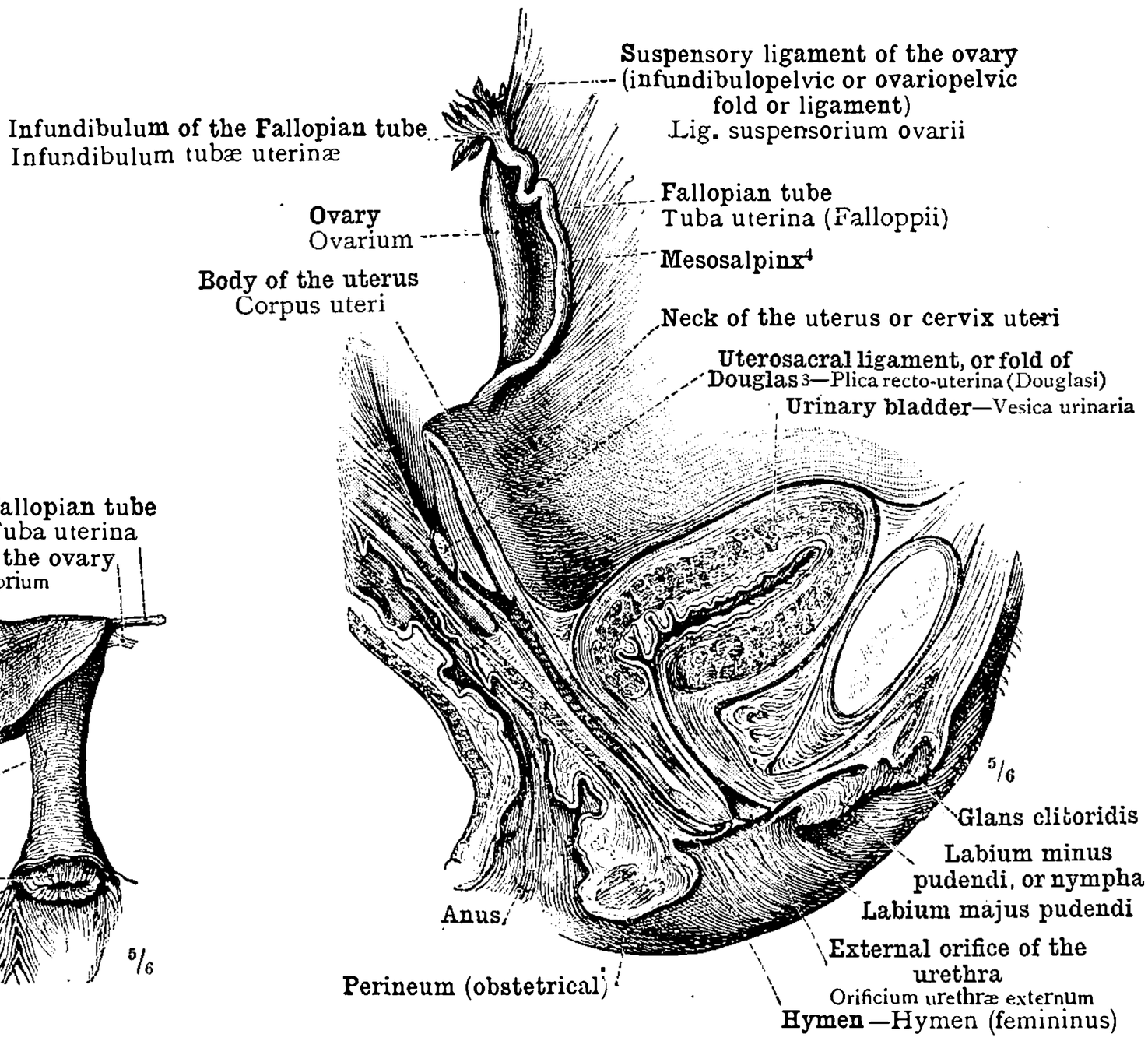


FIG. 872.—REPRODUCTIVE ORGANS OF A GIRL AGED TEN YEARS IN MEDIAN SAGITTAL SECTION. LEFT HALF.

[1] See Appendix, note 75.
[2] See Appendix, note 90.
[3] Known also as the *recto-uterine fold* or *ligament*. It forms the lateral boundary of the *pouch of Douglas*, and must be distinguished from the *rectovaginal ligament*, which forms the floor of that pouch.—TR.
[4] See Appendix, note 82.

Female Reproductive Organs in Infancy and Childhood.

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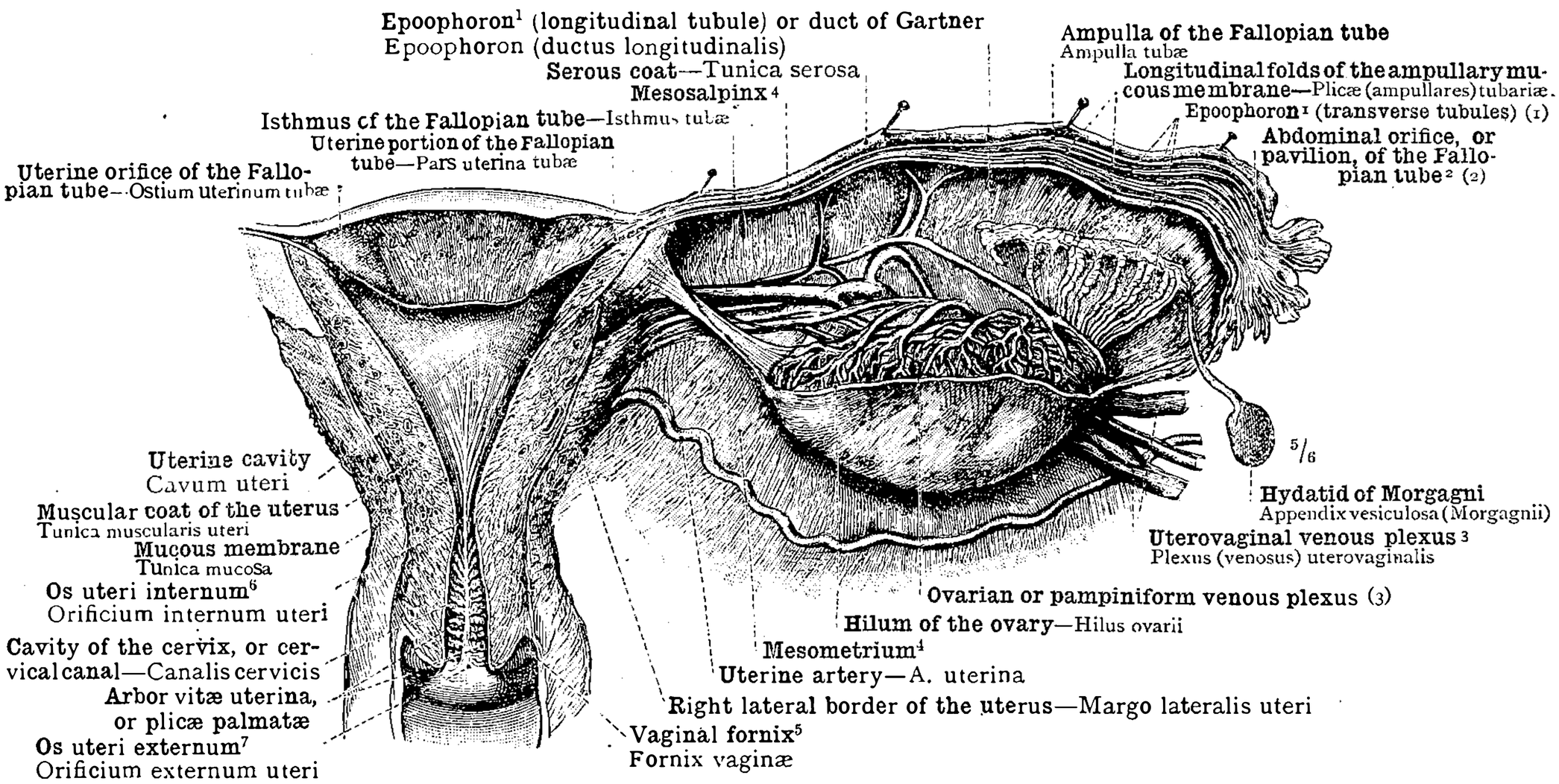


FIG. 875.—THE UTERUS AND THE RIGHT FALLOPIAN TUBE, OPENED FROM BEHIND. EPOOPHORON, PAROVARIUM, OR ORGAN OF ROSENMÜLLER.

The posterior layer of the broad ligament of the uterus has been removed.

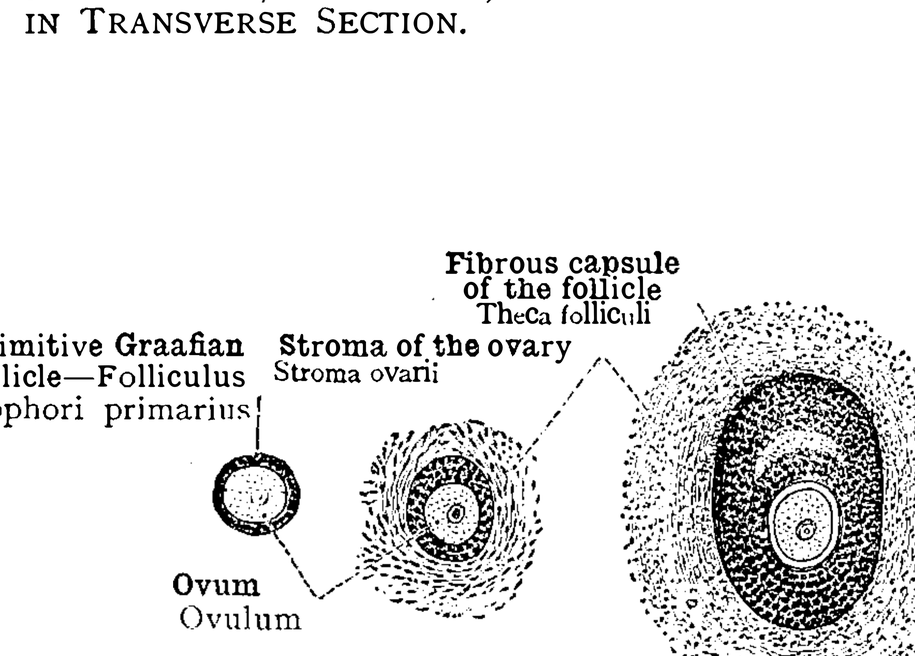


FIG. 876.—LIGAMENTUM LATUM UTERI, THE BROAD LIGAMENT OF THE UTERUS, WITH THE MESOVARIUM · THE MESOSALPINX, THE OVARY, AND THE FALLOPIAN TUBE, IN TRANSVERSE SECTION.

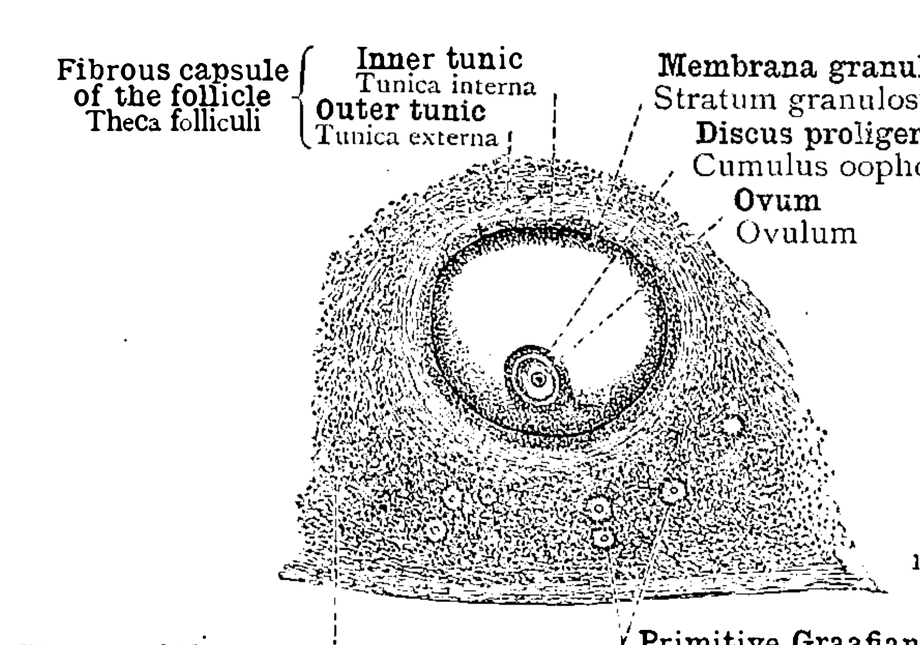


FIG. 877.—LONGITUDINAL SECTION THROUGH THE OVARY.

FIG. 878.—STAGES IN THE DEVELOPMENT OF THE PRIMITIVE GRAAFIAN FOLLICLES.

FIG. 879.—GRAAFIAN FOLLICLE, FOLLICULUS OOPHORUS VESICULOSUS, IN SECTION.

1 The *epoophoron* is also known as the *parovarium*, or *organ of Rosenmüller*.
2 See Appendix, note 80.
3 See Appendix, note 81.
4 See Appendix, note 82.
5 See Appendix, note 78.
6 See note 5 to p. 511.
7 See Appendix, note 67.
8 See Appendix, note 83.

Uterus—The uterus.—Tuba uterina—The Fallopian tube.—Ovarium—The ovary.

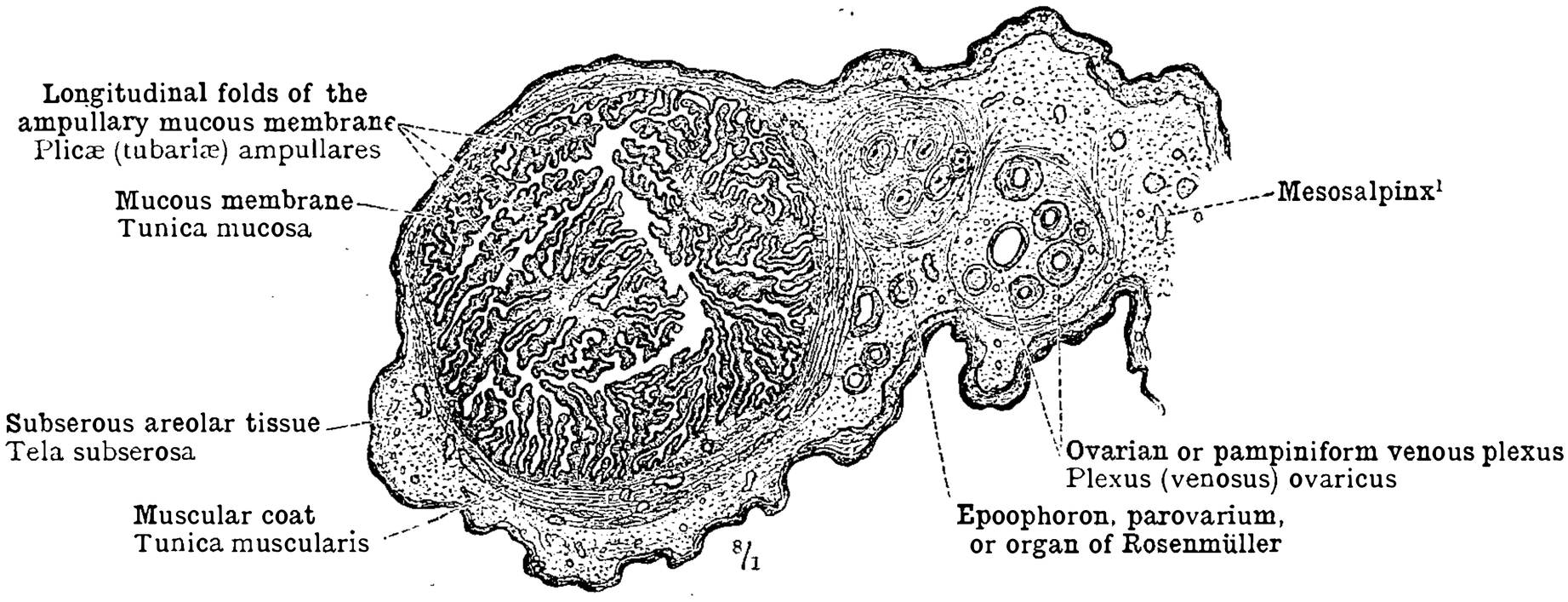
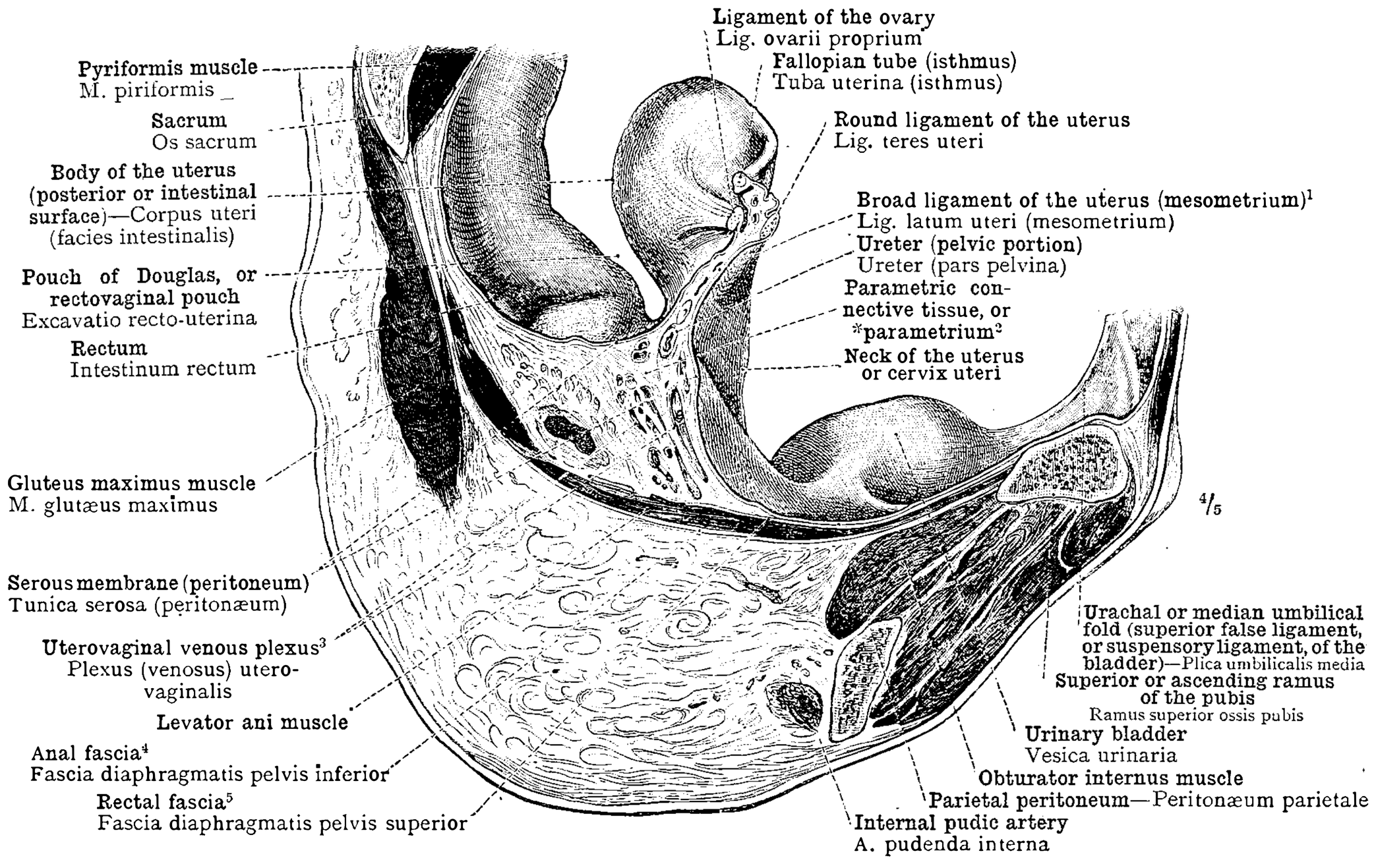


FIG. 880.—AMPULLA TUBÆ UTERINÆ, THE AMPULLA OF THE FALLOPIAN TUBE, WITH THE ADJOINING PORTION OF THE MESOSALPINX, AND THE EPOOPHORON, PAROVARIUM, OR ORGAN OF ROSENMÜLLER, IN TRANSVERSE SECTION.



1 See Appendix, note 82.
2 See Appendix, note 84.
3 See Appendix, note 81.
4 See Appendix, note 85.
5 See Appendix, note 86.
6 See Appendix, note 87.

FIG. 881.—SAGITTAL SECTION THROUGH THE FEMALE PELVIS, 4 CENTIMETRES (1·575 INCHES) TO THE RIGHT OF THE MEDIAN PLANE. THE SECTION PASSES THROUGH THE RIGHT BROAD LIGAMENT OF THE UTERUS, AND SHOWS THE CONTINUITY OF THE TWO LAYERS OF THIS LIGAMENT WITH THE PARIETAL PERITONEUM OF THE FLOOR OF THE PELVIS. *PARAMETRIUM, OR PARAMETRIC CONNECTIVE TISSUE (*see Appendix, note* 84). DIAPHRAGMA PELVIS, THE PELVIC DIAPHRAGM (*see Appendix, note* 87), WITH ITS SUPERIOR AND INFERIOR FASCIAL LAYERS, AND INFERIOR TO THE LATTER OF THESE THE FATTY TISSUE OF THE ISCHIORECTAL FOSSA. FROM A FROZEN PREPARATION.

The long axis of the uterus in this specimen is vertical, the organ being pathologically retroverted.

Tuba uterina—The Fallopian tube.—Ligamentum latum uteri—The broad ligament of the uterus.—*Parametrium—The parametric connective tissue.

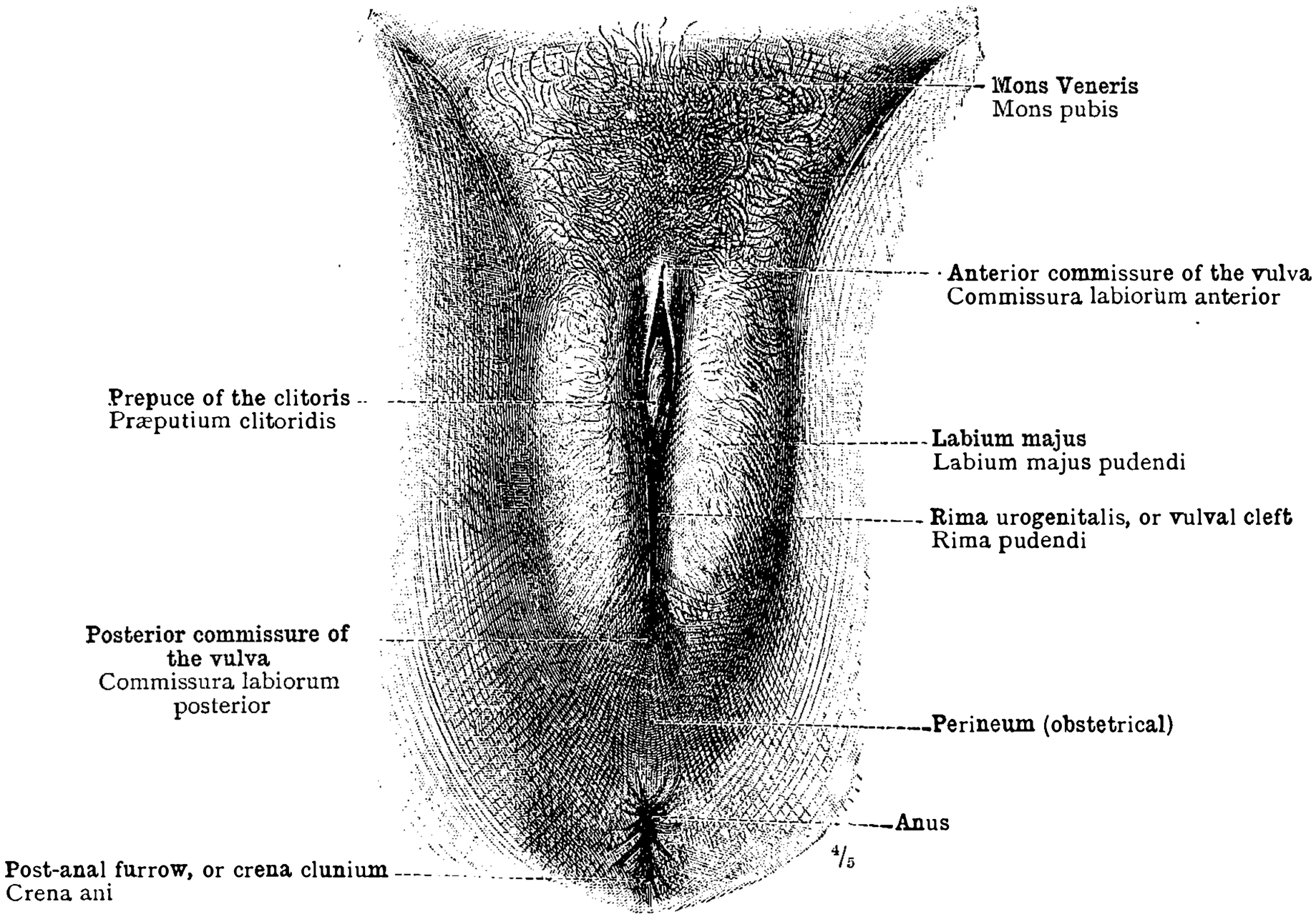
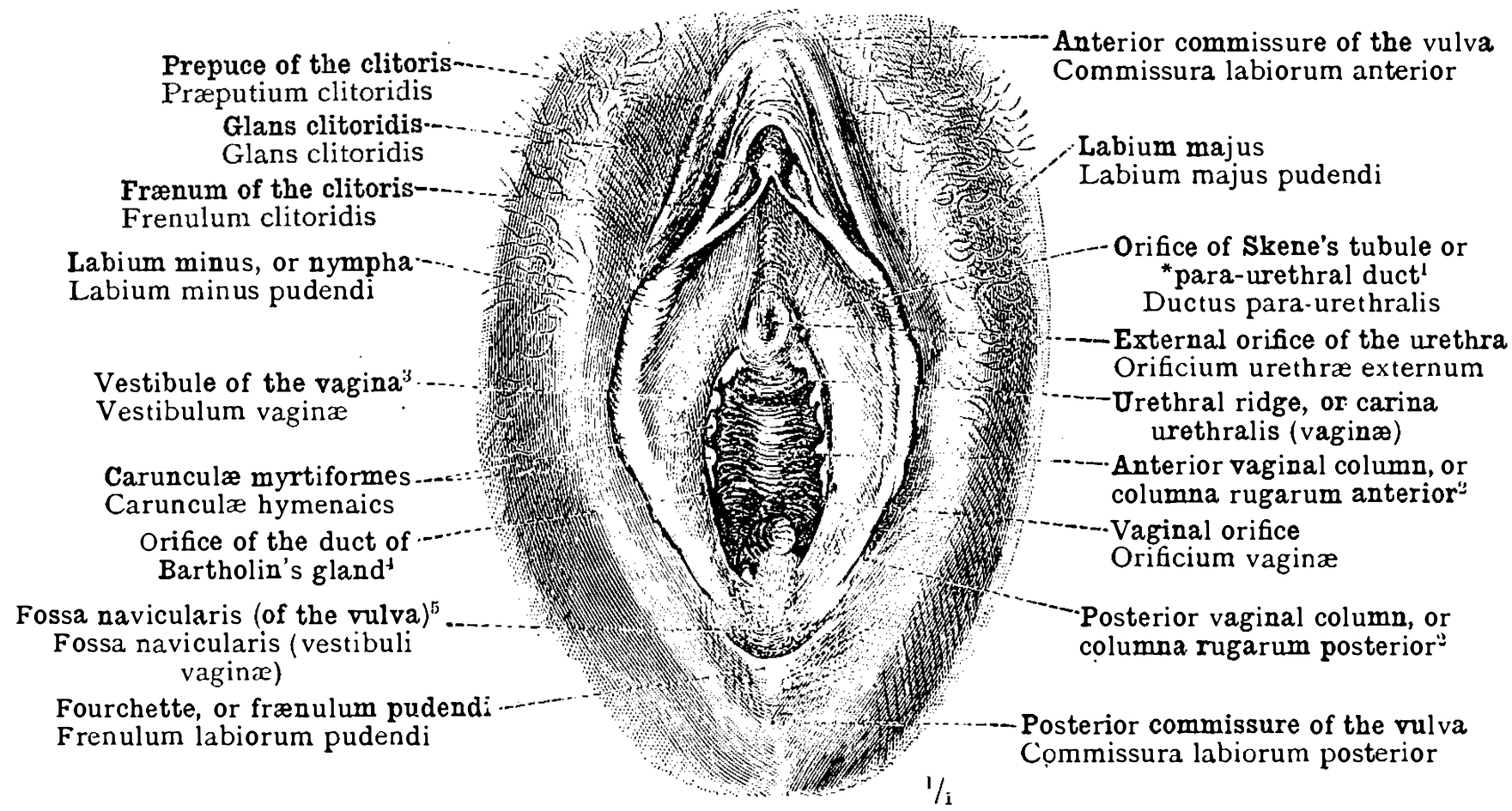


FIG. 882.—PUDENDUM MULIEBRE, THE FEMALE PUDENDUM, OR VULVA, WITH THE LABIA MAJORA. RIMA UROGENITALIS, THE VULVAL CLEFT. FEMALE PERINEUM (OBSTETRICAL PERINEUM). MONS VENERIS, WITH THE PUBIC HAIR.

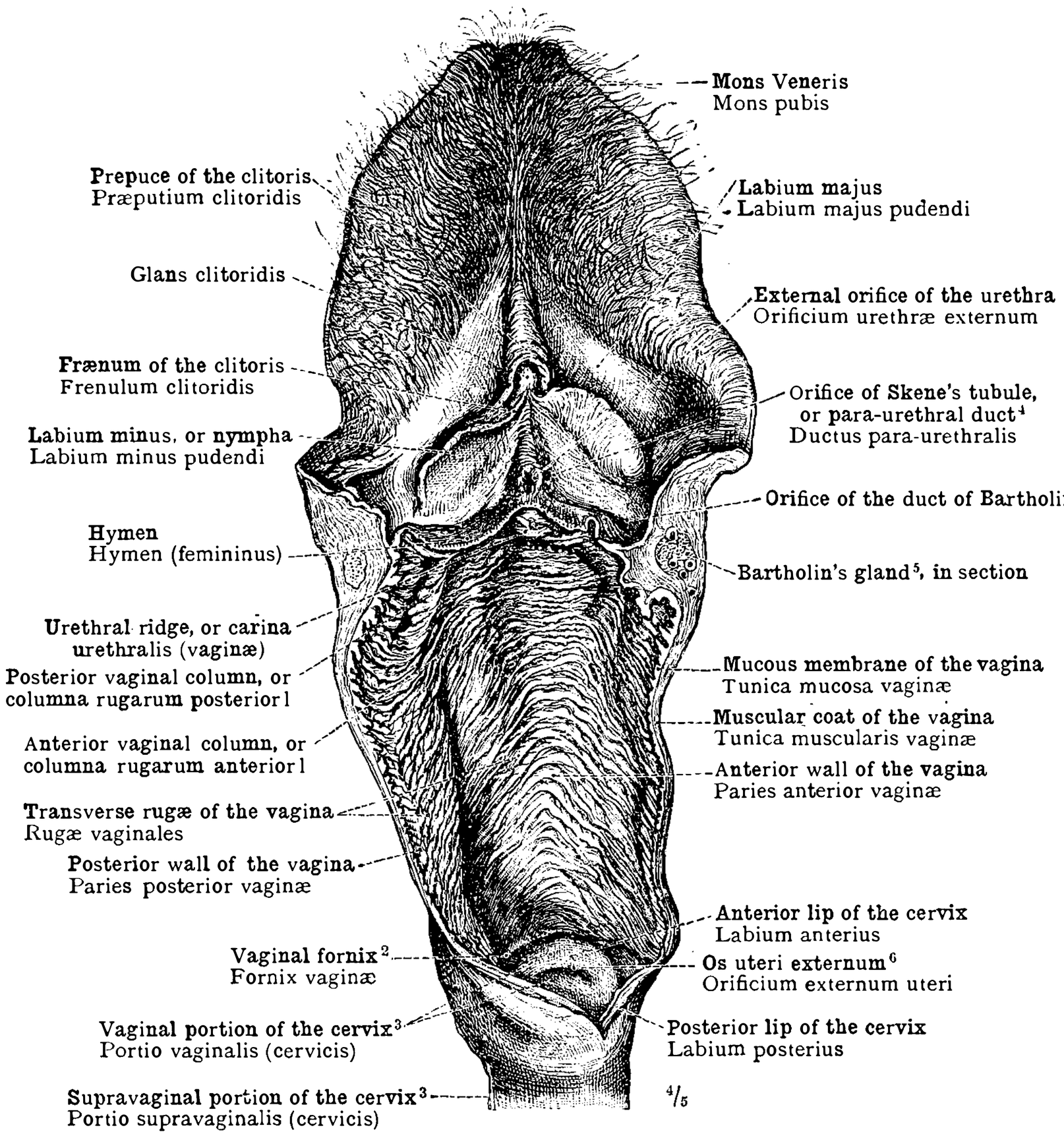


1 See Appendix, note 88.
2 *Vaginal columns*, anterior and posterior. These may be either single or double.—TR.
3 See Appendix, note 89.
4 *Glandula vestibularis major*, known also as *Duverney's gland* and the *suburethral gland*. (See Appendix, note 66.)
5 See Appendix, note 90.

FIG. 883.—VESTIBULE OF THE VAGINA (*see note* 3 *above*) WITH THE LABIA MINORA OR NYMPHÆ, THE VAGINAL AND URETHRAL ORIFICES, AND THE GLANS CLITORIDIS.

The labia majora have been drawn outwards, and the rima urogenitalis, or vulval cleft, has thus been widely opened.

Partes genitales externæ muliebres—The female external genital organs.



[1] See [2] to p. 514. [2] See Appendix, note 78. [3] See Appendix, note 75. [4] See Appendix, note 88.
[5] *Glandula vestibularis major*, known also as *Duverney's gland* and the *suburethral gland*. (See Appendix, note 65.)
[6] See Appendix, note 67.

FIG. 886.—FEMALE EXTERNAL GENITAL ORGANS OF A VIRGIN, ATTACHED TO THE VAGINA, WHICH HAS BEEN ISOLATED AND OPENED, AND A PORTION OF THE CERVIX UTERI. HYMEN (FEMININUS). THE VAGINAL FORNIX (*see Appendix, note* 78), WITH THE ANTERIOR AND POSTERIOR LIPS OF THE CERVIX, AND THE OS UTERI EXTERNUM (*see Appendix, note* 67). THE VAGINAL COLUMNS, COLUMNÆ RUGARUM, AND THE TRANSVERSE RUGÆ OF THE VAGINA, RUGÆ VAGINALES.

The posterior wall of the vagina has been divided longitudinally throughout to the left of the median line, and has been turned to the right. Near the vestibule (*see Appendix, note* 89) the section passes through the left Bartholin's gland (*see note* 5 *above*).

The Vagina.

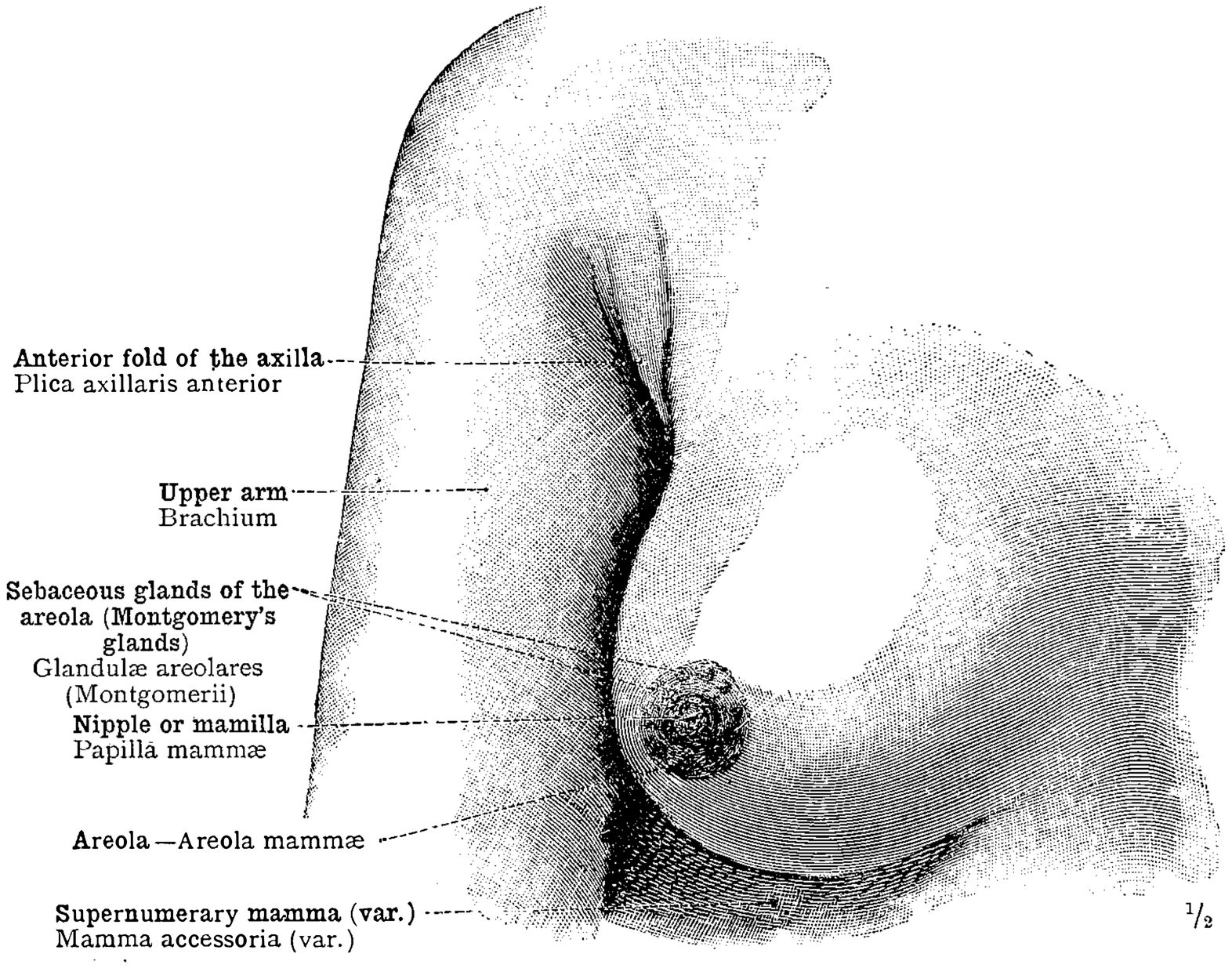


FIG. 887.—MAMMA, THE BREAST, OF A VIRGIN AGED EIGHTEEN YEARS.

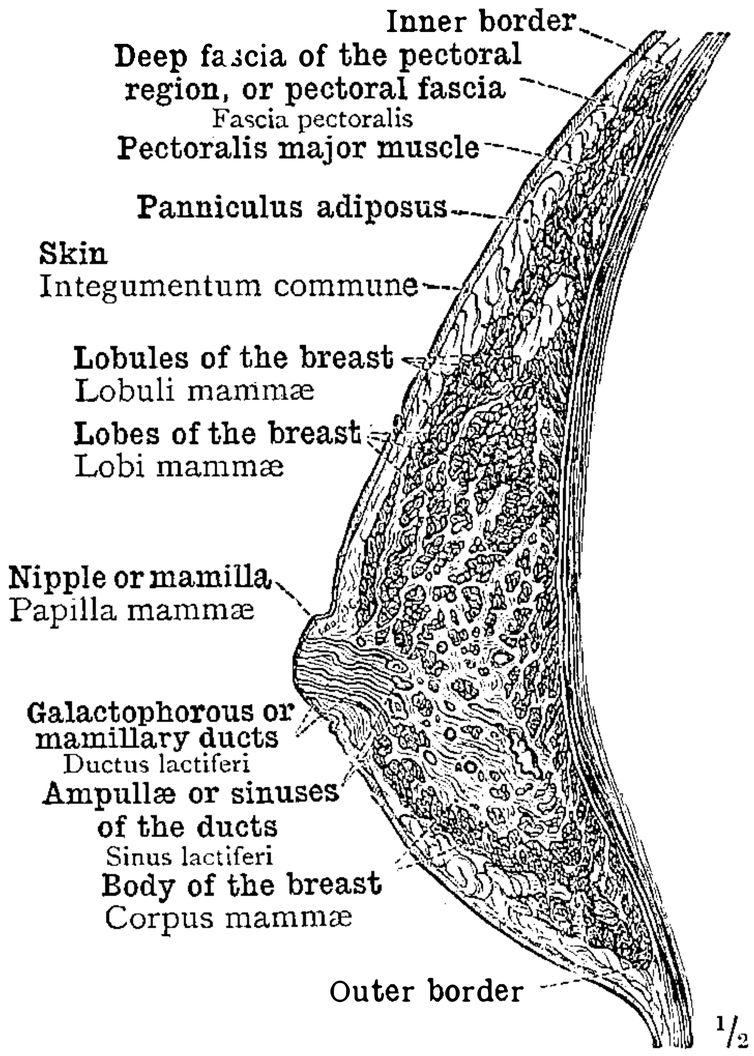


FIG. 888.—HORIZONTAL SECTION THROUGH THE FEMALE BREAST.

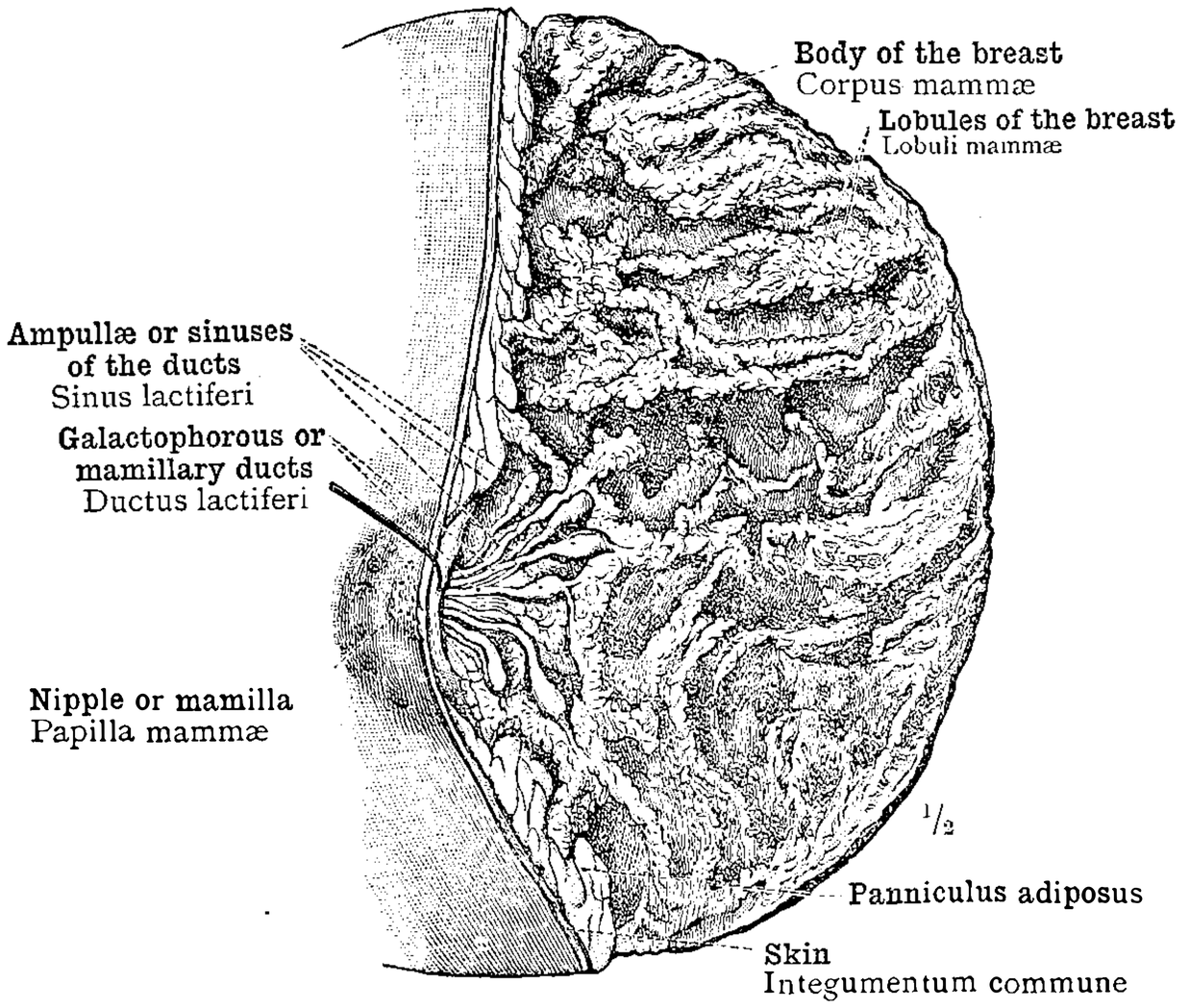


FIG. 889.—BREAST OF A NURSING MOTHER, HARDENED IN STRONG ALCOHOL; FROM ONE HALF OF THE ORGAN THE SKIN AND SUBCUTANEOUS FATTY TISSUE HAVE BEEN REMOVED, AND THE GALACTOPHOROUS OR MAMILLARY DUCTS WITH THEIR SINUSES HAVE BEEN LAID BARE.

Mamma—The breast.

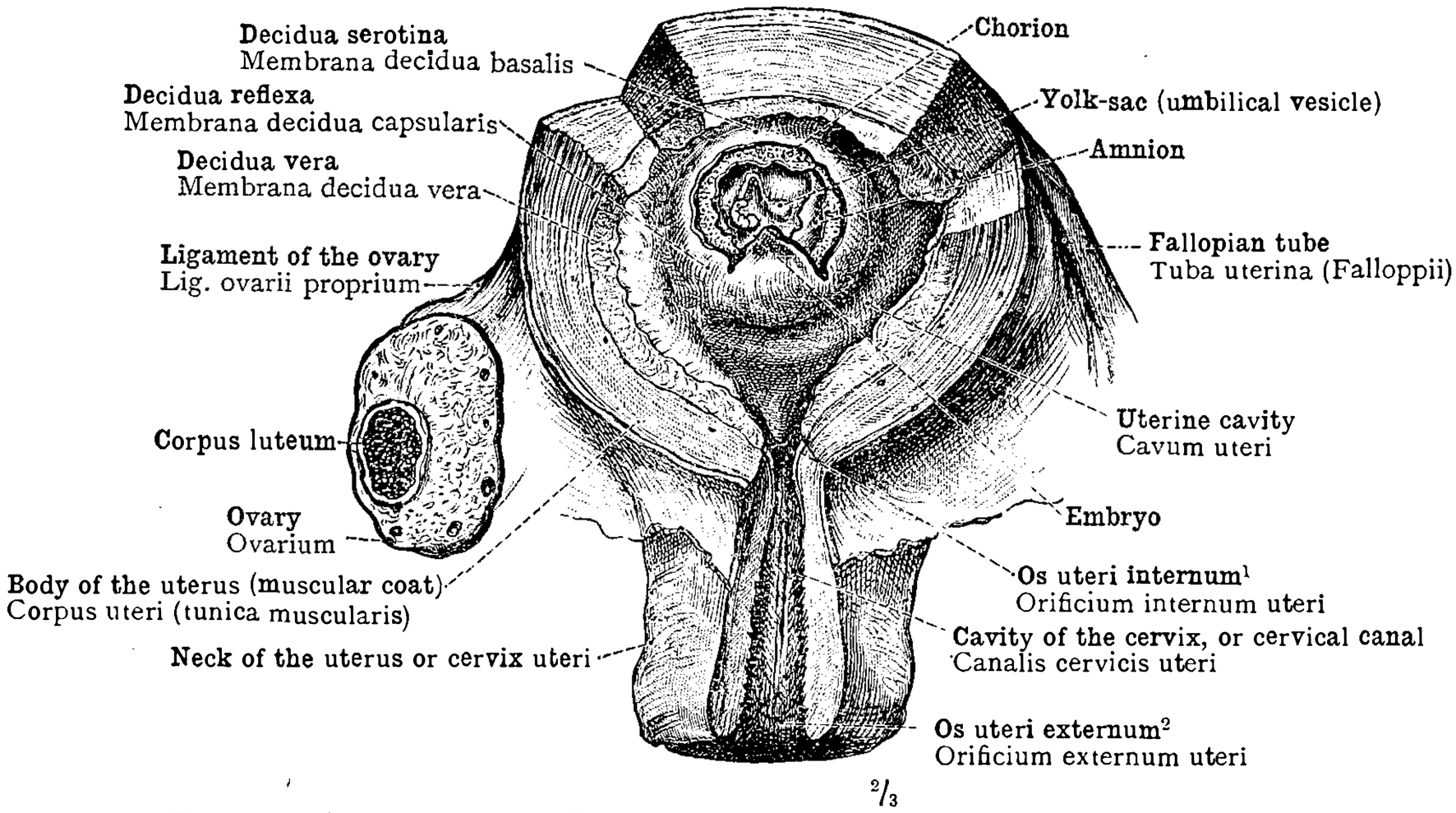


FIG. 890.—UTERUS IN THE FIFTH WEEK OF PREGNANCY, OPENED FROM BEHIND.

By the removal of parts of the membranes the cavity of the amnion has been opened.

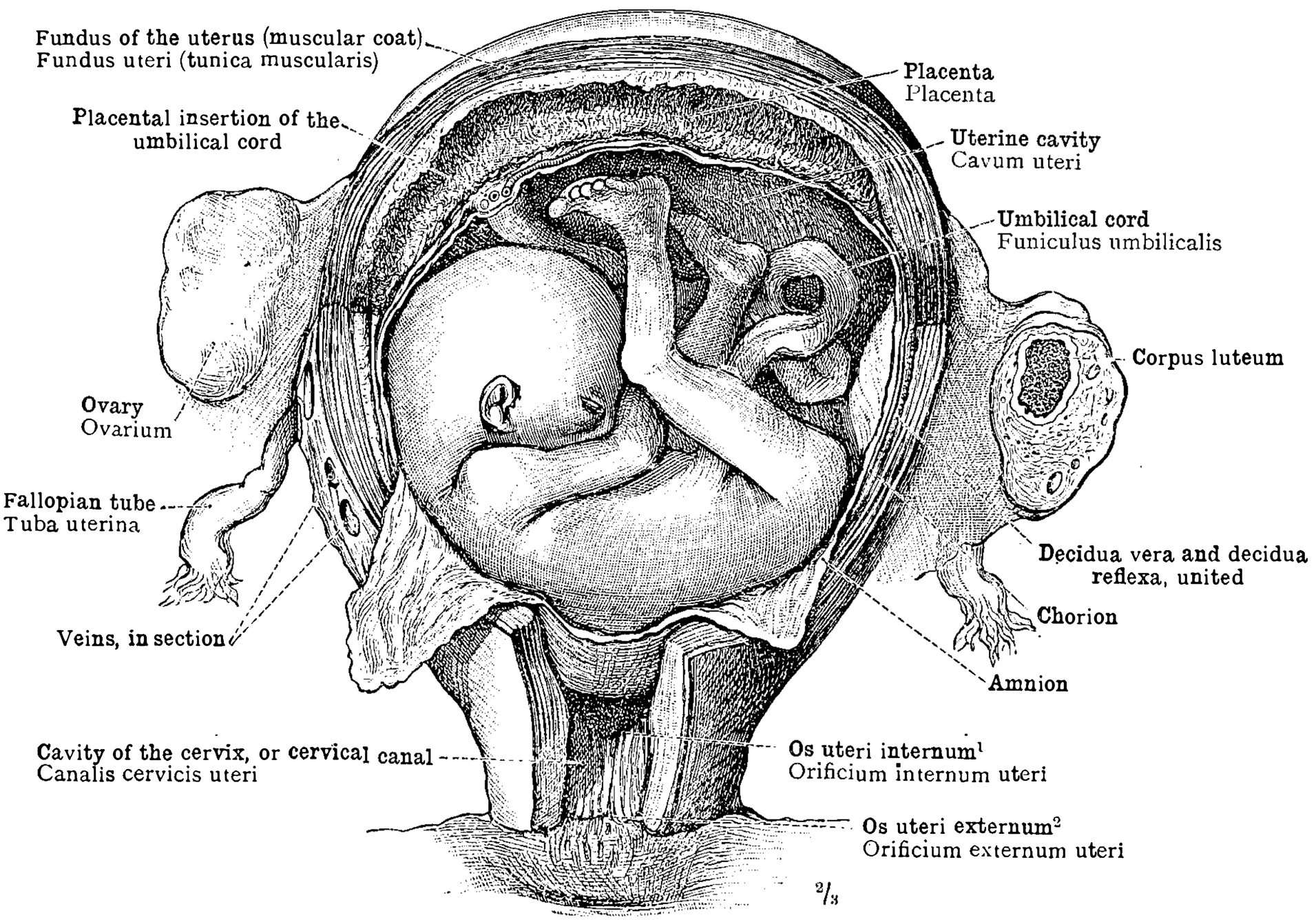


FIG. 891.—UTERUS IN THE SIXTH MONTH OF PREGNANCY (MONTHS OF FOUR WEEKS EACH), OPENED BY THE REMOVAL OF THE POSTERIOR WALL. THE FŒTUS, WITH ITS MEMBRANES, AND THE PLACENTA, IN TRANSVERSE SECTION.

[1] See note 5 to p. 511.

[2] See Appendix, note 67.

Uterus gravidus—The gravid uterus.

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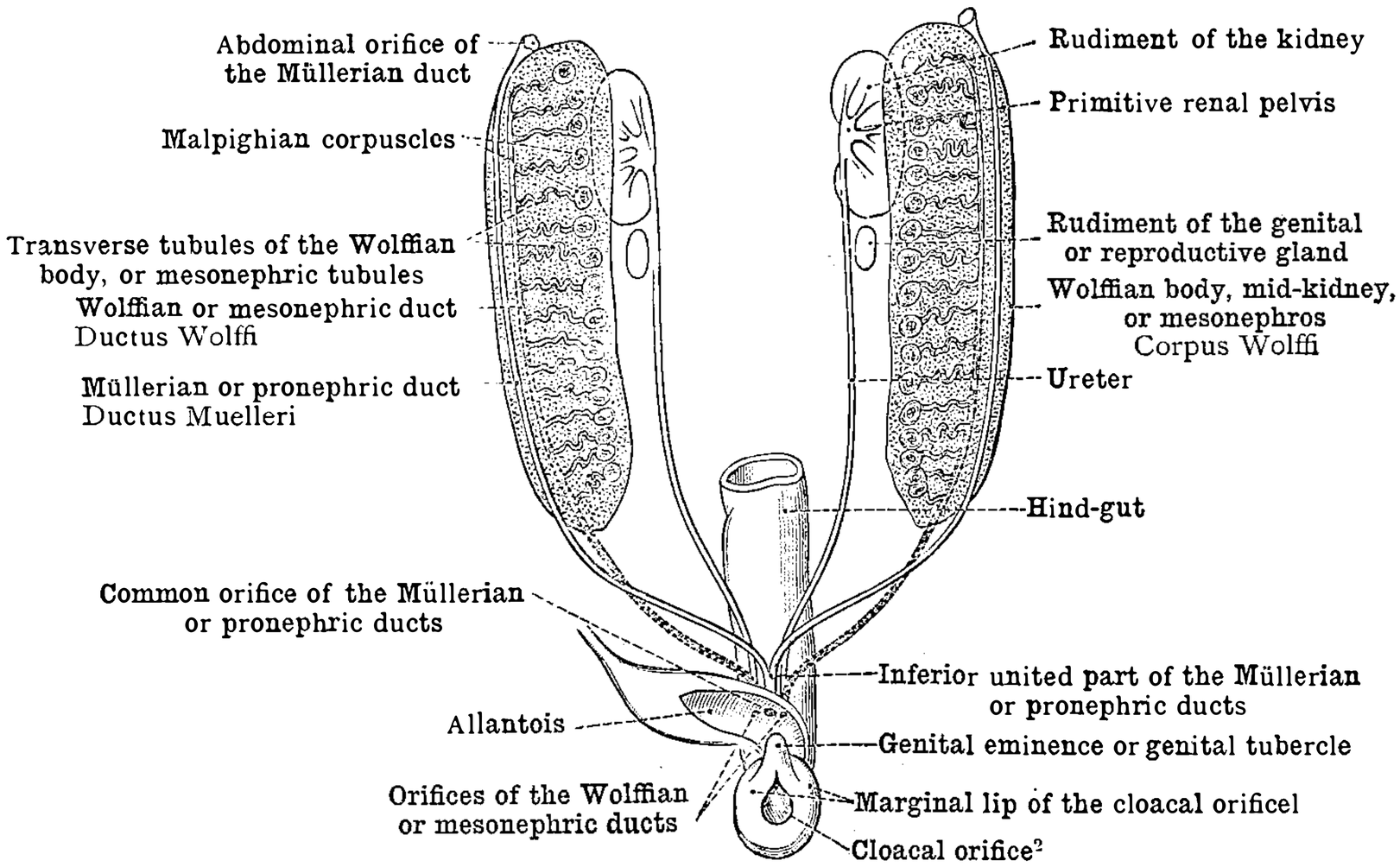

FIG. 895.—DIAGRAMMATIC REPRESENTATION OF THE PRIMITIVE UROGENITAL ORGANS OF THE EMBRYO PRIOR TO SEXUAL DIFFERENTIATION. THE WOLFFIAN BODY (MID-KIDNEY OR MESONEPHROS) WITH THE WOLFFIAN (MESONEPHRIC) AND MÜLLERIAN (PRONEPHRIC) DUCTS.

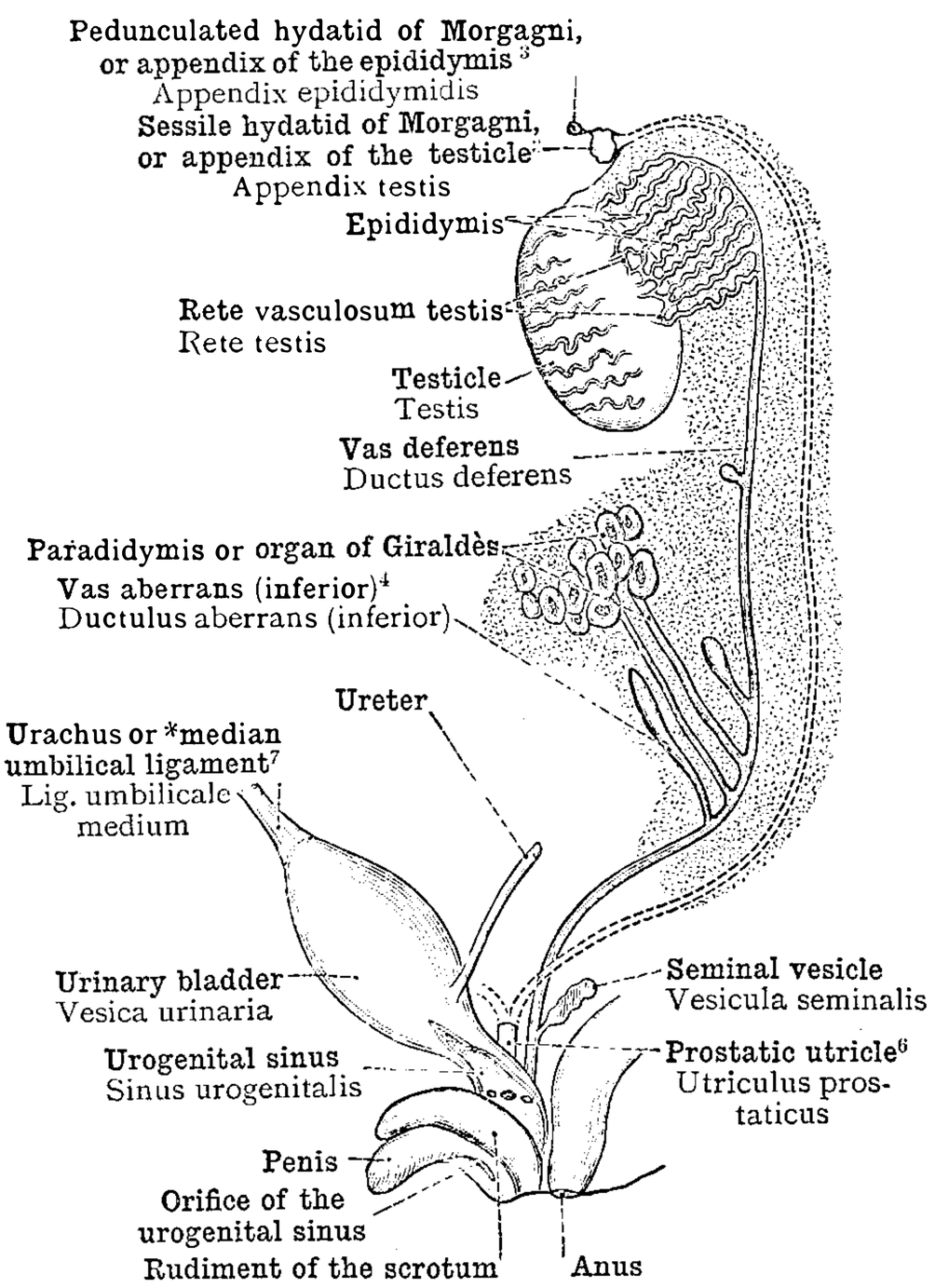

FIG. 896.—DEVELOPMENT OF THE MALE GENITO-URINARY APPARATUS.

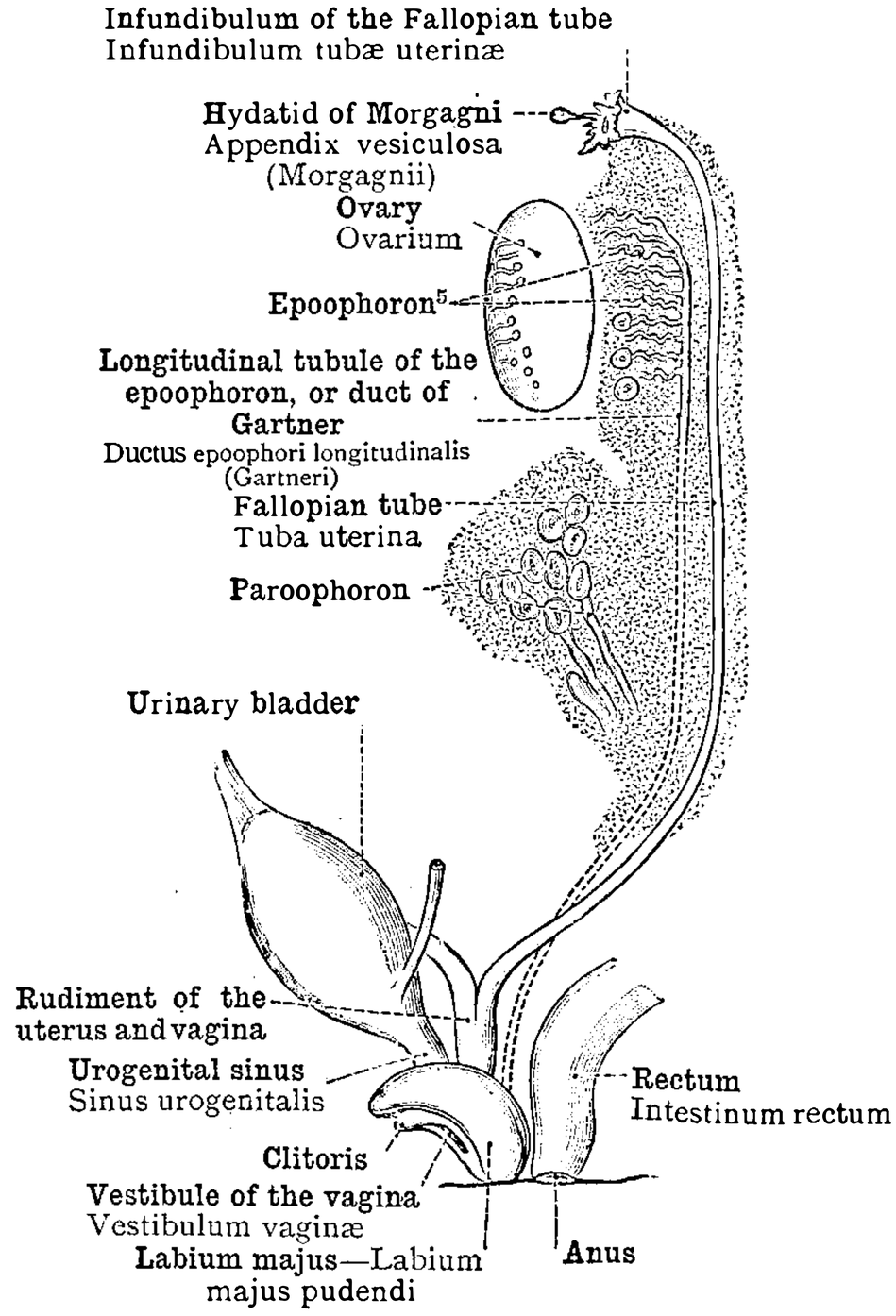

FIG. 897.—DEVELOPMENT OF THE FEMALE GENITO-URINARY APPARATUS.

1 See Appendix, note 93. 2 See Appendix, note 94. 3 See Appendix, note 69.
4 See Appendix, note 71. 5 Known also as the *parovarium*, or *organ of Rosenmüller*.
6 Known also as the *prostatic vesicle*, *prostatic sinus*, *sinus pocularis*, and *uterus masculinus*. 7 See note 3 to p. 387, Part III.

Diagram showing the Development from a Common Type of the Male and the Female Genito-Urinary Apparatus.

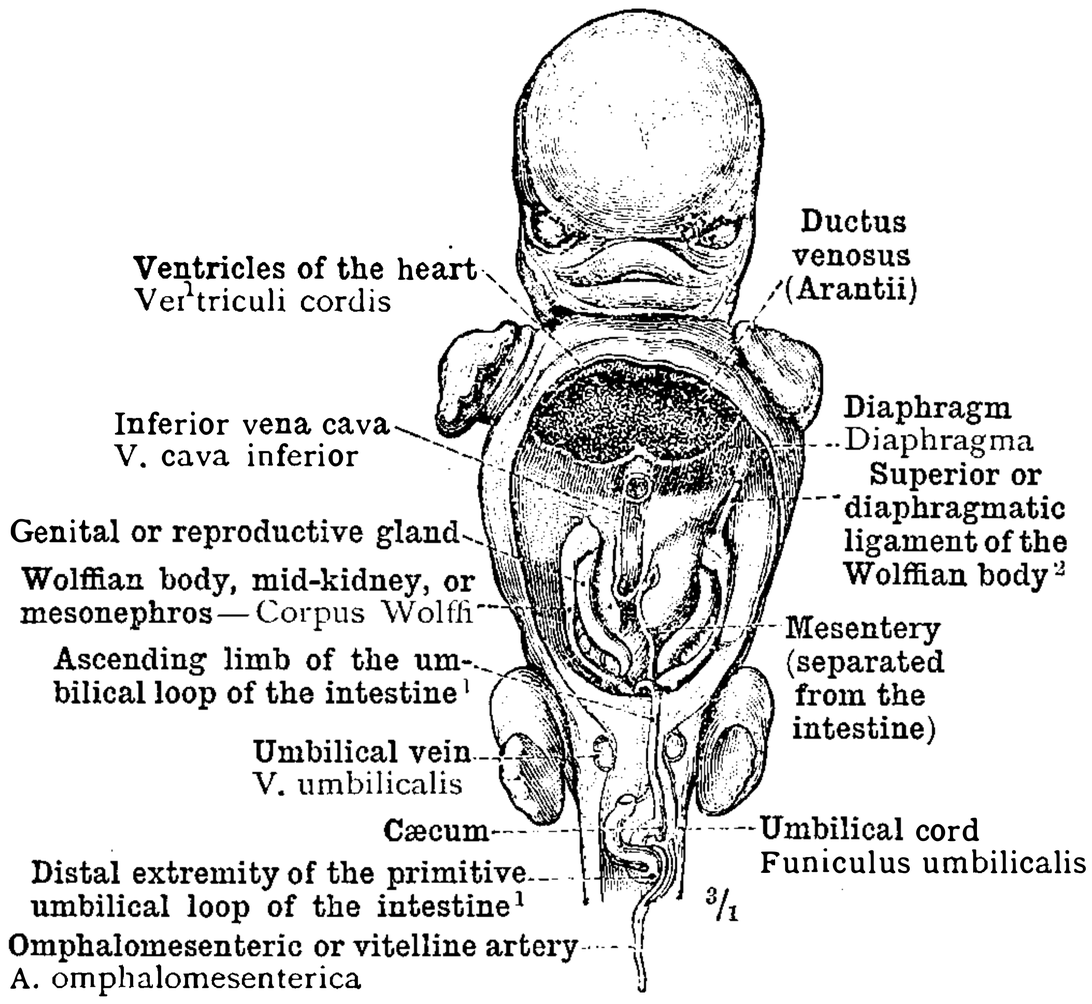

FIG. 898.—HUMAN-FŒTUS AT THE END OF THE SIXTH WEEK. THE GENITAL OR REPRODUCTIVE GLANDS AND THE WOLFFIAN BODIES ARE LAID BARE BY THE REMOVAL OF THE LIVER, THE STOMACH, AND THE DESCENDING LIMB OF THE UMBILICAL LOOP OF THE INTESTINE.[1]

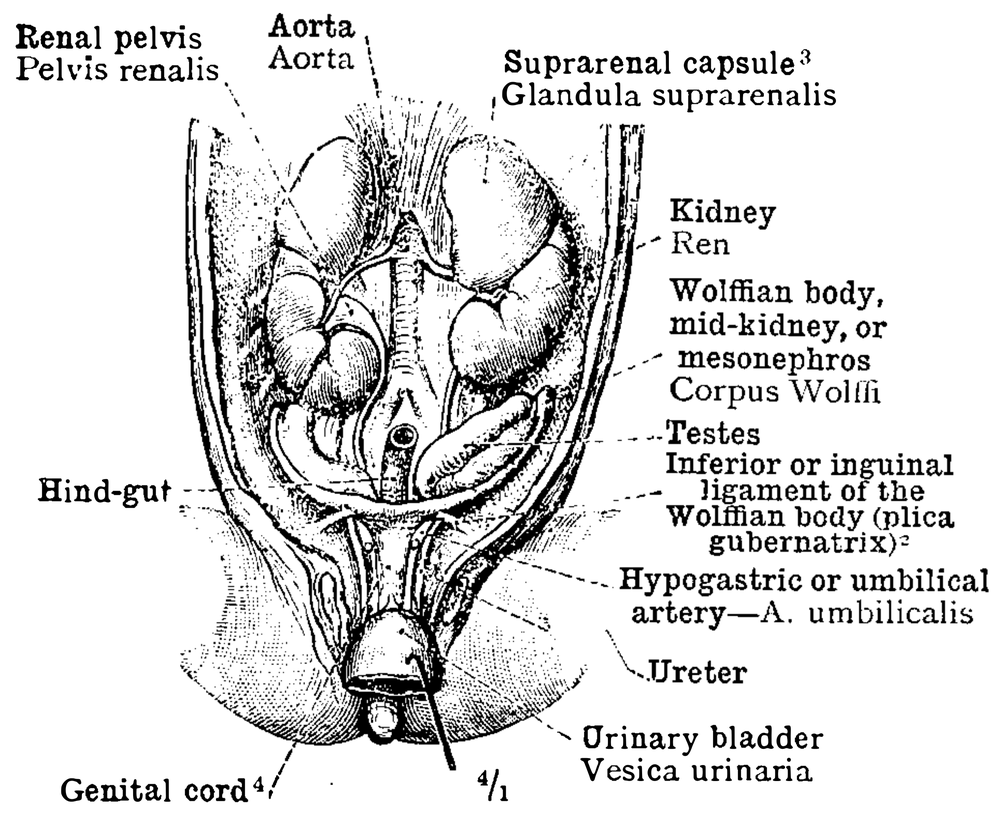

FIG. 899.—GENITO-URINARY ORGANS OF A MALE FŒTUS AT THE END OF THE TENTH WEEK.

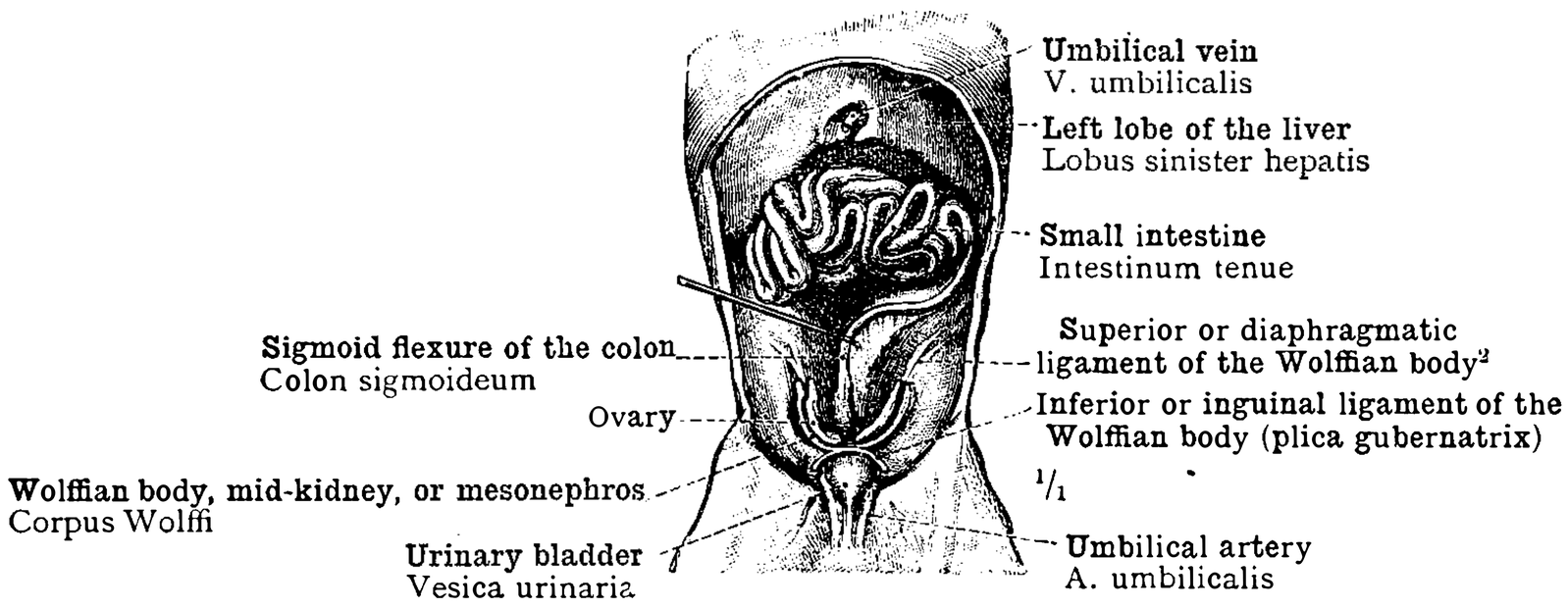

FIG. 900.—ABDOMINAL ORGANS OF A FEMALE FŒTUS IN THE MIDDLE OF THE FOURTH MONTH (MONTHS OF FOUR WEEKS EACH).

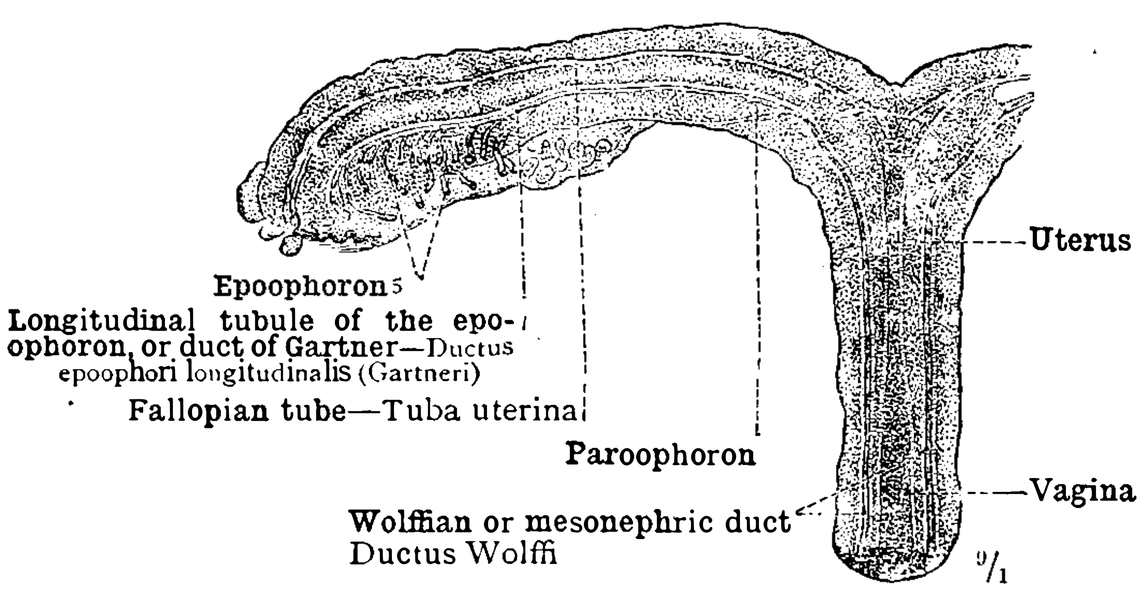

FIG. 901.—UTERUS AND FALLOPIAN TUBE OF A THREE AND A HALF MONTHS FŒTUS (MONTHS OF FOUR WEEKS EACH), WITH THE WOLFFIAN DUCT.

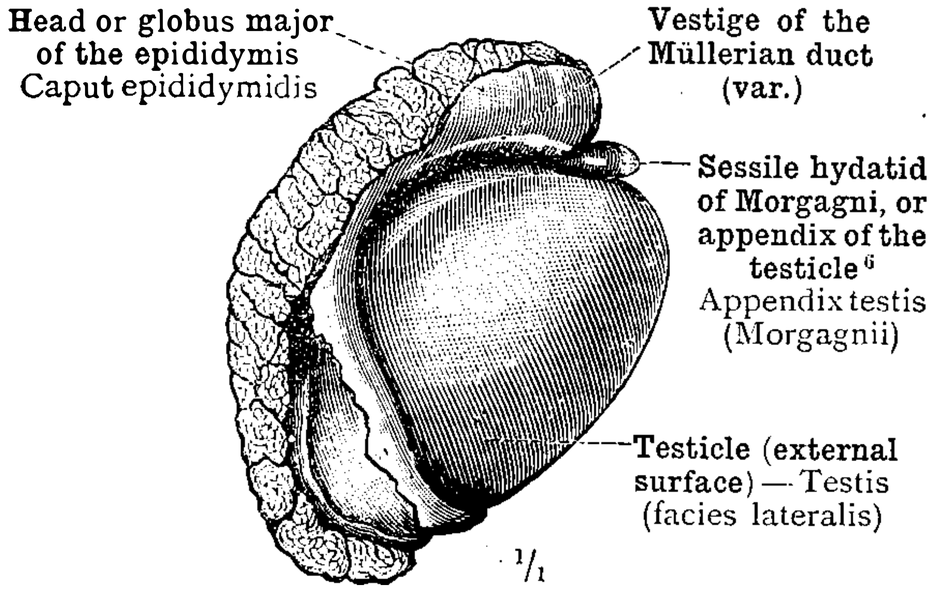

FIG. 902.—TESTICLE OF AN ADULT EXHIBITING A VESTIGE OF THE MÜLLERIAN DUCT.

[1] See note [1] to p. 451.
[2] See Appendix, note 95.
[3] Called also *suprarenal body*, or *adrenal*.
[4] See Appendix, note 96.
[5] Known also as the *parovarium* or organ of Rosenmüller.
[6] See Appendix, note 69.

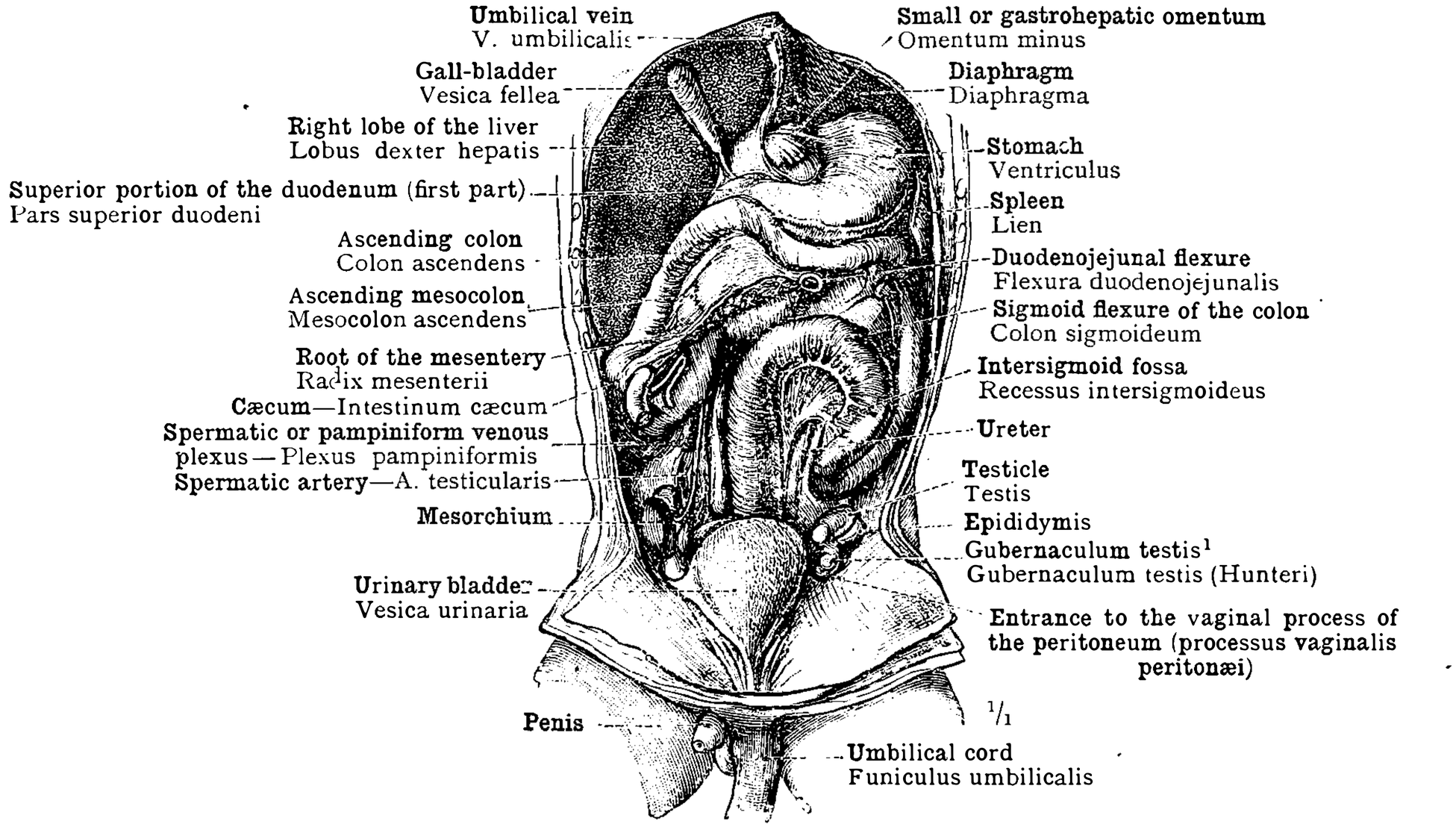

FIG. 903.—ABDOMINAL VISCERA OF A FŒTUS AT THE END OF THE SIXTH MONTH (MONTHS OF FOUR WEEKS EACH), HAVING A BODY-LENGTH OF 28 CENTIMETRES (11 INCHES).

The small intestine has been cut away, and the liver drawn upwards as far as possible. The testicle and the epididymis are in the inguinal region.

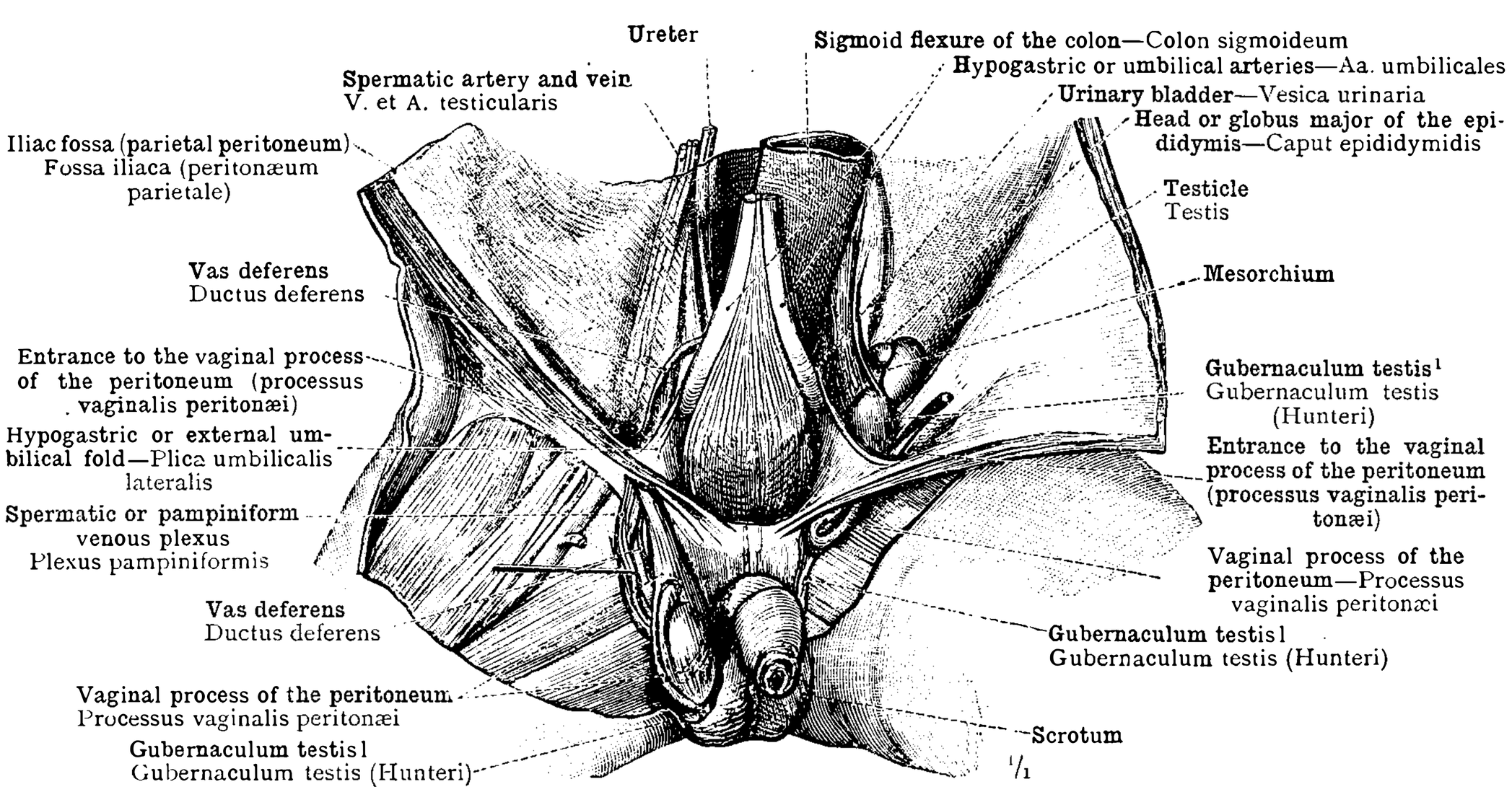

FIG. 904.—PELVIC REGION OF A FŒTUS IN THE MIDDLE OF THE NINTH MONTH (MONTHS OF FOUR WEEKS EACH), HAVING A BODY-LENGTH OF 42 CENTIMETRES (16½ INCHES).

The anterior abdominal wall has been opened. The right testicle has already descended into the scrotum, whilst the left is still above the entrance to the inguinal canal. On the right side the spermatic or pampiniform venous plexus, which lies behind the vaginal process of the peritoneum, has been separated from this latter and drawn outwards.

[1] See Appendix, note 95.

Descensus testis—Descent of the testicles.

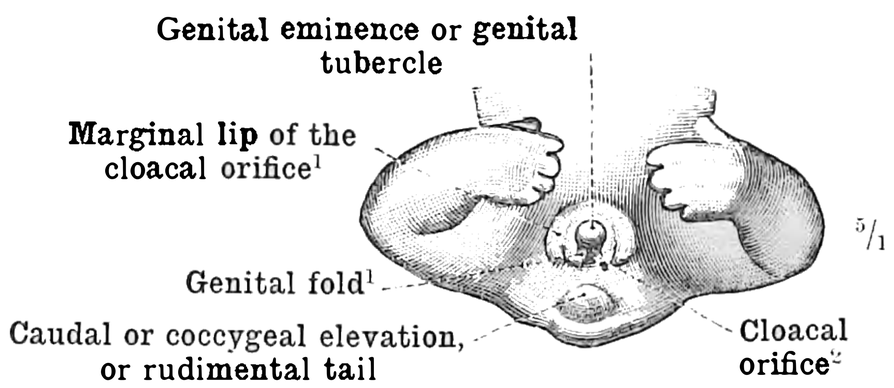

FIG. 908.—EXTERNAL GENITAL ORGANS OF A FŒTUS IN THE SEVENTH WEEK.

The urinary and genital canals unite distally with the alimentary canal to form a common cavity, the cloaca,[2] by which they communicate with the exterior.

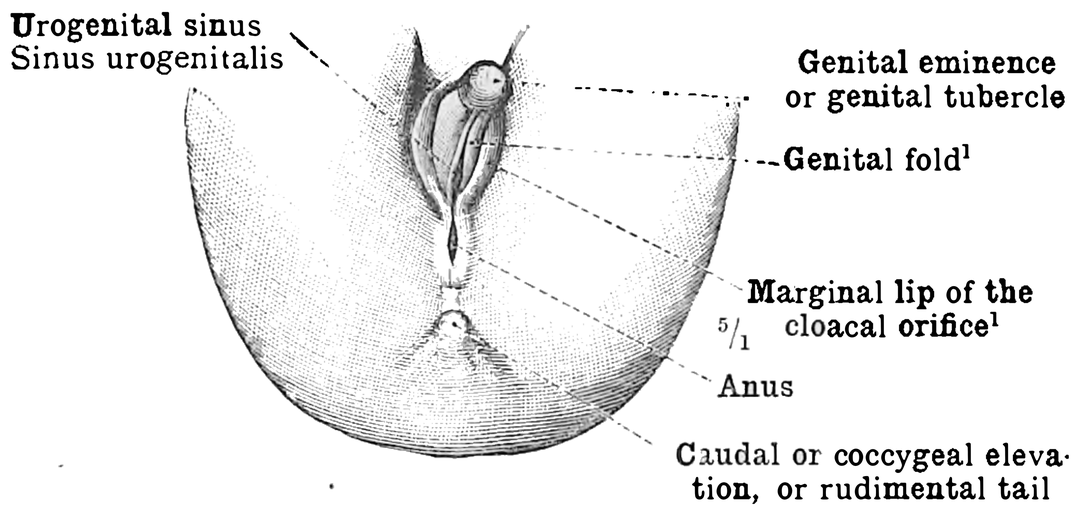

FIG. 909.—EXTERNAL GENITAL ORGANS OF A HUMAN FŒTUS IN THE BEGINNING OF THE THIRD MONTH (MONTHS OF FOUR WEEKS EACH), HAVING A BODY-LENGTH OF 4·5 CENTIMETRES (1¾ INCHES).

The division of the cloaca into a dorsal or anal and a ventral or urogenital part (urogenital sinus) has begun.

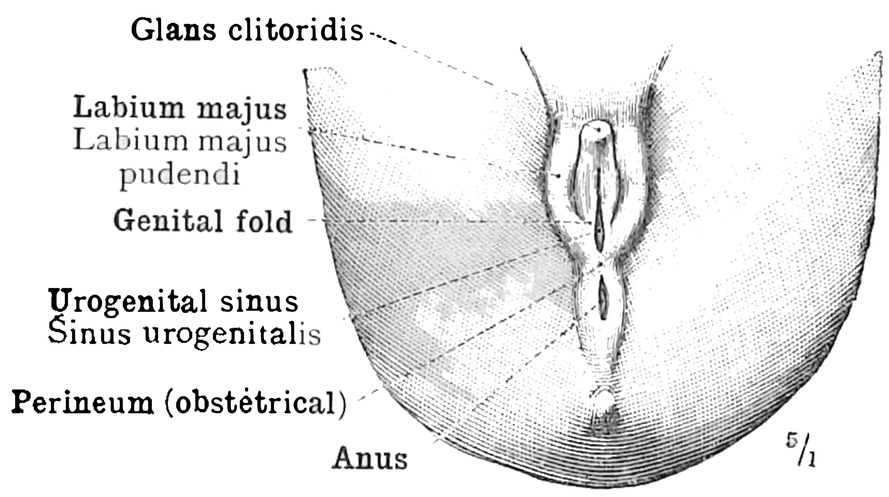

FIG. 910.—EXTERNAL GENITAL ORGANS OF A FEMALE FŒTUS IN THE MIDDLE OF THE THIRD MONTH (MONTHS OF FOUR WEEKS EACH), HAVING A BODY-LENGTH OF 5·6 CENTIMETRES (2⅕ INCHES).

The separation of the anus from the urogenital sinus is completed.

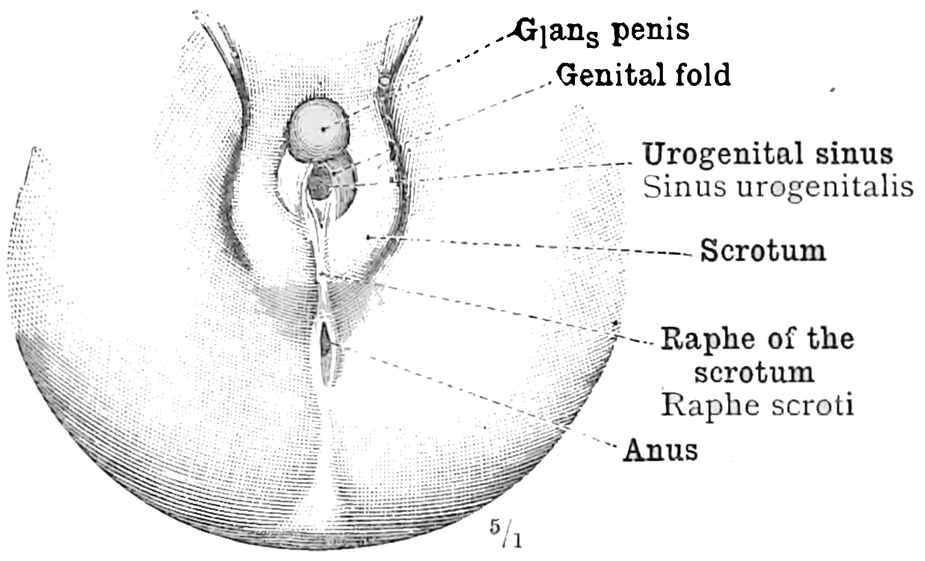

FIG. 911.—EXTERNAL GENITAL ORGANS OF A MALE FŒTUS IN THE BEGINNING OF THE FOURTH MONTH (MONTHS OF FOUR WEEKS EACH), HAVING A BODY-LENGTH OF 8·1 CENTIMETRES (3⅕ INCHES). UNION OF THE GENITAL FOLDS TO FORM THE URETHRA.[1]

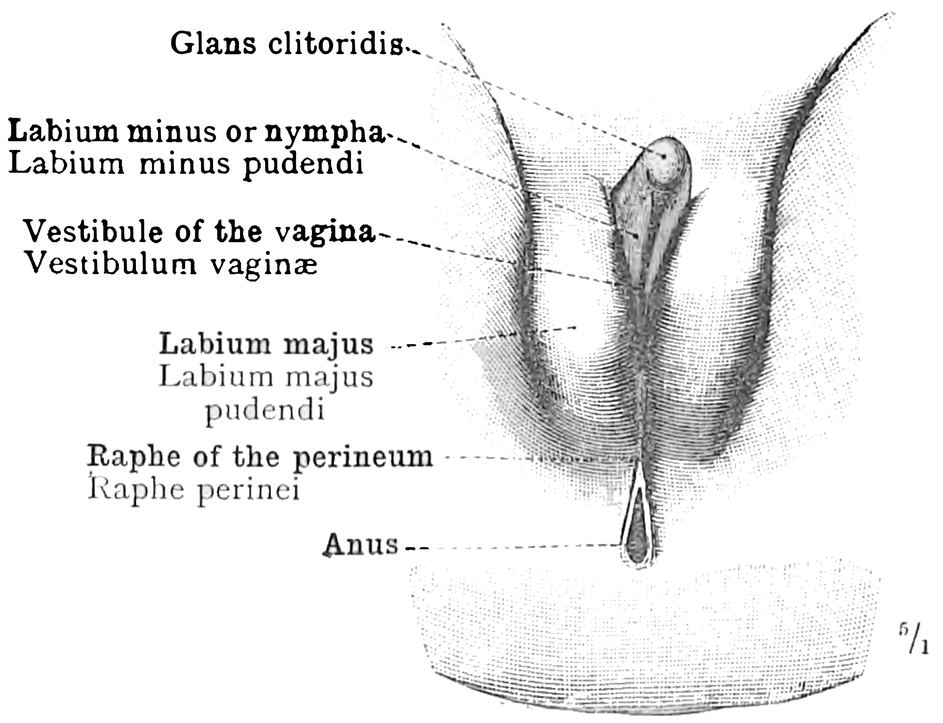

FIG. 912.—EXTERNAL GENITAL ORGANS OF A FEMALE FŒTUS AT THE END OF THE FIFTH MONTH (MONTHS OF FOUR WEEKS EACH), HAVING A BODY-LENGTH OF 11·5 CENTIMETRES (4½ INCHES).

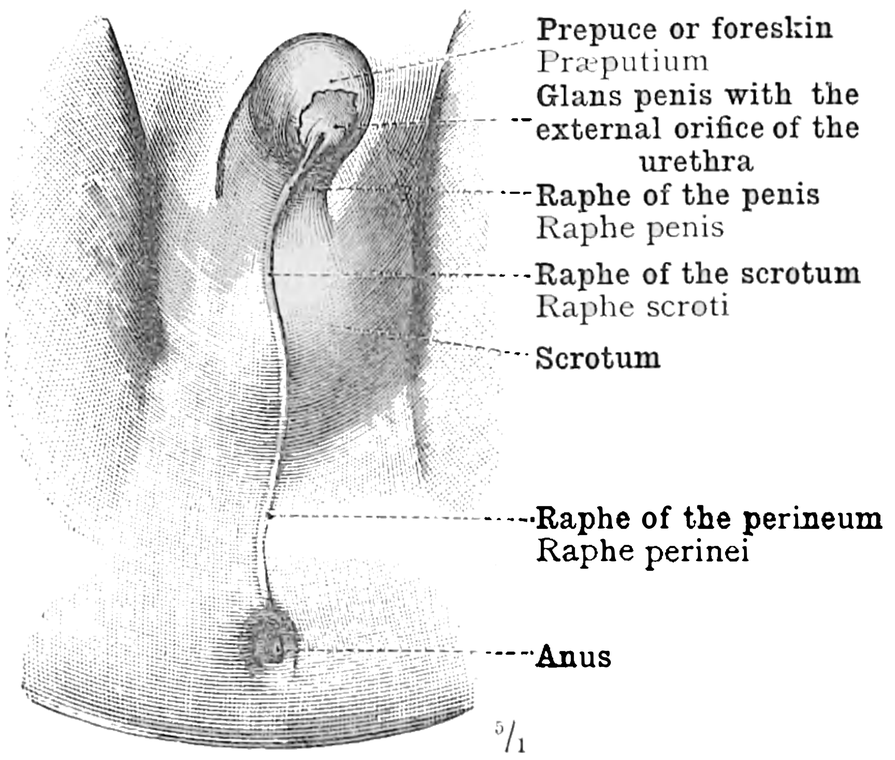

FIG. 913.—EXTERNAL GENITAL ORGANS OF A MALE FŒTUS AT THE END OF THE FIFTH MONTH (MONTHS OF FOUR WEEKS EACH), HAVING A BODY-LENGTH OF 12 CENTIMETRES (4¾ INCHES).

[1] See Appendix, note 93.

[2] See Appendix, note 94.

The Development of the External Genital Organs.

THE MUSCLES OF THE PERINEUM

AND

THE TOPOGRAPHICAL ANATOMY OF THE PELVIC VISCERA

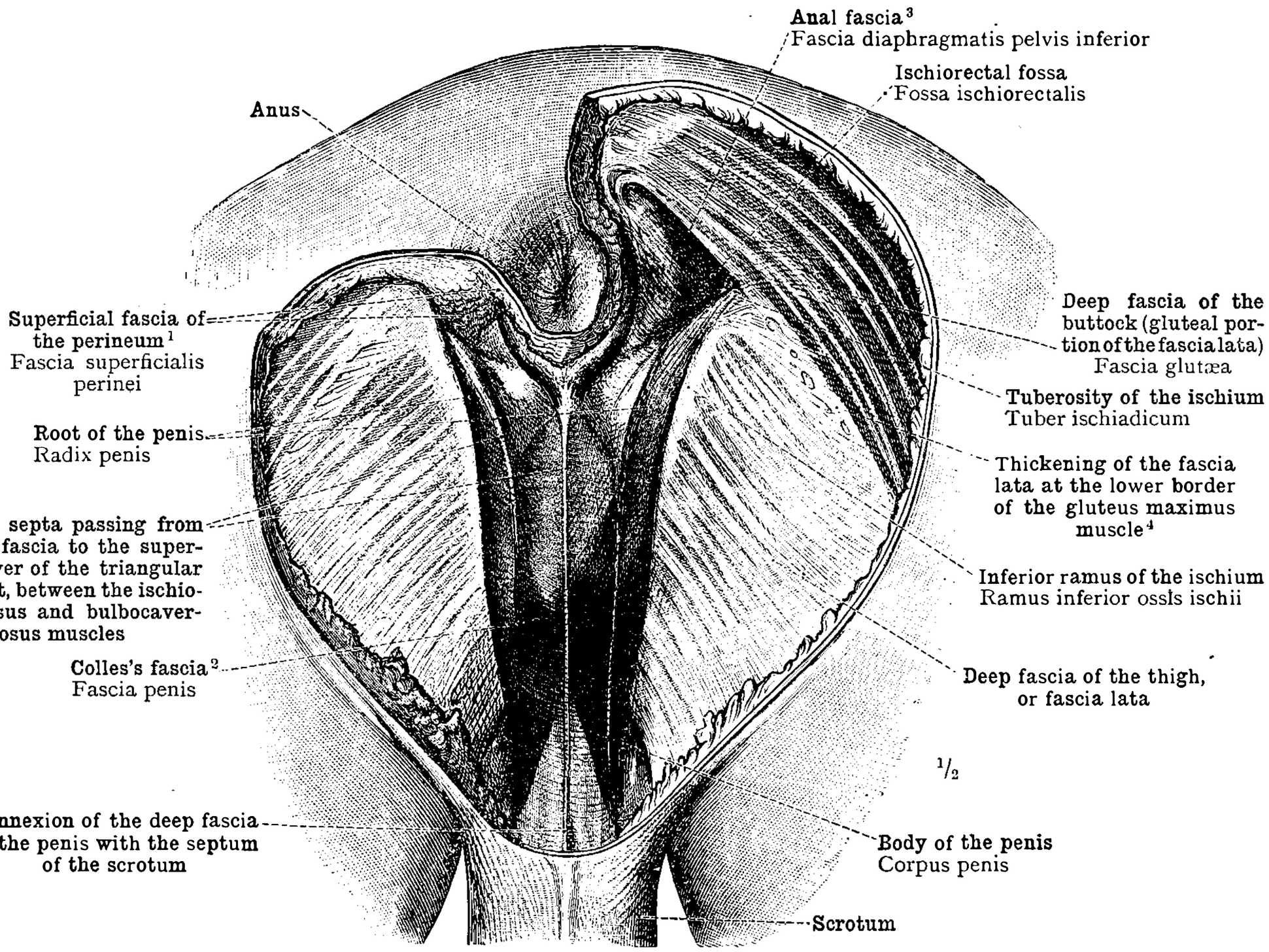

FIG. 914.—THE SUPERFICIAL LAYERS OF THE PERINEAL REGION OF THE MALE.

On the right side of the body, the skin and the superficial fascia[1] having been removed as far back as the posterior limit of the perineal region, the fat has been cleared out of the ischiorectal fossa, and the anal fascia covering the inferior surface of the levator ani muscle (fascia diaphragmatis pelvis inferior—*see Appendix, notes* 85 *and* 106) has been laid bare. On the left side of the body, in the posterior part of the perineal region, the skin and the superficial fascia have not been entirely removed, and the fat occupying the ischiorectal fossa has been left undisturbed.

THE POSTERIOR PART OF THE DEEP FASCIA OF THE PENIS, OR COLLES'S FASCIA,[2] AND ITS CONNEXIONS WITH THE PERIMYSIUM OF THE EXTERNAL OR SUPERFICIAL SPHINCTER OF THE ANUS AND WITH THE SEPTUM OF THE SCROTUM. THE PARTS OF THE DEEP FASCIA OF THE THIGH (FASCIA LATA) ADJOINING THE PERINEUM, INCLUDING THE LOWER PART OF THE DEEP FASCIA OF THE BUTTOCK OR GLUTEAL PORTION OF THE FASCIA LATA.[4]

[1] Sometimes distinguished in England as the *superficial layer* of the superficial fascia, *Colles's fascia* being then called the *deep layer* of the same. The former is, however, the true superficial fascia, and is continuous with the dartos layer of the scrotum.—TR.

[2] *Colles's Fascia.*—This is the posterior part of what is called by the author *fascia penis* (*see note* [1] *to p.* 508). Though in fact continuous with the deep fascia of the penis and scrotum, this fascia is in the anterior half of the perineal region (for it does not extend into the posterior half of that region), always distinguished by English anatomists by a separate name. It is usually, and most suitably, known as *Colles's fascia*, but is sometimes called the *deep layer of the superficial fascia* (*see note* [1] *above*), and sometimes the *deep perineal fascia*. The last name should be avoided, since it is liable to cause confusion, having been applied also to the triangular ligament of the urethra.—TR.

[3] See Appendix, note 85.

[4] *The deep fascia of the buttock or gluteal portion of the fascia lata* (the *fascia glutæa* of the author) is thick and white where it overlies the gluteus medius in front of the gluteus maximus muscle, representing here an obsolete anterior portion of the latter muscle. At the upper border of the gluteus maximus, it divides into two thin layers to enclose that muscle; and when these reunite at the lower border there is again a thickening, a dense band of transverse fibres being formed. This is perforated a little external to the tuberosity of the ischium, by the inferior or long pudendal branch of the small sciatic nerve; and further out, by the ascending or recurrent gluteal cutaneous branches of the same nerve.—TR.

Regio perinealis—The perineal region.

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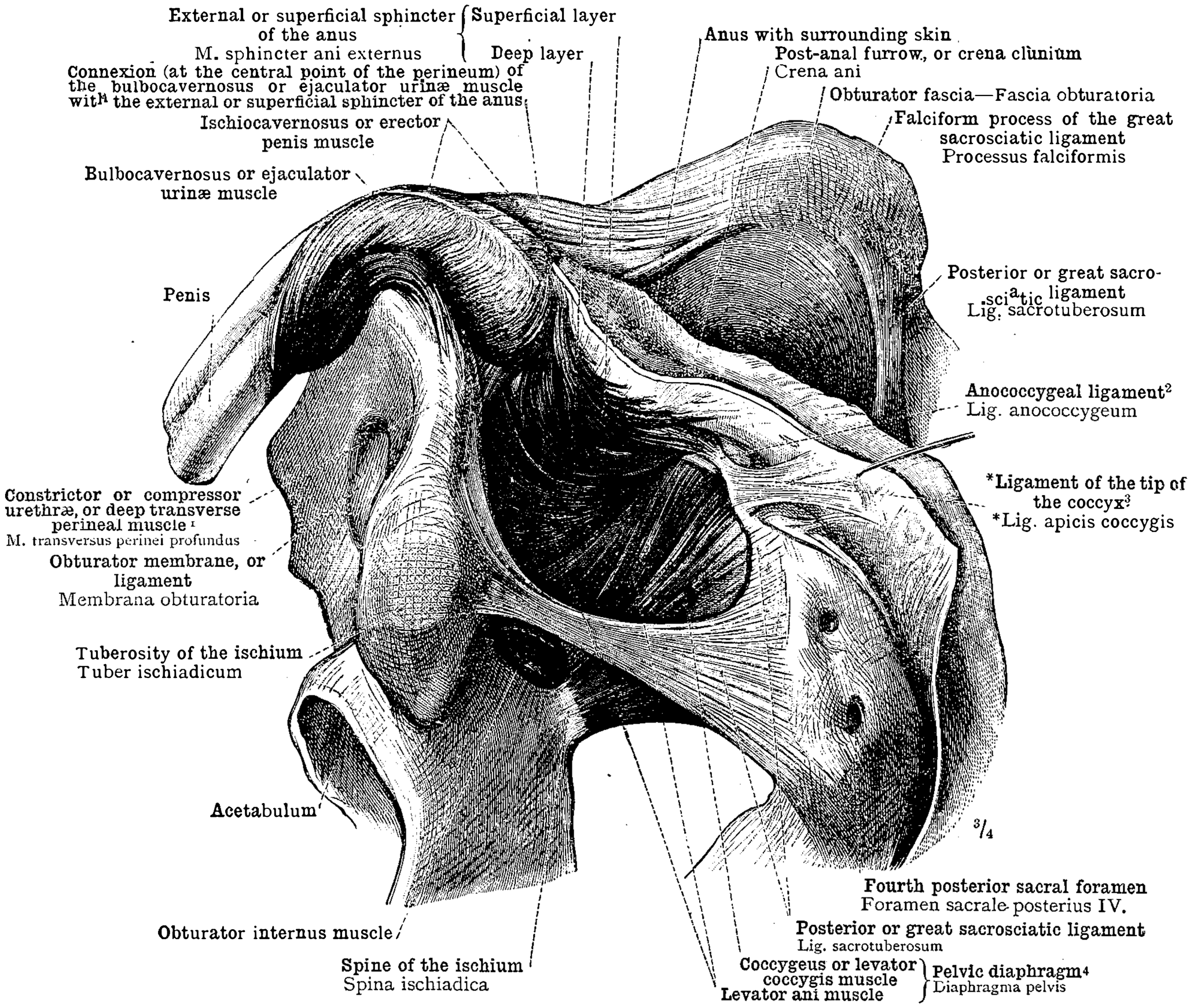


1 See note 1 to p. 527.

2 See note 2 to p. 527.

3 *Ligamentum Apicis Coccygis.*—"From the tip of the coccyx," writes Quain ("Anatomy," 10th ed., vol. ii., part ii., p. 178), "a fibrous band passes to the integument, which is often, especially in the infant, marked by a depression (*foveola coccygea*) at this spot." This is the ligament shown in the accompanying figure, and called by Toldt the **ligament of the tip of the coccyx*.—TR.

4 See Appendix, note 87.

FIG. 916.—THE MUSCLES OF THE PERINEAL REGION OF THE MALE SEEN FROM THE LEFT SIDE. LEVATOR ANI, AND COCCYGEUS OR LEVATOR COCCYGIS MUSCLES, FORMING THE PELVIC DIAPHRAGM.

The skin surrounding the anus, and covering the coccyx and the lower part of the sacrum, has been drawn away from the tissues beneath, in order to display the radiation to the skin of fasciculi of the external or superficial sphincter of the anus (musculus sphincter ani externus). A portion of the posterior or great sacrosciatic ligament has been removed, in order to display somewhat more fully the inferior surface of the coccygeus or levator coccygis muscle.

Musculi perinei—Muscles of the perineum.

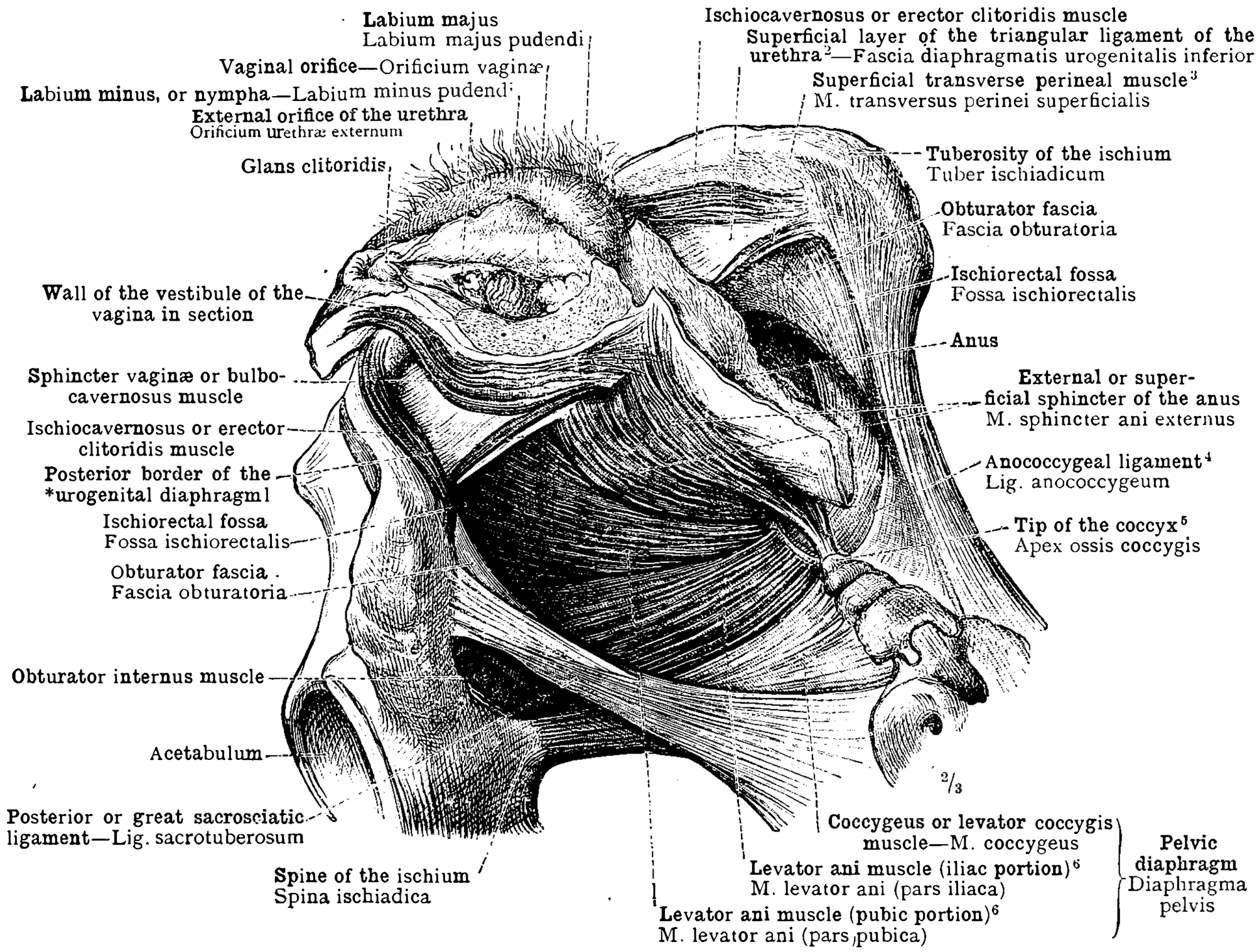


FIG. 917.—THE MUSCLES OF THE PERINEAL REGION OF THE FEMALE SEEN FROM THE LEFT SIDE. OF THE EXTERNAL GENITAL ORGANS, THE LABIUM MAJUS AND THE LABIUM MINUS OR NYMPHA HAVE BEEN REMOVED ON THE LEFT SIDE. LEVATOR ANI AND COCCYGEUS OR LEVATOR COCCYGIS MUSCLES, FORMING THE PELVIC DIAPHRAGM.

[1] That is, the connected posterior borders of the superficial and deep layers of the triangular ligament of the urethra (see Appendix, note 99).—TR.

[2] Known also as the *anterior* or *inferior* layer of the triangular ligament (see Appendix, note 99).

[3] See note [1] to p. 527.

[4] See note [2] to p. 527.

[5] *Apex Ossis Coccygis.*—In the first part of this work (p. 32), I gave *extremity of the coccyx* as the English equivalent of this Latin term. The coccyx, however, has two extremities, and for this reason the expression *tip of the coccyx*, which, though somewhat colloquial, is employed by most anatomists to designate the inferior extremity of the coccyx, is to be preferred. Macalister, like Toldt, speaks of the *apex of the coccyx*, a term that would be more suitable if the coccyx were more distinctly triangular in form.—TR.

[6] *Parts of the Levator Ani Muscle.*—The levator ani muscle is divided into two parts by a cleft beginning just below the obturator canal. The anterior portion only is directly connected with the rectum; it springs from the pubis and adjoining part of the fascial origin (*i.e.*, the **tendinous arch of the levator ani muscle*—see Appendix, note 98); it is called by Toldt the *pubic portion of the levator ani muscle*, and by Savage the *pubococcygeus muscle*. The posterior portion arises from the *white line of the pelvic fascia* behind the obturator canal and from the spine of the ischium; it is called by Toldt the *iliac portion of the levator ani muscle*, by Henle the *ischiococcygeus muscle*, and by Savage the *obturatococcygeus muscle*.—TR.

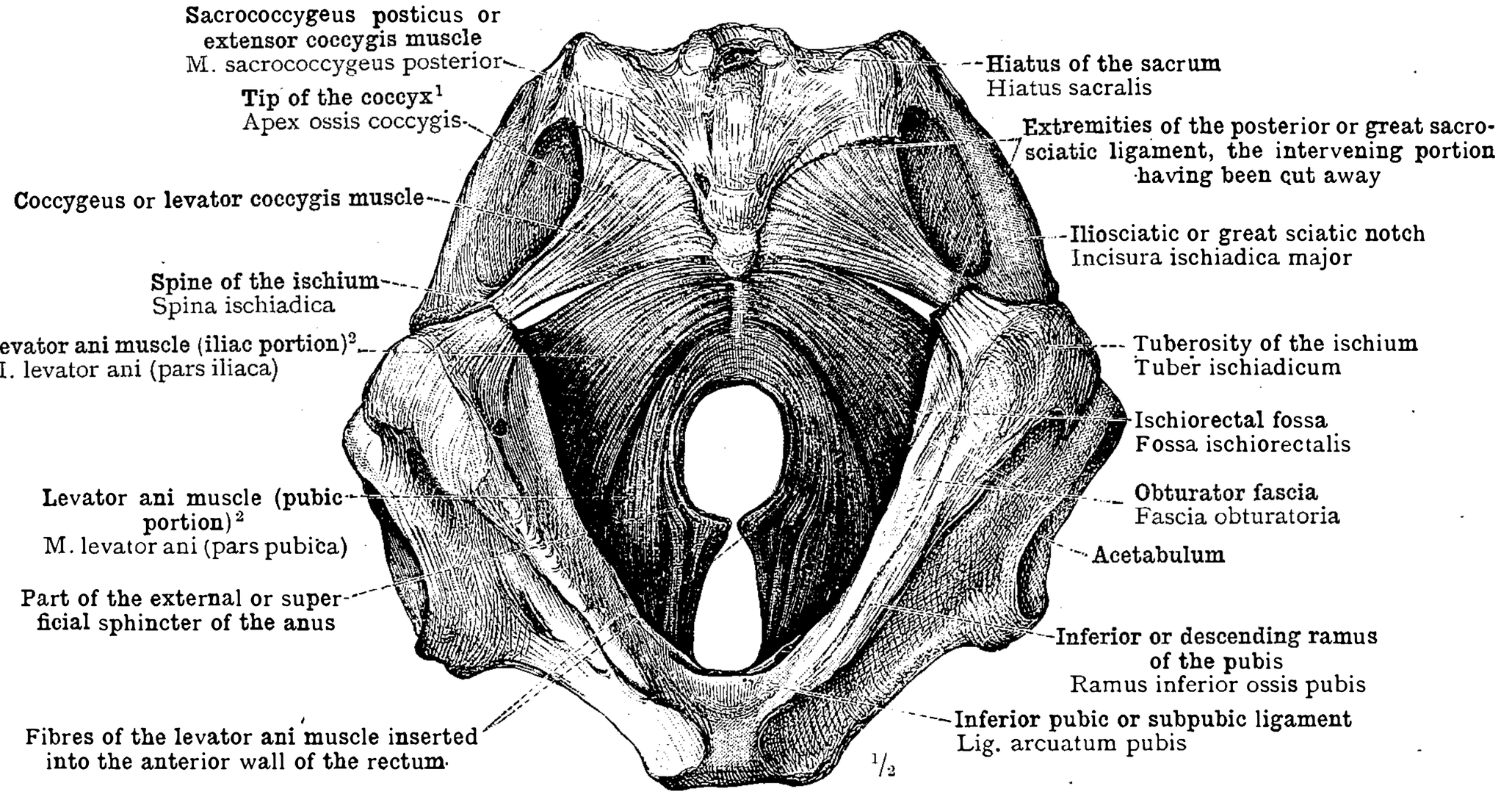


FIG. 918.—LEVATOR ANI AND COCCYGEUS OR LEVATOR COCCYGIS MUSCLES, SEEN FROM BELOW.

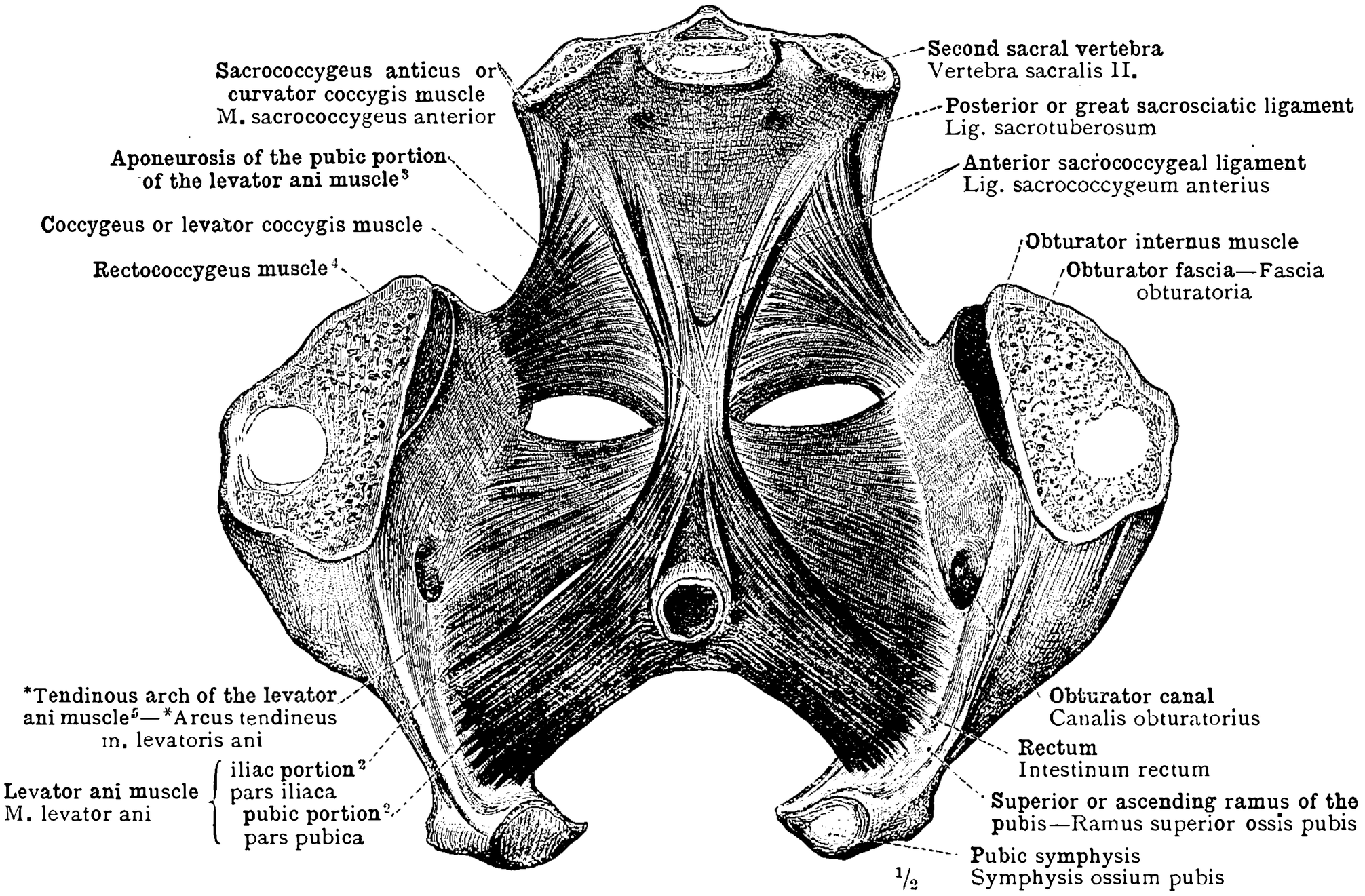


FIG. 919.—LEVATOR ANI AND COCCYGEUS OR LEVATOR COCCYGIS MUSCLES, SEEN FROM ABOVE.

After division of the pubic symphysis, the innominate bones have been drawn apart.

[1] See note [5] to p. 529. [2] See note 6 to p. 529. [3] Or *aponeurosis of the pubococcygeus muscle*. See note [6] to p. 529.
[4] See Appendix, note [97]. [5] See Appendix, note [98].

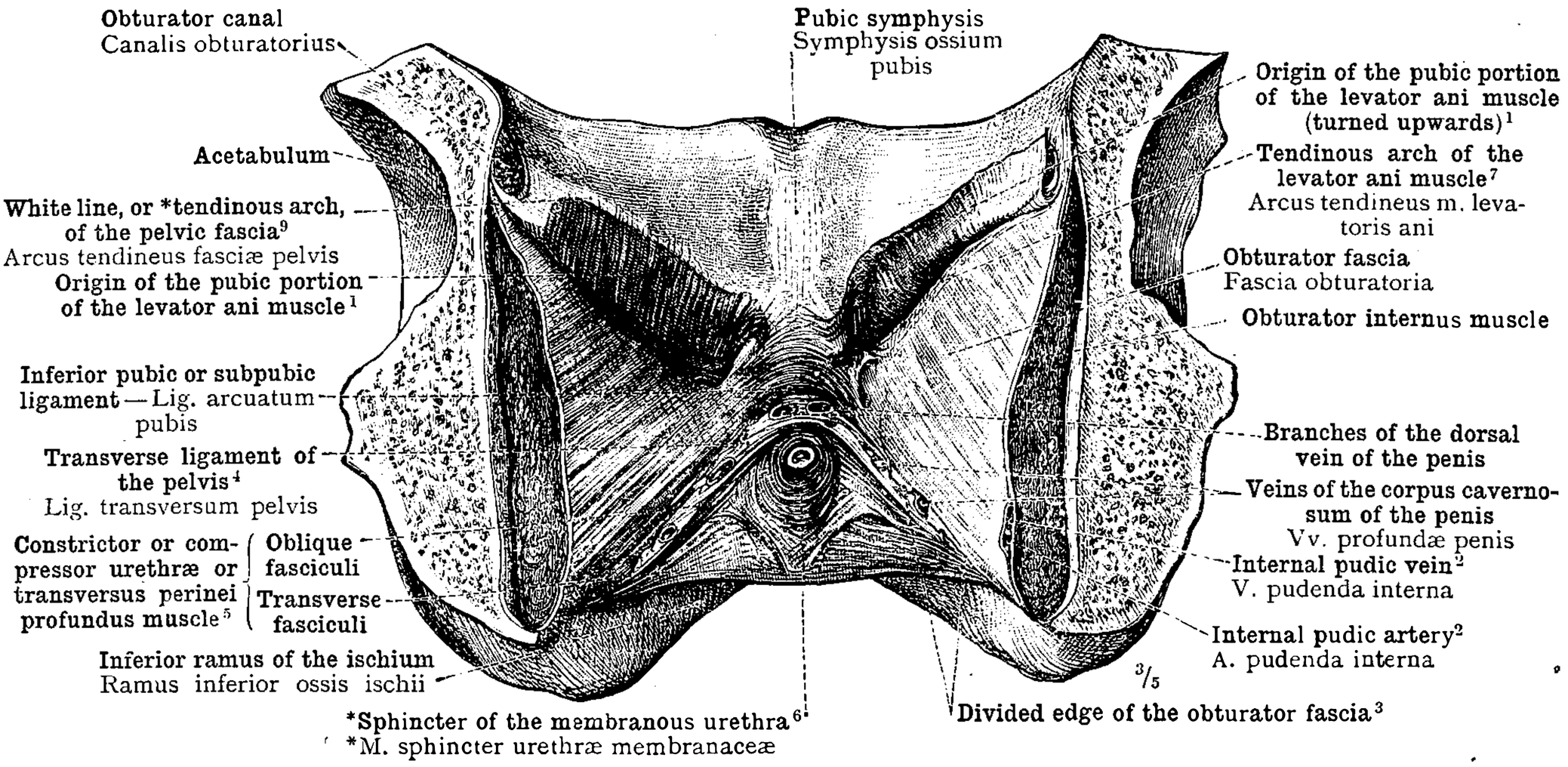


FIG. 922.—CONSTRICTOR OR COMPRESSOR URETHRÆ OR TRANSVERSUS PERINEI PROFUNDUS MUSCLE[5] OF THE MALE, FORMING TIIE MUSCULAR PART OF THE *UROGENITAL DIAPHRAGM.[8] SEEN FROM BEHIND AND ABOVE. ORIGIN OF THE PUBIC PORTION OF THE LEVATOR ANI MUSCLE.[1]

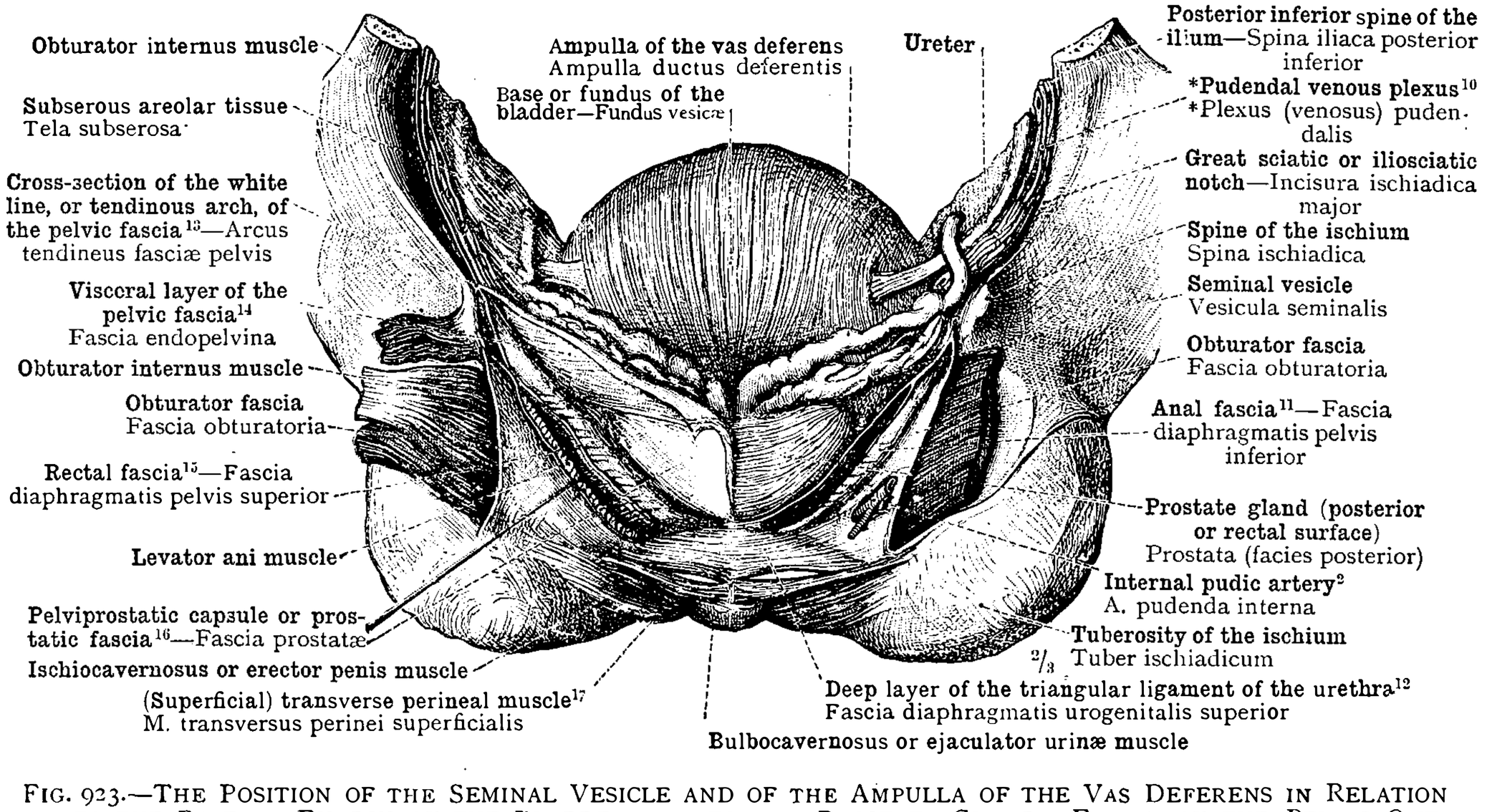
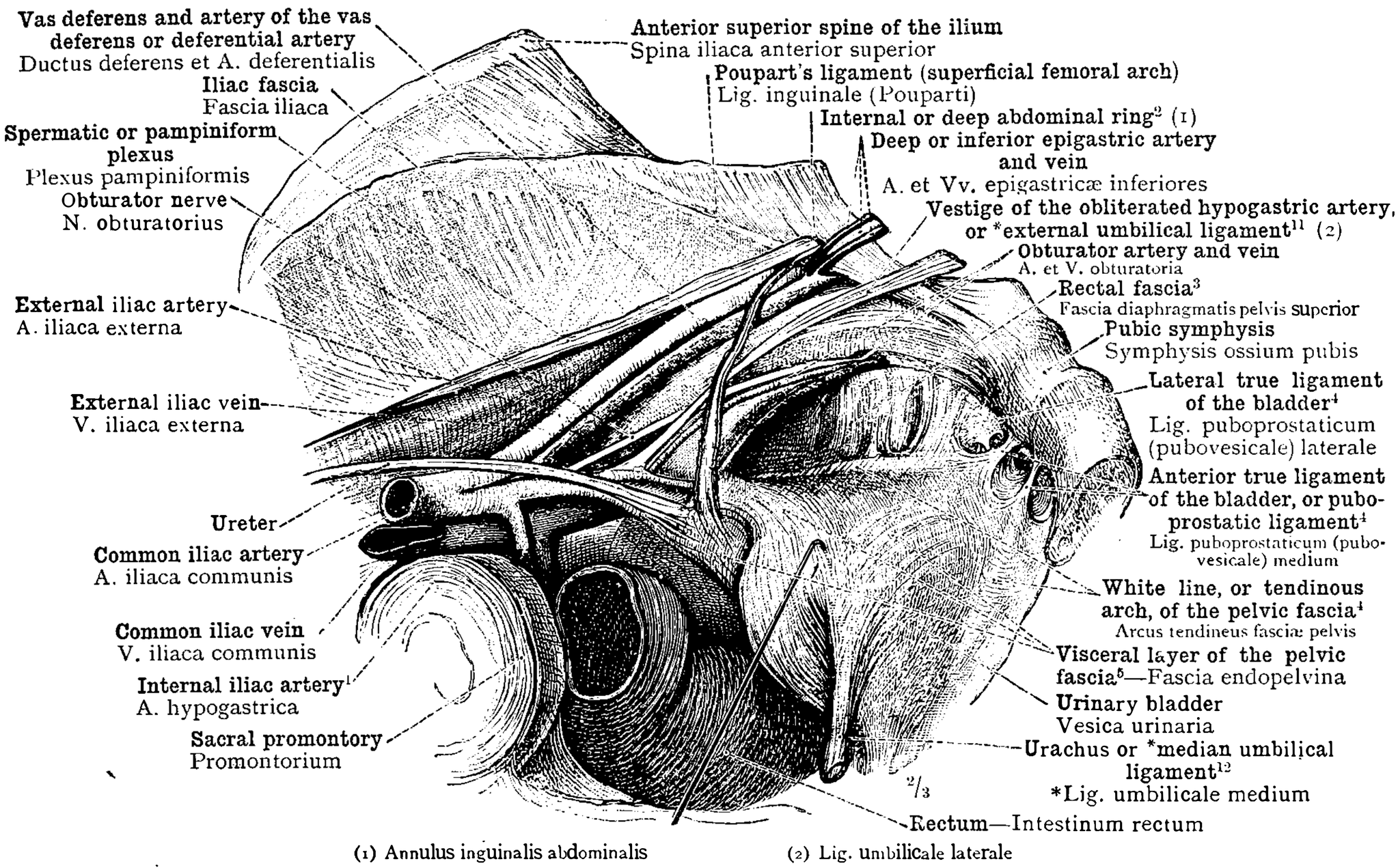


FIG. 923.—THE POSITION OF THE SEMINAL VESICLE AND OF THE AMPULLA OF THE VAS DEFERENS IN RELATION TO THE BASE OR FUNDUS OF THE BLADDER AND TO THE PROSTATE GLAND. FASCIÆ OF THE PELVIC OUTLET. SEEN FROM BEHIND.

The levator ani has been divided coronally. The pelviprostatic capsule or prostatic fascia[16] has on the right side been completely removed; on the left side, its upper part, extending over the seminal vesicle, has been detached from that organ, and turned backwards.

[1] See note [6] to p. 529. [2] See Appendix, note [102]. [3] See Appendix, note [103]. [4] See Appendix, note [100]
[5] See Appendix, note [101]. [6] See Appendix, note [104]. [7] See Appendix, note [98]. [8] See Appendix, note [99].
[9] See Appendix, note [59]. [10] See Appendix, note [105]. [11] See Appendix, notes [85] and [87]. [12] See Appendix, note [99].
[13] See Appendix, note [59]. [14] See Appendix, note [106]. [15] See Appendix, notes [86] and [87]. [16] See Appendix, note [74].
[17] See note [1] to p. 527.

Muscles and Fasciæ of the Pelvic Outlet.



(1) Annulus inguinalis abdominalis (2) Lig. umbilicale laterale

FIG. 924.—FASCIA ENDOPELVINA, THE VISCERAL LAYER OF THE PELVIC FASCIA (*see Appendix, note* [106]), WITH THE ARCUS TENDINEUS FASCIÆ PELVIS, THE WHITE LINE OR TENDINOUS ARCH OF THE PELVIC FASCIA (*see Appendix, note* [69]). THE POSITION OF THE VESSELS AND NERVES AT THE UPPER PART OF THE LATERAL WALL OF THE PELVIS. SEEN OBLIQUELY FROM ABOVE AND WITHIN.

The urinary bladder has been drawn away from the wall of the pelvis as far as possible in a backward and downward direction.

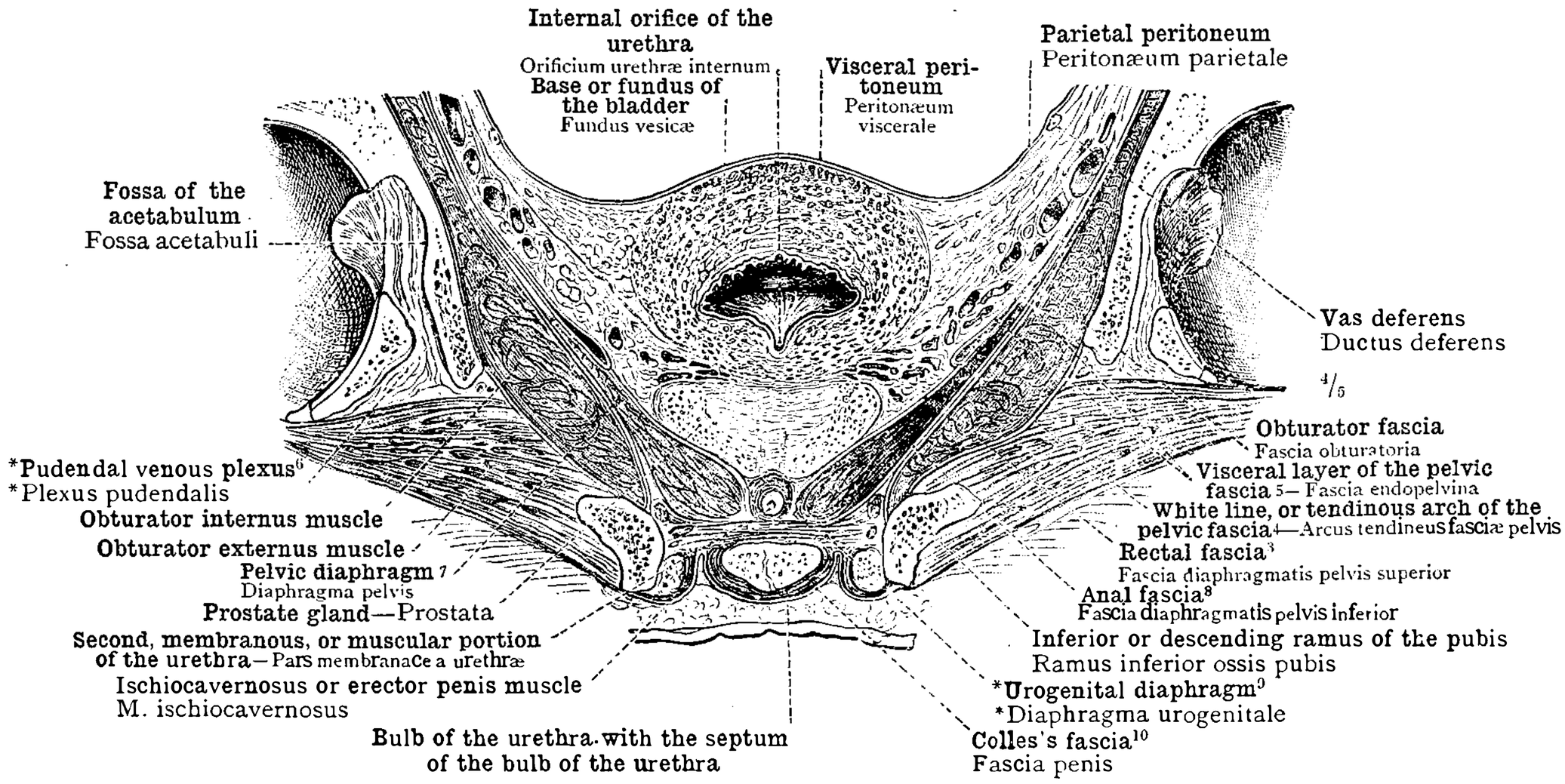


FIG. 925.—CORONAL SECTION THROUGH THE MALE PELVIS IN THE PLANE OF THE INTERNAL ORIFICE OF THE URETHRA. FASCIA ENDOPELVINA, THE VISCERAL LAVER OF THE PELVIC FASCIA (*see Appendix, note* [106]); FASCIA DIAPHRAGMATIS PELVIS SUPERIOR, THE RECTAL FASCIA (*see Appendix, notes* [86], [87], [106]); AND THE UPPER PART OF THE OBTURATOR FASCIA—AS CONSTITUENT PARTS OF THE PELVIC FASCIA. SEEN FROM BEFORE.

The urinary bladder is in a state of almost complete contraction.

1 See Appendix, note [107].
2 Called also the *internal inguinal aperture.*
3 See Appendix, notes [86], [87], [106].
4 See Appendix, note 59.
5 See Appendix, note [106].
6 See Appendix, note [105].
7 See Appendix, note [87].
8 See Appendix notes [85], [87].
9 See Appendix, note 99.
10 See note [2] to p. 526.
11 See note 4 to p. 387 in Part III.
12 See note 3 to p. 387 in Part III.

Fascia pelvis et fascia endopelvina—The pelvic fascia and its visceral layer.

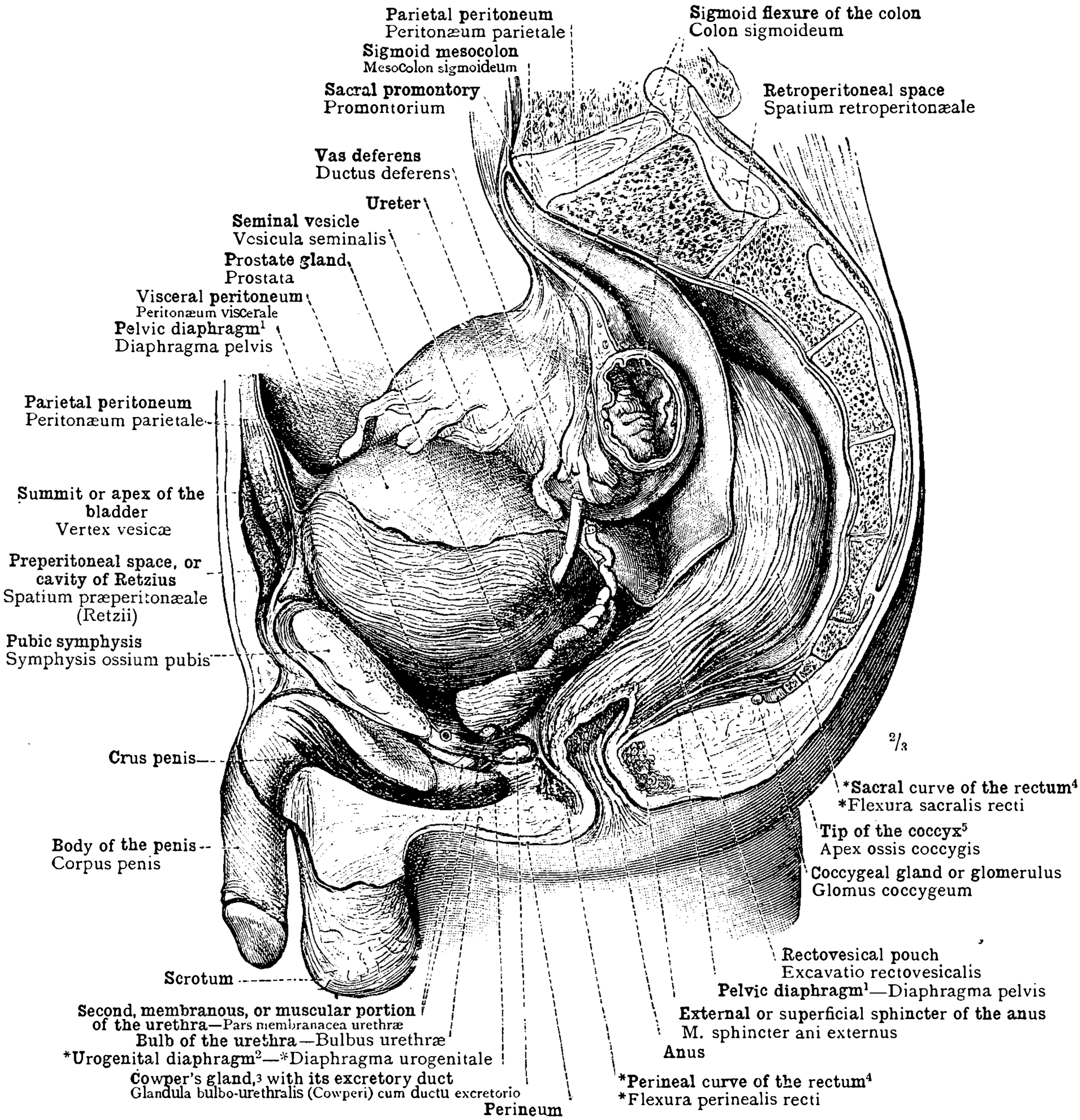


FIG. 926.—POSITION OF THE PELVIC VISCERA IN THE MALE AND THEIR RELATIONS TO THE MUSCLES OF THE PELVIC OUTLET (OR PERINEAL MUSCLES), SHOWN IN THE RIGHT HALF OF THE PELVIS, SEEN FROM THE LEFT SIDE.

The urinary bladder is fully distended, the rectum nearly empty.

[1] See Appendix, note 87. [2] See Appendix, note 99. [3] Known also as the *suburethral gland*.

[4] **Curves of the Rectum.*—"The rectum follows the posterior wall of the pelvis, in a curve the concavity of which is directed forward, as far as the tip of the coccyx, and thence, still continuing the same curve, runs forwards along the upper surface of the posterior part of the pelvic diaphragm; then, bending downwards and a little backwards at an angle slightly more obtuse than a right angle, it perforates that diaphragm in a direction perpendicular to its plane to form the anal canal. In this course the rectum describes two curves: a larger, with the concavity directed forwards, *flexura sacralis*; and a smaller, with the concavity directed backwards, *flexura perinealis*" (Von Langer and Toldt's "Anatomy," 7th ed., pp. 446, 447). In choosing English equivalents for these terms (which are not to be found in the works of Quain and MacAlister), I have preferred to speak of the *sacral* and *perineal curves of the rectum*, for the reason that the former, at any rate, is too prolonged and too open a bend to be appropriately termed a flexure.—TR.

[5] See note [5] to p. 529.

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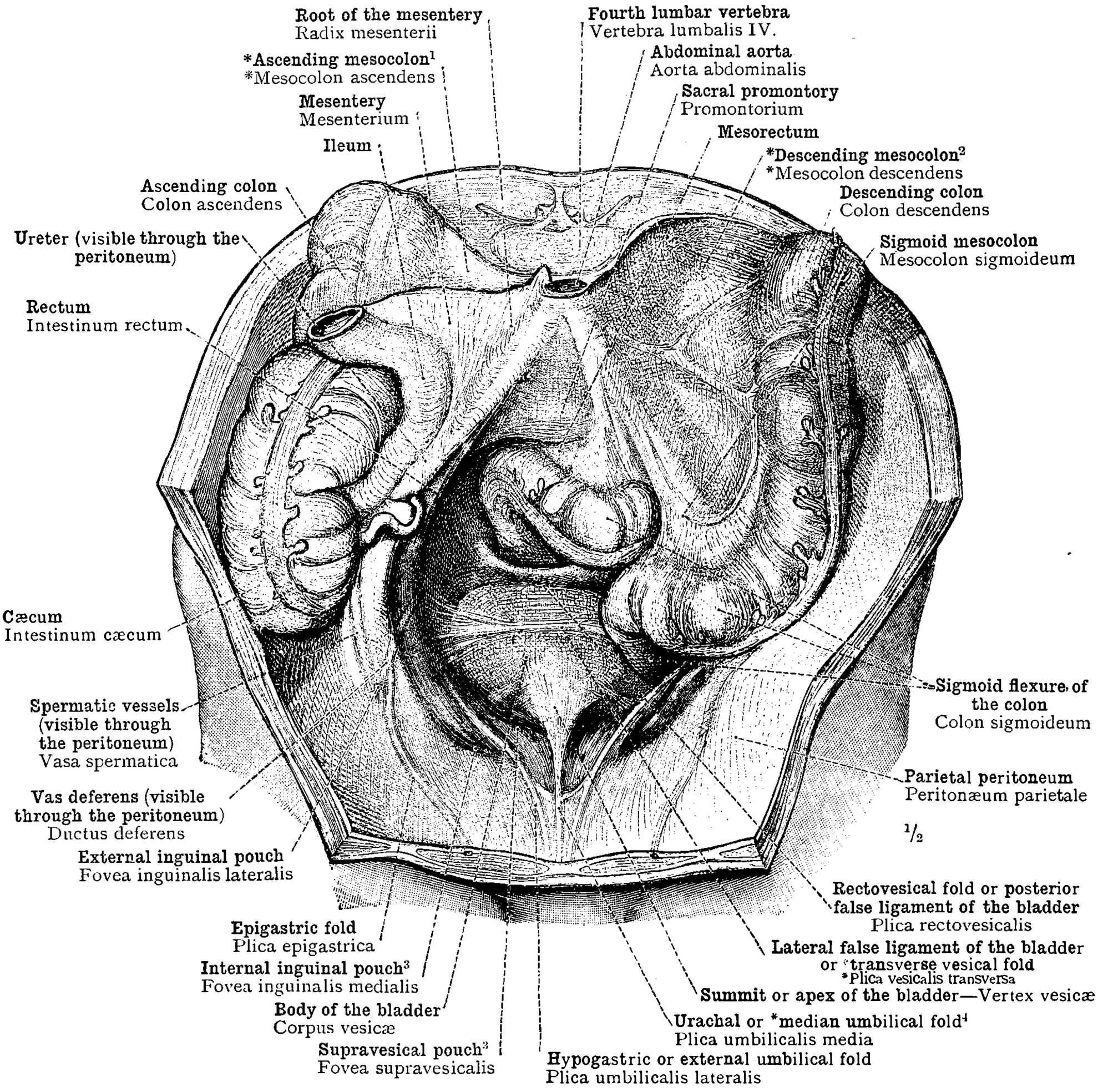

[1] See Appendix, note 39. [2] See note [1] to p. 453.

[3] By some authorities the space between the *urachal fold* and the *hypogastric fold* (called here *supravesical pouch*) is named the *internal inguinal pouch*; and the space between the *hypogastric fold* and the *epigastric fold* (called here *internal inguinal pouch*) is named the *middle inguinal pouch*. The author's nomenclature is to be preferred.—TR.

[4] Often called the *superior false ligament of the bladder*, and sometimes the *suspensory ligament of the bladder*.

FIG. 928.—VIEW FROM ABOVE AND BEFORE OF THE PELVIC VISCERA OF THE MALE *IN SITU* AND COVERED BY THE PERITONEUM: THE BODY AND THE SUMMIT OR APEX OF THE BLADDER AND THE UPPERMOST PORTION OF THE RECTUM. THE POSITION OF THE CÆCUM AND OF THE SIGMOID FLEXURE OF THE COLON. THE RELATIONS OF THE PERITONEUM IN THE PELVIC CAVITY AND ON THE ADJOINING PORTION OF THE ANTERIOR WALL OF THE ABDOMEN: PLICA UMBILICALIS MEDIA, THE URACHAL OR *MEDIAN UMBILICAL FOLD (*see note* [4] *above*); PLICA UMBILICALIS LATERALIS, THE HYPOGASTRIC OR *EXTERNAL UMBILICAL FOLD; PLICA VESICALIS TRANSVERSA, THE LATERAL FALSE LIGAMENT OF THE BLADDER OR *TRANSVERSE VESICAL FOLD; PLICA RECTOVESICALIS, THE RECTOVESICAL FOLD OR POSTERIOR FALSE LIGAMENT OF THE BLADDER. THROUGH THE PERITONEUM, THE FOLLOWING STRUCTURES ARE VISIBLE: THE EPIGASTRIC ARTERY, THE URETER, THE VAS DEFERENS, AND THE SPERMATIC VESSELS.

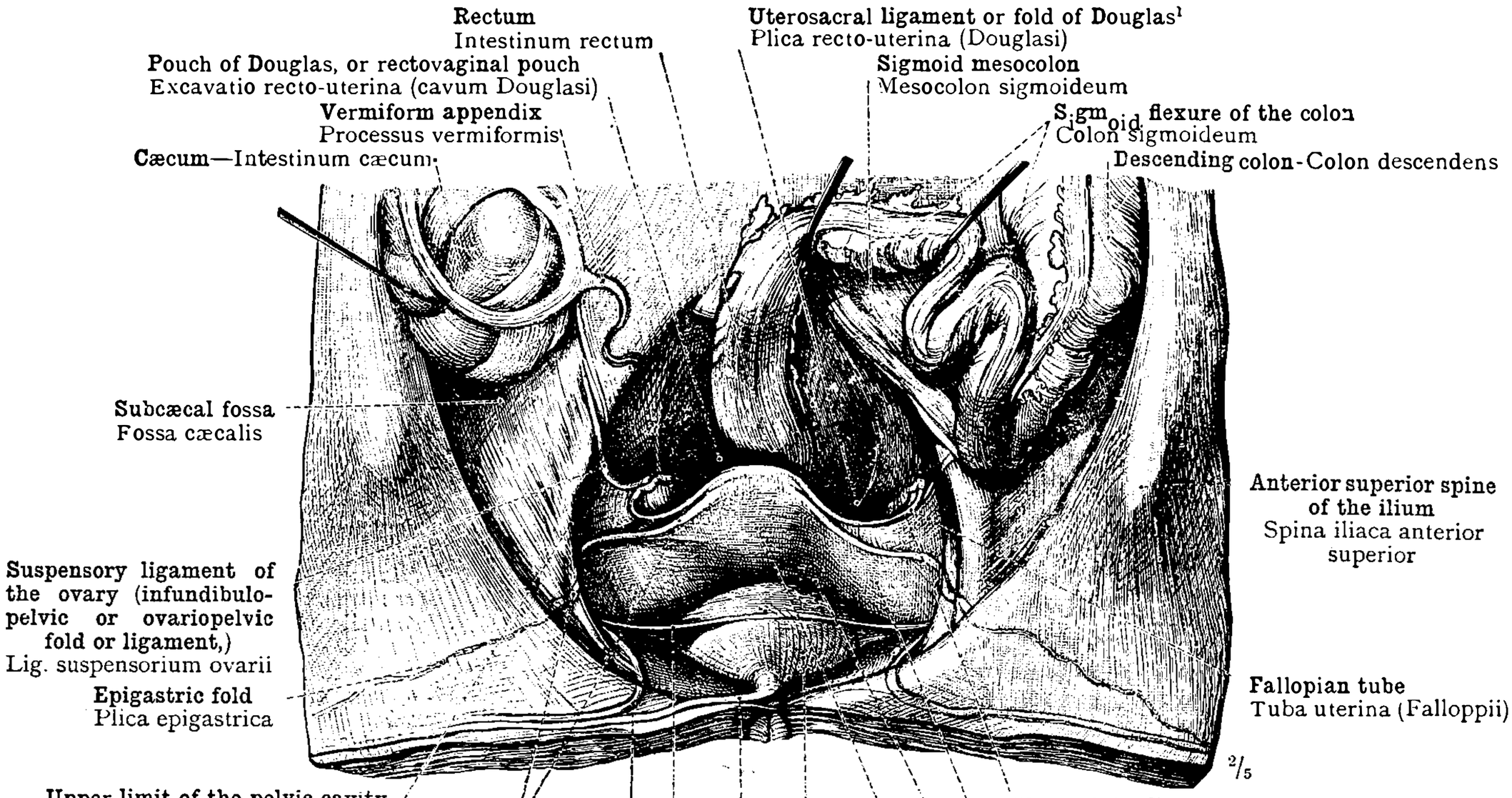

FIG. 929.—PELVIC VISCERA OF A FEMALE AGED TWENTY-NINE YEARS, SEEN FROM ABOVE AND BEFORE.

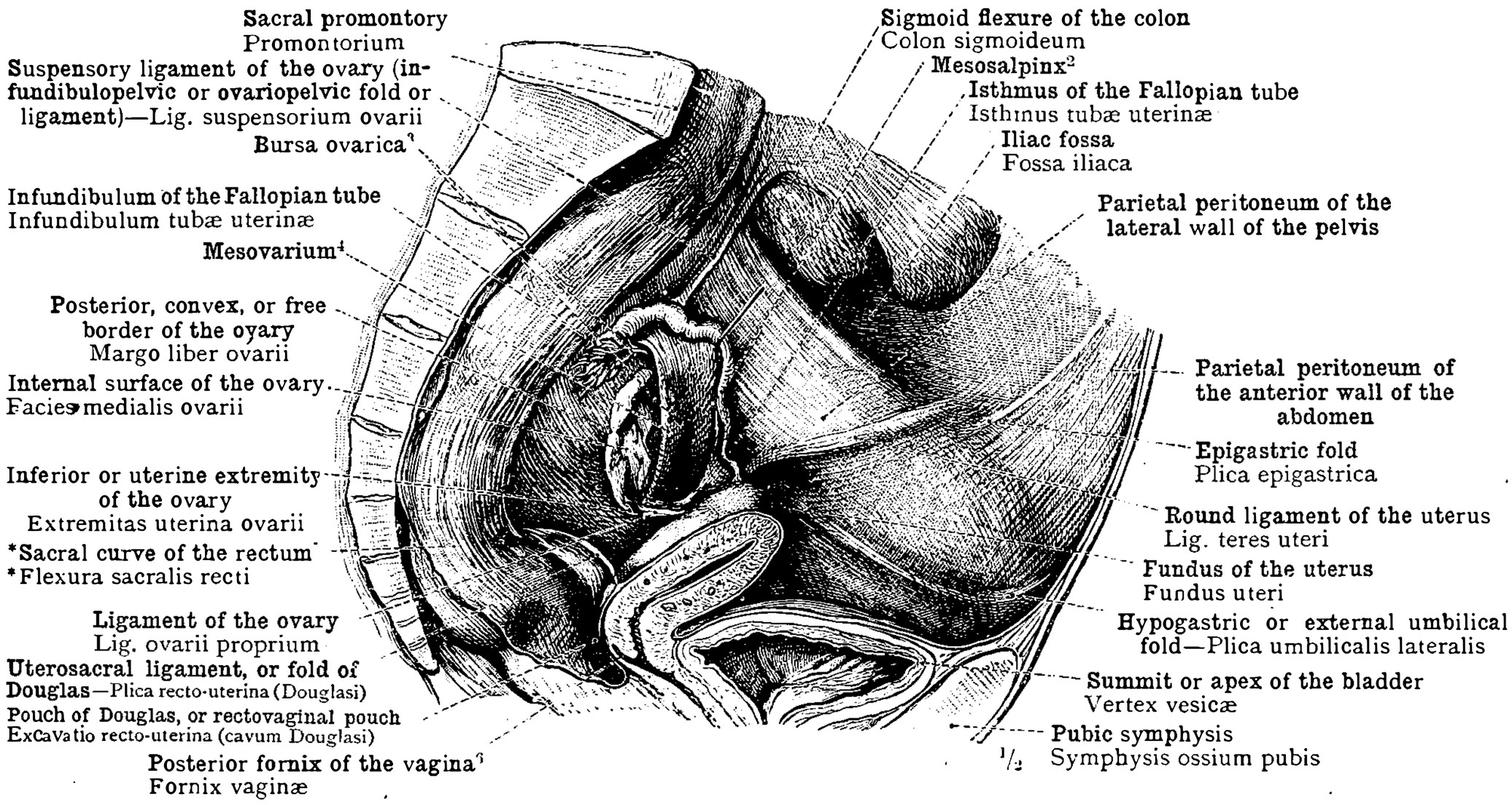

FIG. 930.—POSITION OF THE OVARY IN RELATION TO THE LATERAL WALL OF THE PELVIS.

The Fallopian tube has been drawn upwards, and the cavity of the bursa ovarica (*see Appendix, note* 79) has thus been obliterated.

[1] Known also as the *recto-uterine fold* or *ligament*. See note 3 to p. 510. [2] See Appendix, note 82.
[3] See Appendix, note 81. [4] See Appendix, note 82. [5] See note 4 to p. 534. [6] See Appendix, note 78.
[7] Often called the *superior false ligament of the bladder*, and sometimes the *suspensory ligament of the bladder*.

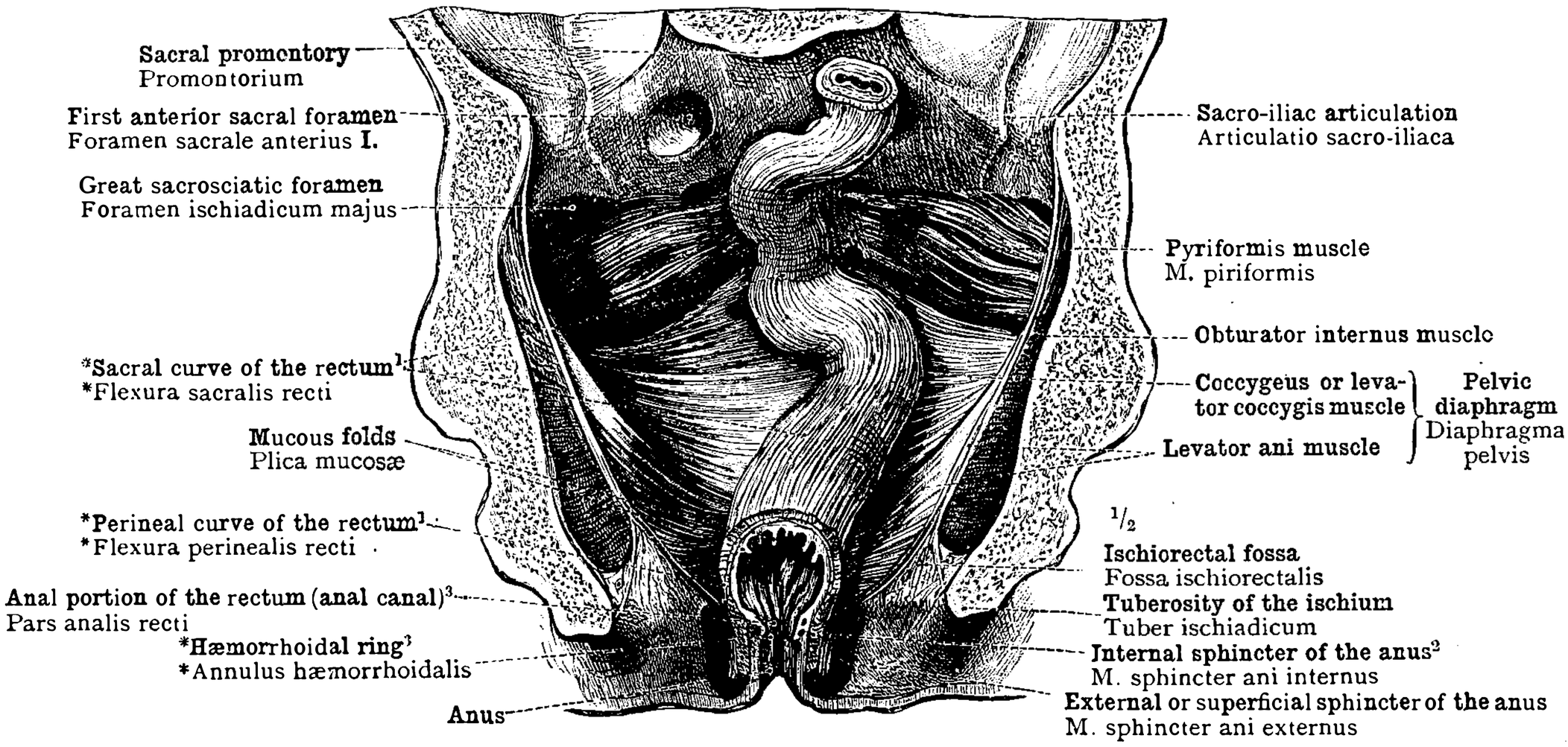

FIG. 931.—POSITION AND FORM OF THE EMPTY AND CONTRACTED RECTUM AS SEEN IN A CORONAL SECTION THROUGH THE PELVIS OF A FROZEN BODY. SEEN FROM BEFORE.

The inferior extremity of the rectum is opened by a section passing obliquely downwards and backwards. After removing the peritoneum and the great vessels, the muscles of the pelvis have been exposed.

FIG. 932.—POSITION AND FORM OF THE RECTUM WHEN GREATLY DISTENDED WITH FÆCES, AS SEEN IN A CORONAL SECTION THROUGH THE PELVIS OF A FROZEN BODY. SEEN FROM BEFORE.

In the region of the first and second sacral vertebræ, the peritoneum and the mesorectum have been left intact; in the lower part of the pelvis, the pelvic fascia is laid bare. The inferior extremity of the rectum has been opened as in the previous figure.

[1] See note 4 to p. 534.
[2] Known also as the *deep* or *circular sphincter of the anus*.
[3] See Appendix, note 12.
[4] See note 4 to p. 534.
[5] See Appendix, note 109.
[6] See Appendix, note 107.
[7] See Appendix, notes 86, 87, and 106.
[8] See Appendix, note 110.
[9] Known also as the *deep* or *circular sphincter of the anus*.

Form and Position of the Rectum.

[11] *Plica Transversalis Recti* (Fig. 736, p. 445).—"When the rectum is empty and contracted, it exhibits numerous folds, most of which are obliterated by distension. Several transverse or oblique folds are, however, of a more permanent character, and have been designated 'valves of the rectum' (Houston) or 'plicæ recti.' One of these, usually the largest, is situated on the right side opposite the reflection of the peritoneum from the rectum to the bladder, and was named by Kohlrausch the *plica transversalis recti*. There are generally two other folds, both on the left side, one about an inch above, the other about the same distance below, the fold on the right side. From the position and projection of these folds they may more or less impede the introduction of instruments. The dilatation of the rectum between the anal canal and the lowest of these folds is called the *rectal ampulla*" (Quain, "Anatomy," 10th ed., vol. iii., part iv., pp. 115, 116). According to Von Langer and Toldt ("Anatomy," 7th ed., pp. 337, 338), the *plica transversalis recti* is on the right and anterior walls of the rectum, about 10 centimetres (4 inches) from the anus (in Fig. 736, 2 inches only). In its substance is the thickening of the circular muscular fibres of the rectum which is known as the *sphincter ani tertius*. According to these authors, *Houston's valves* are prominent only when the rectum is greatly distended, and are obliterated when the organ is quite empty and contracted.

[12] *The Columns of the Rectum, the *Sinuses of the Rectum, and the *Hæmorrhoidal Ring* (Ibid.)—"We have to mention a further peculiarity of the lower end of the rectum, one which marks the transition from the mucous membrane to the skin. There are in this region from five to eight longitudinally disposed elevations of the mucous membrane, the *columnæ rectales* of Morgagni, which widen as they approach the anus. Here their lower ends unite to form a ringed swelling, the *annulus hæmorrhoidalis*, surrounding the gut; and the columns and the ring thus bound a number of depressions or pockets in the mucous membrane, the *sinus rectales*. This portion of the rectum, in the male about 2·6 centimetres (1 inch) in length, but somewhat shorter in the female, is known as the *pars analis recti*, or *anal canal*; while the actual external orifice is termed the *anus*" (Von Langer and Toldt, *op. cit.*, p. 338).

[13] (Fig. 737, p. 446.) Folds of peritoneum connecting a solid viscus with the abdominal wall are called *ligaments*; those passing from one viscus to another are called *omenta*; but the distinction is not always strictly maintained.

[14] **Fibrous Appendix of the Liver* (Figs. 737, 738, p. 446).—"Attached to the free extremity of the left lobe of the liver there is often a membranous appendix, *appendix fibrosa hepatis*, of variable size, from which the parenchyma of the liver has completely disappeared, only connective tissue and *aberrant vessels* remaining. The disappearance of the parenchymatous tissue in this region can perhaps be explained in the following manner: In the embryo the umbilical veins open into the left portal vein, so that the left lobe of the liver is directly supplied with arterial blood from the placenta, and is thus placed under more favourable nutritive conditions than the right lobe; but this advantage is lost with the cessation of the placental circulation. . . . After the disappearance of the parenchyma, however, the bile-ducts, and the branches of the portal vein and hepatic artery, persist, and all of these structures are included in the term *vasa aberrantia hepatis*" (Von Langer and Toldt's "Anatomy," 7th ed., p. 349). In rare cases there may be a small *accessory liver* in the situation of the fibrous appendix, connected with the left lobe by a fold of peritoneum and a leash of vessels. (See also note [17] below.)

[15] **Ligament of the Ductus Venosus* (Fig. 738, p. 446).—This is a fine white cord, the vestige of the obliterated ductus venosus, lying in the *fissure of the ductus venosus* (the posterior portion of the *longitudinal fissure*). It is not usually termed a *ligament* by English anatomists.

[16] *Lobes of the Liver* (Ibid.).—The author enumerates *four lobes* only: *lobus dexter*, right lobe; *lobus sinister*, left lobe; *lobus quadratus*, quadrate lobe; and *lobus caudatus* (*Spigeli*), caudate lobe (of Spigelius): the ridge connecting the *lobus dexter* with the *lobus quadratus* (*Spigeli*), between the *transverse* or *portal fissure* (below), and the lower extremity of the *fissure* or *fossa of the vena cava* (above), he calls the *processus caudatus* (see Fig. 740, p. 447). English anatomists enumerate *five lobes*: the *right*, the *left*, the *quadrate*, the *Spigelian*, and the *caudate*; the three first-named being identical with those of the author; the *Spigelian lobe* corresponding with the author's *lobus caudatus* (*Spigeli*), minus the *processus caudatus*; and this latter being the *caudate lobe* of English anatomists.

[17] *Ponticulus Hepatis* (Ibid.).—The inferior vena cava lies in a deep groove on the posterior surface of the liver, the *fissure* or *fossa of the vena cava*. Passing behind the vessel is a strand of fibrous tissue which forms a bridge connecting the right lobe with the Spigelian lobe. It is called by the author **ligamentum venæ cavæ*, but is known in England as the *ponticulus*. Like the **fibrous appendix of the liver* (see note [14] above), it is the remains of a rudimentary lobe, and contains *aberrant vessels*. Not very rarely it consists of perfectly formed hepatic tissue, so that the fissure of the vena cava is converted into a canal.

[18] (Fig. 747, p. 450.) The *gastrosplenic omentum* is connected below with the *great omentum*, and is often regarded as a part of it. With regard to the preference of the name of *omentum* for this structure over the name *ligament*, see Appendix, note [13] above.

[19] *Descriptive Anatomy of the Spleen* (Fig. 746, p. 450).—The author enumerates *three* surfaces only: *phrenic*, *renal*, and *gastric*. By some anatomists (*e.g.*, Cunningham) the blunt lower and outer end is regarded as a *fourth* surface, the *basal*. This surface lies against the tail of the pancreas, the splenic flexure of the colon, and the costocolic ligament (see note [41] below). In addition to the *anterior* and *posterior borders*, it is usual in England to speak of the ridge just internal to the hilum, which separates the gastric from the renal surface, as the *inner border*.

[20] *Duodenal Folds and Fossæ* (Fig. 757, p. 454).—Two folds of peritoneum usually pass to the left from the front of the ascending portion (fourth part) of the duodenum: one, the lower, with its free edge directed upwards, from the junction of the transverse with the ascending portion of the duodenum; the other, the higher, with its free edge directed downwards, from the duodenojejunal flexure. These are called by the author the *duodenomesocolic* and *duodenojejunal folds*, but it is perhaps better to use the names *inferior* and *superior duodenal folds*. Between these folds, to the right of the ascending portion of the duodenum, is a recess or fossa, called by the author *recessus duodenojejunalis*, the *duodenojejunal fossa*. The extension of this fossa behind the inferior fold is termed the *inferior duodenal fossa*; the extension behind the superior fold, the *superior duodenal fossa*. The folds and fossæ in this region are, however, somewhat variable in their disposition. (See Quain's "Anatomy," 10th ed., vol. iii., part iv., p. 326.)

[21] *Peritoneal Fossæ* (Ibid.).—Some authors speak of all the peritoneal *fossæ* as *pouches*—*e.g.*, *duodenojejunal pouch*, *subcæcal pouch*. I have not thought it necessary to indicate the alternative name in each individual instance.

[22] *Phrenohepatic Fossa* (Fig. 758, p. 454).—"The *phrenohepatic* or *diaphragmaticohepatic fossa* of the peritoneum is occasionally present on the abdominal surface of the diaphragm. It is an

elongated pouch or sinus of varying dimensions, formed by the partial adhesion of the borders of the fibrous appendix of the liver [see note [14] above] and the left lateral ligament of the liver to the peritoneal investment of the diaphragm" (Von Langer and Toldt's "Anatomy," 7th ed., p. 366).

[23] *Ileocæcal Fossæ* (Fig. 760, p. 455).—These are two in number, *superior* and *inferior*. The *superior ileocæcal fossa* (see Fig. 805, p. 475) is situated in the angle between the ileum and the commencement of the ascending colon; the *inferior ileocæcal fossa* is behind and below the junction of the ileum and the cæcum. It may extend upwards behind the ascending colon nearly as high as the right kidney and duodenum. Its mouth looks downwards and is bounded in front by the ileocæcal fold (*bloodless fold* of Treves). In Fig. 760 a sound is passed into the mouth of this fossa. By some authors the *superior ileocæcal fossa* is termed the *ileocolic fossa*, and in this case the *inferior ileocæcal fossa* is called the *ileocæcal fossa* without qualification.

[24] *Cavum Mediastinale* (Fig. 761, p. 456).—The author divides the mediastinal cavity into two portions only: *cavum mediastinale anterius* and *cavum mediastinale posterius*. English anatomists divide it into four portions: *anterior mediastinum*, *middle mediastinum*, *posterior mediastinum*, and *superior mediastinum*. The English *posterior mediastinum* is nearly identical with the author's *cavum mediastinale posterius*; while his *cavum mediastinale anterius* corresponds, with a slight variation, to the three others combined; the *superior mediastinum* being that portion of the cavity above a plane passing from the lower border of the body of the fourth dorsal vertebra to the superior sternal synchondrosis, and thus including the upper portions of both anterior and posterior divisions of the author; the *anterior mediastinum* being the portion of the cavity below the plane above mentioned and in front of the pericardium; and the *middle mediastinum* being the enlarged central portion of the cavity, containing the pericardium with its contents, the roots of the lungs, and the bronchial lymphatic glands. (See also note [2] to p. 410.)

[25] (Fig. 765, p. 458.) The *oblique line*, connecting the *superior* and *inferior* tubercles of the thyroid cartilage, is regarded by the author as a variety. Though it varies greatly in prominence, and may be very indistinct, it is seldom entirely absent. Sometimes it is represented by a fibrous band, the *oblique ligament*, stretched between the tubercles. The oblique line or ligament serves for the insertion of the sternothyroid muscle and for the origin of the sternohyoid and thyropharyngeus muscles.

[26] *Arytenoid Cartilage* (Figs. 766 to 768, p. 458).—As several of the terms descriptive of the parts of this cartilage are used neither by Quain nor by Macalister, I quote the following passage from Von Langer and Toldt's "Anatomy," 7th ed., p. 318: "The cartilage consists of an elongated plate, narrowing above to a point, the *apex*, and presenting beneath a thickened, nearly triangular *base*. The anterior border is very sharp, and exhibits just above the middle a small blunt protuberance, the **colliculus*, and at its lower extremity a forwardly directed process for the attachment of the posterior extremity of the vocal cord, hence called the *vocal process*. The concave *articular surface* of the base looks downwards, and exhibits a blunt *muscular process* directed outwards. The *inner surface* is very narrow above, and wider below, where it is continued on to the vocal process. The *outer surface* gives attachment to muscles: it presents two hollows, the upper of which, **fovea triangularis*, is a rounded triangle, embraced by a semicircular lip, the **crista arcuata*, which begins above in the colliculus; while the lower, a rounded rectangle, **fovea oblonga*, runs along the base and on to the muscular process, and is separated above from the fovea triangularis by the crista arcuata."

[27] **Corniculopharyngeal Ligament* (Fig. 771, p. 459).—This is a slender strand of fibrous tissue which passes downwards and inwards on each side from the corniculum laryngis or cartilage of Santorini to the mucous membrane of the pharynx. Below these ligaments in the median plane is the **cricopharyngeal ligament*, a flattened band with surfaces laterally directed, attached by its anterior edge to the back of the cricoid cartilage, and by its posterior edge to the mucous membrane of the pharynx. These two ligaments are described neither by Quain nor by Macalister.

[28] (Fig. 770, p. 459.) The *corniculo-arytenoid articulation* is usually, as in this instance, a syndesmosis, but is occasionally a synovial joint.

[29] (Ibid.) This foramen, when present, transmits an abnormal branch of the superior laryngeal artery.

[30] **Conus Elasticus* (Figs. 772, 773, p. 459).—As this term is not found in most English text-books of anatomy, I quote the following description from Von Langer and Toldt's "Anatomy," pp. 320, 321: "The **membrana elastica tracheæ* [the fibro-elastic membrane in which the tracheal cartilages are imbedded] passes upwards into the larynx to form the **membrana elastica laryngis*. First of all it sheathes the inner surface of the cricoid cartilage in its whole extent, but above this it becomes detached from the cartilaginous wall of the larynx, and forms on each side a flat membrane, the only attachments of which to the cartilages are in front to the angle of union of the alæ of the thyroid cartilage, and behind to the vocal processes of the arytenoid cartilage. Thus, the **elastic membrane of the larynx* exhibits two surfaces, converging from each side of the upper border of the cricoid cartilage upwards towards the median plane, and at the level of the vocal processes terminating in two parallel free borders. This arrangement of the elastic membrane is known as the **conus elasticus*, and the somewhat thickened free borders are called **ligamenta vocalia* [the inferior thyro-arytenoid ligaments or ligaments of the true vocal cords]. At this level the **elastic membrane of the larynx* terminates, being replaced above by a thin layer of areolar tissue. That portion of the **elastic cone* which connects the upper border of the front of the cricoid cartilage with the lower border of the front of the thyroid cartilage is seen from the front as a triangular membrane filling in the gap between the two cartilages, and is called the *middle cricothyroid ligament* [middle portion of the cricothyroid membrane]." This description appears alike more intelligible and more accurate than that given in most English text-books, which is to the effect that the vocal cord may be regarded as the upper free edge of the cricothyroid membrane.

[31] *Mucous Glands of the Larynx* (Figs. 775, 777, p. 460).—The names used by Toldt—*anterior*, *middle*, and *posterior laryngeal glands*—are not commonly employed by English anatomists. The *anterior* glands, situate on the back of the epiglottis, I have called the *post-epiglottic glands*. The *middle* glands, most numerous above, where they form a prominence beneath the mucous membrane of the aryteno-epiglottic fold immediately behind the cartilage of Wrisberg, and a chain running thence downwards and forwards along the false vocal cord, may be best distinguished as the *glands of the aryteno-epiglottic fold*. The *posterior* glands form a mass behind the arytenoid cartilage and beneath the cartilage of Santorini, and may be called *post-arytenoid glands*. All these must be carefully distinguished from the so-called *epiglottic gland* between the anterior surface of the epiglottis, the hyoid bone, and the root of the tongue, which is not a gland at all, but a mass

of yellow fat and fibrous tissue. (See *periglottis* in Fig. 675, p. 420, and note [2] above.)

[32] *Labium Vocale* (Fig. 779, p. 461).—The true vocal cords, writes Quain ("Anatomy," 10th ed., vol. iii., part iv., p. 155), "are situated at the inner and free edge of a mass of tissue triangular on coronal section [see Fig. 780]. One surface of this mass looks upwards, and forms the floor of the ventricle; another looks downwards and inwards, and bounds the lower division of the laryngeal cavity; while the third is external." This triangular mass constitutes the author's *labium vocale*, or, as it may be called, the **lip of the glottis*, but the term is not current in England.

[33] *Macula Flava, the Cartilage of Luschka* (Fig. 781, p. 461).—"In the anterior part of the vocal cord, near its attachment to the thyroid cartilage, there is a circumscribed mass of dense elastic tissue containing numerous cells. This is visible through the intact mucous membrane as a *yellow spot* (*macula flava*), of about the size of a poppy-seed" (Von Langer and Toldt's "Anatomy," 7th ed., p. 323). "A small nodule of elastic cartilage (*cartilage of Luschka*) is found in the anterior and inferior part of the vocal cord" (Quain's "Anatomy," 10th ed., vol. iii., part iii., p. 155).

[34] *Tunica Adventitia Pharyngis* (Fig. 791, p. 466).—"The outermost layer of the wall of the pharynx consists of a thin stratum of connective tissue, the *tunica adventitia pharyngis*, which forms a fascial covering for the constrictor muscles of the pharynx, and may be regarded as a continuation of the bucco-pharyngeal fascia. It is of importance for the reason that the primary ramification of the vessels and nerves of the pharynx takes place in its substance. In the middle line behind it is connected with the *raphe of the pharynx*, and above with the *fascia pharyngobasilaris* [the *pharyngeal aponeurosis* of English authors; see pp. 432, 433, and 436] . . . which (with the mucous membrane) alone forms the uppermost portion of the posterior and lateral walls of the pharynx, the muscular coat being here deficient, as the superior constrictor of the pharynx does not extend up to the base of the skull" (Von Langer and Toldt, *op. cit.*, p. 305). The outer fibrous coat of the pharynx thus separates the constrictor muscles from the prevertebral fascia. On either side it is attached to the sheath of the great vessels of the neck. It is most strongly developed behind and (above) at the sides, and this portion is called by Macalister the *post-pharyngeal fascia*, which name I have given in the text as an alternative, the name *adventitious coat of the pharynx* not being used by English anatomists.

[35] *Broncho-œsophageus and Pleuro-œsophageus Muscles* (Fig. 799, p. 470).—"The longitudinal fibres of the œsophagus are sometimes joined by a broad band of smooth muscle, passing from the left pleura, and sometimes also by another from the left bronchus. According to Cunningham, the former is almost constantly present, and the latter very frequently" (Quain's "Anatomy," 10th ed., vol. iii., part iv., p. 66.

[36] *Supplemental Pleural Spaces* (Ibid.).—The use of the term *sinus* for those regions of the pleural cavity in which two portions of parietal pleura are in apposition appears inappropriate. Quain suggests the preferable name of *supplemental* or *complemental pleural space*. There are three such regions in which the pleural cavity is unoccupied by lung: the *phrenocostal* (shown in Fig. 799), between the chest wall and the diaphragm, below the inferior border of the lung; the *pericardiosternal* or *costomediastinal* (shown in Figs. 800 and 801, p. 471), between the anterior surface of the pericardium and the posterior surface of the sternum and costal cartilages, internal to the anterior border of the lung, and more extensive on the left side than on the right; and the *mediastinodiaphragmatic* (Macalister) or *pericardiophrenic*, between the lower margin of the pericardium and the diaphragm.

[37] (Ibid.) The *crura* or *pillars* of the diaphragm described by English anatomists are two only in number—a longer *right* crus and a shorter *left* crus. Each of these is composed of all the fibres passing from the right and left sides, respectively, of the bodies of the lumbar vertebræ and the intervertebral discs to the central tendon. Thus, the *crus* of English authors corresponds to the combined *inner* crus and *intermediate* crus of Toldt; while the *outer* crus of the latter is in England not considered to belong to the crural portions of the diaphragm.

[38] *Bulb of the Aorta* (Fig. 800, p. 471).—This name is often given to the somewhat enlarged portion of the *ascending aorta* immediately above the aortic valve, which contains the three *sinuses of Valsalva*.

[39] *Ascending Mesocolon* (Fig. 805, p. 475).—Fig. 756, on p. 453, shows an abnormal condition of the large intestine in which the posterior layer of the ascending mesocolon has failed to become adherent to the parietal peritoneum, and the ascending colon, like the transverse colon, is freely movable. Normally, however, as shown in Fig. 805, this adhesion takes place, and a strip of the posterior surface of the ascending colon is connected by areolar tissue with the fascia covering the quadratus lumborum muscle, and with the front of the right kidney. To call the adherent layer of peritoneum internal to the ascending colon by the name of *ascending mesocolon* is contrary to English usage. (See also note [1] to p. 453.)

[40] **Gastrocolic Ligament* (Fig. 806, p. 476).—This name is given by the author to that part of the *great* or *gastrocolic omentum* which connects the great curvature of the stomach with the transverse colon.

[41] *Saccus Lienalis* (Fig. 807, p. 477).—A fold of peritoneum, the *costocolic* or *phrenocolic ligament*, or *pleurocolic fold*, attached externally to the diaphragm opposite the tenth and eleventh ribs, passes horizontally inwards to the splenic flexure of the colon. It has a lunated free border directed forwards. It forms the lower boundary of a hollow containing the spleen; the basal surface of this organ (see note [19] above) resting upon the ligament as on a shelf (see also Fig. 813, p. 483). Hence this ligament, though not attached to the spleen, is sometimes called *sustentaculum lienis*, while the hollow above is called by the author *saccus lienalis*—*the splenic pouch*. This must be carefully distinguished from the **splenic fossa of the omental sac*. See Fig. 809, p. 479, and note [44] below.

[42] *Parts of the Small Omentum* (Ibid.).—The *small omentum* consists of the following portions, enumerated in their position from left to right: (1) a *thick* portion (*pars condensa omenti minoris*), passing to the cardia; (2) a *thin* portion (*pars flaccida omenti minoris*), passing to the lesser curvature—these form the gastrohepatic omentum proper; (3) a thicker portion again, passing from the transverse or portal fissure of the liver to the pylorus and the first part of the duodenum, with a free border directed to the right, forming the anterior boundary of the foramen of Winslow, and containing between its layers the hepatic artery, portal vein, common bile-duct, and nerves and lymphatics of the liver (this portion of the small omentum is called by the author the *hepatoduodenal ligament*, but the term is not used by English anatomists). In the specimen shown in Fig. 807 the small omentum extends abnormally far to the left, to form a *hepatocolic ligament* or *omentum*.

[43] *Superior Mediastinum* (Fig. 809, p. 479).—The lower margin of the cut surface of the aorta in this figure is at the

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circulating in that organ, the medulla as well as the cortex, must necessarily pass through the glomeruli; for if this be so, the nutrition of the medulla is dependent on the vessels of the cortex. It is an established fact that the efferent vessels of the large glomeruli adjacent to the medulla break up into leashes of straight vessels, *arteriolæ rectæ*, which are continued into the capillary plexus of the pyramids of Malpighi. The question arises, whether, in addition to these vessels proceeding from the glomeruli, other arterioles, directly derived from the arterial arches, supply this capillary plexus. We may answer with considerable confidence that, even if such a direct arterial blood-supply to the pyramids exists, the blood thus conveyed would be insufficient in quantity, and that the nutrition of the pyramids is, in any case, dependent to a notable extent upon the blood-vessels of the cortex." Quain, on the other hand, writes ("Anatomy," 10th ed., vol. iii., part iv., p. 202): "The efferent vessels from the lowermost glomeruli break up wholly into pencils of straight vessels (*pseudarteriæ rectæ*) which pass directly into the boundary layer of the medulla, and there supply the continuation downwards of the medullary rays into the pyramid. . . . With the exception of the blood brought by the false arteriæ rectæ, the blood-supply of the medulla is to a great extent independent of that of the cortex, although, of course, the capillary network is continuous throughout. The pyramids are chiefly provided with blood by branches which come off directly from the concave side of the arterial arches, and passing down into the boundary layer of the medulla there divide to form bunches or pencils of parallel or slightly diverging minute vessels (*arteriæ rectæ*), which, by alternating with the bundles of uriniferous tubules which are passing up to the cortex to form the medullary rays, produce the characteristic streaked appearance of this part of the pyramid." To sum up: In Toldt's view the blood-supply of the medulla is principally dependent on that of the cortex, and the existence of a direct blood-supply to the medulla must even be regarded as doubtful; whereas according to Quain, though the existence of a cortical element in the blood-supply of the medulla (by means of the false arteriæ rectæ) is admitted to be "an established fact," the direct element in the blood-supply of the medulla (by means of the true arteriæ rectæ) must be regarded as having considerably greater importance. Other English authorities—Foster, Halliburton, and Macalister—are in agreement on this question with the views of Schäfer and Symington as set forth in Quain's "Anatomy." Foster, indeed, lays especial stress, from the physiological point of view, on the fact that "the blood-supply of the pyramids, consisting chiefly of conducting tubules, is to a very large extent distinct from that of the cortex, where the tubules are chiefly secreting tubules" ("Physiology," 5th ed., p. 665). Macalister calls the *true* arteriæ rectæ *recurrent straight branches*, or *vasa recta vera*; and the *false* arteriæ rectæ *vasa recta spuria*.

[57] (Fig. 836, p. 494.) "The *iliacosubfascial fossa* is a roomy recess or pouch of the peritoneum met with as a very rare variety in the inner part of the iliac fossa. When present, it is formed in the following manner: The tendon of the psoas parvus muscle, as it passes to its insertion into the iliac fascia covering the iliopectineal line and eminence, separates a little from the iliacus muscle, forming a hollow, which extends for a certain distance inwards behind the psoas magnus muscle. The parietal peritoneum, as it coats the interior of this hollow, necessarily forms a peritoneal recess or pouch, and this recess, if, as usually when present, it is on the left side, is occupied by the lowermost portion of the descending colon" (Von Langer and Toldt's "Anatomy," 7th ed., p. 366).

[58] *Cervix or Neck of the Bladder* (Fig. 839, p. 496).—This name is given by English anatomists to that portion of the bladder immediately in front of the base, at the junction of the organ with the urethra. The term is not used by Toldt. Other terms employed by English anatomists and not by the author, in describing the bladder, are given in note [61] below.

[59] **Tendinous Arch of the Pelvic Fascia* (Figs. 840, 841, p. 497).—"The origin of the *visceral layer of the pelvic fascia* and of the *rectal* and *anal fasciæ* (see note [106] below) from the parietal layer of the pelvic fascia or obturator fascia takes place along a tendinous band that runs across the lateral wall of the pelvis, the *arcus tendineus fasciæ pelvis*. This is seen as soon as the parietal peritoneum and the delicate subserous areolar tissue have been removed. It begins in front behind the pubic symphysis, at the level of the inferior pubic or subpubic ligament, runs backwards, crossing the upper part of the levator ani muscle about an inch below the obturator canal, towards the spine of the ischium, and can be traced yet further backwards, though thinner and less defined, on the surface of the coccygeus muscle, and as far as the fourth sacral vertebra. The foremost portion of this tendinous arch, which has a well-defined edge, is called *ligamentum puboprostaticum* (*pubovesicale*) *medium*—the anterior true ligament of the bladder, or puboprostatic ligament; this ligament, with its fellow, bounds a deep hollow behind the symphysis, *fovea pubovesicalis*—the *pubovesical fossa—at the bottom of which the dorsal vein of the penis is seen entering the pelvis and dividing into two lateral branches. . . . Flattened bands of fibrous tissue, reinforcing the pelvic fascia, and radiating from the tendinous arch upwards near the entrance of the obturator canal (often, however, but slightly developed), receive the name of *ligamentum puboprostaticum* (*pubovesicale*) *laterale*—the lateral true ligament of the bladder,, (see Fig. 924, p. 533).—Von Langer and Toldt's "Anatomy," 7th ed., pp. 444, 445. This passage shows that Toldt's *arcus tendineus fasciæ pelvis* corresponds with the *white line of the pelvic fascia* of English authors; but also that the former term is used in a more comprehensive sense than the latter.

[60] *Pubovesical Muscle* (Fig. 840, p. 497). — See Quain's "Anatomy," 10th ed., vol. iii., part iv., p. 213, and Macalister's "Anatomy," p. 447. By the latter authority these unstriated muscular fibres connecting the anterior wall of the bladder with the back of the pubis and with the prostate gland (in the male) are called *pubo-prostaticovesical fibres*.

[61] *Boundaries of the Trigone of the Bladder* (Figs. 842, 843, p. 498).—The base or posterior boundary of the trigone is formed by a curved elevation of varying prominence connecting the summits of the ureteric orifices, and known as *Mercier's bar*; it corresponds in position with a muscular band which joins these orifices to one another and to the neck of the bladder. At its outer extremities Mercier's bar is continuous with the *ureteric folds*, above and outside the ureteric orifices; these folds are supposed to act as valves preventing the regurgitation of urine into the urethra. The ureteric folds are continued downwards by the lateral boundaries of the trigone, two faint ridges which converge to the lower extremity of the uvula of the bladder and the back of the urethral orifice. These ridges correspond, like Mercier's bar, to muscular bands, which in this case, however, belong to the internal layer of longitudinal fibres, and they are known as *Bell's muscles*. Behind Mercier's bar there is often, especially in old age, a depressed area, the *post-trigonal pouch*.

[62] **Urethral Ring* (Fig. 842, p. 498).—"The internal orifice of the urethra, *orificium urethræ internum*, is seen, in the contracted bladder, to be surrounded by a circular elevation of the mucous

membrane, *annulus urethralis*, dependent on the great development in this region of the circular layer of the muscular coat. When the bladder is greatly distended, the urethral ring is hardly discernible" (Von Langer and Toldt's "Anatomy," 7th ed., p. 376). This is the *sphincter vesicæ* (*internus*) of some authors. Griffiths states there is no thickening of the circular fibres in this situation sufficient to justify the use of the term sphincter ("Observations on the Urinary Bladder and Urethra," *Journal of Anatomy and Physiology*, 1891). These fibres at the *base* of the prostate are called by Macalister *sphincter vesicæ internus* to distinguish them from an envelope of striated muscle fibres surrounding the urethra at the *apex* of the prostate, and called by Macalister *sphincter vesicæ externus*.

[63] (Ibid.) Toldt distinguishes the *colliculus seminalis* as the middle thickened section of the *crest of the urethra*, in which the prostatic utricle opens. In England, however, the names *colliculus seminalis*, *verumontanum*, and *caput gallinaginis*, are commonly employed as alternative names for the whole length of the *crest of the urethra*.

[64] (Ibid.) Known also as the *prostatic sinus*, *prostatic vesicle*, *sinus pocularis*, and *uterus masculinus*.

[65] **Crest of the Female Urethra* (Fig. 843, p. 498).—"The mucous membrane of the female urethra exhibits in the median line of the posterior wall a longitudinal prominence, *crista urethralis*, which can be traced from the internal to the external orifice" (Von Langer and Toldt's "Anatomy," 7th ed., p. 409). This is the most prominent of several longitudinal folds in the female urethra. It is mentioned by Quain and Macalister, but not named.

[66] (Fig. 845, p. 500.) Known also as *Duverney's gland*, or the *suburethral gland*. The latter name, though suitably applied to Cowper's gland, is given to Bartholin's gland only on the ground of its homology with Cowper's gland.

[67] *Os Uteri Externum* (Ibid.).—This is commonly spoken of by clinicians as the *os uteri*, without qualification, though the word *externum* is properly added to distinguish it from the *os uteri internum*. The external os was in former times called the *os tincæ*, from its supposed resemblance to the mouth of a tench.

[68] *Fascial Coverings of the Testicle and Spermatic Cord* (Figs. 846, 847, p. 501).—The names given to these are various and conflicting. According to the best-established nomenclature of English anatomists, the covering derived from the intercolumnar fibres of the external oblique muscle of the abdomen is called the *intercolumnar* or *spermatic fascia*. Next within this comes the cremaster muscle and the aponeurotic layer connecting its fibres, to which, considered as a whole, Quain gives the name of *cremasteric fascia*. Thirdly, within this, we come to the covering derived from the transversalis fascia, and generally known in England as the *infundibuliform fascia*. But the divergencies from the nomenclature just given are manifold. Taking Toldt first, we find he gives the name of *fascia cremasterica* (*Cooperi*) to the *intercolumnar* or *spermatic fascia* of English anatomists; and the name of *tunica vaginalis communis testis et funiculi spermati* to the infundibuliform fascia of English anatomists. (In England the use of the term *tunica vaginalis* is entirely restricted to the serous sac of the testicle.) Macalister further complicates the use of the term *cremasteric* by describing as the *tunica cremasterica*, *all three* of the fascial layers enumerated at the beginning of this note, "which are so closely united as to be with difficulty separable from each other." It will be noted that Toldt appends the name of Astley Cooper to the layer he terms "cremasteric," but this is a further divergence from English usage. By the term *fascia propria of Astley Cooper* we denote, in England, the penultimate covering of an oblique inguinal hernia, that next to the peritoneum, which consists of the combined infundibuliform fascia and the subserous areolar tissue between that fascia and the peritoneum. As a final alternative in the nomenclature of the fascial layers in this region, I give that of Young (U.S.), who enumerates the coverings of the cord as consisting of (1) *external spermatic* or *intercolumnar fascia*, (2) *cremaster muscle*, and (3) *internal spermatic fascia* or *fascia propria*. From this medley, the student will do well to select and impress on his memory the distinctive names of *intercolumnar fascia*, *cremasteric fascia*, and *infundibuliform fascia*.

[69] *Hydatids of Morgagni* (Fig. 848, p 502).—"On the upper extremity of the testis and beneath the head or globus major of the epididymis is situated a hemispherical body of varying size, consisting of delicate and very vascular connective tissue, and often containing the remnant of a duct. This is known as the *sessile hydatid of Morgagni*, or *appendix testis* (*Morgagnii*), and is the rudiment of the cephalic extremity of the fœtal Müllerian duct. Similar but smaller stalked bodies are frequently met with on the head or globus major of the epididymis, and are termed *pedunculated hydatids*, *appendices epididymidis*" (Von Langer and Toldt's "Anatomy," pp. 383, 384). The terms *sessile* and *pedunculated hydatid* are employed by Macalister, but not by Quain; the latter authority uses *appendix of the testicle* as an alternative name for the (*sessile*) *hydatid of Morgagni*. Some authorities call it *corpus Morgagni*. For the development of these structures from Müller's duct, see Figs. 896, 897, p. 520.

[70] **Ligaments of the Epididymis* (Fig. 849, p. 502).—The epididymis is attached to the posterior border of the testicle (1) by the efferent ducts passing from the gland to the head or globus major of the epididymis; (2) by a duplicature of the tunica vaginalis containing numerous bloodvessels passing between the testicle and the posterior border of the epididymis; (3) within the digital fossa (sinus epididymidis) are two strands of fibrous tissue covered by reflections of the tunica vaginalis connecting the upper and lower ends respectively of the body of the epididymis with the testicle. It is these last that are called by the author **superior* and *inferior ligaments of the epididymis*. The names are not used by Quain or Macalister.

[71] *Vas Aberrans* (Fig. 851, p. 502).—"The so-called *ductulus aberrans* is a tube with a blind termination, which opens by its proximal extremity into the canal of the epididymis near the tail of that organ. Coiled tightly, it forms a small lobe not attached to the testicle proper; but occasionally also it is seen as a straight tube of varying length. It is a glandular canal, and represents that part of the Wolffian body which was not used up in the formation of the head or globus major of the epididymis. A similar canal, *ductulus aberrans superior*, is sometimes met with attached to the head or globus major of the epididymis. This, however, is attached to the testicle, and is merely an efferent duct which has become strictured off from the canal of the epididymis, and has thus lost its connexion with the head of that organ" (Von Langer and Toldt's "Anatomy," 7th ed., p. 383).

[72] *Lobes or Lobules of the Epididymis* (Fig. 854, p. 503).—Toldt by this term denotes the coils of the various efferent ducts of the testicle. These, however, form the *coni vasculosi* of English anatomists, who use the term *lobes of the epididymis* to denote the larger masses of the coiled *canal of the epididymis*, these lobes or masses being separated by incomplete tranverse fibrous partitions.

[73] *Middle Lobe or Isthmus of the Prostate Gland* (Fig. 858, p. 504).—This is that portion of the prostate gland lying between the

ejaculatory ducts and the neck of the bladder; its forward projection lies beneath the uvula of the bladder. The term *isthmus*, though not commonly employed in England, is preferable to *middle lobe*, for it is only in pathological senile enlargement of the prostate that the organ becomes distinctly trilobate. The middle lobe of the prostate gland is sometimes also known as *Home*'s *lobe*.

[74] (Fig. 861, p. 505.) The outer fibrous coat of the prostate gland is derived in part from the visceral layer of the pelvic fascia and the deep layer of the triangular ligament of the urethra, and in part from a dense but thin fibrous layer peculiar to the prostate beneath the outer fascial investment. To the compound fibrous coat thus formed Macalister gives the name of *pelviprostatic capsule*, expressing its joint origin. The *prostatic plexus of veins* ramifies between the two layers of this capsule; and immediately beneath the inner layer is the external layer of unstriated muscular fibres to which Toldt gives the name of *musculus prostaticus*.

[75] *Divisions of the Cervix* (Fig. 873, p. 511).—Most authorities are in agreement with the author in his division of the cervix uteri into two parts only—*vaginal* and *supravaginal*. Schroeder, however, speaks of three portions—*infravaginal*, *intermediate*, and *supravaginal*. (See Hart and Barbour's "Gynecology," 3rd ed., pp. 16, 17.)

[76] (Figs. 873, 874, p. 511.) The *mesovarium*, or *mesentery of the ovary*, is the bilaminar fold of peritoneum by which the ovary is attached to the broad ligament of the uterus. (See also note [82] below.)

[77] *Position of the Ovary* (Fig. 873, p. 511).—Owing to the manner in which the broad ligament has been drawn out to its full length, the ovary has been pulled into a horizontal position, differing from that it normally occupies in the body, in which, according to some authorities, its long axis is oblique, according to others, vertical. Hence *in situ* the *tubal* extremity becomes *superior*; the uterine extremity, *inferior*; and the surfaces, here represented as directed upwards and downwards, become *external* and *internal*.

[78] *Vaginal Fornix* (Figs. 873, 874, p. 511). This is the upper portion of the vagina, surrounding the vaginal portion of the cervix. Most English anatomists, however, speak, not of the vaginal fornix as a whole, but of its four parts: *anterior fornix*, *posterior fornix*, and *right* and *left lateral fornices*.

[79] *Bursa Ovarica* (Fig. 874, p. 511).—This term is not used by Quain. Macalister describes it as a pouch at the back of the broad ligament of the uterus in which the ovary lies, between the *ovario-pelvic ligament* (*ligamentum suspensorium ovarii*, according to Toldt's nomenclature—see also note [8], p. 511) and the rest of the broad ligament. The *ovarian bursa* must be distinguished from the *ovarian fossa* or *fovea* (*fossa ovarii*, Quain), which is a recess in the parietal peritoneum on the lateral wall of the pelvis, corresponding to the external surface of the ovary, and situated between the external and internal iliac arteries in front of the sacro-iliac articulation; the ovarian fossa is often bounded behind and below by the ureter.

[80] (Fig. 875, p. 512.) Owing to the irregular, torn appearance of the *fimbriated extremity* of the Fallopian tube, surrounding the abdominal orifice, this orifice was by ancient anatomists named *morsus diaboli*.

[81] (Ibid.) English anatomists usually speak of separate *uterine* and *vaginal* venous plexuses. These, of course, communicate somewhat freely; but on the whole the venous blood from the body of the uterus passes by means of the uterine plexus to the ovarian or pampiniform plexus and the inferior vena cava, that from the neck of the uterus and the vagina by means of the vaginal plexus to the internal iliac vein.

[82] *Mesometrium*, *Mesovarium*, *and Mesosalpinx* (Figs. 875, 876, p. 512).—As these terms are not employed by all English authorities, I append a description from Von Langer and Toldt's "Anatomy," 7th ed., p. 401: "That portion of the broad ligament of the uterus which passes to the lateral wall of the pelvis, there to become continuous with the parietal layer of the peritoneum, conveys the vessels and nerves and the round ligament to the uterus, and is therefore called the *mesentery of the uterus* or *mesometrium*; that part of the broad ligament which lies between the ligament of the ovary and the Fallopian tube, sometimes rising above the plain of the pelvic inlet, and terminating laterally in a free border (the *infundibulo-ovarian border*) is the *mesentery of the Fallopian tube*, or *mesosalpinx*; and from this there branches off backwards the short *mesentery of the ovary*, or *mesovarium*." (See Fig. 876.)

[83] **Corpus Albicans* (Fig. 876, p. 512).—This name is given to the white, stellate mass of scar tissue into which the *corpus luteum* is ultimately transformed.

[84] *Parametrium* (Fig. 881, p. 513).—This name was first given by Virchow (*Archives*, No. xxiii.) to that part of the subserous connective tissue of the pelvis, abundantly supplied with blood-vessels and lymphatics, that lies beside the cervix and the upper part of the vagina, and between the layers of the broad ligament of the uterus at its lower and inner part. The term *parametrium* is rather a clinical than an anatomical one, and since, as Spiegelberg points out ("Midwifery," Eng. ed., vol. i., p. 43), the name conveys the idea of a definite organ, whilst there is no line of demarcation between the parametric and the paravaginal, paravesical, and pararectal tissue, the name *parametric connective tissue* is to be preferred.

[85] (Ibid.) The *anal fascia* is continued in front into what is called (in the male) the *deep* or *superior layer* of the *triangular ligament of the urethra*, and by Macalister called the *subpubic fascia*. The name *anal fascia* is limited to that part which forms the inner wall of the ischiorectal fossa.

[86] *Rectal Fascia* (Ibid.).—This appears to be the most suitable English equivalent for the author's *fascia diaphragmatis pelvis superior*, the fascia covering the upper surface of the levator ani muscle.

[87] *Pelvic Diaphragm* (Ibid.).—In this the author includes, in addition to the *coccygeus* or *levator coccygis* and *levator ani* muscles, the *superior* and *inferior fasciæ of the pelvic diaphragm*—*i.e.*, the *rectal* and *anal fasciæ* of English anatomists. (See also notes [85] and [86].)

[88] (Fig. 883, p. 514.) *Skene*'s *tubules* (*ductus para-urethrales*) are two canals running parallel with the female urethra on either side, beneath the mucous membrane and embedded in the muscular coat. They open either just within or just without the urethral orifice (within, probably, in the virgin, and without, in the multipara, in whom slight eversion of the urethral orifice is almost constant). Their diameter is about 1 millimetre ($\frac{1}{25}$ inch), and their length from $1\frac{1}{2}$ to 3 centimetres ($\frac{1}{2}$ inch to $1\frac{1}{4}$ inches), but they never extend beyond the internal orifice of the urethra. Though not distinctly glandular in character, they are often called *Skene*'s *glands*. They were first described by Skene in the *American Journal of Obstetrics* for April, 1880. A third tubule, *Schüller*'s *tubule*, is occasionally present in the middle line behind, midway between Skene's tubules.

[89] *Vestibule* (Ibid.).—Toldt includes in this the space at the sides of the vaginal orifice within the edges of the labia minora, as well as the space in front of that orifice. As defined by English anatomists, however, the *vestibule* is the triangular space of which

in the male, and the name *transversus perinei profundus* is obviously preferable to that of constrictor urethræ. (See Fig. 921.)

[102] *Internal Pudic Artery and Vein* (Figs. 922 and 923, p. 532).—Macalister calls these vessels *pudic* without qualification. Usually, however, they are known as *internal pudic*, to distinguish them from the *external pudic* branches (*superior* and *inferior*) of the femoral vessels. Macalister calls these latter the *pubic* vessels: (See also note [116] below.)

[103] (Fig. 922, p. 532.) Though the author calls this the *divided edge of the obturator fascia*, it is, rather, the junction of the lower edge of this fascia with the lateral margins of the deep layer of the triangular ligament, the latter having been dissected off the upper surface of the transversus perinei profundus muscle. (See also notes [99] and [101] above.)

[104] *M. Sphincter Urethræ Membranaceæ* (Ibid.).—The muscle called by the author the *sphincter of the membranous urethra* consists merely of the circular fibres of the transversus perinei profundus muscle (see note [101] above) immediately surrounding the membranous part of the urethra.

[105] **Pudendal Venous Plexus* (Fig. 923, p. 532).—This term is not employed by English anatomists. Von Langer and Toldt ("Anatomy," 7th ed., p. 559) write: "The *pudendal plexus* receives beneath the symphysis the dorsal vein of the penis or clitoris, and, running back beside the base of the bladder and in the female beside the vagina, receives in both sexes the blood from the vesical plexus, and in the female also the blood from the uterine and vaginal plexuses. The pudendal plexus opens by several large vessels into the internal iliac vein." From this account it is evident that the pudendal plexus of these authors is made up of veins belonging in the male to the prostatic and vesical plexuses, and in the female to the vesical, vaginal and uterine plexuses, of English anatomists.

[106] *Fascia Endopelvina* (Ibid.).—Von Langer and Toldt's "Anatomy," 7th ed., p. 444: "The *visceral layer of the pelvic fascia* is exposed by the removal of the peritoneum and the subserous areolar tissue from the parietes of the bladder and the rectum. It is given off along the *white line of the pelvic fascia* [see note [59] above] from the *parietal layer* of that fascia (*obturator fascia*), and, reaching the bladder, gives a complete fibrous investment to its anterior and lateral surfaces. Along the white line, the visceral layer is connected with the rectal fascia (*fascia diaphragmatis pelvis superior*), but as they pass inwards the two layers separate, the rectal fascia, following the levator ani, the upper surface of which it covers, dips deeply into the pelvis, whilst the visceral layer stretches tranversely across to the bladder. Thus, between the rectal fascia and the visceral layer there exists on each side of the bladder a space, the *perivesical space*, in which, in addition to the ureter, the nerves of the bladder and the vesical plexus are enclosed. Behind the bladder, the visceral layer of the pelvic fascia assists in forming the pelviprostatic capsule or prostatic fascia [see note [74] above], and furnishes a delicate fibrous investment for the rectum."

I quote this passage in order to indicate clearly the significance attached in this work to the names given to the different parts of the pelvic fascia. Three layers pass inwards from the parietal layer of the pelvic fascia: the lowest of these, the *anal fascia*, covers the perineal surface of the levator ani; the next layer, the *rectal fascia*, covers the pelvic surface of that muscle: these correspond with the *superior* and *inferior fasciæ of the pelvic diaphragm* in the author's nomenclature. The uppermost layer is that described in the above extract as the *visceral layer of the pelvic fascia*. The relative positions of the three layers are well shown in Fig. 923. It will be noticed that I have avoided the use of the term *rectovesical fascia*, which is in England applied, sometimes to all three of the layers just enumerated, sometimes to one or two of them separately considered, and this gives rise to much confusion. The complexity that is apt to surround the description of the pelvic fascia is also, doubtless, in part dependent on the fact that, as Macalister says, "much of the definiteness of these layers in the adult is created by the knife and forceps" ("Anatomy," p. 446).

[107] *Hypogastric Artery* (Fig. 924, p. 533).—In the German anatomical nomenclature, the *common iliac* is said to divide into the *external iliac* and the *hypogastric arteries*. In England, however, the name *hypogastric artery* is given to that branch of the *internal iliac artery* which at the navel becomes the *umbilical artery*. When the placental circulation ceases, it is obliterated, and is represented in the adult by a fibrous cord.

[108] **Corpus Spongiosum Urethræ* (Fig. 927, p. 535).—This term, as applied to the female urethra, is not found in any works on anatomy to which I have access, not even in Von Langer and Toldt's "Anatomy." Quain (*op. cit.*, vol. iii., part iv., p. 258) writes: "Outside the submucous areolar tissue of the female urethra, there is a highly vascular structure, in which are many large veins"; and according to Macalister (*op. cit.*, p. 454): "Outside the mucosa [of the female urethra] is an elastic vascular submucosa covered by an imperfect erectile lamella. The use of the name *corpus spongiosum urethræ* for this erectile tissue is to be deprecated, suggesting as its does homology with the corpus spongiosum urethræ of the male. The counterparts of this structure in the female are the *vaginal bulbs* and the *partes intermediæ* of Kobelt. (See Figs. 884 and 885, p. 515, and note [91] above.)

[109] *Rectal Ampulla* (Fig. 932, p. 538).—This is the portion of the rectum, usually dilated, situate immediately above the *anal canal*. According to Macalister, the upper boundary of the *ampulla* is the lowest of *Houston's valves*; according to Quain, however, the middle one of these three folds (the *plica transversalis recti* of Kohlrausch—see note [11] above). The *rectal ampulla* is sometimes known as the *ampulla analis recti*.

[110] (Ibid.) The pudic vessels run in a canal formed by the obturator fascia, shown here (and also in Fig. 922, p. 532) in cross-section, and known as *Alcock's canal*. For the nomenclature of these vessels see note [102] above.

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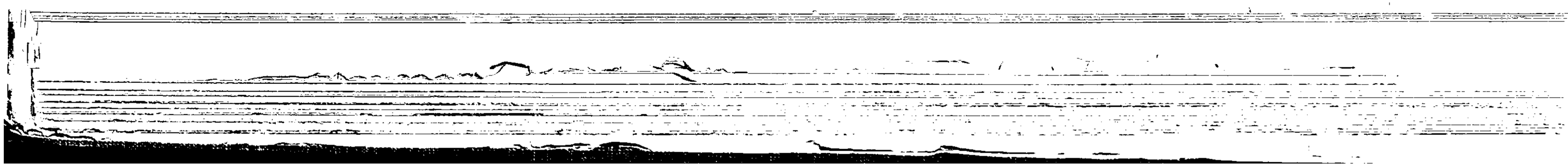

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ERRATUM

In the letterpress of Fig. 797, p. 468, right-hand column, "Rudiment of the *uterus*" is a misprint for "Rudiment of the *ureter*."—TR.