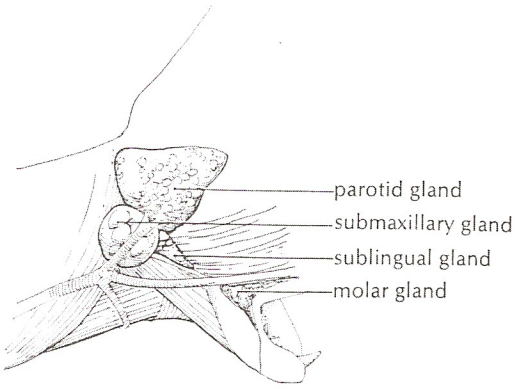
THE DIGESTIVE AND RESPIRATORY SYSTEMS

EXPOSURE OF SALIVARY GLANDS

The left parotid and submaxillary glands were identified and removed during the dissection of the muscles of the head and neck. A more detailed study of the salivary glands will now be made on the right side.

Remove the skin and platysma from the right side of the head and neck and identify the structures illustrated in Figure 29. The lymph nodes which lie on either side of the anterior facial vein should be removed; identify them by referring to Figures 15 and 16 (pp. 20 and 21). Distinguish them from the salivary glands by observing that the surfaces of the lymph nodes are smooth, whereas the surfaces of the salivary glands are lobulated.



The most prominent of the salivary glands is the parotid. Its duct crosses the masseter muscle and penetrates the cheek, opening into the mouth opposite the last cusp of the third upper premolar. To locate the opening of the parotid duct look inside the cheek and tug lightly on the duct with forceps.

Lift the anterior margin of the submaxillary gland and clear away the connective tissue to find the duct of the submaxillary gland. Near this duct is the small, oblong sublingual gland.

Cut the digastric and mylohyoid muscles and trace the duct of the submaxillary gland forward as far as possible in the floor of the mouth. It is accompanied by the duct of the sublingual gland, which is too small to be easily identified. The ducts of the sublingual and submaxillary glands open on a pair of small papillae at the base of the tongue.

The molar gland is a small, rather diffuse mass of glandular tissue located near the corner of the mouth between the masseter and the mandible. It opens into the mouth by several small ducts, too small to identify grossly.

Another salivary gland, the infraorbital gland, lies within the floor of the orbit and will be seen when the eye is dissected.

SAGITTAL SECTION OF HEAD AND NECK

The mouth, pharynx, and larynx can best be studied as seen in the sagittal section of the head and neck. The instructor should select certain students to make sagittal sections which may be studied by the entire class. Most specimens should be left intact for dissection during the study of the circulatory, nervous, and respiratory systems.

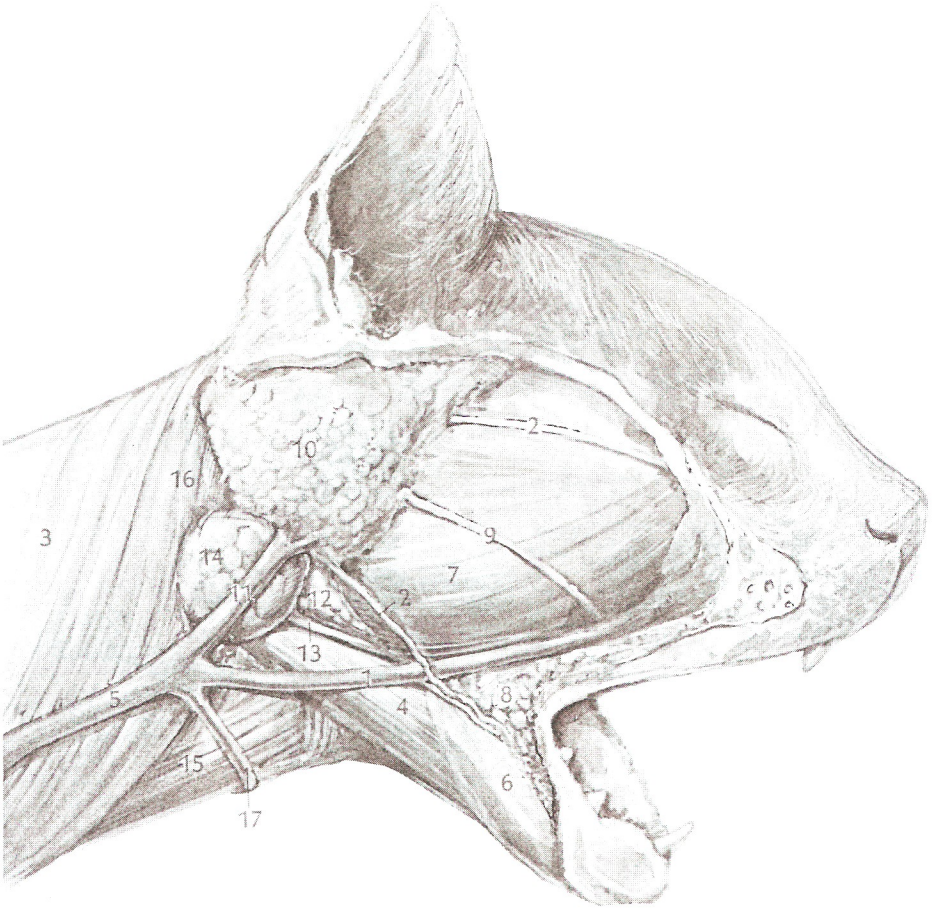


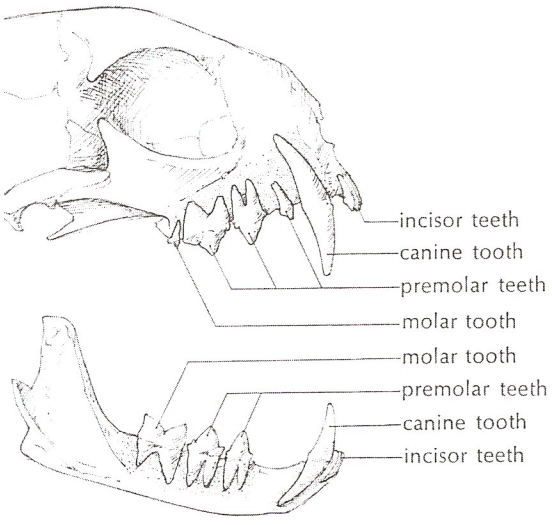
FIG. 29.
THE SALIVARY GLANDS

1 anterior facial vein
2 branch of facial nerve
3 clavotrapezius
4 digastric
5 external jugular vein
6 mandible
7 masseter
8 molar gland
9 parotid duct
10 parotid gland
11 posterior facial vein
12 sublingual gland
13 submaxillary duct
14 submaxillary gland
15 sternohyoid
16 sternomastoid
17 transverse jugular vein

SAGITTAL SECTION OF HEAD AND NECK

Use a bone saw to cut the head and neck in the sagittal plane. Wash the sections and identify the structures illustrated in Figure 30. Also refer to a skull cut in the sagittal plane and to Figure 5 on page 7. Review the names of the bones seen in this section and observe the relations of the bones to the other structures of the head and neck.

TEETH



For convenience the teeth may be described by the dental formula:

$$\frac{3-1-3-1}{3-1-2-1}$$

The numbers represent, from left to right, the number of incisors, canines, premolars and molars on either side. Figures in the upper row represent teeth in the upper jaw; figures in the lower row represent teeth in the lower jaw. In the cat the deciduous teeth appear two or three weeks after birth, and are replaced by permanent teeth at about seven months. Observe that the incisors of both jaws and the first premolar and molar of the upper jaw are quite small compared with the other teeth. Also observe that the last upper molar and the lower molar form a shearing mechanism, typical of carnivores, as opposed to the grinding mechanism found in herbivores.

TONGUE

Observe the papillae of the tongue. Those in the central portion carry small spines which serve as scrapers. Similar spines may be seen on the prominent transverse ridges of the hard palate. At the sides and back of the tongue are softer and larger papillae.

TONSILS

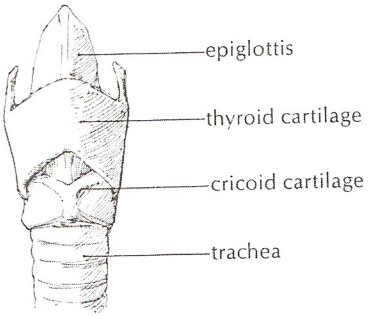
The palatine tonsils are small rounded masses of lymphatic tissue located in the lateral wall of the soft palate near the base of the tongue. The visible portion, which projects into the mouth, is a relatively small part of the tonsil, most of which is embedded in the mucous membrane.

HARD PALATE

The anterior portion of the mouth is separated from the nasal conchae by the hard palate. Refer to Figures 5 and 6 on pages 7 and 8 and review the bones of the hard palate.

PHARYNX

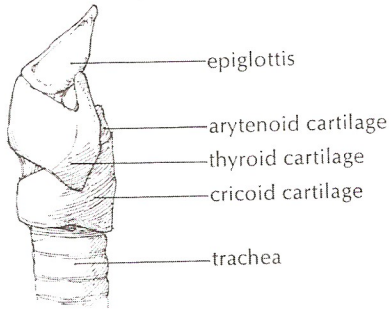
The pharynx is the cavity dorsal to the soft palate and the larynx. Anteriorly it communicates with the nasal cavities via the internal nares. Laterally the Eustachian tubes open into it, and posteriorly it communicates with the esophagus, larynx, and mouth. The free posterior border of the soft palate forms an opening termed the isthmus of the fauces, which leads from the mouth to the pharynx. Normally this opening is closed by the base of the tongue. It opens only during swallowing or in breathing through the mouth. Within the walls of the pharynx are a number of muscles which act to increase the transverse diameter of the pharnyx as food enters it and then contract upon the food, sending it down into the esophagus.



larynx, ventral view

LARYNX

The larynx is situated at the anterior end of the trachea, forming a passageway between the trachea and the pharnyx. It consists of a framework of cartilages connected by ligaments, muscles, and membranes. The cartilages of the larynx and their relation to the hyoid bone should be seen in a demonstration dissection made by the instructor. Leave them intact in your specimen in order to preserve the vessels and nerves lateral to the larynx.



larynx, lateral view

Most of the lateral and ventral walls of the larynx are supported by the large, shield-shaped thyroid cartilage. Posterior to the thyroid cartilage is the ring-shaped cricoid cartilage, which is much wider dorsally than it is ventrally. Anterior to the dorsal part of the cricoid cartilage, the dorsolateral rim of the glottis is supported by the small paired arytenoid cartilages. The vocal cords are paired folds of the mucosa between the arytenoid cartilages and the thyroid cartilage. The epiglottis is supported by the epiglottic cartilage, which is attached to the midventral part of the anterior border of the thyroid cartilage. When food is swallowed, the larynx is raised and the epiglottis folds over the glottis, or entrance to the trachea. The epiglottis guides the food into the esophagus and prevents it from entering the trachea.

THYROID GLAND

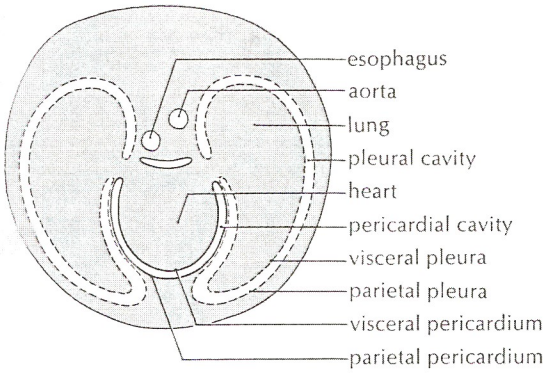
The thyroid gland consists of paired lobes which lie on either side of the trachea just posterior to the cricoid cartilage. They are connected by a thin strip of thyroid tissue, termed the isthmus, which extends across the ventral side of the trachea. See the thyroid gland as illustrated in Figure 47, page 67.

TRACHEA

The trachea is composed of a fibrous membrane stiffened by cartilaginous rings, which serve to keep the air passage open. The dorsal side of the trachea is in contact with the esophagus; in this area the cartilaginous rings are deficient, and the tracheal tube is completed by fibrous tissue and smooth muscle fibers.

EXPOSURE OF LUNG

Use bone scissors to make a cut parallel to, and about an inch lateral to, the left side of the sternum. Cut through the muscles and costal cartilages, extending the cut from the first rib to the posterior end of the sternum. Then extend the anterior and



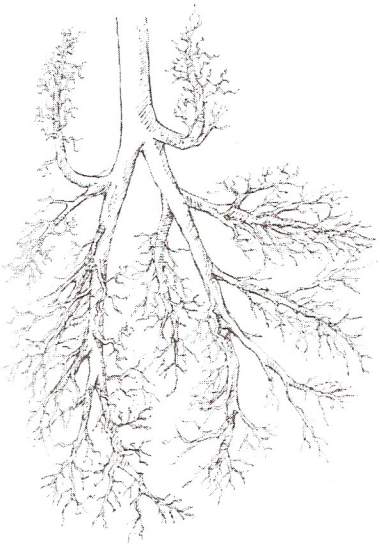
cross section of thorax

posterior ends of the cut dorsally between adjacent ribs and pull back the thoracic wall to expose the left lung.

The potential space between the lung and the thoracic wall is the pleural cavity. There are two pleural cavities, right and left, which are completely separated from each other. Observe the delicate pleural fold which passes from the heart to the ventral median line. The space between the pleural cavities is termed the mediastinum. It extends from the sternum to the vertebral column and contains all the thoracic viscera except the lungs and pleurae.

The pleura is the thin, serous membrane which encloses each pleural cavity. That portion of the pleura which covers the lungs is termed the visceral pleura. The portion that covers the inner surface of the chest wall, the diaphragm, and the structures of the mediastinum is termed the parietal pleura. The visceral and parietal pleurae are continuous with each other at the root of the lung and normally lie in direct contact with each other. In life they are moistened by a serous secretion which allows the lungs to move freely against the chest wall.

Cut the abdominal and thoracic walls to make a dissection similar to Figure 31. Be careful not to damage the brachial nerves and vessels; cut only through the body wall, leaving all other structures intact.



cast of right bronchus, lateral view

LUNGS

Examine the lungs, and observe that each lung is divided into three lobes: anterior, middle, and posterior. The posterior lobe of the right lung is subdivided into medial and lateral portions. About the level of the sixth rib the trachea divides into two branches termed right and left main bronchi. Each main bronchus divides within the substance of the lung, sending a large branch to each lobe. These branches subdivide into successively smaller branches which finally terminate in alveoli, minute air sacs which are richly supplied with capillaries.

PERICARDIUM

The heart is enclosed in a membranous sac termed the pericardium. The pericardium consists of two parts: the visceral pericardium is closely adherent to the heart wall; the parietal pericardium is continuous with the visceral pericardium around the roots of the great vessels and forms a sac which encloses the heart. The potential space between the parietal pericardium and the visceral pericardium is termed the pericardial cavity. In life it contains a serous fluid which allows the heart to move freely against the parietal pericardium.

THYMUS GLAND

Identify the thymus gland, a mass of glandular tissue lying in the median ventral line near the anterior end of the heart. It is prominent in young animals, but may be difficult to identify in older specimens.

ROOT OF LUNG

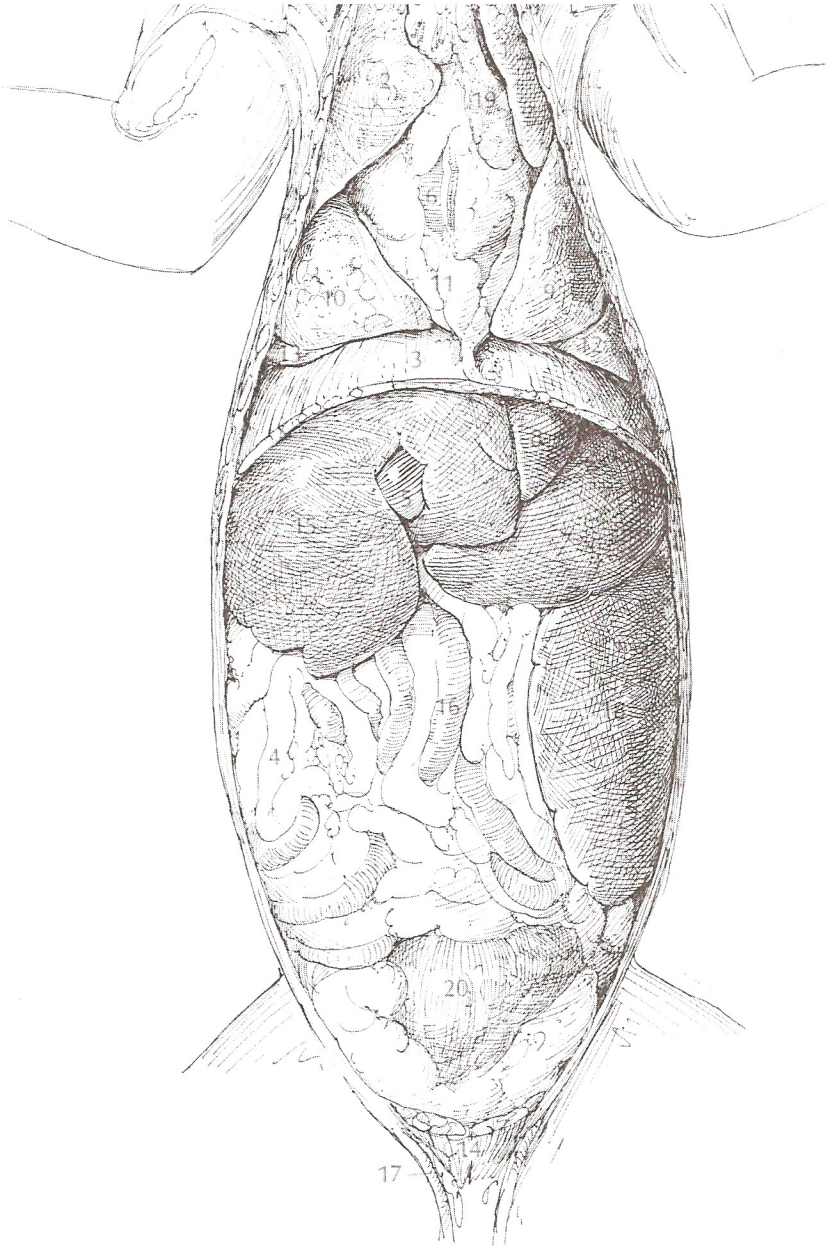
Cut open the pericardium and examine its relation to the heart. Press the heart away from the lung on one side and examine the place where the blood vessels and main bronchus enter the lung. This is termed the root of the lung. Pull the lung forward and examine the pulmonary ligament, a double fold of pleura which attaches each lung to the aorta, vertebral column, and diaphragm.

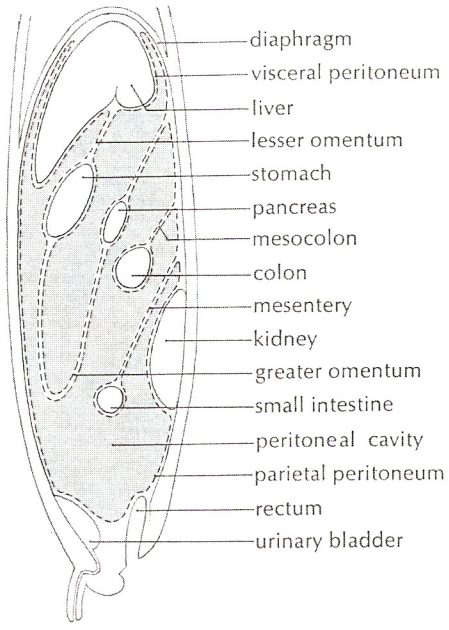
EXAMINATION OF ABDOMINAL VISCERA

Lift the stomach and liver and explore the contents of the abdominal cavity. Identify the structures you encounter by referring to the illustrations in this section, but do not cut any structures until instructed to do so and do not attempt to trace the vessels and

FIG. 31.
THE ABDOMINAL AND THORACIC VISCERA, VENTRAL VIEW

1 anterior lobe of left lung
2 anterior lobe of right lung
3 diaphragm
4 fat in omentum
5 gallbladder
6 heart within pericardium
7 left lateral lobe of liver
8 left medial lobe of liver
9 middle lobe of left lung
10 middle lobe of right lung
11 pericardial fat
12 posterior lobe of left lung
13 posterior lobe of right lung
14 rectus abdominis
15 right medial lobe of liver
16 small intestine covered by omentum
17 spermatic cord
18 spleen
19 thymus gland
20 urinary bladder





sagittal section of abdomen

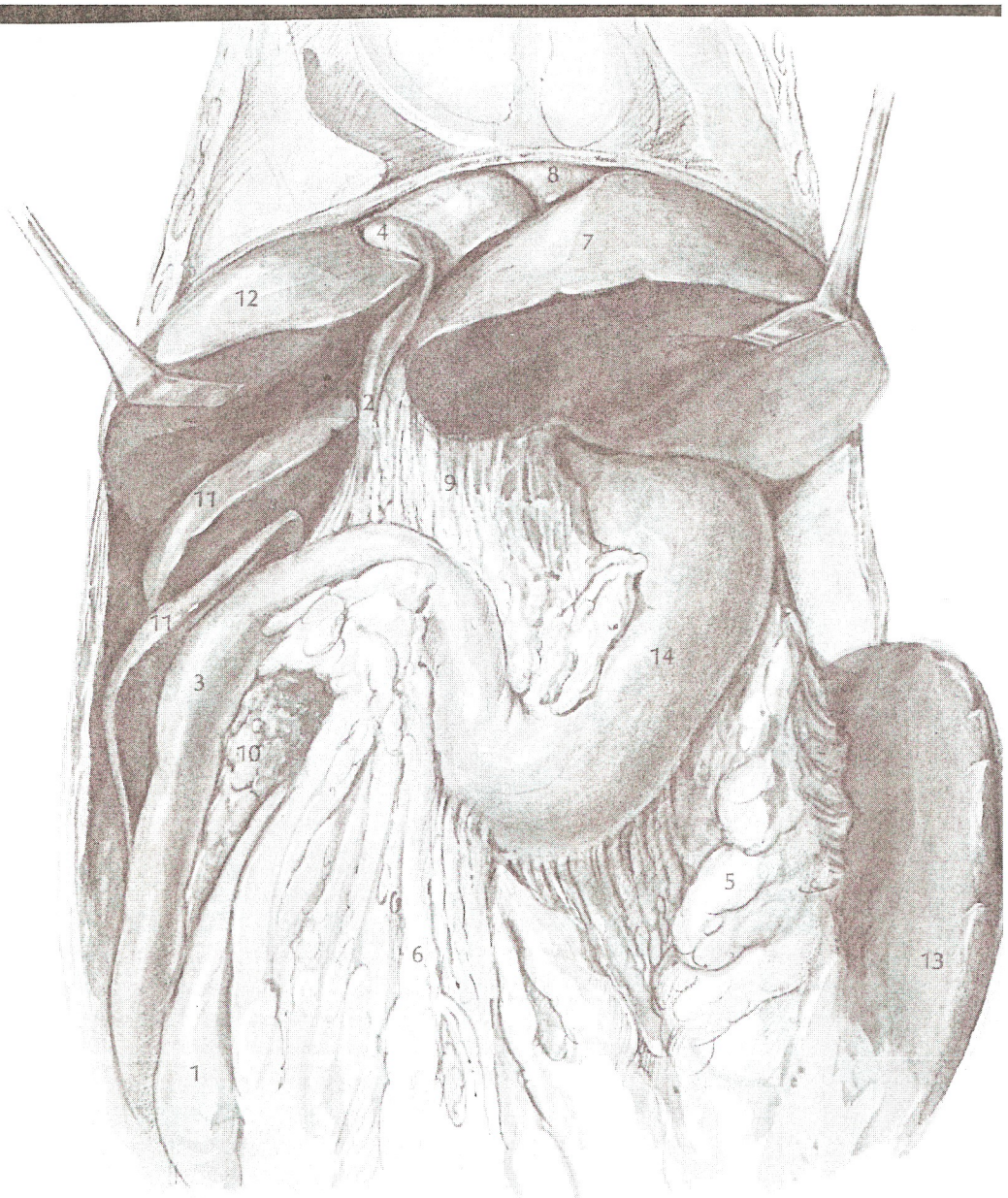
ducts at this time.

Both the inside of the body wall and the viscera are lined by a serous membrane, the peritoneum. That portion of the peritoneum which lines the viscera is the visceral peritoneum, and that portion of the peritoneum which lines the abdominal wall is the parietal peritoneum. The peritoneal cavity is the potential space between the parietal and visceral layers. In life it contains a serous fluid which allows the viscera to glide upon each other and upon the body wall with minimal friction. The peritoneum may be likened to a closed sac into which the abdominal organs have been pushed from the outside. It covers the organs, but none of them actually lie within the peritoneal cavity.

Structures such as the kidneys, which are attached to the body wall and covered by peritoneum on only one side, are said to be retroperitoneal, or behind the peritoneum. The fact that the ventral surface of the kidney is covered by peritoneum can easily be demonstrated by separating the peritoneum from the kidney with forceps and small scissors. In other areas the peritoneum adheres so closely to the organs which it covers that it cannot be dissected away from them. The peritoneal coverings of the liver and spleen, for instance, cannot be demonstrated by gross dissection.

FIG. 32.
THE STOMACH, LIVER, AND SPLEEN, VENTRAL VIEW

1 colon
2 common bile duct
3 duodenum
4 gallbladder
5 gastrosplenic ligament
6 greater omentum
7 left lateral lobe of liver
8 left medial lobe of liver
9 lesser omentum
10 pancreas
11 right lateral lobe of liver
12 right medial lobe of liver
13 spleen
14 stomach



MESENTERIES, LIGAMENTS, AND OMENTA

The peritoneal sheets which extend between the body wall and the viscera are termed mesenteries, ligaments, and omenta. Within these sheets are the vessels, nerves, and lymphatics which supply the viscera. Examine the greater omentum. It is a double sheet of peritoneum which is attached to the greater curvature of the stomach and to the dorsal body wall. Manipulate the greater omentum and determine that it is composed of dorsal and ventral layers, with a potential space, the omental bursa, between them. Lift the greater omentum and observe its relations to the pancreas and the spleen. The dorsal layer of the greater omentum encloses the gastrosplenic part of the pancreas. That portion of the greater omentum between the stomach and the spleen is termed the gastrosplenic ligament.

The stomach and duodenum are attached to the liver by the lesser omentum, which consists of two portions: the gastrohepatic ligament, between the stomach and the liver, and the hepatoduodenal ligament, between the liver and the duodenum. Within the right lateral border of the lesser omentum are the common bile duct, the hepatic artery, and the portal vein.

Make a slit in the greater omentum and confirm the fact that

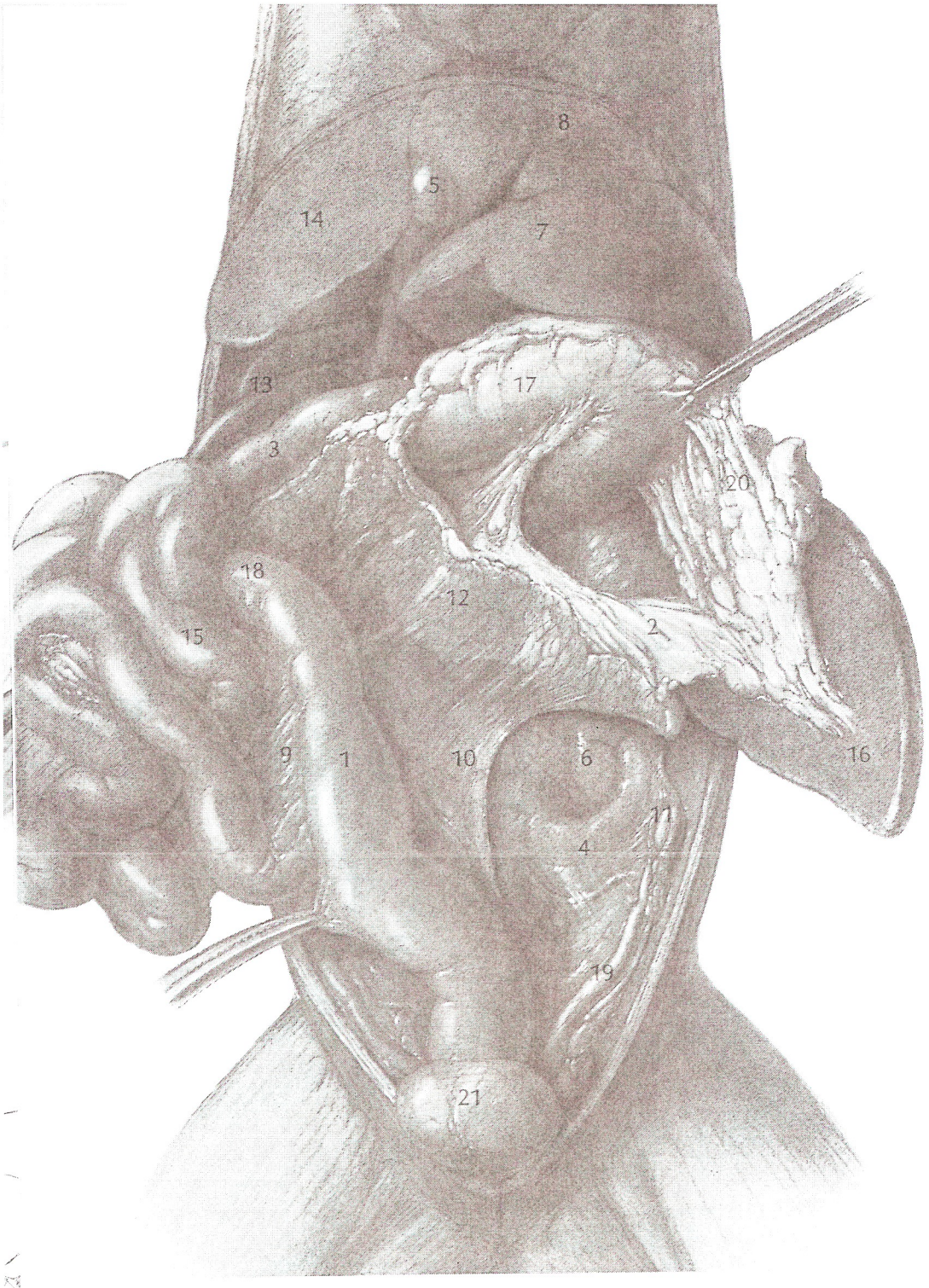
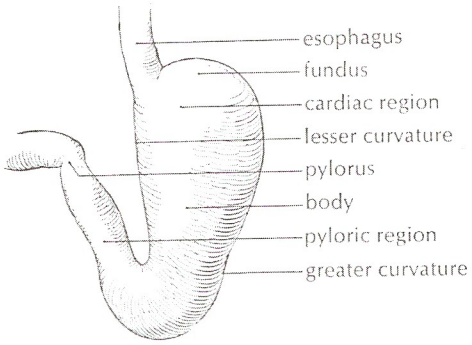


FIG. 33.
THE ABDOMINAL VISCERA, VENTRAL VIEW

The omentum is removed and the large and small intestines are retracted to the right.

1 descending colon
2 dorsal layer of gastrosplenic ligament
3 duodenum
4 fat (retroperitoneal)
5 gallbladder
6 kidney
7 left lateral lobe of liver
8 left medial lobe of liver
9 mesentery
10 mesocolon
11 ovary
12 pancreas
13 right lateral lobe of liver
14 right medial lobe of liver
15 small intestine
16 spleen
17 stomach
18 transverse colon
19 uterine horn
20 ventral layer of gastrosplenic ligament
21 urinary bladder



it consists of dorsal and ventral layers which may be separated.

Trim away the greater omentum, leaving the gastrosplenic ligament, to make a dissection similar to Figure 33.

Pass a probe dorsal to the right lateral border of the lesser omentum and observe that there is a passage between the peritoneal cavity and the omental bursa. This passage is termed the epiploic foramen.

The opening by which the stomach communicates with the esophagus is termed the cardiac orifice, and the opening by which the stomach communicates with the duodenum is termed the pylorus. The pylorus is surrounded by a muscular ring, the pyloric valve, which regulates the passage of food from the stomach to the duodenum.

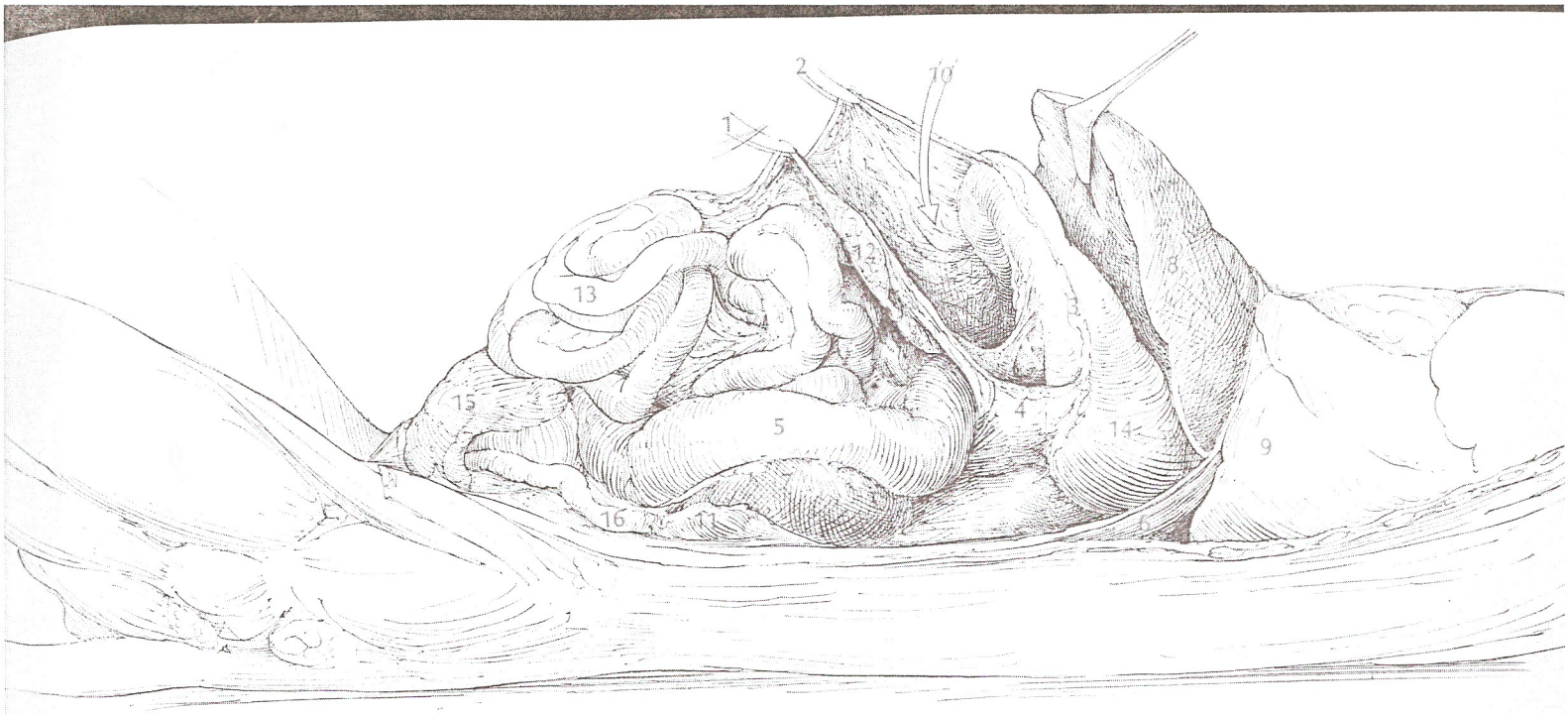


FIG. 34.
THE ABDOMINAL VISCERA, LATERAL VIEW

The spleen and gastrosplenic ligament are removed.

1 clamp on dorsal layer of greater omentum
2 clamp on ventral layer of greater omentum
3 cut attachment of greater omentum
4 cut gastrosplenic ligament
5 descending colon
6 diaphragm
7 kidney
8 liver
9 lung
10 omental bursa
11 ovary
12 pancreas within dorsal layer of greater omentum
13 small intestine
14 stomach
15 urinary bladder
16 uterine horn

DUODENUM

Trace the small intestine distal to the pylorus. The first portion of the small intestine is the duodenum. It passes posteriorly for about three and a half inches and then doubles back on itself, forming a loop within which the duodenal portion of the pancreas lies. Examine the mesentery which supports the duodenum. It is

MESODUODENUM

termed the mesoduodenum, and encloses the duodenal portion of the pancreas. Referring to Figures 35 and 36, pick away portions of the lesser omentum as necessary to identify the common bile duct and trace it to the point where it enters the duodenum. The total length of the duodenum is about seven inches.

Spread out the mesentery of the small intestine, observing that it contains fat, lymph nodes, and vessels (the intestinal branches of the superior mesenteric artery and vein). The small

JEJUNUM AND ILEUM

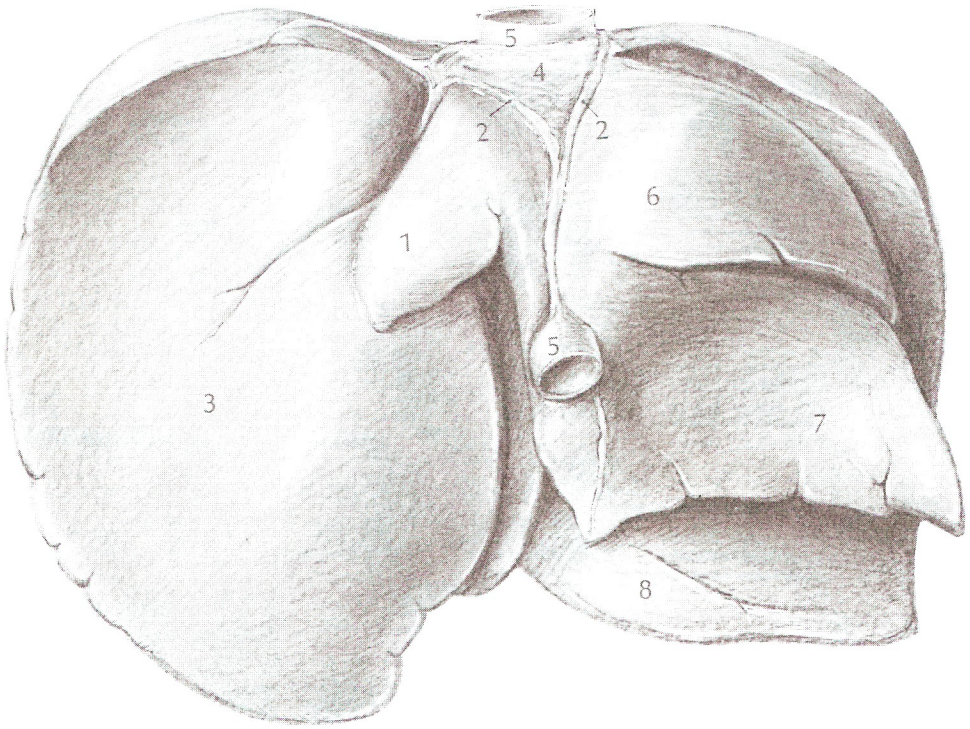
intestine beyond the duodenum is divided into the jejunum (proximal half) and the ileum (distal half). This division is somewhat arbitrary, as there is no definite point of demarcation between jejunum and ileum.

LARGE INTESTINE

Trace the ileum to its junction with the ascending colon. The alimentary canal distal to this point is termed the large intestine. Identify the cecum and the ascending, transverse, and descending parts

FIG. 35.
VISCERAL SURFACE
OF THE LIVER

1 caudate lobe
2 coronary ligament
3 left medial lobe
4 nonperitoneal surface
5 postcava
6 right lateral lobe, anterior part
7 right lateral lobe, posterior part
8 right medial lobe



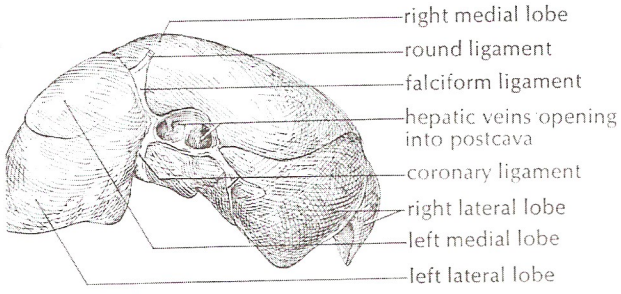
of the colon as illustrated in Figure 36. The rectum is that portion of the large intestine which extends from the pelvic inlet to the anus. The mesentery of the colon is termed the mesocolon.

LIVER

Refer to Figures 36 and 38 and identify the lobes of the liver. Identify the gallbladder and trace its connection with the hepatic, cystic, and common bile ducts. The form of the hepatic ducts, which convey bile from the lobes of the liver, varies. They may join the cystic duct by a common stem or by two or more separate stems.

The portal vein enters the liver and breaks up into a system of capillaries. Blood from the capillaries is returned to the vena cava via the hepatic veins. Note that the postcava passes through the liver, within which it receives the hepatic veins.

Refer to Figures 35, 36, and 37, and observe the relations of the common bile duct, the hepatic artery, and the portal vein. Dissect the lesser omentum away from these structures as necessary to expose them. Identify the falciform ligament, which lies in the cleft between the right and left medial lobes of the liver. In its free margin is the round ligament, which represents the obliterated umbilical vein. The falciform ligament is continuous with the coronary ligaments, which attach the liver to the central tendon of the diaphragm.



liver, anterior view

DIAPHRAGM

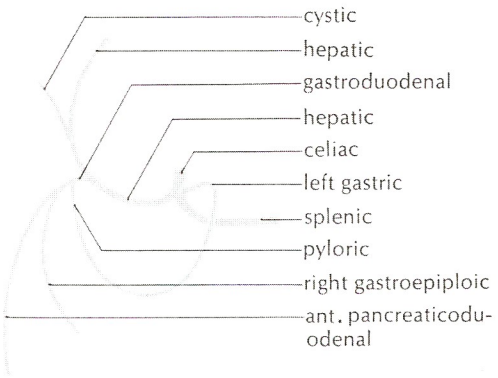
Examine the diaphragm in Figure 39 and observe that it consists of a central tendon surrounded by muscle fibers which originate from the costal cartilages, sternum, vertebrae, and fascia of the dorsal body wall. The diaphragm forms a partition between the thoracic and abdominal cavities. It contains openings for the passage of the esophagus, postcava, and aorta. The diaphragm is an important muscle of respiration. When it contracts, the central tendon is drawn posteriorly and the volume of the thoracic cavity is increased. The diaphragm also acts with the abdominal muscles to compress the contents of the abdominal cavity.

DISSECTION OF ILEUM AND JEJUNUM

Remove the ileum and jejunum, leaving a short piece of ileum attached to the colon as illustrated in Figure 36. Slit open several sections of small intestine and wash out the contents. Use a hand lens to observe the villi, minute tubular projections which serve to increase the mucosal surface.

Trim away the fat, lymph nodes, and connective tissue as necessary to make a dissection similar to Figure 36. Identify the structures illustrated.

The celiac artery, superior mesenteric artery, and portal vein will be studied at this time because of their close association with the alimentary canal. Read the following descriptions of these vessels, study Figures 36, 37, and 38, and trace the vessels as far as possible.

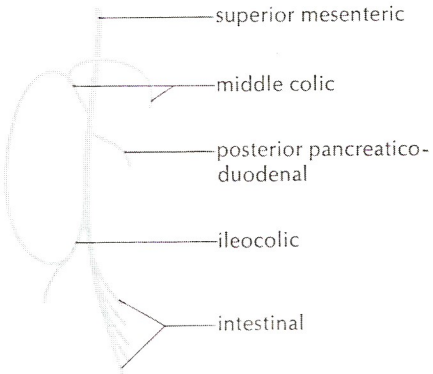


The celiac artery is the first vessel given off by the abdominal aorta. It divides into three branches: the hepatic, left gastric, and splenic arteries.

The hepatic artery lies along the cranial border of the gastrosplenic part of the pancreas. Near the pylorus it turns cranially, lying in a fibrous sheath together with the portal vein and the common bile duct. It gives a cystic artery to the gallbladder and then branches to the lobes of the liver. The largest branch of the hepatic is the gastroduodenal artery, which it gives off near the pylorus. The gastroduodenal is a short vessel that gives rise to three branches: the pyloric artery (to the pylorus and lesser curvature of the stomach), the anterior pancreaticoduodenal artery (to the duodenum and pancreas), and the right gastroepiploic artery (to the greater omentum and the greater curvature of the stomach).

The left gastric artery lies along the lesser curvature of the stomach, supplying many branches to both dorsal and ventral stomach walls. It anastomoses with the pyloric artery.

The splenic artery is the largest branch of the celiac. It gives two or more branches to the dorsal surface of the stomach and then divides into anterior and posterior branches which supply the anterior and posterior ends of the spleen. The posterior branch also supplies a branch to the pancreas. Both anterior and posterior branches give several short gastric arteries to the greater curvature of the stomach.

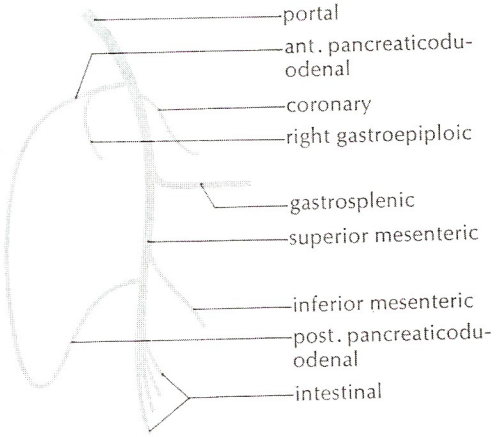


Just below the celiac artery the abdominal aorta gives off the superior mesenteric artery. Its branches are: the posterior pancreaticoduodenal (to the caudal portions of the pancreas and duodenum), the middle colic (to the transverse and descending colon), the ileocolic (to the cecum and ileum). It may also give a separate right colic artery to the ascending colon. The superior mesenteric then divides into numerous intestinal branches

which supply the small intestine.

PORTAL VEIN

Blood from the celiac and superior mesenteric arteries passes through the capillaries of the alimentary canal, spleen, and pancreas, and then returns to the liver via the portal vein. Within the liver the portal vein ramifies, ending in a system of capillaries termed the sinusoids of the liver. From the sinusoids the blood passes to the postcava via the hepatic veins, which join the postcava within the substance of the liver.



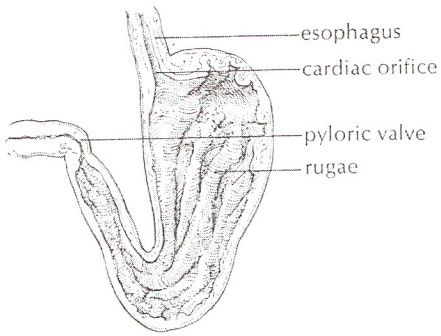
The portal vein is formed by the union of the superior mesenteric and gastrosplenic veins. Near this union the portal vein is joined by the right gastroepiploic vein (from the greater curvature of the stomach), the anterior pancreaticoduodenal vein (from the duodenum and pancreas), and the coronary vein (from the lesser curvature of the stomach).

The gastrosplenic vein receives tributaries from the pancreas and stomach. It is formed by the union of two large branches termed anterior and posterior splenic veins, which accompany the two branches of the splenic artery to either end of the spleen.

The superior mesenteric vein is the largest tributary of the portal vein. It receives the posterior pancreaticoduodenal vein from the duodenum and pancreas, the inferior mesenteric vein from the descending colon and rectum, and numerous intestinal veins from the small intestine.

DISSECTION OF STOMACH

Remove the colon and mesocolon. Cut the stomach below the fundus, leaving the left gastric artery intact as shown in Figure 37. Cut the duodenum just proximal to the point where the common bile duct and the pancreatic duct join it, and remove the section of stomach and duodenum between the cuts. Open the section of stomach you have removed and observe the pyloric valve and the prominent folds of mucosa termed rugae. Cut open the colon and the ileum at the point where they join and observe the ileocecal valve, formed by a fold of ileum projecting into the cecum. Note that there are no villi in the colon.



DISSECTION OF PANCREAS

Examine the pancreas. It is flattened, irregular, and quite variable in outline, and may be recognized by its lobulated texture. It consists of two parts, which lie at right angles to each other. The gastrosplenic part lies in the dorsal layer of the greater omentum, near the greater curvature of the stomach. The duodenal part lies in the mesoduodenum, near the medial border of the descending limb of the duodenum.

Starting at the point where the common bile duct joins the duodenum, pick away the pancreatic tissue and trace the pancreatic ducts as illustrated in Figure 37. The ampulla of Vater is the duct formed by the union of the common bile duct and the pancreatic duct at the point where they empty into the duodenum.

Identify the branches of the celiac artery, superior mesenteric artery, and portal vein as illustrated in Figure 37.

Remove the pancreas and duodenum, making a dissection similar to Figure 38. Identify the structures illustrated.

Remove the spleen and the liver to make a dissection similar to Figure 39. If you have a specimen in which the veins are injected with latex, try to dissect the liver away from the vena cava and preserve it as illustrated. If not, cut the vena cava and remove the liver intact.

FIG. 36.
THE STOMACH AND COLON

The jejunum and ileum are removed

1 anterior pancreatico-duodenal artery
2 aorta
3 ascending colon
4 caudate lobe of liver
5 cecum
6 celiac artery
7 common bile duct
8 cystic duct
9 descending colon
10 descending limb of duodenum
11 dorsal layer of gastro-splenic ligament
12 gastroduodenal artery
13 hepatic artery
14 hepatic duct
15 ileocolic artery
16 ileum
17 intestinal branches of superior mesenteric a.
18 jejunum
19 left gastric artery
20 left lateral lobe of liver
21 lymph node
22 mesentery
23 mesocolon
24 middle colic artery
25 pancreas (duodenal part)
26 pancreas (gastrosplenic part)
27 portal vein
28 pyloric artery
29 right gastroepiploic artery
30 right lateral lobe of liver (anterior part)
31 right lateral lobe of liver (posterior part)
32 right medial lobe of liver
33 splenic artery
34 spleen
35 stomach
36 superior mesenteric artery
37 superior mesenteric vein
38 transverse colon
39 ventral layer of gastro-splenic ligament
40 ventral layer of greater omentum

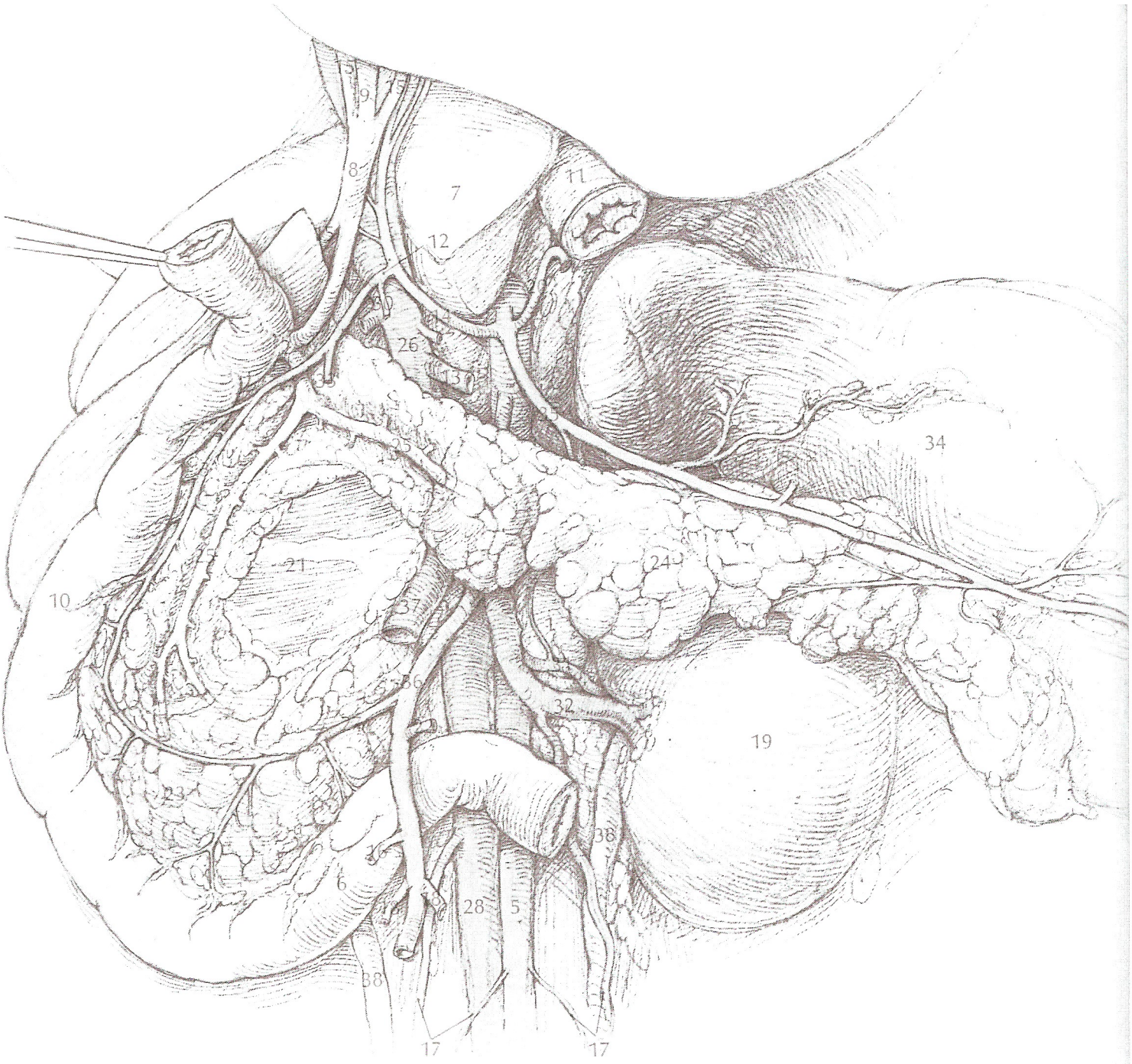


FIG. 37.
THE PANCREAS AND DUODENUM

The colon is removed and the pancreas is dissected to expose the pancreatic ducts.

1 adrenal gland
2 ampulla of Vater
3 anterior pancreatico-duodenal artery
4 anterior splenic artery
5 aorta
6 ascending limb of duodenum
7 caudate lobe of liver
8 common bile duct
9 cystic duct
10 descending limb of duodenum
11 esophagus
12 gastroduodenal artery
13 gastrosplenic vein
14 hepatic artery
15 hepatic duct
16 ileocolic artery
17 internal spermatic artery and vein
18 intestinal branch of superior mesenteric artery
19 kidney
20 left gastric artery
21 mesoduodenum
22 middle colic artery
23 pancreas (duodenal part)
24 pancreas (gastrosplenic part)
25 pancreatic duct
26 portal vein
27 posterior pancreatico-duodenal artery
28 postcava
29 posterior splenic artery
30 pyloric artery
31 renal artery
32 renal vein
33 right gastroepiploic artery
34 spleen
35 splenic artery
36 superior mesenteric artery
37 superior mesenteric vein
38 ureter

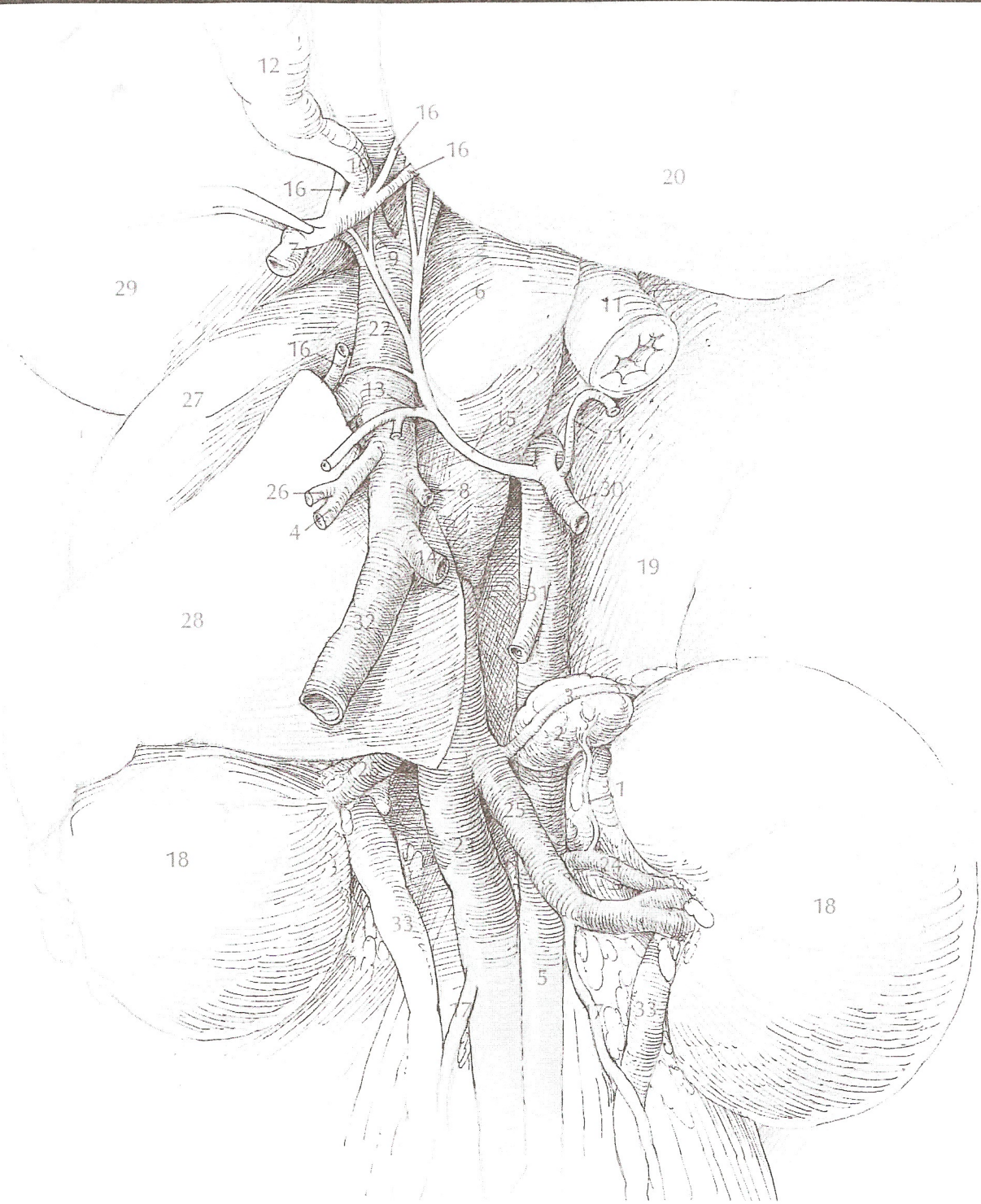


FIG. 38.
THE PORTAL VEIN AND CELIAC ARTERY

The pancreas and spleen are removed.

1 adrenal artery
2 adrenal gland
3 adrenolumbar vein
4 anterior pancreatico-duodenal vein
5 aorta
6 caudate lobe of liver
7 common bile duct
8 coronary vein
9 cystic artery
10 cystic duct
11 esophagus
12 gallbladder
13 gastroduodenal artery
14 gastrosplenic vein
15 hepatic artery
16 hepatic duct
17 internal spermatic v.
18 kidney
19 left crus of diaphragm
20 left lateral lobe of liver
21 left gastric artery
22 portal vein
23 postcava
24 renal artery
25 renal vein
26 right gastroepiploic vein
27 right lateral lobe of liver, anterior part
28 right lateral lobe of liver, posterior part
29 right medial lobe of liver
30 splenic artery
31 superior mesenteric a.
32 superior mesenteric v.
33 ureter