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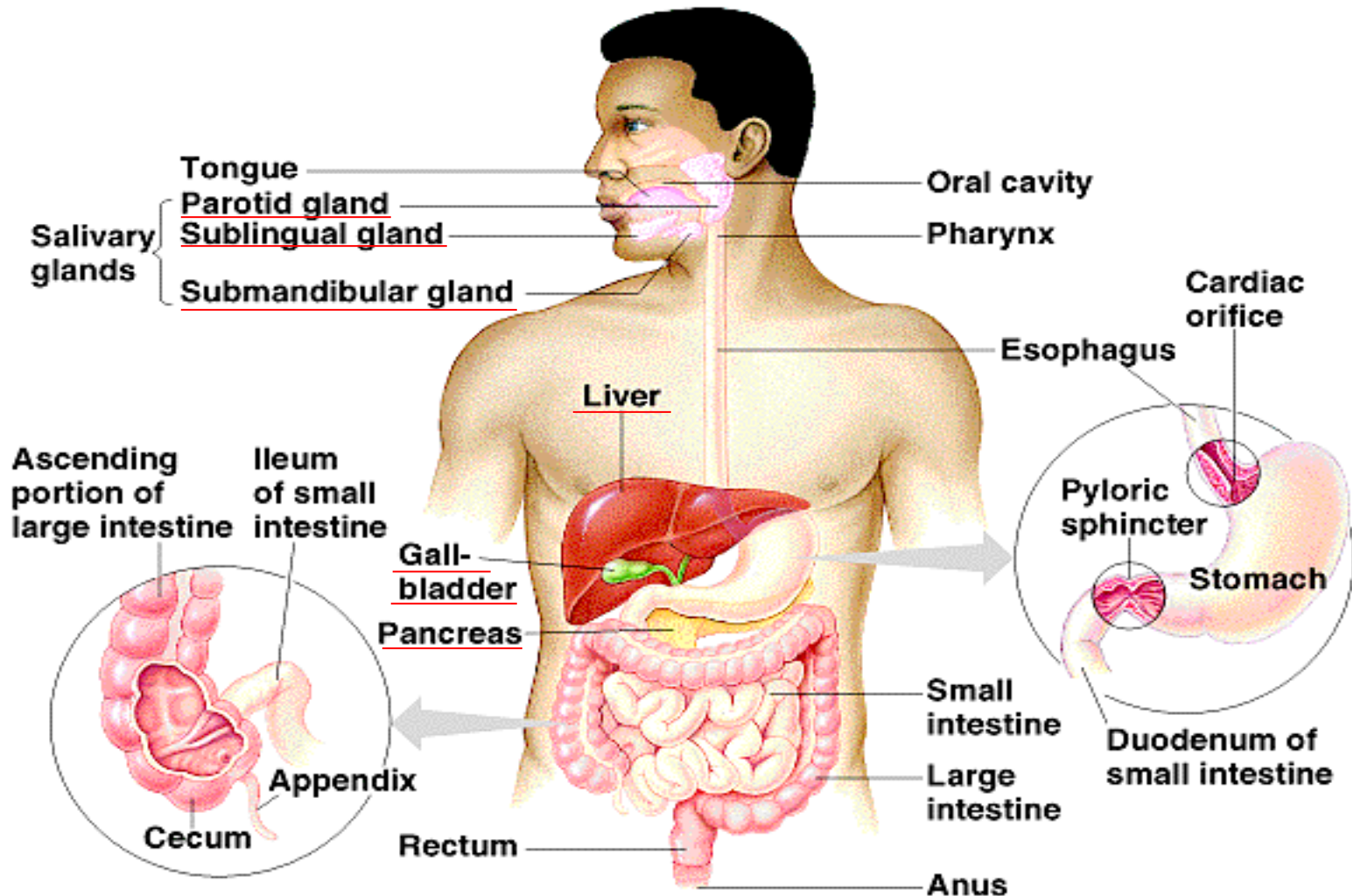
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DEPARTMENT OF BIOTECHNOLOGY  
FACULTY OF ENGINEERING & TECHNOLOGY

(DIGESTIVE GLANDS)

# Digestive Glands

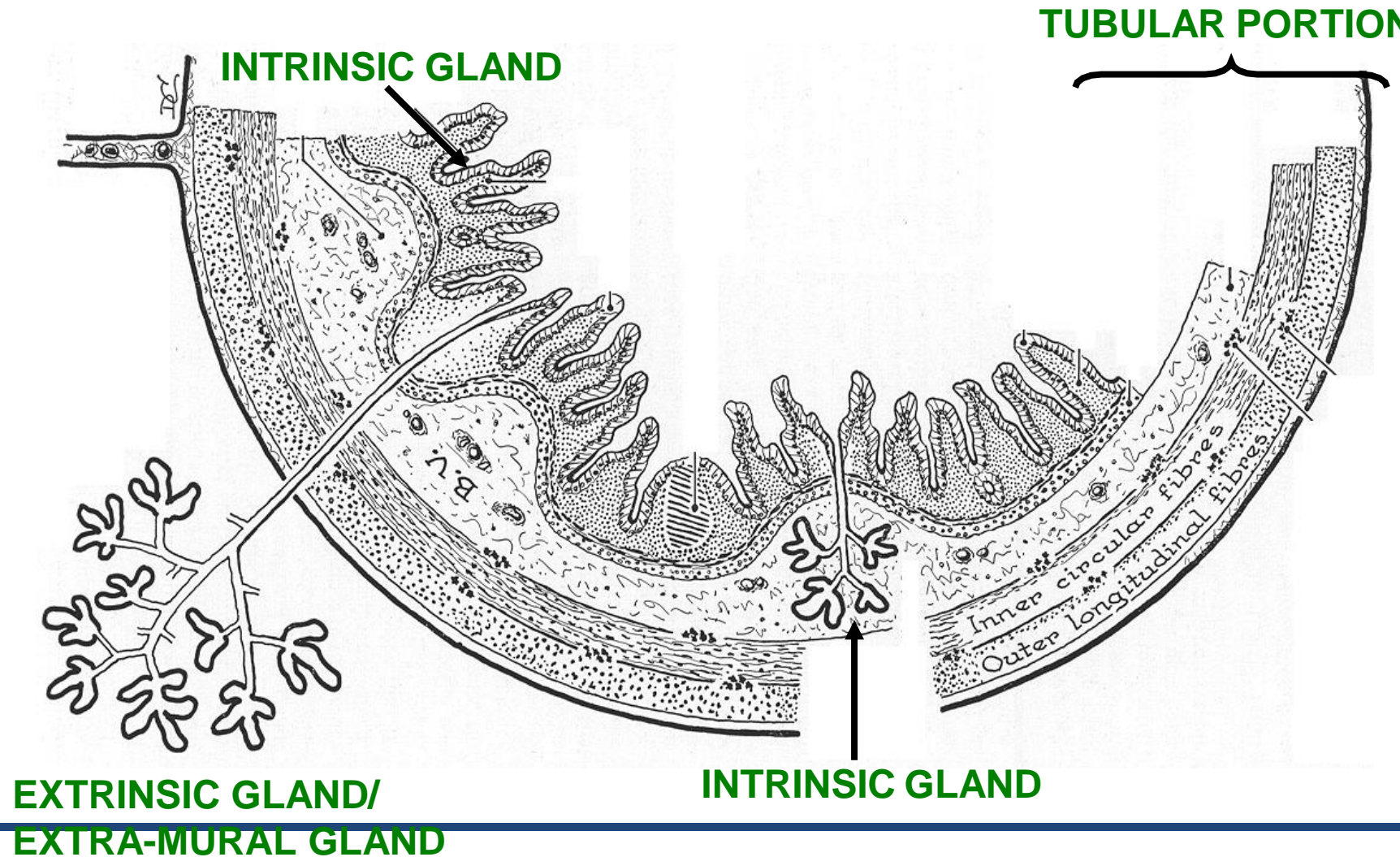
Figure 37.9 The human digestive system



# EXTRINSIC/EXTRA-MURAL GLANDS OF DIGESTIVE SYSTEM

- **Salivary Glands**
- **Pancreas**
- **Liver**
- **Gall Bladder**

# GENERAL ORGANIZATION AND COMPONENTS OF DIGESTIVE SYSTEM



# TERMS USED TO DESCRIBE THE BRANCHED DUCT SYSTEM OF LARGE EXOCRINE GLANDS

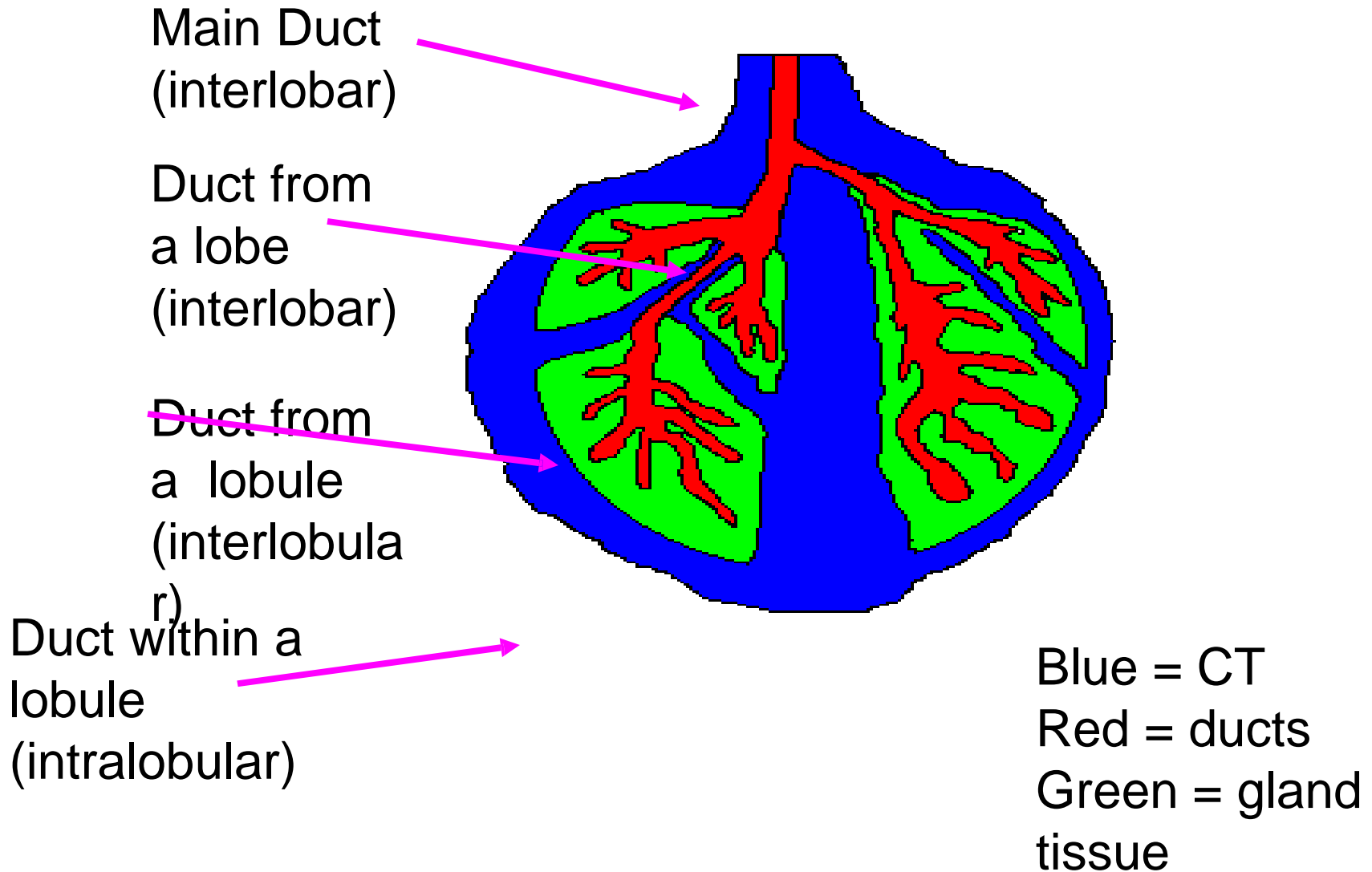
## **BASED ON MORPHOLOGY OF THE EPITHELIUM**

- **INTERCALATED DUCTS**
- **STRIATED DUCTS**
- **EXCRETORY DUCTS**

## **BASED ON POSITION IN THE GLAND**

- **INTRALOBULAR  
DUCTS**
- **INTERLOBULAR  
DUCTS**
- **INTERLOBAR DUCTS**

# Classification of ducts by position in the gland



# TERMS USED TO DESCRIBE THE BRANCHED DUCT SYSTEM OF LARGE EXOCRINE GLANDS

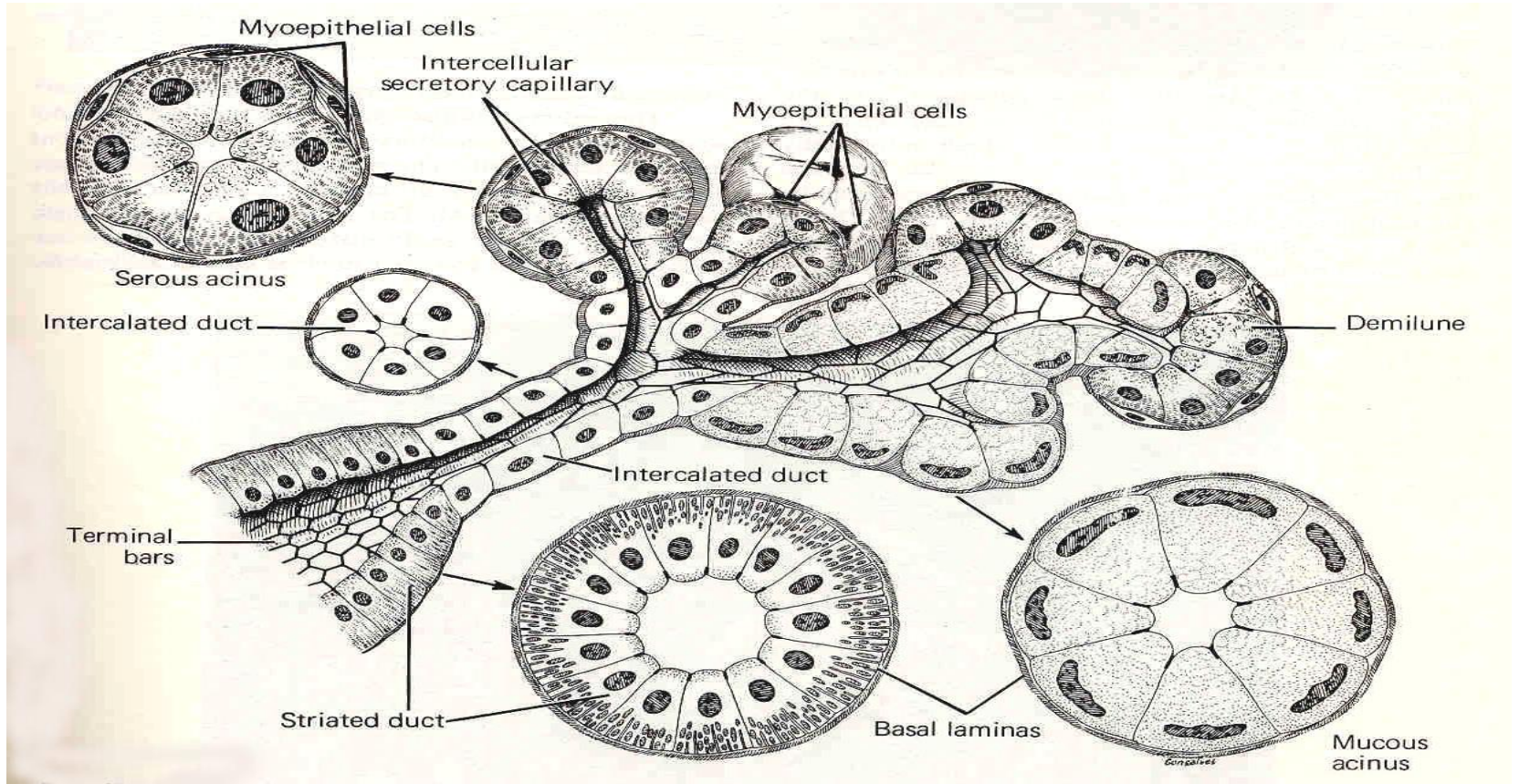
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# Morphology of structures associated with secretory units in digestive glands



From Junqueira et al. 1975

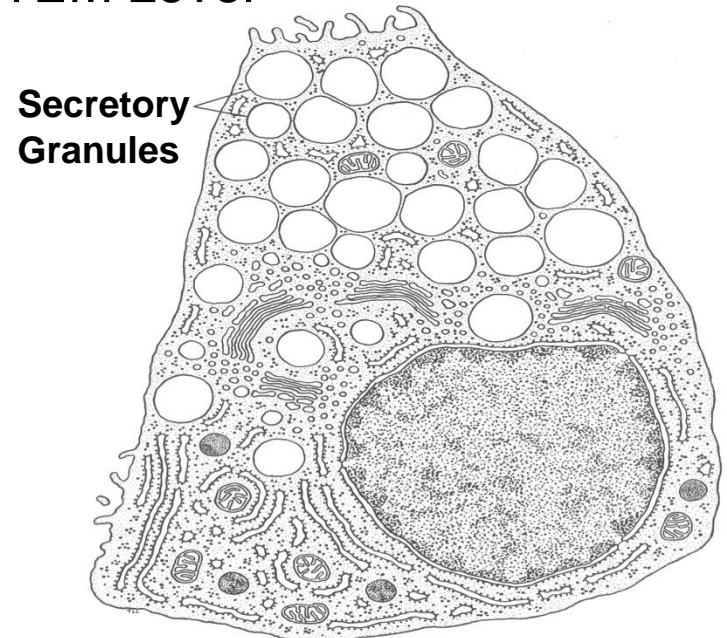
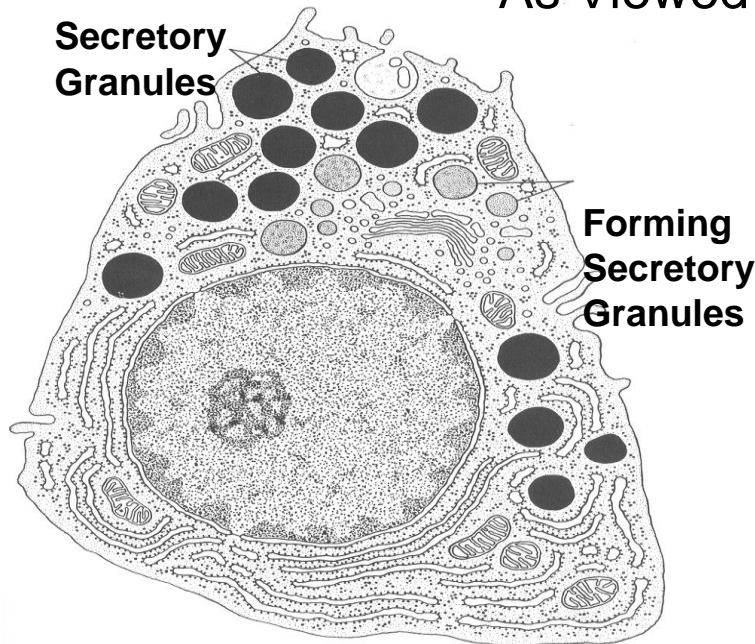


# SECRETORY EPITHELIAL CELLS of Salivary Gland

**SEROUS-SECRETING CELL**

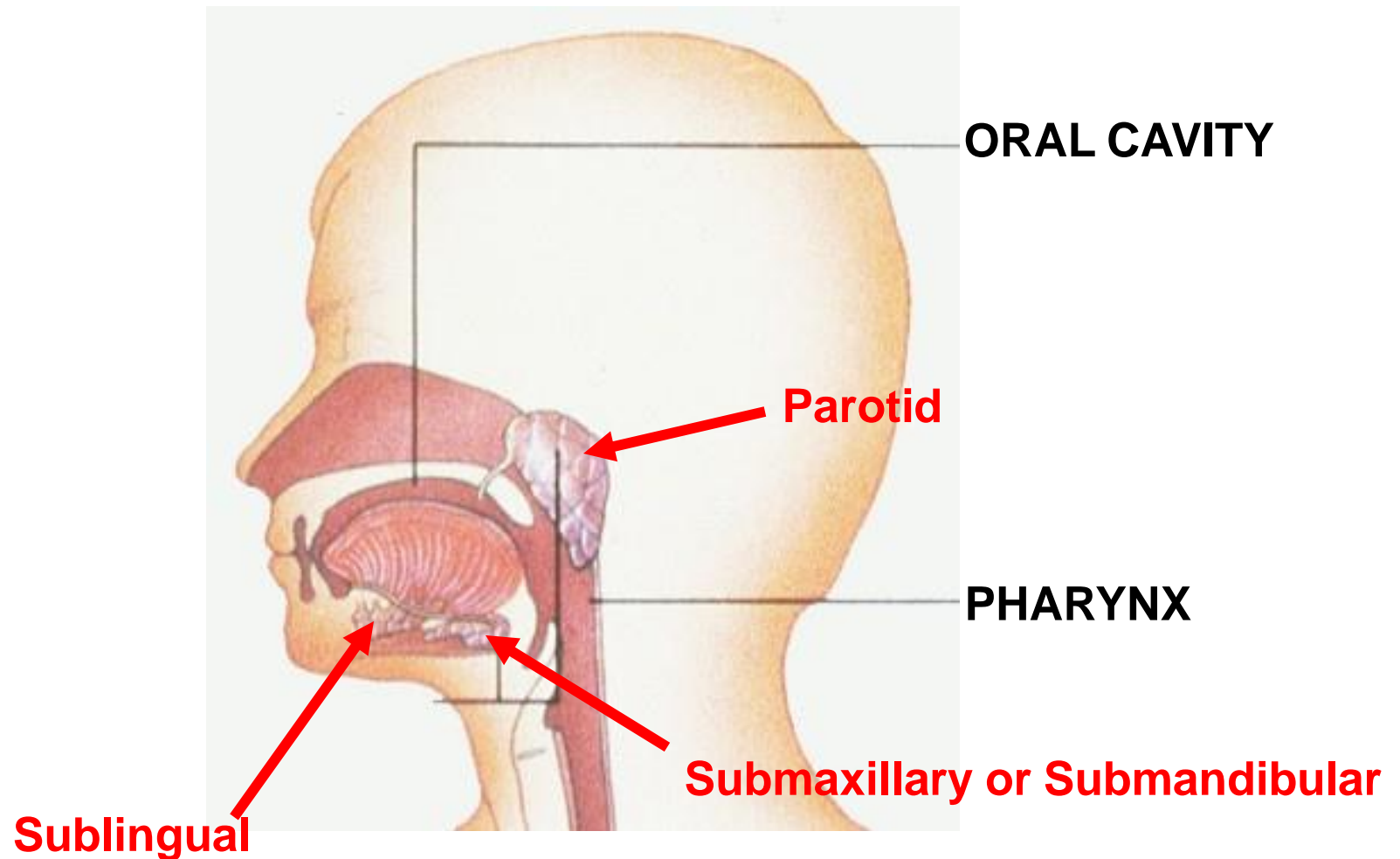
**MUCUS-SECRETING CELL**

As Viewed at TEM Level



Source: Lentz. 1971. Cell Fine Structure.

# Oral cavity and pharynx



# Structures found in major salivary glands

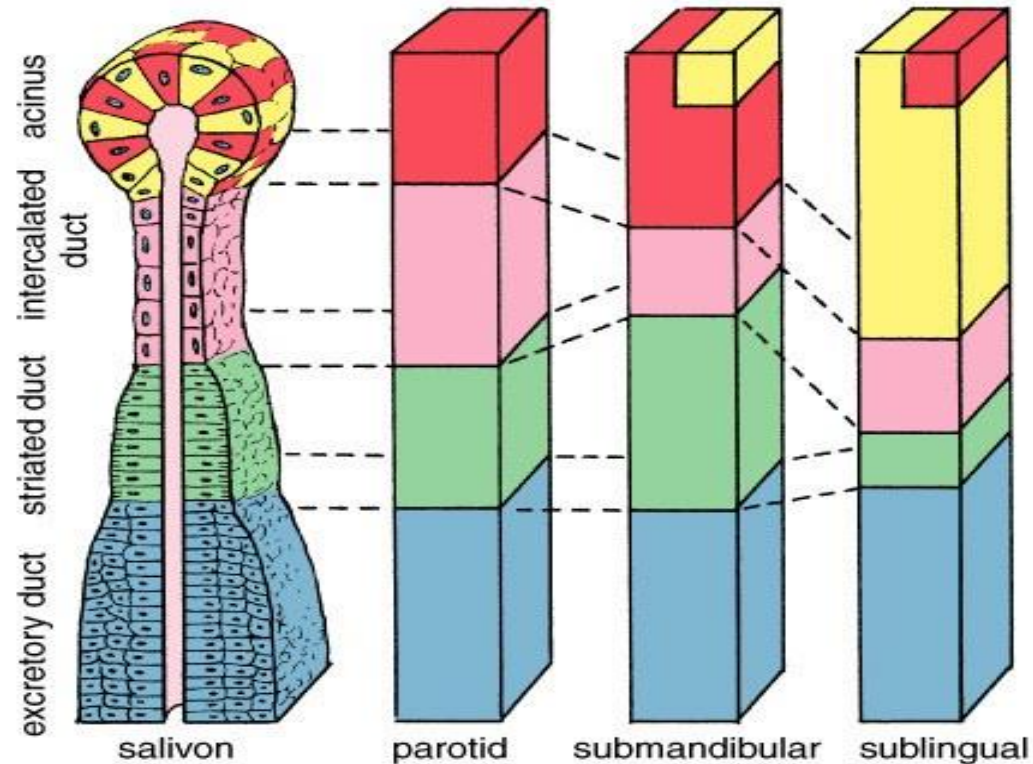


Figure 15.22. Diagram comparing the components of the salivon in the three major salivary glands.

# COMPARISON OF DIGESTIVE GLANDS

<b>Gland</b>	<b>Type of units</b>	<b>Striated ducts</b>
<b>Parotid</b>	<b>all serous</b>	<b>present</b>
<b>Submandibular</b>	<b>serous + mixed</b>	<b>present</b>
<b>Sublingual</b>	<b>all mixed</b>	<b>absent or few</b>
<b>Pancreas</b>	<b>all serous</b>	<b>absent</b>

# Liver structure

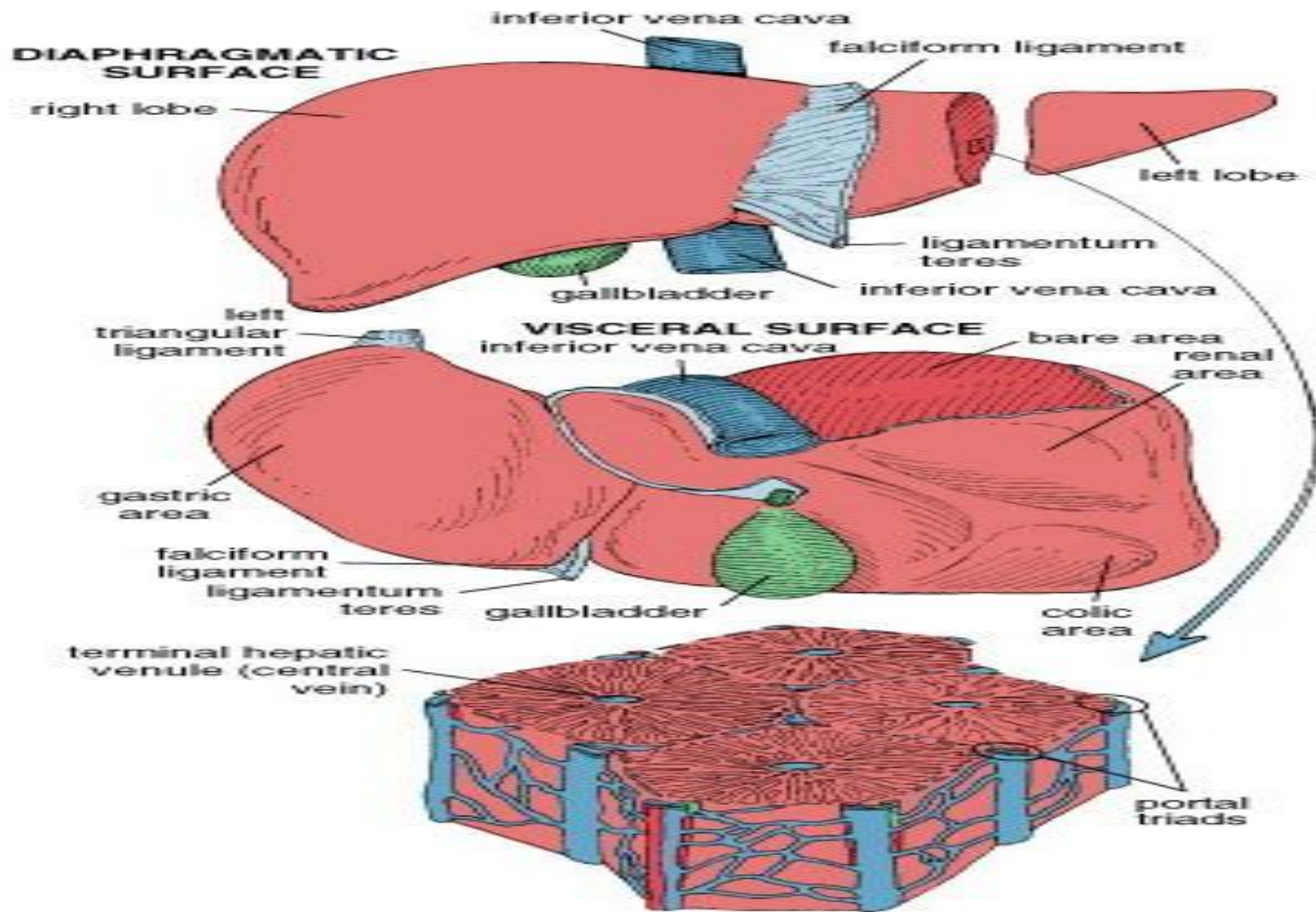
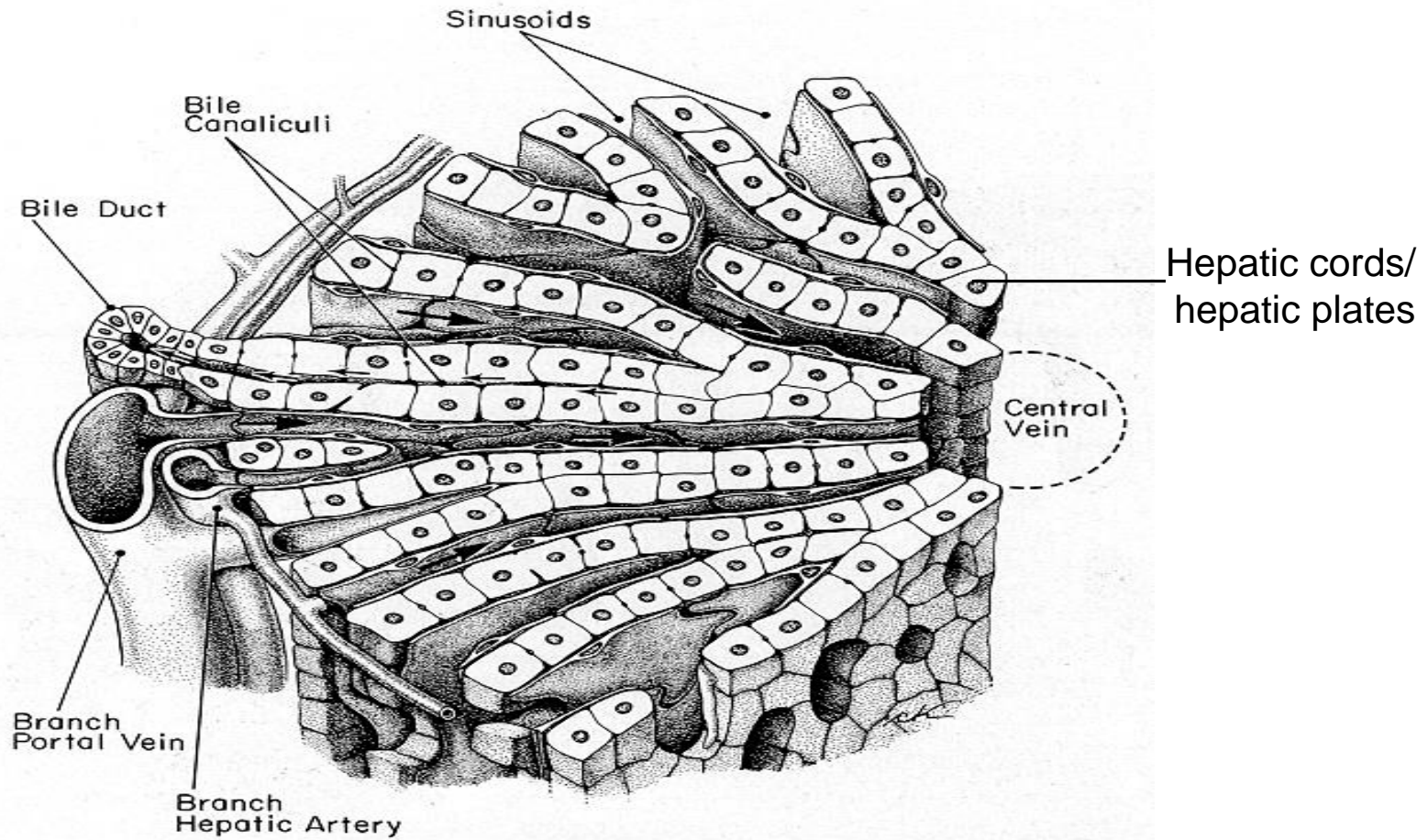


Figure 17.1. Anatomical structure of the liver.

# HEPATIC LOBULE



Source: Bloom and Fawcett. 1975. A Textbook of Histology. 10th Edition.

# Bile duct and gall bladder

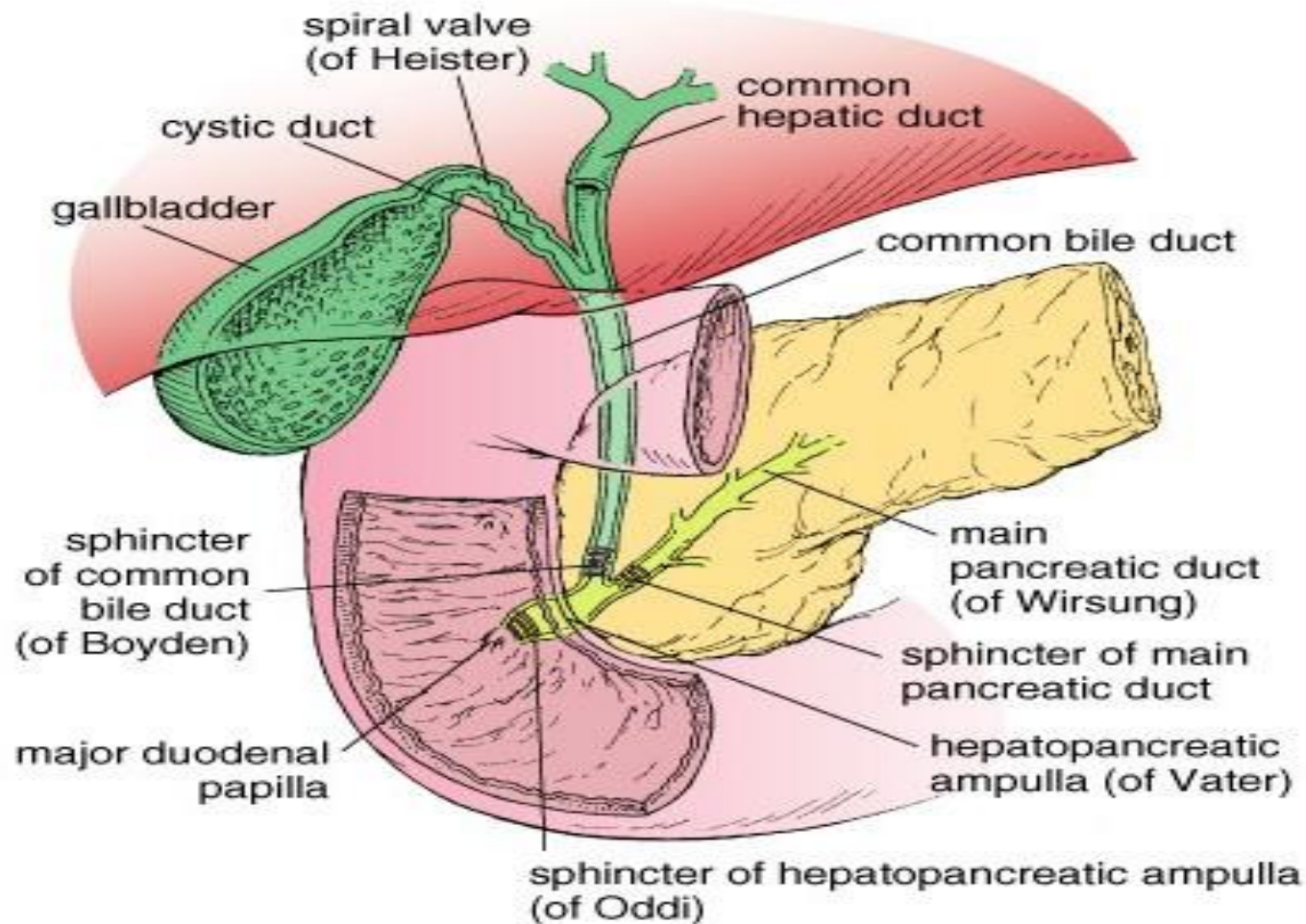


Figure 17.15. Diagram showing the relationship of hepatic, pancreatic, and gallbladder ducts.

# Wall structure of the gall bladder

## Mucosa

simple columnar epithelium with apical microvilli and lateral intercellular spaces

lamina propria of loose FECT

mucous glands may be present, mostly in the neck region

## Muscularis externa

bundled smooth muscle without clear layers

## Adventitia or serosa

loose FECT +/- mesothelium



Figure 17.16. Photomicrograph of the wall of the gallbladder. x175.