

# Digestive System of *Scoliodon*



# Digestive system of *Scoliodon*



➤ The digestive system of *Scoliodon* includes:

- **Alimentary canal:**

- Mouth

- Buccal cavity

- Pharynx

- Oesophagus

- Stomach

- Intestine

- **Digestive gland:**

- Liver

- Pancreas

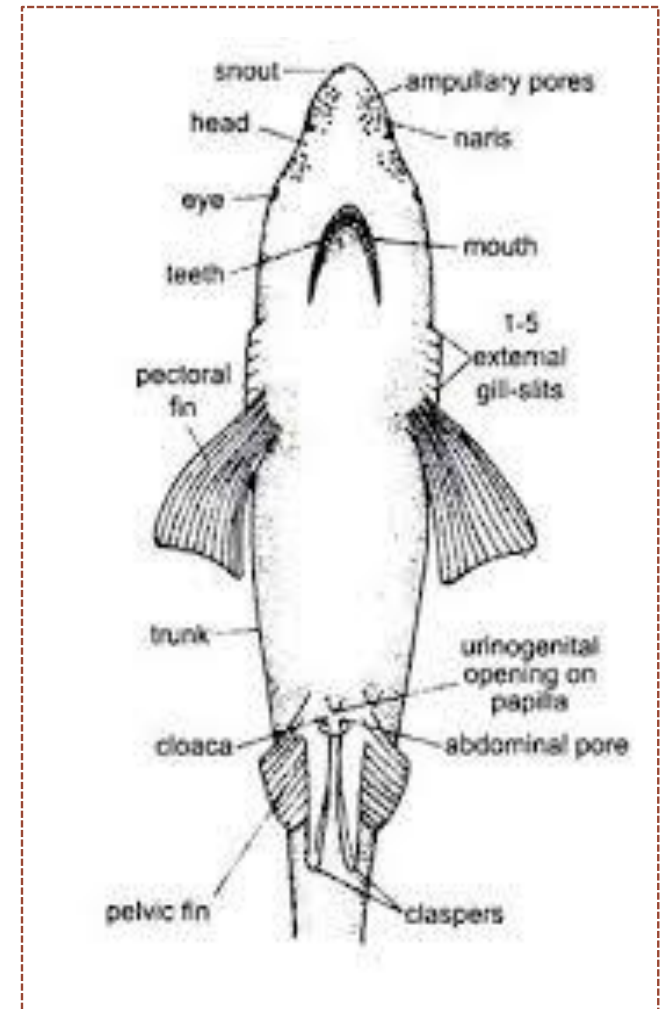
- Caecal gland or rectal gland

- Spleen

# Alimentary canal



- **Mouth:** It is semi-oval slit bounded by upper and lower lips.
- **Buccal cavity:**
  - Mouth leads right into a dorso-ventrally flattened buccal cavity lined by jaws.
  - Teeth are homodont, sharply pointed and directed backwards.
  - They are polyphyodont and arranged in many rows. Teeth help in grasping the prey.
  - On the floor of the buccal cavity thick, flat, and non-muscular tongue is present.
- **Pharynx:**
  - Posteriorly buccal cavity opens into pharynx.
  - Lateral side of pharynx contains an oval pit of spiracle and five separate gill-slits



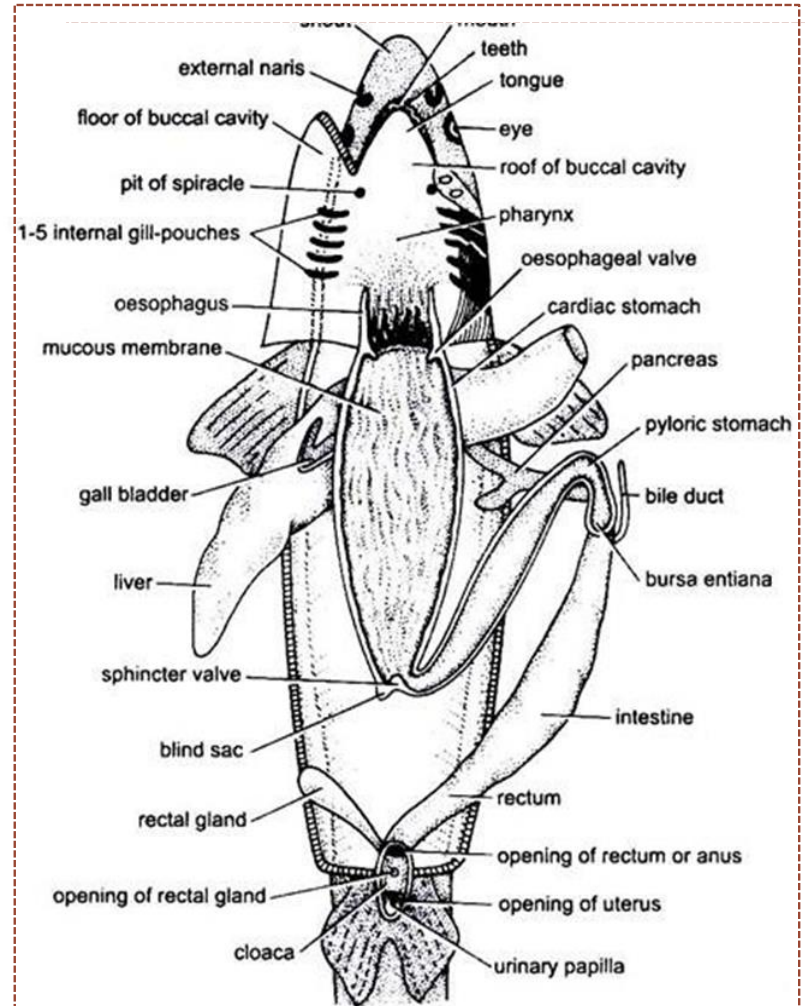
# Alimentary canal

## ➤ Oesophagus:

- Pharyngeal space cavity narrows down posteriorly into a short tube, the oesophagus.

## ➤ Stomach:

- Stomach is a U-shaped large cavity.
- Its proximal limb, the cardiac stomach is longer, wider and distensible.
- Its distal limb is shorter and narrower and is known as pyloric stomach.
- At the junction of cardiac and pyloric stomach a small blind sac in addition to a sphincter valve is present.
- Pyloric stomach ends with a strong circular muscle band known as pyloric valve guarding its opening into a thick-walled muscular chamber, the **bursa entiana**

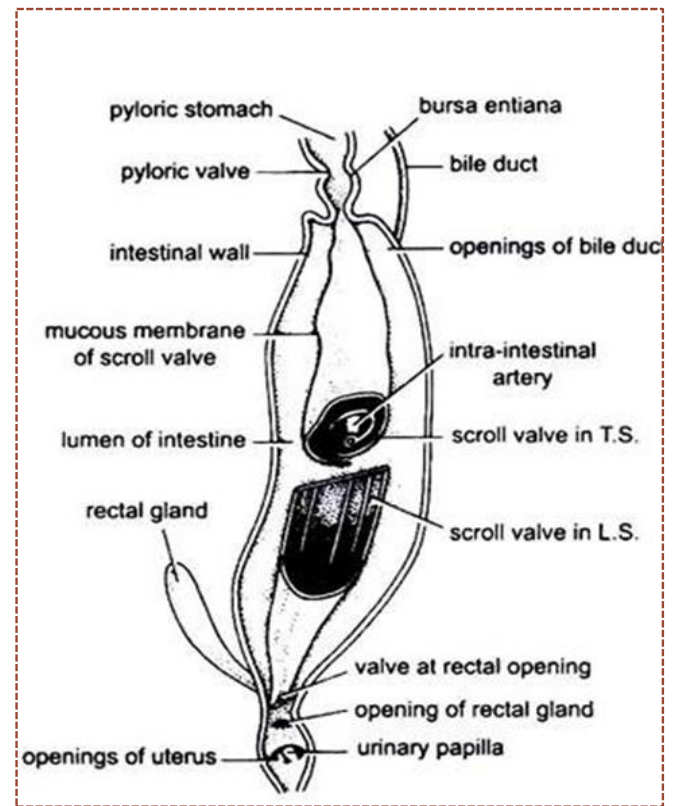


# Alimentary canal



## ➤ Intestine :

- Bursa entiana is followed by intestine. It is a straight wide tube. Its narrow anterior part gets the bile and secretions of pancreatic ducts.
- In *Scoliodon*, the intestine becomes folded anticlockwise into a scroll valve or spiral valve. It gives increased surface area for absorption.
- The last part of gut is referred to as rectum. It is a short and narrow tube opening behind through anus into the ventral cloaca.
- A small finger-like caecal or rectal gland of unknown function opens dorsally into the rectum .



# Digestive glands



- Liver
- Pancreas
- Caecal gland or rectal gland
- Spleen

# Digestive glands



## ➤ **Liver :**

- It is a big yellowish bilobed gland.
- Bile is collected in V-shaped gall bladder, lies inside the right lobe of liver.
- A narrow bile duct leaves the gall bladder and opens into the anterior end of the intestine.
- Bile duct also gets branches from the lobes of liver. It secretes bile, stores glycogen and fat and destroys worn out erythrocytes of blood.

## ➤ **Pancreas:**

- It is a compact whitish or pale bilobed gland running parallel to the posterior part of cardiac stomach and a smaller ventral lobe closely applied to the pyloric stomach.  
The small pancreatic duct open into the intestine just opposite the opening of the bile duct .

# Digestive glands



## ➤ **Caecal or rectal gland:**

- Caecal or rectal gland is a small finger like body attached by its duct to the dorsal side of rectum into which it opens.
- It is highly vascular and composed of lymphoid tissue. Its function is unknown.

## ➤ **Spleen:**

- It is a large gland closely attached to the cardiac and pyloric stomach.
- It has no physiological relation with alimentary canal and functionally associated with circulatory system



# Food and physiology of digestion



- *Scoliodon* is a predaceous carnivore feeding mainly on other fishes. Its diet can also consist of crabs, lobsters and worms.
- Food as a whole is swallowed; no digestion takes place in buccal cavity. Main digestion occurs inside the stomach via the movement of Pepsin and HCl of gastric juice.
- Bile and pancreatic juice containing trypsinogen, amylase and lipase act upon the semi-digested food in the gut.
- Scroll valve in intestine serves to retard the speed of passage of food to amplify the time of digestion and increase the surface of absorption .

# References



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