

DIGESTIVE SYSTEM OF PIGEON

For rapid and efficient digestion, a number of unique features are found in birds. The digestive system of Pigeon exhibiting, like other birds and consists of —

- ① Alimentary canal ② Digestive glands

① Alimentary Canal:

It is large coiled tube of various diameter and includes —

- (i) Mouth: It is wide slit like opening bounded by upper and lower bony beaks without teeth.
- (ii) Buccal cavity: Mouth opens into buccal cavity. Its floor is occupied by tongue. Taste buds are scanty.
- (iii) Pharynx: It is situated just behind buccal cavity. The roof has paired openings of Eustachian tubes which have membranous walls with fimbriated borders and hanging like a curtain forming the soft palate. The glottis is situated just behind the tongue and the wall of glottis is supported by laryngeal cartilage. Posteriorly the pharynx opens into the oesophagus through a large wide opening called gullet.
- (iii) Oesophagus: It is long, distensible wide tube. It turns back through the neck. At the base of neck it dilates into a large thin walled sac called crop for storage purpose.
- (iv) Crop: The one end of oesophagus modified and expands into a thin walled elastic sac the crop. It serves as a food reservoir in which the hurriedly swallowed and hard food grains are stored, moistened and softened.

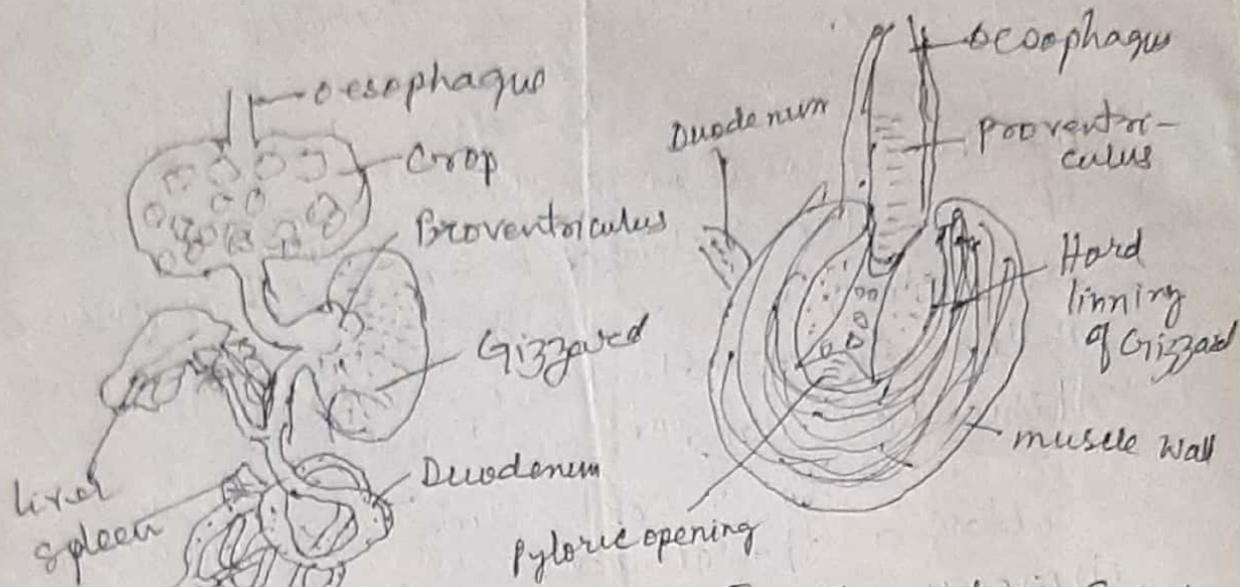


Fig - Stomach in S-Section of Pigeon

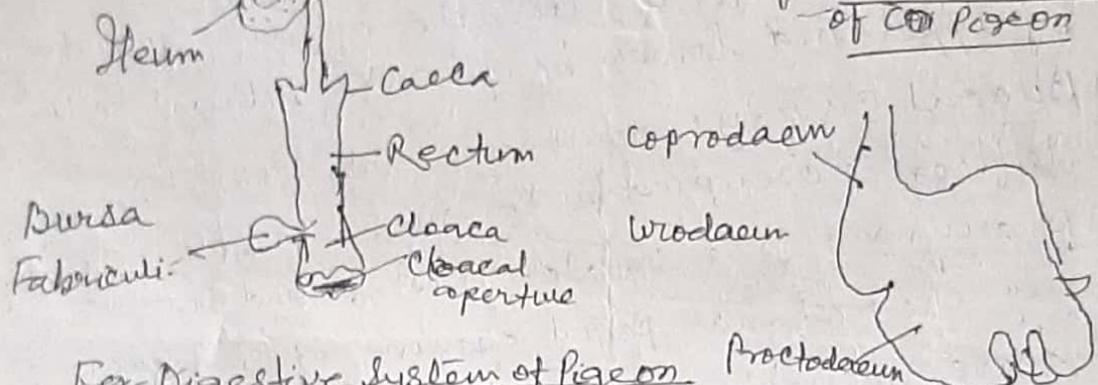


Fig - Digestive System of Pigeon

Fig - Rectum of Pigeon

In Pigeon crop also produced a white slimy milk fluid known as pigeon's milk, which is a highly nutritious containing protein, fat and ash content. The milk is produced by the degeneration of the cells lining the crop. From the crop the oesophagus again constitute behind passing dorsal to the heart to open into the stomach.

- (v) Stomach: Stomach is divided into two parts
 - (a) Proventriculus and
 - (b) Gizzard.

(a) Proventriculus:

It appears as a posterior dilatation of the oesophagus but is actually the anterior glandular

part of stomach. It contain large gastric glands. The gastric glands secrete gastric juice.

(b) Gizzard: It is ~~sope~~ specialized modified part of stomach. It is large and hard structure which is laterally compressed and has a shape of biconvex lens. ~~The~~ Its wall is very thick due to ~~particular~~ well developed circular muscles which radiates from two tendons, one on each side of the convex surface. The lumen of gizzard is very narrow and lined with a thick yellow or greenish horny coating which is secreted by numerous tubular glands present in its epithelial lining. The horny layer has ridges and grove between which food can thoroughly churned. The gizzard lead into duodenum.

(vi) Duodenum: It is U-shaped in appearance and enclosed the pancreas between its two limbs. Internally duodenum contains Villi, Crypt of Lieberkum and goblet cells etc.

(vii) Ileum:: It is long and much coiled tube in which duodenum open. Villi is large to increase surface area for absorption.

(viii) Rectum: ~~The~~ Ileum open into rectum. Junction between ileum and rectum has a pair of small blind caeca.

(ix) Cloaca: Rectum open into a chamber called cloaca which is divided into 3 parts — Coprodaeum, Urodaeum and Proctodaeum

In younger bird bursa-fabricii is found on dorsal to cloaca.

② Digestive glands

- (i) Salivary Buccal glands: It is found in Buccal cavity which ~~only~~ moistened the food and probably contain amylase.
- (ii) Liver: It is large bilobed gland, dark red in colour. From each lobe arise bile duct there is no gall bladder in Common Pigeon (Columba livia), but may present in other some birds. Bile contains bile salt.
- (iii) Pancreas: It is compact reddish gland situated between the two limbs of the duodenum and pours its secretion in the distal limb of duodenum. Pancreatic juice has several enzymes.

③ Feeding and Digestion.

The pigeon mainly feeds on seeds and cereals. The food is moistened with the help of secretion from Buccal glands. The food enters the crop where it is stored and softened further by buccal amylase. From the crop the food passes into the proventriculus and acted upon by proteolytic enzymes secreted by gastric glands. In the gizzard the food is ground up and pass into the duodenum. Here the food is acted upon by the pancreatic and intestinal juice containing digestive enzymes like amylase, trypsin, maltase, invertase etc. Bile also involves with food in the duodenum.

The digested food is absorbed through the wall of ileum and the caeca. The undigested part is pass into rectum and cloaca and is finally ejected through the cloacal aperture.