

# LARGE INTESTINE OF DIFFERENT ANIMALS

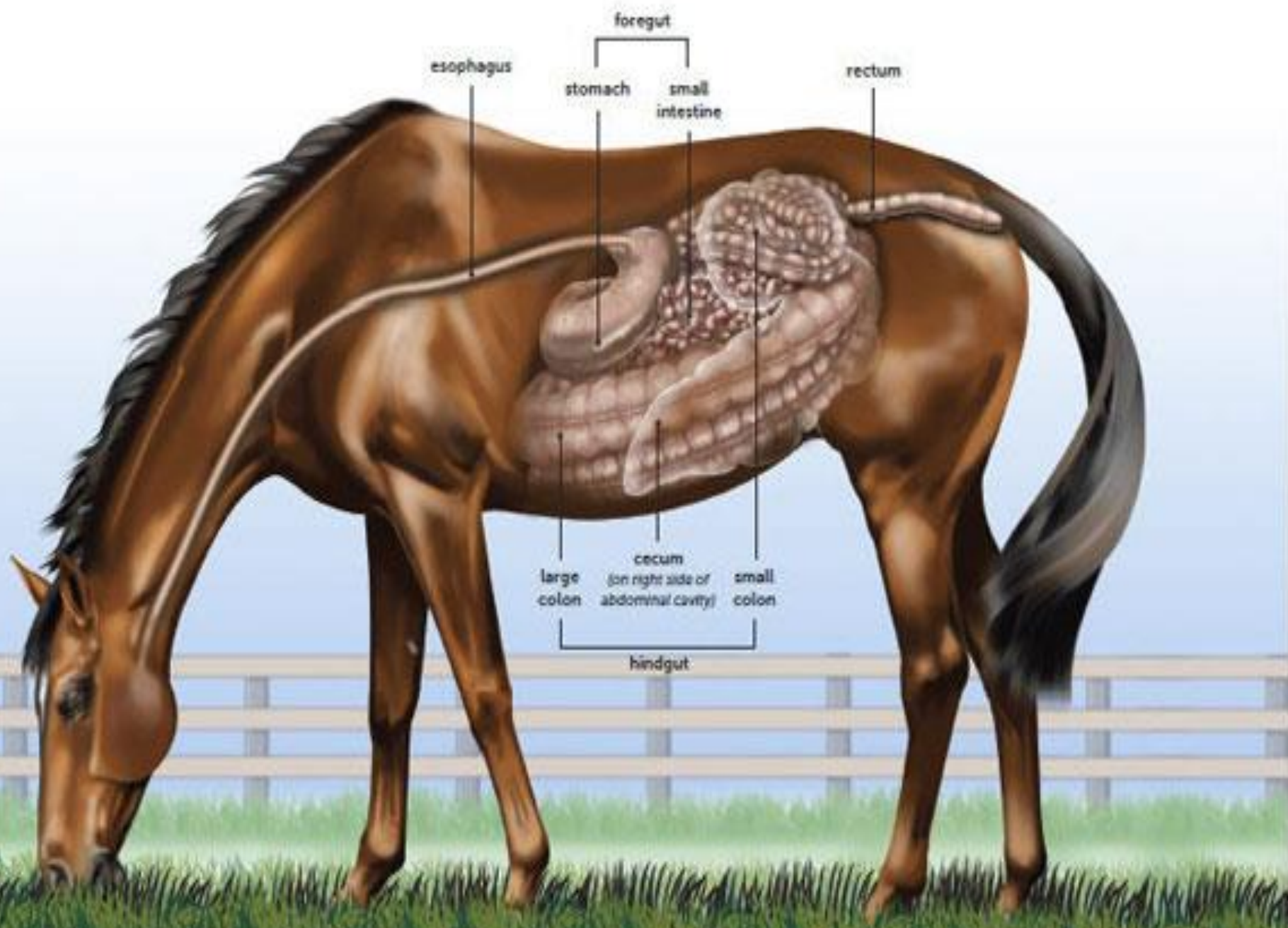
UNIT – 5

DIRECTED BY

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# LARGE INTESTINE OF HORSE

- ▶ Length 7.5 to 8 m
- ▶ It differs from the small intestine with the following features
  - ▶ In being sacculated
  - ▶ In possessing muscular bands
  - ▶ Great size
  - ▶ More fixed position



# CAECUM OF HORSE

- ▶ The caecum is about 1.25 m long
- ▶ It is comma shaped and extends from the right iliac region through the right lumbar region to the abdominal floor behind the xiphoid cartilage
- ▶ It presents *a base, an apex and a body*
- ▶ Both extremities are blind and the ileo-caecal and caeco-colic orifices are placed close together on the lesser curvature of the base of the caecum
- ▶ The base is strongly curved
- ▶ The body is related on the right to the diaphragm, duodenum and liver and on the left to the terminal parts of the colon and small intestine
- ▶ The caecum has four longitudinal muscular bands





# COLON AND RECTUM OF HORSE

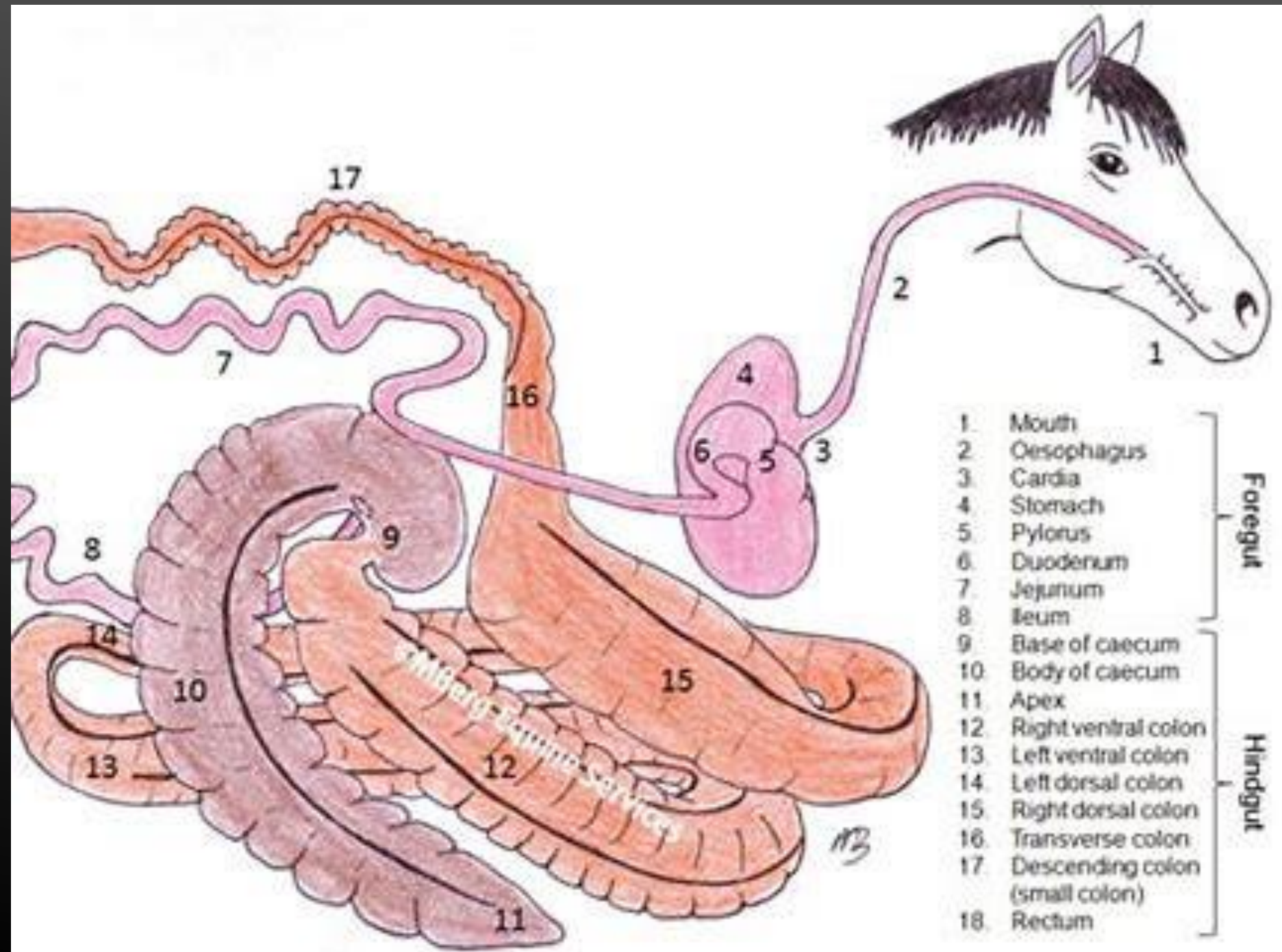
- ▶ Colon is divisible into greater colon and lesser colon based its diameter
- ▶ The greater colon begins at the caeco-colic orifice and ends by joining the small colon
- ▶ It is 3 to 3.7 m. long and has a diameter of 20 to 25 cm It consists of two parallel parts attached by folds and it is kept folded in the abdominal cavity so that it presents 4 parts
- ▶ The *first part or the right ventral part* begins at the lesser curvature of the base of caecum, passes downwards and forwards and bends at the xiphoid cartilage of the left and backward forming the sternal flexure

- ▶ The *second part or the left ventral part* passes backwards on the abdominal floor to the left of the first part of caecum, reaches the pelvic inlet and bends dorsally and forwards forming the pelvic flexure
- ▶ The *third part or left dorsal part*, passes forwards dorsal to the second part, reaches the diaphragm and left lobe of the liver, turns to the right and backwards forming the diaphragmatic flexure
- ▶ The *fourth part or the right dorsal part* passes backward dorsal to the first part, reaches the medial face of the base of caecum turns to the left and upwards behind the saccus caecus of the stomach, becomes constricted by the coils of the floating small colon

- ▶ *Diameter:* Ventral parts about 20 to 25 cm. Left dorsal about 8 to 9 cm Right dorsal about 50 cm
- ▶ *Muscular Bands:* Ventral parts have four bands.
- ▶ The lesser colon begins from the termination of great colon and lies in the form of coils in the space between the stomach and pelvic inlet dorsal to the left part of great colon
- ▶ Its length is about 3.5 m. and diameter about 7.5 to 10 cm



- ▶ They are mingled with those of the small intestine from which they can be distinguished by means of sacculations and the two muscular bands
- ▶ One of the bands is free; the other is concealed by mesentery
- ▶ It is attached to the sublumbar region by the colic mesentery
- ▶ The rectum is similar to that of the ox but is slightly larger



- |     |                                |         |
|-----|--------------------------------|---------|
| 1.  | Mouth                          | Foregut |
| 2.  | Oesophagus                     |         |
| 3.  | Cardia                         |         |
| 4.  | Stomach                        |         |
| 5.  | Pylorus                        |         |
| 6.  | Duodenum                       |         |
| 7.  | Jejunum                        |         |
| 8.  | Ileum                          |         |
| 9.  | Base of caecum                 | Hindgut |
| 10. | Body of caecum                 |         |
| 11. | Apex                           |         |
| 12. | Right ventral colon            |         |
| 13. | Left ventral colon             |         |
| 14. | Left dorsal colon              |         |
| 15. | Right dorsal colon             |         |
| 16. | Transverse colon               |         |
| 17. | Descending colon (small colon) |         |
| 18. | Rectum                         |         |

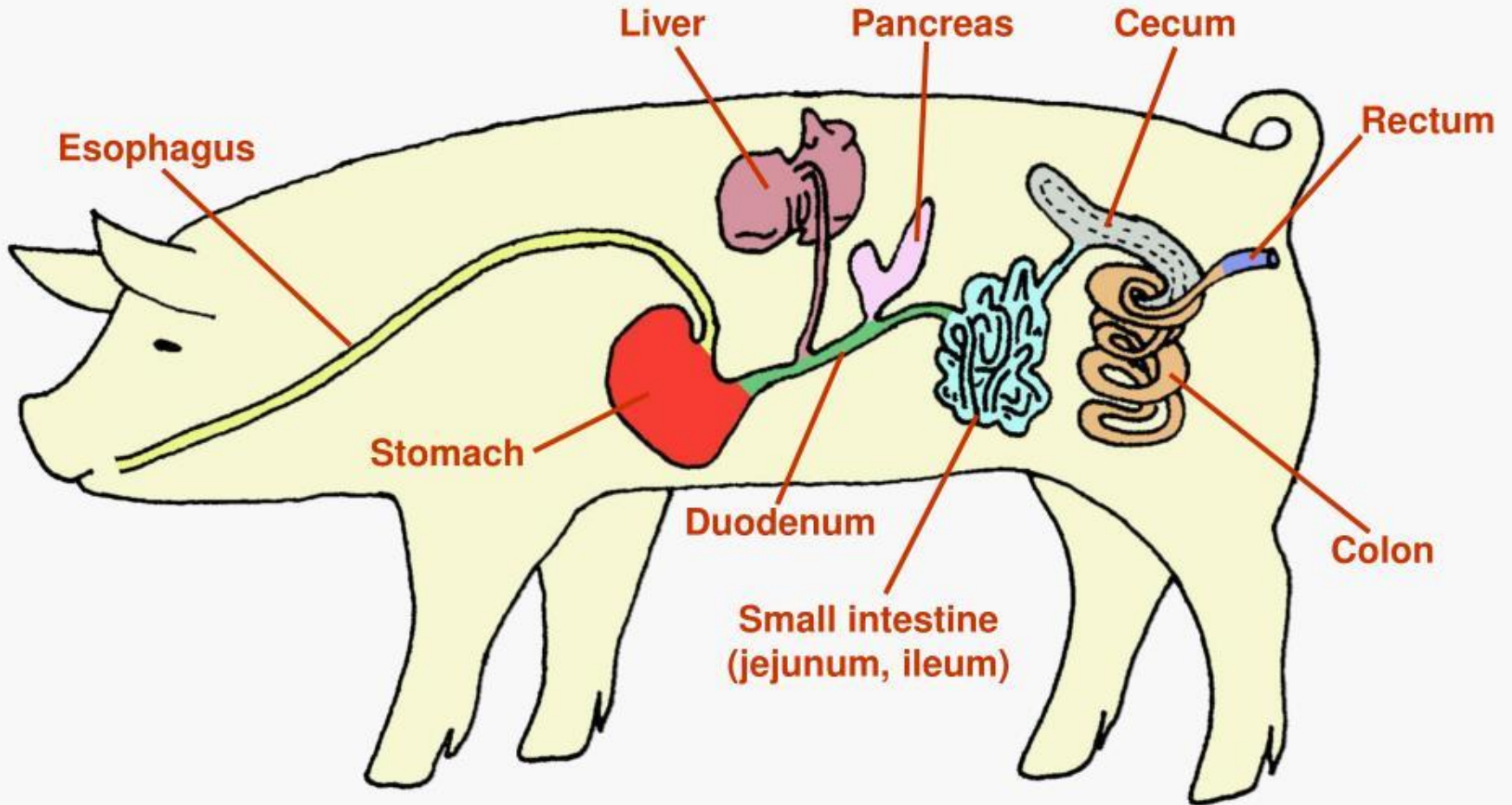
# LARGE INTESTINE OF PIG

- ▶ The caecum is cylindrical
- ▶ It lies in the upper and cranial part of the left flank, and extends ventrally, backward and medially behind the coiled part of the colon, so that its ventral blind end usually lies on the floor of the abdomen near the median plane and at a variable point between the umbilicus and the pelvic inlet
- ▶ The caecum has three longitudinal muscular bands and three rows of sacculations, which is continued a short distance to the colon

- ▶ The solitary nodules are numerous and appear as round prominences. The ileum joins the caecum obliquely and projects considerably in to the latter
- ▶ The colon presents the ascending, transverse and descending parts
- ▶ The ascending colon has three wide centripetal coils, a central flexure and three narrow centrifugal coils
- ▶ The colon lies chiefly to the left of the median plane behind the stomach
- ▶ The rectum is surrounded by a quantity of fat

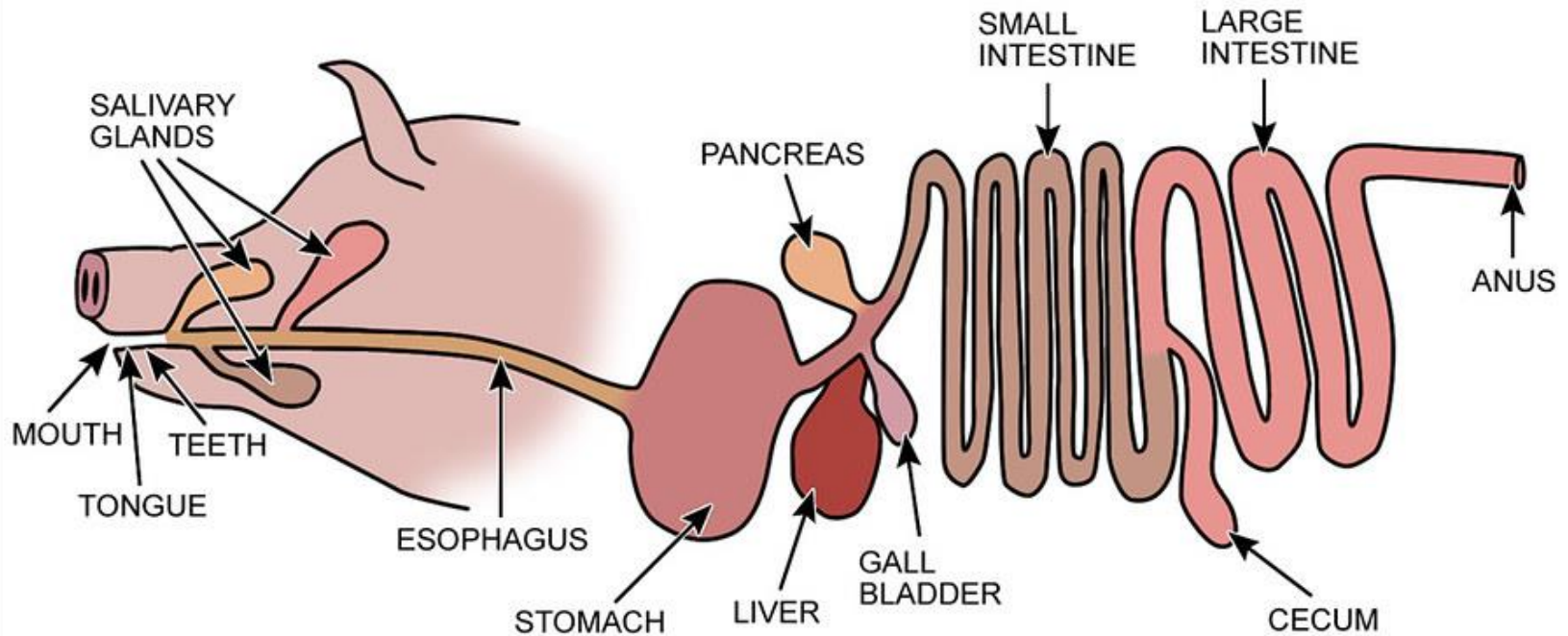


# Digestive Tract - Pig





# Pig Digestive System

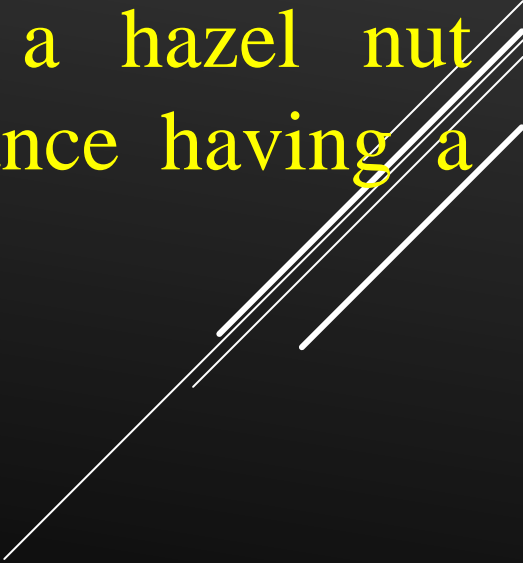


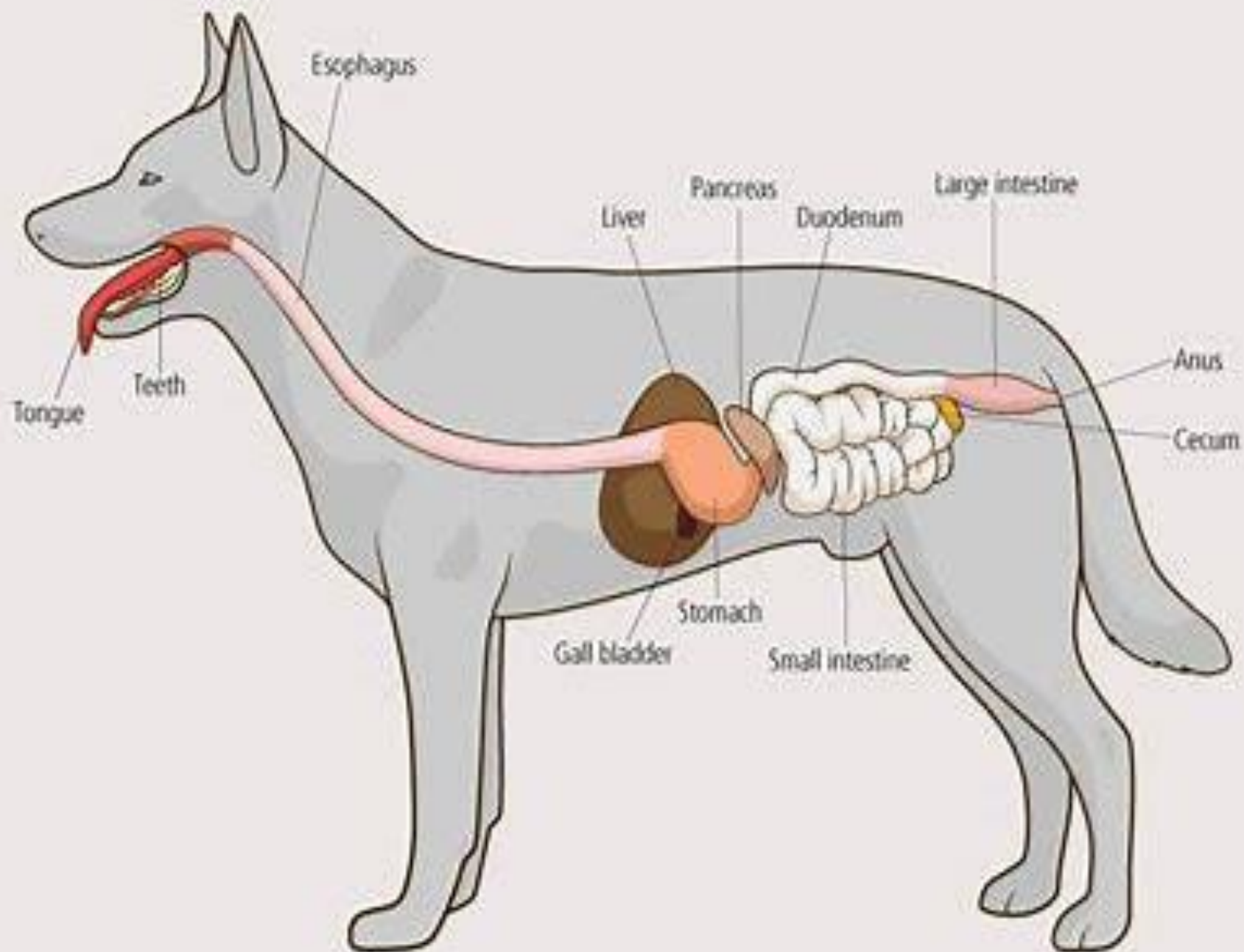
Inspired by digestive system diagrams in Barton, L.D. and G.L. Cooper, 2007. Agriscience: Fundamentals and Applications, 4th ed. Delmar Learning, Clifton Park, New York.

# LARGE INTESTINE OF DOG

- ▶ It is 60 to 75 cm long. It has no bands or sacculations.
- ▶ The caecum is 12.5 to 15 cm It is situated midway between the right flank and median plane
- ▶ It extends as a blind diverticulum from the ileocolic junction and is kept in a flexuous state by peritoneal folds. It opens cranially in to the colon.
- ▶ Colon is attached to the sublumbar region by the mesocolon
- ▶ It has three parts corresponding to the *ascending, transverse, and descending colon* .

- ▶ The first-right part (*ascending*) is very short passing forwards medial to the duodenum, reaches the pyloric part of the stomach
- ▶ Here, it turns to the left crossing the median plane forming the *transverse part*
- ▶ The third-left part (*descending*) passes back in the sublumbar region ventral to the left kidney and inclines to the median plane to be continued as the rectum
- ▶ Colon is of uniform caliber throughout and is devoid of bands and sacculations.

- ▶ The rectum is completely covered with peritoneum. At the junction of the rectum and anus the mucous membrane has stratified squamous epithelium and contains the anal glands
  - ▶ A small opening on either side leads into two lateral anal sacs of the size of a hazel nut containing a dirty grey fatty substance having a peculiar unpleasant odour.
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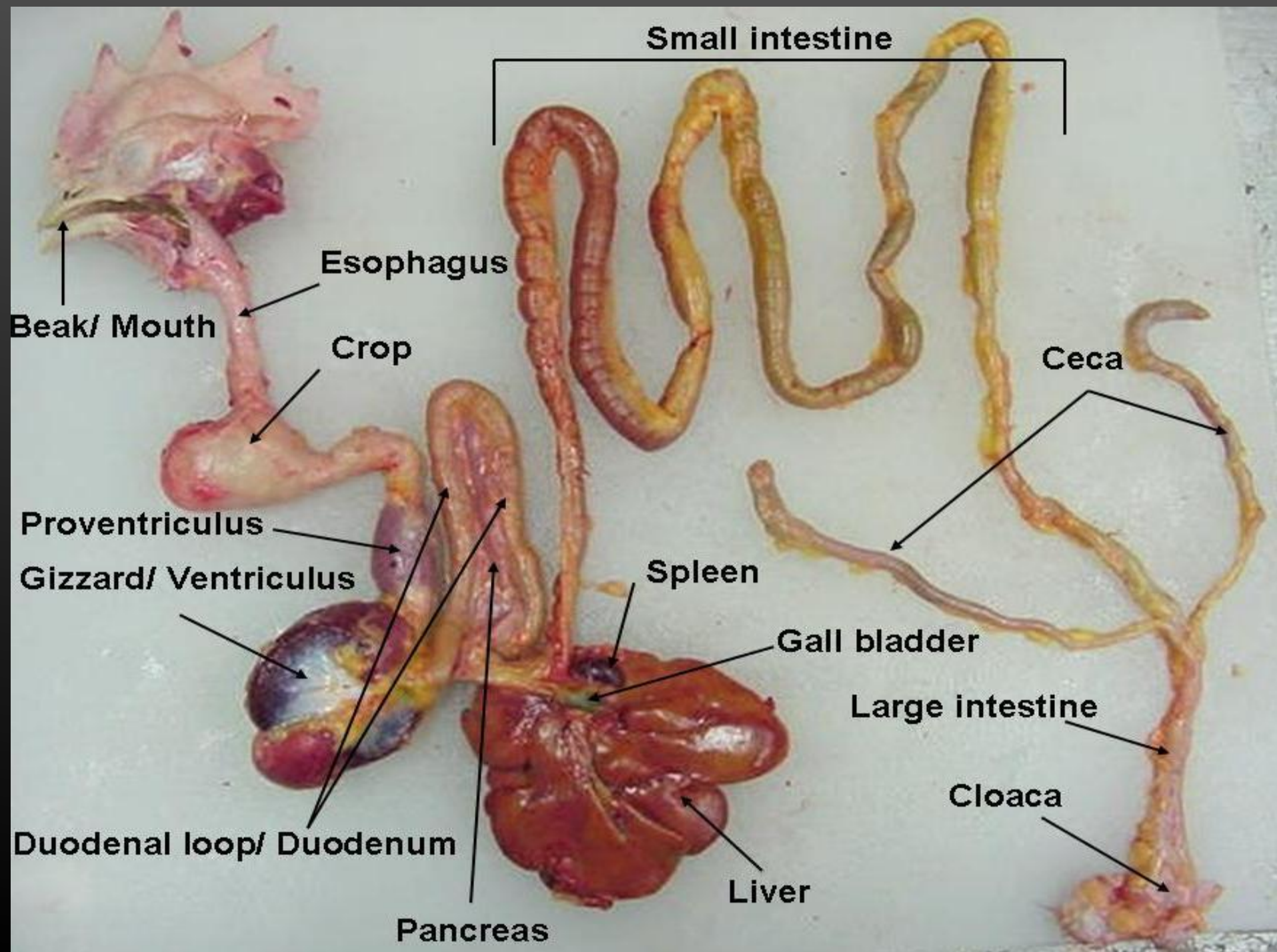




# LARGE INTESTINE OF FOWL

- ▶ The large intestine consists of the two caeca and the colon. The line of demarcation between the ileum and the colon is at the openings of the caeca
- ▶ The *caeca* are two in number, left and right and are two blind tubes about 16 to 18 cm long extending from the ileo-colic junction on either side of it, forwards to the liver and are doubled on themselves
- ▶ They are connected with the gastro-intestinal tract at the junction between the ileum and colo-rectum
- ▶ Each of these tubular structures has a length of about 15cm
- ▶ They extend first cranially and then caudally parallel to the ileum

- ▶ Each caecum has *three parts-proximal, middle and distal*
- ▶ The proximal part is narrow and is connected with the intestine. Middle part is wide and the distal part is expanded
- ▶ The distal part terminates in the form of a pointed end. The wall contains lymphoid tissue, mostly at the proximal part. This lymphoid tissue is known as caecal tonsil
- ▶ The colon or colo-rectum is short straight tube, (without any demarcation between colon and rectum), extending backwards from the openings of caeca, to terminate behind at the cloaca.

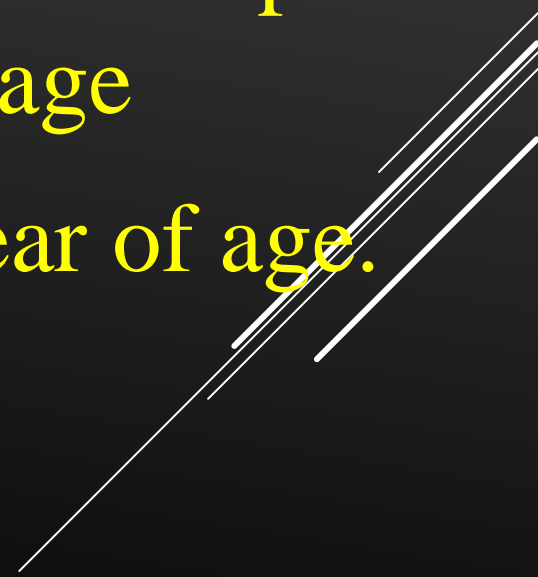


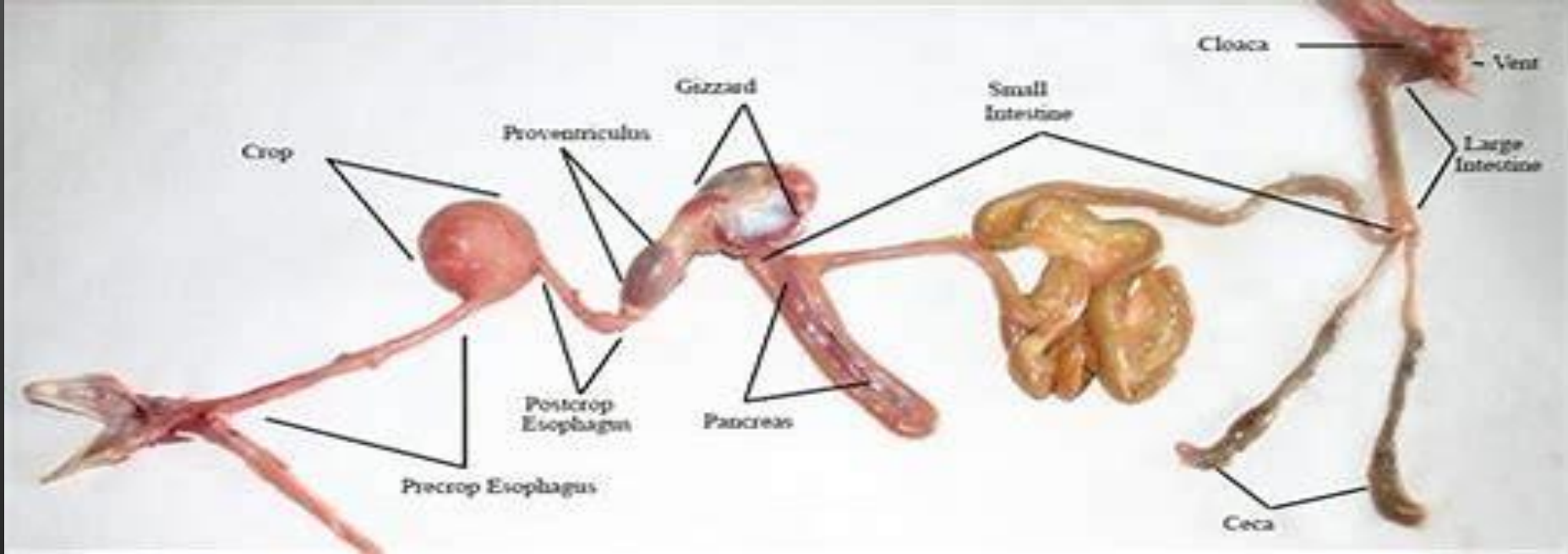
# CLOACA OF FOWL

- ▶ The terminal part of the intestinal tract consists of three compartments separated by contractile folds of mucous membranes
- ▶ The *cloaca* is a tubular structure opening on the exterior, and is the common opening for the digestive, urinary and genital systems
- ▶ It is divisible into three parts; *coprodeum* into which the colon empties
- ▶ It is ampulla like dilated sac as the direct continuation of the colon
- ▶ It receives and temporarily holds the feces passed into it from the colon

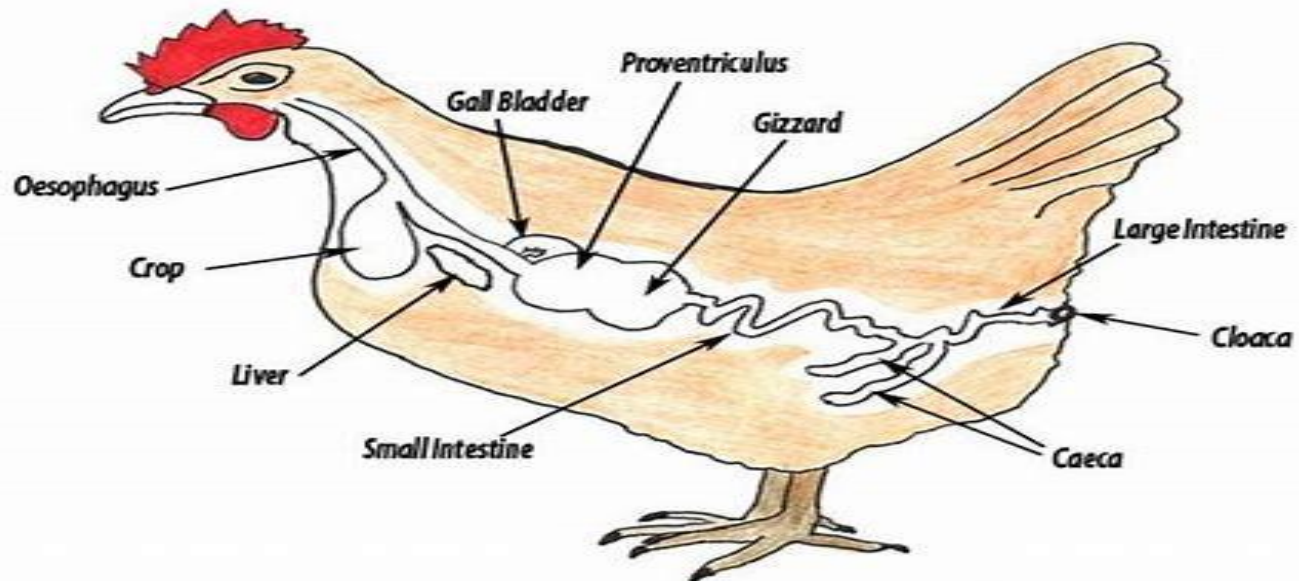
- ▶ The next portion, the *urodeum*, it is less extensive compartment into which the two ureters open into the urodeum in both sexes and in males the seminal duct and in females through a slit-like aperture, the oviduct opens into this segment
- ▶ The last portion- the *proctodeum* is the short, most caudal segment of the cloaca, ends at the vent
- ▶ A small opening in its dorsal wall leads to the cloacal bursa. A small dorsal proctodeal gland is found caudal to the bursa



- ▶ *Vent* is the horizontal slit like opening of the proctodeum
  - ▶ An opening leads from the dorsal wall to the *bursa of Fabricius* - a blind sac like unpaired structure found best developed in chicken about four months of age
  - ▶ It usually disappears at one year of age.
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## The Digestive System of a Chicken



THANKS