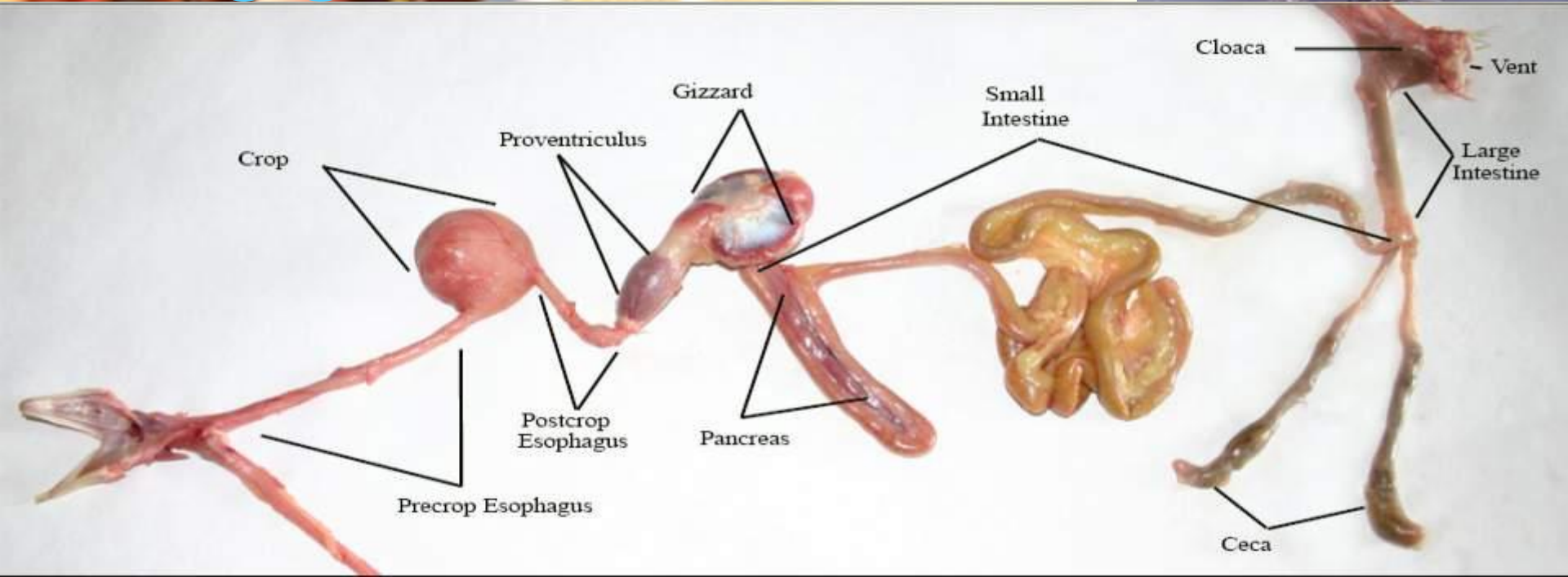




DIGESTIVE SYSTEM IN POULTRY



Did You Know?

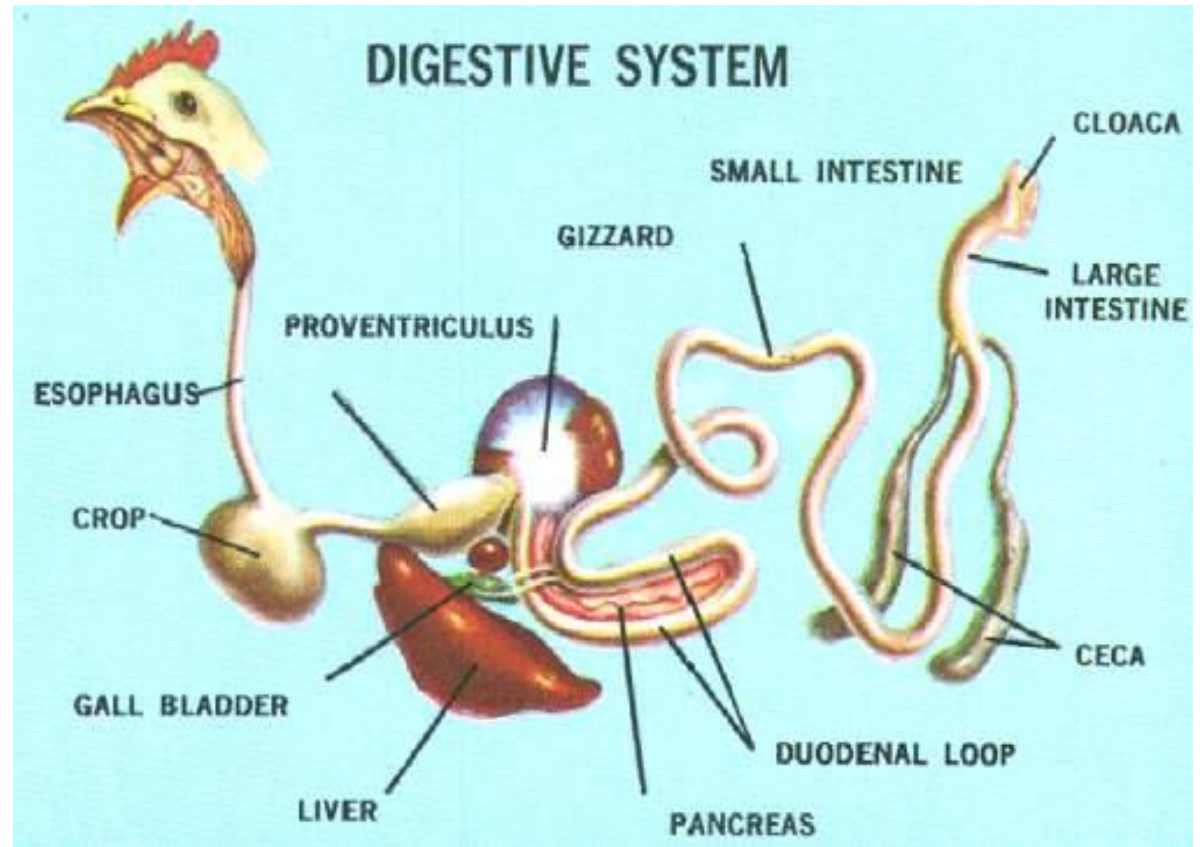
- Digestive system is 75% of the abdominal cavity!
- Birds visually inspect possible food sources.
- Unlike other species of livestock, chickens must stick their head in the air to swallow their food.
- Function of the Digestive System:
- Breaks down feed to utilize the nutrients for growth and maintenance of the animal and excrete wastes not needed by the animal.



Trace the Digestive System

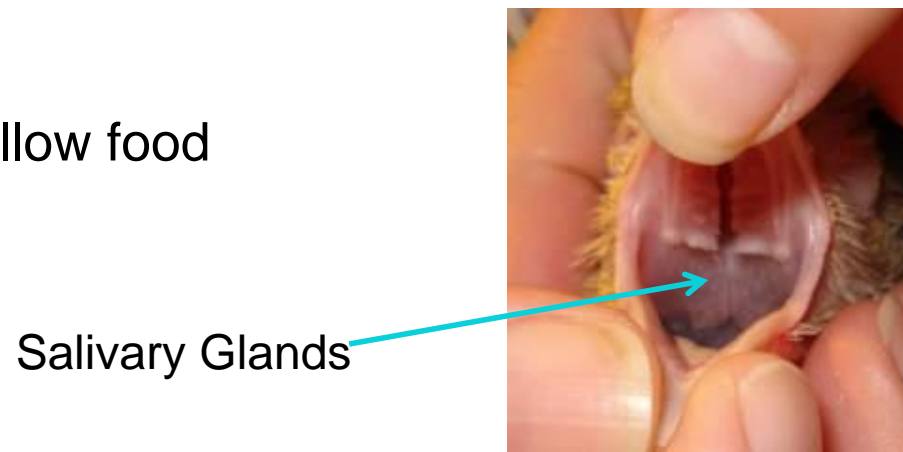
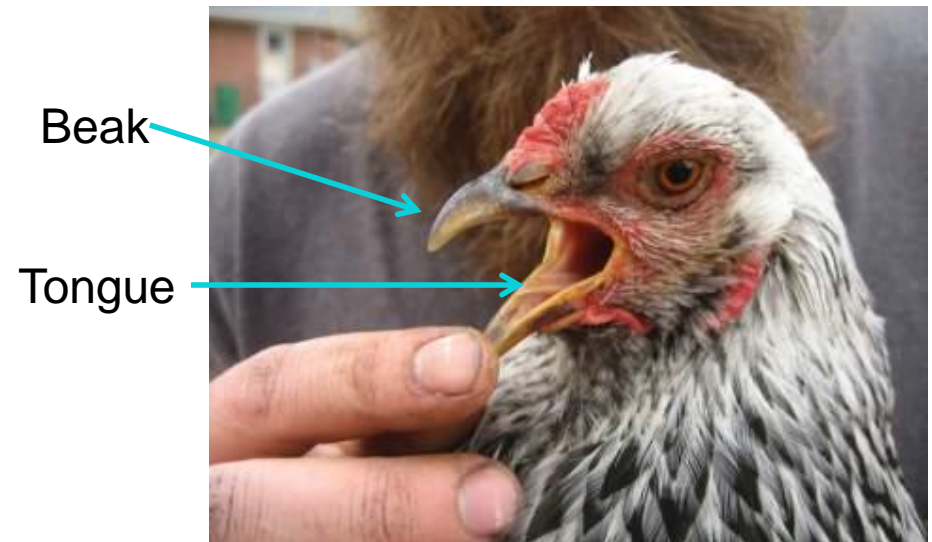
Traveling down chicken's digestive track food goes through:

1. Mouth
2. Esophagus
3. Crop
4. Stomach
 - A. Proventriculus
 - B. Ventriculus "Gizzard"
5. Liver
6. Gall Bladder
7. Pancreas
8. Small Intestine
9. Ceca
10. Large Intestine
11. Cloaca
12. Vent



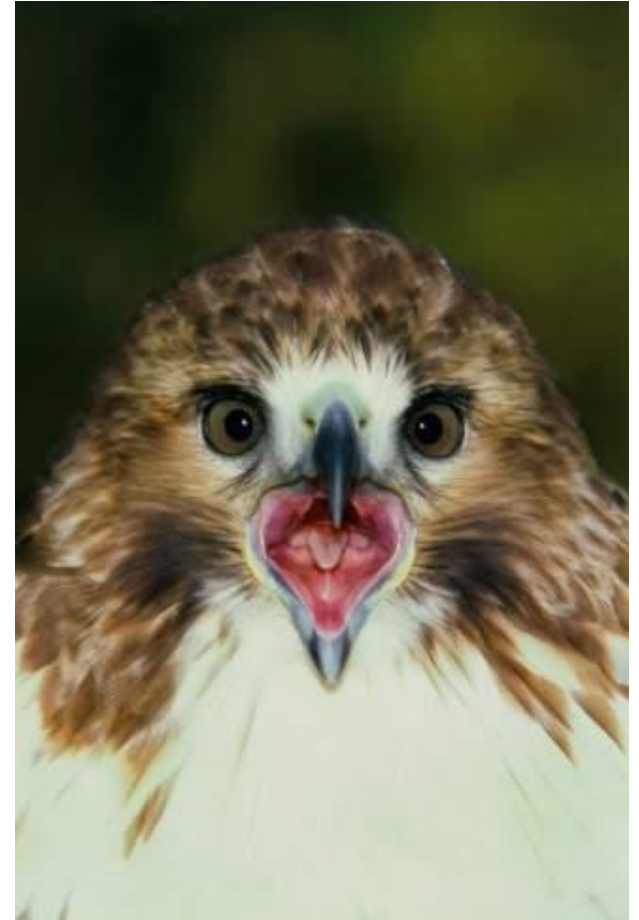
Mouth

- Consists of:
 - Beak
 - Tongue
 - Salivary Glands
 - Production of saliva
 - NO Lips
 - NO Teeth
- Function:
 - Ingest nutrients and swallow food through the esophagus.



Importance of Saliva

- Acts as a Lubricant
- Low ability to taste
- Low enzymatic activity
 - Low ability to break down food



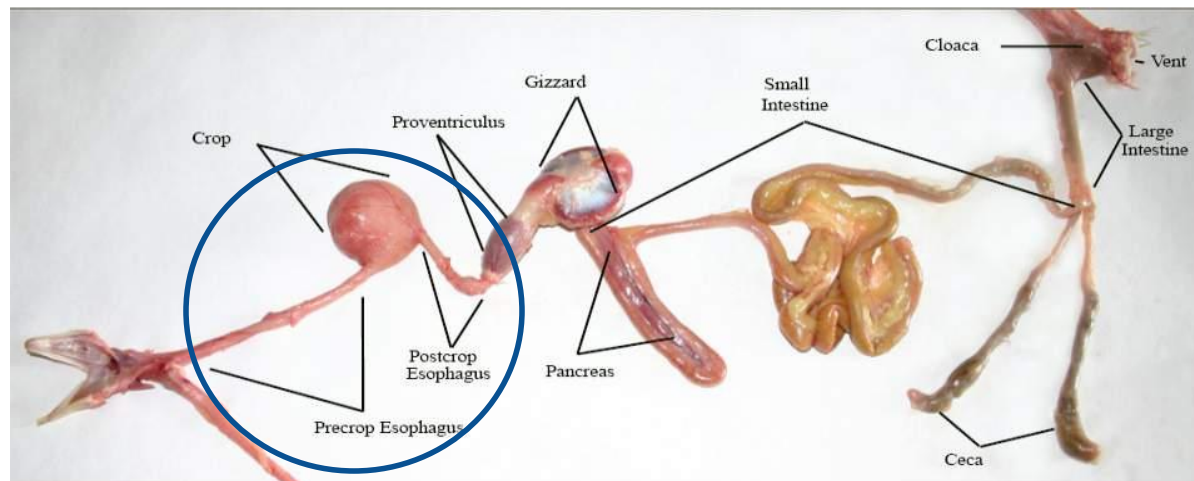
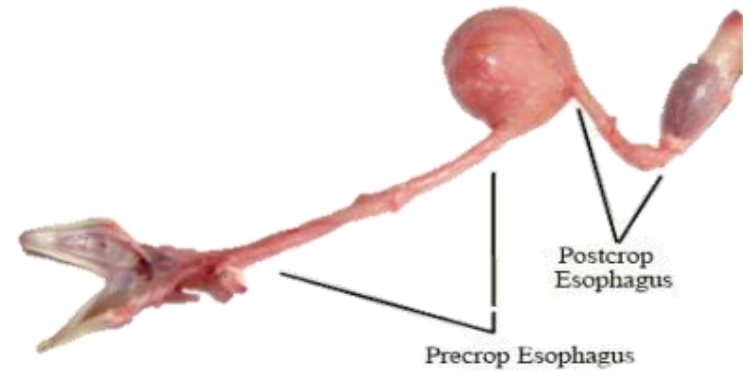
Species Differences of the Mouth

- Poultry:
 - Low taste ability
 - Highly developed salivary glands, produce more saliva than aquatic birds
- Aquatic Birds (non domesticated)
 - Ex: ducks
 - Poorly developed salivary glands
 - Eat many foods that are wet that replace the need for salivary glands
- Livestock Species
 - High taste ability
 - Produce high amounts of saliva
 - Ex: cattle produce 15-20 gallons of saliva a day



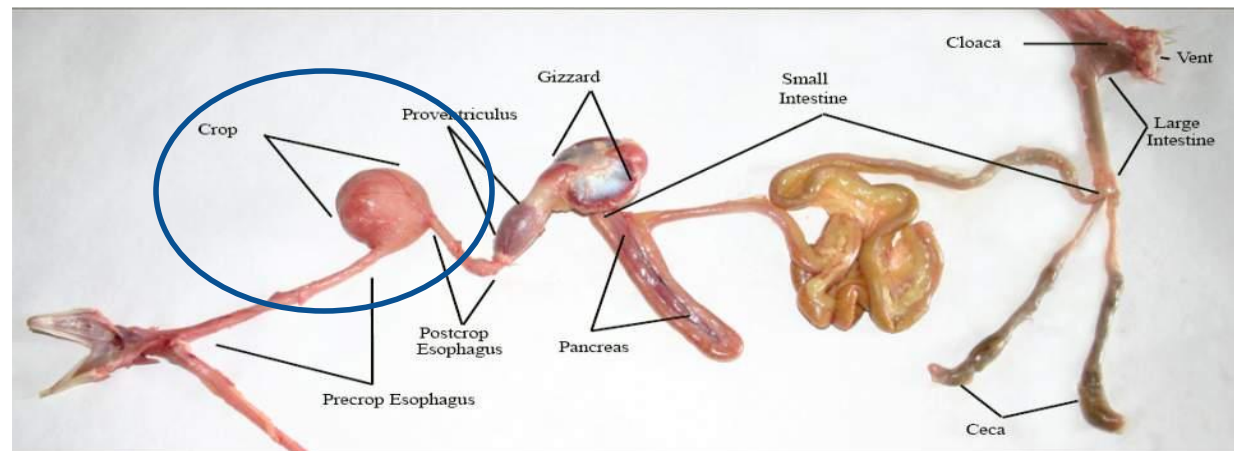
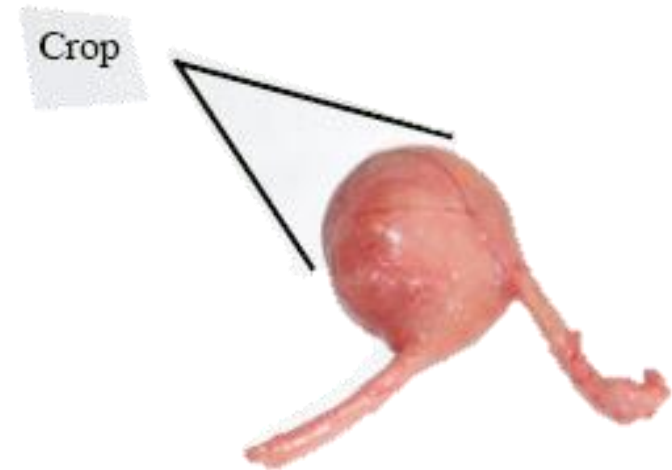
Esophagus

- Connects the mouth to the crop and connects the crop to the Proventriculus.
- Function: transports food and water to the crop or the Proventriculus.



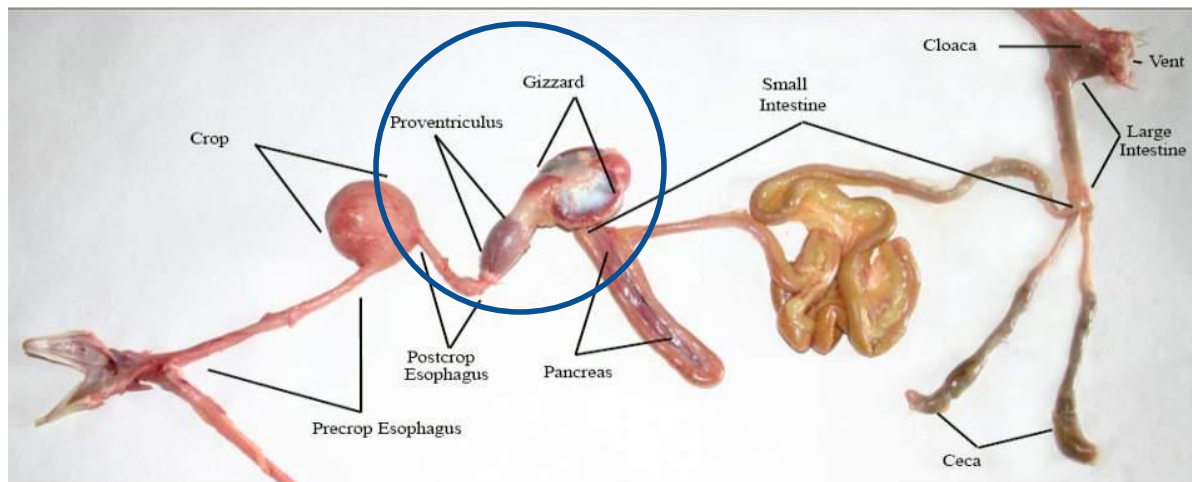
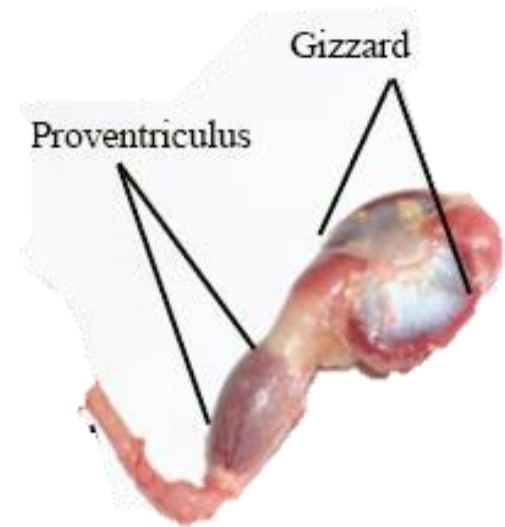
Crop

- Connects to the Proventriculus
- **Function:**
 - Store undigested food
 - Moisten and soften the ingested food
- Birds can eat food, store it here, and digest it later
- **Species Differences:**
 - Migratory birds use the crop to store days worth of food so that when migrating they do NOT need to find food.



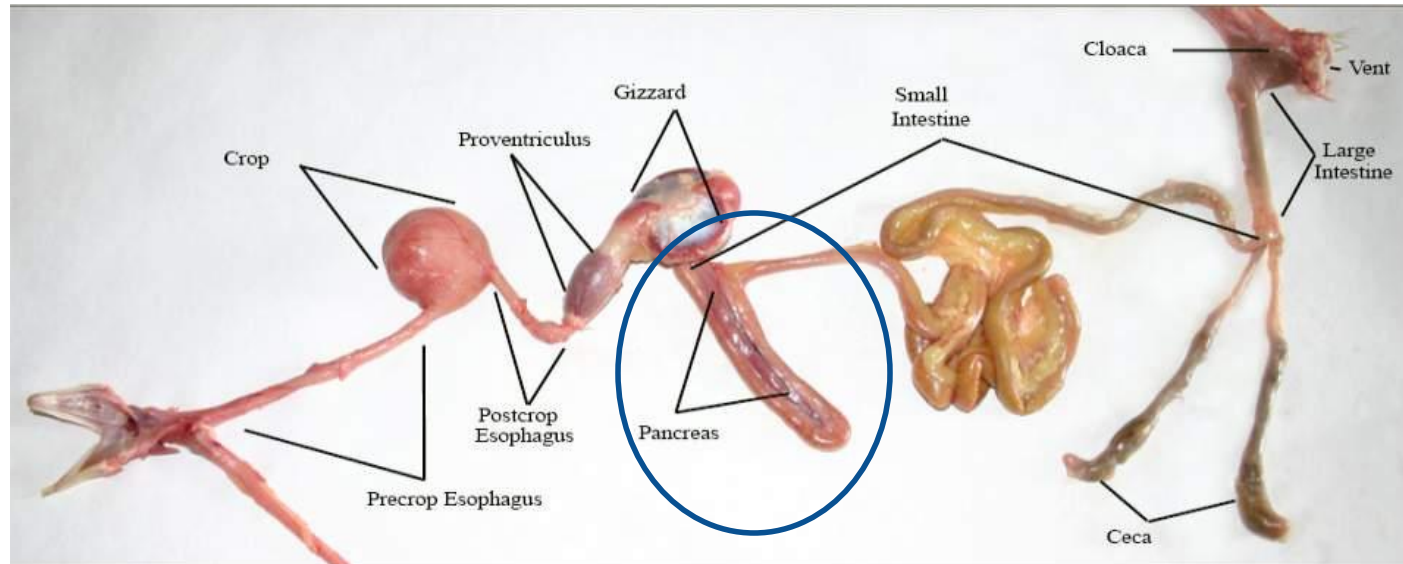
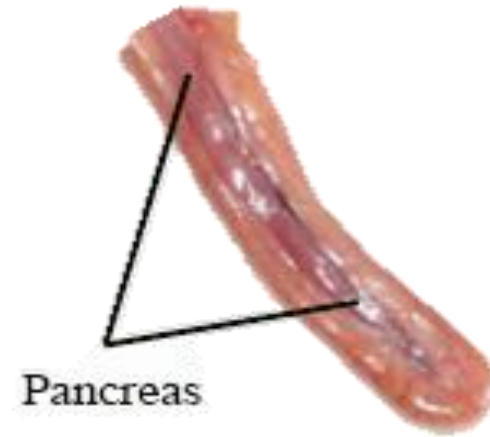
Stomach

- Birds have 2 stomachs
 1. Proventriculus:
 - “Glandular stomach”
 - Digestion begins here
 - Proteins are digested here
 - Similar to the human stomach
 2. Ventriculus “Gizzard”
 - Muscular stomach
 - Reduces the particle size of food



Pancreas

- **Digestive Function:**
 - Helps digest starches, sugars, and fats
- **Endocrine Function:**
 - Produces insulin



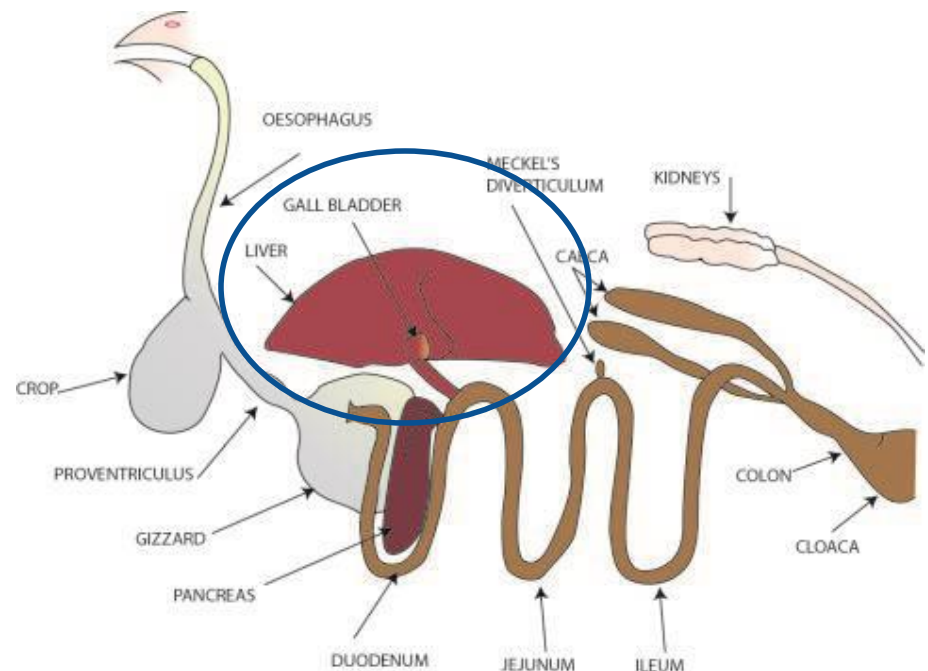
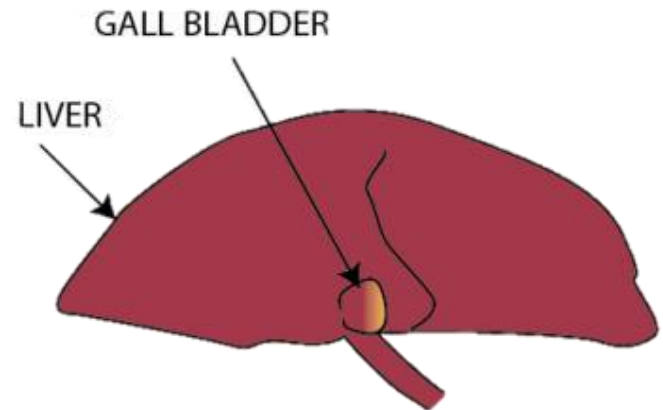
Liver and Gall Bladder

- Liver Digestive Function

- Produce bile (**MOST IMPORTANT**)
- **Bile** is important because it breaks down ingested fats.

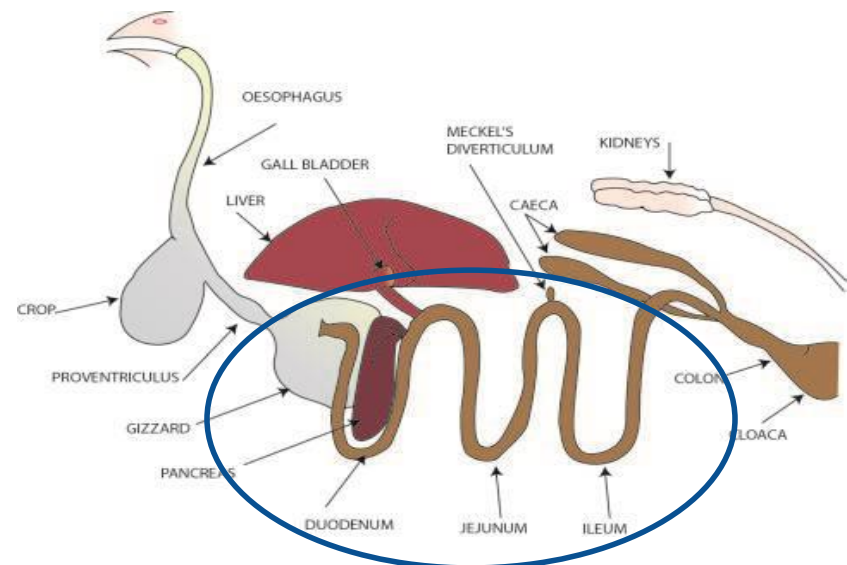
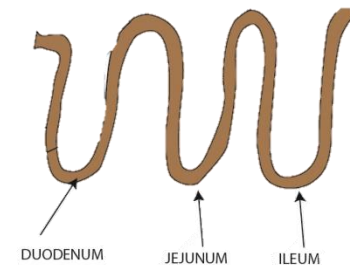
- Gall Bladder Digestive Function

- Stores excess bile produced by the liver.
- Empties this bile into the small intestines whenever fats enter it.



Small Intestine

- Completes the digestion and absorption process
- Long
 - 4 feet
- 3 segments make up the small intestine
 1. Duodenal Loop
 2. Jejunum
 3. Ileum



Small Intestine Cont.

- **Duodenal Loop:**

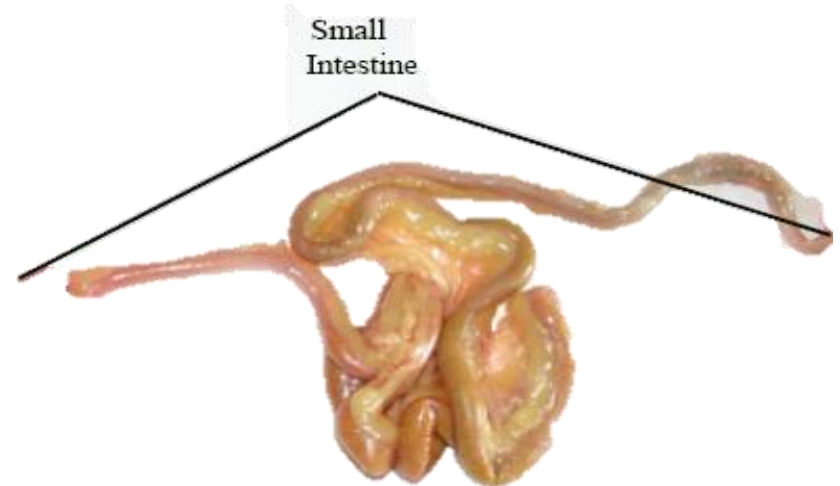
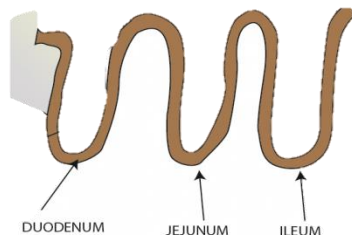
- Extends from the Ventriculus “Gizzard” to the Jejunum
- Pancreas, Liver and Gall Bladder branch off the Duodenal Loop
- Enzymes convert digested food into amino acid and glucose

- **Jejunum:**

- Connects from Duodenal Loop to Ileum
- Receives bile from Liver or Gall Bladder to break down fats

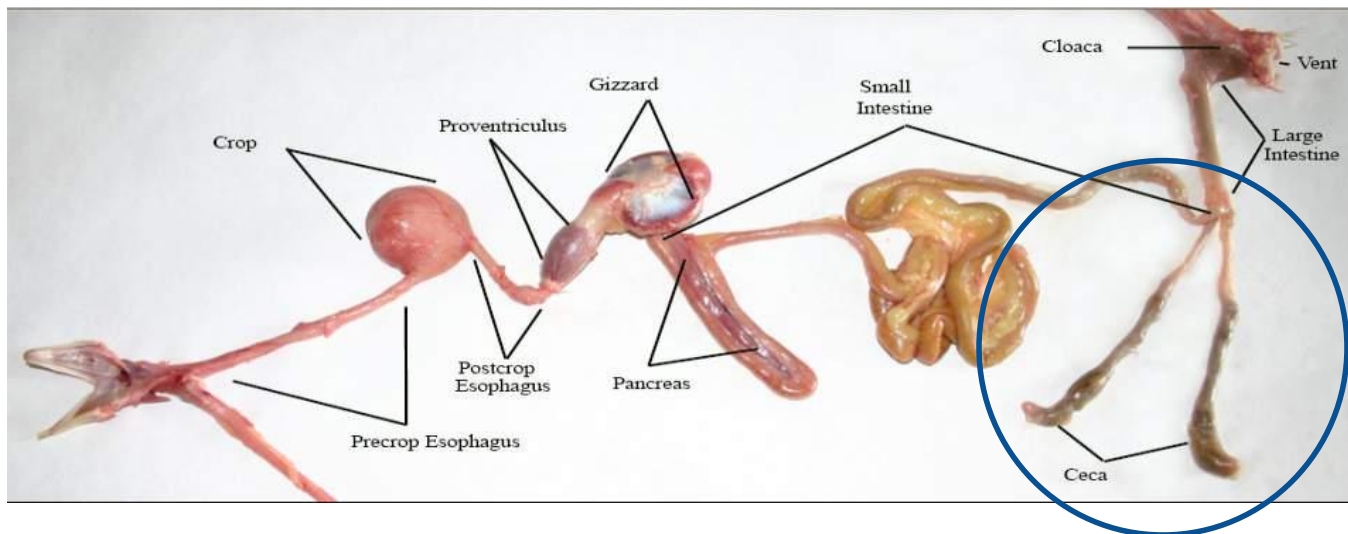
- **Ileum:**

- Connects to Jejunum to the Large Intestine
- Digestion ends here and end products (amino acids and fats) are absorbed for use by the blood stream



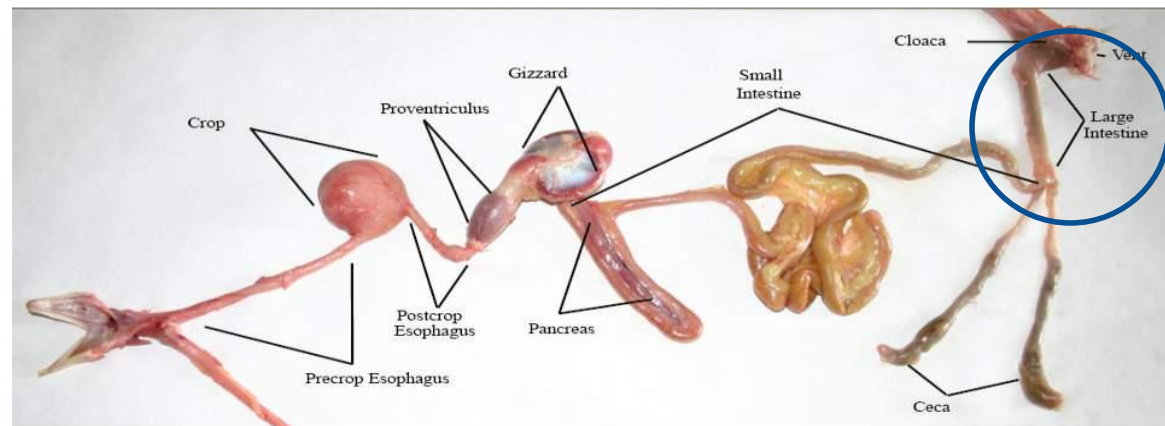
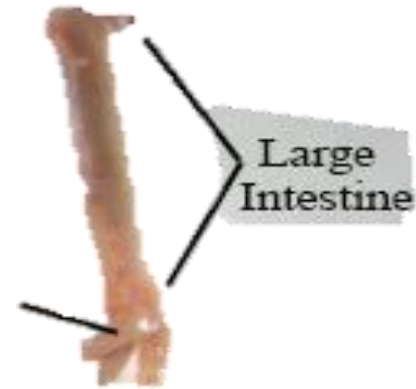
Ceca

- 2 pouches located where the Ileum joins with the large intestine
- Digests fiber here
 - Like the cattle rumen
- Salmonella levels are the highest here
 - NOT all poultry have salmonella inside them



Large Intestine

- Connected to the Ileum and ends at the Cloaca
 - **Cloaca**: collects and mixes feces and urine
- Short in length compared to small intestine
 - 4 inches
- Digestive function:
 - Reabsorb water and salts from the undigested mass(feces)
 - Pass the partially dehydrated digested mass to the cloaca



Cloaca and Vent

- Cloaca:
 - Connects to the end of the large intestine and ends at the vent
 - Collects and Mixes feces and urine
- Vent:
 - Common exit point of feces and urine

