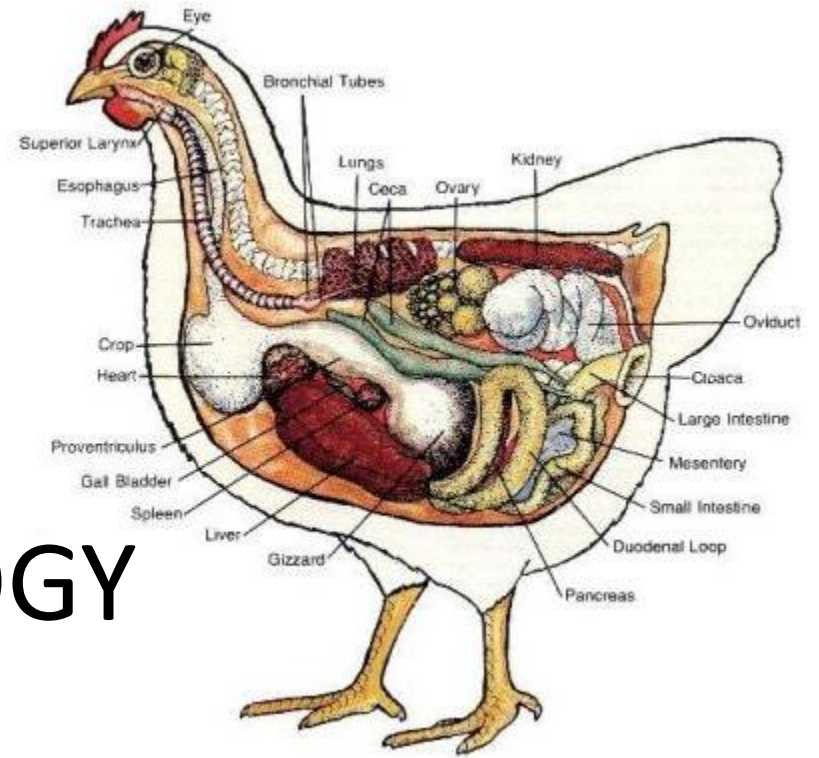


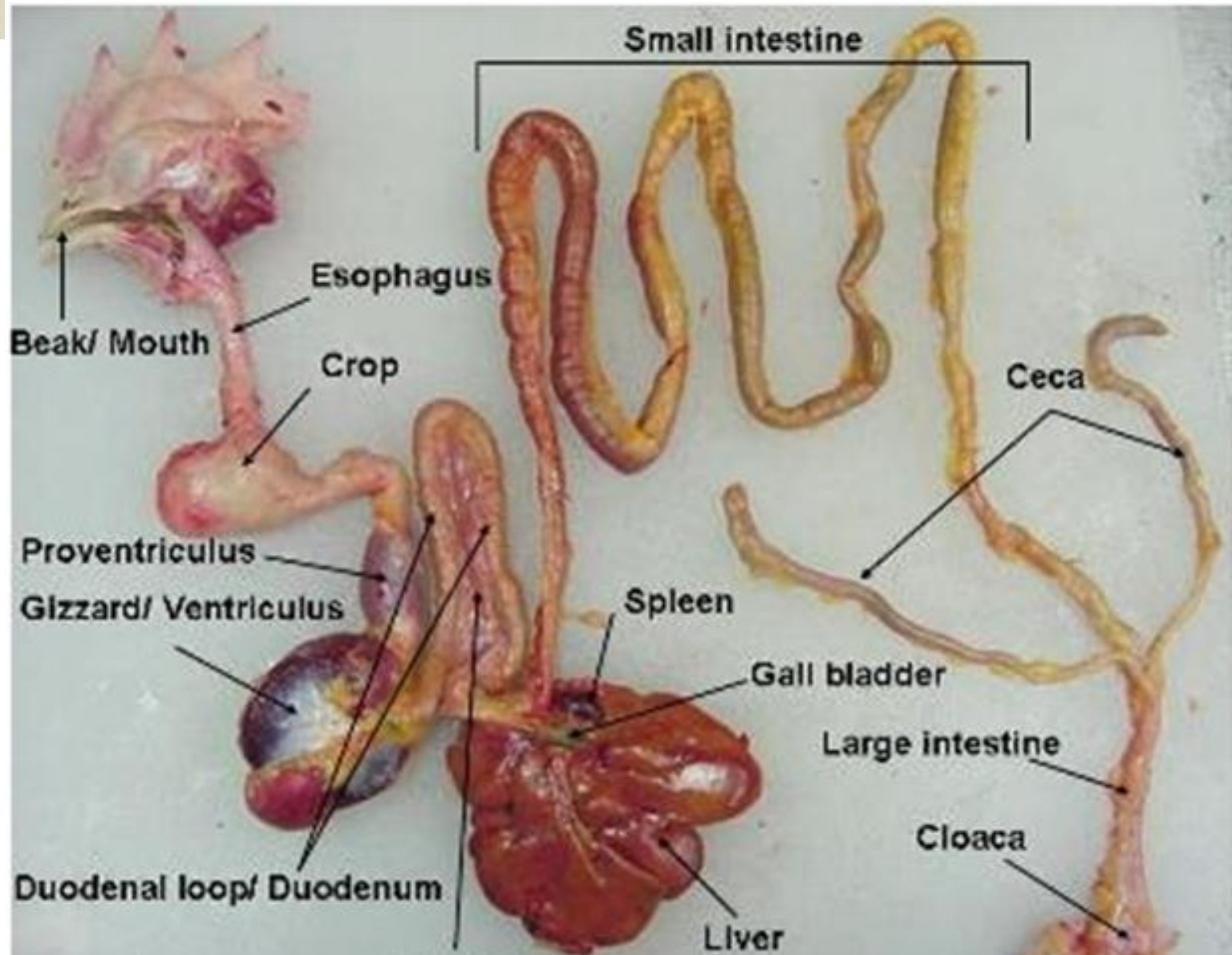
AVIAN PHYSIOLOGY



DIGESTION

- The digestive system of any animal is important in converting the food the animal eats into the nutrients its body needs for growth, maintenance, and production
- An animal's body breaks down food through both mechanical and chemical means.
- Birds do not have teeth, their bodies use other mechanical action.
- The chemical action includes the release of digestive enzymes and fluids from various parts of the digestive system.

PARTS OF A CHICKEN DIGESTIVE TRACT



Beak/Mouth

- As with most birds, a chicken obtains feed by using its beak.
- Food picked up by the beak enters the mouth. Chickens do not have teeth, so they cannot chew their food.
- However, the mouth contains glands that secrete saliva, which wets the feed to make it easier to swallow.
- Also, the saliva contains enzymes, such as **amylase**, that start the digestion process.
- The chicken uses its tongue to push the feed to the back of the mouth to be swallowed

Esophagus and Crop

- **The esophagus** is a flexible tube that connects the mouth with the rest of the digestive tract.
- **It carries food from the mouth to the crop and from the crop to the proventriculus.**
- **The crop** is an out-pocketing of the esophagus and is located just outside the body cavity in the neck region
- Swallowed feed and water are **stored** in the crop until they are passed to the rest of the digestive tract.
- When the crop is empty or nearly empty, it sends **hunger signals** to the brain so that the chicken will eat more.

Crop

- Although the digestive enzymes secreted in the mouth began the digestion process, **very little digestion takes place in the crop**
 - it is **simply a temporary storage pouch**.
- The crop evolved for birds that are typically hunted by other animals but need to move to the open to find feed.

Proventriculus

- The esophagus continues past the crop, connecting the crop to the proventriculus.
- The proventriculus (also known as the **true stomach**) is the **glandular stomach** where digestion primarily begins.
- **Hydrochloric acid**
- **digestive enzymes**, such as **pepsin** are added to the feed here and begin to break down more significantly than the enzymes secreted by the salivary glands.
- At this point, however, the food has not yet been ground—this organ is called the proventriculus because its location in the digestive tract is before the ventriculus, where food is ground

Ventriculus (Gizzard)

- The ventriculus, or gizzard, is a part of the digestive tract of birds, reptiles, earthworms, and fish.
- Often referred to as the **mechanical stomach**,
- made up of two sets of strong muscles that act as the bird's teeth and has a thick lining that protects those muscles
- Consumed feed and the digestive juices from the salivary glands and proventriculus pass into the gizzard for **grinding, mixing, and mashing**.



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