

# Modified Monogastric Digestive System

## Digestive System of the Horse

# The Digestive Tract

- ◆ Horses and rabbits are modified monogastric herbivores.
- ◆ Horses are able to utilize large amounts of roughage due to their relatively large cecum.
- ◆ The cecum is a section of the colon where digestive bacteria break down roughage.

# How Modified Monogastric Systems Work

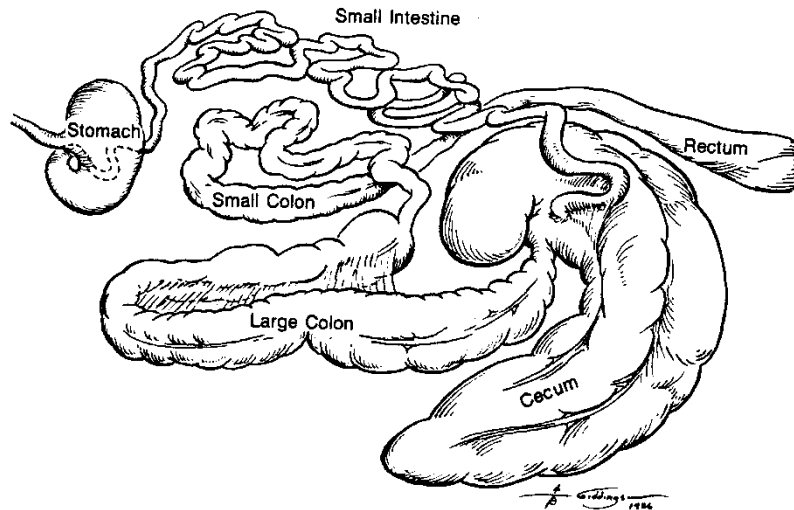


FIGURE 16.2

- Modified monogastric digestive systems work the same way as a monogastric system, except that in the modified cecum, fermentation occurs.

Modified monogastrics go through the same process: Food starts at the mouth, then goes through the esophagus, stomach, small intestine, and large intestine to the cecum. The cecum is where fermentation occurs. Here nutrients are taken from the food and then it goes through the rectum and out of the body.

# Digestive Tract

- ◆ The Mouth-first part of digestive system.
- ◆ Mouth has 2 main functions-masticate food and wet food with saliva.



# Digestive tract, cont.

- ◆ Teeth should be examined by a professional periodically to check for sharp edges that must be floated or filed down



# Digestive tract, cont.

- ◆ The esophagus—50- 60 inches long in an adult horse.
- ◆ Esophagus will not allow vomiting.
- ◆ Stomach may actually rupture before animal will vomit.

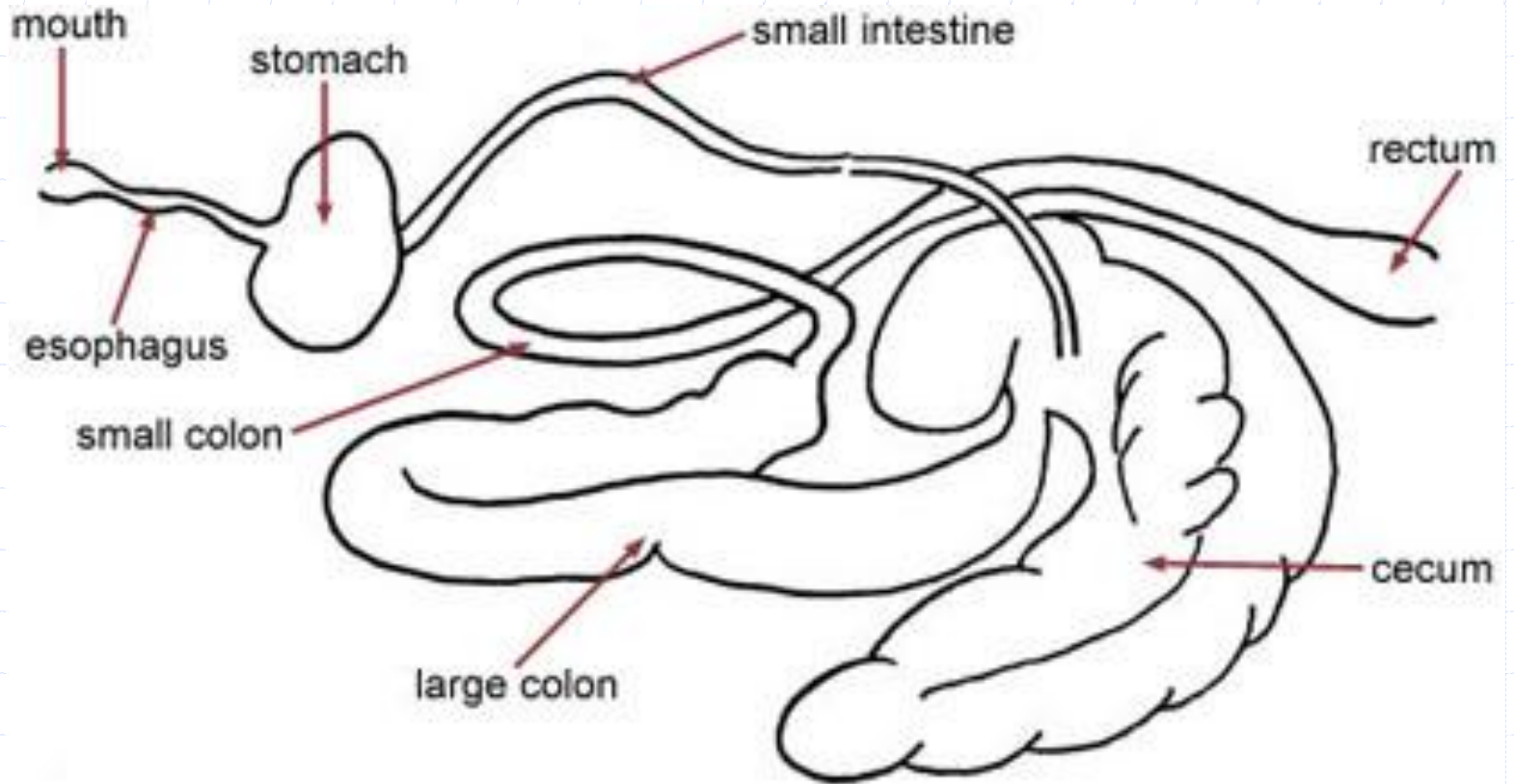
# Digestive tract, cont.

- ◆ The stomach-relatively small. Therefore horses should be fed several small meals per day.
- ◆ The small intestine-contains 30% of the capacity of the entire tract. Food in the small intestine is 93-95% liquid. Nutrients are absorbed here.

# Digestive tract, cont.

- ◆ The large intestine-25 feet long, divided into cecum, colon and rectum





# Rate of passage

- ◆ 95% of all food eaten will be excreted in the form of feces within 65-75 hours of ingestion

# Site of Digestion

- ◆ Protein, carbohydrates, fat, minerals and vitamins are all digested in the small intestine.
- ◆ Water is absorbed in the large intestine.

# Factors Affecting Digestion

- ◆ Processing of feeds-pellets require less digestion than whole grains.



# Feed processing

- ◆ Grinding feed speeds digestion



# Feed Processing

- ◆ Crimping oats will increase rate of digestion.





# Factors affecting Digestion, cont.

- ◆ Level of intake-the more grain eaten, the less digested
- ◆ Frequency of feeding-frequent feeding can increase level of digestion.

# Factors, cont.

- ◆ Work-light work increases digestion, heavy work inhibits it.





# Modified Monogastric Digestive System in Review:

- ◆ One Stomach
- ◆ Enlarged Cecum- Allows for digestion of high-fiber feeds
- ◆ Horses and rabbits are common examples
- ◆ Similar system as a monogastric animal.

# Modified Monogastric Digestive System

Student Note Outline  
Digestive System of the Horse

# The Digestive Tract

- ◆ \_\_\_\_\_ are examples of modified monogastric herbivores
- ◆ Horses are able to utilize large amounts of roughage due to their relatively large \_\_\_\_\_
- ◆ The \_\_\_\_\_ is a section of the colon where digestive \_\_\_\_\_ break down roughage

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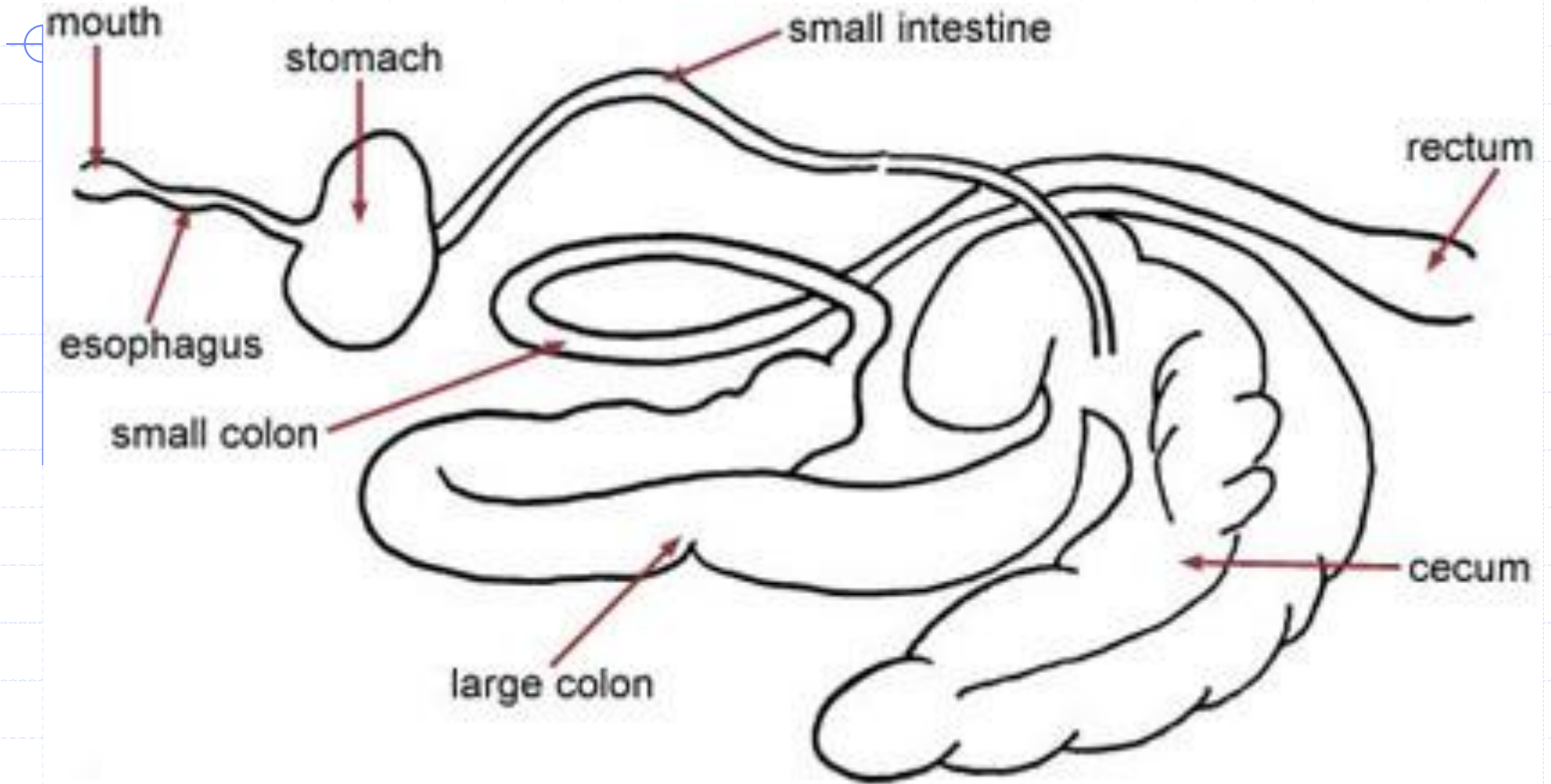
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