Animal Physiology Discussion Questions and Reading Assignments

The basic digestive system

Skim Withers Ch. 18 pp. 902-928: The generalized digestive tract with the following questions in mind. Know:	
The basic types of food molecules How animals accomplish food acquisition, oral transport, digestion (mechanical and chemical breakdown, and absorption, and respective regions of the digestive tract.	
Discuss: 1. What are the advantages and disadvantages of glucose, glycogen and lipids as metabolic substrates. What are the major types of animal food (e.g., grass, leaves, meat, etc. and their molecular composition)? Discuss which are easy (or hard) for animals to digest and why, how/where each type of food eaten gets broken down chemically and mechanically, and which macromolecules need to be transported across the gut wall.	i- d
2. Why do animals have regionalized digestive tracts? What are the functions of each region? What moves food through the digestive tract (be specific)? Why is the rate of movement important?	
a. Draw the ways in which animals have increased surface area of the gut?	
b. What is more conserved, gut diameter or gut length? What might be the functional reason for Can you think of examples to illustrate this?	this?

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Specialized Digestive Systems
Reading assignment Withers Ch. 18 pp. 924-938: supplement 18-1: Specialized Digestive systems. Know:
How herbivores digest cellulose. How digestive systems vary with respect to diet or functional needs. Discuss:
1. Discuss the advantages and disadvantages of foregut and hindgut fermentation. What kinds of animals do each, what are their differences in terms of food eaten (including rate of feeding), morphological differences, energy and nutrition recovered. Which nutrients are limiting, and how can they be obtained?
2. What is corporophagy, and how does it help ameliorate potential disadvantages?