Comments and Study Questions for Campbell, Ch. 40

General Biology 2
Spring 2008

General Comments: The notion of the laws of physics and chemistry as being the fundamental driving forces and constraints behind most of physiological evolution looms large at the start of this chapter and will do for the rest of the course. Make note of this, you will see it is the approach I will often employ.

Terms (sorry there are a lot of these but all are important): epithelial tissue, collagen and elastin, fibroblast, macrophages, mesenteries, thoracic and abdominal cavities, metabolic rate, endothermic, ectothermic, basal metabolic rate, maximal metabolic rate ($\dot{V}_{O_2}$ max is the term we will use in class), energy budget, integument, vasodilation, vasoconstriction, shivering and non-shivering thermogenesis, brown fat, acclimatization, heat shock proteins.

Study Guide:

1. The section on tissues organization is a nice overview. Look it over so that you can use it as an effective reference later. But, except for a few terms listed below, do not concentrate on it.
2. Relate the section on energy metabolism back to what you learned last semester. I will have more to say about it in class (it's my area of research).
3. Section 40.4 should be review from day 1 of class.
4. The thermoregulation section is a nice overview before you look at the more detailed and difficult notes I have provided. My notes will be the main basis for our discussion of thermoregulation.
5. Know what a counter-current heat exchanger does and how it works.
6. Read the short hibernation section out of interest if you wish but we will not cover it nor will it be on the exam.