Animal Physiology. By Richard W. Hill, Gordon A. Wyse, and Margaret Anderson. 2nd edition. Sunderland, Massachusetts: Sinauer Associates; 2008, 770 pp. $119.95, Hardcover. ISBN: 978-0878933174.

Animal Physiology differs from the typical physiology textbook in that it describes the principles of physiology that underlie all animals, rather than focusing exclusively on humans. It provides a comprehensive overview of physiological systems in a well-organized and concise manner by moving between description of general principles of physiology and specific examples of these principles from a variety of animal species. It is a wonderful textbook for any student of physiology.

The introduction begins by describing the importance of the interaction between an animal and its environment. Animals adapt to their environments, and understanding to what the animal must adapt guides our understanding of that animal's physiology. For example, animals that live in the desert must be able to tolerate extreme heat and dehydration. The next three chapters provide background material about membranes, enzymes, experimental techniques, and transport mechanisms.

The rest of the book is organized into sections based on function of different systems, which provide coherence between the systems discussed. For example, the Integrating Systems section includes chapters on the nervous, endocrine, and reproductive systems. This textbook provides astoundingly clear and detailed descriptions of physiological principles, despite the fact that it is describing all of animal physiology. The figures are well placed within the text and range from simple diagrams illustrating structural principles to figures from primary literature illustrating a change in our understanding of a system. A short list of references at the end of each chapter allows the interested reader a place to begin searching for more information, which can be supplemented by a much more extensive list of references in the back of the textbook. Summaries after each section within a chapter and study questions after each chapter allow the student to ensure he or she is not missing any major concepts. In short, Animal Physiology is an excellent learning tool.

What distinguishes Animal Physiology from other physiology textbooks is its extensive use of examples from a wide variety of species to illustrate physiological principles. Each chapter begins with an example of the physiological system presented in action. For example, the chapter on digestion begins with a discussion of lactose intolerance and its variability across different human populations. Additional examples are integrated throughout the text in every chapter. There are also five “At Work” chapters, one after each part, to describe a particular example of that physiological system in much more detail, such as how marine mammals have respiratory adaptations that allow them to dive for more than an hour at a time and to depths greater than 600m. Through these examples, the concepts presented are placed into a greater context, elevating them from scientific facts to be learned to interesting ideas to be investigated further.

In summary, Animal Physiology is the textbook for any student of physiology who is as interested in learning answers as he or she is in finding new questions.

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Heart Failure: A Practical Approach to Treatment. Edited by William T. Abraham and Henry Krum. New York: McGraw-Hill Medical; 2007, 322 pp. $90.95 Hardcover. ISBN: 978-0071443159.

The management of chronic diseases is one of the great triumphs and one of the great discouragements in modern American medicine. Heart failure is no exception. With its sharp increase in prevalence, every clinician will encounter patients with this condition. It is estimated that more than 5 million