A Companion to Animal Physiology, edited by C. Richard Taylor, Kjell Johansen, and Liana Bolis. Cambridge University Press, New York, 1982, 365 p., illus., \$35.00 (cloth) \$13.95 (paper) (81-17055).

This book is a collection of 23 papers honoring Knut Schmidt-Nielsen and presented at the Fifth International Conference on Comparative Physiology in 1980. The organizational scheme was designed to supplement Schmidt-Nielsen's *Animal Physiology*. Part one consists of seven papers emphasizing the exchange of respiratory gases and demonstrating the usefulness of quantitative models for analyzing function. Five papers, treating topics such as the relationship of nutrition to development and anaerobic metabolism, form part two. The four papers in part three emphasize temperature regulation. Part four considers four topics in water balance: the role of the vertebrate skin, salt glands, renal counter-current mechanisms, and osmoregulation in insects. The final part consists of three papers treating special problems of musculo-skeletal systems.

The book achieves its stated purpose of providing professional biologists and students with an opportunity to explore in greater depth some of the topics introduced in *Animal Physiology*. For example, body size and scaling occur as a theme in several papers, especially those discussing the circadian rhythm of body temperature, the implications of the body size-metabolism relationship for animal design, and scale effects on the structure and function of limbs. The brief treatment of anaerobic metabolism in *Animal Physiology* is amplified, and current knowledge of how diverse animals obtain energy, solve the problem of end products, and reestablish metabolic homeostasis are skillfully summarized.

Symposium volumes have built-in variation in quality and ease of reading. This book is no exception, but I found no paper inadequate. Each paper has a list of references, and there is a useful index. Perhaps the major shortcoming of the book is the emphasis on vertebrates.

This book would be excellent for a seminar for advanced undergraduate or beginning graduate students. Also, anyone interested in animal function will want to dip into this volume from time to time, if only for bits of information to enliven one's lectures and to correct misconceptions such as that the incomplete separation of pulmonary and systemic circulation of some vertebrates represents a primitive stage in evolution rather than a functionally advantageous system.

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