

ment. An introductory section of this chapter deals with criteria of endocrine function and methods and difficulties encountered in studying endocrine problems. This is a useful part of the book and should be of value to the student.

Whereas the first two chapters deal at a general level with the topics of osmoregulation and endocrine control, the following chapters cover the function of these two organ systems in the individual vertebrate classes. These chapters provide an excellent, broad, and up-to-date coverage of the comparative aspects of fluid and electrolyte exchange. They are particularly useful in that they not only emphasize the role of endocrine glands in relation to the animal's adjustment to its environment but also cover very adequately what is known about the transport mechanism of fluid and electrolytes at the cellular level of various organ systems.

GERHARD H. GIEBISCH
Department of Physiology,
Yale University School of Medicine,
New Haven

REGULATION OF THE ANTIBODY RESPONSE. Second Edition. Edited by Bernhard Cinader. Thomas, Springfield, IL, 1971. xii, 400 pp. \$19.50.

Regulation of the Antibody Response, edited by Bernhard Cinader, was first published in 1968, the year it became widely recognized that two morphologically indistinguishable lymphocytes, the T cell and the B cell, cooperated in antibody production. This discovery forced cellular immunologists to reevaluate both their data and concepts, and more recent work has emphasized the importance of cooperative events in antibody regulation. Thus, it would seem pointless at this time to publish a volume in cellular immunology that did not consider these new developments. The new issue of *Regulation of the Antibody Response*, however, has paid but minor lip service to these new developments. Only one of the 17 chapters has been updated. Although an exciting compendium of the top work in the field at the time of its original publication, this volume will not prove useful to students today.

RICHARD K. GERSHON
Department of Pathology,
Yale University School of Medicine,
New Haven

FLUORESCENCE SPECTROSCOPY: AN INTRODUCTION FOR BIOLOGY AND MEDICINE. By A. J. Pesce, C-G Rosén, and T. L. Pasby. Marcel Dekker, New York, 1971. 247 pp. \$16.50.

This book provides an excellent introduction to fluorescence spectroscopy, a technique increasingly used to study the molecular basis of enzyme and membrane

function. This application of fluorescence is based on the fact that fluorescence spectra, absorption spectra, and polarization of fluorescence are rather sensitive indicators of the local environment of the chromophore. Therefore, fluorescence measurements can provide information about the environment of natural chromophores (e.g., tyrosine) or of chromophores added to the preparation (fluorescent dyes). The book is mainly devoted to a semiquantitative exposition of the fundamentals of fluorescence and the pitfalls of the measurements; no information is given concerning actual instruments. The level of the presentation is carefully regulated and seems ideal for biologists and other users of fluorescence techniques. Strictly medical applications are not discussed.

Even though the seven chapters were originally written by six individuals, the authors and three others, the book holds together well and there is little redundancy. I recommend this book.

LAWRENCE B. COHEN
Department of Physiology,
Yale University School of Medicine,
New Haven

ANIMAL PHYSIOLOGY. PRINCIPLES AND ADAPTATIONS. Second Edition. By Malcolm Gordon, in collaboration with C. A. Bartholomew, A. D. Grinell, C. Barker-Jorgensen, and F. N. White. MacMillan, New York, 1972. xvi, 592 pp. \$13.75.

This is an extensively revised, enlarged, and updated second edition of a fine textbook on comparative physiology. The authors have placed particular emphasis on vertebrate organ functions as they relate to the survival of organisms in a wide variety of environments. As pointed out the book might be called a text of ecological physiology. The level of discussion assumes familiarity with an introductory college level of biology or zoology.

The book successfully covers the most important physiological principles in a lucid and instructive manner. Compared to the many available texts on this topic it is a strong feature of this particular book that it approaches physiological processes from a comparative and evolutionary point of view and stresses functional adaptations. The book is eminently readable and not exhaustive in terms of factual information; the authors have succeeded well in selecting only significant and essential topics for discussion.

The text is divided into 12 chapters. These cover important aspects of nutrition and energy metabolism and the processes involved in animal movement. This is followed by a description of the homeostatic mechanisms controlling the internal environment: respiration, circulation, fluid and solute control, and temperature adaptation. The final chapters deal with the procurement of information, how the latter is processed, and how animal activities are integrated both from a neurophysiological and endocrinological point of view. Each of the chapters begins with a general introduction of the physiological function subserved by an organ system and from then on proceeds to evaluate these mechanisms in different classes of