

## NEW BOOKS IN PHYSIOLOGICAL ZOOLOGY

[This section comprises reviews of selected new books containing new and significant material in the field of physiological zoology. Books submitted for review should be sent directly to the editor.]

### AVIAN PHYSIOLOGY,<sup>1</sup> EDITED BY P. D. STURKIE

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The publication of the first edition of P. D. Sturkie's *Avian Physiology* in 1954 is recognized as a landmark in comparative physiology. Unfortunately this edition, the third, fails to convey the state of maturity that its subject has attained in the last 20 years. Avian physiology is distinguished from that of mammals and reptiles only in regard to how it is directed toward coping with problems unique to the avian mode of life, the main feature of which is the ability to fly. Consequently, it is a great surprise to find that this book virtually ignores the avian musculo-skeletal system although this fits with our impression that Sturkie's *Avian Physiology* takes a basically "mammalian" approach to its subject.

Several new authors have contributed to this edition; however, the lion's share of the writing was done by the editor. Despite this we found the book uneven with individual chapters varying greatly in quality. For instance, the first chapter, "The Nervous System" by T. B. Bolton, only accommodates birds with difficulty and contains a plethora of unexplained jargon. The chapter "Sense Organs" by M. R. Kane and J. G. Rogers is unavoidably lacking in physiology although it is a pleasantly readable account. Moreover, the authors draw attention to several features of sense organs which are distinctly avian and suggest suitable areas for further research. The blood and circulation are covered in three chapters largely written by Sturkie. In these chapters the editor has not done justice to recent advances in his subject,

and they contain numerous factual errors and contradictions with notable omissions in the sections on hemodynamics and circulatory control. In contrast, M. R. Fedde's chapter, "Respiration," is a superior contribution. The information presented is well synthesized, and Fedde makes good use of excellent illustrations. These chapters more or less cover our area of expertise, but even taking a less stringent approach to the remaining two-thirds of the book did not change our opinion about its uneven nature.

The preface suggests that *Avian Physiology* is suitable as both a reference source and a textbook. The former role is now adequately provided by multivolume treatises which have appeared recently: *Physiology and Biochemistry of the domestic fowl*, edited by D. J. Bell and B. M. Freeman (1971), and *Avian Biology*, edited by D. S. Farner and J. R. King (1972-1974), both published by Academic Press. As most of its chapters have less than 20% of their bibliographies taken from this decade, it is doubtful that *Avian Physiology* will be able to compete as a reference source. On the other hand, it is even more difficult to see *Avian Physiology* as a textbook at even the graduate, let alone undergraduate, level. The text often demands either a high level of expertise or the ability to ignore what is obscure. Furthermore, in many cases no opinions are given after presentation of conflicting data, while synthesis is generally avoided.

Finally, we would like to express the hope that the appearance of this volume will not inhibit other attempts to prepare a textbook on this interesting and exciting subject.

<sup>1</sup> 3d ed. New York: Springer-Verlag, 1976. Pp. 400.