fostering the growth of basic science. The field of high energy radiation-induced processes in matter is an extremely difficult one owing to the complexity and heterogeneity of the phenomena. Much more work must be done on the fundamentals in this field before comprehensive theories capable of quantitatively correlating data are developed.

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Physiology

Animal Body Fluids and Their Regulations. A. P. M. Lockwood. Harvard University Press, Cambridge, Mass., 1964. 185 pp. Illus. $2.75.

The author of this book was formerly at Cambridge University and is now lecturer in zoology at the University of Southampton. He is well known for his work in the osmotic regulation of crustaceans and has previously shown his ability to write excellent and clear reviews. It was therefore with considerable anticipation that I opened this little book, which was written for a level equivalent to that of the beginning college student in the United States.

The book follows an attractive and clear outline. It progresses from the regulation of invertebrate body fluids through vertebrate body fluids, blood, cell composition, active uptake, and the role of the kidney, to a final chapter on the regulation of body water and ion content. It ends with a convenient synoptic table of physiological salines for a variety of invertebrates and vertebrates, which, commendably, cites the "author" of each fluid, but, alas, the list of references reveals no trace of these authors.

Despite his clear outline, Lockwood has not succeeded in the difficult task of extending clarity of presentation to the level of the text. This may be a case where a competent scientist, writing at a more elementary level than that to which he is accustomed, is unable to communicate the fundamental simplicity of the underlying principles with which he is so familiar. Furthermore, the book contains not only misprints but numerous errors of fact, misstatements, and unclear passages; it includes definitions in some places but omits more necessary explanations elsewhere, unit designations are not uniform and are sometimes lacking, metric units are incorrectly designated, and so on.

None of the eight chapters in the book is conspicuously better or worse than the others. Thus, Lockwood has not failed especially in those areas that are further from his own research interests. On the contrary, throughout the book there is evidence that he is familiar with a broad body of knowledge in the field of osmotic regulation in living organisms, and it is unfortunate that he has not succeeded better in making it available to the untrained reader.

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Antarctic Biology

Biologie Antarctique. Comptes-rendus, Premier Symposium organisé par le S.C.A.R. (Actualités Scientifiques et Industrielles, No. 1312). Robert Carrick, Martin Holdgate, and Jean Prévost, Eds. Hermann, Paris, 1964. 652 pp. Illus. F. 54.

This volume records the proceedings of a symposium organized by the Scientific Committee for Antarctic Research (SCAR), an international body subsidiary to the International Council of Scientific Unions (ICSU), which since 1960 has had a Permanent Working Group in Biology for the purpose of stimulating, planning, and coordinating biological research in Antarctica, including the subantarctic regions. The symposium was held in Paris, in September 1962, under the auspices of the Académie des Sciences and with the support of the International Union of Biological Sciences (IUBS).

Although its has long been widely realized that the Antarctic continent and adjacent seas and islands offer unique opportunities for studying the evolution of living organisms in the Southern Hemisphere and their physiological specialization to extremely hostile environmental conditions, the lack of adequate local facilities for such studies has until recently been the most serious limiting factor. The activities of the International Geophysical Year during 1957 and 1958 resulted in the establishment of a number of new scientific stations, many of which have been continuously maintained and offer good working conditions and laboratory accommodations for biological specialists. Conjointly with this improvement in the available facilities for field research there has come increased financial support of scientific research from the governments of the various countries operating stations on and adjacent to the Antarctic continent. This volume presents an impressive demonstration of the rapid progress thus made possible in all aspects of Antarctic biology during the last decade.

The contents consist of 57 papers, 45 in English and 12 in French, distributed in 13 sections: The Life Sciences in the Antarctic, Human Physiology and Psychology under Antarctic Conditions, Microbiology, Biogeography and Systematics–Botany, Biogeography and Systematics–Marine Zoology, Biogeography and Systematics–Terrestrial Zoology, Marine Productivity, Ecology of Invertebrates, Ecology of Vertebrates, Ethology of Vertebrates, Conservation, Animal Physiology, and Future Research Programs. Each section includes a verbatim transcript of the discussions that followed the various sessions; the symposium was attended by 100 biologists from 14 countries. The final paper, by J. E. Smith, sums up the proceedings of the symposium; Smith outlines the present achievements and future goals of such important aspects of Antarctic biological research as the food chains and primary productivity of the circumcontinental marine fauna and flora, their relationships to the hydrographic features of the Antarctic seas, and the systematics and ecology of the organisms inhabiting freshwater and terrestrial environments.

The book is well illustrated with 11 photographic plates that show field and laboratory techniques; plant and animal communities of marine, submarine, and terrestrial environments; Antarctic seals, birds, and insects in their natural habitats; the histology and parasitology of Antarctic animals; and commercial whaling operations. The printing and layout of text figures and tables is good, and there is a gratifying absence of the typographical errors that often mar bilingual productions of this kind. But the binding is far from satisfactory; spine and hinges of some brand new copies are already beginning to disintegrate.

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