

contributions, while containing interesting material, are too short and limited in content to have much pedagogical advantage over research publications in the journals even though they are somewhat less technical.

The broadest contribution is a good theoretical introduction in which J. S. Bell outlines various concepts and tools of theoretical particle physics, though apparently this was intended as background for the more current topics. In spite of the sweeping scope of the book's title, it is only in this introduction that electromagnetic interactions are discussed at all. A short review of the field of weak interactions is given by S. Berman. The contributions by L. Van Hove, G. Puppi, H. Harari, N. Cabibbo, and T. Regge suffer from the disadvantages mentioned above. The last part of the book consists of five seminars, each discussing, in detail, a particle experiment with no apparent relation to each other, or to the lectures in the rest of the book.

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Phospholipids of Vertebrates

Phospholipids: Chemistry, Metabolism, and Function. G. B. Ansell and J. N. Hawthorne. Elsevier, New York, 1964. xiv + 439 pp. Illus. \$20.

This book is, as the authors point out, the first devoted entirely to phospholipids since Wittcoff's monograph published in 1951. As such, it will be welcomed by all whose interests touch this group of compounds. The authors have chosen to restrict their coverage to the phospholipids of vertebrates, a decision which has simplified their task, but one which seriously limits the usefulness of the volume and thereby will greatly disappoint many readers.

The text is divided into roughly 25 percent on chemistry and preparation of phospholipids, 15 percent on phospholipid biosynthesis and metabolism, and the remainder on the role of phospholipids in various tissues, pathological conditions, and physiological processes. Appendices deal with the stereochemistry, nomenclature, fatty acid composition, and distribution in tissues of phospholipids. The section on chemistry includes only minimal information on structure and hydrolysis of phospholipids, with no attempt to

present details of the chemical reactions or physical chemistry of phospholipids. Analytical methods are covered concisely and briefly. For example, the section on thin layer chromatography occupies half a page. A chapter on preparation of phospholipids is written from a highly personal point of view, and somewhat in the style of *Biochemical Preparations*. A method which is used in the authors' laboratory for preparing a specific phospholipid is given in detail, and references to other methods are listed. The DEAE chromatographic procedure of Rouser, probably the most important innovation since the introduction of silicic acid chromatography, is not mentioned.

Phospholipid biosynthesis is adequately covered but not with the clarity found in some recent reviews. The most interesting chapters are those dealing with the more physiological aspects of phospholipids. The authors point out that a well-defined role for phospholipids in these various processes has not been discovered, but they have summarized a large volume of literature and presented it in a form that is fairly easy to digest. I found most interesting and well written the chapter (84 pages with 380 references) dealing with phospholipids and the nervous system.

The main fault with this volume lies not with the authors, but with the publisher. The text occupies 11 by 17 centimeters with approximately 38 lines per page. For 439 pages of this, \$20 is an outrageous price.

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Research in Geophysics. vol. 2, *Solid Earth and Interface Phenomena.* Hugh Odishaw, Ed. M.I.T. Press, Cambridge, Mass., 1964. xxiv + 595 pp. Illus. \$12.50.

This volume and its companion, which deals with the sun, upper atmosphere, and space, represent two further blocks in the avalanche of books of this general type that threatens to engulf us. The book contains review articles, each by a separate author or group of authors, covering some aspect of the broad field of endeavor described in the title. Numerous volumes

covering similar, although not identical, subjects or subdivisions of the broad field have either been published or are projected. In addition to these "one-shot" ventures, there are the relatively well-established review series—such as *Physics and Chemistry of the Earth* and *Advances in Geophysics*—that appear on a more or less periodic basis. Volumes with this format inevitably give very irregular coverage to a field as large as geophysics, and it is all but impossible to rank such a volume vis-à-vis its competitors. It is safe to say (i) that one could spend one's entire time writing articles for such works, and (ii) that each work differs appreciably from the others in its field. The latter fact insures the publishers a wide circulation to libraries. It also, paradoxically perhaps, leads to unnecessary duplication and causes one to wonder whether that frightful day when the total volume of review literature equals or exceeds that of original literature may be closer than is generally suspected.

The volume under review, and its companion, contain the proceedings of a conference held at Berkeley, California, during the 13th General Assembly of the International Union of Geodesy and Geophysics in August 1963. That was also the year of the 100th anniversary of the National Academy of Science, and the coincidence of these events provided a happy excuse for the conference. The basic theme of the conference, as explained in the preface to the book, was to attempt to answer the following questions. "Where did we stand, in a given area, about ten years ago? What were the results of investigations during the International Geophysical Year . . . ? What have we learned in the half-decade or so following the IGY? Hence, where do we stand today? And finally, what problems confront us now?" The papers in this volume in general attempt to answer these questions. Many of them contain brief summaries of the theoretical basis on which the measurements described in the papers are to be interpreted. Thus, they can be read with understanding by the nonspecialist. In addition, most articles include rather complete bibliographies of recent literature. As implied by the above quotation, the emphasis is on research during and after the IGY.

The first chapter in the book is "Long-period waves and free oscillations of the earth" by Frank Press.