Book Reviews

Traité de Zoologie: Anatomie, Systématique, Biologie: Échinodermes, Stomocordés, Procordés. (Tome XI.) Pierre-P. Grassé. (Ed.) P. Brien, M. Caullery, L. Cuénot, A. Dalcq, C. Dawydoff, P. Drach, H. Harant, and G. Waterlot. (Contribs.) Paris (VI): Masson et Cie., 1948. Pp. 1077. (Illustrated.) 3800 fr.

There is always a need, in every branch of science, for up-to-date, authoritative, and comprehensive summaries of knowledge. In the field of descriptive zoology the wealth of new information that was amassed at the turn of the century made the task of compiling such treatises a difficult one, because they frequently became outdated before they were finished. In recent years, since the majority of zoologists have turned their attention towards experimental studies, the time has been better suited to the preparation of such works, which may now be written with reasonable assurance that they will remain useful for many years before extensive revision becomes necessary.

The publication of Miss Hyman's *The invertebrates: protozoa through ctenophora* in 1940 was an event of importance. It was the first attempt in the English language to summarize the existing knowledge of the invertebrates since the unfinished work of Lankester some forty years before. The publication under review is of similar importance, and serves to replace and extend such works as Delage and Herouard's *Traité de zoologie concrète* (1896–1903).

Tome XI is the first of a total of seventeen volumes planned for the series, which will cover the entire animal kingdom. The eight contributors are well chosen for the sections assigned to them and are known for their original contributions to the groups of animals concerned. The entire work is to be shared among a distinguished body of about eighty authors.

Illustrations are adequate in number and in clarity, being, for the most part, original or redrawn from original sources. In spite of the difficulties inherent in this type of collaboration, the editor is to be congratulated upon the consistency of style, and the authors upon the clarity of language. It is a pity that the arrangement of material within each phylum varies somewhat with the different authors. The use of the word *Stomocordés* in place of *Hémicordés* is an example of several innovations that may not receive universal approval, but these minor criticisms are far outweighed by the general excellence of the book.

Further volumes due to appear in 1949 are Tome VI (Onychophores, Tardigrades, Arthropodes: généralités, Trilobitomorphes, Chélicérates), Tomes IX and X (Insectes) and Tome XII (Vertébrés: généralités). These and further volumes will be awaited with interest.

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Aviation medicine in its preventive aspects: an historical survey. John F. Fulton, London-New York: Oxford Univ. Press, 1948. Pp. viii + 174. (Illustrated.) $3.50.

A series of lectures delivered by the author at the London School of Hygiene and Tropical Medicine in 1947 provide the substance of this book. Dr. Fulton's long and intimate association with the field and his broad experience are reflected in the informative and authoritative contents. His scholarly style appeals alike to the initiate and to the layman.

The title is hardly specific. For aviation medicine has been, all along, a thoroughly practical branch of applied medicine and physiology and, as such, has always stressed the preventive aspects. The subtitle is more indicative of the subject matter. It is the author's labors in tracing the beginnings of aviation medicine back to Hooke, Boyle, Priestley, Lavoisier, Bert, and others of the 17th, 18th, and 19th centuries and even farther back, with accounts of early animal experiments and observations on humans in mountain climbing and balloon ascents, that will make the book particularly interesting and valuable to workers in the field.

The first three chapters are devoted to effects of abnormal barometric pressure—the first to anoxia, the second to effects of reduced pressure *per se* (bends, chokes), and the third to very rapid reductions of pressure (explosive decompression). The first two subjects are developed historically; the third was evidently not considered by early investigators. The rich opportunity for discussing preventive aspects, particularly in the first chapter, are not exploited, no mention being made, for example, of the long series of basic respiratory studies conducted in the U. S. Air Force laboratories that resulted in successful preventive techniques for altitudes to 40,000 feet and above. There is also no mention, except in the references, of the explosive decompression studies of Major H. M. Sweeney, whose name will always be associated prominently with this subject by his co-workers.

The fourth chapter gives a good, brief account of the physiological effect of acceleration. The important case of acceleration, too brief to produce displacement of blood (as in ejection seats, etc.), is not discussed. It is gratifying to note that the studies of RAF Wing Commander W. K. Stewart, which preceded all the U. S. centrifuge experiments, are given full recognition.

The fifth and final chapter is devoted to problems of crash injury.

In a dissertation which manages to have its say in a modest 170 pages, some omissions are unavoidable. By no means all of the important omissions, however, are alluded to in the preface, so that the uninitiated reader may receive a less than well-balanced impression of the subject. Of the three broad classical fields of investigation in aviation medicine—extremes of temperature, low

barometric pressure, and acceleration—the first is not even mentioned, in spite of the fact that it has always been a major concern of aviation physiologists. Night vision, pilot training, and sanitation are mentioned in the preface as important omitted topics. To this list might have been added: numerous other vision problems, human sizing problems in the design of aircraft, controls, and clothing, medical problems caused by noise and vibrations, and the whole broad field of the psychology of flight.

There are few errors for a first edition. On page 61, there is an obvious confusion of absolute and gauge pressures, and on page 123, centripetal and centrifugal forces are respectively correlated, erroneously, with footward and headward forces. On page 124, the starting acceleration of the German V-2 rocket is given as 20 to 40 *G*. Actually, the acceleration is maximum when the fuel is nearly exhausted and does not exceed 8 *G*.

Carefully selected references add to the value of the book, but even here certain omissions are obvious. There is, for example, not one reference, on the subject of acceleration, to the important work of the Aero Medical Laboratory group.

With due regard for the fact that, as the author points out in the preface, the book is an account mainly of his own fields of interest and experience, it may be highly recommended to aeromedical specialists because of its historical perspective, and to the layman as an authoritative and easily read introduction to certain parts of the subject.

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Syphilis: its course and management. Evan W. Thomas. New York: Macmillan, 1949. Pp. xix + 317. (Illustrated.) $5.50.

In both theory and application, the treatment of syphilis has undergone revolutionary change in the past fifteen years, leaving the subject in great need of adequate summarization—a service that is well done in this book by Thomas, who is eminently qualified by virtue of sustained interest and exceptional clinical experience in syphilis. In a field where few fixed judgments are yet justified, Thomas has freely expressed personal opinions, distinguishing clearly between those based on demonstrable facts and those derived from clinical impressions. While therapy is emphasized, the author also discusses the disease's course and clinical features, clearly but briefly—especially in the case of cutaneous and mucosal changes, where he merely points out the adequacy of previous descriptions and the obvious change in type of clinical material seen today in contrast with a few years ago. In spite of its brevity, the book should be adequate for the nonphysician interested in syphilis and for the medical student who has opportunity to learn from observation of clinical material. It will be particularly helpful to general practitioners, and to specialists in training or in practice in the many communities where the incidence of syphilis has decreased so much that it is difficult to arrive at definite conclusions regarding the newer therapeutic modalities. A chapter by Theo. J. Bauer reviews the public health aspects of syphilis.

All phases of syphilis are given consideration, but there is particular value in the discussion of interpreting serologic reactions, with emphasis on quantitative studies, and of neurosyphilis, with emphasis on the Dattner-Thomas concept and the need for repeated examinations of the spinal fluid. With reference to therapy, there is almost complete dependence on penicillin and the author attempts to provide the best available schedules for various clinical and serologic stages of the disease.

Minor criticism might be directed toward the too-brief discussion of the treatment of persons having what are presumably infectious contacts and of congenitally syphilitic women who are pregnant. The relation and association of cancer and syphilis are also treated too briefly, and the use of the term "syphilitic virus" is questionable. In view of Dr. Thomas' attempt at brevity, the space given to reports of individual patients seems unwarranted. The number of radiographic reproductions is greater than is justified by their inferior quality.

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Physics: principles and applications. Henry Margenau, William W. Watson, and Carol G. Montgomery. New York: McGraw-Hill, 1949. Pp. x + 760. (Illustrated.) $5.00.

This book has been written to serve as a textbook in a general physics course for sophomore engineering students and natural science majors. A rigorous treatment is presented, with the aim of giving the student a sound basic knowledge of physics that will be adequate for further work in pure or applied physics. The authors assume that the student has a good working knowledge of algebra, trigonometry, and analytic geometry and some idea of the principles of calculus and that he is carrying on further study of calculus concurrently with the physics course.

The rigorous, mature, and stimulating approach to general physics encountered in this text makes it highly suitable for student groups having adequate mathematical preparation and a professional interest in physics. The text is extensive; the authors estimate that they have included enough material for a three-semester course of four or five credit hours per semester. To assist the instructor in choosing material for the usual two-semester course of four or five credit hours per semester, certain sections are starred, to indicate that they may be omitted without interrupting the logical development of the subject or omitting concepts necessary for understanding later sections.

Each chapter contains solutions of well-chosen illustrative examples and is followed by a group of problems for the student to solve. Very few problems can be solved by "substitution in formula"; they demand an understanding of principles and many problems are sufficiently difficult to demand effort from good students.

The text material is organized into sections on mechanics, heat, electricity, sound and light, and modern