Book Reviews

The Biochemistry of Semen. T. Mann. Methuen, London; Wiley, New York, 1954. 240 pp. Illus. + plates. $2.90.

In the prefatory remarks, T. Mann states: "Biochemistry of semen is a relatively modern but rapidly expanding field of physiology; consequently, many of our present views, particularly as regards the biological significance of various chemical constituents of semen, may have to be revised or modified in the near future. That being so, I like to look upon this book, or at any rate those parts of it which deal with the newer, still fluid concepts, as something in the nature of an Interim Report, designed to furnish information and to convey ideas emerging from the state of knowledge as available at the time of writing, however imperfect that may be." I think the epitome of excellent scientific judgment was achieved in the author's preface, especially since approximately 950 references, 33 of which were by himself, embrace his textual facts. Moreover, Mann is a pioneer investigator in this field, and his signature affixed to a compact, monumental book such as this one suffices to give authenticity to his descriptive analysis of our present-day knowledge of the biochemistry of semen.

The Biochemistry of Semen is divided into nine chapters: "The two components of semen: spermatozoa and seminal plasma"; "Chemical and physical properties of whole ejaculated semen"; "The influence of extraneous factors, hormones, and environmental conditions"; "Intracellular enzymes"; "Protein constituents and enzymes of the seminal plasma"; "Lipids and their role in the metabolism of semen"; "Fructose and fructolysis"; "Spermine, choline, ergothioneine, and certain other bases in semen"; and "Citric acid and inositol."

I particularly enjoyed reading the chapter on the influences of extraneous factors, hormones, and environmental conditions on semen. It is interesting to note the progress made in this area during the past 100 years. In this connection, Koelliker's 1856 paper "Physiologische Studien über die Samenflüssigkeit" is a good landmark for tenable comparisons. Most of the present-day reports on semen reflect largely upon Koelliker's early observations. The extension of his early work is largely endocrinological.

This book is very concise and in some areas it is much too telegraphic. The numerous references are presented in an intelligent manner, and the author evaluates many of them for the reader. It is my idea that the book could have been richly enhanced with more illustrative material and shorter tables. In the final analysis, *The Biochemistry of Semen* very carefully summarizes the biochemical knowledge of a very complex area of the endocrinology of reproduction.

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Topley and Wilson's Principles of Bacteriology and Immunity. 2 vols. G. S. Wilson and A. A. Miles. Williams & Wilkins, Baltimore, ed. 4. 1955. xlviii + 2331 pp. $24.50.

The preface states that this book was intended originally for the general student of medicine and biology but that the character of the fourth edition has been changed. The treatise is now designed for postdoctoral students, teachers, and research workers who are interested in the microbiology of infection.

The text has been expanded by 277 pages, but the outline is unchanged, with 93 chapters divided into four parts: "General bacteriology" (432 pp.); "Systematic bacteriology" (664 pp.); "Infection and resistance" (253 pp.); and "The application of bacteriology to medicine and hygiene" (870 pp.). As many as 500 references are cited in certain chapters, and a few of these are as late as 1953–54. An index of 48 pages is included in both volumes. The number of tables has been reduced by 11 (to 196), and the figures, several of which are new, have been increased by one (to 303).

In part I new material has been added to nearly every chapter. Although a few statements have been added to the chapter on history, the latest reference cited is 1938. Topics such as the tricarboxylic acid cycle, transamination, and phosphorylation are not listed in the index, and one has to hunt in the chapter on nutrition and metabolism to find a discussion of these topics. The continuous-culture technique for stabilizing microbial populations at a given growth phase is not mentioned in the chapter on growth and death of bacteria.

Expansion in part II is greatest in the chapters dealing with pure-culture methods and the identification of bacteria. The other chapters describe the characteristics of approximately 40 bacterial genera, the animal viruses, and related microorganisms. The Salmonella section has been enlarged to cover the antigenic description of more than 300 serotypes. The genus *Bacterium* is retained for the coli-aerogenes group.

Part III is enlarged most in the chapters on anaphylaxis, hypersensitivity and allergy, the antibody-forming apparatus, natural antibodies, immunity to virus diseases, and mechanisms in immunity. The sections on measurement of immunity and on herd infection and immunity are good.

Part IV contains chapters on the normal flora of the human body, the various microbial diseases of man and animals, and the bacteriology of air, water and sewage, and milk. The text, figures on mortality indices, and tabular data on some diseases, such as tuberculosis and poliomyelitis, are current, whereas similar information on other important diseases is demoded.

In a book dealing with a broad and rapidly expanding field there are bound to be omissions. It is nearly impossible for two people to keep abreast in all the areas covered. Those who grew up with the earlier editions of this book will continue to use it as an indispensable encyclopedia. Younger people will find the mass of basic material a bit overwhelming but nevertheless easy to read.

There are remarkably few errors in the book and the illustrations and printing are of highest quality.

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Functional Analysis. Frigyes Fiesz and Bela Sz.-Nagy. Translated from the French ed. 2 by Leo F. Boron. Ungar, New York, 1955. 468 pp. $10.

This is a translation of the excellent textbook originally published by the Hungarian Academy of Science. This book is obviously the result of years of research and teaching on the part of its outstanding authors. There is no book in the field that can be compared with it. Frequent use is made of the pedagogic device of proving results at a simple level and then showing later how a few modifications