mammalian male, especially domestic animals and man, the author is interested in the total biochemical, biophysical, and biological phenomena of male reproduction and, being a keen student, he has brought together the widely scattered literature published in many languages and relating to many species. This labor has made available to those whose lingual competence is largely in English a wealth of literature heretofore unrecognized and unevaluated.

The book is not simply a compendium of the known chemical constituents found in spermatozoa, in the secretions of the testes and of the accessory glands of the male, and of the intermediary metabolism of these constituents, although these facts are given in detail; instead, the author has presented his material in the biological context in which such facts are important and relevant to a large number of present-day problems, such as male infertility, artificial insemination, and fertility control. Contributions from the author's own laboratory constitute an important part of the literature that he reviews. Researches elsewhere are sometimes viewed with less approbation, and the interpretations that he has made will not be universally approved.

It is a well-edited, fine book, carefully documented and indexed, and it will be highly useful. It is, as the author candidly stated in the preface to the first edition, not the last word in a rapidly developing field of scientific inquiry.

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1962 International Symposium

Pteridine Chemistry. Proceedings of the Third International Symposium (Stuttgart, Germany), September 1962. Wolfgang Pfleiderer and Edward C. Taylor, Eds. Pergamon, London; Macmillan, New York, 1964. xx + 535 pp. Illus. $15.

The stated purpose of the Third International Symposium on Pteridine Chemistry, held in Stuttgart in September 1962, was "to bring together 'pteridinologists' from many different disciplines so that cross-fertilization of ideas and mutual stimulation would provide new insight into present problems and point out new paths for exploration." It called together 52 participants from laboratories of biochemistry, medicinal chemistry, organic chemistry, botany, and zoology, attached to universities, technische hochschulen, medical schools, and drug-manufacturing concerns, as well as one representative from the National Institute of Mental Health. The focus was on chemistry and biochemistry, but it was by no means a narrow one. There were reports on the synthesis of pteridines and their derivatives, on their transformations, rearrangements, and other chemical properties, on their occurrence in nature, on their isolation, separation, structure, properties, assay, and even elemental microanalysis, on their biosynthesis, on their functions in various enzyme systems and on the interrelationships of the various metabolic processes in which they take part, and on the synthesis and properties of related compounds. Thus, in this volume based on the symposium there are chapters on the proton-resonance spectra of pteridines, on tetrahydrofolic acid as the coenzyme of one-carbon metabolism, and on the synthesis of folic acid antagonists, to mention the subjects of but three of the 36 chapters.

The record of the symposium begins with a chapter by C. Schöpf, "Die Anfänge der Pterin-Chemie," tracing the development of the field from the first observations made in the period around 1890 through the establishment of the structures of the most common pteridine pigments some 50 years later. The 35 technical chapters follow, 17 of them in German and 18 in English. Each chapter is preceded by a short abstract in English. Each has its own bibliography, and nearly every chapter is followed by a transcript of the discussion that followed the oral presentation; both languages are used in the discussions. There are but two or three addenda, made for the purpose of clarification or correction on the basis of data not available at the time of the symposium. No attempt has been made to extend the literature coverage beyond September 1962; the dozen or so references that have later dates are probably to articles that were in press at the time of the symposium.

Perhaps the most important function of a volume like this one should be that of informing interested scientists not in attendance at the symposium concerned, giving them also the benefit of the summaries and correlations, and thus improving their position for further studies. Thus, the success of the volume would seem to hinge on the accuracy of its reporting and the promptness of its publication. Evidently this book is a faithful record of the papers presented and the formal discussions which constituted the symposium. The 2-year delay in publication is, of course, a disadvantage. But despite the delay in publication, the book will be needed by chemists engaged in the study of pteridines and valuable to many others concerned with substances metabolically related to pteridines.

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New Books

Mathematics, Physical Sciences, and Engineering

An Introductory Course of Mathematics and Theoretical Mechanics. vol. 4, *Theoretical Mechanics*. C. Plumpton and W. A. Tomkys. Pergamon, London; Macmillan, New York, 1964. 464 pp. Illus. $3.50.

Local Analytic Geometry. Shreeram Shankar Abhyankar. Academic Press, New York, 1964. 502 pp. Illus. $18.

Mathematical Theory of Optics. R. K. Luneburg. With a foreword by Emile Wolf and supplementary notes by M. Herzberger. Univ. of California Press, Berkeley, 1964. 478 pp. Illus. $12.50.

Microwave Circuits. Jerome L. Altman. Van Nostrand, Princeton, N.J., 1964. 484 pp. Illus. $15.

Modern Earth Science. William L. Ramsey and Raymond A. Burckley. Holt, Reinhart, and Winston, New York, ed. 2, 1965. 672 pp. Illus.

Numerical Methods of Reactor Analysis. Melville Clark, Jr., and Kent F. Hansen. Academic Press, New York, 1964. 352 pp. Illus. $10.50.

Ordinary Differential Equations. Philip Hartman. Wiley, New York, 1964. 628 pp. Illus. $20.

Particulate Clouds: Dusts, Smokes, and Mists. Their physics and physical chemistry and industrial and environmental aspects. H. L. Green and W. R. Lane. Van Nostrand, Princeton, N.J., ed. 2, 1964. 493 pp. Illus. Plates. $13.50.

Theory of Laminar Flows. F. K. Moore, Ed. Princeton Univ. Press, Princeton, N.J., 1964. 883 pp. Illus. $25. The papers are "Laminar flow theory" by P. A. Lagerstrom; "Three-dimensional laminar boundary layers" by A. Mager; "Theory of time-dependent laminar flows" by Nicholas Rott; "Hypersonic boundary layer theory" by F. K. Moore; "Laminar flows with body forces" by Simon Ostrach; and "Stability of laminar flows" by S. F. Shen. There is an introduction by the editor.