prising that this procedure is most satisfactory with hydrocarbons and their halogenated derivatives. Most organic compounds undergo extensive degradation under the conditions required for reaction. The authors not only describe conditions and apparatus for the process but also discuss the possible reaction mechanisms.

Those interested in the particular subject matter in any one or more of the five chapters as discussed herein would find the book both interesting and valuable. It is recommended for reference purposes to all those interested in fluorine compounds.

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Lipide Metabolism. Edited by KONRAD BLOCH, Department of Chemistry, Harvard University. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1960. xiii + 411 pp. 15.5 × 23.5 cm. Price, $10.50.

This book covers some major aspects of lipid metabolism but as the Editor himself states, in order to expedite publication it was necessary to sacrifice complete coverage of the field. Indeed, the breadth of lipid metabolism is of such a large dimension that it is unlikely that any single text can today deal with all the subject material without becoming unwieldy in size. It is therefore customary to strike a compromise which represents on the one hand a fairly complete coverage of certain selected subjects or on the other hand a brief treatise of all the major subjects in the field. This book conforms to the former.

The content of this book is embodied in eight chapters. In Chapter 1, D. E. Green and S. J. Wakil discuss the enzymatic mechanisms for the synthesis and oxidation of fatty acids. Acetoacetate formation and fatty acid desaturation are covered only briefly. The biosynthesis of fatty acids by mitochondrial, non-mitochondrial and bacterial systems are included. Chapter 2 deals with the metabolism of unsaturated fatty acids. J. F. Mead handles this chapter in a fairly concise manner and presents the biosynthesis, hydrogenation and interconversions of these lipids. The next chapter is contributed by R. J. Rossiter and K. P. Strickland and covers the metabolism and function of the phosphatides. This article summarizes the current knowledge concerning the biosynthesis of the individual phosphatides and discusses the proposed multiple functions of these compounds in a very interesting fashion. Chapter 4 is concerned with the metabolism of the glycerides. B. Borgstrom is the author of this article which summarizes the recent advances in the digestion, absorption, and transport of the glycerides and the metabolism of the non-esterified fatty acids. One can appreciate the difficulty in writing a review article on this subject in view of the large number of papers in this field. In Chapter 5, M. Kates gives a fairly complete coverage of the lipases, phosphatidases and other lipolytic enymes. This review is thoroughly done and well presented. It should be pointed out that new evidence has since come forth from three independent laboratories which firmly establish the specificity of phospholipase A as being a preferential cleavage of the β-linked fatty acid. This cleavage is position dependent and appears not to be related to chain length or degree of unsaturation of the fatty acid. However, the specificity may not be absolute since there is evidence that with some of the natural lecithins the α-linked fatty acid may be cleaved to a small degree (a few per cent.). Chapter 6 covers the hormonal regulation of fatty acid metabolism. In this review R. G. Langdon summarizes recent work on the effect of insulin, epinephrine and anterior pituitary hormones on fatty acid metabolism. Ketosis and fatty acid transport also are dealt with. Chapter 7 of the book is contributed by S. Bergstrom, H. Danielsson and B. Samuelsson and presents the current knowledge on the formation and metabolism of the bile acids. The conversion of cholesterol to bile acids and the quantitative aspects of bile acid metabolism in man and animals are well covered. A smaller section on the metabolism of the conjugated bile acids is also included. The last chapter of the book presents a much needed and timely article on the chemistry, metabolism and biological activity of bacterial lipids. F. Asselineaur and E. Lederer cover this field quite adequately and undoubtedly this area of lipid chemistry and metabolism will surge forward in the coming years.

It is apparent that each chapter in the book has been written by a person or persons who are experienced and eminently qualified to review their respective fields of work. The book therefore is highly informative and specialized and will be a particularly useful reference textbook, especially in view of the fact that each chapter has an extensive bibliography. The beginner in the lipid field may not find this book appealing because of the style and specialization. However, nearly every chapter contains a brief historical introduction which will help the less informed readers.

Most text books on lipid metabolism have not in this reviewer's opinion taken up the difficult challenge of integrating this massive field and moreover have not included provocative and speculative articles on those areas which are fundamentally important but poorly understood. Questions relating to the absorption and transport of lipoproteins and non-esterified fatty acids must at some time be considered at a molecular level. This will require a more precise knowledge of the structure of lipoproteins and cell membranes. Only then will the postulated functions of lipids in such vital biological processes as cell permeability, ion transport, specific growth factors, and nerve transmission (and brain function) be better understood. It may be too premature to include detailed articles on these subjects at the present time, but the need for such articles is ever increasing.

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Neutron Detection. By W. D. ALLEN, B.Sc., D. Phil., Atomic Energy Research Establishment, Harwell, England. Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y. 1960. vii + 260 pp. 14.5 × 22 cm. Price, $10.00.

Instrumentation for the detection and spectroscopy of neutrons is a subject of considerable significance to those engaged in widely diversified areas ranging from analytical chemistry to reactor technology, from oil-well logging to nuclear spectroscopy. The considerable effort which has been directed to developing neutron detectors over a period of more than two decades has resulted in a large number of instrumental methods which are available to one who is embarking on a program which in some way involves neutrons. The experimenter who is not a specialist in neutron counting may very reasonably be faced with a difficult problem in deciding what neutron detection method, or what particular counter, is best suited to his needs, *e.g.*, whether to use neutron activation techniques, nuclear emulsions, a BF_3 counter, a boron-loaded scintillator, or other means. It is to such a reader that this book is particularly addressed. It is assumed that the reader has a basic knowledge of nuclear physics and the elementary principles of particle detection.

The first principal section of the book discusses the general features of reactions used in neutron detection, including (n,p) scattering, the $B^{10}(n,\alpha)Li^7$ reaction, other exothermic reactions as $He^3(n,p)T$ and $Li^6(n,\alpha)T$, fission, radiative capture reactions, the Szilard–Chalmers process and threshold reactions. The next section treats the chief instruments of neutron detection and includes a discussion of ionization chambers (with attention to boron-lined counters and fission chambers), proportional counters (particularly the BF_3 counter), organic and inorganic scintillation detectors, and nuclear emulsions. The final chapters are concerned with practical aspects of fast- and slow-neutron flux measurements, methods of neutron spectroscopy, neutron sources, and neutron standards. The treatments of the individual topics given in this book are by no means exhaustive, as each one might easily be the subject of a separate volume. The author has succeeded, however, in discussing the essential features of the various subjects in a coherent and informative manner. Numerous examples of particular counters or methods serve to illustrate the general principles. Frequent discussions of a detailed nature are given on counter construction and use. For example, attention is given to the mechanical aspects of fabrication of a BF_3 counter and the need for careful purification of the counting gas.

A very good bibliography provides access to more detailed treatments in the literature. The bibliography ap-