Book Reviews – Buchbesprechungen – Livres Nouveaux

J. G. Defares and I. N. Sneddon: **An Introduction to the Mathematics of Medicine and Biology.** North-Holland Publ. Co., Amsterdam, 1960. 663 pag., Guilders 45.—

Der Titel des Buches bezeichnet exakt das Gebiet, welches es umfaßt. Vielleicht wäre es richtiger gewesen, die Worte «Medizin» und «Biologie» in umgekehrter Reihenfolge anzuführen, falls man die Medizin von dem Gesamtgebiet der Biologie in dem vorliegenden Zusammenhang überhaupt abgrenzen will. Die Verfasser betonen mit Recht, daß die moderne Entwicklung der Biologie die Anwendung von mathematischen Gedankengängen und Methoden unumgänglich notwendig macht. Die mathematische Ausbildung der Forscher und Kliniker ist oft nicht ausreichend und liegt viele Jahre zurück. Mit großem Geschick und Vollständigkeit werden in diesem Buche die Kenntnisse vermittelt, die zum Verständnis und zu der selbständigen Handhabung von statistischen Methoden notwendig sind. Das Buch ist ein Lehrbuch im strengsten Sinne des Wortes. Man muß es genau durcharbeiten, falls man das genannte Ziel erreichen will. Im Schlußkapitel werden zahlreiche Beispiele gegeben, die einen unmittelbaren Eindruck der Wichtigkeit der behandelten mathematischen Methoden für die Biologie vermitteln. Ausführliche Literaturhinweise erleichtern die Weiterarbeit. Erfreulicherweise werden auch mathematische Bücher genannt, die man konsultieren kann, falls die eigenen Kenntnisse nicht genügen um direkt an das Studium des vorliegenden Buches heranzugehen. Das Buch füllt sicher eine wichtige Aufgabe und kann warm empfohlen werden.

Paul Kallós, Helsingborg

J. W. Rebuck (Editor): **The Lymphocyte and Lymphocytic Tissue.** Paul B. Hoeber, Inc. (Med. Div. of Harper & Brothers), New York, N. Y., 1960. 312 pages, num. illustr. $ 10.50.

This book is the first of a series of "Monographs in Pathology", published under the sponsorship of the "International Academy of Pathology". The President of the Academy, Dr. T. E. Stowell states in his foreword that "manuscripts selected for publication in this series will meet the highest standards of scientific authenticity and educational value". Dr. Rebuck and his 20 collaborators have written a monograph which undoubtedly fulfils these aims. The origin, structure, cytochemistry, life-span and turnover of lymphocytes and lymphocytic tissue are elucidated in most excellent contributions. J. C. Sieracki and J. W. Rebuck state in a well-documented article that "the lymphocytes play a dynamic role in inflammation. They partake in many interrelated functions. In the defensive functions concerned with phagocytosis, the lymphocytes are an important source of motile macrophages." The transformation of lymphocytes into macrophages in acute inflammation is also described and illustrated with excellent photographs. In a particularly interesting and stimulating paper, J. C. Roberts, Jr., summarizes the overwhelming evidence that lymphocytes play a basic role in antibody synthesis and metamorphose during this process in plasma cells, "with intermediate cell types prominent during the most active phase of antibody synthesis". T. N. Harris and S. Harris come to similar conclusions in their very stimulating paper on "Lymphocytic response to tissue transplantation". Th. F. Dougherty contributes with an outstanding paper on the lymphokaryorhectic effects of adreno-cortical steroids. R. Schrek describes the radiation effects on lymphocytes. The other nine papers deal with non-leukemic lymphocytosis, lymphocytic leukemias and lymphocytic malignancies. This is an important book, indeed, and must be warmly recommended.

Paul Kallós, Helsingborg

J. M. CONVERSE and B. O. ROGERS (Editors): **Fourth Tissue Homotransplantation Conference.** Ann. New York Acad. Sci. *87:* 1–607 (1960).

The first paper in this important and impressive volume is by J. M. CONVERSE and B. O. ROGERS, and deals with the evolution of tissue homotransplantation research. The authors state that the present volume "marks the emergence of tissue homotransplantation particularly adapted to the study of the broad patterns of normal and altered biological activity, with special reference to the problems of allergy, malignancy and parturition". They propose to call the new discipline which thus has been established "*transplantation biology*". The forty-six original papers presented at the Conference make it evident that this branch of research has really been developed to a new, independent and most important subject. Independent in its methodology and final aims, it is nevertheless intimately connected with many other fields of biology, not least with immunology. Immunology receives its most fruitful impulses from transplantation biology. The papers in this volume are grouped under five headings: (1) Immunogenetics and Phylogenetics; (2) Variations in the Response to Tissue Transplants; (3) Antigen-Antibody Manifestation in Tissue Transplantation; (4) Graft *versus* Host Reactions and Immunological Tolerance and (5) Organ Transplantation. It is sufficient to state that the members of the Conference thoroughly discussed all these problems and that the proceedings are very important to all immunologists. It is impossible to discuss the individual papers here, all of them are very interesting and stimulating. Nobody interested in immunology can afford to neglect this admirable book.

PAUL KALLÓS, Helsingborg

S. KISTNER: **Inhibition Studies of the Old Yellow Enzyme.** The Interaction of the Enzyme with Specific Antibodies, and with Atabrine and Certain Promazine Derivatives. Almkvist and Wiksell, Uppsala (Sweden) 1960. 56 pages.

In 1932 O. WARBURG and his team prepared from brewer's yeast a yellow-red respiratory enzyme. As is well known, this "old yellow enzyme" (OYE) was the subject of most skillful investigations by H. THEORELL in 1934–1936. He purified the enzyme by electrophoresis and obtained a crystalline product. He also showed that dilute hydrochloric acid is able to split the holo-enzyme in the apo-protein and co-enzyme fractions. The separated fractions are inactive and colourless. Upon mixing the two fractions activity and colour could be restored. THEORELL prepared the co-enzyme in pure form and defined it as a mono-nucleotide of flavin (FMN). This was the first time that a reversible splitting of an enzyme had been accomplished. The substrate of the OYE has also been isolated and characterized by H. THEORELL as reduced triphosphopyridine-nucleotide (TPN). The reviewer cannot here describe the complicated metabolic processes in which the OYE participates. These were extensively investigated and elucidated by H. THEORELL and his school in 1954–1956. In 1956 a new highly purified crystalline preparation of OYE was obtained. This preparation is chemically and physico-chemically homogeneous, it contains 0.877% FMN and its molecular weight is about 102000–106000. Thus OYE is a pure proteid. The present author could show in carefully and extremely skillfully performed experiments that OYE has antigenic properties. Partially purified preparations contain several antigenic components. With the crystalline OYE, however, only one characteristic precipitation line could be obtained with the OUCHTERLONY agar gel diffusion technique, indicating the antigenic homogeneity of this preparation. The holo-enzyme and the apo-protein show identical immunological properties. Consequently, the co-enzyme, FMN, is not a part of the immunologically determinant structure. Antiserum inhibits the activity of OYE without competing with the substrate, TPN. Thus the binding groups cannot be identical. The reaction between OYE and its antibody have also been studied.

Some drugs, such as Atabrine and certain promazine-derivatives, inhibited the activity of OYE after they had been incubated with the apo-protein. Apo-protein thus treated, can, however, bind co-enzyme (FMN) and the author suggests that these drugs "exert their inhibitory effects on sites on the protein molecule closely located to those that bind FMN". Thus the inhibition of the OYE-activity by antibodies and by certain drugs involves different sites on the enzyme molecule.

I am convinced that this small volume marks the beginning of an important development in immunology and enzymology. It also opens new avenues for chemotherapeutical research. The author must be warmly congratulated on this excellent study. PAUL KALLÓS, Helsingborg

Connective Tissue and Diseases of Connective Tissue. Proceedings of a Conference. Ed. by F. N. FURNESS, B. COLLINS and B. M. WAGNER. Ann. New York Acad. Sci. *86:* 875–1132, 1960.

The Conferences arranged by the New York Academy of Sciences are always important, interesting and stimulating. This Conference is certainly no exception. As the Chairman, B. M. WAGNER, states in his "Introduction", the concept of collagen or connective tissue diseases has a great heuristic value and "almost all branches of the biological sciences are currently involved in research related to collagen or connective tissue". The New York Academy brought together the most outstanding authorities in this field and it is to be hoped that the Proceedings will be studied thoroughly. For the immunologists there are a number of contributions of special importance, such as "Cellular Sources of Antibody" by T. N. and S. HARRIS, "High Molecular Antibodies" by H. G. KUNKEL, H. FUDENBERG and Z. OVÁRY, "The Concept of Autoantibodies in Rheumatic Fever" by M. H. KAPLAN, "Reactions to Homologous and Heterologous Fibrin Implants in Experimental Animals" by S. K. BANERJEE and L. E. GLYNN, and, last but not least, "Connective Tissue Diseases and Certain Serum Protein Components in Patients with Agammaglobulinemia" by R. A. BRIDGES and R. A. GOOD.

PAUL KALLÓS, Helsingborg

Immunopathologie in Klinik und Forschung und das Problem der Autoantikörper. Herausg. v. P. MIESCHER und K. O. VORLAENDER. 2. neubear. und erw. Aufl. Thieme, Stuttgart 1961. 694 S., 148 Abb., 26 Tab., DM 90.–

Die erste Auflage des Buches wurde in den Archives 1958 (*13:* 394) besprochen. Die zweite Auflage ist wesentlich erweitert. Zu den bereits in der ersten Auflage vorliegenden Beitragen, die alle ergänzt und erweitert worden sind, sind eine Reihe von interessanten und wichtigen Darstellungen hinzugekommen, und zwar W. O. WEIGLE UND F. J. DIXON: Die biologischen Eigenschaften von Antigen-Antikörperkomplexen und ihre pathogene Bedeutung; N. R. ROSE UND E. WITEBSKY: Immunologische Untersuchungen bei Schilddrüsenerkrankungen; C. CLAYES UND E. QUINOT: Die immunopathologische Hypothese der Bildung von Silikose-Knötchen; B. H. WAKSMAN: Experimentelle, immunologische Erkrankungen des peripheren Nervensystems und C. LAPRESLE: Die Insulin-Antikörper. Die Klinik der auto-immunhämolytischen Erkrankungen wurde in der vorliegenden Neuauflage von H. H. HENNEMANN bearbeitet. Die neuen Beiträge sind sämtlich von bekannten und hervorragenden Forschern bearbeitet worden und bedürfen kaum einer weiteren Empfehlung. Sie haben den Wert des Buches, dessen erste Auflage warm empfohlen werden konnte, noch weiter erhöht. Das Buch wird sicher eine große Verbreitung finden und zu der Weiterbearbeitung der wichtigen Probleme der Immunopathologie wesentlich beitragen. PAUL KALLÓS, Helsingborg

R. T. Johnstone and S. E. Miller: **Occupational Diseases and Industrial Medicine.** W. B. Saunders Company, Philadelphia 1960. 482 pages.

This is an excellent modern textbook dealing with the increasingly important subjects of occupational diseases and industrial medicine. It discusses administrative, medical and medicolegal problems with which every industrial physician must cope in his daily work. The use of illustrative case histories indicates many of the pitfalls doctors must guard against in evaluating industrial illnesses, as well as the scope of the problems; these case histories are a valuable teaching aid.

The bibliographies appended to nearly every chapter give carefully selected references, including many recent ones. In the Appendix, a section is devoted to Threshold Limit Values for 1960, giving the range of values for upper limits of various toxic materials. These ranges are intended to be used as guides in controlling health hazards, and are not intended to indicate precisely the boundary between safe and dangerous concentrations. The Appendix also includes a Glossary of Some Industrial Terms, of considerable assistance to those needing to deal with sick workers.

I believe that medical students, house officers and practicing doctors should read this book for orientation in the important field of occupational medicine. The practicing doctor who reads this will be alerted to the importance and prevalence of occupational diseases and will understand their clinical patterns. As a result, he will be much more likely to inquire as part of the general medical history, about a patient's occupation and work environment, and will be better able to recognize and diagnose occupational diseases in their early stages. W. Kaufman, Bridgeport

L. C. Mills and J. H. Moyer (Editors): **Inflammation and Diseases of the Connective Tissue.** Saunders, Philadelphia, Pa. 1961. 900 pages, illustr.

This book contains the proceedings of a "Hahnemann Symposium". It is a very important and valuable publication. The main subjects of the Symposium were: I. Current Concepts of Connective Tissue; II. General Characteristics of Inflammation; III. Immunology of Inflammation and Connective Tissue Diseases; IV. Etiology and Pathogenesis of Collagen Diseases; V. Biochemistry and Pharmacology of Anti-Inflammatory Steroids; VI. Effects of Anti-Inflammatory Agents on the General Inflammatory Process; VII. Therapeutic Use of Steroids and Other Drugs in Specific Inflammatory States; VIII. Treatment of Other Diseases; IX. Effects of Steroids on Specific Nephropathies; X. Steroids and Infection, and XI. Undesirable Effects of Steroids. The participants of the Symposium were outstanding experts in their respective fields and all the important topics have been thoroughly discussed. The book must be warmly recommended. Paul Kallós, Helsingborg

E. Schultheiss: **Gummi und Ekzem.** Monographie zu der Zeitschrift «Berufsdermatosen», Bd. III. Editio Cantor, Aulendorf i. Württ., 1961. 213 S., DM 19.80.

Die kritische Klärung der Dermatosen, die bei Arbeitern, welche mit der Herstellung von Gummi und Gummiwaren beschäftigt sind, stößt oft auf Schwierigkeiten. Die Arbeiter nehmen oft ohne weiteres an, daß es sich um Berufsdermatosen handelt, was aber nur in einem Teil der Fälle zutrifft. In der Gummiindustrie werden Chemikalien der verschiedensten Art benutzt und Patent- oder Fabrikationsgeheimnisse stehen oft im Weg, falls man bei der Aufklärung eines Falles alle Chemikalien, die beteiligt sein können, erfassen möchte. Der Verfasser hat in seiner Monographie versucht, diese Schwierigkeiten zu beleuchten und in enger Zusammenarbeit mit Chemikern und Technologen der Gummiindustrie zu beseitigen. Das vorliegende Buch enthält somit praktisch bedeutungsvolle Angaben, u. a. ein ausführliches Verzeichnis der Chemikalien, die in der Gummiindustrie zur Anwendung kommen. Der Verfasser hat offenbar eine große Erfahrung auf diesem speziellen Gebiet der Dermatologie und sein Buch ist für jeden, der derartige Berufsdermatosen zu beurteilen hat, nützlich.

Paul Kallós, Helsingborg