Book Reviews


This volume of ‘Contemporary Topics’ includes, as it is stated in the ‘Preface’, ‘phylogeny, ontogeny, induction, regulation, expression and differentiation of the immune cell series, as well as the relationship of these to the pathogenesis of many disease processes’. Thus, the reviews cover the most timely and important areas of research. They are short (average length 25 pages) but concise, the writing is expertly and stimulating. R. L. Gershon’s subject is ‘T-Cell Control of Antibody Production’. The recirculating T-cell with its long life span serves, according to Gershon, ‘as an overseer of the immune response’. The participation of T-cells in different kinds of immune responses, such as antibody formation, delayed reactivity, memory and tolerance, is thoroughly and lucidly discussed. The recently discovered function of T-cells (probably exerted by a certain subpopulation of them) namely the turning off or suppression of the immune response, is discussed in depth. The intriguing problems of ‘Short Term and Chronic Allotype Suppression in Mice’ are dealt with in a comprehensive review by Leonore A. Herzenberg and Leonard A. Herzenberg. T. Wigzell’s excellent contribution concerns the relationship between cellular and humoral antibodies, an area of growing importance. G. F. Mitchell’s review ‘T-Cell Modification of B-Cell Responses to Antigen in Mice’, is an outstanding review, with general significance. Mitchell emphasizes the governing role of T-cells and the manifold expressions of cooperation between T- and B-cell populations and between lymphocytes and macrophages. The unique experience of Rose Lieberman of the genetic control of protein synthesis in wild and inbred mice makes her contribution (coauthored by W. E. Paul), entitled ‘Genetic Control of Antibody Responses to Myeloma Proteins of Mice’, invaluable. It is to be hoped that this stimulating review will promote the development in this important area. The study of the Ir gene system, which is thoroughly covered by the authors, ‘promises to lead to a major advance in our understanding of the antigen-recognition mechanisms of T-lymphocytes’. As the authors rightly stress, the understanding of these elusive mechanisms is a most important aim of research. The contribution by P. J. Morris, entitled ‘Histocompatibility Systems, Immune Response and Disease in Man’, is closely related to the foregoing review. As the author points out, ‘there has been an explosion of interest in the possible association of disease with the major histocompatibility system of man, HL-A’. The review is concise and critical. It clarifies the basic principles and their clinical application as well. Hopefully, it will lead to some restraint, especially in the field of allergy, where connections between the frequency of certain HL-A alleles and disease (for instance hay fever, asthma, urticaria) were claimed quite uncritically. J. E. Davie and W. E. Paul contribute a thorough review of ‘Antigen-Binding Receptors on Lymphocytes’; the review by A. R. Lawton, III and M. D. Cooper concerns the ‘Modification of B-Lymphocyte Differentiation by
Anti-Immunoglobulins’. A. C. Allison contributes an excellent review, entitled ‘The Roles of T- and B-Lymphocytes in Self-Tolerance and Autoimmunity’, an area of research with great clinical implications and importance. Finally, H. W. Wortis accounts for his ‘Immunological Studies of Nude Mice’ and reviews the pertinent literature. Nude mice (nu/nu) lack thymus and thymus dependent immunological capacities. These ‘athymic experiments of nature’ have a host of other defects too. Nevertheless, the study of nu/nu mice produced very important immunological insights and results, which entirely corroborate the fundamental discoveries of J. F. A. P. Miller concerning the role of thymus in immunity. The basic immunologic defect in nude mice is the lack of capacity to convert stem cells to functionally active T-lymphocytes. This leads to defective or lacking ‘cell mediated’ immune reactions. For instance, nu/nu mice cannot be sensitized by skin painting with oxala-zone, they cannot reject allo- or xenografts. Transplantation of a normal mouse thymus or injection of thymus cell suspensions fully restores these functions, ‘thymosin’ does not. An intriguing observation is that nu/nu mice do not develop spontaneous malignant tumors and are resistant to the development of chemically induced tumors (e.g. skin painting with dimethylbenzanthracene). Several months after a successful thymus transplantation, nudes do, according to Wortis, develop malignancies, such as reticulum cell sarcoma, adenocarcinoma and, interestingly enough, thy-moma of the grafted thymus. These findings seem to ‘play havoc with the notion that thymus dependent immunological surveillance is important in tumor prevention’. Further developments in this area are awaited with great expectations. This volume contains a wealth of information and is indispensable.

P. Kallós, Helsingborg


This volume is devoted to ‘Invertebrate Immunology’, a subject somewhat neglected hitherto. There are two excellent introductory chapters by Cooper and Sir MacFärlane Burnet, respectively. The aim of the investigations reviewed in this volume, was twofold. First to establish if invertebrates, from the most primitive forms to more complex organisms, are able to recognize ‘self and ‘not self. Second, if invertebrates have ‘defense mechanisms’, such as phagocytosis, intracellular destruction of foreign material and protective ‘humoral substances’, comparable to antibodies. The 26 chapters of the present volume give a wealth of information concerning these basic problems. It is not possible to review them here in detail. Differentiation between ‘self and ‘not self is definitely discernible. Phagocytosis and destruction of the phagocytized particles are present. There are also humoral substances, reacting with foreign materials, however, they are non-specific, non-protein and short-lived. There is, thus, no relation to immunoglobulins. Immunologic memory could not be demonstrated. The reviewer agrees with the view of Tripp that there is ‘no compelling reason to believe ... that protective devices found in one group are elaborated in the next, more complex group’. Thus, there is no ‘straight line evolution’ of protective mechanisms from invertebrates to vertebrates. Nevertheless, the present volume is very informative, instructive and valuable and must be warmly recommended for thorough study.

P. Kallós, Helsingborg

The present volume of this new series contains a number of expertly written and timely reviews of important subjects. Hong’s review, ‘Immunodeficiency: Enigmas and Speculations’, deals with the ‘enigmatic’ connection of immunodeficiency states with some other developmental anomalies. Hong’s great clinical experience and thorough knowledge of the pertinent literature make this review not only informative but also very stimulating. The excellent reviews by Rocklin, entitled ‘Clinical Application of in vitro Lymphocyte Tests’ and by Preud’homme and Seligmann: ‘Surface Immunoglobulins on Human Lymphoid Cells’ will, hopefully, help to standardize presently much used and misused techniques. The evaluation of results will then become easier and more uniform. Petz and Garratty clarify in their contribution the role of ‘Complement in Immunohematology’. Hitzig and Grobb stress, in their important contribution: ‘Therapeutic Uses of Transfer Factor’, the importance of basic research in this field. The nature of ‘transfer factor’ ought to be determined, if this factor is to be used in therapy. Presently, results from different clinics are hardly comparable. The authors outline a solid basis for future work in this promising field. Another area, which is in the center of clinical interest too, the ‘Carcinofetal Antigens’, is thoroughly and critically reviewed by Constanza and Nathanson. Finally, one review reminds us that experimental research should remain the basis of sound clinical work, namely that by Talal, entitled ‘Autoimmuni-ty and Lymphoid Malignancy in New Zealand Black Mice’. Similarities and differences between the ‘autoimmune’ disease of these inbred mice and the human diseases lupus erythematosus, Sjögren’s syndrome and Waldenström’s macroglobulinemia, are exhaustively described and critically evaluated.


The review by Crampton deals with ‘Protein Antigens: The Molecular Bases of Antigenicity and Immunogenicity’. Crampton establishes the relationships between the molecular structure of proteins and their capacity to induce immune responses and to react with antibodies. These important and multifarious problems are thoroughly analyzed and the review is indispensable for all workers in the field. Hako-mori and Kobata contribute an expertly written and exhaustive review, entitled ‘Blood Group Antigens’. De Weck’s chapter deals with ‘Low Molecular Weight Antigens’, an important area of research to which he contributed so much. All aspects of the immunogen-, antigen- and tolerogenicity of these antigens are thoroughly discussed. Haber and Poulsen review the interesting and practically important ‘Application of Antibody to the Measurement of Substances of Physiological and Pharmacological Interest’. Oudin, the discoverer of idiotypy, discusses in a fascinating review the development and present standing of ‘Idiotyp of Antibodies’. The last masterfully written chapter by the late Heremans, deals with ‘Immunoglobulin A’. This volume is warmly recommended.


The first chapter of this volume by Jann and Westphal on ‘Microbial Polysac-charides’ deals in depth with the chemistry, immunochemistry and immunobiology of this immensely important group of antigens. During the last decades Westphal and his co-workers enriched this field with fundamental chemical and immunologi-cal discoveries. Therefore, it is no surprise that this review is uniquely comprehensive and most stimulating. Goodman discusses expertly the relationship between ‘Antigenic Determinants and Antibody Combining Sites’. Ada and Ey
review the intriguing problems concerning ‘Lymphocytic Receptors for Antigens’. A very timely and important contribution by Marsh deals with ‘Allergens and the Genetics of Allergy’. Another important area, the ‘Biologic and Chemical Profile of Histocompatibility Antigens’ is masterfully reviewed by Ferrone, Pellegrino and Reisfeld. Kenny’s chapter concerns ‘Antigens of the Mycoplasmatales and Chlamydiaceae’. Burns and Allison discuss thoroughly ‘Virus Infections and the Immune Responses they Elicit’. Thus, the last two chapters are of great interest to clinicians and clinical immunologists. This is an excellent volume and further volumes of this series are awaited with great expectations.

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