Further Section

Book Reviews

The study of immunodeficiency diseases added much to the understanding of the complex mechanisms of the immune response. The Toronto conference was concerned with the biological basis of these heterogeneous conditions and its proceedings consist of a necessary complement to clinically oriented texts. The following main areas were discussed and their relation to immunodeficiency states established: the ontogeny of immunocompetent cells; the genetic control of the immune response; receptor-ligand and cell-membrane interactions; different aspects of antibody production; regulation of the immune response and its disturbances; nucleotide metabolism and the role of enzyme deficiencies, and different approaches to immune reconstitution. A chapter on human la antigens has been added in the proof.
Paul Kallós, Helsingborg

Thorbecke et al. ‘Lymphoid-Cell Cooperation in Immune Responses of the Chicken’. Nicholas Cohen’s chapter deals with the ‘Evolution of the Major Histocompatibility Complex (MHC)’. G.W. Warr stresses in his review that there is good evidence that ‘Ig or a structurally related molecule serves as the receptor for primary binding of antigen by lymphocytes in all vertebrates’. B cells bear complete Ig’s of the IgM, and in primates and some rodents of the IgD class also. T lymphocytes possess Ig receptors ‘whose heavy chains are likely to be of a new and unique class’. Ch.A. Janeway, Jr. treats in a stimulating review ‘Idio-types, T-cell Receptors and T-B Cooperation’. He stresses the great importance of T cells in all immune responses and the prominent role of their second receptor for MHC antigens. D.A. Rowley et al. enlighten and extend the network-hypothesis of the immune system, proposed by Jerne. The timely and complex problems of the ‘Biological Function of the MHC are discussed in a very thorough and stimulating chapter by Mernelo and Edidin. In the final chapter Marchalonis accounts for the ‘Molecular Interactions and Recognition Specificity of Surface Receptors’. The volume is warmly recommended.
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It is always a pleasure to read and re-read the volumes of this excellent series. The present volume is devoted to ‘Self/Non-Self Discrimination’. It contains 10 scholarly reviews. Knox and Clarke show in their contribution that plants possess recognition and defense systems, which enable them to discriminate between self and non-self. Chor-ney and Chang’s chapter concerns the immunologic mechanisms operating in invertebrates, Ruben and Edwards review the ‘Phylogeny of the Emergence of T-B Collaboration in Humoral Immunity’,
phosphorylase (PNP) can cause SCID, most probably due to the presence of toxic purine metabolites in the plasma and in the enzyme-deficient lymphocytes. The role of purine metabolism and especially the activities of ADA and PNP, the incidence, prenatal diagnosis, genetics and clinical course of enzyme-deficient cases of SCID were thoroughly and expertly discussed.

Polmar reviewed the results of treatment of such cases with repeated infusions of frozen, irradiated ‘normal’ (i.e. ADA- and PNP-containing) erythrocytes. This enzyme replacement therapy has been beneficial in about 50% of the cases. The lymphocytes of patients so treated, remained enzyme-deficient, their immune functions were, however, partially restored, probably due to the absence of toxic purine metabolites in the plasma. The effect of erythrocyte infusions was in most cases substantially diminished after a number of months or a few years. Hong stressed that bone marrow transplantation is the ‘elixir of life’ in such cases. Successful engraftment effects a permanent cure. Normal, i.e., ADA- and PNP-containing lymphocytes with full immunocompetence were produced. The erythrocytes, however, remained enzyme-deficient. A thorough study of this book is warmly recommended.

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