



IMMUNOPATHOLOGY  
VI<sup>TH</sup> INTERNATIONAL SYMPOSIUM 1970





# Immunopathology

VI<sup>TH</sup> INTERNATIONAL SYMPOSIUM

Held at Grindelwald (Switzerland)

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PETER A. MIESCHER, GENEVA



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## PREFACE

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The Sixth Symposium of Immunopathology establishes this series of international symposia as an ongoing venture. A short historical review will be of interest to the reader in order to assess the meaningfulness of these meetings.

The immunopathology symposia are organized by an International Immunopathology Committee. Their purpose is to arrange periodic symposia in order to facilitate exchanges of information and ideas between investigators from different research centers representing many disciplines. All participants are thus engaged in various aspects of immunopathology.

In 1957 a small committee was formed to organize the first international meeting in Switzerland. This was the first international gathering of biochemists, biologists and clinicians, all working on different aspects of immunopathology. This new field was defined by R. R. A. COOMBS who viewed the history of concepts and mechanisms of pathogenic immunoreactions. He defined immunopathology in the following terms: "Immunopathology presumably covers all immune phenomena associated with general pathology - the majority of reactions of course being physiogenic and beneficial to the host - others again being inconsequential or even harmful (pathogenic)."

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The first symposia stimulated many collaborative research projects. A special effort was made to accept more uniform immunological terms. In particular, the term "allergic reaction" is now widely used being synonymous with "pathogenic immune reaction". The term "autoallergic" has been gradually replaced by "auto-immune", and the term "allergic" is reserved for pathogenic immune reactions that involve exogenous antigens or allergens. Some controversy has centered about the acceptance of the term "allergic" as necessarily conoting disease. The word was coined by VON PIRQUET in 1902, but with altogether a different meaning. Subsequently, however, the term "allergic" has been rather widely adopted by physicians as well as by the non-medical population as indicating disease. Following the formation of many "allergy-societies" that are preoccupied with pathogenic immune reactions, it would be difficult if not impossible to change the meaning of the term "allergic" again.

After the Third International Symposium the usefulness of these meetings as a means of international communication has been broadly accepted. Following the initiative of Dr HOWARD GOODMAN, international collaboration was further strengthened by WHO becoming co-sponsor of the Fourth, Fifth and Sixth symposia. At the Fifth and Sixth symposia, days were devoted to WHO sessions dealing with problems of international health significance.

The Sixth Symposium was jointly prepared by the WHO Immunology Unit and the International Immunopathology Committee. In view of the important devel-

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opments taking place in many biomedical fields, five different subjects were covered at this meeting:

1. Cell interaction and recognition are the dominant current features in research on the basic mechanism of immunization. This session was opened by J. H. HUMPHREY, the meeting chairman, with a talk about receptors on lymphocytes. It has become increasingly probable that antigen recognition by lymphocytes is mediated by structures similar to the Fab fragments of antibodies. It seems likely that this difficult problem will soon find a solution, although some controversy still prevents a general acceptance of the concept. B. BENACERRAF reported on enlightening new experiments about the role of carriers of hapten-protein conjugates. The "helper theory" of T-lymphocytes was developed in the light of the recent work. In this connection A. MITCHISON presented his thought provoking matrix theory. Capture of antigens by macrophage ribonucleoprotein was described by A. A. GORTLIEB. This fascinating hypothesis, first proposed by FISCHMAN and ADLER, remains hypothetical. Localization of antigen on special binding sites of the cell surface seems to render the macrophage-antigen system immunogenic. In this regard it is relevant to mention the papers by ALLISON and WHITE who discussed the "adjuvant" effect in the light of macrophages as the target cells.

2. The second session dealt with the control of antibody synthesis and immunoglobulin deficiency diseases. Of special interest to clinicians was a paper given by C. H. KEMPE on "The implications of specific infectious susceptibilities in immune deficiency syndromes". In this section R. A. REISFELD summarized his research on the isolation of HL-A transplantation antigens. Purification of such antigens may become of great importance for human transplantation.

3. The next session dealt with immune mechanisms of inflammation and injury. H. J. MÜLLER-EBERHARD reported his research on anaphylatoxin generation. He managed to bring some order into a hitherto confusing subject. Two low molecular peptides, C3a and C5a have been shown to exhibit phlogogenic and chemotactic activities. Antibody mediated inflammatory mechanisms were further described by K. F. AUSTEN, CH. G. COCHRANE and F. MILGROM. Cell mediated mechanisms were thoroughly discussed by J. R. DAVID who spoke about the activity of supernatants from lymphocyte suspensions following the addition of antigen. Chromatographic fractions of such supernatants contained several mediators of hypersensitivity. P. PERLMANN discussed the cytotoxicity of activated lymphocytes. F. H. BACH analysed specific and non-specific lymphocyte responses *in vitro*. A challenging paper by H. RAMSEIER and J. LINDEMANN dealt with "Inhibition of recognition of transplantation antigens by specific antibody". These antibodies may be directed against idiotypic determinants of the cell receptors.

4. In the session on tissue specific immunopathology, G. BENDIXEN reported studies to assess delayed hypersensitivity in men with a macrophage inhibition test. K. H. MEYER ZUM BÜSCHENFELDE reported his studies on liver specific anti-

gens. For the first time, it became possible to induce a condition which appears to be the experimental equivalent of chronic active hepatitis. This includes a histological picture of piecemeal necrosis.

5. The WHO conference dealt with a most exciting new development: viral immunopathology. In particular, new pathogenic pathways are opened concerning infections with "slow viruses". The role of viruses in the immunopathology of NZ mice was first discussed. Subsequently, a paper on lymphocytic choriomeningitis was presented by OLDSTONE and VOLKERT. D. D. PORTER discussed the immunopathology of Aleutian mink disease. A. J. ZUCKERMAN spoke about the immunopathology of viral hepatitis and its association with Australia antigens. This subject is rapidly developing; the Australia antigen has now been related to polyarteritis nodosa as well as hepatoma.

As with previous symposia, the discussions were edited by several of the participants. In this regard we are most grateful to Drs. J. C. CEROTTINI, J. R. DAVID, D. C. DUMONDE, P. J. LACHMANN, P. H. LAMBERT, M. B. A. OLDSTONE and E. E. UNANUE for their editorial assistance.

The period between the symposium and its publication was characterized by two rather serious incidents. First, one of the participants fell victim to the highly uncivilized act of sky-jacking. He consequently spent an anxiety filled, involuntary sojourn in the Middle East. Understandably, this miserable experience tended to dampen his enthusiasm to edit one section of the discussions, but the task was kindly assumed by Dr. M. B. A. OLDSTONE. Another participant could not resist the beauty of Switzerland and postponed his return flight. The plane on which he had planned to return was hijacked! The second incident was precipitated by the British Royal Mail's decision to return to a more antique delivery system for several months. This unfortunately delayed publication of the proceedings. The incident seems to have been satisfactorily if not temporarily resolved.

We extend our thanks to all the participants for the vigor and enthusiasm with which they contributed to the success of the symposium. We thank WHO for supporting our efforts. Dr. H. GOODMAN's presence contributed to the success of the meeting. Our thanks to Geigy, Basle, and Behringwerke, Marburg, whose financial contributions permitted us to hold this meeting. We are indebted to Hoffmann-La Roche, Nutley, and to the Wellcome Foundation, London, for additional help. We thank Mr. HUGO STULZ and Miss HEIDI MURI from Basle for secretarial assistance. We are much obliged to Miss RICHENDA WHITE who worked hard on this publication as our editorial assistant. Finally, we thank Dr. h. c. CHR. OVERSTOLZ and Dr. H. G. OERI for their excellent collaboration in the preparation of this publication.

Geneva, June 1971

P. A. MIESCHER



## WELCOME

The international Symposia on Immunopathology held so far have, with their possibility of a thorough exchange of and discussions about new scientific results in immunological and clinical research, enlarged our stock of knowledge in this field vitally.

We therefore have gladly taken the opportunity of being, together with the former company J. R. Geigy, the host of this Symposium and are wishing a good outcome of this meeting to all the assembled scientists.

H. G. SCHWICK  
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