

## BOOK REVIEWS

## CANCER CHEMOTHERAPY

## Immunity, Cancer, and Chemotherapy

Basic Relationships on the Cellular Level. Edited by Enrico Mihich. Pp. xxiii+390. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1967.) 144s.

WITH as yet very few exceptions, drugs used in the treatment of malignant disease are effective because they have the capacity to kill dividing cells in general and their action is not restricted to cancer cells. Cell division forms an essential part in the genesis of the immune response, and so it is not surprising that many anti-cancer agents interfere both with the formation of antibody and the rejection of foreign tissues. This dual action poses some extremely serious problems for cancer chemotherapy, for many tumours in experimental animals are now known to contain antigens in their membranes that are not present in the normal cells of the animals. These antigens introduce a slight degree of "foreignness" and in many experimental situations the growth of primary tumours is slowed down by an immunologically mediated host reaction. The possibility exists, therefore, that the immuno-suppressive action of anti-cancer drugs may impair the anti-tumour host response, and this has been observed with grafted tumours where the drugs reduced the magnitude of a primary immune reaction. No information appears to be available for primary tumours where an immuno-suppressive action would have to be directed against an already established immune response.

In man, the situation is still more complex, because the techniques used in animals to detect the presence of an anti-tumour host reaction cannot be applied clinically and the therapist does not know whether such a response exists in a particular patient. The theoretical danger of immuno-suppression is clearly not an argument against cytotoxic drugs when there is extensive disseminated disease but there are other circumstances such as prophylactic administration post-operatively when their use may be questioned.

A thorough discussion of the available knowledge of the influence of immuno-suppression on chemotherapy would clearly be most valuable but the book under review does not meet this requirement. It is the report of a symposium that took place in Buffalo, New York, but there is no indication as to when the meeting was actually held and none of the papers reproduced is, in fact, very topical. In some respects the most interesting part of this volume is the report of the discussion, which is both stimulating and informative, and the editor deserves great credit for what must have been a time-consuming and difficult task.

The title is misleading, for only one of the eighteen papers deals specifically with cancer and there are three papers by Sterzl, Schwartz and Berenbaum respectively devoted to the mode of action of immuno-suppressive agents without, however, going into their anti-tumour properties. Three-quarters of the book is concerned with different facets of immunology and includes such problems as the nature of the cellular response to antigens, the processing and localization of antigens, as well as the biochemical mechanism of protein synthesis. This vast field is covered too thinly for this book to make a worthwhile contribution to the scientific literature.

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## IMMUNOLOGICAL VADE-MECUM

## Handbook of Experimental Immunology

Edited by D. M. Weir. Pp. xiv+1245. (Oxford and Edinburgh: Blackwell Scientific Publications, 1967.) 160s. net.

IMMUNOLOGY was derived from bacteriology, but has long since developed into a discipline in its own right which impinges upon, and is useful to, other disciplines such as biochemistry, medicine, genetics or parasitology and has a peculiar fascination for molecular biologists. In doing so it has developed its own jargon and its own techniques. Although these may appear frightening to persons unfamiliar with them, some of the techniques are astonishingly simple; others are complicated in concept, though technically easy (provided—and this is a big proviso—that suitable reagents are available); and others are just plain complicated. There is no corpus of accepted experimental techniques, although good monographs exist relating to some of them, and Kabat and Mayer's *Experimental Immunochemistry* (especially the first edition, which made less demands on its readers) has probably done more than any other single work to advance immunology in those fields which it covered. It has been agreed for quite a number of years that a comprehensive book which explained immunological techniques in sufficient practical detail to make them usable by non-immunologists as well as immunologists was highly desirable. The questions were who could be persuaded to write it, and how much or how little theory would be required to make the techniques more than plain cookery. The publication of a *Handbook of Experimental Immunology* has therefore been awaited with considerable eagerness.

It contains thirty-six chapters and two appendices, written by twenty-nine authors from Britain, ten from the United States and three from the mainland of Europe. All the authors have contributed to the practical aspects of the methods which they discuss, and some are their originators. This has ensured that the presentation is authoritative. On the whole a fair balance has been kept between the need to supply a theoretical background and the provision of sufficient technical detail to allow the user to put the methods described into practice without further resort to other books or journals. Since each chapter contains a bibliography (which is well selected so far as I could judge) it is usually possible to find a reference to some specialized technique such as the isolation of a specific anti-hapten antibody.

The handbook contains more than 1,200 pages, and covers methods for isolating and characterizing immunoglobulins, for study of their synthesis *in vitro*, and for examining human immunoglobulin allotypes. There are useful chapters on preparation of viral, tissue and bacterial antigens (but surprisingly omitting the pneumococcal antigens, which are well characterized chemically, even if now of lesser medical importance than before the introduction of antibiotics). Several chapters deal with different aspects of primary and secondary antigen-antibody interaction, including immunofluorescence and immunoferritin techniques, the use of radio-iodinated proteins, and methods for gel diffusion, micro-complement fixation and passive haemagglutination; specific applications in virology, mycology and parasitology; methods for study of anti-tissue antibodies and of various aspects of cell mediated immunity, especially in relation to transplantation; demonstration of antibody forming cells by localized haemolysis in gels; methods for studying reaginic antibodies and pharmacological mediators, and there are appendices on statistical methods and on the use of emulsions for immunization.

The choice of what to include or exclude is inevitably somewhat arbitrary and to satisfy everyone's needs in one volume is probably impossible. Most laboratories concerned with immunology are likely to find that the bulk