

Immunological and Blood Products

MARY DAWSON, Ph.D., F.P.S.

G. R. MILNE, F.P.S.

The lower half of the book cover features a repeating pattern of overlapping circles. Each circle is filled with a vertical, textured pattern of red and white, resembling a microscopic view of cells or a stylized representation of blood components. The circles are arranged in a staggered grid, creating a dense, rhythmic visual effect.

HEINEMANN

IMMUNOLOGICAL AND BLOOD PRODUCTS

PHARMACEUTICAL MONOGRAPHS

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Professor of Pharmacy, University of Strathclyde

Volume 5

IMMUNOLOGICAL AND BLOOD PRODUCTS

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IMMUNOLOGICAL AND BLOOD PRODUCTS

BY

MARY DAWSON Ph.D., F.P.S.

University of Strathclyde

G. R. MILNE F.P.S.

Glasgow and West of Scotland Blood Transfusion Service



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GENERAL PREFACE

The aim of this series of pharmaceutical monographs is to provide an up-to-date series of short publications for teaching general and specialised topics to undergraduate students of pharmacy and allied subjects. Each monograph in the series is the work of an expert or group of experts actively engaged in teaching or practice. For convenience, however, groups of two or more monographs on related subjects have been collected together for publication.

Each monograph is intended to serve as the basis for a group of lectures or tutorials in the honours and pre-honours years of undergraduate courses in pharmacy and allied subjects in British and Commonwealth Universities and, of necessity, some monographs are slanted towards the more specific requirements of these countries. We have, however, endeavoured to keep the monographs on a general plane to ensure their suitability for use in other parts of the world.

An attempt has been made to present the subject matter of individual monographs in such detail that it provides a permanent record for study purposes capable of being used by students in lieu of lecture notes. Each monograph, however, sets out to provide not merely a detailed account of essential subject matter, such as would be required for examination purposes, but also seeks to indicate its relevance and importance to pharmaceutical studies in general. In this respect, monographs extend naturally to the boundaries of knowledge in all major aspects, and wherever possible present appropriate rival views and hypotheses in sufficient detail for the student to grasp their essential detail without reference to the original. The texts are, however, referenced to provide additional sources of information.

I am indebted to the authors of the individual monographs for their willingness to collaborate with me in the preparation of this series. I should also like to express my thanks to my colleagues and many friends for their help and advice in framing the series and for discussions on individual monographs. I should further like to express my sincere thanks to Mrs S. Cohen for invaluable secretarial assistance

J. B. S.

PREFACE TO VOLUME 5

IMMUNOLOGICAL PRODUCTS

This monograph on immunology and immunological products is intended primarily for undergraduate students of Pharmacy to provide an introduction to a subject which will be important to them later, when as graduates they may be called upon to prepare, store and dispense vaccines, sera, allergy-diagnostic and similar preparations of biological origin. For similar reasons, the present monograph which draws heavily on examples of immunological products, official in the British Pharmacopoeia and the British Pharmaceutical Codex, should be of interest also to medical students. Students of veterinary medicine should also find special interest in this monograph, both from the point of view of the use of animals generally in the preparation of immunological products, whether these be for human or for veterinary use, and also in the references to the specific veterinary immunological products which are described. In addition to dealing with whole animal techniques, the monograph describes recent tissue culture techniques which are of growing importance both in the preparation and standardisation of certain immunological products.

As is essential in the treatment of such a complex subject, some prior knowledge of related disciplines has necessarily had to be assumed, particularly the subjects of general microbiology (Volume 1 in this series), elementary mathematics and statistics. This apart, the student not involved in this type of work after graduation should find the text of the monograph adequate for a basic understanding of the subject. For others, there are references of both a generalised and a specialised nature, though on any one topic, only those of greatest pharmaceutical or applied interest are quoted. This short monograph, therefore, makes no claim to be an exhaustive catalogue of pathogenic micro-organisms or the diseases they produce, but deals almost entirely with bacterial and viral immunological preparations.

The author thanks the following for permission to reproduce photographs, diagrams and tables: Evans Medical Ltd., for Figure 2; Coulter Electronics Ltd., for Figure 4; Glaxo, for Figures 5-11

and 14-26; The Controller, Her Majesty's Stationery Office (from Beveridge & Burnet, *The Cultivation of Viruses & Rickettsiae in Chick Embryo*, M.R.C. Special Report No. 256) for Figures 12 and 13; Difco Laboratories for Table 3; Allen & Hanburys Ltd., for Figure 27; *British Medical Journal* for Figure 30; Beechams Ltd., for Figure 32.

The author thanks Mrs. E. Bryans and Mrs. A. Glen for typing; also Mrs. M. Hards for photographing the charts, and Mr. Frank Price for preparing Figure 3.

January 1967

M.D.

BLOOD PRODUCTS

This short monograph has been written to augment a short series of lectures on Blood and Blood Products, given to Honours Degree students in the Department of Pharmacy, University of Strathclyde.

Blood and Blood Products are described in the British Pharmacopoeia and British Pharmaceutical Codex and their preparation is controlled under the Therapeutic Substances Act, 1956, and the Therapeutic Substances (Manufacture of Preparations of Human Blood) Regulations, 1963. Similarly, Dextran Injection is controlled under the Therapeutic Substances (Manufacture of Dextran Injections) Regulations, 1966. For these reasons, if no other, the pharmacist has to know about Blood and Blood Products, as in practice he may be asked for information or advice about them. It is hoped therefore that the contents of this book will be helpful, not only to pharmacists, but that also as a general account of the work of the Blood Transfusion Service it may be useful to others in related fields of medical work.

I acknowledge, with thanks, permission from Academic Press Inc., New York, to reproduce Figs. 6 and 7 from *The Plasma Proteins, Vol. I*, edited by Frank W. Putnam, 1960.

I am indebted to Mr D. Petrie for the original line drawing of the plasma drying unit in Fig. 3. I acknowledge helpful advice and criticism from my colleagues, Dr John Wallace, Mr G. M. Todd and Miss Marian Izatt.

January 1967

G.R.M.

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