can be recommended to all haematologists, histopathologists, and immunologists. Hairy Cell Leukaemia, the joker in the lymphoma-leukaemia pack, continues to be a subject of intensive research and interest. Most recently, for example, there appears to be a bald variety of the cell. Who knows what will come next?

HEM KAY

Cloning of Human Tumor Stem Cells. Progress in Clinical and Biological Research. Vol 48. Ed SE Salmon. (Pp 367; illustrated; \$44.00.) Alan R Liss Inc. 1980.

Dr Salmon has brought together over 30 authors to review the culture of human tumour cells as colonies in semi-solid media.

In the first part Salmon and Buick present a very brief review of the theoretical background. Part two consists of eight chapters covering the development of suitable assays for colony forming cells in a variety of human tumours. The chapters are comprehensive and contain an appropriate amount of experimental detail, but in some areas the need for further work is obvious. There is an error in Chapter 8 (Figure 2A, p 90). A claim is made for a linear relationship between colonies and cells plated, but the figure clearly shows a log-linear relationship. Linearity is important, and an explanation for this is needed if much of the work is not to be invalidated.

Methods of colony analysis are summarised in five chapters, and the work of Trent on the cytogenetics of cells in colonies is noteworthy. Section four contains details of the controversial but encouraging work on the use of colony inhibition as a measure of tumour chemosensitivity. The final two sections contain Dr Salmon's overview of future work and useful technical appendices.

The contribution of the Arizona group in this field has been very great and this book will be of value to everyone interested in working with these techniques. However more emphasis in some chapters upon the problems which remain and some of the controversies which surround existing methods and results might have made it more valuable to the less specialised reader.

PJ SELBY

Fundamentals of Oncology. 2nd ed. Henry C Pitot. (Pp 304; illustrated; Sw fr 45.) Marcel Dekker Inc. 1981.

This text is designed as an introduction to the biology of cancer for the non-medical student of oncology in the United States. It would equally suit the trainee pathologist or medical oncologist in this country. The book requires the attention of the reader and some understanding of biology and pathology are essential if the student is not to be guided by a teacher. The chapters cover terminology, etiology, pathogenesis and biochemistry of cancer, host-tumour relationships, etc. This second edition has up-to-date references (1980) and an added chapter on the basics of cancer chemotherapy.

There are some differences in the language of oncology on this side of the Atlantic but the terms used by the author are clearly defined. It is not too difficult to find rather bald statements or comparisons made in a relatively short introduction to a vast subject. For example, too glib a comparison is made between initiations of tumour in the experimental sense and carcinoma *in-situ* of the human. The literature cited has had to be limited and is predominantly American. These are minor criticisms and I find the book admirable. I would recommend it to any serious student who wants an authoritative introduction to the subject.

HG RICHMOND

Manual of Methods for General Bacteriology. Eds P Gerhardt, RGE Murray, RN Costilow, EW Nester, WA Wood, NR Krieg and GB Phillips. (Pp 524; illustrated; \$25 hardback.) American Society for Microbiology. 1981.

This excellent and up-to-date book may be regarded as a companion to the *Manual of Clinical Microbiology*, Lennette *et al.* (eds) (1980), also produced under the auspices of the American Society for Microbiology. It is directed to general rather than clinical microbiology and deals with the following topics—morphology, growth, genetics, metabolism, systematics, and laboratory safety. The book is intended for serious microbiologists and contains a wealth of useful information and detail about a great many techniques appertaining to general bacteriology: virology is not included. There is a uniform quality to all the chapters and the details given are adequate to enable the reader to use the techniques

described without reference elsewhere. Many of the methods described are likely to be useful for research in a clinical laboratory. Strongly recommended as a reference book on the shelf of any active bacteriology department and very good value for the money.

DM JONES

Immunological Investigation of Connective Tissue Disease. LE Glynn and CA Reading. (Pp 98; illustrated; £15.) Churchill Livingstone. 1981.

The stated aim of the series "Practical Methods in Clinical Immunology" is to provide manuals giving "explicit guidance" in the performance of tests and also an account of the "interpretation of results". In this volume the authors consider so-called "connective tissue diseases" (a term which stubbornly refuses to pass into obsolescence) and have concentrated on five of these conditions—rheumatoid arthritis, SLE, mixed connective tissue disease, rheumatic fever and amyloid.

Of the 83 pages the first 50 are concerned with theoretical considerations of the investigations in various well defined groups of patients as reported in the literature. The text reads more like a review of the literature rather than a distillate of the authors' own extensive experience in the field. The chapter on immune complexes describes in brief detail a large number of tests, with little guidance as to which is most suitable. There is no reference to the recent results of collaborative studies of immune complex tests organised for the World Health Organisation. Immunoelectrophoresis and quantification of proteins are described but no guidance is given on how these may be used to evaluate patients with connective tissue disorders. The ELISA technique is discussed without indicating how it should be used other than to say it "offers endless opportunities" and can be readily adapted for the study of IgG, IgM or IgA rheumatoid factors—under what circumstances should we be doing this?—or again "to replace the Mancini plate method for the quantification of serum protein"—is this really advocated? Anything is possible, but books with these aims should also indicate what is realistic and appropriate.

Chapter 6, headed "In vivo tests of immunity", contains one-and-a-half pages of text, there is virtually no information on what the tests are or how they should be done and interpreted. The chapter on

lymphocytes is poor—EAC rosetting is given as a test for B cells, whereas it is unreliable because monocytes are also positive, and there is no mention of the use of antisera to define lymphocyte populations in man (perhaps the monoclonal expansion occurred before the manuscript went to print). The last 30 pages are devoted to detailed description of methods without any indications of the technical pitfalls.

The book is easy to read and could form a useful introduction for clinicians and others to the subject of immunological tests in rheumatic disorders—but I fear it is of less practical value than it could be.

RA THOMPSON

New Developments with Human and Veterinary Vaccines. Progress in Clinical and Biological Research. Vol 47. Eds A Mizrahi, I Hertman, MA Klingberg and A Kohn. (Pp 425; illustrated; £24.60.) Alan R Liss, Inc. 1980.

Although we usually pay lip service to the idea that prevention is the best way of dealing with disease it is difficult for many people to find much enthusiasm for the study of vaccination. Yet hopeful work is going on, both in the realm of the better application of vaccines, as for instance the Extended Programme for Immunisation of the WHO, and in the development of new and better vaccines, by applying new ideas and techniques in immunology, bacteriology, parasitology, virology, and "genetic engineering". This book contains papers and a discussion from a recent meeting in Israel, which was attended by a wide range of speakers. Some gave general reviews, some mainly described their own work, all of them spoke of genuinely new and up-to-date science. There were examples of getting to the molecular or submolecular basis of antigens as varied as tetanus and cholera toxins and influenza viruses, and progress reports on work towards entirely new vaccines, including those against hepatitis viruses. There were interesting summaries of vaccines against a number of important parasites and novel methods of exploiting the immune response including adjuvants.

Though reproduced by photo-offset from typescripts the text is readable, particularly because it is generally written in clear English and communicates interest, enthusiasm, and a breath of hope for the future. Anyone who wants to keep abreast of present and future advances in

the development of vaccines should read this volume.

DAJ TYRRELL

Non-Arthropod-Borne Togaviruses. MC Horzinek. (Pp 200; illustrated; £16.40; \$39.50.) Academic Press Inc. (London) Ltd. 1981.

This is the third volume in a comprehensive review series of recent advances in virology and viral infections of immediate topical interest.

Most togaviruses are arboviruses which are maintained in nature to a large extent by biological transmission between susceptible vertebrate hosts by blood-sucking arthropod vectors. Togaviruses are thus of enormous medical, veterinary, and economical importance in most parts of the world. The term non-arthropod-borne togaviruses is a useful and concise jargon name for viruses which, though far from being neglected as judged by their importance and the numerous publications scattered in medical and veterinary journals, have not been concisely and expertly reviewed.

The viruses and infections which are discussed in this volume include rubella virus, European swine fever (hog cholera), bovine viral diarrhoea, "border disease" of lambs, lactate dehydrogenase virus of mice, equine arteritis and simian haemorrhagic fever. For good measure, carrot mottle virus is thrown in since this plant virus resembles animal togaviruses rather than other plant viruses, as well as a cell-fusing agent found in mosquito cell cultures. Infections with these viruses lead to widely varying host reactions ranging from inapparent infection, abortion, and congenital malformations, and rapidly fatal illnesses.

The medical and veterinary clinical virologist, pathologist, immunologist, biochemist, and of course teachers of virology will find this monograph an elegant, scholarly, and comprehensive review of current knowledge, which will stimulate further interest in the world of viruses and its wide ramifications into genetic engineering, monoclonal antibodies, other aspects of biotechnology, ecology, and human and animal diseases.

AJ ZUCKERMAN

Notices

Winston Churchill Memorial Trust

Applications are invited for the Churchill Travelling Fellowships 1982. These are open to all UK citizens regardless of age, occupation, politics, religion, or race, and no special educational or technical qualifications are needed. Fellowships are offered in different categories each year and among those for 1982 is included "Medical research into the relief of pain" which is aimed at doctors, scientists, and research workers associated with the development of new methods to alleviate suffering. Candidates are asked to propose a project they wish to carry out in any country they choose. The grant will cover return air fare, plus all travel and living expenses abroad for a period of up to three months. Final selection by interview will be made in January 1982. For information please contact Winston Churchill Memorial Trust, 15 Queen's Gate Terrace, London SW7 5PR.