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Methods of Enzymatic Analysis Third Edition — Volume X Antigens and Antibodies I. Edited by Hans U. Bergmeyer, Jürgen Bergmeyer and Marianne Grab. VCH Verlagsgesellschaft, W. Germany, 1986. ISBN 3-527-26050-1. 550 pp. US$148.00.

Conscious of the cost and risks inherent in the use and disposal of radioactive isotopes, many laboratories have explored the feasibility of replacing radioimmunoassays by enzyme immunoassays (EIA), popularly known as ELISA or enzyme-linked immunosorbent assays. This book describes how ELISA can be used for the detection of serum antibodies and for research purposes, for example, for enumerating antibody-secreting cells and screening culture cell supernates for monoclonal antibodies.

A major portion of the text is devoted to describing methods for the measurement of immunoglobulin classes and subclasses and the detection of antibodies to autoantigens and viral proteins. Any laboratory intending to develop this type of assay will find this book an invaluable companion. Indeed, having acquired materials and reagents, a laboratory could be assured of immediate success in establishing the assay simply by following the precisely defined conditions and methodological steps. Also discussed are the sources of error, limitations, precision, accuracy, sensitivity and specificity of each particular assay.

A most useful section of the book and one which possibly deserves proportionately more space is the first chapter dealing with standardization of ELISA for antibodies, problems and limitations to the interpretation of the results and means of expressing the result. If length determined the cost of this book, pages could have been saved by discouraging repetition in the multi-authored text. Most of the chapters illustrate the principle of the assay which is basically the same. This saving of space could have been devoted to a separate section on the various applications of ELISA, or an extension of the General section. Whilst the range of applications is covered, the full impact of ELISA has not been obvious at the first reading.

For example, Western blotting is not described until the last chapter and is “buried” under the heading of Human T Lymphocyte Virus III/Lymphadenopathy Associated Virus Antibodies.

S. F. Whitingham

Gastric Carcinoma. Edited by M. Isabel Filipe and Jeremy R. Jass. Churchill Livingstone, London, 1986. ISBN 0-443-03166 5. 297 pp., illustrated. $132.00.

This is the second in a series of planned volumes which are to be devoted entirely to the pathology of tumours. There are twenty-two international contributors who have put together 15 chapters. Despite this, there is a recognisable theme which runs through much of the book. Thus, putative etiological factors are argued from what is known of epidemiology and changes in the so-called micro-environment of the stomach which results with the establishment of chronic gastritis and intestinal metaplasia. The changes in cell kinetics, histochemistry and DNA metabolism which run in parallel with this are also considered together with conventional pathological descriptions of dysplasia, gastric polyps, early and late gastric cancers and techniques of diagnosis, including cytology. All this is excellent stuff, but one must not be lulled into forgetting that much of the early part of this presentation concerning etiology and the evolution of gastric neoplasia is hypothesis, albeit well argued. The problem of the relationship between chronic gastritis with intestinalisation of the stomach and subsequent cancer development is, however, put into proper perspective in the chapters on early gastric cancer and on the electron microscopy of malignant and premalignant gastric epithelium, which come towards the end of the book.

The chapter on the gastric mucus: bicarbonate barrier appears outside the general theme of the book and one wonders why it was included when, as indicated in the preface, other more important aspects on the tumour pathology of gastric cancer had been omitted.

The bibliography is extensive and includes complete references up to 1984, and a few in 1985 which are listed as ‘in press’. This book is for the postgraduate and will be primarily of interest to pathologists, although it was also aimed at gastroenterologists. It is an essential reference for those in training or faced with problems in definition of early malignancy in the stomach. It will also be of value to basic scientists who are seeking information concerning the frontier area of research into gastric carcinoma.

R. Whitehead

Complications of Viral and Mycoplasmal Infections in Rodents to Toxicology Research and Testing. Edited by Thomas E. Hoit, Hemisphere Publishing Corporation, New York, 1986. ISBN 0-89116-388-3. 191 pp., illustrated. US$49.95.

Infectious diseases of experimental rats and mice are a serious problem in many laboratories. To quote from the introduction to Chapter 1 of this book: “More than 23 separate viruses have been isolated from laboratory rodents during the past 20 to 25 yr. Some are no longer encountered. Some are encountered infrequently, while others are encountered all too frequently. Many of these murine viruses, together with mycoplasma, present significant problems to investigators, either by adversely affecting the health of the animal or by complicating research efforts. The problems cover a wide range, including animal morbidity and mortality, alterations in immune response and metabolism, alterations in pathological lesions, alterations in response to stress or experimental treatment, and human infection.”

Measures to deal with these diseases are available. This book, which is a collection of nine papers presented at the Sixth Chemical Industry Institute of Toxicology Conference on Toxicology, is a comprehensive review of the most important of these diseases and what can be done about them. The first two chapters are the results of surveys of some murine viral and mycoplasmal diseases in American laboratories. The next three chapters deal in detail with Sendai virus, rodent coronaviruses and murine mycoplasmal infections, and there are two chapters describing detection methods for rodent viruses and mycoplasmas. The last two chapters are of particular interest to anyone developing a rodent colony free from viral and mycoplasmal diseases, as they describe the appropriate methods. Each chapter has suitable references and there is a good index.

This is a very useful book for anyone using laboratory rodents and is especially recommended for those who still use “conventionally raised” animals and who are not satisfied with them.

T. L. Rothwell

Pathology of the Testis and Its Adnexa. Edited by Aleksander Talerman and Lawrence M. Roth. Churchill Livingstone, New York, 1986. ISBN 0-443-08351-7. 263 pp., illustrated. $105.00.

This excellent monograph brings the reader up-to-date with recent advances in the field of testicular neoplasia. Sophisticated imaging techniques and the use of serum and tissue tumour markers have improved diagnosis and allowed accurate definition of the extent of disease, monitoring of response to therapy and early detection of relapses. More effective chemotherapy has meant that many patients with metastatic disease can now be cured.

Although the title suggests a comprehensive review of testicular disease, the subject matter is virtually restricted to testicular tumours, and the book therefore complements, but does not replace, the standard texts on the subject. The WHO tumour classification is used but its limitations and relationship to other currently used systems are discussed in an early chapter. There is a strong emphasis on germ cell tumours, which is justified, since these constitute approximately 90% of all testicular neoplasms. As well as a very thorough chapter on the morphology of the germ cell tumours, three further chapters discuss their ultrastructure and immunocytochemical characteristics; correlation of serum and tissue tumour markers is made. Additional chapters on the management of germ cell tumours stress the clinical importance of tumour markers as well as covering many other aspects of diagnosis and treatment. Pediatric aspects of testicular and paratesticular...
neoplasia are also considered. There is a timely and very useful chapter on the pathological assessment of germ cell tumours following chemotherapy, a situation which the pathologist rarely encountered before the new age of effective multi-agent cytotoxic therapy. An analysis of the effects of systemic chemotherapy and radiotherapy on testicular morphology is also presented. There is a detailed review of the rare sex cord-stromal tumours. The reader’s perspectives on testicular tumours and chemotherapy, a situation which the pathologist rarely encountered before the new age of effective multi-agent cytotoxic therapy. An analysis appropriate since Denmark has the world’s highest incidence of testicular neoplasia. Several of the authors are well-known experts in the pathology of ovarian neoplasia with which interesting and pertinent comparisons are made. This book presents a very practical approach to testicular disease but also has a sound academic basis. It should have a broad appeal, but will be especially useful to surgical pathologists, urologists and clinical oncologists. Patricia Bannatyne

Kidney Transplant Rejection — Diagnosis and Treatment. Edited by G. MELVILLE WILLIAMS, JAMES F. BURDEK and KIM SOLEZ. Marcel Dekker Inc., New York, 1986. ISBN 0-8247-7496-5. 536 pp., illustrated. US$95. 50.

Immunological rejection is the crucial process in determining the outcome of a human organ transplant. With the exception of those fortunate enough to receive an HLA identical kidney from a sibling, most recipients of organ allografts will require treatment for rejection over and above the various immunosuppressive regimens routinely administered. This volume is a timely review of the field of kidney transplant rejection and is recommended for transplant specialists, nephrologists, general physicians and surgeons and physicians in training.

In my opinion, over half of its content is good to excellent with outstanding reviews of the interleukins by P.A. Murphy, the pathology of renal allograft rejection by T.S. Olsen, the localisation of the cellular components in acute rejection using monoclonal antibodies by W. E. Beschorner, fine needle aspiration biopsies from the unit which pioneered the technique, and the immunobiology of cyclosporine by A. D. Hess and colleagues. As might be expected with 22 chapters from 41 authors, there is some unevenness in the quality and clarity of presentation. However, with the exception of a confused, uncritical and overlong treatment of suppressor cell regulation and allograft potentiation (337 references!) a review of mechanisms of cell-mediated rejection which was in part both outdated and internally inconsistent (both acute rejection, page 31, and chronic rejection, page 33, were stated to be the commonest causes of allograft loss) and a mercifully brief, but totally unnecessary, contribution on hyperacute rejection and the perfusion injury (the former better covered in preceding chapters and the latter now a historical oddity), the editors have done well. One third of the chapters are concerned with the theoretical basis of our knowledge of allograft rejection and, with the exceptions noted, the experimental evidence for this was well reviewed and presented. Thus, in addition to those noted above, chapters on the molecular basis of cell-mediated immunity, antibody-mediated rejection, immunological enhancement and the role of anti-idiotypic responses in regulating allograft rejection in which experts briefly and clearly reviewed these areas were included. Overall, however, the major part of the book which focused on human renal transplantation was the better in quality.

To my mind one of the highlights of the book was the stress laid on vascular and glomerular histopathological changes (chapters 8, 10, 11 and 14) as being the most important prognostic indicators of graft survival. Until recently, the dogma of renal allograft rejection has given centre stage to the obvious interstitial inflammatory changes seen in rejecting kidneys and to the cytotoxic T lymphocyte as the key player in renal allograft rejection. This dogma is now widely and rightly questioned, as this book reveals. Many renal transplant units now report that most of their allografts are lost due to immunopathological processes in which vascular and/or glomerular damage predominates and many recent experimental transplantation studies have found that the T lymphocyte which initiates delayed-type hypersensitivity is the crucial T cell type in allograft rejection.

In addition to these contributions, the role of immune monitoring in management of renal transplant patients, the importance of cytomegalovirus infection, the biology and use of polyclonal and monoclonal anti-lymphocyte antibody preparations and, with the exception of a somewhat anecdotal account of one unit’s experience with cyclosporine, the immunobiology and nephrotoxicity of cyclosporine were relevant areas all well covered. Finally, a useful review of cancer in recipients of organ allografts by D. H. Hato and R. L. Simmons, and an overview and update of kidney transplant rejection by the editors, close a very worthwhile addition to the literature.

Robert Burton

New Concepts in Neoplasia as Applied to Diagnostic Pathology. International Academy of Pathology Monograph. Edited by C. M. FENCLOU PREESE, R. S. WEINSTEIN and NATHAN KAUFRMAN. Williams and Wilkins, Baltimore, 1986. ISBN 0-683-03151-1. 292 pp., illustrated. $163.00.

This monograph is based upon a meeting held in September, 1984 under the auspices of the International Academy of Pathology. It clearly represents more than just the proceedings, because the references quoted include papers published after the event in 1985. Some 30 international contributors are involved.

After a short introduction by the editors there are a dozen chapters which are all of the same high quality. There is an overview of the nature of the neoplastic process, including the ultrastructural features of the malignant cell, carcinogenesis and oncogenes. This is followed by an in-depth consideration of oncogenes and cancer and two excellent chapters on ionizing radiation and neoplasia and the relationship of papilloma viruses to neoplasia in man. There are two short chapters, somewhat speculative, concerned with tumour invasion and mechanisms of metastases which are followed by the somewhat more practical section of the book. Thus the remaining five chapters concern the use of monoclonal antibodies in cancer diagnosis, the demonstration of tumour associated blood group antigens and ploidy analysis of tumours, antigenic markers of neuroendocrine tumours and the diagnosis of the anaplastic malignancy. This book makes excellent reading and is recommended to all with a more fundamental interest in cancer, despite the fact that the title would seem to indicate that the book is aimed primarily at the diagnostic pathologist. It is a good example of the many changes tissue pathology has seen in the last fifteen years and it provides us with an insight into the direction in which the diagnostics of the future may well be going.

R. Whitehead

Monographs on Pathology of Laboratory Animals. Digestive System. Edited by T. C. JONES, U. MOHR and R. D. HUNT. Springer-Verlag, Berlin, 1985.

This book is the third in a series of monographs, sponsored by the International Life Sciences Institute, on the pathology of laboratory animals. This institute was "created to promote cooperative efforts towards solving critical health and safety questions involving foods, drugs, cosmetics, chemicals, and other aspects of the environment."