In our experiments collections were done over a 96-hour period during which time the specimens were kept refrigerated. For the same reason internal standards should be processed immediately after addition. Quenching is compensated for by the use of an internal standard where a two- to three-fold increase in the counting rate is usually found.

One of the main attractions of this method on a routine or research basis is the fact that untrained technicians can obtain excellent results after a little practice. It is also suitable for assaying a large number of samples provided pellets have been prepared in advance. Many estimations can be performed rapidly and simply by this method. It also employs inexpensive and readily available apparatus.

I am indebted to Dr Janet Perry and Dr I. Chanarin, for valuable discussions.

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Letter to the Editor

The Effect of Bilirubin on the Assay of Gentamicin

The lack of effect of bilirubin on the assay of gentamicin by the large-plate technique in the studies of Renshaw and Cornere (1974) confirms my earlier findings (George, 1973). My own studies showed no difference in serum gentamicin levels in jaundiced patients receiving gentamicin when assayed by the tube and large-plate techniques. No differences from the expected levels of gentamicin were observed when known amounts of gentamicin were added to serum with raised levels of conjugated or unconjugated bilirubin or to which sodium taurocholate had previously been added.

A possible explanation for the original findings of Stratford (1970) has recently been published (George, Bint, and Prangnell, 1974).

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Book reviews

Trimethoprim Sulphamethoxazole in Bacterial Infections. Edited by L. S. Bernstein and A. J. Salter. A Wellcome Foundation Symposium. (Pp. x + 254; illustrated. £3.00.) Edinburgh and London: Churchill Livingstone. 1973.

This is an account of an international symposium held in Sardinia in April 1972; it was organized by the Wellcome Foundation to gather together the experience gained during the first three years that trimethoprim/sulphamethoxazole (co-trimoxazole) was generally available. There were sessions on the laboratory aspects, pharmacokinetics, urinary tract infections, respiratory tract infections, and paediatric use. A session on miscellaneous infections includes papers on the treatment of brucellosis (75 patients), chronic osteomyelitis (25 patients), and chronic salmonella carriers. There is also a review on the treatment of typhoid fever. The final session was devoted largely to a full account of the various side effects which had been reported to the Wellcome Foundation's Adverse Reactions Centre. This paper is particularly valuable in showing the incidence of the different side effects seen; it also points out that these are much as would be expected from treatment with or similar dose of a sulphonamide alone. The papers in each session were followed by discussions, which are apparently fully reported.

E. JOAN STOKES

The Principles of Pathology. By A. J. M. Reese. (Pp. 198; 25 figures. £2.25.) Bristol: John Wright and Sons, Ltd. 1974.

To do this book justice, it must be viewed in the context of the author's intentions. He states quite clearly in his preface that 'The principles of pathology' is intended to help medical and dental practitioners prepare for the examinations in basic medical sciences set by several Royal Colleges and consequently has a strong clinical orientation. Thus the audience for which it is intended has, presumably, already received a grounding in general pathology during their medical training, so that this book and the lectures on which it is based should be, in theory, by way of revision.

However, because it is concise and inexpensive, it will be attractive to medical students, and the danger may be that they will use it instead of, rather than as well as, a standard textbook, though I would doubt the author ever intended that even the particular audience he had in mind should ever use it in this way.

The book itself is well written and very readable, and the inclusion of historical background welcome. The almost total absence of illustrations is a drawback, particularly for those for whom pathology may be a dim memory and those undergraduates who may be lured into thinking that this book provides a short cut to success. Illustrations increase the cost, but one wonders if the author has not been over anxious to keep the cost down in this connexion as well as in the brevity of the text. The latter covers the field of general pathology, but some expansion in

certain areas might have been advisable.

In conclusion, while this book will certainly be of help to the audience for which it is intended, one cannot but have certain serious reservations concerning its suitability for pathologists, both undergraduate and postgraduate.

G. B. D. SCOTT

Mucosal Biopsy of the Gastrointestinal Tract (Volume 3 in the Series Major Problems in Pathology). By Richard Whitehead. (Pp. x + 202; illustrated. £4.50.) London, Philadelphia, and Toronto: W. B. Saunders Co. 1973.

As the fibrescopes proliferate, so the need for an authoritative and practical work on this subject increases. Now that the small intestine can be seen from both ends, and the intervening area can be biopsied under remote control, there is no part from which smaller and smaller biopsies cannot be taken and presented to the pathologist. Since many of the advances in this subject have been the product of clinical studies, this puts the pathologist on his mettle.

'Mucosal biopsy of the gastrointestinal tract' is comprehensive and reasonably short. The pathology and significance of gastritis is described and discussed in detail and the author's classification will be known to readers of this Journal. Japanese workers have already demonstrated that by the critical use of radiology and multiple mucosal biopsy it is possible to identify and treat gastric carcinoma in the intramucosal stage, but the chapter on gastric epithelial dysplasia and early gastric carcinoma contains only a page of text. This is a chapter which one hopes will need expansion in the future. The rare conditions, including parasitic infestations, are well described and throughout the book the photomicrographs (many at $\times 70$) are of a good quality.

In general hospitals mucosal biopsies tend to be taken for the assessment of malignancy in gastric ulceration; the investigation of malabsorption; the distinction between Crohn's disease and ulcerative colitis; and the recognition of early carcinomatous change in the colon. Crohn's colitis is well described but the section on precancerous changes of the colon is unlikely to solve all our problems. An attempt to clear away some of the confusion caused by the classification of small intestinal villous atrophy as partial or subtotal is welcome, but a close correlation with the dissecting microscope appearances and enzyme deficiencies is

needed. The author's aim of meeting the needs of the practising histopathologist is an impossible one, but has been achieved sufficiently to make this book the one to which we shall often turn.

R. A. B. DRURY.

The Physiopathology of Cancer. Volume 1. Biology and Biochemistry, 3rd ed. Edited by F. Homburger and P. Shubik. (Pp. xiv + 407; 32 figures. £14.30.) Basel: S. Karger AG. 1974.

This is the first of a two-volume third edition of a book first published in 1953. A second volume—on diagnosis, treatment, and prevention—is being prepared. Despite its general title, this first volume is concerned only with carcinogenesis (six chapters) and tumour-specific antigens (one chapter). Chapters on chemical carcinogenesis (B. L. Van Duuren, G. Witz, and A. Sivak) and naturally occurring carcinogens (G. N. Wogan) cover a lot of ground but not always in much detail or very critically. A further three chapters are concerned with two-stage theories of carcinogenesis. I. Berenblum who, with P. Shubik, wrote classical papers on this subject during the 1940s, speculates, unconvincingly, that tumour initiation results from the binding of chemical agents to nucleic acids and tumour promotion from their binding to cell proteins. More pragmatically, F. Homburger discusses 'modifiers' of carcinogenesis among which he includes cocarcinogens, factors which influence immune status, absorption, tissue concentrations, metabolism, excretion of carcinogens, and host factors such as age, sex, endocrine, and nutritional status. F. Stenbäck, H. Garcia, and P. Shubik cover some of the same ground in a generally more thoughtful contribution. W. H. Kirsten and S. B. Panem provide a useful contribution on viral oncogenesis while R. W. Baldwin competently but unexcitingly reviews tumour-specific antigens. Little attempt seems to have been made to coordinate the contributions from different sets of authors to an otherwise well-produced book which contains few facts or thoughts that are uniquely new.

FRANCIS J. C. ROE

Pathology of the Ear. By I. Friedmann. (Pp. x + 607; illustrated. £14.00.) Oxford, London, Edinburgh, Melbourne: Blackwell Scientific Publications. 1974.

The object of this work is to provide a comprehensive account of the pathology

of the auditory system, stopping at the internal auditory meatus, so to speak, where the neurologists take over. The audience the author hoped for 'is the advanced student and in particular the postgraduate who is training in otology and pathology'. His method is to proceed from without in, preceding any pathology by an account of the normal anatomy and histology supplemented as required by an extremely effective historical review. The study of the external ear and middle ear cleft is presented along logical traditional lines until one reaches at page 278 that the general pathology has not only been presented painlessly but that a very substantial account of otosclerosis has been included.

The pathology of the inner ear and deafness is really a monograph unifying the histopathology, audiometry, and biochemistry of the disordered labyrinthine and vestibular systems, the whole copiously illustrated, prominently by electromicrographs. Though Imrich Friedmann is an acknowledged master of electron microscopy in otology and in the experimental use of the tissue cultured otocyst he gives these topics no more than their due place. The whole work is characterized by judicious balance.

The bibliography and index are outstandingly good. The former is a necessary supplement to the inevitably sketchy chapter on neoplasia. The whole book is written in a style which makes for easy reading and comprehension. The detailed methodology in the third, technical, section will ensure its use by a wider market than the author envisaged.

This is an important contribution to pathology, which is recommended reading.

A. LEVINE

Medical Microbiology: Quality Cost and Clinical Relevance. By Raymond C. Bartlett. (Pp. xvii + 252; 84 figures. £8.25.) New York: John Wiley and Sons. 1974.

The cost of pathological investigations has, perhaps, been more in the forefront of the American doctor's mind than in that of the average British doctor, but the state of the National Health Service is forcing us all to take a close look at the work we do in an attempt both to cut the cost and to improve the service to the patient. In this book the Director of Microbiology at Hartford Hospital, Connecticut, looks at quality, cost, and clinical relevance of the service provided by microbiological lab-