Letter to the Editor

A simplified method for detecting fluorescent antibody to rotavirus: its application to sero-epidemiology

Serological investigations into human rotavirus infections have involved the use of antigenically related non-human strains (Kapikian *et al.*, 1975; Ørstavik and Haug, 1976) or rotavirus obtained from human faeces using complicated technical methods (Gust *et al.*, 1977).

By adapting a method previously described for the identification of rotavirus in faeces (De Silva and Marshall, 1977), we have developed a simple technique of antibody detection using a human strain of virus as antigen and used it to study the spread of rotavirus in the community.

Two hundred and sixty-three samples of serum from patients, mainly inpatients, in the Bedfordshire and North Hertfordshire areas were screened for rotavirus antibody at a dilution of 1:4. Monolayers of pig kidney cells (strains IB-RS-2), grown on Teflon-coated slides as previously described (De Silva and Marshall, 1977), were inoculated with a faecal extract containing sufficient rotavirus to produce 10-15 infected cells per disc when harvested after 18-24 hours' incubation at 37°C. Infected discs of cells were treated with serum dilutions for 30 min at 37°C, washed with phosphate-buffered saline (PBS), reacted with FITC-labelled sheep anti-human IgG conjugate for 30 min, again washed with PBS, and counter stained with Evans blue. They were examined using a Leitz Dialux microscope with iodone quartz illumination.

The results are shown in the Table. Although the numbers are small, the results are broadly in agreement with previous reports from large conurbations (Kapikian *et al.*, 1975; Middleton *et al.*, 1976; Ørstavik and Haug, 1976), indicating that infection occurs very early in life, 90% of children in the 5-9 years age group possessing antibody.

The method described uses a strain of human rotavirus and simple tissue culture

and fluorescent antibody techniques. Large numbers of infected cell preparations (up to 12 per slide) can be prepared, fixed, and stored at -20 until required, making the method useful for sero-epidemiological studies and, by analogy with previous studies of other virus infections (De Silva, 1972) the serodiagnosis of rotavirus infections by estimation of specific IgG, IgM, and IgA antibodies in single and paired sera.

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Book reviews

Lupus Erythematosus: A Review of the Current Status of Discoid and Systemic Lupus Erythematosus and their Variants, 2nd edition, edited by E. L. Dubois. (Pp. xv + 798; illustrated; £25.) Los Angeles: University of Southern California Press. 1976.

The second edition of this classic textbook was published in 1974. So much research had appeared by 1976 that it was decided to add some progress reports before reprinting. The present volume contains about 200 new references and covers newer aspects, such as 'mixed connective tissue disease', which can be distinguished from SLE by precipitin tests for ribonucleoprotein antibodies. The book has almost doubled in size since it first appeared in 1964; it is still by far the most useful and popular text on the subject. No laboratory or hospital should be without it. The price is exceptionally cheap for this comprehensive and essential reference book. In future editions it will be necessary to prune it and remove some of the obsolete investigations, which are now mostly of historical interest.

D. DONIACH

The Gastrointestinal Tract. (International Academy of Pathology Monograph No. 18.) Edited by John H. Yardley, Basil C. Morson, and Murray R. Abell. (Pp. xii + 223; illustrated; \$23.00.) Baltimore: the Williams and Wilkins Company. 1977.

Comprising a series of papers on selected topics in gastrointestinal pathology, this book places particular emphasis on colonic disease. As expected, the recurrent problem of differentiating between ulcerative colitis and Crohn's disease is discussed in detail. An excellent review of colorectal biopsy in inflammatory bowel disease in general puts this problem into perspective, and further sections on ischaemic disease and infective disturbance provide a timely reminder of the scope of intestinal lesions. The importance of colonic cancer is reflected by the informative papers dealing with the aetiology and pathogenesis of this tumour, and the account of prognostic factors rightly draws attention to the value of detailed pathological assessment of colonic neoplasms.

Table Age incidence of IgG fluorescent antibody to rotavirus

	Age group (years)					
	0-4	5-9	10-14	15-34	35-64	≥65
Number tested	38	30	35	60	57	43
Number positive	29	27	28	49	42	35
Percentage positive	76.3	90.0	80.0	81.7	73.7	81.4

The Japanese experience of early gastric cancer is of great interest and is admirably outlined, and the description of gastric polypi, a somewhat neglected topic, will be welcomed by histopathologists. On the other hand, the section on gastrointestinal lymphomas, while excellent in many respects, does not fully take into account current trends in lymphoma classification, and the authoritative paper on the histogenesis of the apudomas is all too brief. Nevertheless this book will be of considerable value to histopathologists faced with unravelling the complexities of gastrointestinal disease.

F. D. LEE

Elastin and Elastic Tissue, edited by L. B. Sandberg, W. R. Gray, and C. Franzblau. (Advances in Experimental Medicine and Biology, Volume 79.) (Pp. xv + 782; illustrated; \$71.) New York and London: Plenum Press. 1977.

This book is made up of research papers presented at the First International Conference on Elastin in August 1976. It covers the important recent advances in a field in which interest has grown rapidly in the last few years as knowledge has accumulated. Most of the research papers (which include a methods section in most cases) are of a high standard, and a short general discussion that followed each paper is included. Although there is no chapter giving a general perspective, this is probably the most comprehensive reference book on elastin and certainly the most up-to-date; it is highly recommended to research workers in the connective tissue field, and particularly to new-comers starting to work in this area. The book is divided into sections dealing with morphology, chemical structure and molecular models, physical chemistry, turnover and biosynthesis, and a workshop on the lung. It is not a primer for students or clinicians.

HELEN MUIR

Pathological Basis of Renal Disease. By M. S. Dunnill. (Pp. vii + 473; illustrated; £17.50.) London: W. B. Saunders. 1976.

This is an important and up-to-date book, which will undoubtedly prove to be most popular. It is clearly aimed at ensuring that the diagnostic pathologist can give a helpful and informed service to the renal physician and that lecturers in pathology can have access to a well-reasoned and

up-to-date account of the pathogenesis of renal diseases. The various chapters concentrate on aspects of renal pathology of immediate clinicopathological interest. This book, therefore, while neither as comprehensive as Heptinstall's nor, again, as concerned with the physiology of renal disease as de Wardener's, will, nevertheless, be indispensable to every clinical pathologist.

Its merits reflect the various roles played by Dunnill at Oxford—namely, as a Fellow of Merton, a one-time Director of Medical Studies in the University, as a member of the renal team at the Radcliffe Infirmary, and, above all, as a practising general pathologist, who is one of the country's leading exponents of the application of measurement techniques in histopathology. Plucking his way delicately through the obscurities of nephrological nomenclature, Dunnill offends no one. He clarifies for the student, the general pathologist, and the physician the curious but now widely accepted renal interpretation of words such as 'proliferative' and 'minimal' glomerulonephritis; not that students or young graduates seem to be over-worried by 'newspeak' in this the last decade before 1984.

The contents of this monograph are essentially practical. The text is outstanding by virtue of the clarity and brevity with which complex concepts are analysed. It begins with a superb analysis of experimental glomerulonephritis, and this is followed by the separate consideration of the many varieties of glomerular disease. Dunnill takes the reader easily through complexities of 'membranous' and 'membranoproliferative - glomerulonephritis' (where the diagnostic criteria especially require careful explanation). The diagnostic histopathologist will particularly enjoy the clarity with which important and controversial morphological changes are analysed—for example, what exactly constitutes a 'crescent'. The light and electron micrographs are among the best and most useful I have seen in this field.

The chapters on Schönlein-Henoch purpura, systemic lupus erythematosus and bacterial endocarditis, the kidney in pregnancy, the haemolytic uraemic syndrome, cryoglobulinaemia, and diabetes mellitus are noteworthy. The busy pathologist will find them ideal as a reference; the good student could scarcely seek a better introduction to renal pathology.

The emphasis on glomerular lesions reflects a contemporary and rather curious preoccupation with what is, after all, merely a small knob on a long tubule. The last chapter, however, is devoted to the microanatomy of the tubules and good account of the countercurrent theory. Perhaps some reference might have been made to Homer-Smith's work and Darmady's valiant attempts at tubular microdissection, with a view to clarifying the pathology of the nephron as a whole. This aside, there are interesting chapters, too, on renal infection, papillary necrosis and interstitial nephritis.

The discussions of renal transplant rejection and acute tubular necrosis are especially good. The account of Fabry's disease would profit from an electron micrograph showing the glomerular epithelial cell inclusions so characteristic of the disease. Again, the analysis of the nephropathies found in countries where malaria is endemic perhaps oversimplifies the complexity of the renal lesions seen. Here, however, I am expressing a personal prejudice. Morel Maroger and I were driven to coin terms such as 'tropical nephropathy', of which Dunnill gives a clear account, to describe what we saw in Senegal.

These, however, are minor shortcomings in a very good and readable book which has given tremendous pleasure to both the reviewer and his colleagues. The author is to be greatly congratulated.

J. C. SLOPER