Letters to the Editor

A Possible Cause of AutoAnalyzer Error

It has been noticed in this laboratory that serum specimens in polystyrene cups as used on the AutoAnalyzer often contain an air bubble attached to the cup wall and usually situated at the bottom of the cup.

These bubbles vary in size, but a volume of 0.01 cm³ is not uncommon. They form when serum is put into the cup, and are more prevalent when the serum is tipped in quickly, as one might do when transferring what is obviously only just sufficient serum for a test from a small tube to a cup. Bubbles have been introduced into 80% of cups filled experimentally in this way, whereas 20% is a more usual figure with cups filled by pasteur pipette. The conical cups are affected far more often than the flat-bottomed variety. Aqueous solutions seem to be rare offenders.

In at least half the cases the air bubble is not present after sampling and so has been included in the volume taken. Obviously the effect of 'short sampling' by 0.01 cm³ will vary according to the volume of specimen taken, the closeness of the reaction to equilibrium, and the precision required for that test but it is equivalent to 'short sampling' by between 40 seconds (0.005 in. orange/black) and two seconds (0.030 in. black/black) amongst the smaller tube sizes. Experimental short sampling by 0.01 cm³ has shown that the precision of a number of routine estimations as done in this laboratory could be significantly affected.

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Immunofluorescent Staining of Rat Gastric Parietal Cells

We would like to add comment to a recent paper by Muller, McGiven, and Nairn (1971) in which they describe immunofluorescent staining of rat gastric parietal cells by human antibody unrelated to pernicious anemia.

Some two years ago when establishing

immunofluorescence methods for the detection of autoantibodies we were faced with the problem of not having laboratory rats available as a source of substrate tissues. We had available, however, golden hamsters (*Cricetus auratus*) and mice, which were used in our tick paralysis research. A brief pilot study was made to assess the suitability of hamster and mouse tissues as substrates for various autoantibodies. It became obvious that hamster stomach mucosa gave brilliant results for the detection of gastric parietal cell antibody in human serum but the positive results could not be reproduced when the sera were retested using mouse gastric mucosa. It was our impression at the time that hamster tissue provided a much better source of antigen, as judged by the strength of the 'staining' reaction, but gave far too many false positives to be used routinely. Further studies are planned.

At that time rat and human gastric mucosa were the reported substrates of choice but after this initial study we have continued to use mouse gastric mucosa routinely for detecting antibody to gastric parietal cells. Concurrent mouse kidney and liver sections are also used to detect other significant antibodies such as against mitochondria. We have found that the recognition of smooth muscle antibody is difficult on mouse stomach but in nearly two years of routine use the presence of gastric parietal cell antibody has been significant and to our knowledge false positives have not been a problem.

We too recommend that mouse gastric mucosa should be used in the immunofluorescence tests for gastric parietal cells and that hamster tissue is unsuitable.

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Reference

- Muller, H. K., McGiven, A. R., and Nairn, R. C. (1971). Immunofluorescent staining of rat gastric parietal cells by human antibody to pernicious anemia. *J. clin. Pathol.*, 24, 13-14.

Book reviews

Verhandlungen der Deutschen Gesellschaft für Pathologie Edited by G. Seifert. (Pp. xxxii + 696; illustrated; DM. 178). Stuttgart: Gustav Fischer Verlag. 1970.

This is the book of the 54th meeting of the German Society of Pathology, held in Berlin in March 1970 and published in the same year. The main theme was immunopathology and transplantation, all the papers being in German but preceded by a summary in English. Practically all these summaries are in completely understandable English, which is as much as can be said for many British and American papers. All the major papers and most of the others are followed by massive reference lists, and the works quoted show that our German colleagues are studying the world literature. These lists alone could prove valuable to anyone working in or alongside this rapidly spreading field. How widely it is spread is well shown in the titles of the 48 papers.

There are a further 48 papers on diverse pathological subjects, abstracts of papers to be given at the autumn meeting, and obituaries. Two of these, with photograph and bibliography, may well be of personal interest to members, namely W. E. Ehrlich of Philadelphia and Hermann Chiari of Vienna.

A. C. LENDRUM

Frozen Section in Surgical Diagnosis By Andrew A. Shivas and Suzanne G. Fraser. (Pp. ix + 261; illustrated. £6.00.) Edinburgh and London: E. and S. Livingstone Ltd. 1971.

To begin with one must question some of the premises adopted as the *raison d'être* of this otherwise excellent, small, but rather expensive, atlas. The reviewer does not believe that frozen section diagnosis is relatively little practised nor that the use of paraffin methods means 'the total loss of all the advantages of frozen section diagnosis.' The authors' insistence that a frozen section service must be 'instantly available, without prior notice, during

operating hours' should be acceptable to large departments such as theirs but would scarcely be tolerable to the majority of NHS histopathologists, often working single-handed and giving cover to more than one hospital. Conceding that toluidine blue and aqueous mounting media save minutes, time, despite the frenetic age we live in, is not now so critical and the extra couple of minutes required to complete a rapid haemalum and eosin preparation would be acceptable to any surgeon. The advantages are obviously a permanent slide and an easier adaptation from paraffin to frozen sections for the inexperienced. The book would have been improved by beginning each section with a discussion of the important pitfalls and difficulties: florid sclerosing adenosis versus carcinoma of the breast, viral lymphadenitis versus malignant lymphoma, chronic pancreatitis versus sclerosing carcinoma of the pancreas, proliferative fibromatosis versus fibrosarcoma, and juvenile melanoma in the adult are a few examples that readily spring to mind. Granted that many of these diagnostic difficulties can be gleaned from the illustrations and their captions they nonetheless require special emphasis if therapeutic disasters are to be avoided by the enthusiastic, inexperienced histopathologist. The authors are to be congratulated on using their routine toluidine blue sections for illustration, showing them warts and all and resisting the temptation to indulge in window dressing. With few exceptions the colour reproductions are of high quality though I would not recommend a practice of picture matching to the histopathologist faced with a difficult frozen section.

W. B. ROBERTSON

Cytology Automation. Proceedings of Second Tenovus Symposium Edited by D. M. D. Evans. (Pp. 275; illustrated. £3.00). Edinburgh and London: E. & S. Livingstone Ltd. 1970.

The proceedings of the 1968 conference published two years later is still interesting reading although many of the hopes expressed have not been realized. The importance of the conference and the report is that the participants were interested in developing the subject from the 'hack screening' which so often produces the moribund, frustrated departments of cytology into active, interested laboratories continually developing the

subject. First to establish the accepted criteria for abnormality, then to find methods of scanning for such cells by any automated method is an admirable goal and should be pursued if any progress is to be made in the understanding of cervical cytology. None of the methods have so far borne much fruit.

A. G. SIGNY

Laboratory Diagnosis of Kidney Disease Edited by F. W. Sunderman and F. W. Sunderman, Jr. (Pp. xv + 587; illustrated. £12.60). St Louis, Missouri: Warren H. Green, Inc. London: Adam Hilger Ltd. 1971.

In the preface this book is described as containing '... the edited proceedings of an Applied Seminar on the Laboratory Diagnosis of Kidney Diseases held in Washington, D.C. under the auspices of the Association of Clinical Scientists'. The 50 chapters in this book presumably therefore comprise the papers read at that seminar and as such the title is misleading. The material covered ranges widely over the fields of normal renal function and structure to the biochemical and histopathological changes associated with kidney disease. However, as with the published proceedings of any symposium, the subject implied by the title is not covered comprehensively and there are many notable gaps. The more detailed information which is in this book is readily available in the standard texts on renal physiology, histopathology, and chemical pathology, and, therefore, especially at the price, the book cannot be recommended.

M. R. WILLS

Interpretation of Diagnostic Tests. A Handbook Synopsis of Laboratory Medicine By Jacques Wallach. (Pp. xxxii + 441; 5 figures; 60 tables. £3.00). Boston: Little, Brown and Co. London: J. and A. Churchill Ltd. 1970.

Despite disclaimers in the preface this synopsis contains many esoteric or outmoded tests, a number of surprising omissions, and some inaccuracies. It will not 'make it simpler for the physician to select the most useful laboratory test' but is a powerful argument for an interpretative clinical pathology service.

A. E. GREEN

The Blood Supply of Bone By Murray Brookes. (Pp. ix + 338; 219 Figures.

£6.50). London: Butterworth and Co. Ltd. 1971.

This book is to be welcomed as a brief and well illustrated account of the subject. It is based on a review of the literature and the author's extensive personal research.

It is essentially an anatomist's account of the subject. There are chapters on haemodynamics and on other physiological aspects of the intra-osseous circulation, but the main emphasis is given to the morphological study of blood vessels when visualized using microscopic, radiographic, and other injection techniques.

Most of the book describes the normal anatomy of the larger and smaller blood vessels in bone, but there are also brief sections on the role of vascular factors in disease processes, including occlusive vascular disease, avascular necrosis of bone, fracture repair, and osteoarthritis. The author regards circulatory factors as having a central position in the control of bone growth and renewal, and this point of view is elaborated in the final section of the book.

H. A. Sissons

Intestinal Absorption and its Derangements

The proceedings of the symposium on 'Intestinal absorption and its derangements' organized by The Royal College of Pathologists and delivered in London in February 1971 will be published on 21 October as a supplement to the *Journal of Clinical Pathology*, price £2.00 including postage. Members of The Royal College, members of the Association of Clinical Pathologists, and subscribers to the *Journal of Clinical Pathology* will be able to buy the supplement at the concessionary price of £1.75, including postage. Copies may be obtained from the Publishing Manager, BMA House, Tavistock Square, London WC1H 9JR.