Letter to the Editor

Buffy-coat smear of bloodstained aspirate and intraperitoneal bleeding

Abdominal paracentesis is frequently the best way to diagnose intraperitoneal bleeding. When bloodstained aspirate is obtained it may still be very difficult to determine whether the blood is from traumatic bleeding during the procedure, from large blood vessels, or from blood already present before the procedure.

Recently we encountered a patient who was suspected of having intraperitoneal bleeding due to rupture of a liver adenoma. The bloodstained aspirate obtained by abdominal paracentesis had a haematocrit approximately that of the peripheral blood. The bloodstained aspirate did not readily coagulate but clotting was also prolonged in the venous blood because of disseminated intravascular coagulation. The possibility that the blood came from a large vein or was induced by bleeding during the procedure could not easily be ruled out. We used a simple method of buffy-coat examination of aspirate.

A heparinised capillary tube was filled with bloodstained aspirate immediately after paracentesis and centrifuged after one end had been sealed. The tube was then broken at the buffy-coat

area into two pieces. The smear from the buffy-coat was prepared using either microslides or cover slides and stained with Wright stain. Many macrophages of different sizes and degrees of erythrophagocytosis were observed (Figure).

The number of macrophages in the peritoneal cavity of animals increases significantly after the local injection of many different stimulants (Carr, 1973); intraperitoneal bleeding produces a similar response. Phagocytosis of these 'foreign' red cells also takes place. The abundance of macrophages and marked erythrophagocytosis indicate that there had been blood in the peritoneal cavity for some time. Surgery performed later confirmed the diagnosis of intraperitoneal bleeding. This simple method of examination by buffy-coat smear of bloodstained aspirate helps in the diagnosis of intra-abdominal bleeding.

J.-Y. CHU

Department of Pediatrics,
St Louis University School of
Medicine and Cardinal Glennon
Memorial Hospital for Children,
St Louis, Missouri, USA

Reference

Carr, I. (1973). *The Macrophage: A Review of Ultrastructure and Function*. Academic Press, London.

Book reviews

Systemic Pathology. Volume 2, 2nd edition. By 38 authors. Edited by W. St. C. Symmers. (Pp. 564; illustrated; £29.50.) Edinburgh, London, New York: Churchill Livingstone. 1978.

The first volume of the second edition of *Systemic Pathology* told us that the next would cover the blood, lymphoreticular system, thymus, gastrointestinal canal, and liver. In the event we get only the first three and a 50% price rise, with gut and liver to follow.

The 75 pages on the blood will not settle the evergreen argument as to whether histopathologists should know more or less haematology, but an opportunity to concentrate on the haematological aspects of morphological disease has not been fully grasped. The thymus is clearly but briefly covered (31 pp), and the 16 pages of text may not be enough to solve a mediastinal problem. But this volume will be judged on the large section on lymphoid diseases written by the editor, and his descriptions of the reactive lymphadenopathies are better than ever. The 100 pages, 350 references, and 90 illustrations devoted to lymphomas will become well-thumbed. The Rappaport, Lukes, and Kiel classifications are set out in detail, but the author does not use any of them and defends the use *pro tem* of the old terms. Rarities such as Burkitt lymphoma and Kaposi's sarcoma are well described in depth but histiocytic, immunoblastic, and undifferentiated lymphomas are dealt with in four pages between them. Despite a slight lack of balance, this is far the best book for the histopathology of the benign and malignant diseases of the lymphoid system. Forget the price and stretch the budget as pathologists, young and old, green or grey, all need and will use this book.

R. A. B. DRURY

Clinical Laboratory Medicine. Clinical Application of Laboratory Data, 3rd edition. By Richard Ravel (Pp. xii + 531; illustrated; £11.50.) Chicago, London: Year Book Publishers. 1978.

This popular, laboratory-orientated book is now in its third edition, each previous edition having been reprinted on three occasions. There is little doubt that it fulfills a need.

Figure Buffy-coat smear of bloodstained peritoneal aspirate demonstrating erythrophagocytosis.

Book reviews

A new chapter has been added on the serum level monitoring of therapeutic drugs, and this includes not only the commonly monitored compounds such as the anticonvulsants, lithium and digoxin, but also those compounds falling into the general category of poisoning such as lead, the barbiturates and salicylates, and alcohol. Other chapters have been extensively rewritten, and new tests have been added in many of these areas of revision.

The book is concise and easy to read but is probably too 'all-embracing' for the current trends in pathology in Great Britain. A brief look at the table of contents indicates that chemical pathology, endocrinology, and medical microbiology are all extensively discussed. There are also a number of topics, which normally do not fall within the province of a pathology laboratory, such as ultrasound examination and computerised axial tomography.

This is an admirable book for those pathologists who, because of their geographical situation, or for other reasons, are responsible for more than one discipline; it will be a valuable addition to their reference library. For specialist pathologists, however, the tendency will be for them to acquire alternative books devoted solely to their own disciplines.

G. W. PENNINGTON

Surgical Pathology Case Studies. Volume 2. By M. Ali, A. O. Fayemi, and E. V. Braun. (Pp. viii + 519; illustrated; \$16.) New York: Medical Examination Publishing. 1978.

First sight of this unconventional book aroused curiosity, browsing led to doubts and closer examination to disappointment. Curiosity stemmed from the format: an extensive series of illustrated case studies, each of which is followed by a group of multiple-choice questions, followed in turn by a general discussion and selected references. The 60 case studies are drawn from the alimentary system, urinary tract, reproductive system, lymphoreticular and haemopoietic systems, vascular lesions, and the musculoskeletal system, and conclude with a small miscellaneous group. The authors' aims are to challenge what they pessimistically describe as 'residual' knowledge and to prime the reader for detailed discussions. It is an interesting attempt but falls short on several counts: the answers to these problem-solving

exercises are commonly self-evident from the first few words of the clinical history; many of the multiple-choice questions are poorly constructed; although a key to the answers is provided, a fair number of controversial points raised by the questions are not covered in the text; and the photomicrographs are generally poor—some no more than an uninformative blur.

I suspect that reactions to the novel format will vary; it certainly did among some colleagues in training. Some might find it helpful, while others would prefer a more conventional approach. The authors' hope is to provide 'that elusive formula which captures and sustains the reader's interest'; they will not be unique if they are only partly successful.

Its value may perhaps be found at the end of the day—in place of the crossword puzzle when one is not prepared for the discipline of formal study. It will surely reveal gaps in knowledge, and the information it provides is authoritative and up to date.

H. M. CAMERON

Atlas of Haematology, 4th edition. By George A. McDonald, T. C. Dodds, and Bruce Cruickshank. (Pp. viii + 309; illustrated; £15.00.) Edinburgh, London, New York: Churchill Livingstone. 1978.

Normal, Transformed and Leukemic Leukocytes. A Scanning Electron Microscopy Atlas. By Aaron Polliack (Pp. 140; 236 figures; DM 86, \$39.60.) Berlin, Heidelberg, New York: Springer-Verlag. 1977.

Clinics in Haematology, Volume 7, Number 2, June 1978. Acute Leukaemia. Guest Editor. Joseph V. Simone. (Pp. vii + 202; illustrated; single issue price £8.25.) London, Philadelphia, Toronto: W. B. Saunders. 1978.

The fourth edition of McDonald's *Atlas of Haematology* is about half as big again as the previous edition. Comparison of the two shows where welcome additions have been made. There are now some good hairy cells and some myeloma cells with prominent nucleoli, also a promyelocyte leukaemia, but I hope this will be more densely granular in the next edition and that follicular lymphoma cells will be more uniformly sized with some notched nuclei. The main addition is a section on electron microscopy, which on the whole is excellent although some definition appears to be lost in places—the RER of the plasma cell, for example.

The section on SEM will need to be revised (see below) but, for most purposes, this maintains the high standard previously set and gives something extra.

We have already come far from the neat spheroidal concept of cells, and in Polliack's *Atlas of Scanning Electron Microscopy* one can appreciate the surface irregularities of processes, ridges, ruffles, or villi and the pockmarks of craters and blebs. The smooth cell is usually an artefact of fixation although some unstimulated T-cells may have only a few projections. There is much to be admired here; the point-to-point contacts of rosetting lymphocytes, the effect of transforming mitogens, bleb-covered myeloma cells, and, of course, leukaemic 'hairy cells'. The latter are actually almost the only non-hairy ones, the surface being mostly ridges and ruffles (of course, one should have guessed). This is a book of revelations but, as the author is careful to point out, SEM cannot help much in the diagnosis of leucocyte disorders.

The latest volume in *Clinics in Haematology* returns after an interval of six years to Acute Leukaemia, a subject which is thus, for the moment at least, brought up to date. An imposing list of contributors has reviewed the various aspects of the disease, omitting epidemiology, virology, and leukaemogenesis. Treatment matters predominate and give further encouragement and hope of success, yet so many questions are entirely open. Are there leukaemia-specific antigens or not? Does immunotherapy have any role to play and, if so, by what mechanism? Are cytokinetics critical to drug strategy? Here one must admire the honesty of the authors from the Memorial Hospital, whose own cytotoxic-based regimes have been excellent yet who admit that equally good results can be obtained by reversing the order in drug-sequences. A chapter on chromosomes points the way to a better understanding of the diversity of AML and one on bone marrow transplantation indicates what may be the most hopeful long-term treatment of that disease. All in all, a useful guide for the next two to three years in acute leukaemia.

H. E. M. KAY

The Pathology of Violent Injury. Edited by J. K. Mason. (Pp. xi + 388; illustrated; £16.00.) London: Edward Arnold. 1978.

For a book with 25 contributors this is a remarkably readable and homo-