Fig 2 "H6000" analysis of blood and mononuclear cell fraction
RBC = red blood cells; PLT = platelets; PEROX = peroxidase

edetic acid from 98 normal donors showed that we could improve our previous mean yield by 20% (Table). Viability of recovered cells was 98% and purity 77%. Interestingly, other workers found that a major proportion of unrecovered lymphocytes were lost in the buffy coat region of erythrocytes sedimenting through the density gradient.

Minor modifications to the Boyum method⁴ over 20 years have failed to produce a substantial improvement in yield. We believe that prior concentration of the mononuclear cells in whole blood by centrifugation is a new approach which will ensure a substantial improvement in the yield of lymphocytes and reduce reagent costs, as the

volume of separation medium required can be reduced by 80%. We have also been able to show that this method is equally effective for leukopaenic patients.

LA KAY,
DE LOCKE,

Department of Haematology,
The Royal Infirmary,
New Durham Road,
Sunderland SR2 7JE

References

- ¹McKeating D, Markey GM, Alexander HD, Morris TCM. Separation of lymphocytes from peripheral blood: a m-visitation. *J Clin Pathol* 1985;38:595.

- ²Hicks MJ, Jones JF, Thies AC, Mannich LL. The effect of lymphocyte recovery on lymphocyte typing results. *Am J Clin Pathol* 1981;76:745-52.

- ³Colowick SP, Kaplan NO. Immunological techniques part G. In: *Methods in enzymology*. Vol 108. London: Academic Press, 1984:88-102.

- ⁴Boyum A. Separation of white blood cells. *Nature* 1964;204:793-4.

Dr Markey and others reply as follows:

Not all workers in this field are separating lymphocytes from whole blood at room temperature. Some notable exceptions are mentioned in our recent letter; and we therefore reported our findings using different condi-

tions of separation with a consequent improvement of the rate of lymphocyte separation to 56%. The main purpose of our letter, however, was to remind readers that: rates of lymphocyte recovery from normal blood remain far from satisfactory; and therefore the interpretation of lymphocyte profiles obtained from normal subjects may well be inaccurate with regard to minor subsets and subsets in changed states of activation. It is preferable to expend energy on improving lymphocyte yields before exhaustive work is performed on incomplete samples.

The improvement of lymphocyte yield to 64% by prior buffy coat preparation reported by Kay and Locke is obviously a step in the right direction if it is reproducible. We are, however, surprised that only 8.3% and 16% of the cells recovered were monocytes, using the standard and modified procedures, respectively. Our median level of monocyte contamination for normal samples (72 in number) is 25.5% (Quartiles 19, 30), using α naphthyl acetate esterase staining (ANAE) of cytopsin preparations from the harvested cells to identify monocytes. Soman and Kaplow,¹ who used four different methods for identifying monocytes (50 normal samples) found levels of monocyte contamination as follows: Wright Giemsa staining of cytopsin (19.8%); phagocytosis of latex particles (26.8%); ANAE staining of cytopsin (27.5%); and flow cytometric analysis of suspensions also stained for ANAE (26%). As underestimating levels of monocyte contamination necessarily causes overestimation of lymphocyte recovery rates, we wonder if the authors can explain their low rates of monocyte recovery? Could the H 6000 be counting some monocytes as large unstained cells?

GERALDINE M MARKEY
D McKEATING
HD ALEXANDER
TCM MORRIS

*Department of Haematology,
Belfast City Hospital,
Lisburn Road,
Belfast BT9 7AD*

Reference

- ¹ Soman S, Kaplow LS. Monocyte contamination in Ficoll-Hypaque mononuclear cell concentrates. *J Immun Methods* 1980;32:215-21.

Book reviews

Introducing Immunology. Norman A Staines, Jonathan Brostoff, Keith James. (Pp 65; paperback £1.95.) Gower Medical Publishing. 1985.

This book provides an initial introduction to the basic concepts of immunology in the form of an illustrative guide. It is written by three experienced teachers of immunology. The text is well written and the 24 illustrations are clearly presented and emphasise key components of the immune system. A useful glossary of terms is provided. There is a section on immunology as a career and the degrees available in immunology; the book will be of particular interest to school leavers and others contemplating a career in this field. The book is short (65 pages) and not expensive (£1.95). I would highly recommend it as an introduction to the subject before the reader moves on to a more authoritative text.

RUTH C MATTHEWS

Anderson's Pathology. 8th ed. Ed JM Kissane. (Pp 2074; 2 vol set; 2949 illustrations; £104.50.) Blackwells. 1985.

The day of the overall pathology book is almost gone. Everyday I have queries and turn to monographs for reassurance, and yet I do use individual books for an overall synoptic view. *Anderson's Pathology* in its eighth edition is clearly one such general book and a valuable overview of pathology that has been acclaimed by generations of pathologists. I am pleased to have it in my library. It is slightly too comprehensive, however, and it suffers from the deficits of the inherited rigidity of the previous seven successful editions.

When I advise examination trainees on their reading I suggest the third edition of Robbins, Cottrane, and Kumar, buttressed by monographs. Many individualists with their own opinions have chosen previous editions of Anderson as their text and disregarded my advice. There is no difference in the examination results.

G SLAVIN

Colour Atlas of Mesothelioma. JSP Jones, C Lund, and HT Planteyolt. (Pp 201; £49.) MTP Press Limited. 1985.

This atlas helps to standardise the terms used to describe mesotheliomas and illustrates the appearances from which the tumour can be

recognised. The use of case reports emphasises the importance of the clinicopathology rather than recognition of patterns for making the diagnosis. Thus much of the value of the work depends on the text, which deals comprehensively with the main features of the tumour including its aetiology. The term mesodermoma is given undue prominence, and metaplasia of ovarian surface mesothelium is not mentioned. A note on how asbestos bodies can be shown and the type of asbestos identified would have been useful.

The photographs are generally of good quality. There is duplication of macroscopic appearances and their reduction might have decreased the cost of the book. The colour photomicrographs are good, but the legends are much too brief. References, an important element in a small volume, have been well chosen.

This book should be read by training pathologists and would help anyone needing to treat and manage a mesothelioma.

DJ POLLOCK

Endocrine Tumours. The Pathobiology of Regulatory Peptide-producing Tumours. Current Problems in Tumour Pathology. JM Polak and SR Bloom. (Pp 288; £35.) Churchill Livingstone. 1985.

The applications of radioimmunoassay technique and immunocytochemistry have created a revolutionary advance in the recognition and study of tumours that secrete peptide hormones. These hormones are currently called regulatory peptides, new types of which are continually being documented, especially in the diffuse neuroendocrine system. Their amino acid sequence in several instances has been derived by analysing messenger RNA extracted from endocrine tumours. The advances, in general, have been rapid. This book is a most welcome review covering most aspects of the present state of the art. The first 10 chapters comprise various topics, including the molecular biology of regulatory peptide synthesis and the principles of immunocytochemistry, as well as other staining techniques. The following four chapters give accounts of endocrine tumours of the gut and pancreas, lung, medullary carcinoma of thyroid, and pituitary adenomas. The last chapter describes endocrine syndromes. In addition to their own contributions, the editors have commissioned chapters from a most distinguished group of international experts. *Endocrine Tumours* is beautifully produced, rich in illustrations, and with an excellent bibliography. I can recommend it unreservedly.

I DONALD

J Clin Pathol 1986;39:1408-1409