Letter to the Editor

Assay of Vitamin B₁₂

Orrell and Caswell (1972) have reported that the radioisotopic method of Raven, Robson, Walker, and Barkhan (1969) for the assay of vitamin B₁₂ in serum gives lower values when a higher temperature or a longer period of heating is used in the extraction procedure. We would like to support these observations and to add that the use of a larger volume of N/4 HCl in the extraction mixture or the use of a stronger HCl solution has similar effects. These observations, however, have little clinical importance because the differences between the serum vitamin B₁₂ values obtained with an extraction process involving heating at 115°C for 15 minutes, which is the method we recommended in 1969, and one involving heating at 115°C for one minute, which is our current method, only became apparent when the serum vitamin B₁₂ values exceeded about 800 pg/ml. The lower limit of normal (200 pg/ml) and the low values found in vitamin B₁₂-deficient sera remain unaltered. The main advantage of the shorter time of heating in the extraction process is that the amount of ⁵⁷CoB₁₂ bound non-specifically by the denatured serum proteins is reduced and thus the background count for each serum sample is reduced. In an attempt to reduce background counts to avoid the need for individual background counts, we have in the past considered changing from the use of a whole serum extraction procedure to one involving deproteinisation, such as that used in the *Lactobacillus leichmannii* microbiological assay. However, extensive use of deproteinisation in the radioisotopic method (during studies into the extraction of vitamin B₁₂ from its binding proteins in serum) convinced us that higher and more accurate serum vitamin B₁₂-values were obtained when a whole serum extraction process was used. For the present, the best compromise appears to be an extraction process involving heating at 115°C for one minute and this is the method that we are now using. These conditions are very similar to those suggested by Orrell and Caswell, ie, heating at 110°C for 15 minutes.

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References

- Orrell, D. H., and Caswell, A. D. (1972). The effect of autoclaving characteristics on the recovery of serum vitamin B₁₂ determined by a radioisotope dilution method. *J. clin. Path.*, 25, 181-182.
- Raven, J. L., Robson, M. B., Walker, P. L., and Barkhan, P. (1969). Improved method for measuring vitamin B₁₂ in serum using intrinsic factor, ⁵⁷CoB₁₂, and coated charcoal. *J. clin. Path.*, 22, 205-211.

Notice

Host-Virus Reactions with Special Reference to Persistent Agents

The published proceedings of the Royal College of Pathologists' symposium on 'Host-virus reactions with special reference to persistent agents' is now available from the Publishing Manager, *Journal of Clinical Pathology*, BMA House, Tavistock Square, London WC1H 9JR, price £2.00 post free. All those who paid the registration fee for the meeting itself will receive a copy of the symposium. For members of the Royal College of Pathologists and members of the Association of Clinical Pathologists there is a concessionary rate of £1.75 post free.

Fourth Congress of the International Society on Thrombosis and Haemostasis

The fourth congress will be held in Vienna, Austria from 19 to 22 June 1973. The main topics will be on biochemistry and biosynthesis of normal and abnormal clotting factors, clinical trials in the treatment of thromboembolic disorders, and pathogenesis of thrombosis. Free communications are invited and abstracts of these should reach the President of the Congress, Professor Dr E. Deutsch, c/o Intercongress, Stadiongasse 6-8, A-1010 Vienna, Austria, not later than 15 February 1973.

Book reviews

Legal Aspects of Medical Practice By Bernard Knight. (Pp. viii + 280; 33 figures. £3.00). Edinburgh: Churchill Livingstone. 1972.

Into some 270 pages, Dr Bernard Knight has packed a mass of information primarily of value to the general practitioner or junior hospital practitioner but by no means confined to them. Most pathologists will find in this book a great deal of valuable information, easily obtainable through an excellent index. Dr Knight has illustrated his work by a number of self-explanatory diagrams and he covers most subjects coming under his title of 'Legal aspects of medical practice'. He has added a summary of the relevant part of the Brodrick Report, carefully pointing out that none of it is yet implemented. It seems likely that in due course he will have to publish a revised edition to cover such changes as may arise from this and from the new Crown courts and perhaps other changes. It is to be hoped that the occasional factual error (magistrates are not appointed by the Lord Lieutenant in England) and rare spelling mistake will be corrected then. This book should be available in every hospital, and general practitioners will be well advised to have a copy available for reference.

A. G. MARSHALL

The Lymphocytes 2nd edition By M. W. Elves. (Pp. ix + 604; illustrated. £7.25). London: Lloyd-Luke (Medical Books) Ltd. 1972.

The purpose of the second edition of this book is 'to attempt a comprehensive review of the entire field of study of the lymphocyte'. The author has almost succeeded in achieving this ambitious aim. The first four chapters deal with the basic anatomy, physiology, production, circulation and life span of lymphocytes, and provide a useful summary of present knowledge in this complex field. The remainder of the book is mainly concerned with the immunological activities of the lymphocyte and deals in turn with antibody production, cell-mediated immunity, lymphocyte transformation, and homograft reactions *in vitro*. These chapters have been extensively revised, or written anew, and although most of the subject is

treated admirably immunologists will be surprised to find no mention of clonal selection, the generation of immune diversity, the nature of the T cell receptor, or immunoglobulin structure and function. The other serious omission is the absence of any discussion of abnormalities of the lymphoid tissues including lymphoproliferative disorders. Despite these omissions, and the inadequate index, the book does provide an extensive review, with an excellent bibliography, of the subjects described under its chapter headings. Its length and cost will, however, discourage most research workers.

GERALD JONES

Adrenal Steroids and Disease 2nd edition By C. L. Cope. (Pp. xi + 883; illustrated. £10.00). London: Pitman Medical Publishing. 1972.

After an interval of seven years we have the second edition of this remarkable book; remarkable because, covering as it does a wide multidisciplinary field in a subject in which knowledge is advancing at a very rapid pace, it is the work of one author. The immensity of the author's task is exemplified by the mention in the preface that data from over a thousand recent references, chosen from many more, have been incorporated in the text and it is noteworthy, and almost certainly exceptional, that every reference has been checked and read at source by the author personally.

The whole work is scholarly and there is a complete absence of the sort of thing one gets all too often in extensive reviews—a statement, usually uncritical and not carefully thought out, and often in direct contradiction to an earlier or later statement, followed by a string of references which all too obviously the author has never read.

The book sets out to help the practising physician to understand the scientific—largely biochemical—background to disease states involving the numerous adrenal steroid hormones. In this it is remarkably successful. The style is clear, and of course uniform, and in controversial questions the evidence in support of the various views is carefully laid out and critically appraised. There are 38 chapters which adequately cover the subject, though it will be obvious from the purpose of the book that purely clinical aspects are not dealt with in the same depth as are those with a more fundamental background of principle.

It is a book which is to be highly recommended as reading matter to all those with an interest in endocrinology and it is an important and authoritative reference book for all who become concerned with a problem which might involve the adrenal steroids.

G. A. SMART

Clinical Toxicology By Clifford H. Thienes and Thomas J. Haley. 5th edition. (Pp. x + 459; 22 figures; 87 tables. £8.30). Philadelphia: Lea and Febiger. London: Henry Kimpton. 1972.

This established American textbook on toxicology has now reached its fifth edition and is a standard work on both sides of the Atlantic. One welcomes the section on differential diagnosis, and many of the analytical procedures have been changed from those in previous editions to keep abreast with the numerous advances in forensic science and technology. In addition the index has been revised and is now a considerable improvement over that in previous editions.

All pathologists working on medico-legal cases should possess this book, although there are few British references.

J. M. CAMERON

The Macrophage By B. Vernon-Roberts. (Pp. viii + 242; 47 figures. £6.40). London and New York: Cambridge University Press. 1972.

Until quite recently the macrophage seemed to be a most uninteresting cell, just a water snail in the body's aquarium, a scavenger concerned with little more than garbage collection. But all that has changed of late. Dr Vernon-Roberts effectively describes the renaissance of this hitherto neglected cell in this pleasing monograph. Published as the second in a new series of books on biological structure and function it nicely details both these aspects of the macrophage and justly emphasizes the ascendancy of this cell in modern immunology. Inevitably with such a book, published at such a time, several sections are out of date by at least two years. Two years is a long time in the current immunological boom. As a consequence the chapters on the role of macrophages in immunity are too tentative and incomplete and would need drastic

updating to satisfy immunologists. This is, of course, an unavoidable result of writing any monograph. Modern biological research, like the motor car, moves rapidly and has its own built-in obsolescence.

This book, as well as providing a clear general exposition of the morphology and myriad functions of the macrophage, integrates fundamental biology with pathology and describes the role of macrophages in a variety of disease states. This is not a book for the super-specialist but clinicians, pathologists, and anyone at all interested in physiopathology at the cellular level will find much to ingest and enjoy in reading it. Several larger and more authoritative books on the macrophage have been published recently but they are mostly concerned with the minutiae of research and generally lack the readability and perspective which Dr Vernon-Roberts brings to his subject. With 23 pages of references, good illustrations, and a fund of information this well produced monograph is almost worth buying. Unfortunately the cost, as usual with such specialized books, is excessive.

GRAHAM CURRIE

Clinical Immunology. Report of a WHO Scientific Group. World Health Organization Technical Report Series 1972, No. 496. (Pp. 50. 40p. Annual subscription £5.00. Obtainable from H.M. Stationery Office.) Invaluable for those having to draft memoranda on the subject.

H. E. M. DAY