act by LISS antiglobulin test when only 5 minutes' incubation was given.

All antibodies used in the investigation had been stored for varying lengths of time; they had been detected initially using a conventional antiglobulin test. Five weak antibodies had deteriorated on storage to such an extent that they were no longer detectable by the conventional antiglobulin test. However, these antibodies were still detected by LISS antiglobulin test even after only 5 minutes' incubation. These five antibodies were of various specificities, comprising one example each of anti-E, anti-S, anti- $\bar{S}$, anti-Le^b, and anti-Jk^a.

An LISS albumin displacement test (the details of which are given below) was also assessed using the antibodies listed in Table 3.

Table 3 *Number and specificities of antibodies examined by LISS albumin displacement technique*

Anti-D	15	Anti-S	5
Anti-C	2	Anti- $\bar{S}$	1
Anti-E	9	Anti-K	15
Anti-c	5	Anti-k	2
Anti-e	2	Anti-Le ^a	5

Two anti-E sera and an anti-S serum gave results by this technique only marginally weaker than a conventional albumin displacement test. Otherwise the results obtained were at least as good as the conventional albumin displacement test, and the total incubation time was only 25 minutes.

From a consideration of the results it was decided that the following techniques would form the serological basis of a good emergency cross-matching procedure.

LISS antiglobulin test: 2 vol of serum are incubated with 2 vol of a 5% LISS suspension of red cells for 10 minutes at 37°C in a waterbath. Thereafter proceed as in a conventional indirect antiglobulin test.

LISS albumin displacement test: 1 vol of serum is incubated with 1 vol of a 5% LISS suspension of red cells for 10 minutes at 37°C in a waterbath. Using a bench-top centrifuge, spin at 1000 rpm for one minute. Add 1 vol of 20% bovine albumin and reincubate at 37°C for 15 minutes.

In conclusion, from our findings we suggest that the minimum incubation time should be 10 minutes using a waterbath rather than an air incubator. We have found the method to be sensitive and suitable for rapid cross-matching of

blood in urgent clinical situations.

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Broadsheet No. 89

The recent Broadsheet No. 89 (Handling and clinical use of blood products) contained the statement that the Plasma Fractionation Laboratory, Oxford, produces Prothrombin Complex Type C. The production of this fraction was discontinued in October 1975.

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Book reviews

Laboratory and Research Methods in Biology and Medicine. Volume 1. 'Practical Enzymology of the Sphingolipidoses'. Edited by R. H. Glew and S. P. Peters. (Pp. 321; illustrated; \$34.) New York: Alan R. Liss, Inc. 1978.

This is the first volume of *Laboratory and Research Methods in Biology and Medicine*, and, if future volumes are of the same standard, they will make a significant contribution to medical science. It contains 10 sections: the first is concerned with the general principles and techniques of case identification, carrier testing, and prenatal diagnosis, and the others are devoted to individual clinical conditions such as Niemann-Pick disease, metachromatic leukodystrophy, and Fabry disease, for example. The contents of the sections are wide-ranging and concerned with clinical and pathological descriptions, the enzyme defects, the enzyme assays, the properties of substrates used in assays, recommendations concerning diagnosis and much practical information on the biochemistry.

This will be a very useful volume not only for those who work in the laboratory but as a reference book for the practising neurologist. It fulfills a definite need and is recommended.

B. E. CLAYTON

Major Problems in Clinical Pediatrics, vol. XVII. 'Viral Disease of the Fetus and Newborn.' By J. B. Hanshaw and J. A. Dudgeon with a foreword by A. J. Schaffer. (Pp. xvi + 356; illustrated; hardback £14.) Philadelphia, London, Toronto: W. B. Saunders. 1978.

This monograph is the most recent of a very excellent series, which has proved useful to workers in all branches of paediatrics including neonatal paediatrics. This new addition maintains the same high standard. It is very readable and at the same time is scientifically sound with up-to-date bibliographies at the end of each of the 15 chapters.

The more important viral infections likely to affect the fetus and newborn are dealt with in detail, and there are also chapters on differential diagnosis, laboratory diagnosis, and prevention, treatment, and chemotherapy. Additional contributions on pathology of the placenta and cord (W. A. Blanc) and development of

immune mechanisms in the fetus and newborn (W. C. Marshall) add to the wealth of information one can find here.

The book is generally well illustrated; Figure 3-1 is rather complicated to produce in this size, and the type is just readable; the text (page 168) refers to liver lesions shown in Figure 5-8, but one finds this is an x-ray of chest; in Table 5-2 the total number of cases, shown in the heading as 167 and in the table as 169, do not tally.

These, however, are minor details which do not detract from the value of the book, and I would regard it as a valuable asset to the library shelf of all workers, both clinical and laboratory, in this field.

JEAN M. SCOTT

Aids to Pathology. By Michael F. Dixon. (Pp. vii + 245; illustrated; £3.50.) Edinburgh, London, New York: Churchill Livingstone. 1978.

Abraham Lincoln, on being asked to recommend a book, is alleged to have written: 'For people who like this sort of book, this is the sort of book they will like'. In the case of *Aids to Pathology* I am tempted to do the same since I must confess a prejudice against the presentation of knowledge in the form of lists of facts to be memorised swiftly in the pre-examination period and then, as swiftly, to be forgotten. It is true that this book is presented as a 'revision guide' and not as a substitute for a conventional textbook, but many years' experience of medical students has taught me that they are likely to use inexpensive texts of the 'Aids to' variety as their only personally owned textbook. This having been said, the contents of this book, especially in the general pathology section, are up to date and well presented and show evidence of a considerable degree of scholarship on the part of the author.

N. WOOLF

Pulmonary Pathophysiology—the Essentials. By J. B. West. (Pp. ix + 227; illustrated; £7.50.) Oxford: Blackwell. 1977.

Based on lectures to medical students, this book, a companion to *Respiratory Physiology: the Essentials*, is also intended for a wider qualified audience. The first section discusses some of the many available tests of lung function in a lucid and balanced manner with excellent simple line diagrams that are a feature throughout the book. The second and

third sections on the function of the diseased and the failing lung also provide concise explanations of the abnormal function that may be present—particularly the sections on respiratory failure, mechanical ventilation, and chronic bronchitis and emphysema. However, the physiological discussions compete for space in this very concise volume with clinical and pathological accounts of each disease that are very dogmatic and simplified but do set the scene for the discussion of functional abnormality. Brevity forbids but the shortest explanation of some more complex concepts—inequality of ventilation, O_2 - CO_2 diagram, and the technique of estimating ventilation and perfusion inequality, the effects of which are mentioned frequently enough in the text to have deserved longer introductions. The book adequately references larger works and is easy to read apart from one bad typographical error on page 196. Its generally clear style should make this book invaluable for medical students, and the physiology at least should be helpful for 'anaesthetists, cardiologists, intensive care personnel and respiratory therapists'.

S. G. SPIRO

Hepatotropic Factors. Ciba Foundation Symposium 55 (new series). Edited by Ruth Porter and Julie Whelan. (Pp. ix + 405; illustrated; \$36.00.) Amsterdam: Excerpta Medica. 1978.

This book is another in the excellent series arising from Ciba Foundation Symposia. The aims of the symposium were to accumulate authoritative opinion on the highly complex subject of hepatotropic factors—circulating factors which are thought to stimulate and/or protect the liver in respect of growth and regeneration. Contributions have been made from experts in the fields of *in-vitro* studies using isolated hepatocytes, from those using refined surgical techniques to investigate the phenomena in experimental animal models, and from those working to alleviate liver-orientated problems in the clinical situation. This conglomeration of varying fields of interest has provided fertile ground for the discussion of ideas, production of hypotheses, and constructive criticism.

Each chapter contains a brief review of the present knowledge from the author's standpoint and progresses to conclusions drawn from experimental or clinical data. Sufficient technical information is provided to facilitate understanding of the

methods employed, and for those wishing to delve deeper into scientific or surgical techniques a comprehensive bibliography follows each chapter. The discussions arising from each presentation are reported, along with a general discussion at the end of the symposium, and these are particularly valuable since they allow for views to be expressed from different angles and with the introduction of new information where relevant. The exact nature and mode of action of the factors controlling liver growth and regeneration are not resolved by this symposium, but the whole field is exposed to the most contemporary scientific and clinical scrutiny. Interesting new developments in techniques for the study of isolated hepatocytes and for measuring liver parenchymal blood flow are reported, and it seems that these and other sophisticated methods reported in the book should advance knowledge in this field for the future.

The book has been set out in such a way that the natural progression from studies on isolated cells through to clinical observations in certain disease makes it eminently readable, and yet so much up-to-date information has been included that it will also find service as a reference text for anyone involved in the study of liver function, liver regeneration, and control of liver growth in relation to body growth. The spectrum of participants has ensured that the book will be of interest to anyone working on problems associated with liver whether they be physiologists, biochemists, endocrinologists, gastroenterologists, or surgeons.

B. J. FULLER

Neisseria gonorrhoeae and Gonococcal Infections. Report of a WHO Scientific Group. Technical Report Series 1978. No. 616. (Pp. 142; illustrated; Sw. fr. 12.) Geneva: WHO. 1978.

In November 1976 a WHO Scientific Group concerned with *Neisseria gonorrhoeae* met in Geneva to (i) evaluate the present knowledge about *N. gonorrhoeae* and the infections and complications produced by it; (ii) determine the most constructive lines of research that should be pursued; and (iii) produce a control policy. The Group's deliberations, presented in detail, cover the following aspects: components of gonococci (pili, capsules, lipopolysaccharides, etc); pathogenesis (attachment, invasion, rôle of phagocytes, etc); animal models (types and