



Fig. Regression analysis comparing 'chloramphenicol' with routine autoclaving methods.

low serum folate levels in the megaloblastic range (0.3 to 1.3 ng/ml) obtained by the routine method were repeated using the 'chloramphenicol' method. The repeated results ranged from 1.0 to 2.2 ng/ml with a mean of 1.4 ng/ml.

The mean result obtained from the 'chloramphenicol' method was approximately 20% higher than that from the routine method. This difference was revealed when a comparison was made of the results of 83 sera assayed by the 'chloramphenicol' method which does not require autoclaving and the routine method which includes autoclaving (Fig.).

The mean correlation ( $r = 0.921$ ) between the two methods was good and the displacement of the regression line ( $y = 1.122x + 0.53$ ) was in keeping with the difference between the means.

**Comment**

The 'chloramphenicol' method presented in this communication is a simple, swift, and economical method for estimating serum folates. The principle is to add micro-quantities of serum and standards directly to medium without aseptic precautions. This is made possible by the use of a chloramphenicol-resistant test organism and micropipettes. These modifications make dilution of serum unnecessary and also obviate the need to autoclave and centrifuge during the assay procedure.

Results obtained from the 'chloramphenicol' technique reveal a 20% higher mean result when compared with those from the routine method. Herbert (1966) also observed higher results using his 'aseptic' method. It would seem that either autoclaving destroys folate despite the presence of ascorbate or that it precipitates protein-bound folate which is available to the test organism when the 'chloramphenicol' or 'aseptic' techniques are used.

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**References**

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 Herbert, V. (1966). Aseptic addition method for *Lactobacillus casei* assay of folate activity in human serum. *J. clin. Path.*, 19, 12-16.  
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**Book reviews**

**Artificial Organs and Cardiopulmonary Support Systems** By Felix T. Rapaport and John P. Merrill. (Pp. vi + 186; illustrated. \$15.00). New York and London: Grune and Stratton. 1972.

This book is reprinted from *Transplantation Proceedings* and covers a symposium on the use of artificial support systems, particularly with a view to holding patients for transplantation. It does concentrate on

cardiac support and the problems of long-term extracorporeal bypass and artificial hearts, but artificial respiration and a number of unrelated support systems are also briefly covered. The present state of artificial heart and lung support is extensively covered, and for those concerned in the problems there is useful up-to-date material. Many of the conclusions reached will probably be soon outdated so that this is unlikely to remain a useful reference book for more than a very few years in a developing speciality.

J. F. MOWBRAY

**Thromboembolism: Diagnosis and Treatment** The proceedings of a symposium held at King's College Hospital, London, sponsored by Kabi Pharmaceuticals Limited. Edited by V. V. Kakker and A. J. Jouhar. (Pp. xii + 241; illustrated. £3.50.) Edinburgh and London: Churchill Livingstone. 1972.

This book contains an assortment of articles from a Symposium on thromboembolism held in July 1971 with the addition of some extracts from the Discussion. It has all the advantages and

disadvantages of such a method of presentation.

To its credit, the book gives an account of all the most recent advances in this field. Since advances have been numerous and spectacular over the last few years, the information presented is of real value. Most articles are very liberally sprinkled with up-to-date references (indeed, the reviewer had great difficulty in retrieving the book from several of his colleagues, who were making full use of so excellent a source of references).

Conversely, the book is less successful as a guide to the best treatment for any particular case. It is clear that most of the authors are enthusiasts and they tend to overemphasize their own interests. Junior medical staff seeking balanced information on treatment are likely to be disappointed.

This book contains a variety of articles on the aetiology of thromboembolism, diagnosis of thrombosis by laboratory tests, ultrasound and isotopic techniques, prevention of deep venous thrombosis, the treatment of venous thrombosis and pulmonary embolism by thrombolytic therapy, and the surgical treatment of pulmonary embolism. Illustrations are clear and there are many most informative tables, which have obviously been modified from lantern slides. It is a pity that the first illustration in the book (showing graphs of various clotting tests in different subjects) has no key, so that the information it presents is unavailable.

All in all, this book should be read by all concerned, however remotely, with thrombosis and its diagnosis, prevention, and treatment. In these inflationary times, one must come to the reluctant conclusion that £3.50 is not exorbitant for what is a relatively small volume.

A. J. SALISBURY

**Clinical Laboratory Computer Systems: A Comprehensive Evaluation** A study commissioned by the College of American Pathologists. (Pp. viii + 560; illustrated. \$50.00, including air-parcel post, shipping and handling.) J. Lloyd Johnson Associates, 1500 Skokie Building, Northbrook, Illinois 60062. 1971.

The College of American Pathologists commissioned a study of clinical laboratory systems by Lloyd Johnson Associates, a firm of management consultants, and this publication is a report of their findings. It is a very comprehensive and thorough enquiry into all aspects of the systems

currently in use in the USA, based largely on the on-site investigation of no fewer than 78 laboratories. It aims to appraise the capabilities and benefits of available computer systems in relation to their objectives and costs.

After describing the potentialities of a clinical laboratory system and the planning needed before its introduction, the report proceeds to evaluate the benefits and to examine the changes in procedure it will force or make possible. The alternative approaches to laboratory computing are next considered, namely, sharing time on a hospital computer or acquiring a dedicated machine with either all the necessary programs or only the basic operating software. After pointing out that the theoretical advantages of sharing time on a large hospital computer do not appear to be realizable in practice, subsequent detailed description is confined to dedicated laboratory computer systems. Those available from B. D. Spear Medical Systems, Berkeley Scientific Laboratories Inc, Digital Equipment Corporation, Diversified Numeric Applications, Honeywell Inc, Infotronics Corporation, International Business Machines, Laboratory Computing Inc, and T. & T. Technology Inc, are all considered in great detail in separate chapters.

Although this book deals only with the American scene, its messages are applicable elsewhere and any pathologist thinking of introducing a computer system into the laboratory would benefit from reading it at an early stage. The detailed descriptions of data input and of the content and format of the various reports produced would be invaluable to anyone involved in the planning of a laboratory system. Probably more important, however, is the advice concerning the need for active leadership by the laboratory director, for early and widespread consultation of users, for flexibility in the design, for adequate servicing facilities, and for an adequate period of time for takeover from the manual system. These lessons come over very vividly from the laboratory 'case histories' given after the description of each system, as does the tendency to underestimate the needs of the laboratory and also the almost universal experience of hardware and software difficulties which arise from the premature marketing of new products. The trend towards disc-based systems and away from technician operators also emerges from the case histories.

This book can be strongly recommended

to directors of laboratories, computer team leaders, and others who are concerned with the introduction of a laboratory computer system. It is too detailed for those who only wish to learn something of the potential of a computer in a laboratory situation. At 35 dollars, few individuals would consider buying this book for themselves but it would be a sound investment for any institution contemplating the installation of a computer, as much time, effort, and money might be saved by drawing on the experience of others.

F. V. FLYNN

**Progress in Experimental Tumor Research. Vol. 17: Recent Advances in Brain Tumor Research.** Series editor: F. Hamburger; volume editor: W. G. Bingham Jr. (Pp. xii + 455; 149 figs., 63 tabs. Sfr.140., US \$39.20, DM126., £15.40.) Basel, Munchen, Paris, London, New York, Sydney: S. Karger. 1972.

Proceedings of a meeting held in October 1970—specialists who are interested are presumably more up to date.

H. E. M. KAY

**Annals of Clinical Laboratory Science** Volume 1. July-August 1971. Number 1 (Official Journal of the Association of Clinical Scientists, Philadelphia.) (Pp. 99 illustrated. Subscription rates: U.S. possessions, \$20 per year; elsewhere, \$22 per year. Single issue \$5.50.) Another journal! The first issue shows it to be of high quality and relevant to all manner of clinical pathologists.

H. E. M. KAY