Book Reviews

Cell Chemistry. A collection of papers dedicated to Otto Warburg on the occasion of his 70th birthday. Dean Burk, Ed. Elsevier, Houston–Amsterdam, 1953. 362 pp. Illus. $7.50.

The original edition of this book appeared as an issue of *Biochimica et Biophysica Acta* (vol. 12, No. 1/2, 1953). It contains 35 original papers by recognized leaders in the field of biochemistry, including two papers in which Warburg himself is an author, thereby attesting to his continued vigor and productivity. This volume, covering a diversity of subjects, provides an illuminating cross section of the best in current biochemical thought. Although there was obviously some attempt on the part of the editor to select authors whose work has developed from fundamental observations made by Warburg during the past 50 years, this has in fact imposed no limitation on the selection process, since there is probably no worker in biochemistry today who has not profited in some way from one or more of Warburg's contributions. A chronological listing of the experimental contributions that are regarded by Warburg as his most important discoveries is provided by the editor in an unusual introduction, which includes some interesting comments on Warburg's personal, scientific, and political history.

The high caliber of the present volume is best indicated by the following impressive list of the principal authors: L. F. Leloir, H. Tamiya, J. H. Northrop, P. Karrer, F. F. Nord, C. B. van Niel, E. Boyland, V. Du Vigneaud, R Wurmser, B. L. Horecker, J. H. Quastel, O. Meyerhof (deceased), A. Szent-Györgyi, C. Martius, F. Lipmann, H. H. Weber, A. L. Schade, H. A. Krebs, A. I. Virtanen, A. L. Lehninger, G. D. Greville, H. O. L. Fischer, H. G. Wood, A. Kornberg, G. T. Cori, E. S. G. Barron, H. M. Kalckar, C. Neuberg, H. Theorell, C. Fromageot, B. Chance, F. Lynen, S. Ochoa, D. Nachmansohn, R. Kuhn, D. Burk, and O. Warburg.

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Signal, Noise and Resolution in Nuclear Counter Amplifiers. A. B. Gillespie. McGraw-Hill, New York; Pergamon Press, London, 1953. 155 pp. Illus. $4.50.

This short monograph presents an orderly and readily understood analysis of signal, noise, and resolution in equipment for electrically detecting, amplifying, and counting nuclear particles. The principal problem treated concerns pulses from a gas ionization chamber. Such pulses require considerable amplification and become mixed with noise arising from grid current and shot effect in the input stage. The author restricts his detailed treatment to an amplifier whose pass band is set by single RC time constants at low and high frequencies. Although the high-frequency cutoff of practical amplifiers is usually more rapid than that arising from a single RC element, favoring a higher signal-to-noise ratio, the essential factors involved are all carefully treated in the analysis and, in many cases, subjected to experimental verification.

The derivation of mathematical results is contained in an appendix where it does not obscure the main line of reasoning. At one point, the author admits that one of his mathematical findings disagrees with what one might expect on an intuitive basis, and a careful examination shows that his analysis is in error. Fortunately, he discards this result in favor of one that is essentially correct and from which he derives useful results that appear to agree with experiment. Except for this slight lapse in mathematical analysis, no other errors have been detected.

The monograph leaves no doubt in the mind of the reader that the author is very familiar with his subject. The ideas presented in the monograph should be understood by every experimentalist who uses electronic techniques for making nuclear measurements.

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A Bibliography of the Research in Tissue Culture: 1884 to 1950, Vols. I and II. An index to the literature of the living cell *in vitro*. Margaret R. Murray and Gertrude Kopech. Academic Press, New York, 1953. 1741 pp. $24 per set.

Workers in a particular field of investigation often drift along complacently for years preoccupied with immediate current tasks, only to awake abruptly to the realization that some single phase of activity has been so long neglected that a really herculean effort is needed to bring things back into balance.

The tissue-culture field has recently been pulling itself out of just such a shock. In Nov. 1946, at the invitation of the Committee on Growth of the National Research Council, a group of tissue culturists and others met at Hershey, Pa., to discuss mutual problems. When this group came to summarize its discussions, several tasks were recognized as urgently requiring attention. The Tissue Culture Commission was organized to implement this need. This commission later became the present Tissue Culture Association.

The tasks that the commission (association) set for itself were four: (i) To establish and maintain a training course for workers in tissue culture, until such time as some university would take over this work. This course was conducted for one summer at Toronto and then transferred to Cooperstown, N. Y., where it has become the well-known Cooperstown Course in Tissue Culture Techniques. (ii) To provide a source of tissue-culture nutrients and supplies available to all laboratories so as to free individual workers from the time-consuming and often complex problems