

others and points out the conditions under which various by-products are formed. Attention is called to the complexity of several reactions usually described in the text-books as comparatively simple. It is interesting to note in this connection the large number of cases in which ethyl alcohol is produced.

The book is not intended to be more than a suggestive compilation of results scattered through the recent literature, but as pretty full references are given it will be found useful to chemists and bacteriologists who desire to gain an insight into this important field of investigation, to which the author himself has made several valuable contributions.

J. H. LONG.

G. BUNGE'S TEXT-BOOK OF PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY. Translated by F. A. STARLING and edited by E. H. STARLING. Philadelphia: P. Blakiston's Son and Co. 1902.

Bunge's text-book still remains the most popular book on the subject. The fourth German edition, from which the second English is translated, is not much enlarged over the previous editions of the work. However, Bunge's aim was to give the general principles of the chemical side of animal physiology and pathology, and in this he succeeded most brilliantly. There are only a few questions that the author discusses in greater detail, but those are chapters of such general interest, that every biologist will read them with great pleasure, whether he does or does not accept the conclusions of the writer. Such are the chapters on vitalism and mechanism, also the chapter on alcohol. The importance for the animal organism of the mineral constituents of food is discussed by Bunge more than it has been by any other writer. The book as a whole presents in a very interesting and comprehensive form the most obscure problems of physiology, and can be recommended to those who desire to gain a general knowledge on the subject.

P. A. LEVENE.

ELECTRO-CHEMICAL ANALYSIS. BY EDGAR F. SMITH. Philadelphia: P. Blakiston's Son and Company. 1902. 199 pp.

The earlier editions of Professor Smith's work on electro-chemical analysis are so widely and favorably known as to render unnecessary any extended notice of this third edition, further than to call attention to the changes and additions that have been made by the author.

The chapters on sources, reduction and measurement of cur-