

with the carbon dioxide present in the fuel bed. By this reaction carbon is consumed with absorption of heat already liberated by the combustion of carbon with oxygen, and temperature rise is hindered. The manner in which these various factors are interwoven in different fuel processes forms the subject of the experimental work recorded in the report.

It should be mentioned that the Research

Committee is interested primarily in the products of the large coke oven. Gas works coke, made today predominantly in continuous vertical retorts, has qualities which receive little prominence in the report. Nevertheless, it is the most comprehensive account of work on the qualities of cokes available in Great Britain, and is indispensable to all interested in this branch of technology.

H. J. HODSMAN.

BUSINESS MANAGEMENT

(1) The Science of Production Organization

By Prof. E. H. Anderson and Prof. G. T. Schwennig. Pp. x + 282. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1938.) 17s. 6d. net.

(2) The Economics of Business Enterprise

By Prof. Walter Rautenstrauch. Pp. xiv + 446. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1939.) 20s. net.

BOTH these books are further contributions to the already extensive American literature on business management.

(1) The first, dealing with production organization, seeks to gather up and correlate recent writings on the subject, to smooth out and reconcile apparent contradictions, and to point the true path to further progress. There are doubtless still many who regard the extreme analysis of business methods and the more advanced tenets of scientific management with some distaste, not to say great aversion; but whilst industry and trade remain largely on a competitive basis—and possibly still more so if they were on some other basis—it appears to be a primary need to seek out the best and most effective methods of running a business. This necessarily involves a close study of the science of organization, and the book before us gives, lucidly and concisely, within the comparatively short compass of some 250 pages, much of the best of recent American thought in this field.

After a preliminary clearing up of definitions, the authors deal with the growth of organization ideas from the time of Adam Smith; the organization of work; organization structure; types of organization—line, line-staff, functional, and committee; comparison of these; principles and laws; and broader aspects. The analytical mind at least will probably study with some interest the discussion of Gilbreth's 'therblig', the unit of

human effort which F. W. Taylor had sought for in vain. There are at present eighteen of these, with promise of more to come, and the authors think the 'therblig' is destined to become a standard unit of manual productivity and possibly of labour cost. A fairly extensive and carefully selected bibliography is appended.

(2) The second work is rather more formidable—more than four hundred pages and a longer bibliography—and yet its modest aim is merely to serve as an introductory text on *some* economic problems of business enterprise. It is also much more concrete in that its chief pre-occupation is with practical methods for dealing with such things as cost estimating, interest and depreciation, evaluation of machines, materials and supplies, interpretation of financial statements, together with an interesting discussion of business enterprise in general illustrated with valuable examples of actual American businesses taken from a wide range of industry. Another admirable feature which gives a welcome realistic touch and a satisfying method of grasping the subject-matter is the addition of problems at the end of each chapter. There are numerous tables and a certain amount of fairly easy mathematics.

Costing and accounts executives who wish to add to the basic knowledge underlying their particular fields of action will find much of interest and value. Prof. Rautenstrauch certainly seems to have done a good piece of work, something more than an introductory study, and has adequately fulfilled his purpose of "stating what is generally considered to be good practice in dealing with the economic problems of specific business enterprise, inquiring into theories on which these practices rest, and developing methods of analysis" for dealing intelligently with the economic problems of a given business. But although he goes very thoroughly into the questions of costing, he does not seem to worry much about the 'therblig'.