and profits, so that the workpeople can determine whether they are being fairly treated or not, and at the same time the consumer can ascertain whether the prices he is charged are due in any degree to profiteering. As Mr. Johnston rightly points out, "the first essential to a better understanding between Capital and Labour is that all the cards should be laid on the table."

H. M. V.

Fuel Economy.

The Use of Low-grade and Waste Fuels for Power Generation. By John B. C. Kershaw. Pp. x+202. (London: Constable and Co., Ltd., 1920.) Price 17*s.* net.

THE great increase in the cost of coal has naturally directed the attention of users of fuel to the question of fuel economy, the possibilities of which lie in two directions—the utilisation of lower-grade fuels and waste combustible material, and the more efficient utilisation of all fuels. Mr. Kershaw's book deals adequately with both these aspects of this important question. His earlier chapters are devoted to the consideration of peat, wood waste, small coal and washery waste, and other minor combustibles. In his second section he deals with fuel sampling and analysis and with the scientific control of combustion in practice.

Mr. Kershaw defines low-grade solid fuel as containing more than 25 per cent. of ash and 10 per cent. of moisture, or, in all, 35 per cent. of incombustible material. The cynic may remark that such a definition covers most of the coal at present marketed! Small coal, however, no matter what its ash and moisture content, is also "low grade," and the author includes all coal and coke passing a $\frac{1}{4}$-in. mesh sieve.

Means are available, and Mr. Kershaw describes them clearly and discusses their merits lucidly, by which the lower-grade fuels may be utilised, but possibly, because of present economic conditions, the more general utilisation of low-grade coal and colliery refuse will be confined to the large, centralised power schemes which have been recommended, and individual consumers will more specifically seek economy in the better utilisation of the class of fuel they have been accustomed to use, and for which their plants can be adapted with but little expenditure. Mr. Kershaw's treatment of this side of the question is adequate and practical, and he is to be congratulated on producing this small volume at this opportune moment, for it is one to command the attention of all interested in the use of fuel for every industrial purpose.

Text-books of Chemistry.

(1) *An Introductory Course in Quantitative Chemical Analysis, with Explanatory Notes, Stoichiometrical Problems, and Questions.* By Prof. G. McPhail Smith. Pp. x+206. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1919.) Price 9*s.* net.

(2) *Quantitative Analysis by Electrolysis.* By A. Classen, with the co-operation of H. Cloeren. Revised, rearranged, and enlarged English edition by Prof. W. T. Hall. Pp. xiii+346. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1919.) Price 17*s.* 6*d.* net.

(3) *Industrial Organic Analysis: For the Use of Technical and Analytical Chemists and Students.* By Paul S. Arup. Second edition, revised and enlarged. Pp. xi+471. (London: J. and A. Churchill, 1920.) Price 12*s.* 6*d.* net.

(4) *A Foundation Course in Chemistry: For Students of Agriculture and Technology.* By J. W. Dodgson and J. Alan Murray. Second edition, thoroughly revised. Pp. xii+241. (London: Hodder and Stoughton, Ltd., 1920.) Price 6*s.* 6*d.* net.

(5) *Chemistry in Everyday Life: Opportunities in Chemistry.* By E. Hendrick. Pp. xii+102. (London: University of London Press, Ltd., 1919.) Price 3*s.* 6*d.* net.

IN the multiplicity of text-books one naturally looks for evidence of the trend of progress as demonstrated in new editions and new volumes. We want to find the aim of the author and why he has considered it desirable to add one more to the books that are already so many that the teacher and the student find it difficult to select the one that will suit them best.

(1) Prof. Smith says of his manual that it is for those who have completed courses in elementary chemistry and qualitative analysis and are beginning work in quantitative analysis. We are glad to see, so far as this is evidence of it, a return to the natural sequence of quantitative following qualitative work. The student at this stage ought to be able to appreciate the introductory section in which the author, after some excellent advice, proceeds to consider the balance, its use and care, methods of weighing, the calibration of weights, various errors and their elimination; the precipitation, filtering, and washing of precipitates, in which he uses the theories of modern physical chemistry; drying, ignition, evaporation, and the use and calibration of volumetric apparatus. The student is thus well prepared to work intelligently, but throughout the book, although the instructions are definite, almost every direction is accompanied with the

© 1920 Nature Publishing Group