

*The Examination and Thermal Value of Fuel: Gaseous, Liquid, and Solid.* By J. H. Coste and E. R. Andrews. Pp. xvi + 278. (London: C. Griffin and Co., Ltd., 1914.) Price 6s. net.

THE importance of the scientific examination of fuels and the avoidance of wasteful methods of utilisation is becoming more and more recognised as it is realised that economy, both individual and national, must be exercised in their application. This small treatise deals with the methods of sampling, analysis, and determination of the calorific value of fuels of all classes, and the examination of flue gases.

The book will prove of considerable service in the laboratory, but it must be confessed that in some sections it is lacking in that personal assistance, the result of experience, one is led to hope for in the preface.

In gas analysis, for example, many are the pitfalls besetting explosion analysis, but beyond the usual outline of procedure, little help is given in avoiding the difficulties. Again, whilst the Petroleum Act regulations for testing the flashing point of burning oil (which is of minor importance as a fuel) are quoted *in extenso*, the flash point of heavier oils (those of special importance as fuel oils) is dismissed with the briefest description of the Pensky-Martens apparatus, and no description of the method of working is given or reference made to the precautions necessary to obtain good results.

The sections on calorimetry are undoubtedly the most satisfactory portions of the book, with much evidence of personal experience. Very ample consideration is given to questions affecting the accuracy of the results and the comparative value of different types of calorimeters. Now that purchase on calorific value is becoming more general and legal standards of calorific value of gaseous fuels already established, the whole subject of calorimetry has become of primary importance, and this book is certainly a useful addition to the literature on the subject.

*Rapid Methods for the Chemical Analysis of Special Steels, Steel-making Alloys, and Graphite.* By C. M. Johnson. Second edition, rewritten. Pp. xi + 437. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1914.) Price 12s. 6d. net.

THE first appearance of this book dates back to 1908, and the edition now brought out contains quite twice as much material as its predecessor. The chapters have increased from sixteen to twenty-one, whilst the subdivisions of chapters, which were so strange in the first edition, are still further elaborated. The new chapters deal principally with the analysis of ores, refractory materials (acid and basic), fluor spar, lubricating oils, and coal; whilst uranium, cobalt and nitrogen are added to the section on steels. Besides these the chapter on the determination of carbon is amplified considerably, and an interesting account of the estimation of oxygen in tungsten powders and in steels has been inserted. The valuation of

nickel chrome steels and Monel metal have been given chapters to themselves. Unfortunately, the new portions (which deal practically entirely with the author's own work—the general literature being rather neglected) have been inserted in such a way as to give the book a very patched appearance. The arrangement has also resulted in several rather tiring duplications. A blue pencil wielded by a friendly though very free hand would have tended to a much improved book. In a work of this nature one naturally looks for all things up to date, and in consequence one is surprised to find no appreciation of the "reductor methods" that are so extremely useful in analysis of this kind. Among many other omissions may be mentioned the work of Gooch and his pupils on vanadium, molybdenum, etc., the recognised volumetric methods for manganese in ferro-manganese, the ignition of Brünck's precipitate to nickel oxide, and the iodometric estimation of copper.

LESLIE AITCHISON

*The Latest Light on Bible Lands.* By P. S. P. Hancock. Second edition, revised. Pp. xii + 371. (London: S.P.C.K., 1914.) Price 6s. net.

ARCHÆOLOGY is a two-edged sword for those who would "prove the Bible," an uncertain lamp which may unexpectedly throw a distressing light on the mental calibre of chosen races; nay, more, traditions of similarities in Flood-narratives, or divergences in Creation-stories, may not unnaturally set up doubts in credulous minds as oppositions of science falsely so-called. It was one of the discoveries of Macalister at Gezer that Philistinism was a misnomer for boorishness, for the Philistines by the traces of their culture and civilisation there discovered have proved themselves to be far more worthy artists than the Hebrews. Mr. Hancock's book is of a kind which is published from time to time, giving the latest discoveries so far as they are analogous to the Old Testament, and recapitulating what was hitherto known. Here is again the Babylonian account of the Flood and the Creation of Man by Marduk from his own blood (why is no reference made to Mr. King, who first published the tablet containing the latter story?); an account of the Gilgamesh epic and the Flood-story, told sufficiently accurately in their main points, although the distinction which the author makes in the epilogue is too nice for us ("the gods came down to smell the sacrifice like flies," a description which in its materialism contrasts somewhat strikingly with the dignified words of the Biblical writer, "And the Lord smelled a sweet savour."); and a proper rejection of the Chedorlaomer theory. The chapters on the latest diggings in Palestine form a useful *précis* of what has been published by excavators, and Mr. Hancock gives also a full index of Old Testament place-names. In judicious hands his book will go far to provide a guard against one edge of the sword; it has been the writer's endeavour to allow the facts to speak for themselves.

R. C. T.