The work is illustrated by 291 cuts, which, if not elegant, are mostly sufficiently accurate, and characteristic of the species indicated, to be of value; many of them are original. Two or three new species appear in the work for the first time.

Lucien M. Underwood.

The Calorific Power of Fuels. By Herman Poole, F.C.S., etc. New York, J. Wiley & Sons; London, Chapman & Hall. 1898. 8vo. Pp. xv + 255.

The importance of a work on this subject is to-day vastly more evident, and is very much greater than before the days of scientific discussion, investigation and experimental researches in connection with the processes of modern engineering in the department of heat production and utilization. The extensive application of scientific methods by the engineer in his steam engine and boiler trials, and in a thousand other lines of professional work, also makes the subject and such compilation of facts and data peculiarly important. A work specially devoted to this subject thus assumes rare value.

This treatise is based upon M. Scheurer-Kestner's *Pouvoir calorifique des combustibles* and has been worked into a shape which adapts it to our own data and methods and includes later developments both of method and of apparatus. It gives us an excellent general discussion of the calorimetric principles and of the calorimetric apparatus now available for use by the chemist and by the engineer, and, with especial fullness, all of those found helpful in commercial work.

The fuels are described at considerable length and their heating powers given as computed from their composition and checked by direct calorimetric measurement. The report of the committee of the American Society of Mechanical Engineers on exact methods of steam boiler trial is introduced, and a large quantity of data and an excellent bibliography are appended, the latter including numerous and helpful references to the files of scientific journals. The 'Fuel Table,' in which are given the composition and the calorific power of the fuels of the world, is the most extensive yet produced and is extremely interesting and valuable.

The book is well up to date and includes descriptions of the latest calorimeters, as Berthelot's, Mahler's Barrus' and Carpenter's, gives Ringelmann's 'smoke scale,' Kent's revision of 'Johnson's Report on Coals,' and other no less important recent contributions to the literature of the subject.

The book is one which is likely to find its way into the library of all chemists and of all engineers having to do with applications of the calorific power of fuels. It is well written, well published and of moderate cost.

R. H. Thurston.

SCIENTIFIC JOURNALS.

The Journal of Physical Chemistry. The January number begins the second volume of this journal. The opening article is the first part of an extensive paper 'On the General Problem of Chemical Statics:' by P. Duhem, Professor of Theoretical Physics at Bordeaux. The paper is "a commentary on and a complement to the celebrated memoir of J. Willard Gibbs, 'On the Equilibrium of Heterogeneous Substances.'" The second article, 'Fractional Crystallization:' by C. A. Soch, is a contribution to the theory of separations by fractional crystallization. 'Distribution of Mercuric Chlorid between Toluene and Water:' by Oliver W. Brown, completes the original matter. Several pages are devoted to book reviews. The department of reviews of the journal literature of physical chemistry is very full and critical.

February. 'Solutions of Silicates of the Alkalies:' by Louis Kahlenberg and Azariah T. Lincoln. From freezing point and conductivity determinations of solutions of the silicates of sodium, potassium, lithium, rubidium and cesium, it is concluded that in such solutions the silicate is hydrolytically decomposed into the caustic alkali and colloidial silicic acid. 'On the General Problem of Chemical Statics:' by F. Duhem. The conclusion of the paper begun in the January number. 'On Integrating Factors:' by P. Saurel. A mathematical introduction to theoretical studies that are to follow. 'Vapor-tension of Concentrated Hydrochloric Acid Solutions:' by F. R. Allan. It is concluded that electrolytic dissociation is not an