iron laboratories, these are used only for the determination of constituents which occur in small quantities. The amount of silica in slags and magnesia in slags and dolomitic limestones does not accord with this statement. A difference in the atomic weight of magnesium would also affect the determination of phosphorus as magnesium pyrophosphate. The commas should be omitted from some of the tables, and if they were arranged for one gram of sample and to cover larger percentages, they would be more valuable and much simpler.

More examples should be given to illustrate the manner of using the tables. Table XL should be headed "Factor Weights," and Table XLI "Atomic Weights." The tables are undoubtedly of value, but the arrangement might be much simplified. EDWARD K. LANDIS.

INORGANIC CHEMICAL PREPARATIONS. BY FRANK HALL THORP, PH.D. 238 pp. Boston: Ginn and Co. Price $1.60.

In this book are found directions for the preparation of nearly one hundred compounds. Naturally enough, the salts of sodium, potassium, aluminum, ammonium, and iron receive the greater attention, but the remaining preparations are numerous and well selected, although no element is found among them.

The introductory remarks concerning solution, precipitation, filtration, evaporation, etc., are clear, full, and satisfactory, and the directions are, in most instances, all that could be desired. In some cases, however, the methods given would not furnish chemically pure substances.

Nearly all questions, that a student might ask, are anticipated and answered, while the use of equations to explain the chemistry of the methods and the incorporation in the text of numerous tables of solubility and specific gravity add not a little to the usefulness of the book.

In an appendix are placed specific gravity tables of the more common acids and ammonia, and a table showing atomic weights and valence.

The paucity of books of its kind and quality in the English language makes its appearance most welcome. L. B. HALL.

NITRO-EXPLOSIVES. BY P. GERALD SANFORD. 8vo. 270 pp. 54 Illus. London: Crosby, Lockwood and Son. 1896. Price, 9 shillings.

The sub-title states that this book is a "Practical treatise con-

cerning the properties, manufacture, and analysis of nitrated substances, including the fulminates, smokeless powders and celluloid." A treatise to be practical should be first of all reliable, and second, it should be written in so clear and direct a manner that its descriptions may be easily and definitely understood by intelligent readers. The book before us is an example of the reverse of this, in that it is filled with errors and is so involved in its style that it is doubtful if any one but an expert could tell what it was that the author really sought to say.

As an example of the errors in the book we call attention to the description of the Boutmy & Faucher process of making nitroglycerine. This process is one of those best known to bookmakers; it has especially interested chemists, as its invention is believed to have arisen from the consideration of Berthelot's second thermo-chemical law; the invention was crowned by the French Academy; and the process has been repeatedly described, the reviewer having himself, as long ago as 1878, published an account of his visit to the works of the French Government at Vonges, where this process was operated, yet on page 16 of his book Mr. Sanford says, "A few years later (1872) M. M. Vouges and Boutnny* proposed to prepare nitro-glycerine by mixing the sulphuric acid with glycerine," etc., etc. The asterisk refers to the foot-note, "* *Comptes Rendus*, 75, and Desortiaux, *Traité sur la Poudre*, 684–686," and turning to the latter we read: "Le procédé employé depuis 1872 à la poudrerie des Vonges, et dû aux recherches de H. Boutmy et de L. Faucher," etc., etc. Throughout the book we find everywhere evidence of haste and negligence, so that one wonders why, if the author was unable to give the proper amount of time and effort to the preparation of the book, he should have undertaken it at all, and especially as no "long-felt want" existed for such a book.

The author states in his preface his belief "that the account given of the manufacture of nitroglycerine and of the gelatine dynamites will be found more complete than in any similar work yet published in this country," but a comparison with "The Manufacture of Explosives" by Oscar Guttman, published in London the previous year, shows that this earlier book devotes more than double the space to the treatment of these topics, and deals with them in a more systematic and thoughtful manner.

The chief merit of Sanford's book lies in the fact that he has collected and presented more information regarding analytical methods than is, to my knowledge, to be found in any one place, and if he had given his entire thought and attention to the elaboration of this material he would have produced a book of value and one which must have contributed to his professional reputation. As it is he has given us a crude work.

I am especially sorry to give this adverse opinion of his book, since Mr. Sanford quotes more freely from and oftener gives credit to American investigators than any other European writer on this subject.

CHARLES E. MUNROE.

A SIMPLE METHOD OF WATER ANALYSIS, ESPECIALLY DESIGNED FOR THE USE OF MEDICAL OFFICERS OF HEALTH. BY JOHN C. THRESH, M.D., D.Sc. 49 pages. 1897. Philadelphia: P. Blakiston, Son & Co., and London: John A. Churchill. Price 88 cents.

The book before us is one intended to so simplify the method of water analysis as to bring them within the power of the "Medical officers of health for rural districts" to accomplish, any such officer being "well aware that unless he himself can undertake the work it must remain undone."

The analytical processes described "require no specially fitted laboratory, and only the simplest possible apparatus," and the analysis "can be conducted in the neighborhood of the well or other source of supply."

The chemicals used are in the form of "Soloids" each containing exactly the requisite quantity, and they remind one of the "Fehling's Test" capsules now supplied to the medical profession.

That the book can fulfil any useful mission in this country is exceedingly doubtful. The processes described can give but approximate results at the best, and are such as would not be acceptable to a health officer were he a chemist, for the sufficient reason that he would be in a position to employ more exact methods. Should the officer in question not be a chemist he would be wise to omit analytical examination entirely, and content himself with a careful sanitary survey of the surroundings of the source of supply.

W. P. MASON.