Of the total potash in the soil, as determined by fusion, less than eighteen per cent. is soluble in the hydrochloric acid as used in soil analysis; about ten per cent. is soluble in oxalic acid, and three per cent. in tartaric acid.

TABLE III.

CONCENTRATED ACIDS.

	Hydrochloric acid.	Nitric acid.	Sulphuric acid.	Total by fusion methods.
Total insoluble, per cent.....	81.20	83.45	80.45	72.45
Potash.....	0.42	0.30	0.52	1.75
Soda.....	0.31	0.28	0.40	0.50
Lime.....	0.55	0.30	0.53	0.86
Magnesia.....	0.40	0.32	0.52	0.72
Iron oxide.....	3.41	2.97	3.57	3.63
Alumina.....	5.84	4.55	6.88	12.71
Phosphoric anhydride.....	0.23	0.23	0.26	0.28
Sulphuric "	0.08	0.08	0.10	0.10

NEW BOOKS.

A TREATISE ON INDUSTRIAL PHOTOMETRY, WITH SPECIAL APPLICATION TO ELECTRIC LIGHTING. BY A. PALAZ, PROFESSOR OF INDUSTRIAL ELECTRICITY IN THE SCIENCE FACULTY OF THE UNIVERSITY OF LAUSANNE. TRANSLATION BY GEO. W. PATTERSON, JR., ASSISTANT PROFESSOR OF PHYSICS IN THE UNIVERSITY OF MICHIGAN, AND M. R. PATTERSON. pp. 322. New York: D. Van Nostrand Co., 1894. Price, $4.00.

Many of the methods of photometry which have been long in use for measuring the intensity of light from gas flames have required modification when applied to the measurement of the intense light produced by electricity. A book which gathers together and arranges, systematically, the work on the subject which is scattered in many different journals, and which is frequently difficult of access, will be very welcome to many who are interested in the subject.

The first part of the book gives a discussion of the general principles of photometry and includes a description of all of the common photometers and photometric standards. This part of the book is quite full and will be of value to anyone interested in photometry in any of its applications. Then follow chapters on the equipment of photometric laboratories, and on the measurement of the intensity and distribution of light from electrical sources.

In an appendix of eight pages the translators criticise or give additional information upon a few topics in the book.

The work of translation appears to have been carefully done, and the English used by the translators is good. A short index is given, which might be made more comprehensive with great advantage. There are a great many short references to particular topics, and to the work of individuals, which can not be found by means of the index. W. A. NOYES.

DESCRIPTIVE INORGANIC GENERAL CHEMISTRY. A TEXT-BOOK FOR COLLEGES. BY PAUL C. FREER, M.D., PH. D. (MUNICH), PROFESSOR OF GENERAL CHEMISTRY AND DIRECTOR OF THE LABORATORY OF GENERAL CHEMISTRY, UNIVERSITY OF MICHIGAN. Revised edition. pp. 550. 54 Illustrations. Boston: Allyn and Bacon. 1894. Introductory price $3.00.

This book is intended as a text-book for colleges and is therefore adapted for the use of students who already have some knowledge of the elementary principles of the science. The treatment of the subject is consequently somewhat different from that usually pursued in the best of the recent text-books on chemistry. For example the book begins with a discussion of the atomic theory and the composition of chemical compounds. The author believes that "beginners should be taken through a course in which only a few elements and compounds are discussed, with the purpose of familiarizing the pupils with the fundamental laws which govern chemical change." "During the progress of such work as this," he continues, "I would not advise the use of chemical symbols or any reference to the atomic theory. It is manifestly impossible to make a student without experimental knowledge, understand, in all its bearings, a theory which it has taken some ninety years to place upon its present footing. If an elementary course, in which every stated fact has been proved by actual experiment, precedes the work given in this book, the pupil will be then amply fitted to look at chemical phenomena from the basis of the atomic theory."

Professor Freer is undoubtedly right in this matter and the sooner the teachers of chemistry in this country recognize the truth contained in the above-quoted statements and model their instruction on the plan there suggested the better it will be for the teaching of the science of chemistry in our colleges and uni-