bottle, where it is dried and weighed. The fiber obtained in this way is in excellent condition for further examination (microscopic, ash, pentosans, cellulose, etc.). There is no danger of contamination with fiber from the hardened filters; in fact the latter may be re-used many times. C. A. BROWNE, JR.

NEW BOOKS.

NOTIONS FONDAMENTALES DE CHEMIE ORGANIQUE. PAR CH. MOUREAU, Professor agrégé a l'École superieure de Pharmacie de l'Université de Paris. Paris: Gauthier-Villars. 1902. 286 pp.

This book may be useful under French conditions as a syllabus or memorandum in connection with a course of lectures on theoretical organic chemistry to mature students, but it is difficult to see in what way it can serve American teachers or American elementary students.

The book is clearly written but has grave faults in the selection and arrangement of material for a book intended for beginners. Its preface indicates that it is an introduction to organic chemistry. But elementary students could hardly avoid being overwhelmed by the first 60 pages which are devoted to an outline of theory which includes atoms, molecules, isomerism, valence, radicals, bonding, saturation and unsaturation, homology, nomenclature and the stereochemistry of carbon, nitrogen, and sulphur; and all this before a substance is described or its mode of occurrence or preparation are indicated. In a book of reference and if accompanied by original references, this outline would be admirable but in this place it seems excessive.

In the body of the book, substances are treated together which contain the same substituted radical, which have the same kind of functional activity. The treatment is clear and the classification has its advantages but it is questionable whether in an elementary book it is not better to take up first methane and its homologues and their derivatives, each class of which is made up of members so nearly alike that a full study of one is a nearly complete study of all, and then turn to the other hydrocarbons to study them and their derivatives by illustration and in the mass.

The absence, in the majority of cases, of any statement of the sources of substances which are found in nature is quite noticeable especially in a book written by a professor in a school of phar-

macy and so also is the absence of any indications of the industrial value of substances. It would have been more logical either to include more such material or else to omit the small amount now included.

It is perhaps hardly necessary to mention that the book has no alphabetical index, a time-saving device which seems to be appreciated by very few French writers. H. W. HILLYER.

AN INTRODUCTION TO CHEMISTRY. BY D. S. MACNAIR. London: George Bell & Sons. 1902. xii + 187 pp.

This is an admirable example of that class of text-books to which Professor Alexander Smith refers in his "Teaching of Chemistry in the Secondary School" under the heading of "The Nature Study Method." No reference is made to the atomic theory, but formulae and equations are freely used, being treated "solely as a short-hand expression of the proportions by weight in which the elements are found by experiment to combine." All but a few of the experiments (intended to be performed by the teacher) are within the capabilities of boys of fourteen or fifteen.

A. M. PATTERSON.

CHEMISTRY BY OBSERVATION, EXPERIMENT AND INDUCTION. A LABORATORY MANUAL FOR STUDENTS. BY J. I. D. HINDS, PH.D., Professor of Chemistry in the University of Nashville. New York: John Wiley & Sons. 1902. 12mo., viii + 192 pp. Price, 75 cents.

This laboratory manual is divided into four parts: In the first part, consisting of 25 pages, there is a description of the commoner forms of laboratory appliances and some instruction in manipulation. The second part, 9 pages, contains instructions and questions on specific gravity, electrolysis, specific heat and the reduction of gas volumes to normal conditions. The third part, 8 pages, entitled "theoretical chemistry" deals with chemical and physical changes, elements and compounds, acids, bases and salts. The fourth part, 144 pages, is devoted to descriptive chemistry. The elements and compounds are prepared according to the directions given and the student's attention is called to the salient properties of the substances he has made by a number of questions. The book serves also as a laboratory note-book, as sufficient space is left in the text for the written answers to the questions. In the opinion of the reviewer the book would have been improved by the introduction of some accurate quantitative experiments illustrating some of the general laws of chemical combination. Also an