the student with the means of following up the literature of any subject as thoroughly as he may be inclined. The figures are numerous, new, and admirably fitted to illustrate the points for which they are intended. Altogether, the book is well suited for the wants of beginners, to whom the size and abstruseness of the larger works on petrography are often discouraging; and it will doubtless find many readers in this country as well as in Europe. It would abundantly repay translating into English.

SIMON'S MANUAL OF CHEMISTRY.

THIS book, as the preface informs us, is intended as a guide to lectures and laboratory work for beginners in chemistry, being especially adapted for the use of pharmaceutical and medical students. It is hard to see, however, in what respects pharmaceutical or medical students need special methods of treatment in their commencement of the study of chemistry before they enter upon a study of those particular branches of the science especially necessary to them in their profession.

A peculiar feature of the book is the presence of seven colored plates, showing the variously shaded colors of the more common chemicals, and their color-reactions; such as the red of mercuric iodide, the yellow of arsenious sulphide, the shades of color produced by the action of reducing-agents on a solution of potassium dichromate, etc., — a feature which can possess little value to a laboratory student, who must necessarily become familiar with these colored substances and their reactions by personal experience. The book, however, bears the appearance of being intended for students who are to have but little laboratory work; and, indeed, with the exception of the portion treating of metals and their combinations, it cannot be considered as a really good text-book for laboratory use.

There is noticeable, moreover, throughout the book, an apparent lack of connection between fact and theory. The facts are given, but the theory is lacking. When supplemented by lectures, this defect might not be so noticeable. It is, however, a point to which the student's attention needs to be constantly called. Chemistry is more than a collection of facts: it is a living science. Facts serve as a basis upon which to build theories; and the mutual connection of fact and theory needs to be constantly indicated, as well as the methods of reasoning by which the theoretical conclusions are reached.

The book, however, possesses some admirable features. As a whole, it is well written, is systematic, and contains much that is valuable. Its main defect as an elementary text-book consists in the attempt to cover too great a variety of subjects at the expense of thoroughness. Critical examination, moreover, reveals here and there an occasional incorrect or misleading statement. Thus, on p. 358 we are told that "ptyalin, the active principle of saliva, is a ferment which has the power of converting starch into glucose," whereas it has been known for the last five years that the main product of the amylolytic action of saliva is maltose. The method for the determination of nitrogen, given on p. 241, can hardly be considered as the method generally used for this purpose, as is claimed by the author; neither can the method, given on the same page, for the determination of carbon and hydrogen "by passing dry oxygen gas over the substance heated in a glass tube," be taken as a satisfactory statement of the method generally used for making a 'combustion' in oxygen gas. Again: we are told on p. 359 that pepsin, in the presence of free hydrochloric acid, does not prevent the continued action of saliva on starch, whereas it has been plainly demonstrated within the last three years that the ferment of saliva is completely destroyed by gastric juice, and even by dilute hydrochloric acid alone.

Manual of chemistry. By W. SIMON. Philadelphia, *Lea's son & Co.*, 1884. illustr. 8°.

NEW TEXT-BOOKS OF PHYSICS.

MR. GAGE states his aim to be, "to collate in this volume something of value to every teacher of physical science." The book is divided into five parts: laboratory exercises, manual of manipulation, general review of physics, test-questions, and key to solution of problems. The experiments given in the first part are mostly well enough, and some of them even of considerable ingenuity. They are, however, numbered in a minute fashion, which is likely to mislead one who reads in the announcement that there are two hundred and thirty-eight experiments. In the forty-five pages devoted to the 'manual of manipulation,' very few directions for manipulation

Physical technics, or, Teacher's manual of physical manipulation, etc. By ALFRED P. GAGE, A.M. Boston, *Author*, 1884. 200 p. 8°.

Problèmes de physique de mécanique, de cosmographie, de chimie. Par EDME JACQUIER. Paris, *Gauthier-Villars*, 1884. 6 + 271 p. 8°.