earthquakes or glaciers; the other a bold and stimulating guide in every branch of research concerning the evolution of the earth.

B. K. Emerson.

Amherst, Mass.

The Students' Laboratory Manual of Physical Geography. By Albert Perry Brigham. New York, Appleton. 1904.

This is an expansion of the 'Teachers' Guide and Laboratory Exercises' published in 1903, and like it designed to accompany Gilbert and Brigham's 'Introduction to Physical Geography,' to which it is very closely adjusted. It is about half as large again as the 'Teachers' Guide,' but omits the lists of books. It is purely for the student and implies the additional use of the guide by the instructor.

Any one using the text referred to will find this an admirable guide for its illustration by map and exercise. It contains many suggestive questions that must help the inexperienced teacher toward modern points of view. This is particularly true of the questions on map reading, which are good and abundant, as they ought to be. For class use they may need some selection apart from selection of exercises, if thorough work by the student himself is to be done. Thus the exercise numbered 13, contoured maps, has material for three one hour exercises with pupils in the 'early stages of the high-school course,' if the reviewer's experience is to be trusted. Drawing a section for the first time, for instance, is no side issue, but quite a task in itself. Alongside this exercise 263b, C. S. Chart No. 3,089 is wonderfully short and easy, though for students well advanced toward the end of their course. The practical exercises are still further from definite form. It would be a hardship to put this book into the hands of the ordinary teacher of the subject, who is almost invariably too crowded for time and too incompetent in the subject matter to rearrange the exercises in practical form, and require her to use it with her classes. No doubt the class would get advantage of it.

It might be supposed that the wide use of laboratory manuals for physics and chemistry might guide us in some measure in preparing one for physical geography. Many of these are models in their clear statement of what materials to use, what to do with them and how to do it. This definiteness is of great importance. First-year pupils in a high school will find the latitude exercise in this volume, with its generalities, its principle, its geometry and trigonometry, very discouraging.

The description of field exercises for use in unknown localities has generality and vagueness imposed on it by necessity. It is difficult to conceive of satisfactory accounts being written for such work. Professor Brigham has gathered together some excellent suggestions, and that is all that can be done. The variety of the local fields forbids adequate general treatment. The point of view of the work is modern and scientific, as would be expected of its author. Teachers will find it a safe guide to open their eyes and those of their pupils to the real world about them. Altogether we are left still awaiting an adequate laboratory manual for physical geography, but in the present volume is much material that ought to figure in the book when it is written, much material that ought to be in the hands of teachers attempting laboratory work or wishing to know how to do it.

Mark S. W. Jefferson.

Ypsilanti, Mich.,
September 19, 1905.

Elements of Applied Microscopy. A Textbook for Beginners. By Charles-Edward Amory Winslow, Instructor in Industrial Microscopy and Sanitary Biology in the Massachusetts Institute of Technology. Pp. 183, with 60 text figures. New York, John Wiley and Sons. 1905.

This manual is an excellent example of a book prepared for a definite purpose and as the result of experience in an institution where independent work and special ideas have a prominent place.

As the author states in his preface the book does not profess to compete, on the one hand, with monographs or on the other with the popular works on microscopy. It is, however, specifically intended for the class in industrial