

Some familiar terms are used in a sense that is not likely to find favour on this side the Atlantic. Take, for instance, the following on p. 108: "Extreme induration and recrystallisation of a shale, independent of dynamic action or contact-metamorphism, may produce a highly crystalline rock without cleavage, to which the term slate is usually applied. . . . It is not convenient or necessary to apply any other term than slate to these rocks." A slate without cleavage! Again, on p. 173: "the complete granulation of constituents is sometimes expressed by the term mylonite." The complete granulation of the constituents of a rock gives rise to a *granulite*, not a *mylonite*. Granulites and mylonites may be produced from one and the same rock, but not under the same conditions; hence the necessity of keeping the terms distinct.

The third part of the work treats of such questions as the methods of distinguishing metamorphic rocks of igneous from those of sedimentary origin, and the relation of the saline constituents of ocean, lake, and river waters to the metamorphic processes. The laboratory methods described in the last part relate chiefly to methods of computation and to the construction of graphs, not to methods by which new chemical or physical data are obtained.

#### OUR BOOKSHELF.

*Exercises in Practical Physics.* By Prof. A. Schuster and Prof. C. H. Lees. Fourth Edition, revised. Pp. x+379. (Cambridge: At the University Press, 1915.) Price 7s. net.

THIS well-known text-book, the first edition of which was reviewed in NATURE of February 20, 1902, now appears in a revised form. A comparison between the present volume and an earlier edition shows few changes of great importance. Additional paragraphs have been supplied at the ends of some of the sections, but only a small part has been rewritten. A new section on the determination of dip by means of the dip circle is given in an appendix. A more drastic revision would have improved the book greatly, and brought it more into touch with modern methods. The increased use now made in physical laboratories of commercial ammeters and voltmeters would not be realised by a teacher depending only on this volume. We do not find a single exercise in connection with electrostatic measurements. In section lxvi. the Weston cell is now described as the standard cell, and all reference to the Clark cell is omitted; in the following sections, however, the Clark cell is still mentioned as the standard. In the measurement of wave-lengths, Rowland's table is referred to, but no mention is made of the new international scale of wave-lengths. In spite of its somewhat old-fashioned character, the book remains an excellent one both for the teacher and the advanced student.

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*Bacon's Sixpenny Contour Atlas.* Northern Wales Edition. Pp. 41. East Anglia Edition. Pp. 41. South-west England Edition. Pp. 41. (London: G. W. Bacon and Co., Ltd., n/d.) Price 6d. net each.

THIRTY-SIX pages of coloured maps and an index to towns is certainly good value for sixpence. Four of the maps—communications, geological, relief, and vegetation—vary with the different editions. Of the others, twenty-five are contoured maps, on various scales, of different parts of the world, and the remaining pages contain nine maps of the world to show different distributions. The somewhat fantastic chart of geographical terms on the last page might well be replaced by another map. We feel also that the two-page introduction to the special maps would scarcely be intelligible to the children for whom this excellent little atlas is designed. The maps are clearly printed, and the colouring on the whole is good. It would be an advantage if the British Isles could be shown in relation to the Continental border of the North Sea, rather than as isolated islands, and if India could be shown on a larger scale. Most of the maps show no railways, but political frontiers are marked by dotted lines. The projection used is indicated on every map, and on a few England is shown on the same scale for purposes of comparison. This should be done on all the extra-European maps. The use of these atlases in lower forms would certainly be of assistance in the teaching of geography.

R. N. R. B.

*Thermodynamik.* By P. B. Freuchen. Pp. 143. (Köbenhavn: Lehmann and Stages Forlag, 1915.) No price.

THE scope of this little book is best indicated by the sub-title: "An outline of the history of thermodynamics and the significance of the two chief laws." In the preface the author declares his intention of tracing the development of thermodynamical ideas and their bearing on physics and chemistry. It is not a text-book, but rather a kind of thermodynamical "Who's Who"; successive short chapters deal with Carnot, Clapeyron, William and James Thomson, Robert Mayer, etc. One of these begins: "To read Planck's thermodynamical papers is to breathe pure, clear air."

The various parts of the subject are treated at unequal length; some, which are dealt with in the larger text-books of physics, are entirely omitted. Julius Thomsen's and Horstmann's work is described more fully, but like many other histories, this does not concern itself greatly with the recent past, so that Nernst's theorem occupies only half a page, and the quanta theory is referred to in a single sentence. Although unsuitable for beginners, the book should appeal to physicists, and particularly to chemists desirous of extending their outlook. Its publication in Danish speaks well for the scientific public of small countries, and we hope that by means of a translation it may become accessible to a larger number of readers.

G. B.