can without great cost be from time to time re-edited, would serve the more useful purpose of bringing the subject up to date, and of reaching, by reason of their cheapness, a larger number of readers than this more costly form of advanced literature, excellent though it may be. J. B. C.

THE PHYSICAL BASIS OF GEOGRAPHY.

Physical Geography. By P. Lake. Pp. xx+324. (Cambridge: At the University Press, 1915.) Price 7*s.* 6*d.* net.

PHYSICAL geography is already represented by numerous elementary text-books, and by other more ambitious works, most of which deal with particular branches of the subject. Mr. Lake's book occupies an intermediate position, being suitable for the needs of teachers and university students. The result is admirable, and the author is to be congratulated, not only on the accuracy of the subject matter, but also on the lucidity and attractiveness of his treatment.

The book is divided into three sections, dealing in turn with the atmosphere, the oceans, and the lands. The first of these is perhaps the most valuable, or at least calls for most praise, for climate and weather, being still imperfectly understood even by their special students, have afforded many a pitfall for the unwary writers of general text-books. Any attempt at undue simplicity is to be deprecated in the interests of accuracy, and Mr. Lake has steered a happy course between the temptation to describe ideal cases, on the one hand, and the danger of citing confusing masses of actual meteorological data, on the other. The author points out the desirability of planning a teaching-course so that the study of the atmosphere occupies the winter session, leaving the land to the summer months when field excursions can be taken.

In the section dealing with the oceans, the chapter on waves and tides should be particularly useful to the student, for these subjects are effectively handled with enviable ease. A chapter is devoted to coral reefs and islands, and the views of Darwin and Murray are presented, but no mention is made of Daly's recent contribution to the controversy, in which he correlates the formation of atolls and barrier reefs with the lowering of sea-level that accompanied the Pleistocene glaciation, and its subsequent rise as the ice melted (*Amer. Journ. Sci.*, 1910, p. 297). The chapters which treat of the land are uniformly good. They constitute a delightful exposition of dynamical geology, and one feels that they are all too short. The temptation to have written more must have been strong, for rivers, and glaciers, and volcanoes have a way of leading one further and further afield in the realm of earth-lore. Mr. Lake has written just enough in this, and in the other sections, to fire the student with interest, and no text-book can hope to achieve more.

The book is well illustrated with twenty plates, 162 figures in the text, and a series of maps illustrating isobars, isotherms and rainfall, those of the latter being coloured. Altogether it is a very refreshing text-book, and it has the advantage of satisfying a real need in the teaching of physical geography. ARTHUR HOLMES.

OUR BOOKSHELF.

Smithsonian Physical Tables. Sixth revised edition. Prepared by F. E. Fowle. Pp. xxxvi+355. (Washington: Smithsonian Institution, 1914.)

THESE physical tables, originally compiled by Prof. Thomas Gray in 1896, have been revised by Mr. F. E. Fowle, of the Smithsonian Astrophysical Observatory. The number of tables has been increased from 335 in the fifth to more than 400 in the sixth edition. The new matter includes a new set of wire tables from advance sheets supplied by the Bureau of Standards, mathematical tables compiled by Mr. C. E. Van Orstrand, and data relating to Röntgen rays and radio-activity. Thus we find a table giving Moseley's atomic numbers and the wave-lengths of lines in the X-ray spectra of the elements. We miss, however, determinations of the ratio of the charge to the mass of an electron. The mass of an electron is very nearly 9×10^{-28} grams, not 6×10^{-28} grams (Table 406). Sadler, on p. 336, no doubt through association with Barkla, becomes Sadla! It would be useful to have the value of the electro-chemical equivalent given for some elements other than silver. These, however, are minor blemishes, and actual use of the tables during two months has proved their great value. It is not too much praise to say that a copy should be in every scientific library and advanced physical laboratory. It may be of service to state that the volume may be obtained in Great Britain, where it should be more widely known, through Messrs. Wm. Wesley and Son, Essex Street, Strand, W.C., at 8*s.* 6*d.* net.

The Design of Steam Boilers and Pressure Vessels. By Prof. G. B. Haven and Prof. G. W. Swett. Pp. vii+416. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1915.) Price 12*s.* 6*d.* net.

THIS book is a comprehensive treatise on the design of steam boilers and other vessels subjected to internal fluid pressure. The subject naturally divides itself into questions of strength, of providing dimensions suitable for the thermal operations involved, and the production of working drawings embodying the results of the calculations. The authors have endeavoured to harmonise the rational methods of both theory and practice;