still wanting. The connexion between the constitution of the dye and its sensitising effect has not yet emerged clearly from the mass of data which has accumulated, and this probably accounts for the fact that it has taken so long to find dyes capable of sensitisation in the deep infra-red. That the search has been successful is due to the intensive research which has been carried out in the laboratories of the various large firms manufacturing sensitive material. Of one of these firms, Ilford, Ltd., Dr. Rawling, author of the little book under notice, is a member.

The account is written in a popular manner, the fundamental principles necessary for an understanding of infra-red sensitisation being carefully and clearly explained. After dealing with the characteristics of infra-red radiation, the infra-red materials and the method of handling them are described. The last chapter then deals with the various applications and is especially valuable. After describing the use of infra-red photography as a haze penetrator—the phase of the subject which has given rise to most of the astonishing photographs recently published in newspapers and magazines—reference is made to its use in deciphering censored documents, in astronomy, in photomicrography, in clinical work, etc. It is in connexion with scientific problems that the main uses will probably be found, and new applications are being made every day. It is likely that a new edition of the present book, incorporating such applications, will soon be called for.

Dr. Rawling has done his work well and the book, which is illustrated, should be in the hands of all interested in photography and its many applications. T. S. P.

An Introduction to Acoustics of Buildings. By Dr. E. G. Richardson. Pp. 63. (London: Edward Arnold and Co., 1933.) 3*s.* 6*d.*

DR. RICHARDSON has produced a very useful and practical handbook. There always exists a tendency to attempt to pack too much information into a pocket volume, but the author has here selected his data well and wisely. The result is a handy and uncrowded little book, which contains almost all the information needful for a student who desires to make a successful attack on the problem of designing an acoustically successful hall, or amending the acoustic properties of an ill-designed room.

The different sections of the book deal with reverberation, the distribution of sound, absorbent materials, the insulation of sound, and hints on acoustic design. The simple principles developed are illustrated by practical examples and by tables giving the relevant properties of materials and other necessary data.

We might criticise mildly some of the definitions given in the introductory chapter—'pitch', for example, and 'intensity or loudness of a sound'; the author is evidently in a hurry to lead the reader into the adytum, and has no time to spare for the details of the entrance porch. These matters, however, do not bulk largely in the structure of the book, and necessary slight amendments may readily be made in a second edition. A. F.

An Outline of Atomic Physics. By Members of the Physics Staff of the University of Pittsburgh: Oswald H. Blackwood, Elmer Hutchisson, Thomas H. Osgood, Arthur E. Ruark, Wilfred N. St. Peter, George A. Scott, Archie G. Worthing. Pp. vii+348. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1933.) 21*s.* 6*d.* net.

WE do not as yet suffer from an excess of text-books on atomic physics. As the authors remark, we have plenty of works "replete with equations and mathematical phraseology" designed for the use of specialists, and we have more than enough of works devoted to the uplift of the fireside reader. But there are signs that the flood is setting in. The present work is a series of critical studies of various aspects of atomic physics very fit to be put into the hands of an undergraduate student. An excellent picture of the state of physics in the late nineteenth century is followed by fourteen chapters which deal, in a manner designed to leave their readers wanting more, with the atomic nature of matter and electricity, the corpuscular nature of radiant energy, spectra, X-rays, radioactivity, molecular structure, relativity and astrophysics.

The book may be strongly recommended.

The Calculation of Heat Transmission. By Dr. Margaret Fishenden and Owen A. Saunders. Pp. xii+280. (London: H.M. Stationery Office, 1932.) 10*s.* net.

THERE is a very marked difference between the ease of approach to a practical problem in electricity, and the feeling of vagueness and uncertainty which oppresses one when tackling a problem in heat transfer. One of the fundamental difficulties is that of obtaining reliable information, and the authors, who have collected, in this very important book, the results of a great mass of experimental work "interpreting and comparing them—in the light of the fundamental principles of radiation, conduction and convection" have put workers in the science of heat very heavily in their debt. They have discussed a number of thoroughly practical problems, and their book should prove, not only an aid to the investigator, but also a stimulus to future experimental work. A. F.

Geography and Travel

Peaks and Plains of Central Asia. By Col. R. C. F. Schomberg. Pp. 288+8 plates. (London: Martin Hopkinson, Ltd., 1933.) 15*s.* net.

To explore untrodden ways is the ambition of all who travel in the remoter parts of the world. Col. Schomberg in traversing the deserts of Central Asia found it impossible, notwithstanding his endeavours, to avoid the cities; but nevertheless in "Peaks and Plains of Central Asia" he shows,