

arrangement of auxiliaries, but also conveys much useful information regarding their working and maintenance in practice. The subject is treated very thoroughly, and contains much that could only be found otherwise by searching through periodicals and the transactions of engineering societies.

*Heat.* By W. J. R. Calvert. Pp. viii + 336. (London : Edward Arnold and Co., 1922.) 6s.

It is sometimes difficult to justify the publication of a new text-book on a branch of elementary science, but Mr. Calvert has been so successful in presenting the subject of heat in an attractive and yet scientific manner that his book deserves a special word of commendation. The first part is intended to cover the ground of a general school education, and the second part brings the work up to University scholarship standard. The author realises that the majority of those who begin the subject will have little or no interest in experimental determinations unless it is made clear to them, at the outset, that objectives which appear to them reasonable cannot be reached without dealing with such measurements. He quotes with approval an appropriate sentence from one of J. B. Biot's works—"Toutes ces choses ne peuvent se déterminer sûrement que par des mesures précises que nous chercherons plus tard ; mais auparavant il fallait au moins sentir le besoin de les chercher."

While practical applications have been emphasised, attention has been kept fixed upon the underlying principles. In all the experimental work the degree of accuracy likely to be attained has been carefully considered. In this connexion mention may be made of the details and dimensions which have been given in the case of many experiments of the laboratory or lecture type. We think the author is to be congratulated on having had the courage, even in so elementary a book, to give references to original papers. The few readers who look them up will gain a great deal, and even those who do not will at least be able to use the dates to get some idea of the chronological development of the subject. The book is the work of a teacher who has given much thought to the treatment of a familiar subject, and the result of his labours forms a valuable addition to the elementary literature of an important branch of physics.

(1) *Guide to the University Botanic Garden, Cambridge.*

By H. Gilbert-Carter. Pp. xvi + 117 + 24 plates. (Cambridge : At the University Press, 1922.) 3s. 6d. net.

(2) *An Alpine ABC and List of Easy Rock Plants.*

Arranged by A. Methuen. Pp. x + 35. (London : Methuen and Co. Ltd., 1922.) 1s. 6d. net.

(1) In this attractive little handbook is a systematically arranged account of a number of the more interesting flowering plants which are cultivated in the University of Cambridge Botanic Garden, which should be of service to students in the Botany School of the University. The sequence is the familiar modern German one, and under each family is a short description of some of the genera and species which are regarded as specially worthy of mention. The plates, which are good full-page photographic reproductions, add to the value and attractiveness of the book. A clear plan of

the garden indicating the larger plants with page-references to the trees, and an index of the genera and species mentioned in the book, enables the student to make full use of it. In deference to the oriental scholars who have loved and befriended the garden, the author has included the eastern names of some of the plants, with quotations illustrating the use of these names. A historical note gives the date of the foundation of the Cambridge Garden as 1762, and in 1831 the removal to the present site was authorised.

(2) Mr. Methuen's notes are for the beginner and the amateur. Their purpose is to give a list of the most attractive and the most easily grown Alpine flowers and to guide in their placing and cultivation. A few general rules are given for making a rock garden and planting and tending Alpines. The greater part of the book is an alphabetical list of the species recommended, with indication of the colour of the flower and very brief notes on cultivation. The book is the outcome of the compiler's own experience and conveys a good deal of useful information in a very small space.

*The Origin and Development of the Nervous System : from a Physiological Viewpoint.* By Prof. C. M. Child. (The University of Chicago Science Series.) Pp. xvii + 296. (Chicago : The University of Chicago Press ; London : The Cambridge University Press, 1921.) Price 1.75 dollars net.

In the preface to his book, Prof. Manning Child points out that, considered from a physiological viewpoint, the origin of the nervous system must be sought in conditions present before the appearance of a morphological nervous structure. In accordance with this, the earlier chapters are devoted to a discussion of the origin and nature of the pattern which constitutes the organism as a whole, and to a consideration of the experimental investigation of some of the physiological conditions which antedate the appearance of the nervous system. A brief summary is given of the evidence for the existence of physiological axial gradients—*i.e.* graded differences in the organism in the rate of the fundamental activities of protoplasm and in the conditions associated with these activities—as the essential factors in the organismic pattern. An attempt is made to show that the nervous system is the physiological and morphological expression of the excitation-transmission relations, first with respect to the primary physiological gradients, and later with respect to the progressive developmental complications as they arise.

Prof. Child admits that with many of his points only suggestion, inference, or weighing of probability is at present possible. For this reason, and on account of the necessary technical detail, the book is more suitable for the biologist and physiologist than, as suggested in the note on the University of Chicago Science Series, to which this volume belongs, for the educated layman.

*The Life of the Weevil.* By J. Henri Fabre. Translated by Alexander Teixeira de Mattos. Pp. viii + 278. (London : Hodder and Stoughton, Ltd., 1922.) 8s. 6d. net.

GATHERED together in this volume are the various essays on weevils contained in the "Souvenirs entomologiques" of Fabre. Chapters i. and vi.-ix. have already appeared wholly or in part in a previous translation, as have also chapter v. and parts of chapters vi.