

principles and their applications. It demands little mathematical equipment and is chiefly concerned with cyclic processes. All the nine chapters conclude with numerical examples to which, however, no answers are provided. Nearly half the book deals with the applications of thermodynamics to electrochemistry, and in some cases the material has little relation to thermodynamics. It is regrettable that the symbol δ has been used in place of the correct notation for partial differentiation. On p. 39 the transition point of rhombic to monoclinic sulphur is given as 95.5° C. in the text and 96.5° C. in the figure. In the consideration of gaseous reactions in Chapter v., the law of action is deduced by using two equilibrium boxes. This method of deduction does not correspond with any practical case and a better method is that used a few pages later for the maximum work, in which the problem is again worked out in detail and the external work term is introduced. The book is clearly and carefully written, well printed, and is reasonably priced. A second volume dealing with thermodynamical functions is promised.

Some Questions of Musical Theory. Chapter 3: The Second String; Chapter 4: Ptolemy's Tetrachords; With an Appendix: The Tierce-tone Scale. By Dr. Wilfrid Perrett. Pp. iv + 31-98. (Cambridge: W. Heffer and Sons, Ltd., 1928.) 5s. net.

THIS is a continuation of the author's preceding chapters, "How Olympos found his New Scale" and "The Olympion," published in 1926. The first of the new chapters is a technical and historical discussion of the problem of the second string of the enharmonic tetrachord, and Dr. Perrett directs attention to the fundamental difference between the ancient and the modern practice of harmony, the Greeks apparently having no instruments constructed to give very deep notes, and the singers forming their chorus being men, whose vocal enharmonic would have to be written in our bass clef. The orchestration, mainly for harps and clarinets, must have been a light one, lying mainly above the voice part—more like what we should call an obligato.

The second chapter gives a careful analysis of the tetrachords of Ptolemy and their relation to the Tablature. Attention is naturally directed to the way in which we, accustomed to the Lydian mode, think of the scale as an uninterrupted series of eight notes, whereas the Greek musician looked upon the octave as composed of two descending series of four notes, two tetrachords separated by a "tone of disjunction." This view of the octave is still held in the Greek Church. H. D. A.

Myths and Legends of the Polynesians. By Johannes C. Andersen. Pp. 512 + 48 plates. (London, Bombay and Sydney: George G. Harrap and Co., Ltd., 1928.) 21s. net.

IN his preface Mr. Andersen admits that in the field of Polynesian mythology his personal gleaning has been small. He came too late in the field. He has accordingly availed himself freely of the work of Grey, of Percy Smith, and particularly of Elsdon

Best, to name some only of those to whom he makes full acknowledgment. His own contribution to this survey is a running commentary and an abstract of legends not cited in full, which makes his book a survey of and guide to Polynesian tradition, culture, and belief. It is prefaced by a few general remarks on the physical character and languages and present conditions of the Polynesian which, brief as they are, give some background for the main theme of the book.

The traditions of Polynesian migration receive due attention, as do the creation legends and those in which Maui figures. The non-specialist public, for whom presumably the book was written, will find in its stories much that is beautiful as well as strange, while the folklorist whose interest is general rather than specifically centred on Polynesia will appreciate its value as a guide to original sources of information.

Progressive Trigonometry. Part 1: *Numerical Trigonometry and Mensuration.* By Frederick G. W. Brown. Pp. x + 222. (London: Macmillan and Co., Ltd., 1928.) 3s. 6d.

A PREVIOUS work of this author, "Higher Mathematics for Students of Engineering and Science," has already been favourably reviewed in these columns, and the present volume will supply a real want in the introduction of trigonometry at an early stage of the mathematical course. Mensuration is naturally dealt with more fully than when this subject is merely included in a text-book on arithmetic. The simple solution of a triangle is well treated. Throughout there are numerous examples of an interesting and practical character. In the last chapter mention is made of spherical triangles.

The book covers the syllabuses in mensuration and numerical trigonometry of most school examining bodies, and a second part is in preparation which will deal with the trigonometry required to the end of a school course. The whole should prove very useful.

Geology Manual: an Instruction and Laboratory Manual for Beginners. By Prof. Richard M. Field. Part 1: *Physical Geology.* Second edition. Pp. ix + 149. (Princeton: Princeton University Press; London: Oxford University Press, 1927.) 12s. 6d. net.

THE call for a second edition of this book within a year indicates that at least in the United States it has fulfilled a useful purpose. Practical courses in geology in the universities of Great Britain probably stand less in need of such external assistance, but most teachers will find that they can adopt some of the Princeton methods with advantage.

The new edition is enriched with sections on the chemistry of rock-minerals and the essential characters of the sedimentary rocks, and there is a brief introduction to the study of economic geology. The part of the book which deals with the interpretation of maps remains, as before, the best, though its appeal is necessarily to North America, except as regards the method of treatment.