

*Some Questions of Phonetic Theory.* By Wilfrid Perrett. Chapter 6: The Mechanism of the Cochlea. Pp. 39-80. (Cambridge: W. Heffer and Sons, Ltd., 1923.) 2s. net.

THIS section of Mr. Perrett's book is an attack on the resonance theory of hearing, and on all those who have written in support of it. It is his avowed object "to lay the yammering ghost of 'sympathetic resonance' in the cochlea" (p. 44). His criticisms of the resonance theory are under three headings: (1) An attack upon Helmholtz's theory of beats as he conceives it. The construction he puts upon Chapter VIII. of the "Tonempfindungen" is, in the reviewer's opinion, forced and unfair. (2) An uncorroborated personal experience of his own which leads him to the conclusion that the ear can distinguish two notes "in perfect physical unison" sounded simultaneously. (3) That speech sounds can terminate suddenly in a "voiceless-occlusion" consonant, consequently no "after vibrations" of the basilar fibres occur. Mr. Perrett quotes graphic speech records, but admits that the evidence drawn from them is inconclusive.

We gather that Mr. Perrett has abandoned the Wrightson theory in favour of a "travelling-bulge" theory on the lines of those of Meyer and ter Kuile, but he does not appear to have brought forward any additional evidence in support of this view. He tells us that the preceding four chapters of his book have been received "with gratuitous contumely in certain quarters" (p. 59). We cannot help thinking that his manner of conducting a controversy may have been responsible to a certain extent for the treatment his work has received.

G. W.

*The Americas.* By J. Bruce. (The "Explorer" Geographies). Pp. viii+216. (London: G. Bell and Sons, Ltd., 1922.) 3s.

A NEW note is introduced into elementary geographical teaching by this volume, which appears to be the first of a series. After an introductory chapter on map-reading, there are several chapters describing the way in which the American continent was discovered and opened up by Europeans. The sections are vividly written and cannot fail to interest, although the paragraphs and map dealing with Arctic Canada and the North-west passage would bear some revision. Then follows a general geographical survey of the Americas. Eight double-page plates with full descriptions are a notable feature, and there are in addition several sketch maps and two coloured orographical maps. The list of books for students' reading is useful, but might well be extended. The book as a whole gives a far more vivid picture of North and South America than the more formal analytical text-books succeed in doing.

R. N. R. B.

*Elements of Glass-blowing.* By Dr. H. P. Waran. Pp. ix+116. (London: G. Bell and Sons, Ltd., 1923.) 2s. 4d. net.

DR. WARAN'S book deals in a clear and practical way with many things which a research student will find that he requires to know. The ability to put together and to repair simple glass apparatus is one of the things which he should gradually acquire, and this

book will be found a useful guide in this direction. It is very doubtful whether the laboratory worker will find it desirable to make his own stopcocks or Dewar vessels; the time spent on such work would usually be more profitably applied in research, but in places where apparatus is not easily obtained it may be quicker to make it. As a general rule, unless one has become very proficient in glass-working, it is usually cheaper and quicker to leave complicated things to the professional man.

*The Wonders of the Stars.* By Joseph McCabe. Pp. ix+114+4 plates. (London: Watts and Co., 1923.) 3s. net.

THE author has written a series of volumes on various phases of evolution; the present book belongs to the series, and discusses the light that has been thrown on stellar and planetary evolution by the discoveries of the last half-century. As an illustration of the difficulty of keeping up-to-date in discussing the status of the spiral nebulae, some of the views of leading astronomers in favour of the "island-universe" theory that are quoted in the book have already been modified by the discovery of their rapid rotation.

While a few sentences here and there might be picked out for criticism, chiefly the statement of matters of conjecture as facts, on the whole the picture given of our present knowledge of the universe appears to be correct, and as complete as can be expected in the space of 112 pages. We sympathise with the author's appeal for a general agreement among astronomers as to the meaning of a "billion."

A. C. D. C.

*Astronomie: Grösse, Bewegung und Entfernung der Himmelskörper.* Von A. F. Möbius. 13. Auflage, bearbeitet von Prof. Dr. Hermann Kobold. Teil 2: Kometen, Meteore und das Sternsystem. (Sammlung Göschen Nr. 529.) Pp. 128. (Berlin und Leipzig: W. de Gruyter und Co., 1923.) 1s.

THIS little book has three chapters dealing with comets and meteors, the fixed stars, and cosmogony respectively. This restriction of subjects enables each to be treated pretty fully, in spite of the small size of the volume. The information is brought up-to-date, and includes recent comets, the Giant and Dwarf theory, and a discussion of the planetesimal theory. The star-maps give the positions of all stars of magnitude 5 or brighter down to south Decl. 45°.

A. C. D. C.

*Tracks of British Animals.* Edited by H. Mortimer Batten. (Edinburgh: W. and A. K. Johnston, 1923.) 4s. net.

THIS publication takes the form of a chart, 20 in. × 30 in., depicting in life-size the spoor of the commoner British wild animals and of domestic animals for comparison, with brief explanatory notes by the editor. The diagrams are boldly and clearly printed and the chart should be of the greatest use for the teaching of nature study in schools and for the instruction of Boy Scouts and Girl Guides in the craft of the country-side. The omission of a figure of the track of a dog is one that should be made good in a future edition.