

p. 166 to the formula given for eddy current losses. On p. 44 it is misleading to state that the 'convex surface' of a conductor carries the high-frequency current. In a concentric main with high-frequency currents the current nearly all flows near the concave surface of the outer conductor, the current near its convex surface being almost negligible. On p. 107 the method of representing a vector by a complex number is attributed to Dr. Kennelly. Mathematicians usually attribute it to J. R. Argand (1806), but it seems to have been previously used by Gauss and Wessel (1797).

*L'Industria chimico-metallurgica del solfato di rame e le miscele cupriche fungicide ed anticrittogamiche.* Per E. Crivelli. Pp. viii + 321. (Milano: ULRICO HOEPLI, 1928.) 35 lire.

THIS is an interesting book, which can be heartily recommended to makers or users of copper sulphate, to all chemists, and, as regards some sections of it, to the general reader.

Part 1 deals with the development of the blue vitriol industry and with its marketing, methods of analysis and properties, and contains also a detailed description of its manufacture, including treatment of by-products. In Part 2, the metallurgy of copper, in so far as it concerns the manufacture of the sulphate, is considered, and in Part 3, such subjects as its physiological effects, its mode of action in lime-copper sulphate pastes, its uses as an anti-cryptogam, and various minor applications, are discussed.

The book has been carefully written and, although the information given must be almost exhaustive, is far from being a mere compilation, the material being dealt with in a logical and readable manner. To the majority of readers, probably the most interesting portions of the book are those of Part 3, in which the available experimental data concerning the effects of copper salts on animals and plants are subjected to critical examination.

No index is provided, but this lack is largely compensated for by the table of contents. A few minor misprints occur, and the first logarithm given on page 52 for  $\text{CuSO}_4$  is actually that of the pentahydrated salt. The printing is of the usual high Hoepli standard.

*An Atlas of Economic Geography (Text and Maps).* By John Bartholomew and Prof. L. W. Lyde. Third edition, revised and enlarged in co-operation with M. R. Shackleton. Pp. xciii + 74. (London: Oxford University Press, 1928.) 8s. 6d. net.

THIS is more than an atlas of economic geography, for the text runs to nearly a hundred pages, and besides explaining the maps, adds a great deal of useful geographical matter. It is full of ideas, and points out many striking geographical correlations. Prof. Lyde is responsible for the whole of the text. The number of coloured maps is slightly reduced from the original edition, but two dozen black and white distributional maps have been added. In these, as in the coloured maps, the technique is excellent and the standard of accuracy is high.

Minor changes might be made in the map of religions and of commercial development, and it is to be hoped that in the next edition the colour division of the races of man may be abandoned. Another improvement in a most useful work would be the re-introduction of the maps of seasonal distribution of rainfall and of languages of commerce.

*Stage A Geometry.* By R. W. M. Gibbs. (Black's Mathematical Series.) Pp. viii + 109. (London: A. and C. Black, Ltd., 1927.) 2s.

ALL teachers will recognise the importance of the Mathematical Association's Report on "The Teaching of Geometry in Schools," and the value of Mr. Gibbs's work lies in his successful attempt to provide a suitable text-book to cover Stage A as recommended in the Report. The arrangement of subject matter and the selection of examples show that the author is used to the practical difficulties of approaching the subject of geometry for the first time.

Emphasis is naturally laid on the experimental aspect; and field work, and what is sometimes known as 'boy-scout geometry,' are well treated. In addition to general ideas on mensuration, including Pythagoras's theorem, the book concludes with introductions to symmetry, loci, and similar figures. This volume should form an excellent stepping-stone to the other stages, deductive and systematising, mentioned in the Report.

H. D. A.

*Volumetric Glassware.* By Verney Stott. (Books on Glass and Glass Technology.) Pp. 232. (London: H. F. and G. Witherby, 1928.) 20s. net.

THIS work comes as a wholesome corrective to those trustful chemists and physicists who are tempted to accept their volumetric instruments even with a modicum of faith. The author emphasises the importance of quality and accuracy in volumetric glassware, and his book is intended for manufacturers and users of such apparatus. Various common types, including measuring flasks, graduated cylinders, pipettes and burettes, are treated in detail, and a description is given of the processes of marking and graduating. Other essential subjects, such as units of volume, calibration tables, and the effect of apparatus errors on results, are also adequately treated. The book, which contains numerous illustrations and tables, can be recommended to all who are concerned with volumetric analysis and similar work.

*School Researches in Heat.* By C. W. Knight. Pupil's Book. Pp. ii + 96. 1s. 3d. Teacher's Handbook. Pp. 80. 1s. 6d. net. (London: George Philip and Son, Ltd.; Liverpool: Philip, Son and Nephew, Ltd., n.d.)

LITTLE books which follow the author's method of teaching heat to an elementary standard by means of questions and answers. They are good in their way, though somehow the spontaneity which the method demands seems dulled by the formality of print.