

conductivity, the values for the last-named property being restricted to twenty-four elements. Table 4 contains all these constants, but arranged for each property in strict order of magnitude, and, in addition, certain ratios of these constants are tabulated. The different constants have also been plotted graphically after the manner of Lothar Meyer's well-known graph of atomic volumes.

*The Botany of Crop Plants: a Text and Reference Book.* By Prof. W. W. Robbins. Third edition, revised. Pp. x + 639. (Philadelphia: P. Blakiston's Son and Co., Inc., 1931.) 4 dollars.

THE value of this book, first published in 1917, as a classroom textbook is testified by the fact that a third edition is now called for. The undue inflation that is frequently caused by the inclusion of fresh material in repeated editions is here obviated by the elimination of most of the tables and text matter dealing with the distribution and yield of crop plants. The treatment is essentially botanical, not horticultural, and such matters as methods of cultivation and the soils appropriate for various crops do not come within its scope.

The book is prefaced by a short botanical outline, providing a revision of fundamental points necessary for the better understanding of the main discussion. Crops are dealt with according to their families, and the range of data discussed varies according to the type of information which is most useful in each individual case. The practical and economic aspects are kept in view throughout, and the references at the end of each chapter provide useful guidance to those students who desire more detailed knowledge of particular crops. Where necessary, keys are given for the classification of the different genera, species, or varieties. Many of these keys are original, and no attempt is made at uniformity, each case being dealt with on its own merits.

The illustrations deserve a special meed of praise for their clarity, many of them being simplified annotated line drawings, which convey a distinct impression of the special points they are intended to exemplify.

*Polyphase Induction Motors: their Theory, Calculation and Application.* By Louis Lagron. Translated by R. C. Simpson and Dr. M. G. Say. Pp. xiv + 218. (London, Glasgow and Bombay: Blackie and Son, Ltd., 1931.) 15s. net.

READERS of this book should have a good knowledge of electromagnetic principles and a working knowledge of the ordinary vector methods of discussing alternating current problems. As the book discusses only polyphase induction motors, its scope is scarcely wide enough for the student, whose library is naturally somewhat limited in size. The reasoning is easy to follow, but it is only mildly interesting to the engineer, as few of the difficulties of the theory are pointed out.

For mining purposes and for work in agriculture these motors are widely used, as they are not easily damaged. They were originally called 'asynchronous motors', but this led to confusion with

'a synchronous motor', and so the phrase 'non-synchronous' motor has come into use. The translators use both terms. The great advantage of an induction machine is that it requires no direct current excitation. If we drive it by means of external power above synchronous speed it becomes a generator. Thus it can be used for braking purposes in lifts and trains and, under certain conditions, power can be returned to the lines. Brief descriptions are given of cascade converters and frequency changers.

*But for the Grace of God.* By J. W. N. Sullivan. Pp. 223. (London: Jonathan Cape, Ltd., 1932.) 7s. 6d. net.

IN earlier works Mr. J. W. N. Sullivan has exercised his literary gifts in making science intelligible to readers who are prepared to give thoughtful attention to novel conceptions and complex relationships. He has been very successful in his mission, and has rendered good service to science by his writings. In the present volume Mr. Sullivan tells the story of his life and reactions—physical and psychological. He intended at one time to present the events and experiences in the form of a novel, but decided eventually to adopt the autobiographical style. The emotional episodes are delicately described, but there is nothing particularly unusual about them even to the men of science who are said to be "exceptionally incomplete as human beings". Many thought-provoking aphorisms are, however, to be found in the book; such, for example, as "The attempt to teach mathematics by making it as 'concrete' as possible is killing to the naturally mathematical intelligence", and "It is the scientific man, not the poet, who is the dweller in dreamland". As a personal revelation of the development of a scientific mind, the book is well worth reading.

*Seventy Years in Archaeology.* By Sir Flinders Petrie. Pp. viii + 284 + 26 plates. (London: Sampson Low, Marston and Co., Ltd., n.d.) 18s. net.

AT least one reader of Sir Flinders Petrie's autobiography must admit to closing the book with a feeling of disappointment. It falls between two stools. The general reader, who is no Egyptologist, will look to its author in the hope of gaining perspective in a review of archaeological discovery in Egypt during the last fifty years, but he will find that the book confines itself strictly within the limitations of its title as a personal record of work in the field year by year since 1880, when Sir Flinders first went to Egypt. The Egyptologist, on the other hand, will regard it as too brief, too summary in its descriptions, to serve as anything more than a reminder of where the author was digging in any given year. From one who is our greatest pioneer and systematiser in archaeological exploration, the most prominent and the most striking figure in British archaeology in the present century, a broader view of his own work and its relation to archaeological studies might legitimately be expected.