

show the present position of diseases which are extending geographically, such as red core of strawberries, bacterial canker of tomatoes, asparagus rust, onion smut, and grey bulb rot of tulip. The results of surveys of take-all of wheat, yellows of sugar beet, wart disease of potatoes, and *Didymella* stem-rot of tomato are also given.

It is not the function of this publication to give lengthy descriptions of plant pathogens; but the text nevertheless includes useful notes on some of the more uncommon troubles. Citations of recent and relevant literature are very frequent, and several photographs of particular diseases are reproduced. The whole makes a very modern symposium of plant pathology in England and Wales, showing the success of control measures for some diseases, indicating the need for new methods of prevention or eradication for others; it holds the balance between those troubles which are only of scientific interest and those which provide a serious incubus on crop production.

J. G.

Diseases of Cereals

By Dr. W. A. R. Dillon Weston. Pp. x+69. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1948.) 4s. net.

HOW cereal diseases can be recognized and controlled is shown in the twenty-six pages of this well-produced and generously illustrated book. The author, an advisory plant pathologist, has devised life cycles, attractively illustrated by Miss Ann Murray, to demonstrate diagrammatically important stages in the lives of organisms causing cereal diseases, and the means by which they can be controlled. These are used with other drawings to illustrate accounts of diseases caused by fungi and other ailments of cereals. The improvement in crop health since seed disinfection became general is indicated.

This book will be particularly useful to farmers and students for whom it is primarily designed; and practising plant pathologists will appreciate the clear and concise accounts showing how modern knowledge is used in controlling disease. M. D. G.

Five-Figure Tables of Natural Trigonometrical Functions

Prepared by H.M. Nautical Almanac Office. Pp. iv+124. (London: H.M. Stationery Office, 1947.) 15s. net.

THESE tables were originally prepared in 1941 by the Nautical Almanac Office, at the request of the War Office, for use in survey calculations. In 1945 they were reprinted, but the present issue, dated 1947, is the first one to become available to the general public. They contain *natural* values only, and are intended to replace similar tables, published in 1924 (in Part 2 of the "Manual of Artillery Survey"), which provided *logarithmic* values of the same four functions. It should be emphasized that they are primarily designed for use with calculating machines and are of no great practical value unless such a machine is available.

There are two distinct sections, in the first of which, the auxiliary section occupying some thirty pages, values of the cotangent are given to five significant figures for every second of arc up to 7° 30'. The main table, comprising ninety pages, contains values of the sine, tangent, cotangent and cosine arranged semi-quadrantly for every ten seconds of arc. In the cotangent tables for the range 27-45°, six significant figures are available, there being five only

for the remaining entries. Information supplied at the heading of each third of a page enables the range of the tables to be extended to 360° without difficulty, and as the tabular intervals are so small no differences are provided, as interpolation is not considered necessary.

A short list of minor corrections which have been incorporated since 1945 and another of errata noted after printing are appended; the book is well bound and clearly printed.

J. H. PEARCE

Reports of the Progress of Applied Chemistry

Vol. 31, 1946. Pp. 745. (London: Society of Chemical Industry, n.d.) n.p.

IT is unfortunate that, owing to circumstances over which the editors no doubt have no control, the "Annual Reports" for 1946 have appeared only in 1948. Taking into account the fact that the publication of a paper may involve a year's delay, most of the actual work described is from three to four years old.

Apart from this defect, the volume maintains the usual excellence of the series. It is divided into twenty-eight main sections, to which forty-seven well-known authors have contributed. In general, these sections follow the headings adopted by *Chemical Abstracts*. One interesting departure is noted: "Pest Control" is given a separate section of 19 pages with 173 references, thus showing the growing importance of the subject. The main sections are subdivided, making it easy for a reader to look up any subject in which he may be particularly interested. The references cover an extremely wide range, and include papers or patents which may easily be overlooked without such guidance.

The subject-matter, varying from the production of ammonium sulphate in Turkey to the solubility of carbon in molten copper and the disposal of kitchen waste, is too varied to enable even an indication of its nature to be given; but it may confidently be stated that few readers can glance through this volume without catching sight of something of unusual interest.

H. E. WATSON

Sequence in Layered Rocks

A Study of Features and Structures useful for Determining Top and Bottom or Order of Succession in Bedded and Tabular Rock Bodies. By Prof. Robert R. Shrock. Pp. xiii+507. (New York and London: McGraw-Hill Book Co., Inc., 1948.) 45s.

THE use of features such as graded bedding and cross-lamination, pillow lavas and pipe amygdaloids, to establish the order of succession in a series of folded strata is but briefly dealt with in text-books of geology. Prof. Robert R. Shrock sets out to describe and illustrate not only these better-known top and bottom criteria, but also all other features, structures and relations which have been or might be employed in determining the original order of succession in sedimentary, igneous and metamorphic rocks. His comprehensive compilation is a work of quite a new kind which can be used with advantage to supplement existing texts of a more general nature. While prepared specifically for students, it will form a valuable review for experienced field geologists, who will undoubtedly find it most stimulating. The illustrations comprise some 500 line drawings and more than 150 photographs, nearly all of which are new to text-book literature. A bibliography of seven hundred items is drawn principally from American and British publications.