

Encyclopedia of Chemical Technology

By Kirk-Othmer. Vol. 3: B to Calcium. Second, completely revised edition. Pp. xvi + 927. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, 1964.) 338s.

FOR an encyclopaedia of chemical technology to be useful to the chemist and chemical engineer in industry, university or in a research organization, it must be as near perfection as possible. To achieve this perfection can be no easy task, since over the past decade, chemical technology has expanded to unbelievable levels. The editors of "Kirk-Othmer", supported by a large team of expert authors and reviewers, are to be congratulated on providing a compendium of information of chemical technology that is as near to perfection as possible, up to the time of printing. Every article, expertly written, contains a mass of information of industrial methods, materials, processes, equipment and, where possible, information on storage, transport, health and safety aspects. In certain cases details are given of new industrial research processes that are both in operation and at the experimental stage.

The third volume of the revised *Encyclopedia of Chemical Technology* covers 43 articles ranging from "Bacterial Infections" to "Calcium Alloys". The subjects reviewed follow closely those chosen in the first edition. In general, new articles cover materials which over the past decade have become of increasing industrial importance. For example, there is an article on "Bentonite", a clay that displays strong colloidal properties, and which is put to a multiplicity of uses in the pesticide, paint, abrasive, detergent and food industries. Also included are "Optical Brighteners", an article that summarizes the various types of fluorescent organic chemicals that are of utmost importance to the manufacturers of detergents, plastics and textiles. The omission of a selection of trade names in this article is to be regretted. In the analytical field, there is a good review on "Bioassays", where special reference is given to underlying theories and calculations.

It is disappointing to note the omission of the collective article on "Building Materials", a subject that is of world-wide importance. Although no cross-references are given, one must assume that this omission will be partially remedied by the inclusion in later volumes of separate articles on individual materials.

K. FIELD

Local Rings

By Masayoshi Nagata. (Interscience Tracts in Pure and Applied Mathematics, No. 13.) Pp. xiii + 234. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, 1962.) 83s.

THIS book presents an up-to-date account of a flourishing branch of abstract algebra, to which the author has made notable contributions. It is No. 13 in the series of *Interscience Tracts in Pure and Applied Mathematics*. After an introductory chapter on "General Commutative Rings" there are chapters on "Completions and on Multiplicities", followed by a chapter on the "Theory of Syzygies". The latter is a new theory, taking the place of homological methods. As a result, homological algebra is not used in the book and the author claims that his theory is simpler than that based on homology theory. Later chapters cover the theory of complete local rings, geometric local rings and Henselian rings and Weierstrass rings. In an appendix, there is a valuable historical account of many of the important results in the text; there is also a comprehensive bibliography.

The exposition is somewhat condensed, although it is systematic, and it is assumed that the reader is already familiar with a good deal of the necessary background, in abstract algebra. The book is, in fact, for the specialist, but since it is virtually the only account of the subject it will be indispensable to every mathematician doing

research on the theory of local rings. It is perhaps a little disappointing that the book does not reveal more of the geometric motivation behind the subject, and the algebraist who wishes to link up with this will have to study independently the subject of algebraic geometry.

L. S. GODDARD

Aspens

Phoenix Trees of the Great Lakes Region. By Prof. Samuel A. Graham, Robert P. Harrison and Casey E. Westell, jun. Pp. xiii + 272. (Ann Arbor: University of Michigan Press; London: The Cresset Press, Ltd., 1963.) 7.50 dollars; 50s. net.

THIS book is devoted entirely to the two aspens that occur in the Great Lakes Region of North America, that is, the trembling aspen (*Populus tremuloides*) and the bigtooth aspen (*Populus grandidentata*), so named because of its deeply indented leaves. The trembling aspen is a very common and widely distributed tree in North America, where it reaches 100 ft. It is transcontinental in its range and occurs from northern Mexico or California to the frozen tundra of Alaska. It is the only Californian tree to do so. The bigtooth aspen is less widely distributed, occurring from Maine and southern Canada to Tennessee and North Carolina. These two trees are of great importance in the forest ecology of some parts of North America and it is pleasing to note that they have received such close attention and study. Would that other trees in other parts of the world that are important constituents of the native forests could receive similar attention.

Both these species have been cultivated in other countries, including the British Isles, where they have not shown great promise or grown as well as other North American species of *Populus*.

In this work, the two trees have been studied from all angles, with the main emphasis on their ecology. Pests, diseases, silviculture and utilization—all figure prominently. In recent years the trees have become of more and more importance as sources of paper pulp. Some of the work of postgraduate students, who have worked on specific problems concerned with aspens, is incorporated in the book and is acknowledged, as is financial assistance gratefully received from the forest industry of Lower Michigan.

F. N. HOWES

Vegetative Anatomy of Plants

By H. G. Burström and Camilla Odhnoff. Pp. 148. (Stockholm: Svenska Bokförlaget, 1964.) n.p.

IT is no mean achievement to write a good introduction to plant anatomy in a book of only 148 pages. It is true that the authors' task has been made easier by the omission of any reference to floral anatomy, but, even so, they have succeeded in presenting the essentials of the subject very effectively. The language is simple, technical terms are not needlessly numerous and the meaning of each is clearly defined wherever it is first presented. The book is clearly and adequately illustrated. The text is based on a course of lectures given as part of the curriculum for a Swedish M.Sc. degree. The authors' special hope is that it will give an adequate introduction to plant structure to those botanists whose interests are mainly in plant physiology. The subject is covered in four main sections dealing respectively with the plant cell, the forms of cells and their mode of origin, the histological differentiation (ontogeny) of the plant body and ecological anatomy. There is a selected bibliography of 240 titles and an index.

Although the brevity of the book inevitably imposes limitations on its content, it is an admirable text for the type of readers for whom it is intended. It is to be hoped that the spelling will be more carefully checked in future editions.

C. R. METCALFE