

### Van Nostrand's Scientific Encyclopedia

Third edition. Pp. vii+1839. (Princeton, N.J.: D. Van Nostrand Company, Inc.; London: D. Van Nostrand Company, Ltd., 1958.) 220s.

THE third edition of this well-known work is impressively up to date. It is fresh, comprehensive and altogether a masterly production. The amount of material which has been compressed into the volume is really surprising. Five or more pages are given to many subjects, including television, transistors, carbon, computers, guided missiles, satellites, rockets, jet engines, nuclear reactions and reactors. There are also quite comprehensive accounts of subjects such as water, chlorine, perfumes and topical items such as titanium and radio-astronomy. The list could be greatly extended. There are more than 14,000 articles, covering mathematics, engineering, medicine and the physical and biological sciences. The work is very useful for the professional scientist as well as the layman. The topics covered extend even into specialized fields; on the mathematical side, for example, there are accounts of group representations and of Dirichlet integrals and their use in Fourier series.

In compiling a work of this character the decision what to include and what to exclude must be difficult. The reviewer hesitates to suggest additional topics, but must record his surprise at the omission of articles on information theory and on cybernetics. There is practically no mention of man-made fibres, and only two pages are given to quantum theory and one page to the subject of paper. An account of such topics would make the work larger than its present size. Even now, it is a little cumbersome to handle (it weighs 8 lb.). It would seem, therefore, that for future editions it would be a big improvement if the work could be split into two volumes.

L. S. GODDARD

### Symposium on Protein Structure

International Union of Pure and Applied Chemistry, Paris Meeting, 1957. Edited by Prof. Albert Neuberger. Pp. 351. (London: Methuen and Co., Ltd.; New York: John Wiley and Sons, Inc., 1958.) 45s. net.

AN account has already been given of the purpose and scope of this Symposium (see *Nature*, 180, 833; 1957). While its object was to assist the Protein Commission of the International Union of Pure and Applied Chemistry in defining 'purity' as applied to protein preparations, its programme was broadened to include many other topics of vital interest to protein chemists at the present time. The emphasis of the papers and discussions, now formally presented in this monograph, is upon the chemical aspects of structure, which include studies of amino-acid sequence and also the more challenging problems of chain-folding and topography of side chains. For certain proteins, all three aspects have been related in some measure to biological activity, especially in the case of the proteolytic enzymes and ribonuclease, and it is, perhaps, this manifold approach which fascinates most. It certainly marks a new phase in the chemistry of biologically active proteins.

Several chapters are devoted to techniques for the separation of proteins, some of which have been almost too successful and have revealed a disturbing micro-heterogeneity. Others emphasize the power of X-rays or of other physical tools to determine absolute structure or variations in it. With one or two excep-

tions, the contributions are commendably precise and digestible; even a rapid perusal will convince the reader he has been introduced to fields of intense activity and of great reward. The book is a sad reminder, however, that two of its distinguished contributors, Prof. Claude Fromageot and Dr. Rosalind Franklin, are no longer with us.

KENNETH BAILEY

### Bacterial Fermentations

By H. A. Barker. (Ciba Lectures in Microbial Biochemistry.) Pp. vii+95. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1957.) 24s. net.

IN 1955, the Ciba Lectures in Microbial Biochemistry were established at the Institute of Microbiology, Rutgers University, and in the spring of each year since then a series of three lectures has been given by an invited speaker. The lectures are afterwards published, and so far three volumes have appeared, of which this is the first. Prof. Barker is well qualified to deal with bacterial fermentations since he and a succession of colleagues have made outstanding contributions in this field for more than twenty years. The author makes no pretence of being exhaustive but rather selects those aspects with which he personally has been most concerned.

The first chapter deals with methane-producing bacteria, some of the most difficult species to isolate and maintain in pure culture. Well-merited attention is given to the physiology of these organisms as well as to the chemistry of their fermentations. Then comes a description of butyric acid and butanol fermentations. This includes the brilliant work on the route of synthesis from ethanol of short-chain fatty acids in *Clostridium kluyveri*, an organism isolated by Barker. The last chapter is concerned with fermentations of nitrogenous compounds—amino-acids, purines and pyrimidines. The influence of Barker permeates every branch of this subject; it is good to have this lucid account, and it is fitting that his ability should have been formally recognized by the naming of a species after him—*Methanosarcina barkerii*.

KENNETH MCQUILLEN

### Western Australian Wildflowers

Pp. 24 (22 coloured illustrations). (London: Angus and Robertson, Ltd., 1958.) 5s.

WESTERN AUSTRALIA is one of the world's flower gardens, noteworthy alike for the masses of coloured blossom that greet the eye in spring and for the curious shapes and vividly contrasting hues of so many of the flowers. The cover picture of this booklet presents the illyarrie (*Eucalyptus erythrocorys*) with the curiously contorted crimson operculate buds and golden yellow stamens of the open blooms outlined with the blue-green scimitar leaves and set against a blue Australian sky. Inside, a further twenty-one species are illustrated in colour, ranging from the kangaroo paw (*Anigozanthos manglesii*) strangely clothed in green and crimson wool, to the final picture of the sturt desert pea (*Clianthus formosus*), where a black glossy boss on the standard contrasts vividly with the scarlet petals. Proteaceae are represented by the scarlet banksia (*B. coccinea*) from King George's Sound and the curious sea-urchin (*Hakea laurina*) in which the flowers change gradually from cream to crimson. Other floral gems are the blue *Leschenaultia* (*L. biloba*) and the purple enamelled orchid (*Glossodia brunonis*). Mr. C. A. Gardner,