

option 4 a negative sign is omitted from one value of ΔG , a complicated phase diagram is produced with no explanation or even a heading (though letters printed on the curves suggest that some description was intended), and the last experiment is headed, "Effect of quenching temperature on silver steel"—whatever that may mean! Option 12 contains the remarkable equation $Cl \rightarrow 2Cl^{-2}$, and the author of option 13 ought (if he had read option 10) to be aware of the confusion that results from describing a concentrated solution of ammonia as "strong ammonia solution". If the student is to be encouraged to think for himself with a minimum of guidance, he must at least be able to rely on the accuracy of the instructions that are given to him.

Nevertheless, there are in these pages plenty of sound ideas—and some original ones (notably in options 5 and 7)—that will be welcome to all teachers of chemistry at the school level, and their use need not be confined to pupils who have previously studied the earlier stages of the Nuffield course. Several of these options would, for example, make useful projects for pupils who have the opportunity to work in the laboratory out of school hours, a purpose for which their loose-leaf form makes them particularly suitable.

Nuffield Foundation Chemistry Background Books

Dissolving, The Structure of Substances, Chemical Engineering, and Catalysis. 2s. 6d. each. Published for the Nuffield Foundation by Longmans/Penguin Books; Longmans Green and Co., Ltd.

The four *Background Books* (Dissolving, Structure of Substances, Chemical Engineering, Catalysis) form part of a series that are intended for issue to Nuffield students at appropriate stages in the course to stimulate interest and to set their laboratory work in a wider context.

It seems to have been assumed that to make these books palatable to their young readers all that was necessary was a wealth of illustrations and a prolific use of colour. No doubt these things are important, but the illustrations ought to be relevant to the text and their contribution should be to convey ideas that are suitably visual. Many of the illustrations in these books appear to have been included for no other purpose than that of filling up the page, and some of them are very weird. What, for example, would a child who knows nothing of Heath Robinson make of the diagrams in "Chemical Engineering"? Moreover, the use of colour, welcome in moderation, has run riot here. Whole pages of small print have to be read against a dark coloured, and sometimes patterned, background. Unfortunately, the text does not compensate for these defects; the writing is discursive and too continuous to appeal to young pupils. If the questions at the end were less vague and were integrated with the text to provoke more thoughtful reading of it, these books would undoubtedly stand a better chance of achieving their aim. E. J. HARTWELL

BOTANICAL LITERATURE

Index to Botanical Monographs

A Guide to Monographs and Taxonomic Papers relating to Phanerogams and Vascular Cryptogams found Growing Wild in the British Isles. Compiled by Douglas H. Kent. Pp. xi+163. (London: Academic Press, Inc. (London), Ltd; New York: Academic Press, Inc., 1967. Published for the Botanical Society of the British Isles.) 42s.; \$7.75.

THE literature of taxonomic botany is the largest in the whole of biology, and individual taxonomists tend to make their own private indexes of certain parts of it in view of the unsatisfactory nature and incompleteness of most of the available abstracting systems. Mr Kent has for many years been responsible for the compilation of a

valuable series of abstracts from the literature which are published in the *Proceedings of the Botanical Society of the British Isles* and he has put together for this book those references to monographs, taxonomic and cytotoxic papers published since 1800 that he came across during his searches through the literature. His book is intended mainly for students of the British flora although it will be of considerable use to botanists and allied scientists throughout Europe and other North Temperate regions.

After an introduction containing a short but detailed list of some of the major works which include monographs, such as Engler and Prantl's *Pflanzenfamilien*, there follows a list of abbreviations of the titles of about four hundred periodicals referred to in the main part of the text. These abbreviations are not always satisfactory or sensible, such as *Bot. Arch.* for *Botanisches Archiv (Berlin)* and *Bot. Archiv.* for *Botanisches Archiv (Königsberg)* respectively, and *Fedde.* for *Feddes in Feddes Repertorium*; but, on the whole, they are reasonable. A larger list of taxonomic-botanical periodicals is given by Brummitt and Ferguson in the *Index to European Taxonomic Literature for 1966, Regnum Vegetabile*, vol. 53 (1968), which differs frequently in its system of abbreviations, and the recently announced *Botanico-Periodicum-Huntianum* will cover 12,000 periodical titles and will use "internationally acceptable unambiguous abbreviations". It is encouraging to see questions of botanical literature being tackled vigorously after so many years of neglect.

The main part of the book comprises nearly 1,900 references. The nomenclature is based on that given by Dandy, *List of British Vascular Plants*, brought up to date when appropriate. This up-dating can be confusing at times, as in the case of *Rhynchosinapis*, where a reference is given to O. E. Schulz in the *Pflanzenreich*, in which work the generic name *Brassicella* is used. In other cases the previous incorrect generic name is given in parentheses such as *Petrorhagia (Kohlruschia)*.

The work is certainly a valuable compilation and will be widely used by botanists who want an initial orientation regarding the literature of a particular genus. It is necessarily incomplete, surprisingly so in some instances, but there has to be a limit and critics would do well to remind themselves that there is no other comparable work available, and we should be grateful to Mr Kent for providing us with this valuable tool, the need for which has often been voiced. The book is clearly and well printed, strongly bound, and reasonably priced.

V. H. HEYWOOD

STEREOISOMERISM

The Stereochemistry of Macromolecules

Edited by A. D. Ketley. Vol. 1. Pp. xii+412. 175s. net. Vol. 2. Pp. xiii+383. 170s. (London: Edward Arnold (Publishers), Ltd; New York: Marcel Dekker, Inc., 1967.)

ALTHOUGH the occurrence of stereoisomerism in the addition polymers had long been recognized, it was not until recently that methods were discovered for the synthesis of stereoregular molecules. Schildneck in 1948 described two forms of poly isobutyl vinyl ether, one of which was crystalline and recognized as stereoregular in structure. Little attention was paid to this discovery until Natta showed that the catalysts developed by Ziegler for the polymerization of ethylene at room temperatures and pressures could be used to prepare crystalline polypropylene and other crystalline polyolefines. Since 1955 progress in this field—which is important and significant both in regard to the fundamental and technological study of polymers—has been so rapid and is still continuing at such a rate, that even today it is difficult to present an entirely satisfactory theory of the