

*Environmental Chemistry.* By John W. Moore and Elizabeth A. Moore. Pp. xv+500. (Academic: New York and London, April 1976.) \$27.50; £15.10.

MANY environmental problems have been initiated by the failure of decision-makers to consider problems in their entirety and the failure of specialists to make relevant information both available and understandable. American science students having pursued the popular, mind-broadening course on which this book is based will be better able to fulfil their roles in both science and society irrespective of the careers they choose. Most suited to the interests of chemists having acquired a basic knowledge of kinetics and thermodynamics, the book should be considered essential reading for degree level courses in chemistry or environmental science. Physicochemical principles are applied to a breadth of practical non-ideal systems with economic, historical, and social commentary in an enjoyable and readable manner.

Following an introductory section on chemical evolution, the main text is based squarely on the alchemical elementary concepts of fire (energy), air, earth and water illustrated using modern issues. Nuclear reactor safety, stratospheric ozone depletion, phosphate eutrophication and use of pesticides are some of the controversial subjects discussed in a balanced way from an American viewpoint. Topicality will date the book rapidly, however, as evidenced by the now rejected Ca-Hg-Br system quoted to explain the hydrogen economy. Exercises and further reading suggestions are included in each chapter. The author's style, free from American phraseology, will appeal to students but many will consider the Moores' first textbook rather expensive.

**I. R. McKinley**

*Examination and Analysis of Starch and Starch Products.* Edited by J. A. Radley. p. vii+220. (Applied Science: London, 1976.) £15.00.

THIS is a practical book giving a description of various starches and the methods for identifying and characterising them.

G. E. Moss describes methods for examining starches in the light microscope. The appearance of various starches is given with numerous illustrative photographs. A table provides information on the microscopic appearance of 32 different starches. D. J. Gallant and C. Sterling describe

both the transmission and scanning electron microscopes and their application to starches. A. H. deVilligen discusses the rheology of different starches. A chapter by the editor follows, in which rheological measurements are discussed along with a description of various commercial viscometers. Procedures are also discussed for measuring gels, colour and several other properties. F. A. Lyne describes methods for determining moisture, mineral matter, fats, protein, alkali number, amylose content carobxyl groups and so on and also provides procedures for the

## Books brief

determination of starch in various products. J. van der Bij provides methods for the analyses of starch ethers and esters.

Each chapter has many references to the fundamental literature. The book should be useful in analytical laboratories concerned with starch analysis. Although detailed methods are not often given, sufficient references are present to lead to the appropriate details where needed.

**Roy L. Whistler**

*The World Computer Chess Championship.* Stockholm, 1974. By Jean E. Hayes and David N. L. Levy. Pp. v+105. (Edinburgh University: Edinburgh, May 1976.) £3.75.

THE first World Computer Chess Championship took place in Stockholm in August 1974, and resulted in a closely contested victory for the Soviet Union's 'Kaissa' program, ahead of several American rivals. This book, written by a professional chess master and a research worker in artificial intelligence, combines a report of the tournament games with a brief introduction to the problems of programming a complex human skill into a computer.

Although the account presents the intended material in a well organised manner, I felt that it has fallen short of what might have been achieved. The account of the games is rather pedestrian, following too closely the style of annotation appropriate to human chess, and laying insufficient

emphasis on the peculiar motives and aberrations of computer play. Furthermore, the delay of nearly two years between the tournament and the appearance of the book is far too long in such a rapidly developing subject, and this, coupled with the use of the obsolescent English Descriptive notation (which has all but disappeared from international chess) produces the impression of a historical document rather than an up-to-date report.

Compared with the much earlier report on the same tournament by Monroe Newborn, I find the present book difficult to recommend. It does however, have the merit of being considerably cheaper than the earlier report.

**Nigel J. Holloway**

*Flora Europaea.* Vol. 4: Plantaginaceae to Compositae (and Rubiaceae). By T. G. Tutin *et al.* Pp. xxix+505+5 maps. (Cambridge University: Cambridge: London and New York, August 1976.) £25.

THE production of *Flora Europaea* is a remarkable project in a number of respects. The geographical area and habitat diversity of the European continent makes it rich in plant species, so the description of its flora is a formidable task. It calls for a highly concise but informative text and in this respect *Flora Europaea* is eminently successful. It is also a credit to authors, editors and publishers in that the appearance of new volumes is a regular and frequent event.

Volume four is now in the bookshops and it maintains the standards of brevity set by its predecessors. The bulk of this volume is taken up with the family Compositae, which brings with it the taxonomic challenge of such genera as *Taraxacum* and *Hieracium* with their multitude of microspecies. The authors deal with these groups in a pleasantly conservative manner. Those of us who are consumers rather than producers of things taxonomic will welcome this agglomerative rather than divisive approach. There is one point, however, where a little splitting might have been welcome, that is in the case of *Hieracium pilosella*. There is a case, one would have thought, for its removal from this large genus.

As a source of concise information, relevant to the needs of taxonomists, ecologists and biogeographers this series is exemplary. The price is not unreasonable by modern standards, although subscribers may feel trapped in the general price escalation of the series.

**Peter D. Moore**