

ing for the sixth time Directive 67/548/EEC on the application of the laws, regulations, and administrative provisions relating to the classification, packaging and labelling of dangerous substances". In spite of that unpromising beginning, a very useful book has emerged.

The nature of the book is indicated by its sub-title, viz: 'A Systematic Instruction Manual'. It is not meant to offer a complete account, or even a detailed outline, of the IUPAC Rules of Organic Chemical Nomenclature, but rather to provide a step-by-step programme to enable the reader to set about naming a new compound or interpreting the name of a known one.

Readers coming fresh to the book are likely to be put off by being told right at the start to read an Appendix ("Guide to Name Construction") and then unfold a rather frightening flow-chart consisting of a maze of about 65 linked boxes, and may be even more dismayed if they glance ahead through the book and see sentences such as: "If you reached box 24 of the flow diagram at the back of the book without going via box (xxx) (whether or not redirected here from section 23) turn to the Table of contents and refer to the sub-section in section 24 appropriate to PG (e.g. amides, ketones, phenols)". If they persist, however, they will find a clear guide to naming organic compounds without having to remember all or even most of the IUPAC rules.

The book will be especially helpful to undergraduates, who are so often dismayed by the subject, and to organometallic chemists who have lost their undergraduate knowledge of organic nomenclature and will welcome this relatively painless way of devising or interpreting the name of an organic ligand, starting material, or product when this cannot be avoided. Furthermore, if they fail, the book gives them an address from which they can obtain help (that of the Chemical Nomenclature Advisory Service at the Laboratory of the Government Chemist, a U.K. governmental organization at which the author is Head of Chemical and Tariff Nomenclature).

The treatment complements that in the volume entitled *Organic Chemical Nomenclature*, by P. Fresenius, described in an adjacent review. I expect to make good use of it myself, and I wish a similar book were available on organometallic nomenclature. Along with the book by Fresenius it should be in all chemical libraries, and many teachers and authors will want it on their shelves.

The volume is well produced, and the clear type and diagrams are pleasant to look at. Unfortunately about 75 errors are listed in a leaflet accompanying the book, and corrections should be made on the relevant pages before the book is put on the shelf. I fear that the pull-out flow diagram will not survive the intensity of use it is likely to find in a library, and librarians would be wise to keep a few photocopies of it in hand.

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Instrumental Methods of Analysis, seventh edition; by H.H. Willard, L.L. Merritt, Jr., J.A. Dean and F.A. Settle, Jr., Wadsworth Publishing Co., Belmont, U.S.A., 1988, xxi + 895 pages, £19.95. ISBN 0-534-08142-8.

This is the seventh edition of a well-established textbook of instrumental methods of analysis aimed at senior undergraduate and graduate level students. The first

edition of this book appeared over forty years ago. Since then the application of instrumental methods to analytical problems has undergone a complete revolution. This edition of the book has been restructured into four main sections dealing with the processing of information, spectroscopic methods, separation methods and electrochemical methods. The wide coverage of this book has made the task of updating it, deciding what to include and what to exclude, an extremely difficult one. For example the exclusion of the chapters on optical rotation and related methods which were present in the previous editions, may not be a wise decision because of the developments in biotechnology and the requirements in the pharmaceutical industry for the use of single enantiomers of drugs with their consequent need for analytical methodology. A further problem in producing a new edition of a standard textbook is maintaining the balance between chapters as the relative importance of methods change. Thus the attention paid to nuclear magnetic resonance spectroscopy (1 chapter, 42 pages) versus ultra-violet and visible spectroscopy (2 chapters, 78 pages) seemed to be unbalanced in the light of modern developments. The NMR chapter is concerned primarily with proton spectroscopy with rather less discussion of carbon-13 NMR. A number of the routine techniques, such as methods of determining the number of attached protons, receive very little discussion. Nevertheless this textbook serves well in providing a general basic introduction to those instrumental methods of analysis that are widely used. Each chapter or section in the book is followed by a useful bibliography intended to provide the student with an introduction to the literature. However some of the chapters might benefit from a paragraph or so, indicating where the major collections of data are to be found.

The book is well produced with some good line diagrams of various types of instrument. The answers to the problems are included and there are some appendices comparing the methods and listing electrochemical data. There is a good index. This volume will no doubt continue to serve as a course-book for years to come.

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