M. Tsionsky, J. V. Macpherson, and P. R. Unwin. Next G. Denault, G. Nagy, and K. Tóth describe the principles, preparation, and uses of potentiometric probes. Other very impressive chapters are provided by B. R. Horrocks, G. Wittstock, B. D. Bath, H. S. White, and E. R. Scott, who describe applications of SECM to the imaging of biological systems and to studies of transport processes in membranes. D. Mandler describes the use of SECM to create microstructures on surfaces. The book ends with a further chapter by A. J. Bard, in which he discusses many ideas for further developments of this very versatile technique. Each chapter begins with an introduction to the topic that is understandable by nonspecialists, and therefore those who are not familiar with all the details of the method will nevertheless benefit from reading the book. Through their careful choice of authors and clear arrangement of the different topics, Bard and Mirkin have succeeded in producing the first standard work on this rapidly developing technique. Although some of the figures are badly reproduced, that does not detract significantly from the good overall impression.

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Fluorine Chemistry at the Millennium. Edited by *R. Eric Banks.* Elsevier Science, Amsterdam 2000. 656 pp., hardcover $ 259.00.—ISBN 0-08-043405-3

This highly interesting, fascinating, and entertaining book is a monograph of a historical kind, which comprises personalized accounts of the progress and events in both organic and inorganic fluorine chemistry which have happened over the last 50 years. Superbly edited by Eric Banks, *Fluorine Chemistry at the Millenium* is a unique book in which a group of excellent fluorine chemists describe many of the most fascinating and exciting areas of fluorine chemistry in 32 chapters (plus appendices) covering both academic interest and technological aspects. The editor, Emeritus Professor Ronald Eric Banks, himself a prominent fluorine chemist at UMIST, Manchester, began his career in pure academic research, and has since become the world leader in electrophilic fluorination (associated with the product Selectfluor, made and distributed by Air Products). Amongst many other distinctions, he is on the editorial board of the *Journal of Fluorine Chemistry.*

Since all essential areas, ranging from biological aspects to hard-core organic and inorganic noble gas fluorides and metal fluorides are covered (e.g., by N. Bartlett and R. J. Lagow), the book is a must for all dedicated fluorine chemists. With many chapters containing information relating to modern organic, inorganic, organometallic, and industrial fluorine chemistry, with a wealth of literature references, this book is also of great value to anyone interested in historical aspects of this field.

The list of contents is clear and precise, and the name index, subject index, and establishment index help to make this book not only an essential historical monograph, but also a useful and valuable work of reference. Some of the topics covered in *Fluorine Chemistry at the Millenium* are more geographically oriented, such as "Fluorine Chemistry in Russia and Ukraine" (M. J. Atherton), at Novosibirsk (G. M. Brooke), at Durham (R. D. Chambers), in Poland (W. Dmowski), in Italy (G. P. Gambaretto), at Leicester (J. H. Holloway and E. Hope), in Japan (Y. Kobayashi, T. Taguchi, and T. Abe), at Göttingen (H. W. Roesky), at Salford (H. Suschitzky and B. J. Wakefield), at Birmingham (J. C. Tatlow), at Glasgow (J. M. Winfield), and in Slovenia (B. Zemva). There are more thematic chapters, such as those on fluoropolymers (K. C. Eapen), fluorocarbons (D. M. Lemal), and highly toxic fluorine compounds (C. M. Timperley), others on industrial aspects such as "Nuclear Fuel at BNFL" (M. J. Atherton), "Adventures of a Fluorine Chemist at duPont" (W. J. Middelton), and "The ICI Legacy" (R. L. Powell), and snappily titled ones such as "Fluorine Chemistry—A Chemical Gardener's Paradise" (D. D. DesMarteau), "Never Say No to a Challenge" (K. O. Christe), and—last but not least—the editor's contribution on "Going with the Fluo".

One can only congratulate the editor, whose idea of encouraging the authors to combine as much information as possible about the area and themselves with a light, yet authoritative, style has worked out in such a beautiful way. Naturally, the chapters differ in style, depth, and emphasis, but this is exactly what the editor intended: "personalized accounts … written almost without exception by fluorine chemists I [i.e., Eric Banks] have interacted with during my research lifetime". This may also explain why the names of a few of the most prominent fluorine chemists are missing: G. Schrobilgen, K. Seppelt, J. Shreeve … to mention just three of them. The fact that the centennial issue of the *Journal of Fluorine Chemistry* (Vol. 100) already had six chapters of the book included, is hardly relevant, since very few libraries subscribe to this very useful, but expensive, journal.

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Electrochimie physique et analytique. Edited by *Hubert H. Girault.* Presses polytechniques et universitaires romandes, Lausanne 2001. 464 pp., softcover € 59.70.—ISBN 2-88074-429-6

Electrochemistry has proven since its earliest days that its concepts and methods are essential in many other important scientific fields. Recent developments have reinforced this evidence, in particular in biology, environmental sciences, molecular chemistry, etc. However, most of these developments, even when applied by non-electrochemists (as is increasingly often the case), are all rooted in specific electrochemical concepts and considerations that are very often known only to electrochemists. Although many other important physical methods are taught in great detail to nonspecialists, for historical and cultural reasons electrochemistry is generally taught only to electrochemists. This specialization of the teaching means that even physical electrochemistry is often dissociated from analytical electrochemistry.

  1433-7851/02/4104-0658 $ 17.50+.50/0

Girault's book is one of the first modern attempts to unite both fields, so as to provide one excellent reference textbook which should become extremely useful and handy to almost every scientist. The level chosen is that of undergraduate and graduate studies, yet the book covers most of the root concepts and methods of the discipline.

All the aspects are treated comprehensively, which means that all the physico-mathematical derivations of the laws presented are given accurately and in detail. In my view, this makes the book an excellent reference source, not only for students but also for any scientist interested in learning more about electrochemistry. It will also be valuable to those who have to teach electrochemical concepts and methods. In this respect the only defect that may be pointed out is the fact that the book exists presently only in its French version. Although this is clearly an advantage for francophone undergraduate students, it will unfortunately limit the use of this excellent book until an English translation becomes available.

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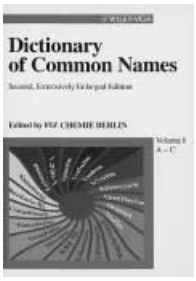
Dictionary of Common Names/Trivialnamen-Handbuch. Second, extensively enlarged, edition. Volumes 1–5. Edited by Fachinformationszentrum Chemie (FIZ Chemie) Berlin. Wiley-VCH, Weinheim 2001. xi + 4630 pp., hardcover € 2.299.00.—ISBN 3-527-30288-3



In every area where chemical compounds are involved, whether in everyday life, in commerce, in legislation, or in science, there is a need to identify them unambiguously. The two most important means of identification are the chemical formula and the name. Many compounds are known by "common" or "trivial" names, partly for historical reasons, but more importantly because, as one progresses to larger molecules, systematic nomenclature quickly leads to names that are very complicated, or at least inconveniently long. However, trivial names have the great disadvantage that, unlike systematic names, they do not allow one to deduce the structure, and everyone has at some time met the problem of identifying a compound described in a publication only by its trivial name. Consequently there has been no lack of attempts to collect together trivial names in various works of reference. The *Dictionary of Common Names*, now appearing in its second edition, is such a work, and impresses one immediately just by the size of the five-volume set. It is no less impressive in its contents, listing 51 962 common names or abbreviations for 40 027 organic compounds or substances (almost twice as many as in the first edition), with well-established constitutions. However, despite that expansion of the contents the user will not find here trivial names such as carboplatin, cisplatin, or Fremy's Salt, which belong to inorganic or organometallic compounds, and that limitation leads one to question the choice of title for the work.

The dictionary begins with an introduction consisting of a short description, in both English and German, of the work's contents and structure, and an explanation of the various data fields used. Each volume also carries on the front endpapers a brief explanation of the data panels. The introduction is followed by 4024 pages containing the data panels (each 8.7 cm × 5 cm) for each of the compounds described, arranged alphabetically according to their English trivial names. There are ten data panels on each page, and each of these contains eight data fields giving the structural formula, the molecular configuration (if known), the molecular formula, an English and a German trivial name, the Chemical Abstracts Registry number, a literature reference for further information about the compound, and the dictionary's internal reference number.

The formulas are clearly presented and easy to understand. A commendable feature is that all the methyl groups, including those attached to heteroatoms, are shown explicitly. Two criticisms are: firstly, that the directions of the shaded wedges convey a wrong perspective, and secondly that in some complicated structures, where bonds are shown crossing (e.g., in xestocyclamine B), there is no break in one of the lines to make the connectivity clear. In a few rare cases (e.g., butex, ciprokiren, sibanomicin) the space in the panel could have been used more effectively to improve readability.

It is reassuring to find that the stereodescriptors *R** and *S** and the term "relative configuration" (*rel*-) are used correctly here to describe a single isomer, whereas *RS* and *SR* are used for a mixture of two isomers, usually a racemate. This is very important in view of the many natural products and pharmaceutical compounds that are included, and especially considering that since 1997 the Chemical Abstracts Registry, and since 1999 also the Index Guide, no longer distinguish between a racemate and a pure enantiomer for which the relative, but not the absolute configuration is known. The pharmaceutical effect of a compound is in many cases very different according to whether a single enantiomer or both is administered. On the other hand it is unfortunate that the stereodescriptors often attached to the formulas are not printed in italic type, and are sometimes so far away from the relevant chiral center that they could belong to a neighboring atom; thalifarapine is an extreme example of the latter.

In contrast to the treatment of chiral centers, the configuration of double bonds is often unclear. The descriptors *E* and *Z* are often not given with the formula, even when the configuration is known, as in the case of cinnarizin (*E*), whereas sometimes for isomer mixtures (e.g., citral) or compounds for which the configuration is not defined (e.g., cinnamic acid (CA definition)) the formula is nevertheless drawn with the *E* configuration.

Fortunately, though, real errors such as these are very rare. Exceptions are the formula of glycyrrhizin (which is also wrongly drawn in other works of reference), the stereodescriptors at the prochiral centers of α-homodypnopinacolone, and the omission of HCl from the formula of adenine hydrochloride.

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