explanation of something that has intrigued me for some time: why certain constants such as that of Planck and the speed of light are always typeset in the italics convention usually reserved for variables – as fundamental constants they are the exceptions that prove the rule!

Advice is also given on how to collect and organize references to the literature with a description of card files and electronic database systems. In addition, the authors have developed a set of comprehensive guidelines for constructing references. As there are many strongly held beliefs how this is best done, it is always wise to establish beforehand what the rules of the publisher or university in question are. The authors plead for more standardisation in this area. Many copy-editors and authors who have had to revise complete lists would undoubtedly agree.

It is inevitable in a book of this scope that to many readers much will be self-evident. To those contemplating writing a book, a thesis will be a problem of little concern, unless of course the author is a supervisor of graduate students as well. Apparently there are still people who need to be convinced of the advantages of pc's and wordprocessing. And, of course, nonchemists are not likely to be wildly interested in the problems of chemical nomenclature. However, there is probably something of interest for every scientist and it is a useful reference for writers as well as their publishers.

DEREK COLEMAN

Quantification of analytical chemistry

Literature of Analytical Chemistry: A Scientometric Evaluation, by T. Braun, E. Bujdosó and A. Schubert, CRC Press, 1987. US$ 90.00 (outside the U.S.A., US$ 100.00) (vi + 259 pages) ISBN 0-8493-6591-0

The authors' stated purpose "is collecting and presenting in an organized manner the most pertinent scientometric and bibliometric information dealing with the statistical evaluation of the literature of analytical chemistry". It might be useful at the outset to cite the authors' definitions of bibliometrics and scientometrics in their introductory chapter. "Bibliometrics considers books, periodicals, etc., as formal and tangible documents, its major goal being the quantitative analysis of library collections and services in order to improve scientific documentation, information, and communication activities. Scientometrics analyzes the quantitative aspects of the generation, propagation, and utilization of scientific information to contribute to a better understanding of the mechanism of scientific research."

In a systematic fashion, the authors define and estimate the volume of the literature on analytical chemistry in chapter 2 and discuss the growth of this literature in chapter 3. An important correction, taking into account the early literature, leads to revised doubling times of the worldwide body of chemical and analytical chemical literature of 14.5 and 13.9 years, respectively. The authors attempt to answer the question to what extent this growth reflects the growth of analytical knowledge. It is the human side of the scientometrics, *i.e.* scientific activity, productivity, and progress of scientists that the authors explore in the book to considerable extent in addition to data on the literature itself.

Chapter 4 defines the notions of obsolescence and reference half-lives of analytical chemistry literature, and chapter 5 classifies that literature with respect to countries, language, subfields, topics, and techniques. Chapter 6 analyzes in detail the analytical chemistry journals, including such aspects as citations, interrelations, influence, peer review, gatekeeping patterns, publication speed, and various correlations among them.

As an example of a 'scientific revolution' within a field, the development of continuous flow analysis (CFA) followed by flow injection analysis (FIA) is described in chapter 7. Chapter 8 addresses the subject of authors of analytical chemistry papers in terms of their productivity, citation analyses, ranking of papers, and professional connections. Chapter 9 reports on a case study, trends and patterns of the literature on prompt nuclear analysis.

The final chapter presents scientometric indicators for cross-national comparison of publication productivity in and of citation impact on analytical chemistry between 1978 and 1980. These indicators are based on papers selected from 247 chemistry journals, including 22 analytical chemistry core journals. Papers were assigned to countries by the nationality of their first author according to the mail address. In addition to the various global statistics, the individual scientometric indicator values are given for each of 36 countries from Australia to Yugoslavia. This accounts for a relatively large portion of the book (72 pages).

The placement of tables and graphs in relation to the text where they are explained and commented upon is not always conveniently close. For instance, the figures displayed on pages 232-240 are discussed on pages 155-156. A minor error occurred on page 5 in the second paragraph: Baker has been publishing a report every five years, not 'five reports annually'.

The book provides a rarely seen global perspective on the publication activities of analytical chemists and on trends and progress of analytical chemistry. It allows a researcher, a publisher, or a group in a given country to lean back and to see where they or their research topics are in relation to the overall analytical chemistry activities. Some results may be

unexpected, such as that Denmark, New Zealand, Sweden, and Wales have the highest relative citation rates, or that Pakistan has the highest activity in analytical chemistry within the total field of chemistry.

W. V. METANOMSKI

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Games scientists play

Survival Strategies for New Scientists, by C. J. Sindermann. Plenum Press, 1987, US$ 17.95 (264 pages) ISBN 0-306-42703-6

Prof. Sindermann has done a service to both new and old scientists with his investigations into their life in North America. Their problems are not unique to that continent but are present in varying degrees of importance across the globe. His tabulated words of advice and analysis on how to achieve success may, however, have frightening consequences. All his readers will attain preferment at an early age and each one become the key figure in their chosen field. This will become apparent in a series of symposia, perfectly run to Sindermann rules. I have real sympathy for peer grant review committees with limited funds endlessly worrying over the size and choice of payments to proposals of equal 'beauty and substance'.

It is amazing that such a student of social and scientific mores finds difficulty in defining the 'old-boy network'. Those not inside it should beware, it is alive and working with great precision in North America. For example, passing a colleague's marginal student rates 5/5 credits or old-boy points and readers may be interested to know that their reviewer gains 2/5 O.B.P.s for reporting this work favourably.

The book frequently uses the 'game' metaphor to describe how professional scientists behave. It is perhaps surprising that the term was not reserved for the 'amateur' scientist's role with which the author has some sympathy. There is no doubt that the science 'game' is changing. This book helps clarify the need for social and public relations at all levels of science even if the mechanisms by which it is achieved are sometimes best hidden. Self analysis and the logistical study of probable career milestones or the management of senior faculty members who have been picked out from a 'catalog' and privately subjected to a detailed psycho review classification before an interview is not a pretty sight. The reader will know how far to take these ideas for himself. I must apologise here, Prof. Sindermann would now go into a tearful remorse, quite unknown in Europe, for having used a sexist word and most certainly would lose a couple of credit points.

The sections on writing a paper or making verbal presentation and on roles in committee, especially as a chairman, give excellent guidance. Instructions concerning the organisation of conferences are detailed but by no means tedious, even to the extent of quoting the problems of feeding delegates in various North American aquaria!

'Survival Strategies for New Scientists' dispels almost any possible naivete and enables the reader to understand and manipulate this world. It will be interesting to see the fruits of this work transcribed into a business or governmental context. Finally Prof. Sindermann even has the carrot and stick approach for his reviewers, who are first requested to preserve the author's ego by being positive before firing critical salvoes and then reminded that revenge can be sweet. May I end on a sweet note by offering the reviewer's copy to my son, about to go up to Oxford as a scientist.

J.R.P. CLARKE

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Books received

Review copies of the following books have been received. The appearance of a book in this list does not preclude the possibility of it being reviewed in the future

Laboratory Information Management Systems, edited by R.D. McDowall. Sigma Press, Wilmslow, 1987, xvi + 383 pp., ISBN 1-85058-083-9, £ 24.95.

Inductively Coupled Plasmas in Analytical Atomic Spectrometry, edited by A. Montaser and D. W. Golightly. VCH Verlagsgesellschaft, Weinheim, 1987, xxiii + 660 pp., ISBN 3-527-26529-5, DM 215.00.

Two-dimensional NMR Spectroscopy — Applications for Chemists and Biochemists, edited by W.R. Croasmun and R.M.K. Carlson. VCH Verlagsgesellschaft, Weinheim, 1987, xviii + 511 pp., ISBN 3-527-26528-7, DM 197.00, US$ 104.50.

Statistics for Analytical Chemistry, by J.C. Miller and J.N. Miller. Ellis Horwood, Chichester, 1988, 227 pp., ISBN 0-7458-0292-3, £ 9.95.

Advances in Standards and Methodology in Spectrophotometry, edited by C. Burgess and K.D. Mielenz. Elsevier, Amsterdam, 1987, xii + 404 pp., ISBN 0-444-42880-1, US$ 95.00, Dfl. 195.00.

Measurement, Statistics and Computation (ACOL, Analytical Chemistry by Open Learning), by D. McCormick and A. Roach, published on behalf of ACOL by Wiley, Chichester, 1987, xx + 760 pp., ISBN 0-471-91367-7 (paper back), £ 19.50.

Human Substances and Their Role in the Environment, edited by F.H. Frimmeland and R.F. Christman. Wiley-Interscience, Chichester, 1988, xiii + 271 pp., ISBN 0-471-91817-2, £ 37.50.

Silicon Chemistry, edited by J.Y. Corey, E.R. Corey and P.P. Gaspar. Ellis Horwood, Chichester, 1988, xi + 565 pp., ISBN 0-7458-0528-0, £ 60.00.