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Book review

Handbook of thin-layer chromatography, Second edition, edited by J. Sherma and B. Fried, Marcel Dekker, New York, NY, 1996, IX+1104 pp., price US $225, ISBN 0-8247-9454-0.

After five years, the monograph of Sherma and Fried in its revised and extended version appears in print again [for a review of the first edition, see J. Chromatogr., 558 (1991) 365]. Of the 31 chapters which comprised the first edition, 19 chapters have been updated with references covering mainly the years 1989–1994, two chapters have been considerably altered (carbohydrates and amino acids), two chapters have been expanded (inorganics and enantiomers), seven chapters have been rewritten by new authors (optimization, optical quantitation, radiochromatography, natural pigments, pharmaceuticals and drugs, nucleic acids and their derivatives, hydrophillic vitamins) and two chapters are new additions (detection, identification and documentation and a chapter about automatics and robotics). The size of the book has increased from 1047 to 1104 pages.

The above reported changes make a definite contribution to the general part of the book. As far as the second part, which is devoted to applications, is concerned, it is possible to raise a number of objections, of which the main one is that there is a certain lack of balance, particularly because this part of the book does not reflect the importance of TLC in the individual groups of compounds. The chapter about inorganic applications has been completed by a section on the principles and techniques of TLC, however, the very extensive tables have not been shortened but, on the contrary, they have been expanded to a total number of 80 so that the chapter has been boosted to an inadequate 112 pages (out of 606 pages devoted to applications in total). There have been about 2% of all TLC pages devoted to inorganic applications during the past two to three years; here, however, inorganic applications cover more than 18% of the pages dealing with applications. A chapter devoted to alkaloids is still lacking: According to bibliography data, alkaloids span over the same number of publications as inorganic compounds. In this handbook alkaloids are covered by a mere three pages in the chapter on toxins! One of the weakest chapters in the 1st edition, which dealt with pharmaceuticals, has been substituted by a completely new chapter. This one is compiled in a very interesting way, however, conceptually it differs considerably from the other chapters in the applications section of the book. The authors have focused on the general problems and the position of TLC in pharmaceutical analysis, but complete data for individual drug categories, which are expected (as I believe) by the reader in such a handbook as this, are missing. An exception is represented by the table taken from USP and BP. In the bibliography we are lacking fundamental papers from the area of drug analysis including books devoted to this topic. The new chapter on nucleic acids certainly does not belong among the best chapters; it contains a number of errors and imprecisions, both fundamental and formal. It is not quite clear why the chapter about the analysis of enantiomers is included in the applications section and is not dealt with in the general part. It would be much more logical to treat the general problems of enantiomer separations in the part called 'Principles and Practice of TLC' and defer concrete examples to sections dealing with individual groups of compounds (e.g., amino acids).

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Although the editors state in the preface that suggestions made by reviewers of the first edition have been incorporated, the fact is that most of the formal objections have survived. The contents lists of subchapters are still missing which makes looking for a particular problem in the book very difficult. Categorization of headings remains still very vague and sometimes even misleading (in the chapter about pesticides 'I' is used for both Roman one and Capital i). In many chapters both the authors and editors were not diligent enough to renumber the literary references in the new edition: The additional references are included under diverse authors as a, b, c, etc. The chapter on carbohydrates is special in that it includes also the headings of quoted papers. Editors should not allow four pictures of commercially available instruments to be duplicated in chapters 5 and 26, or to have in Phenols, aromatic acids and indoles chapter III to precede chapter II, etc. The nomenclature does not always follow IUPAC recommendations. Finally, the Index is far from being user-friendly: although there are quite a few new entries included, the individual compounds are referred to somewhat randomly (for instance, in antibiotics we find in the Index all aminoglycosidic antibiotics, but not a single cephalosporin).

In conclusion, it can be said that the second edition has certainly gained in quality. Potential readers will find here a lot of new information although its amount does not always correspond to the size of this handbook. For the next edition it is recommended to make some of the applications more balanced and the size of individual chapters should at least be roughly proportional to the relative number of papers published in the literature.

Karel Macek Prague, Czech Republic