

Book review

Biophysical Methods in Food Research: edited by H. W.-S. CHIN, Blackwell, London, 1984, viii + 199 pages + Subject Index, £19.50.

This rather slim book, constituting Vol. 5 of "Critical Reports on Applied Chemistry", and published for the Society of Chemical Industry, consists of four chapters, each of which describes physical methods of utility in research on foodstuffs. Each of the first three chapters was written by a member of the ARC Food Research Institute in Norwich, Gt. Britain, and the fourth is by an author working at the Colworth Laboratory of Unilever Research, Sharnbrook, Gt. Britain.

The first chapter, by D. J. Wright, discusses thermoanalytical methods used in food research. The sequence of subject matter is essentially the same in this chapter and the others. First comes a section entitled "Notation" that explains the acronyms and other abbreviations to be employed, together with definitions of symbols used. This is followed by an introduction, a treatment of the techniques and their application, and a list of references. The last-mentioned section often contains minor errors in abbreviations of names of journals cited. Use of a section on notation certainly simplified the work of each author, but it causes frustration for the reader, who has to keep turning back to that section to ascertain the definition of an abbreviation or a symbol; introduction of the definition at the first mention thereof is much preferable.

Chapter 1 embraces thermoanalytical techniques, differential scanning calorimetry and differential thermal analysis, together with their applications, other thermoanalytical methods, and future developments. Optical methods as applied to biopolymer solutions are then discussed by V. J. Morris; these include use of electromagnetic radiation and its scattering, linear birefringence and linear dichroism, circular dichroism and circular birefringence (chiroptical effects), and future prospects. P. S. Belton contributes a chapter on spectroscopic methods, namely, nuclear magnetic resonance spectroscopy and photoacoustic spectroscopy, and their applications. The last chapter, by S. B. Ross-Murphy, is devoted to a treatment of rheological methods. It includes sections on force, deformation, and flow; experimental methods; rheological properties of food components; rheology of food materials; and ultrasonic techniques.

Each chapter is scientifically satisfactory and could prove useful to readers having little interest in the food industry. However, all of the authors seem to have lost sight of the fact that scientific books are not written for the *cognoscenti*, but for those seeking to learn. This is witnessed by the long, or even short, strings of adjectives and adjectival nouns often found preceding a noun, but lacking any

commas or hyphens for clarification of the meaning. Examples include high-precision scanning microcalorimeters (p. 5), specific heat determination (p. 5), fat crystal melting (p. 7), fat disperse systems (p. 177), time averaged scattered intensity (p. 63), simple shear flow induced birefringence (p. 75), oil containing seeds (p. 120), random close packed packing (p. 176), and chain flexible normal modes (p. 194).

The reader does not expect to encounter elementary errors in English in chapters presumably written by Englishmen. Space permits mention of only a few of the more egregious: "represent" for constitute (p. 2); a single comma between subject and verb (*e.g.*, pp. 3, 119, and 155); "this latter" (pp. 12 and 16) — how many "latters" can there be?; "different . . . to" (p. 13); "affecting" for effecting (p. 15); "effect" for affect (p. 22); "varying" for various (p. 17); "Neither [of these two] have" (p. 28); "a honorary member" (p. 42); "the phase differences is fixed" (p. 44); Section 3 refers to "the previous section" — which one? (p. 48); "The media is" (p. 49); "to try and measure" (p. 51); "everything . . . absorb strongly" (p. 57); "predominately" for predominantly (p. 79); the carbon atoms "contain" (for "bear") four different substituents (p. 89); "rotation data shows" (p. 92); "The variation give" (p. 114); "due to" for due (p. 134); "A range have" (p. 146); "A number have" (p. 146); and, "A number are" (p. 147).

In addition, there are many spelling mistakes, presumably attributable to careless proofreading. These include "moeity" for moiety (p. 12); "moveover" for moreover (p. 25); "preceeding" for preceding (p. 29); "circulatory" for circularly (p. 39); "L-glumate" for L-glutamate (p. 56); "molar rotation" for molecular rotation (pp. 40 and 86); "possibilities" (p. 105); "diminuation" (p. 116); "dependant" (p. 122); and "Van der Waal's" for van der Waals's (p. 174). On p. 18, "the second of higher temperature" is unfathomable, and so is "globular structures such as soya" (p. 42). Errors in chemical naming include "1,3-distearo, 1,3-dipalmito and mono-oleyl" (p. 22); "carboxymethyl cellulose" (p. 42); "polyuronides" for glycuronans (p. 74); and "hydroxy ethyl cellulose" (p. 82). Other errors are "shape and conformation" for the identical property (p. 42); "configuration" for shape (pp. 74 and 93); optical "rotary" dispersion for "rotatory" (p. 83); "optical activity or chirality" for different attributes (p. 88); and "KHz" for kHz (pp. 115 and 132). The statement (p. 143) that "all materials can behave as either solids or liquids" seems debatable. In addition, certain outmoded units are employed, such as calories instead of joules (pp. 1, 2, 5, 11, 12, 20, 21, and 28) — although kJ is used on p. 15, kcal in the same paragraph, and J on p. 172; and, on p. 49, Å is used (almost simultaneously with nm), as it is on pp. 57, 95, and 122. On p. 86, there is an inadequate definition of specific optical rotation (mL of what? — solvent or solution?), and "orientated" is used on p. 88, but "oriented" on p. 121. The year 1980 is described as "recent" on p. 141, and 1982 is "very recent" on p. 190. The word "clearly" is used *ad nauseam* in connection with descriptions that are "as clear as mud" to the tyro. On p. 108, *T* is used (instead of T) for tesla, but, in Eq. 3, *T* is an undefined unit, and T_1 and T_2 are relaxation times. In numerous places, a hyphen is used where there should be a 1-en dash, and clarity is not enhanced by

the consistent omission of a comma immediately preceding the final "and" or "or" in a list of three or more items.

Because of these shortcomings, the book cannot be wholeheartedly recommended, but, if they are borne in mind, it could be profitably read by most organic chemists and biochemists.

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Gums and Stabilisers for the Food Industry 2: edited by GLYN O. PHILLIPS, DAVID J. WEDLOCK, AND PETER A. WILLIAMS, Pergamon Press, Oxford, 1984, xii + 561 pages + Subject Index, £ 59.50, \$95.00.

This, the second volume of a projected series having the same title, consists of the Proceedings of the 2nd International Conference on the subject, held at Wrexham, Wales, in July, 1983. Whereas Vol. 1 emphasized the interactions of hydrocolloids, this one is oriented toward the practical needs of the end-user.

The book consists of six chapters, seven poster presentations, and a list, by name and affiliation, of the 194 participants in the second conference. (The third is scheduled for July, 1985, at the same locale.)

The first chapter (51 pages), entitled "Characterisation—Analysis", encompasses 5 contributions by a total of 11 authors; and the second (78 pages), on "Characterisation—Rheology", also has 5 articles, by a total of 14 authors. Chapter 3 discusses "Product and End-Use Areas", and occupies 157 pages, with 10 articles by a total of 22 authors; chapter 4 (70 pages), dealing with "Food Processing/Hydrocolloid—Cause and Effect", has 5 articles and 9 authors; chapter 5 (47 pages) is on "Legislation and Toxicology", and consists of 4 articles by a total of 7 authors; and chapter 6 (82 pages), entitled "Recent Developments—Future Trends", has 5 articles by a total of 16 authors. Finally, there are 7 poster presentations (50 pages) by a total of 19 authors. Thus, in the 561 pages, there are actually 535 pages of text, the rest being title pages, blank pages, and the list of participants.

The contents of the various articles differ so enormously in scope, from the abstruse to the readily intelligible to the rather simple (exemplified by an article, by R. G. Morley of Stone Mountain, Georgia, entitled "Utilisation of Hydrocolloids in Formulated Foods", which, in a total of 29 pages, contains 45 photographs of the labels on packaged foods and drinks to be found in grocery stores in the U.S.), that it would be an impossible task to describe them individually in a limited space. Presumably, the book will prove useful to those working in the food industry, but this reviewer failed to find anything new, or even particularly interesting, to most carbohydrate chemists and biochemists.

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