



Book Reviews

Alternative Sweeteners. Edited by Lyn O'Brien Nabors and Robert C. Gelardi. 2nd Edn. Marcel Dekker Inc., New York, 1991. viii + 461 pp. ISBN 0-8247-8475-8. Price: US\$143.75.

This second edition of 'Alternative Sweeteners' is revised and expanded (first edn. 355 pp). Some new sweeteners are included and thaumatin (a protein sweetener) has been deleted because its persistency has precluded its use as a sweetener.

The book is clearly divided into three sections: intense sweeteners, caloric sweeteners and multiple ingredient approach. Presentation is attractive and the editors must be congratulated on the technical accuracy and absence of textual errors, which makes the book a pleasure to own as a reference text.

One or two points about the contents are somewhat puzzling. For example, the inclusion of *L*-sugars within the intense sweetener section, when their sweetness potency is somewhat less than sucrose, is anomalous. Also the section on fat alternatives departs altogether from sweeteners, but these are important in low calorie foods. Information was generally well provided and helpful for applications of sweeteners, throughout the book, but inevitably there are also some annoying gaps. For example, the Table 1 on p. 175 for the temporal sweetness characteristics of sucralose (one of the newest sweeteners) does not indicate what strength of sucralose solution was used, nor indeed its temperature. It is also important not to confuse the terms 'taste' and 'flavour'.

The caloric sweetener section (which would more aptly have been designated 'bulk sweetener' and included the *L*-sugars) was extremely well researched and well presented. I especially liked Moskowitz's chapter on maltitol and hydrogenated starch hydrolysate, which was accurate, concise and technically informative. Although the polyols are now well-established sweeteners their taste quality and functional effects are close to those of the common food sugars and they therefore have particularly good prospects as food ingredients.

It could be argued that this book covers the same ground as 'Handbook of Sweeteners' by Marie and Piggot (Blackie, 1991). However, I find that 'Alternative Sweeteners' is the better of the two from a chemical point of view. It is up-to-date, structurally accurate and technically dependable, and I recommend it to all

scientists and technologists interested in the use of sweeteners in foods.

Gordon Birch

Lithium in Biology and Medicine. Edited by G. N. Schrauzer and K-F. Klippel. VCH, Weinheim, 1991. xiii + 209 pp. ISBN 3-527-28203-3. Price: £36.50.

It is well known that the trace element lithium, usually in the form of lithium carbonate, has for over thirty years been used in clinical practice for the treatment of various mental disorders including manic depressive psychosis. Indeed, lithium has been claimed to be the most effective anti-psychosis agent known. It has even been shown to calm habitually violent prison inmates without producing any adverse side effects on intelligence or personality. However, a body of evidence has been accumulating during recent years that lithium may have other valuable uses in medicine, and may even be an essential trace element micronutrient.

The present book is made up of the papers at an International Symposium at Trier, Germany in 1990. The area covered is surprisingly wide, bearing in mind the novelty of most of the subject matter. Thus the first paper by Joyce reviews previous reports that lithium enhances the recovery of hematopoiesis that had been damaged by cytotoxic chemotherapy, and describes the protective effect of lithium on mice that had been subjected to normally lethal radiation levels. In a related paper, Gallicchio *et al.* report that lithium enhanced the hematopoietic recovery of irradiated bone marrow. These findings and others in the paper by Kehrberg indicate that lithium has a useful role to play in protecting the blood-forming systems against the damage normally caused by aggressive radiation and chemotherapy for the treatment of cancer.

In another paper, Vanyo *et al.* show that lithium can increase cellular uptake of vitamin B₁₂ and may modulate cell growth. Horrobin reviews the effects of lithium on fatty acid metabolism, and describes how a serendipitous observation led to the discovery that topical application of an ointment containing lithium succinate proved effective in treating seborrhoeic dermatitis. Controlled clinical trials have confirmed this finding. Visca, Santi, and Spina provide and review evidence that lithium may have clinically useful properties as an immunomodulator.