

Developments in Food Microbiology—2. Edited by R. K. Robinson. Elsevier Applied Science Publishers, London, 1986. 226 pp. ISBN 0-85334-432-9. Price: £30.00.

There can be little argument that a review series covering food microbiology is an asset for those with insufficient time to keep fully abreast of the subject's burgeoning 'primary' literature. Indeed, most of us probably consider ourselves to be in the category of reader for whom *Developments in Food Microbiology* is intended. The second volume in the series brings a change of editorship and presents a selection of eight topics, illustrating the broad scope of the subject, with an international authorship.

There are two excellent chapters covering the microbiology of fortified wines and table wines (Goswell, UK). In addition to providing a useful account of the various processes and their microbiology, they demonstrate the double-edged weapon that microbial growth in foods can be, where the same or similar organism can be either beneficial or undesirable, according to circumstances—as for example in the malo-lactic fermentation or the growth of film yeasts in the production of fino sherry.

On the dairying front, there is a chapter describing the white, brined cheeses of the Middle East (Haddadin, Jordan) and a review of the evidence in the long-running saga of *Lactobacillus acidophilus* and its reputed therapeutic properties (Nahaisi, Libya).

At the risk of understating the situation, it would be fair to say that genetic engineering and its potential have enjoyed some coverage of late, though not perhaps their application in the food area. The previous volume in this series included a chapter by McKay covering some aspects of the genetics of dairy streptococci and this volume contains a review of the basic techniques of genetic engineering and their application in 'food grade' organisms such as lactic acid bacteria and yeasts (Gasson, UK). The applications section focuses particularly on factors such as phage resistance, citrate and lactose fermentation and casein hydrolysis in dairy starters, and chymosin production in *E. coli*.

On the more negative aspects of food microbiology there are chapters on food-borne infections caused by vibrios (Sakazuki & Shimada, Japan) and the significance of *Campylobacter* in foods (Hoffamn & Blankenship, USA). The latter concentrates mainly on the organism's taxonomy, biochemistry and physiology with respect to isolation and identification procedures. There is a chapter on toxins and allergens from higher plants (Pusztai, UK) which some might quibble should not be in a book on food microbiology. It does have some relevance, however, since the symptoms elicited by plant toxins may resemble microbial food poisoning, although I was disappointed that the chapter was not longer, sufficient to give a less summary treatment of the subject.

This book should contain something of interest for most food microbiologists. However, any complacency that the series will prove an exclusive vehicle for keeping up with the field is soon dispelled by the observation that even the same publishers also produce several closely related developments series relevant to food microbiology.

M. R. Adams

The History of Scurvy and Vitamin C. By K. J. Carpenter. Cambridge University Press, Cambridge, 1986. vii + 288 pp. ISBN 0-521-32029-1. Price: £27.50.

Scurvy has the dubious distinction of being, after malnutrition itself, the deficiency disease that has caused the greatest amount of death and misery to mankind.

In this book Kenneth Carpenter traces the history of the disease and the efforts of the small numbers of people in succeeding generations whose observations and insight led to the discovery of, first, preventative treatments and, finally, the isolation and identification of the antiscorbutic vitamin—vitamin C.

The history of the disease is charted using contemporary accounts and Dr Carpenter has refrained from using modern knowledge to make judgements, with hindsight, on the various and often baffling observations that the early writers made.

It is intriguing to discover just how often the observers failed to see in their observations and early attempts at the evaluation of treatments the 'correct lead', or what we now know to be the effective treatment. Dr Carpenter helps us to understand the early writers' problems by outlining the intellectual climate in which they worked, and how this limited their horizons and constrained the imaginative insights that would have led to the early elimination of scurvy. The history shows that a succession of experimenters had evidence of the effectiveness of citrus juices in their hands; however, even Lind was constrained by his personality, which limited his ability to push his ideas against the then current climate of opinion.

The book has salutary value in showing how mysterious the disease appeared to the early experimenters, often appearing to be multifactorial in origin just as pellagra had seemed.

The book traces the history of the disease from the early voyages of exploration, the experience of the British Navy and Captain Cook and the adoption of empirical solutions, to land scurvy in communities deprived of fresh fruit and vegetables such as Ireland in the years of the potato famine. Nearing modern times the appearance of infantile scurvy seemed to be