

the richness of the species mix (about 1000 species) in vegetable origins and production systems and the close connections with culture and history. Some important vegetables were originally introduced and have been adapted to local needs and tastes. The main regions exhibit differences in the relative importance of different vegetables and the ways in which they are prepared. Undoubtedly, they are of great importance nutritionally, particularly for children, as they are often minor accompaniments to a carbohydrate dominated dish in many diets.

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*Physicochemical and Environmental Plant Physiology.* 4th edition. By Park S. Nobel. Amsterdam, Academic Press (2009), pp. 582, £54.99, ISBN 978-0-12-374143-1.

This is an update of a classic text first published in 1970 as *Plant Cell Physiology: A Physicochemical Approach*. Although it has since changed its name, there have been minimal changes since the first edition (published in 1991). Nevertheless, the book remains a rigorous and reliable text covering many aspects of the basic biophysics of plant physiology and of plant interactions with the environment, with its well-recognized emphasis on a quantitative approach.

Notwithstanding its merits, it is unfortunately now showing its age. I was disappointed that this new edition, or should I say reprint, hardly acknowledges the substantial advances in both techniques and understanding that have been made in recent years, and which are important in much agricultural research. Although references to some recent papers have been included, these mostly do not appear to be referred to in the text. A few additional figures and minor clarifications have been introduced, but there is no, or limited, coverage of important developments in fields such as the use of stable isotopes, and the use of chlorophyll fluorescence or thermal imaging as diagnostic or phenotyping tools. Similarly, there is unfortunately limited analysis of the problems of scaling up gas exchange and energy balance to canopies, or even further. Coverage of important topics such as global climate change appears to have been limited to the addition of a couple of pages.

Although all those interested in a rigorous approach to plant biophysics should have a copy of one of the editions, there seems little reason to buy this new edition rather than seeking out a second-hand earlier edition, which would be better value.

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*Crop Protection. From Agrochemistry to Agroecology.* By J-P Dequine, P. Ferron and D. Russell. Enfield, NH, USA: Science Publishers (2009), pp. 190, £55.00. ISBN 9-781578-086528.

Although the title implies that broad aspects of crop protection will be covered, the authors focus on the difficulties and progress over a 50-year period in the management and control of major insect pests of cotton in different countries. Bacterial, viral and fungal diseases of cotton are mentioned only in passing, without providing key references, and they are not even listed in the index, though weeds are featured to some extent. To be fair to the authors, they admit to this bias in the Preface.

The book is arranged in seven chapters, each presented in essay-style, with only a few references after each chapter. Chapter 3 'Stepping off the pesticide treadmill' gives a good historical account of the evolution of chemical resistance in target pests treated repeatedly with insecticides, and the effects this has often had on secondary insect pests and their predators. Later chapters deal with the concepts of integrated control, biological control, optimizing varietal selection and the introduction of genetically modified crops carrying entomotoxins from *Bacillus thuringiensis* with varying specificities. There then follow the concepts of ecologically based management of insect populations by natural predators, leading to agro-ecosystems that need to be economically and environmentally sustainable.