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Plant Tissue Culture. Techniques and Experiments. Third edition. By R. H. Smith. Amsterdam: Academic Press (2013), pp. 188, £54.99. ISBN 978-012-415920-4.

This is the third edition of a book first published in 1996. It is interesting to note that the basic techniques of plant tissue culture have changed very little, but some of the applications have diversified in this time. The book is aimed at students, and as such contains some valuable material and well-described practical exercises. The section on the set-up of tissue culture laboratory is useful and the following chapters describe exercises in all the accepted aspects of plant tissue culture, concluding with a chapter on *Agrobacterium*-mediated transformation. The chapter contents are rather uneven however, and there is no real need in a slim volume aimed at student practical exercises for a lengthy review on plant tissue culture history with 200 references cited. The chapter outlines at the start of each chapter are simple and informative and clear headings make the chapters easy to follow. However, some chapters have questions embedded and some do not, and this creates an inconsistent tone. The Appendices on *Useful Measurements* and *Solution Preparation* would be of some value to a beginner, and the *Glossary* gives clear explanations of commonly used terms. The real problem with this volume is that, while informative and easy to read, it offers little new to an already very well-documented branch of plant science.

Stephen Millam

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Agroecology and Strategies for Climate Change. Edited by E. Lichtfouse. Heidelberg, Germany: Springer (2012), pp. 335, £135.00. ISBN 978-94-007-1904-0.

Don't be misled by the title – the book is no more about climate change than any volume about agricultural systems. It is an eclectic mixture of contributions from fascinating chapters such as that on a novel land–energy use indicator for energy crops through to a chapter that largely catalogues plant parasitic nematode diversity in pome stone and nut fruits, hardly central to either agroecology or climate change adaptation strategies. There are the usual introductory and historical chapters and a number of good individual contributions such as that on the rhizosphere. The term ‘sustainably-competitive agriculture’ is used in one chapter, causing some confusion with current common use of the term sustainable intensification. Issues of pollution from animal waste are addressed, as are biotechnology contributions such as transgenic crops. When it came to chapters comparing organic with conservation farming, or looking at water use efficiency, I was hoping for data to support the comparisons but there was very little. Surely, reviews are the opportunity to compare such data side-by-side and look for overall trends? Having said that, the chapter on water use efficiency was also another otherwise good resource chapter. Overall, however, there is no coherence to this book – it is an assembly of quite separate contributions from very different perspectives that happen to all be about some aspect of agriculture, not strictly even agroecology. You might buy this book for some individual chapters, but otherwise it is just one in a library series.

Adrian Newton

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Principles of Plant Genetics and Breeding. Second edition. By G. Acquaah. Chichester, UK: Wiley/Blackwell (2012), pp. 740, £42.50 (pb). ISBN 978-0-470-66475-9.

The second edition of this book follows the general format of the first in that it is composed of two parts. The first part describes the principles, strategies and technologies used in crop breeding in a thorough and readable manner and the second part gives case studies of breeding in selected crops. However, this is not just an update