Root Feeders – an Ecosystem Perspective. Edited by S. N. Johnson and P. J. Murray. Wallingford, UK: CABI (2009), pp. 226, £75.00. ISBN 978-1-84593-461-3. doi:10.1017/S0014479709007728

Research on herbivores has been dominated by studies on above-ground interactions and this book aims to partially redress the balance by synthesizing current information on agricultural and ecological aspects of root herbivory. The book consists of 11 chapters to which 24 authors contributed. The book focuses on insects and nematodes and the chapters are organized under three headings: techniques for studying root feeders, root feeders in context and root feeders in the wider ecosystem. The first two chapters cover the main 'traditional' techniques for studying the impacts of root herbivory and recent developments in non-invasive methods for studying root herbivores in the field and laboratory. The next six chapters focus on root herbivory in three managed (agriculture, grassland, forestry) and one natural (forest) ecosystem and present two more specific 'case studies', one on grape phylloxera and the other on biological control of root feeders, focusing specifically on root weevils. The chapters on agriculture and forestry also contain short 'case studies' on species or groups of species. The final chapters concentrate on three more general topics of current interest: which are the interactions between above-ground and below-ground herbivores, trophic interactions in the soil environment and the potential impact of climate change on root herbivores. This is a useful and interesting book containing a large amount of information. Because of space limitations and the focus on 'case studies' in certain chapters it is by no means comprehensive, but should provide the reader with the impetus to search for additional information elsewhere.

Rosemary Collier

Science and the Garden. The Scientific Basis of Horticultural Practice. 2nd Edition. Edited by D. S. Ingram, D. Vince-Prue and P. J. Gregory. Oxford: Blackwell Publishing (2008), pp. 350, £24.99. ISBN-13: 978-1-4051-6036-6. doi:10.1017/S001447970900773X

This is the second edition of a book first published in 2002. It was written with students in mind, particularly those studying for the Royal Horticultural Society examinations. However, the editors hope it will also appeal to gardeners and growers, though they recognize the problems posed by such a wide readership.

The contents include plant form and function, genetics and plant breeding, soil structure and management, environmental factors, propagation, pest and disease control, and storage. All the chapters in the first edition have been revised, and four new chapters added, covering the diversity of plant life, conservation and sustainability, gardens as natural habitats and gardens for science.

It is the attempt to explain the relevant science to the home gardener, an aim reflected in the main title, that makes this book unusual. This could be done at many levels depending upon the scientific background of the reader, but it is clearly difficult to embrace all of these levels in a single volume. The editors were concerned to simplify without 'dumbing-down'. The 14 contributors have differed in the ways in which they have dealt with this problem. Some have minimized the use of technical terms or explained these as they occurred. Others have relied more on italicizing a term the first time it is used, to indicate that it is explained in the glossary. Though these measures have not made all the material readily accessible to the average home gardener, there remains much to interest those curious about the science underlying horticultural practice.

P. D. Waister

Sustainable Agriculture and Food Security in an Era of Oil Scarcity: Lessons from Cuba. By J. Wright. London: Earthscan (2009), pp. 261, £60.00. ISBN 078-1-84407-572-0. doi:10.1017/S0014479709007741

This book presents the case for alternative farming and food systems on the grounds of ecology, human health and the depletion of natural resources. But it is the focus on the inevitable decline of fossil fuel availability which gives this book its impetus. The concepts of 'peak oil' and 'post-petroleum food systems' are fully recognized and used to support the case against 'industrial agriculture'.

The author uses Cuba as a living example of how an agricultural economy might cope with sudden shortages of fertilizers, pesticides and fuel, by analysing the Cuban situation after the withdrawal of Soviet support in 1989, and the continued trade embargo imposed by the USA. The book, which is adapted from the author's PhD thesis at Wageningen, analyses how Cuban agriculture adapted in the 1990s to scarce inputs and falling prices for its main exports of sugar and tobacco. Food shortages were addressed, first, by price controls and rationing,

then by major shifts in the structure of agriculture to give greater incentives to farmers. The government then promoted low-input, sustainable systems and the development of urban farming. Wright traces the rapid moves to organic methods such as biological pest control, organic manures and the partial replacement of tractors with draught oxen. By the late 1990s, Cuba had achieved food self-sufficiency. More recently, as trade in oil and oil-related inputs has increased, there is evidence of some return to a less sustainable agriculture.

This important, well-referenced book sheds light on how agri-food systems may have to adapt to long-term oil shortages.

Michael E. Daw

Sustainable Rural Systems. Sustainable Agriculture and Rural Communities. Edited by G. M. Robinson. Aldershot, UK: Ashgate Publishing (2008), pp. 210, £55.00. ISBN 978-0-7546-4715-7. doi:10.1017/S0014479709007753

The book, most originating from a conference in 2004, consists of ten chapters on a range of topics in sustainable agriculture, mostly written from the standpoints of the social and geographical disciplines. The biophysical factors in sustainability – for example how a farmed soil might be defined as sustainable in terms of its organisms and processes – are not covered. Chapter 1 sets the scene, comparing definitions and contrasting, with examples, what are termed sustainable and industrialized agriculture. I would have welcomed more critical dissection here and elsewhere of the various definitions, possibly by reference to agricultural systems that have already collapsed, and to the likely reasons for their unsustainable behaviour. Some of the remaining chapters deal with general issues, such as farm animals and rural sustainability (which I found informative as a non-specialist in this area), while others are highly specific, presenting cases from mostly England, but also Ireland and Canada. The cases include alternative food networks, reasons why farmers quit organic schemes, and the link between farming and landscape where the aesthetic by-products of farming may be more valuable than the products. In general, the writing is clear, though admittedly jargon in Chapter 2, for instance, might discourage some readers. As a whole, the book provides useful reference material, and will be valuable for this as an addition to a library, but in this reader's opinion, the geographical and social aspects of sustainable agriculture would benefit from a much more quantitative and less anecdotal approach than is generally given here.

G. R. Squire

Temperate Fruit Breeding. Germplasm to Genomics. Edited by J. F. Hancock. Heidelberg: Springer (2008), pp. 445, £123.00. ISBN 978-1-4020-6906-2. doi:10.1017/S0014479709007765

This is not a book intended for light reading or for those only casually concerned with the culture of fruit. However, for anyone interested in the genetics, improvement through plant breeding or other scientific aspects of a wide range of temperate fruit crops this book is a must. It will be of serious interest to plant breeding students and those from a wide range of disciplines involving the improvement of virtually any crop. The editor has skilfully and logically directed his co-authors in a stepwise description of their crop speciality, from evolutionary biology to biotechnology and breeding techniques. The referencing is both extensive and up-to-date with each chapter giving the key botanical traits and origin of species for each crop. What is fascinating and extremely educational is that a similar story of crop improvement has been applied to all of the 15 different types of crop. Crops covered are: apple, apricot, blackberry, blueberry, cranberry, cherry, currants, gooseberry, grape, kiwifruit, peach, pear, plum, raspberry and strawberry. For most of these fruit crops, extensive use has been made of closely, and sometimes distantly, related species of often widely differing ploidy level for the incorporation of a specific character. This book is an essential reference for those involved in temperate fruit research.

Ronnie McNicol

The Peach: Botany, Production and Uses. Edited by D. R. Layne and D. Bassi. Wallingford, UK: CABI (2008), pp. 615, £135.00. ISBN 978-1-84593-386-9. doi:10.1017/S0014479709007777

As befits one of the most common and popular tree fruits, the peach has in this volume been accorded a comprehensive and detailed coverage of the various aspects of its botany, breeding and cultivation.