

## BOOK REVIEWS

*Bacterial Disease Resistance in Plants. Molecular Biology and Biotechnological Applications.* By P. Vidhyasekaran. Binghamton, NY: USA: Haworth Press (2003), pp. 466, US\$59.95. ISBN 1-56022-924-1. DOI: 10.1017/S0014479704212054

This book is a great success and will be used by both students and experts in the field. To take on such a big topic alone is brave but to succeed, as Dr Vidhyasekaran has done, is remarkable. The book takes the reader logically through topics in bacterial disease resistance, starting with the initial contact between bacteria and plant cell. Dr Vidhyasekaran explains the different processes involved in plant defence. Each chapter is clearly broken down into sections and is concisely written. This not only makes the book very readable but also allows the reader to dip into the book for information on a particular topic. I found this particularly useful in Chapter 3, where the different types of 'active oxygen species' are described, together with their effects on both the plant and invading pathogens. The final chapter describes a number of biotechnology applications, with clear examples and methodologies, allowing the reader to follow current progress also to understand how progress was made and identify the references to go to for further reading. I have no doubt that this book will appeal to a wide audience in its field, and will be used both for general reading and as a desktop companion for more specific information.

Ian Toth

*Biotechnology and Sustainable Development: Voices of the South and North.* Edited by I. Seregeldin and G. J. Persley. Wallingford, UK: CABI Publishing (2003), pp. 318, £55.00. ISBN 0-85199-675-2. DOI: 10.1017/S0014479704222050

There is no doubt that wealth and poverty are unevenly distributed in the world, and that the livelihoods of the poor will not improve without a significant and sustainable increase of agricultural productivity. However, this increase will not be achieved without a concerted effort mobilizing every available technology. Biotechnology is thought by many to have the potential to make a major impact in this respect. The potential of biotechnology for sustainable development was the subject of an international conference held in Alexandria, Egypt, in March 2002 and the present book gives account of the opinions voiced on that occasion. It contains 29 contributions organized in eight sections addressing New Life Sciences and Sustainable Development, New Life Sciences for Food and Agriculture, New Life Sciences for Human Health, New Life Sciences for the Conservation of Natural Resources, Safe Use of New Biotechnology, Public Perceptions, and the route Towards New Partnerships. The book provides a comprehensive overview on the current state of this field. The individual contributions are competent and are mostly very well written which makes for informative and enjoyable reading. However, those readers hoping to find arguments against the widespread use of biotechnology will be disappointed: all the hard scientific evidence presented reinforces the idea that biotechnology has the potential to make a significant contribution to the improvement of the livelihoods of the poorest citizens of this world. The book is highly recommended reading for scientists and interested laymen alike.

G. Hahne

*Apples: Botany, Production and Uses.* Edited by D. C. Ferree and I. J. Warrington. Wallingford, UK: CABI Publishing, (2003), pp. 672, £99.50. ISBN 0-85199-592-6. DOI: 10.1017/S0014479704232057

Within the 660 pages and 24 chapters of this book are some 40 contributions from an impressive list of international researchers, many of whom are recognised as world experts. The book is ambitious in that it aims to satisfy an extensive spectrum of individuals interested in all aspects of apples.

The book is divided into six sections and begins with an introduction dealing with the botany of apples, along with production and consumption issues. The next section describes propagation and rootstock development, and the plant material used in extensively well-documented worldwide breeding programmes and their goals and successes. Section three describes the extensive knowledge of apple physiology and the impacts of different growing environments on production. Section four details the numerous approaches and knowledge used to optimise and manage trees and orchards. The fifth section is about crop production and covers diseases of apples and the management of pests. Topical areas such as integrated fruit production and organic growing are also included. The final section completes the chronological events of apple growing by describing harvesting, crop utilization and postharvest storage.

Each section includes informative key references and in some cases a useful further reading list. With very few exceptions, there is a first class selection of illustrations, figures and photographs. This impressive book clearly achieves its ambitious aims to provide fundamental knowledge for those wishing to study apples. I would strongly recommend this book for all the library shelves of those associated with apple growing, as it will rapidly establish itself as the primary reference on apples.

C. J. Atkinson

*Organic Fruit Growing*. By K. Lind, K. Schloffer, G. Innerhofer and H. Meister. Wallingford, UK: CABI Publishing (2003), pp. 281, £55.00. ISBN 0-85199-640-X. DOI: 10.1017/S0014479704242053

The appearance of this volume is timely: as the authors themselves say in the preface, organic fruit growing is in vogue throughout Europe and beyond. It contains seven main chapters covering basic principles, including legal aspects, planning and establishment of an organic production unit, cultivar/rootstock choices, agronomic and cultural requirements, plant protection, processing and marketing.

The emphasis of the book is firmly on top fruit, especially apple, and as a source book for organic top fruit production, it has much to commend it. Other fruit, including berries, are mentioned, but not in the same depth or with the same authority. The recommended cultivar listings are inconsistent, being good for some species and rather dated or geographically limited in others. Surprisingly, although there are extensive notes on various processing applications, there is very little mention of fresh fruit quality, despite this being one of the key issues surrounding organic v. conventionally grown crops. Also, the volume contains no references or bibliography.

How valuable an addition to the literature this volume will prove is open to debate. The intended readership, according to the authors, is schools, colleges and growers. The text is generally well written and informative in many areas, notably in the excellent pest and disease sections. However, although successful organic growing clearly needs to consider all areas of fruit production, there is a strong feeling from the start that the overall coherence of the volume is reduced by the authors' attempts to include every single aspect of fruit growing, from site selection to processing, rather than focus on the wholly organic aspects. In providing such a general text, the real value of the book is diluted, and as a result it can only be recommended with reservations.

R. Brennan

*The Biology of Seeds. Recent Research Advances*. Edited by G. Nicolas, K. J. Bradford, D. Come and H. W. Pritchard. Wallingford, UK: CABI International (2003), pp. 472, £95.00. ISBN 0-85199-653-1. DOI: 10.1017/S001447970425205X

This book contains 49 papers edited down from 290 papers and posters presented at the Seventh International Workshop on Seed Biology, held in Salamanca, Spain in May 2002. The published papers represent what has been occupying seed scientists since the last workshop in 1999. The opening chapter from Derek Bewley sets the workshop in a historical as well as a contemporary and controversial molecular biology context. The papers are divided into five parts: Seed Development (10 papers), Seed Germination and Dormancy (17), Desiccation and Other Stress Tolerances and Conservation (11), Seed Ecology (6) and Seed Biotechnology (3). The publication of the book in the year after the workshop adds to its usefulness as an up-to-date reference book for researchers. Well done editors! Although not uniform throughout, the papers mostly follow the convention of primary papers (Introduction, Methods, Results, Discussion), but none, obviously as an editorial policy, contains a Summary. This makes the book less reader-friendly in the face of information contained in 472 pages. The final chapter is both a summary of the workshop and a look to the future, based, one assumes, on an oral presentation. This

chapter might have been stronger with closer reference to the papers that were published, particularly so in the case of part V, Seed Biotechnology. The value of the book to readers not at the workshop would have been greatly enhanced by the inclusion of an early chapter, written with the published papers in mind, to establish general themes and trends, leaving the final chapter to concentrate on a look to the future.

Stan Matthews

*Nutrients for Sugar Beet Production: Soil–Plant Relationships.* By A. P. Draycott and D. R. Christenson. Wallingford, UK: CABI Publishing (2003), pp. 242, £65.00. ISBN 0-85199-623-X. DOI: 10.1017/S0014479704262056

This book is a cross-Atlantic collaboration bringing together a wealth of research and experience on the sugar beet crop. Broom's Barn, UK and Michigan State University, USA have been central to much of the research that has led to substantial increases in the production of this crop. Although the percentage of world sugar production supplied by sugar beet declined between 1950 and 2000 from about 33 to 25%, yield of sugar increased by about 64% over the same period as a consequence of improved nutrition, genotypes and other factors. After a brief introduction to sugar beet production worldwide, there are six chapters on the 14 essential nutrients for sugar beet accompanied by a collection of 49 colour plates showing deficiency symptoms mainly of field-grown plants. Interestingly, deficiency symptoms of neither chlorine nor sodium have been observed in the field, but while symptoms of the former are shown in the collection of plates, sodium is absent from both the plates and the chapter on nutrient deficiencies. The approach of the next six chapters is fairly conventional, examining the content and availability of the nutrients in soil, uptake by the crop, role in the plant, and effects of fertilizer additions on uptake and beet yield. The second half of the book examines a broad range of agronomic topics including organic manures and issues of organic production, fertilizer applications, soil physical conditions, and nutritional aspects of sugar beet quality, fodder beet and the beet seed crop. Overall, this is an admirable summary of agronomic and nutritional research on this crop, and destined to be a work of reference for many years.

P.J. Gregory

*Crop Production in Saline Environments: Global and Integrative Perspectives.* Edited by S. G. Goyal, S. K. Sharma and D. W. Rains. Binghamton, NY, USA: Haworth Press (2003), pp. 427, US\$129.95. ISBN 1-56022-097-X. DOI: 10.1017/S0014479704272052

This book has a foreword and 15 chapters, starting at the general and moving to a series of country specific case studies. Each chapter, written by high profile authors, would easily stand alone. Of the 409 pages of text, 120 are devoted to molecular approaches to plant breeding, 48 focus on water for irrigation including modelling, 208 cover regional case studies, with the remaining 33 for the overview and comment on 'plant salinity resistance research'. Crop production and salinity are viewed in their broadest sense but some chapters are specific and reflect the emphasis the editors give to molecular approaches; with one chapter focusing on the role for *Arabidopsis* in seeking drought tolerance.

As a soil scientist I would have preferred to see a clear emphasis on the role of soil science in crop production in saline environments in the more general sections. Certainly the role of soil science comes through in each of the case study chapters, but some of the more recent approaches to salinity as a process, rather than seeing salinity as a state, could have been better highlighted.

In books of this type, with authors from widely different disciplines and countries, coordination of terminology, referencing, units and the index is obviously a major task. The editors have taken considerable care to get these things right, which makes comparisons between chapters, particularly for the case studies, much easier than would otherwise have been the case. This book is a useful addition to the literature, particularly for its attempt to link molecular plant breeding to an age-old problem.

Blair M. McKenzie

*Sustainable Agriculture.* Second Edition. By J. Mason. Collingwood, Australia: Landlinks Press (2003), pp. 205. AU\$49.95. ISBN 0-64306-8767. DOI: 10.1017/S0014479704282059

This is more a user manual than a textbook. The book is based largely on experience in Australia – indeed all nine organisations acknowledged as information sources are in Australia. After a brief introduction, the book

is organised into 11 chapters that include concepts, soil water management, pest and disease control, weed control and cultivation, management of crops, trees, pastures and animal products. A concluding appendix lists 28 contact addresses, 17 of which are in North America or Australasia. In a book of this size, coverage of any particular topic is inevitably brief and the author concentrates on practice rather than theory. Numerous checklists and bullet points summarise key points. There are some useful definitions and descriptions of practices and a few case studies but we are rarely given any underlying principles or insights. The book makes an easy and sometimes interesting read which will be a useful resource to dip into from time to time for the practitioner. The target readership includes students, farmers, policy makers, conservationists and environmental groups. No doubt, the book will be useful to environmentally aware farmers, particularly in Australia. However, as there is no overarching theme or theoretical framework, it is less clear how much value it will be to students or policy makers.

Sayed Azam-Ali

*Sustainable Soils: The Place of Organic Matter in Sustaining Soils and their Productivity*. By B. Wolf and G. H. Snyder. New York: Haworth Press (2003), pp. 352, US\$49.95. ISBN 1-56022-916-0.  
DOI: 10.1017/S0014479704292055

Although written by soil scientists, this book is aimed at a readership of farmers and extension agents, mostly those living and working in the United States. Thus the great majority of examples are from different parts of the United States, and most references are to work completed at extension stations in the USA. There is one reference to work in India, and the results of a consultancy by the senior author on 'cantaloupes in Guatemala' are also quoted. Units vary disconcertingly between metric and imperial. A table of conversion factors is provided at the back of the book, but this does not provide information about bushels or tons or boxes, all of which are used in the text. Nutrient contents are sometimes given as the element and sometimes as the oxide. There was one example from England (p. 73) illustrating adjustments needed to nitrogen applications to sensitive vegetable crops according to the soil organic matter level, attributed to the 'Vegetable Research Trust'. In spite of these limitations, for readers concerned with British or tropical conditions the book has a saving grace. It does attempt to provide a balanced account of the practical advantages and advocates a combination of organic matter additions with inorganic fertilizers and pesticides.

Dennis Greenland

*Multifunctional Agriculture: A New Paradigm for European Agriculture and Rural Development*. Edited by G. van Huylenbroeck and G. Durand. Aldershot: Ashgate (2003), pp. 239, £45.00. ISBN 0-7546-3576-7.  
DOI: 10.1017/S001447970430205X

In contrast to its main competitors elsewhere in the world, Europe's agricultural sector is nowadays required to produce non-commodities (such as stewardship, landscape, environment, food safety, non-food production, maintenance of rural areas, maintenance of biodiversity, rural development, waste recycling and even social services) as well as commodities. That, agree the 21 contributors to this book, makes it 'multifunctional'. The situation is complicating international trade negotiations and confusing policy makers, scientists and the general public, most of whom see the system as being in crisis: too much input, too much output and inadequate control.

This informative, in-depth, academic analysis written by, and for, Europeans, with the aim of making a small contribution to the future of agriculture, certainly succeeds in adding structure and substance to the debate. As the Preface admits, however, the book does not seek to address the impact of multifunctionality on international trade and the less developed countries; nor does it debate how the costs of this multifunctionality might be met without disturbing international trade. Nevertheless, concepts and terminology are discussed that agriculturalists beyond Europe's borders would do well to acquaint themselves with; examples include competitiveness and viability analysis methodologies and income diversification strategies. Only a few pages are concerned with agricultural science and technology issues: a consequence, perhaps, of the challenging view expressed in the book that the problem-solving capacity of agricultural sciences seems nowadays to be stagnant. Can the economists, social scientists and politicians do better? Read the book and decide whether or not to hold your breath.

Alan C. Jackson

*The Ecology of Soil Decomposition*. By S. M. Adl. Wallingford, UK: CABI Publishing (2003), pp. 335, £60.00. ISBN 0-851990-661-2. DOI: 10.1017/S0014479704312056

This is a comprehensive and well written reference work on soils, with a precise, understandable style suitable for researchers, lecturers and students in a wide range of disciplines such as agriculture, forestry, ecology, soil science, microbiology, mycology, protozoology, nematology and acarology. The subject is presented in six main topics: 'Functional Groups', 'Habitat', 'Sampling and Enumeration', 'Soil Food Webs and their Integration', 'Spatial Stratification and Succession Patterns Over Time' and 'Integrating the Food Web'. The major groups implicated in decomposition are introduced within a modern taxonomic framework and emphasis is placed on the role of species diversity in these functional groups. A comprehensive introduction to all these topics is accompanied by excellent illustrations and photographs, with a very useful 'further reading' list in each section. There are many well-detailed subdivisions in each section, covering a comprehensive range of subjects. These include a discussion on the advantages of individual species adaptations and the intricacies of the microbial members, including emphasis on using 'realistic' nutrient inputs instead of sugar-rich media for microbial culture. The degree of biodiversity and myriad of actions and interactions involved in both primary and secondary decomposition are discussed in detail. There are excellent detailed descriptions of soil, soil atmospheres, and water release curves, and the need for very careful experimental and field sampling planning. The topics of site variation and statistical patterns, together with the importance of spatial and temporal aspects in habitat descriptions, are well introduced. The final section provides a fitting finale with numerous examples and lots of useable data on this global phenomenon.

Ron E. Wheatley

*Soil Fertility Decline in the Tropics*. By A. E. Hartemink. Wallingford, UK: CABI Publishing, (2003), pp.360, £65.00. ISBN 0-85199-670-1. DOI: 10.1017/S0014479704322052

This book is a review of the literature (particularly English and Dutch) concerning soil chemical fertility (defined as pH, organic C, total N, available P and exchangeable cations, but not micro-elements) of tropical soils, especially under plantation crops, and the way it declines under cropping. There are also more detailed case studies for sisal in Tanzania and sugar cane in Papua New Guinea, based on the author's own work. He uses three approaches to reveal fertility decline: chronological records from a single site, comparison of cropped soils with neighbouring uncultivated or virgin soils, and the 'balance' approach of comparing estimated nutrients inputs with removals over long periods. The first two tend to agree with one another, but less so with the third. As expected, plantation crops, especially tree crops, are less depleting than annual crops, which are also given a chapter. Almost invariably (but depending greatly on soil type) the author found that concentrations of carbon and macronutrients, and pH, declined alarmingly. However, as he points out on the final page, the decline in chemical fertility has not apparently been paralleled by a similar decline in yields, which is as well since 95% of the world population increase is occurring in the tropics. In his case studies, the attempt to relate fertility level to yield was frustrated by factors such as pests and diseases, which were more limiting than soil fertility. It might be expected that modern crop methods ought to be able make good this deficiency, but the author is clearly sceptical about this.

Alan Scaife

*Handbook of Soil Acidity*. Edited by Z. Rengel. New York: Marcel Dekker (2003), pp. 496, US\$195.00. ISBN 0-8247-0890-3. DOI: 10.1017/S0014479704332059

Soil acidity is considered by many to be one of the fundamental problems which must be overcome if production of food and fibre is to be increased to meet the demands of the rising global population. This edited text brings together 38 authors from a number of countries to review the underpinning scientific principles of soil acidity, the impact of soil acidity on food and fibre production systems and a range of soil and crop management approaches to overcome the constraints imposed by the acidity. There is a single chapter on the role of pH in phytoremediation of contaminated sites. The first two-thirds of the text provides an introduction to the subject. There are clearly written chapters addressing the global extent of soil acidity; the linkage of soil acidity to the cycling of C, N and S; the interactions between plant and soil in general and specifically within the rhizosphere;

the heterogeneity found in the patterns of soil acidity, and the contribution of acid rain. There are also chapters dealing with aspects of modelling; the toxicity associated with soil acidity and how GIS might be used to assess the risk of soil acidity. The final third of the text addresses the attempts to alleviate the problems posed by soil acidity in food and fibre production through normal management practices, the use of lime and organic matter additions and crop breeding. The final chapter, somewhat outside the theme of the rest of the text, deals with phytoremediation of contaminated sites. This text includes some very well written papers which present the information in a clear and concise style with clear tables and figures. Unusually for an edited text the standard of the papers is reasonably consistent and the index, whilst not comprehensive, is adequate. The editor is to be congratulated on bringing together a group of authors who have managed to produce a text which presents a reasonably comprehensive coverage of the subject in a style which should be accessible to most undergraduate and graduate students of Soil Science and Agricultural Science.

Stephen Nortcliff

*Managing Soil Quality. Challenges in Modern Agriculture.* Edited by P. Schjonning, S. Elmholt and B.T. Christensen. Wallingford, UK: CABI Publishing (2003), pp. 344, £75.00. ISBN 0-85199-671-X.  
DOI: 10.1017/S0014479704342055

My immediate reaction to the title of this book was one of confusion. How can one manage soil quality without knowing what it is? Reading the book, I am left none the wiser. However, some of the contributed chapters are informative; the book does cover several angles of soil use: land-use planning; urban soils, as well as the well-trodden research in compaction. At worst the book provides a good source of background material. Sadly, most of the chapters do not add much to an already heavy debate on the utility of soil quality indices. However, I still commend the book. What raises this book above most others is a chapter by Brussard and co-authors on 'Biological Soil Quality'. The chapter is well written, thought provoking and, importantly, adds something new to the discussion about managing our most important resource, soil. It raises the question: does detail matter? It would seem that Brussard and co-authors do believe that the Devil truly is in the detail. The chapter emphasises the importance of biochemical and biophysical interactions and suggests that soil biodiversity actually confers stability on ecosystem functioning. The reader may not agree with them, but will be made to think. It perhaps at last provides an argument against those who say that biodiversity is Biological diversity without the logical.

Iain M. Young

*Rangelands of the Arid and Semi-Arid Zones in Uzbekistan.* By G. Gintzburger, K. N. Toderich, B. K. Mardonov and M. M. Mahmudov. Paris: CIRAD and Aleppo, Syria: ICARDA (2003), pp. 426, €70.00. CIRAD ISBN 2-87614-555-3; ICARDA ISBN 92-9127-137-8. DOI: 10.1017/S0014479704352051

Much experience has accumulated, over a long period, on the winter-rainfall grazing lands of Middle Asia but it has only been accessible to Russian speakers; this book makes that information available to the wide readership it deserves. Rangelands were used, traditionally, by mobile herding systems, for subsistence and production of Karakul pelts, then damaged severely by collectivisation; recently independence and poor markets have caused further problems. For over sixty years, rehabilitation has involved destocking, reintroduction of herd mobility, protection and reseedling. Choice and evaluation of species, seed technology including dormancy problems, land preparation, sowing and after-management are described for each seasonal range type. The environment is described using bioclimatology, which is novel in the region, as well as the standard Russian biogeography. Livestock and the pastoral system are touched on lightly to provide the context for the botanical body of the book. About 150 key plants are described in detail and illustrated: pastoral importance, fodder value, ethnobotany and economic uses are given for each species. The national nature reserves are also described. The bibliography is comprehensive; an Uzbek-English glossary is provided and an appendix gives meteorological data from many sites. This book will be valuable not only to pasture specialists, but to all workers dealing with the semi-arid lands in Uzbekistan and neighbouring zones of similar climate. The section on range improvement and rehabilitation, often by direct seeding which the climate pattern suits, contains a lot of proven techniques which could be of interest to a wider readership.

J. M. Suttie

*Water Dynamics in Plant Production*. By W. Ehlers and M. Goss. Wallingford, UK: CABI Publishing (2003), pp. 273, £65.00. ISBN 0-85199-694-9. DOI: 10.1017/S0014479704362058

This book, originally in German, and translated and updated by the two authors, deals with the science of water and how it interacts with plants. It is a good book worth buying. In each chapter, there is good use of insert boxes, allowing the reader a varied read: from the science of water to the history of research in water uptake by plants. Using this technique the reader can immediately see how far the science has progressed. The figures are well done, benefiting from a simple style, and are a good example of substance over style, which many other books would do well to copy. Surprisingly, the work of McCully on water dynamics in the rhizosphere, and other more fundamental root physiology work, is not well covered in this book. This would have made an interesting addition. However, overall the breadth of work is good, with a healthy dose of worked examples on water flow, packed full of real data, as well as informative guides to some of the more mathematically obscure terms, especially for plant biologists. Students will find this a very worthwhile addition to their textbooks. The authors have done a good job. It is a book that I have already learnt from, and I am sure that it will be a valuable contribution to this area in the years to come.

Iain M. Young

*Water Productivity in Agriculture: Limits and Opportunities for Improvement*. Edited by J. W. Kijne, R. Barker and D. Molden. Wallingford, UK: CABI Publishing (2003), pp. 352, £60.00. ISBN 0-85199-669-8. DOI: 10.1017/S0014479704372054

This volume is the first in a projected series resulting from *The Comprehensive Assessment of Water Management in Agriculture*, a worldwide initiative, funded by international and national sponsors, and which is part research, part inventory and part technology transfer. The 19 chapters here are varied. Some are detailed, quantitative and analytical, some generic and some very specific. Among the generic coverage is a good general framework, a realistic appraisal of the contribution of molecular breeding, a note on water use in saline conditions and worldwide assessments of the water available for cropping. The more specific chapters are diverse accounts of some individual crops (e.g. rice, agroforestry, potato) and specific study areas. The ordering of chapters has little obvious rationale. So reform of the Thai irrigation sector follows wheat on the Western Indo-Gangetic Plains and precedes the use of remote sensing to estimate water productivity (plant mass per unit water). Nevertheless, there is much of value here. Researchers in the field might sift through the book to light on something that extends their interest. Student groups might take a chapter at a time for analysis and discussion. The series is a commendable concept: valid, timely and holistic. This volume is more than a collection of disparate articles but not a coherent synthesis. The editors and publisher should consider how the structuring of the chapters and of the series can best serve the project. A final note: an appendix on transpiration, while arguing the role of transpiration in conducting nutrients to the plant, seemingly underplays the role of transpiration in dissipating solar energy. A greater biophysical slant in future volumes would make the whole more authoritative.

G. L. Squire

*Handbook of Formulas and Software for Plant Geneticists and Breeders*. Edited by M. Kang. New York: Food Products Press (2003), pp. 347, US\$39.95 paperback, US\$69.95 hardback. ISBN 1-56022-949-7 paperback, 1-45022-9480-9 hardback. DOI: 10.1017/S0014479704382050

This book contains the code plus a brief description of a wide range of specialist genetical analysis computer programs. Each of the 32 chapters covers a different analysis and the code is written in SAS. The choice of programs is wide and eclectic covering GxE, diallels, generation means, QTL mapping, bootstrapping and simulation. In most chapters the programs are supplemented with data sets giving worked examples to illustrate their application. The editor is to be congratulated on having persuaded so many people to provide software which might otherwise have been lost to the research community.

Each chapter follows a similar format in which the purpose and approach underlying the program are very briefly explained together with key references, contacts and sources of code. However, because of the need to keep the chapters short, the detail of the experimental structure underlying the illustrated datasets and the nature of the outputs is often far from clear. It is difficult to see the point in printing approximately



180 pages (more than half the book!) of detailed code and data matrices when the software can be obtained electronically from the authors. It would have been more useful to provide more explanation of the objectives of the applications, the data structure and type of information obtained. The code could then have been put on a web-site for those who wanted it. Nonetheless, it will be a useful reference work for many practical breeders.

M. J. Kearsey

Readers may be interested to know about the following publications received but not reviewed because of their limited relevance to the majority of readers of *Experimental Agriculture*.

- A Guide to Effective Management of Germplasm Collections. IPGRI Handbooks for Genebanks No. 6.* Edited by J. M. M. Engels and L. Visser. Rome: IPGRI (2003), pp. 165, no price quoted. ISBN 92-9043-582-8.
- Global Review of Commercialized Transgenic Crops. 2002 Feature: Bt Maize.* By C. James. Ithaca, NY, USA: ISAAA (2003), pp. 182, US\$35.00. ISBN 1-892456-38-8.
- Preview. Global Status of Commercialized Transgenic Crop.* 2003. By C. James. Ithaca, NY: ISAAA (2003), pp. 25, US\$35.00. ISBN 1-892456-34-6.

#### Books currently under review

- Plant Evolution and the Origin of Crop Species.* Second Edition. By J. F. Hancock. Wallingford, UK: CABI Publishing (2003), pp. 313, £60.00. ISBN 0-85199-685-X.
- Transhumant Grazing Systems in Temperate Asia.* Edited by J. M. Suttie and S. G. Reynolds. Rome: FAO (2003), pp. 331, no price quoted. ISBN 92-5-104977-7.
- Agriculture and Rural Development Planning. A Process in Transition.* By H. D. Akroyd. Aldershot, UK: Ashgate (2003), pp. 224, £45.00. ISBN 0-7546-3693-3.
- The Oil Palm.* Fourth Edition. By R. H. V. Corley and P. B. Tinker. Oxford: Blackwell Publishing (2003), pp. 592, £115.00. ISBN 0-632-05212-0.
- Crop Management and Postharvest Handling of Horticultural Products. Vol III. Crop Fertilization, Nutrition and Growth.* Edited by R. Dris, R. Niskanen and S. M. Jain. Enfield, NH, USA: Science Publishers Inc (2003), pp. 284, US\$ 84.00. ISBN 1-57808-278-1.
- Agrobiotechnology and Plant Tissue Culture.* Edited by S. S. Bhojwani and W-Y. Shah. Enfield, NH, USA: Science Publishers Inc (2003), pp. 197, US\$94.00. ISBN 1-57808-243-9.
- Landscape Agroecology.* By P. A. Wojtkowski. Binghamton, NY, USA: Haworth Press (2004), pp. 330, US\$49.95. ISBN 1-56022-253-0.
- Chemical and Isotopic Groundwater Hydrology.* Third Edition By E. Mazor. New York: Marcel Dekker (2003), pp. 453, US\$175.00. ISBN 0-8247-4704-6.