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BOOK REVIEWS

Biological Control of Crop Diseases. Edited by S. Gnanamanickam. New York: Marcel Dekker (2002), pp. 468, US$175.00. ISBN 0-8247-0693-5. DOI: 10.1017/S0014479703211236

This is a very comprehensive book covering the technical and theoretical aspects of biological control of many of the diseases of the world's major food crops. The academic contributors are from a range of countries, both developed (mostly American) and developing (mostly Indian), and both temperate and tropical crops are covered.

The book considers the history of agriculture, types of biological control, current thoughts, practices and approaches to control, and opportunities and challenges for the future. The quality of academic knowledge shines through from the wide array of academic contributors. However, this may make the book less readable to those not familiar with an academic style of writing.

Each crop disease is considered in depth, and the controls available are discussed in detail. Some detailed micrograph pictures of plant tissues, pathogens, and diseases complement the descriptions.

Without doubt the book is essential reading for those seriously interested in biological controls in any major food crop from wheat to tomatoes, citrus fruits to rice. A word of warning, however, for those considering the application of biological controls to organic agriculture: the book discusses and endorses genetic engineering.

Jonathan Smith

Plant Roots: The Hidden Half. 3rd Edition. Edited by Y. Waisel, A. Eshel and U. Kafkafi. Monticello, NY, USA: Marcel Dekker Inc. (2002), pp. 1120, US$250.00. ISBN 0-8247-0631-5.
DOI: 10.1017/S0014479703221232

The contents of this book represent the most comprehensive text on the root research literature available to date. Most of the chapters are by world-leading authorities, and virtually all have been produced to a high standard with relatively few errors. There are good quality black-and-white illustrations but only four pages of colour plates. The organization of the chapters is logical, dealing first with the origin, structure, and development of the root system, its genetics, and research techniques for root studies. Root growth regulation and physiology is followed by the behaviour of roots under stress and interactions with the rhizosphere. Two final sections on specialized root systems and the economic value of roots conclude the book.

A broad spectrum of root research is presented – including the roots of trees, aquatic, and desert plants. For once, *Arabidopsis* takes a back seat to maize, whilst many other important systems (including pea, rice, wheat, soyabean, tobacco, clover, pine, birch and poplar) receive substantial coverage. Emphasis is on root anatomy, morphology and physiology in relation to root function. Essential chapters introducing parts of the root system are all there.

The book is an accessible and valuable reference work for use by postgraduate students, postdoctoral workers and established scientists alike but its price puts it into the category of a library purchase, or to be bought as a reference work for a small root-research group.

Glyn Bengough

Agricultural Biotechnology: Country Case Studies – A Decade of Development. Edited by G. J. Persley and L. R. MacIntyre. Wallingford, UK: CABI Publishing (2002), pp. 228, £45.00. ISBN 0-85198-8-164.
DOI: 10.1017/S0014479703231239

Biotechnology is a new but very rapidly evolving branch of biological sciences with a high potential for impact on agricultural practices, and an intrinsic risk that has triggered an intense public debate in many countries.

With this background, a book that gives an overview of the state of the art in developing countries appears timely. There is an introductory chapter that attempts an overview of the global challenges and emerging science in agricultural biotechnology, as well as 12 case studies of countries from Asia, Africa, and Latin America. The result could have been a comprehensive overview of the global situation, illustrated by a few well-chosen examples. However, it rather appears as a collection of individual cases. The depth and quality of analysis is quite variable: the chapter on Egypt occupies six pages, the one on Kenya 29. The specific data cited in the latter are all from the early 1990s – much progress has been made since then.

In conclusion, the reader is provided with a spotlight illumination of the biotechnological landscape in some developing countries. The specialist will find noteworthy differences between the examples and can draw his or her own conclusions, whereas those who look for information on the degree of penetration of agricultural biotechnology into the developing world as a whole will be left unsatisfied.

Gunther Hahne

Market Development for Genetically Modified Plants. Edited by V. Santaniello, R. E. Evenson and D. Zilberman. Wallingford, UK: CABI Publishing (2002), pp. 318. £55.00. ISBN 0-85199-573X.
DOI: 10.1017/S0014479703241235

This book arose from a meeting convened by the International Consortium on Agricultural Biotechnology Research in Ravello, Italy, in August 2001. It focuses essentially on consumer attitudes to genetically modified (GM) foods, farmer acceptance of GM crops, information and regulatory issues and changes in the structure of the life science and food industries. The authors address many of the key issues in the 26 chapters and are predominantly from the academic sector. Despite the significant investment in the technology and acceptance by growers, mainly in North America, consumer resistance, mainly in Europe, has been stronger than anticipated. The market today is just as uncertain as it was at the time of the conference and a prediction that marketing efforts are unlikely to have a significant effect over the next five years is realistic. The importance of verifiable information, consumer benefits and choice, effective and evolving regulatory processes are all discussed in detail. Overall, the book is of value, particularly to the academic sectors, and will interest those involved in the development and adoption of the technology. One chapter, however, which estimates the willingness of consumers to pay a premium for non-GM foods is based on a survey of only 54 questionnaires in the city of New Haven, Connecticut USA!

As one author comments, the uncertainty of consumer reaction is the largest impediment to assessing the future potential of GM technology.

Nigel Kerby

Using the Agricultural, Environmental and Food Literature. Edited by B. S. Hutchinson and A. P. Greider. New York: Marcel Dekker Inc (2002), pp. 533, US$125.00. ISBN 0-8247-0800-8.
DOI: 10.1017/S0014479703251231

In recent years, scientific publications and other sources of information have increased to such an extent that tracking down specific research, or researchers, has become a frustrating and time-consuming minefield for novices and experienced professionals alike. Word of mouth from friends, colleagues and librarians frequently provides the quickest route. The editors of this book, and their chapter authors, have done scientists a significant service in bringing together both sources of information and search methods on topics as varied as veterinary science, economics and environmental sciences. From trade literature, through specialized journals and abstracts, to the Internet and useful search engines, they have provided a useful repository of information on matters as diverse as pure research to costs, government statistics and patents in just about every corner of the world.

This publication will be of particular value to advanced first-degree students and young researchers, but will also be of considerable use to experienced scientists seeking to access information in areas of science less familiar than their own. This is an information source that all science libraries should add to their collection and it will also be a valuable addition to the bookshelves of individual scientists.

W. H. Macfarlane Smith

Seed Dispersal and Frugivory, Ecology, Evolution and Conservation. Edited by D. J. Levey, W. R. Silva and M. Galetti. Wallingford, UK: CABI Publishing (2001), pp. 511, £75.00. ISBN 0-85199-525X.
DOI: 10.1017/S0014479703261238

This book of 32 chapters is the result of a symposium held in 2000 in Brazil. Contributions range from largely conceptual accounts on evolutionary issues in dispersal and frugivory to detailed studies of particular plant-frugivore combinations. The general approach is rigorous and quantitative; models are used sparingly to explore matters of scale for instance, but the emphasis is on observational and experimental data. Much of the research described is in tropical habitats and forests, though an interestingly wide range of plants and animals, including humans, is covered through the case histories. There is little direct information on seed dispersal and predation in disturbed agricultural habitats, or on the spread and diversity of landrace seed, for instance, but instructive parallels can be drawn from the book to aid anyone wishing to develop research in these areas. A possible deficiency for readers unfamiliar with background issues is the absence of a synthesis. While several of the early chapters between them cover much of the required material, readers might refer to one or other of the articles cited in the preface before taking on the greater detail here. The editors and contributors are clearly enthusiastic about their subject and are to be congratulated for transmitting their enthusiasm to the reader, to the effect that, despite reservations, the whole is much more than a collection of individual presentations.

G. R. Squire

Lockhart and Wiseman's Crop Husbandry. Eighth Edition. By H. J. S. Finch, A. M. Samuel and G. P. F. Lane. Cambridge: Woodhead Publishing Ltd (2002), pp. 510, £35.00. ISBN 1-85573-549-0.
DOI: 10.1017/S0014479703271234

If you read the parts of this book on topics with which you are already well acquainted, you will find only a little with which you will disagree, and a great deal that you would like to qualify or expand upon. The subject matter of the book is very wide-ranging, covering almost all arable crop types grown in the UK plus grassland. A first, general section introduces how plants grow, soils, fertilizers, weeds, pests, diseases and weather. Of necessity, therefore, the treatment given to anyone part of the contents is superficial. This leads to the question: 'For whom is it written?'

It is not declared anywhere but the content is very explicitly written for readers in the UK (and Ireland?). Even within that limit, consider that this book is addressed to undergraduate students aiming to learn a little bit about a wide range of crops and some general aspects of crop growing. It might also be suited to members of some other professions such as financial services or journalism who find that he/she is suddenly going to need a nodding acquaintance with a whole industry. For agriculturalists, the book might prompt alert readers to ask more focussed questions on any crop that they really want to grow, but no one should cultivate any crop armed solely with the knowledge gained from this book.

Nonetheless, it is interesting – in a general sort of way.

D. K. L. MacKerron

Spice Crops. By E. A. Weiss. Wallingford: CABI Publishing (2002), pp. 411, £80.00. ISBN 0-95199-605-1.
DOI: 10.1017/S0014479703281230

Contemporary interest in natural condiments, food or beverage flavourings, medicines and scents is increasing, as is their importance as cash crops. The text is aimed at meeting the needs of professional growers, agronomists, researchers and extension workers, and is an obvious buy for their libraries. An introduction to the spice industry is followed by an analysis of world production and trade, but the bulk of the book is devoted to reviewing particular spice plant families (Cruciferae, Lauraceae, Leguminosae, Myristicaceae, Myrtaceae, Orchidaceae, Piperaceae, Solanaceae, Umbelliferae and Zingiberaceae) with a concluding review of minor spices. There are extensive references, a glossary of specialist terms and appendices. Each chapter has a general introduction to the family, followed by detailed agronomic discussion of the cultivated spice species and final usage. I like the encyclopaedic nature of the book, the detail is comprehensive and informative, but I was a bit frustrated with the lack of information on grower and trade associations – where are the useful web pages listed? I would also have appreciated a discussion of under-utilized or novel spices and some appreciation of their conservation status – spice collection from the wild is a serious threat to spice diversity. Overall the book is well written and easily understandable, and therefore will make a valuable addition to agronomy libraries.

Nigel Maxted

Science, Agriculture and Research. A Compromised Participation? By W. Bulher, S. Morse, E. Arthur, S. Bolton and J. Mann. London: Earthscan Publications Limited (2002), pp. 163, £17.95 Paperback. ISBN 1-85383-691-5. DOI: 10.1017/S0014479703291237

This book discusses how British and tropical agricultural research has changed over 150 years as influenced by landowners, scientists and, more recently, by scientific fashions, industry, pressure groups and politics. A very significant change over the last 30 years has been the move towards short-term research, which the authors deplore. The evolution of agriculture and agricultural research in Britain from 1700, the abolition of the Corn Laws in 1846, the Agricultural Act in 1947 through to the Common Agricultural Policy, shows the profound impact of politics on both prosperity and recession of British farming.

The sections on tropical agriculture fail to recognize the information on peasant farming systems published in books and records of district officers and Departments of Agriculture; only five references predate 1980. The book suggests that export crops were produced mainly on plantations, whereas many were grown by peasant farmers. The ingenuity of these farmers in fitting cash crops into their farming systems is an excellent example of their adaptability. The participation of tropical farmers in setting the research agenda re-emphasises this ingenuity.

While shortcomings in a book that attempts to cover such a wide field in such limited space are easy to identify, it is easily readable and adds to our understanding and appreciation of agricultural research.

John K. Coulter

Principles of Tropical Agronomy. By S. N. Azam-Ali and G. R. Squire. Wallingford, UK: CABI Publishing (2002), pp. 236, £25.00. ISBN 0-85199-136-X (paperback). DOI: 10.1017/S0014479703301231

As the authors explain, empirical field trials have remained the stock in trade of tropical agronomy for decades, and the working doses of fertilizer and irrigation for many crops have been derived from the results of such trials. However, they have limitations in that they are repetitive and need much land, money and time. They rarely identify links between the physical environment and yield and, as a result, results are usually site-specific. Their value can be enhanced considerably if appropriate measurements are taken to allow the growth processes to be explained in terms of weather, soil and crop, so that the results can be extrapolated with confidence in space and time.

The book describes how an understanding of the flux currencies of water and solar radiation can be used to inform agronomy practice, using appropriate examples from the tropics. A final synthesis chapter attempts to put this process-based approach to understanding crop production into an historical context, before considering the future role of agronomy as an essential intermediary science linking, for example, gene manipulation and modelling to farming practice.

An extensive reference list is followed by an appendix, which provides valuable advice on the consistent definition and presentation of units, data and terminology in agronomy. This book should be essential reading for everyone concerned with tropical agronomy research.

M. K. V. Carr