

Book Reviews

THE GREENHOUSE AND NURSERY HANDBOOK. A COMPLETE GUIDE TO GROWING AND SELLING ORNAMENTAL PLANTS. Francis X. Jozwik. 2000. Andmar Press, P.O. Box 217, Mills, WY 82644-0217. 804 p. 190 illus. \$97.00 hardcover. ISBN 0-916781-23-2.

In his preface, Francis Jozwik writes that this book is aimed primarily at those who are already commercial growers or wish to become commercial growers of "containerized crops of flowers, foliage plants, trees, and shrubs." Production of "hydroponic food crops, cut flowers, and field nursery stock are not covered." He includes that "Due to the preponderance of original material contained in *The Greenhouse and Nursery Handbook*, citations of literature are omitted."

The book is organized into two parts. The first provides background information necessary to understand container crop production including chapters on structures, media, fertilizer, light, temperature, water, pests, plant growth regulators, management and marketing. The second 400 pages are devoted to production of specific crops in chapters headed Bedding Plants; Herbaceous Perennials; Trees, Shrubs and Roses; Flowering Pot Plants and Indoor Foliage Plants.

Jozwik writes in an easily understandable style and distills complex concepts into straightforward information. As a career extension specialist, I understand the difficulty in achieving clarity with certain concepts then providing recommendations. He accomplishes this masterfully. His summaries are concise, to the point and excellent.

Every new text should supercede what is available or present information in a better way in order to be successful. Jozwik has undertaken an enormous task in trying to cover this broad field.

His floricultural production information is not superior to texts by Larson and Nelson but those texts were devoted solely to floriculture. Jozwik's section on woodies is too brief to be anything but an introduction to the concept.

The most economically important states in greenhouse and nursery production are California, Florida, Texas and North Carolina. This book does not address production conditions in those areas and contains information that, at least in North Carolina, has not been recommended for over a decade.

For example, he advocates incorporation of superphosphate into container media before potting. "Superphosphate is supplied in luxury amounts to all mixtures described in this book because phosphorous can become deficient under certain long term growing circumstances." Research has shown that phosphorus leaches rapidly from soilless mixes under the irrigation regimes utilized in the southeastern United States and can become a major contributing factor to algae blooms. Responsible nurserymen in the southeast are not incorporating superphosphate into their potting mixes even in nurseries with total irrigation water recapture since that encourages algae in retention basins, clogs irrigation intakes and nozzles, discolors plants, etc.

To his credit, Jozwik points out that much of the potential for problems associated with greenhouse and nursery fertilization can be controlled by more efficient use of fertilizers and irrigation water as well as total capture and recycling. His recommendations "reduce total fertilizer salts use by approximately one-half from the amount which was traditionally used 20 years ago."

The section on fertilizers states that "most slow release fertilizers are simply quite stable elemental com-

pounds which break down slowly in the soil. Coated slow release fertilizers are those in which individual granules of fertilizers are coated with a resinous polymer membrane." Polyon, Nutricote and Scotts fertilizers are among the most popular in the Southeast. His statement does not do them justice and would be considered inaccurate by the manufacturers.

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FRUIT GROWING. J.S. Bal. 1997. Kalyani Publishers, 1/1 Rajinder Nagar, Ludhiana-141008, India. 425 p. 20 tables, 14 photographs. 250 rupees (U.S. \$5.75). Hardcover.

This book was written primarily for the fruit growers and agricultural educators of India, to fill a void which exists because most of the textbooks in horticulture are written by foreign scientists and they do not represent well the conditions in India. In reading the book one senses the latent but enormous horticultural potential, which exists in that country, where currently fruit is cultivated on traditional lines and fruit consumption is relatively low. The author believes that the standard of living of a population can be judged by the per capita consumption of fruit.

Fruit Growing is organized into five sections: Fundamental Horticulture, Tropical Fruits (7 species), Sub-Tropical Fruits (11 species), Temperate Fruits (8 species) and References. The first section contains discussions of the topics usually found in horticultural textbooks, including nutritional values, areas of production in India, selection of soils and site, land preparation, layout of plantings, propagation and nursery production, orchard cultural practices, flowering and fruiting. Examples from all over the world are given, but everything is then related to the Indian situation. A laudable feature is the strong emphasis placed on use of available materials and equipment. The approach is practical throughout. The next three sections give detailed information on production of each specific fruit, from cultivar selection and propagation to harvesting and handling. Special emphasis is given to the postharvest area because the author considers this the most sorry aspect of the fruit industry of

India. The discussions of well-known species like banana, pineapple, cashew, mango, citrus and grape are detailed in proportion to their production. Even less-known fruits like ber (*Zizyphus mauritiana*) and phalsa (*Grewia* sp.) receive significant attention. It is interesting to see how a fruit like the sapota or chiku (*Manilkara zapota*), introduced from Central America, has become important enough that India now produces more than any other country.

The Reference section lists 53 books, manuals, and bulletins that were consulted. All but six of these were published in India. The author refers frequently to work done in other countries, but does not cite the sources of the information. Probably that is of little consequence to Indian fruit growers, but it makes the book of very limited use as a scientific reference. In fairness it should be said that it was not the author's objective to produce a book aimed at an audience of researchers. Tables and photographs are few. Most of the tables are not numbered. The quality of the photos varies from fair to good. The scientific names are accurate, but in some cases outdated. The book is written in English. Readers who are particular about grammar will be disturbed by the very frequent omission of definite and indefinite articles in the text. Often the syntax is different from American English, but I could always understand the meaning easily.

There are many things to be learned from this book, and I enjoyed reading it. It will serve as a useful guide for people involved in the fruit industry of India and nearby countries, so the author has accomplished his stated purpose. It is not likely to be used widely in other parts of the world.

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ORGANIC APPLE PRODUCTION MANUAL. S. Swezey, P. Vossen, J. Caprile, and W. Bentley (eds.). 2000. University of California Agriculture and Natural Resources Communications Services-Publications, 6701 San Pablo Avenue, 2nd floor, Oakland, CA 94608-1239. 72 p. \$18.00, softcover. ISBN 1-879906-48-1.

The demand for organically produced apples and apple products has increase dramatically in recent years in

the United States. Laws regulating and defining organic produce production were put in place so that consumers could be reasonably assured that the produce that they were purchasing was truly organically produced. This manual was written by an interdisciplinary team of University of California specialists and farm advisors for current and potential producers of certified organic apples in California to aid them in producing a high quality product that conforms to the laws regulating organic produce production. This book contains six chapters, a bibliography, 20 high-quality color photographs, and 19 tables.

Chapter 1 provides an overview of the organic apple industry in California, including production, consumption, and demand. An overview of the state and federal laws regulating organic production are presented including certification costs and inspections. Generalized procedures and guidelines are given for growers considering organic apple production and certification.

A chapter is devoted to orchard management where situations and additional considerations unique or particularly relevant to organic production are discussed. Sections on site selection, land preparation, and rootstock selection focus on orchard location and site preparation details that help restrict insect and disease pressure and enhance nutrient availability. The section on varieties is very good. Disease resistant, conventional, antique, and novelty varieties are discussed. Susceptibility and resistance to anticipated pests, diseases, and postharvest disorders are mentioned so that variety selections can be made that will minimize pressures that are difficult to remedy by organic means. The section on orchard floor management is particularly useful since weed control is one of the greatest challenges in organic apple production. Effective use of mulches, cultivation, flammers, mowing, and cover crop management is described to achieve effective weed control, retain moisture, and provide a sustained low nutrition level for the trees. Specific cover crop characteristics and seeding rates are provided that are applicable to organic production.

Chapter 3 is devoted to disease, insect, and vertebrate pest management. Symptoms and life cycles of the major diseases are discussed in detail with a wide range of control strategies including cultural, biological, management, organically accepted chemicals, variety

resistance, and environmental considerations. Minor diseases are less thoroughly covered. Codling moth, the most serious insect pest for organic apple growers in California, was discussed in detail, including life cycle, damage caused, monitoring, and control strategies such as mating disruption, organically accepted spray materials, biological, cultural, and physical controls. There are sections on mites and other arthropod pest management. A portion of this chapter discusses the various control strategies for vertebrate pests including gophers, mice, squirrels, rabbits, birds, and deer.

There is a short but useful chapter describing harvest, postharvest, and sanitation considerations in growing apples. Chapter 5 discusses the marketing, pricing, and fruit quality considerations. Organic producers face fluctuations in price and demand, and other market challenges, similar to that faced by conventional apple producers. Therefore, suggestions are supplied for identifying customers, customer preferences, pricing, and explorations of marketing channel options. The last chapter is devoted to economic analysis and discusses many of the factor that are involved in making the production of organic apples profitable. Among the considerations are yield, price structuring, and variety selection. A sample spread sheet of operational, cultural, harvest, and overhead costs will be useful for organic growers in assessing business viability and/or future or present organic apple production operations. A strength and a weakness of this manual are that this is a somewhat parochial publication that will be most useful for growers in California. However, it does contain a wealth of information that will be extremely useful for organic apple producers in similar climates as well as growers in the more humid apple growing areas in the eastern and midwestern U.S. Organic apple production embraces many of the same basic horticultural and integrated pest management techniques used by conventional apple producers. Where techniques for organic production deviate from conventional practices, this manual emphasizes methods that are most appropriately used in an organic system. Since the book is 72 pages in length, it can not be considered a comprehensive guide to producing and marketing organic apples. The authors do clearly state at the outset that this manual will be most useful when used

in conjunction with the *Commercial Apple Growing Guide in California* and the *Commercial Apple Growing in California and Integrated Pest Management of Apples and Pears*

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TREES: THEIR NATURAL HISTORY. Peter Thomas. 2000. Cambridge University Press, The Edinburgh Building, Cambridge, CB2 2RU, United Kingdom. 286 p. 28 black and white photographs, line drawings, and tables. \$24.95, softcover. ISBN 0-521-45963-X.

At the risk of being called a Doubting Thomas, I must admit when I was asked to review yet another book on trees, I wondered if *Trees: Their Natural History* by Peter Thomas could possibly bring anything new to the table. I mean, could anyone really hope to improve on *A New Tree Biology* by Shigo, or the third edition of *Arboriculture* by Harris, Clark, and Matheny? Fortunately, Mr. Thomas renders the question moot by targeting a hitherto under-served audience (Master Gardeners, community tree volunteers, county extension personnel, entry-level professionals in the nursery and arboriculture fields, students, and the ever-expanding home-gardening audience) who will treasure a tree manual that doesn't patronize with oversimplification, yet spares the reader some of detail that might only be appreciated by academics and experts.

The nuts and bolts of *Trees* are these. All of the important topics are covered, from the requisite description of tree parts to several concise and clearly-worded chapters on tree growth and development. Black and white photographs, tables, and many detailed line drawings are creatively blended with tidy compartments of information within each chapter, each introduced by attention-grabbing headings such as, "The problem of being large," "Why be dioecious," and "Trees that swap sex." In general, facts, concepts, and ruminations presented in *Trees* are current and accurate, and communicated in an easy-to-read, unassuming style that serves to entertain as well as inform. Ample cross references are provided throughout *Trees* that link early chapters and their descriptions of a

tree's component parts to discussions of whole tree performance in subsequent chapters. Finally, suggestions for further reading are provided at the end of each chapter.

As readers in North America make their way through *Trees*, they may experience some literary and horticultural disorientation due to the vernacular and geographic frame of reference of the author, a member of the Environmental Science faculty at Keele University in the United Kingdom. Yet, references to the British climate, the odd (at least to U.S. audiences) spelling of certain words, unfamiliar common names of trees, and mention of something called Sheffield blight (a.k.a., lawn-mower blight in the U.S.) do not overly distract or diminish the usefulness of the book, and in fact, add a unique perspective and texture for non-British audiences.

Two chapters logically positioned at the end of the book, "The shape of trees," and "Health, damage, and death" are particularly useful because they organize, assemble, and synthesize facts and principles covered in early chapters into a working, dynamic picture of how trees grow, survive, and ultimately die. The latter chapter is especially well-written, blending Alex Shigo's theories of compartmentalization of decay in trees with an excellent segment describing the many factors responsible for tree death. Other interesting snippets of information sprinkled throughout the chapter, are guaranteed to keep your attention. For example, do you know why the famous explorer and trader Jacques Cartier named the white cedar arbor vitae, meaning, tree of life?

Finding fault with *Trees* is difficult, however, there are a few weak branches in the book Professor Thomas might wish to prune before the next printing. For starters, I'm a firm believer in providing citations throughout a text to lend credibility to important factual statements, even if a book or article is intended for a nontechnical audience. In some instances the author does provide these guideposts for the reader. But during the discussion relating to root loss and tree death, the author makes the statement, "50% of roots can sometimes be removed with little problem provided there are vigorous roots elsewhere." Unfortunately, this controversial and debatable declaration is offered as fact without an accompanying citation to bolster its validity.

The author also may wish to qualify the statement, "Trees in the pea family (Fabaceae) have nodules that can fix atmospheric nitrogen," by starting the sentence with the word some, certain, or selected. In a recent study, Foster et al. (1998) conclude *Cladrastis kentukea* (american yellowwood) and *Styphnolobium japonicum* (japanese pagodatree), both in the Fabaceae, lack the capacity to produce nitrogen-fixing nodules. This may seem a minor point, but over-generalizations often come back to haunt us.

Finally, there must be a more comprehensive and up-to-date table describing flood tolerance of trees and shrubs than the one provided from 1954.

In the final analysis, I thoroughly enjoyed *Trees* and strongly recommend it to persons learning about the inner workings of trees for the first time, or those in need of a quick refresher. From its handsome cover and meticulous illustrations, to the thoughtful way topics and chapters build on one another, *Trees: Their Natural History*, like the sturdy oak, should have a long and useful life span.

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THE GARDEN TOURIST 2000. A GUIDE TO GARDENS, GARDEN TOURS, SHOWS AND SPECIAL EVENTS. Lois G. Rosenfeld. 1999. The Garden Tourist Press, 330 West 72nd Street, New York, NY 10023. 296 p. softcover, \$21.95 + \$3.00 shipping and handling. ISBN 0-9639082-8-6.

The Garden Tourist is an excellent companion for garden tourists providing descriptions of more than 1000 of the best garden events in the U.S., Canada, and around the world. Simply, this book is a comprehensive list of tours, shows, festivals, and other not-to-be-missed events with descriptions, dates, locations, telephone numbers and e-mail addresses, plus hundreds of great web sites for virtual touring. In addition to its use as an annual guide, it can also be considered a perennial guide to the more than 480 botanical gardens and arboreta listed. Each state or province includes two sections, a guide to gardens listed alphabetically and a list of selected events by city and date. Each listing includes a brief abstract describing

the unique aspects of the garden or event. A Far-Away-Places section covers foreign tours and international events.

This book has been published for the past 9 years, expanding each year. The author maintains a database of sponsors of the events and gardens in the book, sending out a questionnaire each summer asking for information on their events for the coming year. In addition, she is continually searching for new events and gardens to include. There currently are not organizations listed that are strictly profit-making, although nurseries with display gardens may be added in the future.

New with this edition is recommended for families and three-, four-, and five-star ratings of national and regional events. Those events receiving a star rating are deemed very important or are preeminent in the world of gardening. The family events are chosen from their descriptions.

Another new feature this year is the calendar of listings on line at Virtual Garden (www.gardentourist.com). The calendar is searchable by date, event type, location or keyword. There are also links to the Web sites of hundreds of event sponsors and an on-line form for submission of new events. Virtual Garden is one of the oldest gardening sites on the web which is nice connect for visitors to the Garden Tourist listings.

The Garden Tourist 2000 provides a very comprehensive list of gardens and events, more than you would find in the typical tourist information for a city, state, or region. This is the primary reason why I would recommend this to all travelers who search out gardens during their travels. The book is easy to use, the information for each garden or event is brief but adequate, and since many of us travel with our laptop computers, we can access the information anytime, anyplace.

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THE PLANTFINDER'S GUIDE TO EARLY BULBS. Rod Leeds. 2000. Timber Press Incorporated, 133 S.W. Second Avenue, Suite 450, Portland, OR 97204-3527. 192 p. \$34.95 + S & H, hardcover. ISBN 0-88192-443-1.

This is the fourth in a series of *Plantfinder's Guides*. The previous guides

covered ornamental grasses, tender perennials, and cacti and other succulents.

I highly recommend this book as a reference for anyone who has a keen interest in flower bulbs. It will be a valuable resource for gardeners, extension agents, faculty, and botanical garden staff. The book is well written. Overall, the 111 color photos, 7 black and white illustrations, and 12 color plates are excellent. The latter are reminiscent of those provided by Rix and Phillips in their photographic book on bulbs. One of the color photos (page 27) may not be correct. It is cited as *Ipheion sellowianum*, but it appears to be a Crocus. In addition, the line drawing of the daffodil on page 145 is cited as an example of 'Tete a Tete,' but normally this cultivar is multiflowered and not single flowered. Also, it is clear that the author favors *Galanthus* ("Snowdrops"). They are well illustrated throughout the book.

From a bulb performance standpoint, and this is very important, gardeners in North America and other parts of the world must take into account that the information provided was obtained under conditions in southern England. This is a very unique climatic area. Thus, gardeners must carry out limited trials to determine how the bulbs perform under their climatic conditions. This would be an excellent service role for local botanical gardens. Second, Leeds cites many species and cultivars that are not readily available, which clearly demonstrate the diversity of this group of bulbs. He does, however, cite bulb sources for some parts of the world.

This is an excellent book. In addition to the normal general information, I felt that the recognition of some of the individuals who specialized in the early bulbs was excellent. People make things happen and it was a pleasure to see them acknowledged. The chapter devoted to the various techniques of propagating bulbs was excellent. The coverage was amongst the best I have seen in this type of book. Four appendices and a bibliography are also included at the end of the book. However, if a second edition is printed, there are some organizational aspects that should be considered by the author. All my comments in this area are meant to be constructive in nature.

First, the information is presented in three Parts with a total of eight chapters. Parts 1 and 2 cover introductory and growing information, how-

ever, there is no clear dividing line between them. Thus, the information could have been placed into one part. Consequently, the A to Z information on the various bulbs would have been Part 2. A bulb that should have been included in the A to Z list was *Leucojum aestivum*, which is an excellent performer in many parts of the world.

Second, the book contains two very essential charts. The first (page 180) provides the flowering periods for the bulbs. The second (page 181) covers propagation. I felt that they should have been placed in the General Information Part and should have been cited in the Table of Contents, which they were not.

Lastly, although the author cites the 1991 *International Checklist for Hyacinths and Miscellaneous Bulbs* that was edited by J. van Scheepen of the Royal General Bulbgrowers' Association (KAVB) of the Netherlands, I noted instances in which this list was not followed. For example, on pages 8 and 9, there is an excellent photo of *Erythronium* 'Pagoda.' The Classified List cites this cultivar as a hybrid between two species, while the author cites it only as *E. tuolumnense*. Somehow, there should be some consistency, especially with the specialty bulbs.

In conclusion, I highly recommend this book. Although there are aspects that could, and hopefully will, be improved, this guide will be a valuable resource for flower bulb enthusiasts.

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DESIGN FOR GARDENS. Joseph Hudak. 2000. Timber Press, 133 S.W. Second Avenue, Suite 450, Portland, OR 97204-3527. 217 pages, 147 color photos, hardcover, \$29.95, ISBN 0-88192-441-5.

Written for homeowners, *Design for Gardens* explains the basics of garden design. Unlike most design texts, line drawings and planting plans are purposely omitted. The disadvantage of this is the reader must read the text, and the advantage is the information is general and very applicable and not specific to one individual site.

Beginning with an historical chapter, since good ideas last forever, Hudak suggests borrowing ideas from wherever you can for your garden. With his

background of 45 years as a landscape architect, he draws on his experience, providing information for all climates and, as he says, an international audience.

Chapter 2 tells how to evaluate your site, and chapter 3 covers the major design components. Here, Hudak provides a good look at formal, informal, and naturalistic designs. Chapters 4, 5, and 6 cover design principles including good descriptions of repetition, sequence and balance. Chapters 7, 8, and 9 deal with plants and how they fit in the landscape. An entire chapter is devoted to foundation plantings. Here, the author offers good suggestions for planting in two or three layers; viewing the plantings from indoors; and thinking long-term to avoid chicken croquettes from constant shearing.

The final chapter covers a 5-year planting project at the author's home. It shows many before and after photos and how design problems were solved.

Design for Gardens would be helpful for homeowners, and design instructors who want to learn general design concepts. The design information is basic and easy to read. Even though there are no design plans, the basic concepts of design are fully covered. Hudak also wrote *Gardening with Perennials Month by Month* (Timber Press).

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TEMPERATE AND SUBTROPICAL FRUIT PRODUCTION. 2nd ed. D.I. Jackson and N.E. Looney (eds.). 1999. CABI, New York, N.Y. 332 p. \$55, softcover. ISBN 0-85199-271-4.

This publication, edited by David Jackson of Lincoln University, Canterbury, New Zealand, and Norman Looney of Agriculture and Agri-Food Canada, Summerland, British Columbia, is an update of the widely respected text *Temperate and Subtropical Fruit Production* first published in 1986. As in the first edition, which was edited solely by David Jackson, the goal was to provide both background as well as detailed information on the production of temperate and subtropical fruit and nut crops for students, farm advisers, and professional and amateur growers. Information is presented in two, roughly equal parts. Part 1 consists of an overview of world fruit production and

climates followed by a general review of important production considerations including plant and fruit development, soils, nutrition, propagation, pest and disease control, fruit maturation, handling and storage. A nicely illustrated section on pruning and training emphasizes pome and stone fruit, as well as grapevines, kiwifruit, and cane fruit.

In Part 2, the cultivation of individual crops is described in greater detail with the goal of introducing important crop-specific determinants and other information deemed essential for growers. While the first edition emphasized fruit production in New Zealand, this new edition attempts a more global perspective. The crop overviews are typically presented as short introductions followed by updated and very informative tables for each crop summarizing climatic, geographic, soil and water requirements, and botanical, anatomical, physiological and cultural aspects. The sections conclude with a summary of the key points, which distinguish that crop. Crops discussed (and their authors) include the stone fruit (Norman Looney and David Jackson), pome fruit (David Jackson and John Palmer), grape (David Jackson), berryfruit (Graham Thiele), citrus (Michael Morley-Bunker), and expanded sections on kiwifruit (Michael Morley-Bunker and Peter Lyford), and olive (Michael Morley-Bunker). Shorter introductions are also provided for the subtropical fruit tamarillo, passion fruit, avocado, persimmon and feijoa (Michael Morley-Bunker), as well as for the edible nuts, including almond (David Jackson and David McNeil), chestnut (David Jackson and David McNeil), hazelnut (David Jackson and David McNeil), macadamia (Michael Morley-Bunker and David McNeil), pecan (David Jackson and David McNeil), and walnuts (David Jackson and David McNeil). Omitted from the 2nd edition are discussions of the tropical fruit banana, papaya, pineapple, and mango. Gone also are the high quality color prints of the fruit and nuts discussed, but the 2nd edition retains the excellent illustrative drawings and diagrams, which were a hallmark of the original text.

Most of the section authors are associated with Lincoln University in New Zealand, and while many have international experience, aspects more typical of New Zealand production are often presented. The authors, however, are careful to acknowledge regional differences and

encourage the reader to develop local knowledge. Carefully selected recommendations for further readings are included at the end of each chapter. The convenient accessibility of these local experts to the editors, combined with the direct involvement of the editors as coauthors in most of the chapters has resulted in an exceptional consistency of style and content making it particularly useful as a basic undergraduate text in pomology. Students in my Fruit Crop Production class particularly liked the concise and easy-to-read style of the chapters combined with the extensive yet structured presentation of botanical, climatic and cultural information for a wide range of fruit crops in well organized and easily studied tables. For more detailed information, however, they often preferred M.N. Westwood's *Temperate-zone Pomology*, or the increasing number of web-site sources of regional information. In fact, the emphasis on basic pomological concepts and practices combined with an overview of a wide range of fruit and nut crops make Jackson and Looney's book particularly useful as a core pomology text for courses which also incorporate appropriately selected Website information to remain current with rapidly changing production practices. The text's concise and orderly presentation of up-to-date information, combined with a useful glossary and complete index make it a good basic reference as well. (The index is consistently off by four pages for the last section Edible Nuts, but this presents few problems once the shift is recognized). In summary, this new publication represents a comprehensive update of temperate and subtropical fruit production practices in a structure and style which work well as both a core pomology text and basic reference for these increasingly information intensive times.

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PRUNING AND TRAINING SYSTEMS FOR MODERN OLIVE GROWING. Riccardo Gucci and Claudio Cantini. 2000. CSIRO Publishing, 150 Oxford Street (P.O. Box 1139) Collingwood, VIC 3066, Australia softcover 144 p. \$60.00. ISBN 0-643-06443-5.

As the title states, this book reviews pruning and training systems for modern olive growing. The discussion

focuses on more recently developed methods while providing numerous references for traditional methods. The methods covered are applicable to both table and oil olive production. The intended audience is serious olive growers, extension or research academics, and horticulture students. This book would also be an excellent reference text for commercial olive production courses.

The book is organized into discussions that proceed from basic physiology and principles to practice and commercial production issues. The first chapter is an entertaining review of the history of olive pruning. The next two chapters review woody crop pruning principles, including an excellent glossary of terms, and the physiological basis for pruning olives. Chapter three examines the role of pruning in production orchards. In the three practical application chapters, Pruning Olive Trees, Pruning Young Trees and Pruning Mature Trees the authors initiate each chapter by defining the pruning objectives. They then structure the discussion around meeting these objectives and support their conclusions with data from the olive experimental literature.

The final three chapters focus on production criteria for selecting a training system, in depth descriptions of the modern training systems, and technical and economic comparisons of these systems. How to convert older, traditionally pruned, orchards to modern systems is addressed. Also, these are the first complete discussions of preparing traditionally pruned and training young trees for mechanical harvesting. The authors do a good job of synthesizing the admittedly limited data available evaluating modern pruning and training systems, and adaptation of these methods for mechanical harvest.

This book has some organizational features and graphics that greatly enhance the written text. The strongest aspect of this book is the authors' willingness to organize the information into separate, short sections that facilitate decision making. For example, they present a table on selecting training systems for mature olives. They also outline, in separate highlighted reference sections, the features, advantages and disadvantages of the different modern training systems. Another strong point is drawings demonstrating the growth responses of different pruning cuts.

The weakest aspect of this book is the same thing that compromises all books on pruning trees, but is particu-

larly those on pruning olives. The numerous, small, soft focus, black and white, but generally gray, photographs are not equal to the quality of the text. Frequently, the reader must accept the captions' description as valid without visual confirmation.

There are numerous publications concerning traditional live pruning in the literature. The authors are to be commended for organizing the sometimes-limited information on modern training pruning systems into a discussion that permits practice based on the available knowledge.

"Many people cut, very few prune." This old saying will be less true for the olive grower who has read this book.

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Books in Brief

by *Donald N. Maynard*

CLEMATIS: THE GENUS. Christopher Grey-Wilson. 2000. Timber Press, 133 S.W. Second Ave., Suite 450, Portland, OR 97204-3527. 224 p. 100 color illustrations. hardcover. \$39.95 + S & H. ISBN 0-88192-428-8.

Christopher Grey-Wilson's *Clematis: The Genus* is the most comprehensive study of the genus ever undertaken in English. The vigorous montanas and tanguticas, the familiar jackmanii hybrids and rarer plants such as the touch-sensitive *Clematis aphylla* are all covered in detail.

Clematis are members of the Ranunculaceae or Buttercup family. All the species are covered both in the wild and in cultivation, and illustrated with many color photographs. Details of many cultivars are provided. Maps show the distribution of all the species in the wild. The text is accessible to all horticultural professionals and practitioners.

HOW TO MAKE MONEY GROWING PLANTS, TREES & FLOWERS. Francis X. Jozwik. 2000. Andman Press, P. O. Box 217, Mills, WY 82644. 312 p. hardcover. \$39.95 + S & H. ISBN 0-916781-22-4.

How To Make Money Growing Plants, Trees, and Flowers is oriented towards people who wish to begin in

this industry with as little monetary risk as possible. Therefore, most of the information presented deals with situations applicable to small start up ventures rather than to larger, more complex enterprises. This book is meant to be used by people who want to grow plants for profit. Highly technical production and marketing methods are not emphasized since they generally have little relevance to the initial stages of a new business.

SUCCULENTS II. THE NEW ILLUSTRATED DICTIONARY. Maurizio Sajeve and Mariangela Costanzo. 2000. Timber Press, 133 S.W. Second Ave., Suite 450, Portland, OR 97204-3527. 234 p. 1222 color photographs. hardcover. \$49.95 + S & H. ISBN 0-88192-449-0

Succulents grow in a wide variety of forms and occur naturally in almost any climate; they are not simply desert-dwellers. They also grow in alpine regions and even epiphytically in tropical rain forests. This new illustrated dictionary includes over 900 species not included in the first volume (*Succulents The Illustrated Dictionary*) and, where a species has been covered in the earlier volume, *Succulents II* illustrates different aspects of the plant. The authors have included a brief overview of succulents along with some principles of how to grow them successfully in the home or garden.

THE GARDENER'S GUIDE TO GROWING TEMPERATE BAMBOOS. Michael Bell. 2000. Timber Press, 133 S.W. Second Ave., Suite 450, Portland, OR 97204-3527. 160 p. 68 color photographs. hardcover. \$29.95 + S & H. ISBN 0-88192-445-8.

In *Gardener's Guide to Growing Temperate Bamboos*, Michael Bell provides a history of bamboos to lay the groundwork for the book. He describes their botany, including their rigorous root systems. The cultivation section gives tips particularly important for bamboos such as pruning, and prevention of overspreading and flowering. There is the useful A-Z bamboo list with details about each species' characteristics and cultivation hints. The natural range of bamboo is from 46 degrees north to 47 degrees south, and their cultivated growing range is even wider. They can be found in the America, Africa, Asia, and Australia, testifying to their success as thriving in varied conditions.

Specifically, a modern olive growing system must include, on one side, the possibility to use local cultivars that adapt well to climate and soil settings and, on the other side, the adoption of precision farming techniques to reduce production costs. Regardless of the planting system and the training form, to keep a plant efficient from a vegetative and productive point of view, some fundamental ecophysiological aspects, such as the amount of light reaching most of the canopy necessary to ensure vegetative growth and fruiting, must not be overlooked. Therefore, it is necessary to avoid that portions of the foliage constantly remain in the shade as it often occurs in high-density and super-intensive plantings [43 , 46 , 47].

Olive training and pruning. Dr. Peter A. Roussos Agricultural University of Athens, Greece. Laboratory of Pomology Iera Odos 75. E-mail: roussosp@aua.gr. Olive and environment. Olive trees can grow also in nutrient poor but well drained soils. The trees need full sunlight during summer and slight winter chill during the winter for flower bud differentiation and fruit set. Olive trees should not be cultivated in areas where the temperature often falls below -5 oC, as they do not tolerate very low temperature and get severely damaged by winter or early spring frosts. The planting scheme for olive tree is mainly based on the cultivation system that will be applied to the orchard (either intensive or non-intensive). Pruning and training systems for modern olive growing. R. Gucci & C. Cantini This is one of the best pruning references for olives. It compares several different training systems for young and mature trees. It also includes the basic principles of pruning for olives. Available from www.publish.csiro.au. OLIVAE MAGAZINE by the International Olive Oil Council. The two main pruning systems are the Guyot system and the rod and spur (cordon) system. Grape vines, whether grown for dessert or wine, and indoors or outdoors, need regular pruning and training to keep them under control and producing good fruit yields. Grapes grown for wine and dessert grapes outdoors are usually pruned and trained according to the Guyot system. Grapes grown against walls, fences, pergolas and those grown in greenhouses are usually pruned and trained according to the rod and spur system. Grapes grown in containers are usually trained as standards. When to prune and train. The main pruning time is early winter (late November or December). Pruning later can cause Training and pruning. XII. Insect pests and diseases. Modern techniques (micro-propagation or tissue culture) Propagation by cutting Steps in producing cutting Preparation of IBA solution Preparation of IBA paste. Page(s). 1. Olive growing plays an important role in the economy of the country. It can be grown in marginal and waste land where the soil is unsuitable for other crops. It increases the land value. It contributes to soil conservation and helps to combat problems of the environmental degradation and desertification. It provides employment opportunities to the rural population and thus helps in poverty alleviation. A large number of olive groves are owned by smallholders in the olive growing countries; they earn enough for the betterment of their livelihood.