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Wild Crop Relatives: Genomic and Breeding Resources. Temperate Fruits. Edited by C. Kole. Berlin: Springer (2011), pp. 247, £126.00. ISBN 978-3-642-16057-8.

This book, part of a 10-volume series covering all major crops, is concerned with the potential utility of wild germplasm in temperate fruit crop improvement. It contains 11 chapters written by established researchers across a considerable range of crops, including major species such as apple, grape (two separate chapters for *Euvitis* and muscadine types) and strawberry, but also smaller crops such as quince. There are some surprising inclusions, notably chapters on olive and pistachio, neither of which would meet most people's definition of a temperate fruit, and it is to be hoped that as a result researchers in these crops do not overlook these excellent chapters. The chapters differ in emphasis, but the general layout considers geographical distribution of related species, origins and evolution (some of the most interesting parts of the book), conservation strategies and availability of molecular tools. The summary of genomic resources for each crop is useful, although since the book's publication the genomes for both *Malus* and *Fragaria* have been published, such is the pace of progress in this field.

The use of wild relatives in breeding is an area of great interest and activity for many fruit breeders, especially with the assistance of molecular tools. It is therefore rather depressing to read how many germplasm collections, species and natural habitats are at risk, often due to lack of resources. However, this volume provides an excellent source of information about the relevant species and how they might be utilised by breeders in the future. The production is of a high standard, with an extensive bibliography in each chapter. However, its high price will probably restrict availability to libraries rather than individual purchasers.

Rex Brennan

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Non-Wood Forest Products 10/Rev.1. By D. V. Johnson. Rome, Italy: FAO (2011), pp. 241, US$45.00. ISBN 978-92-5-106742-0.

Palms, together with grasses and legumes, are of major importance to humankind, with products, including food and beverages, building materials, furniture, clothing, medicine, fuel and handicraft materials. The objective of this book is to provide information on exploited palm species, with a target readership of foresters and conservation and development workers. Over 500 species and their uses are listed, grouped geographically, and there are interesting case studies of indigenous tribal use of palms. Of the 500 exploited species nearly 300 are threatened, and 36 are endangered. Over-exploitation and habitat loss are the main threats, and the importance of sustainable harvest planning is emphasised.

For information on domesticated species (coconut, oil palm, date, betel nut, peach palm) specialist texts should be consulted, but anyone interested in lesser known species, including some with clear potential for domestication, could start here. There are useful lists of publications, and addresses (including e-mail) of palm experts, but in some respects the book is disappointing. There is no index, a serious omission, and photograph quality is also poor. There are over 400 references, but only about 25% were published since the first edition in 1998. There are 28 tables giving composition and characteristics of some individual palm products, but only one is from after 1998, and only nine of the 18 species listed as having development potential are included. It will be a useful book, but could have been much better.

(It is possible to download the book free of charge. See http://www.fao.org/docrep/012/i1590e/i1590e.pdf)

Hereward Corley

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Genetics, Genomics and Breeding of Vegetable Brassicas. Edited by J. Sadowski and C. Kole. Enfield, NH, USA: Science Publishers (2011), pp. 436, £89.00. ISBN 978-1-57808-706-8.

The book contains 11 chapters by authors based in national research institutes and universities. Two introductory chapters give standard reviews of crop brassicas (and radish) and their breeding, with anecdotal accounts of the breeding of *B. rapa* vegetables in Korea.

Many genetic studies of *Brassica* have been prompted by the wide array of morphological and physiological types, by species with known evolutionary relationships, including hybrid polyploids, and by close relatedness to the extensively studied *Arabidopsis thaliana*. The next six chapters review these studies, covering the cytogenetics of the genus *Brassica*, its molecular taxonomy, genome mapping and architecture and genetic transformation. The last three chapters describe transcriptomics, proteomics, metabolomics and bioinformatics. There are limited references to vegetable forms of brassicas beyond short accounts of the genetics of disease resistance, self-incompatibility and glucosinolates. Other important objectives of brassica vegetable breeding such as cosmetic/culinary properties and predictable maturity are scarcely discussed.

The book adds little to a contemporary review covering the same topic (Schmidt and Bancroft, 2011), but complements a recent review of more traditional methodologies and achievements in brassica breeding (Gupta, 2009).

Gupta, S. K. (Ed). (2009). *Biology and Breeding of Crucifers*. Boca Raton, FL: CRC Press, 405 pp. ISBN 978-1-4200-8608-9.

Schmidt, R. and Bancroft, I. (Eds). (2011). *Genetics and Genomics of the Brassicaceae*. Heidelberg, Germany: Springer, 677 pp. ISBN 978-90-481-8686-0.

Peter Crisp

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Elevated Carbon Dioxide. Impacts on Soil and Plant Water Relations. By M. B. Kirkham. Boca Raton, Fl, USA: CRC Press (2011), pp. 415, US$129.95. ISBN 978-143-9855-041.

This useful summary of plant and crop responses and impacts on soil and plant water relations to elevated carbon dioxide levels is a timely and valuable contribution to the debate on atmospheric and climate change. It presents research on field-grown wheat, sorghum and rangeland plants performed over a seven-year period at Kansas State University. The opening chapters cover a useful reminder of different types of photosynthesis and water relations in the soil and the soil–plant–atmosphere continuum.

The main body of the book is soil-focused, which look at soil–atmosphere relations and then moves onto plant responses in terms of stomatal density, resistance and evapotranspiration. The area of carbon isotope research in root studies is well covered. The potted biographies of key researchers in each chapter provide an intriguing human insight. The effect of elevated CO_2 in narrowing the gap between C3 and C4 crops is an important area covered and has global implications for both food and biofuel crop production. The careful targeted use of figures is a feature of the work and will be most useful to all readers.

The book clearly demonstrates the positive effects on crop and rangeland plants of elevated carbon dioxide, producing not just increased yields but improved efficiency of water use with increase in carbon dioxide. This will be an important positive effect in a world short of both food and water resources. This book is a timely, balanced and authoritative contribution to the field of crop science.

Keith Dawson

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Agrobiodiversity Management for Food Security. A Critical Review. By J. M. Lenné and D. Wood. Wallingford, UK: CABI (2011), pp. 248, £75.00. ISBN 978-1-84593-761-4.

The main aim of this book is to show how agrobiodiversity can be effectively and efficiently managed for food security. There are 13 chapters. The first two are concerned with definitions of agrobiodiversity and