

methodologies for specific plant types (lower plants, rice, other monocots and dicots, respectively). The transformation protocols cover a range of organisms, including *Chlamydomonas reinhardtii*, the major monocot crops rice, wheat, barley and oil palm and dicots, including plum, grapevine, cotton, *Impatiens* and *Torenia*.

A further four sections encompass a range of associated technologies, approaches and example applications. These include protocols for selection of transformants, targeted gene silencing and mutation, molecular pharming (production of biopharmaceuticals) and a curious single chapter section on *Arabidopsis* field trials. It is a pity that a more extensive treatise on field trialling genetically modified crops was not included, as this is an on-going and topical area worthy of an update.

The layout of the chapters follows a well-tested formula for this Methods and Protocols series: a brief introduction, detailed materials and step by step methods sections, and perhaps uniquely, a notes section with hands-on tips, and a list of references which are adequate without being comprehensive. The protocols are easy to follow, usually contain all the critical detail and are therefore an effective laboratory guide.

This volume is a second edition and also follows on from a previous volume in the same series (Methods in Molecular Biology 478) targeted specifically at wheat, barley and oats, edited by H. D. Jones and P. R. Shewry and published in 2009. This current volume represents a useful companion volume with updates in some areas and many unique topics. It is a worthy purchase for any plant biotechnology laboratory.

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*Invasive Alien Plants. An Ecological Appraisal for the Indian Subcontinent.* Edited by J. R. Bhatt, J. S. Singh, S. P. Singh, R. S. Tripathi and R. K. Kohli. Wallingford, UK: CABI (2012), pp. 314, £95.00. ISBN 978-1-84593-907-6.

India is vulnerable to invasive species due to rapid development, the increased transport links and disturbance to the environment in many areas. The focus on India gives readers a chance to access case studies on a wide range of environments and topics.

The book comprises 24 chapters, arranged in five parts with some 41 contributors in total. Part I on Major Invasive Plants, includes *Parthenium*, *Lantana* and the marine algae *Kappaphycus*. These chapters describe the distribution, habitat, biology, ecology and control methods. Some chapters are detailed review articles, while others, such as those on *Anthemis* and *Potamogeton*, are based largely on original data and observation. The possible impact in future climates is considered, using *Chromolaena* as an example. Part II on Status, Mapping and Distribution describes the situation of selected invasive plant species in different regions. Subsequent parts are Environmental Impact and Risk Assessment, and Population, Dynamics and Utilization. Lastly, Part V covers Management and Legislation in case studies on *Lantana* management in Chandigarh and *Prosopis* in Gujarat, and these explore issues related to these alien species and some of the challenges facing management of these areas.

Readers looking for an overarching ecological appraisal of the subcontinent may be a little frustrated as authors took different approaches, some being very descriptive and others more analytical; most chapters are well referenced. Some of the text could have benefitted from more robust editorial attention but the oversights do not detract too greatly from the work. The book is well bound, with a good index, and it is likely to be a valuable resource for practitioners, managers and policy-makers alike.

David E. Johnson

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*Phytohormones and Abiotic Stress in Plants.* Edited by N. A. Khan, R. Nazar, N. Iqbal and N. A. Anjum. Berlin, Germany: Springer-Verlag (2012), pp. 306, £126.00. ISBN 978-3-642-25828-2.

Phytohormones play a critical role in the complex signalling pathways controlling plant responses to abiotic stresses. Recent research on stress responses has concentrated on molecular signalling mechanisms with rather