This is a well-written readable book, which brings together different aspects of vermiculture from throughout the world and should be read by anyone interested in how earthworms can be exploited for the benefits of humankind.

Brian Boag

Expl Agric. (2012), volume 48 (1), © *Cambridge University Press 2011*
doi:10.1017/S0014479711000937

Genetics, Genomics and Breeding of Potato. By J. M. Bradeen and C. Kole. Enfield, NH, USA: Science Publishers (2011), pp. 296, £76.99. ISBN 978-1-57808-715-0.

The book is one in a series on Genetics, Genomics and Breeding of Crop Plants edited by Chittaranjan Kole. Twenty authors from Europe and North America have enthusiastically contributed 12 chapters, including an introduction to the crop and its wild relatives followed by classical genetics and traditional breeding, and a conclusion on future challenges and prospects. The bulk of the book comprises nine chapters, which review recent progress and current research in molecular breeding: use of molecular markers (including DArT) for linkage maps, mapping simply inherited and complex traits and association mapping; cloning late blight resistant genes (including promising ones from *Solanum bulbocastanum*); molecular cytogenetics (including fluorescence *in situ* hybridization) and transcriptomics (ESTs and microarrays), proteomics and metabolomics. For ease of production, nine colour plates are grouped at the end of the book, but with black and white versions in the text. The reader will get a good feel for the techniques currently being used and the research problems being tackled. Although the results will inform future potato breeding, it is difficult to predict the timescale, impact and extent of actual use by potato breeders. The same will be true of the potato genome sequence, which is now available. It is worth remembering that 20 years after the advent of molecular markers, we are only now beginning to see their use in breeding. However, it is clear that many of the benefits for potato crop improvement will come through transgenic potatoes and this will require societal acceptance of genetically modified potatoes.

John E. Bradshaw

Expl Agric. (2012), volume 48 (1), © *Cambridge University Press 2011*
doi:10.1017/S0014479711000949

Paddy and Water Management with the System of Rice Intensification. Paddy and Water Environment. Special Issue, Volume 9 (1). Edited by N. Uphoff and A. Kassam. Berlin: Springer-Verlag (March 2011), pp. 182. ISSN 16011-2490.

This special issue re-states the basic principles of the System of Rice Intensification (SRI), reports on its evolution and expansion and deals with aspects that are still misunderstood or are in contention. SRI represents a paradigm shift from the traditional belief that rice is best produced under continuously flooded conditions to recognition of the benefits of producing rice in an aerated soil. The essential components are planting single, 8–12-day-old seedlings shallowly at regular wide spacing (ca 25 × 25 cm) and keeping the soil moist but not wet. In addition to introductory and closing chapters, there are six papers on research findings on growing rice with reduced water applications at sites in China, India, Indonesia, Thailand and Madagascar, and 10 papers reporting experience and evaluations from nine countries in South and South-East Asia, the Middle East, tropical Africa and Central America. The country reports describe the economic benefits: growing rice in aerated soil uses less labour and bullock/tractor power for land preparation, and it enables roots to penetrate more deeply and use nutrients more efficiently; keeping soils moist instead of wet uses less water; and plants growing under SRI conditions are more efficient at capturing solar energy. The result is greater output with less input. Overall, yield increases over customary cultivation methods averaged over 60%, although varying between and within countries. Studies in India, Indonesia, Kenya and Mali reported production costs reduced by 20–32% and profitability per hectare increased by 52–183%. Especially needed now are adaptation of SRI techniques to different climatic, soil and cultural environments, and stronger institutional support.

Hugh Brammer