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Marschner's Mineral Nutrition of Higher Plants. 3rd edition. Edited by P. Marschner. Amsterdam, Netherlands: Elsevier/Academic Press (2011), pp. 684, US\$124.95. ISBN 978-0-12-384905-2.

This third edition of Horst Marschner's classic text *Mineral Nutrition of Higher Plants*, updated by 29 experts due to his untimely death in 1996, is a handsome hardback volume with more elegant layout (A4 size with double columns), and that is perhaps the most striking thing about the revision. For this alone it is worth updating your copy of the second edition, or if the text is new to you, getting your hands on the best book in the subject area. What is somewhat surprising is that the book content differs little since the 1995 edition, with just some updating of terms of structure, figures and tables, with a light modernisation of the text and associated references.

The text covers the main macro- and micronutrients, moving from soils, rhizosphere, plant biochemistry and whole plant ecophysiology. Non-essential elements that are assimilated by plants, and which can be somewhat problematic to plants and to the food chains reliant on them, have a more limited coverage. As these non-essential elements interact with essential ones, they could maybe have been given a greater prominence?

The large strides in molecular understanding of plant mineral nutrition over the last 16 years have mainly not been covered. Perhaps the unique selling point of all three editions of this book is the clarity in which soil chemistry and plant ecophysiology are linked, making it somewhat timeless.

Andy Meharg

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Climate Change Biology. By J. A. Newman, M. Anand, H. A. L. Henry and S. L. Hunt. Wallingford, UK: CABI (2011), pp. 289, £39.95 (paperback). ISBN 978-1-84593-670-9.

This book attempts to fill a gap in the market of books on climate change, namely bringing together the biological sciences. It is aimed at the undergraduate market, which defines the depth of details discussed. It also has to cross many biological disciplines, and therefore needs to avoid specialism jargon. Overall, it achieves these objectives very well. The figures and tables are clear and illustrate the text well and there is a reasonable glossary. The book starts with basic climate change information, focusing particularly on the methodology that has been crucial to establishing the consensus. There then follow several 'responses' chapters before looking more towards future consequences. An area that is a bit thin is microbes in the aerial environment, although there is a whole chapter devoted to the soil. This probably reflects more the lack of research in the aerial microbe-plant and microbe-animal interactions. The book finishes with two refreshing but daunting chapters on multiple stressors and the limits of science. If ever there was clear evidence for 'more research needs to be done', it is well illustrated here. All chapters can simply be used to illustrate the general state of our knowledge in different areas, but through key references should lead questioning students to investigate areas of particular interest in more depth. It is also useful for climate change research specialists for keeping abreast of developments in the broader context of their research. The book will obviously date rapidly as climate change science is progressing fast in some areas, so I hope this will be updated regularly.

Adrian Newton

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World Soil Resources and Food Security. Edited by R. Lal and B. A. Stewart. Boca Raton, FL, USA: CRC Press (2012), pp. 574, £82.00. ISBN-13: 978-1439844502.

The importance of food security in global development has been recognised for a number of years; less widely recognised is the importance of considering soil resources as a key component influencing food security. This text focuses on soil resources and food security and combines a number of chapters dealing with the topic from a