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BOOK REVIEWS

New Books Received

Agriculture and the Nitrogen Cycle: Assessing the Impacts of Fertilizer Use on Food Production and the Environment—*Arvin R. Mosier, J. Keith Syers, and John R. Freney*. Island Press, 1718 Connecticut Ave., NW, Suite 300, Washington, DC 20009. 2004. $40.00. Softcover. 296 p. ISBN 1-55963-710-2.

Boiling Point: How Politicians, Big Oil and Coal, Journalists, and Activists Have Fueled the Climate Crisis—and What We Can Do to Avert Disaster—*Ross Gelbspan*. Perseus Books Group, 5500 Central Ave., Boulder, CO 80301. 2004. $22.00. Hardcover. 254 p. ISBN 0-465-02761-X.

Data Analysis and Presentation Skills: An Introduction for the Life and Medical Sciences—*Jackie Willis*. John Wiley & Sons, 111 River St., Hoboken, NJ 07030. 2004. $35.00. Softcover. 183 p. ISBN 0-47085-274-7.

Environmental Microbiology: A Laboratory Manual (Second Edition)—*Ian L. Pepper and Charles P. Gerba*. Elsevier Academic Press, 30 Corporate Dr., Suite 400, Burlington, MA 01803. 2005. Softcover. 209 p. ISBN 0-12-550656-2.

The Environmental Regulatory Dictionary (Fourth Edition)—*James J. King*. John Wiley & Sons, 111 River St., 4th Floor, Hoboken, NJ 07030. 2005. $99.95. Hardcover. 507 p. ISBN 0-4717-0526-8.

Garbage in the Cities: Refuse, Reform, and the Environment—*Martin V. Melosi*. University of Pittsburgh Press, Eureka Building, Fifth Floor, 3400 Forbes Ave., Pittsburgh, PA 15260. 2004. $27.95. Softcover. 320 p. ISBN 0-8229-5857-0.

Illegal Logging in the Tropics: Strategies for Cutting Crime—*Ramsay M. Ravenel, Ilmi M.E. Granoff, and Carrie A. Magee*. The Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580. 2005. $39.95. Softcover. 393 p. ISBN 1-56022-117-8.

Immunology in Plant Health and Its Impact on Food Safety—*P. Narayanasamy*. The Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580. 2005. $49.95. Softcover. 412 p. ISBN 1-56022-287-5.

New Dimensions in Agroecology—*David Clements and Anil Shrestha*. The Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580. 2005. $69.95. Softcover. 553 p. ISBN 1-56022-113-5.

Plant Functional Genomics—*Dario Leister*. The Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580. 2004. $89.95. Softcover. 677 p. ISBN 1-56022-999-3.

The Privatization of the Oceans—*Rögnvaldur Hannesson*. The MIT Press, 5 Cambridge Center, Cambridge, MA 02142-1493. 2005. $35.00. Hardcover. 202 p. ISBN 0-262-08334-5.

Stable Isotopes and Biosphere–Atmosphere Interactions: Processes and Biological Controls—*Lawrence B. Flanagan, James R. Ehleringer, and Diane E. Pataki*. Elsevier Academic Press, 525 B Street, Suite 1900, San Diego, CA 92101-4495. 2005. Hardcover. 318 p. ISBN 0-12-088447-X.

Sustaining Biodiversity and Ecosystem Services in Soils and Sediments—*Diana H. Wall*. Island Press, 1718 Connecticut Ave., NW, Suite 300, Washington, DC 20009. 2004. Softcover. 275 p. ISBN 1-55963-760-9.

Trace and Ultratrace Elements in Plants and Soil—*L. Shtangeeva*. WIT Press, c/o Computational Mechanics, 25 Bridge Street, Billerica, MA 01821. 2004. $218.00. Hardcover. 348 p. ISBN 1-85312-960-7.

Wiley's Remediation Technologies Handbook: Major Contaminant Chemicals and Chemical Groups

Jay H. Lehr, John Wiley and Sons, 111 River Street, Hoboken, NJ. 2004. 1271 p. $150.00 hardcover. ISBN 0471455997.

Near-constant growth of the world economy places an ever-increasing demand on natural resources and agricultural land. Resource consumption leads to soil, water, and atmospheric contamination. This environmental degradation can reduce productivity, decrease quality of life, and carry both direct and indirect economic consequences. Mitigating these effects is essential for the future well-being of humankind. The world market for environmental remediation is currently estimated to be US$25 billion, a figure that will undoubtedly increase due to growing environmental and legislative pressures.

A plethora of remediation technologies have been developed to meet these environmental challenges and commercial opportunities. *Wiley's Remediation Technologies Handbook* is a timely publication that provides contaminated-site stakeholders with a much-needed framework for selecting an appropriate remediation technology. An easy-to-use key is given to find suitable remediation technologies that are available for 368 individual and classes of contaminants. Organic compounds are categorized according to their functional group. An index allows the user to find the category for individual chemicals. The range of contaminants that are covered is nearly as impressive as the ambit of technologies that are on hand to remediate each one.

The 901 available remediation technologies are listed alphabetically. A description of each class of technology is also given in addition to the services provided by individual companies. For example, an explanation of the general process of phytoremediation complements entries by Phytokinetics Inc. and PhytoWorks Inc., two companies that provide a phytoremediation service. Each entry contains a basic description of the technology, an example of its successful application, and the likely costs in a variety of scenarios. The entries are succinct and readable for both the layperson and the professional alike. References for each technology are provided, both in the technology description and in a rather cryptic reference section, where they are classed into "cost summaries," "technology costs," and "technology description." Full bibliographic references for each entry are provided on a CD-ROM that accompanies the volume. However, the extraction of these references it is not straightforward using the software contained thereon.

The alphabetical listing of the remediation technologies according to the company name means that, although individual organizations and technology summaries are easily found, there is no natural grouping of related techniques. For example, companies that offer bioremediation are scattered throughout, intermingling with those that offer capping, sparging, in situ

fixation, and other unrelated technologies. It is, therefore, cumbersome to compare companies that offer similar services and problematic to gain an overview of the breadth of an unfamiliar technology. This shortcoming, however, does not lessen the appeal of this comprehensive yet usable handbook.

This book is a must-have for all stakeholders in the contaminated sites industry. It is particularly relevant for workers in the United States, where most remediation providers are located. Nevertheless, this book has worldwide appeal in its capacity to broaden the reader's awareness of the burgeoning number of available remediation technologies.

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New Dimensions in Agroecology

Edited by David Clements and Anil Shrestha, Food Products Press, an imprint of the Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580. 2004. 553 p. $69.95 softcover, $89.95 hardcover. ISBN 1560221135.

The book is a simultaneous co-publication of two volumes of the *Journal of Crop Improvement*, Volumes 11 and 12. The integrity of the separate contributions is conserved within the volume but the accessibility of the material in this format is increased with the addition of a very useful index. This provides links not only to the key topics and the contributing authors, but also to the referenced work of key authors within the separate chapters.

Agroecology is presented as a coalescent discipline, which considers agriculture as a biologically complex system best viewed as a simplified form of managed and/or applied ecology drawing on the range of technological innovations available at the beginning of the 21st century. This is strongly linked to achieving sustainability within agricultural systems, but the focus of the contributions remains on agricultural production and its environmental interactions. There is only limited reference to the social and economic pillars of sustainability within the main body of the papers. Francis (p. 21–43) gives a wider definition of agroecology that considers the ecology of the whole food system and highlights the limited focus of the volume and the need for an increasingly holistic consideration in future research and teaching.

Nonetheless the volume reviews a wide breadth of topics, as might be expected under this title, including agricultural systems, ecology of cropping systems, diverse tropical farming systems, mixed farming systems, tillage systems, crop–weed interactions, pest management, soil nutrient dynamics, microbial diversity, climate change, ecological integrity, landscape ecology, and biotechnology. Overall the volume provides a series of good review chapters in each of these areas and taken together the volume provides a useful overview of current understanding of the biophysical underpinning of agricultural systems and the interaction of spatial and temporal controls.

This book would provide an ideal text to support an advanced undergraduate or postgraduate course introducing the principles of agroecology to students. It would also provide a readable text for practitioners who want to look behind the surface of the management of agricultural systems to discover the principles that underpin applied ecological management approaches. The chapters written by Francis (p. 21–43) and Hill (p. 491–510) also provide a significant jolt to the modes of thinking and working of established research scientists and teachers in this field, and they challenge us to better integrate social and cultural factors together with ecology, technology, and economics in the consideration of approaches to the management of farming systems.

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Venomous Earth

Andrew A. Meharg, Macmillan, Houndmills, Basingstoke, Hampshire RG21 6XS, UK. 2005. $29.95 hardcover. ISBN 13:978-1-4039-4499-3.

This is an excellent treatment of a broad and complex topic, an outstanding piece of scholarship translated into popular science. The book paints a graphic picture of man's involvement with arsenic, from the classical civilizations of ancient Greece, Rome, and Persia through to the present day crisis in Bangladesh. The history and current status of this major environmental crisis are succinctly described. There is an admirably readable examination of the probable causes of widespread arsenic pollution of ground water in West Bengal (Bangladesh and India) and of the social and economic conditions that appear to have exacerbated its impact on the population. The author then takes the current situation in Bangladesh as a basis for a wide-ranging examination of the role of arsenic in human society that has taken some truly surprising forms.

Mankind's association with arsenic has been alarming, but ubiquitous. Alongside notorious renaissance poisoners such as Cesare Borgia, a bizarre group of characters emerges. These range from the arsenic eaters of Styria, Austria (cunning peasants with a penchant for arsenic-induced good looks), Dr. Paul Ehrlich (who relieved the sufferings of syphilitics with arsenic-based drugs), to the most unlikely figure of all, William Morris, the founder of the Arts and Crafts movement, most influential interior designer of the 19th century, pioneer socialist, environmentalist, and chief shareholder in the largest and most polluting arsenic mine in the world.

The reader learns of death by wallpaper, why nobody will eat green confectionery in Scotland, and the charms of Dr. Simms "safe" Arsenic Complexion Wafers. The social history of arsenic makes for very interesting reading, reaching its apogee in the ornate accoutrements of our Victorian forebears. The role of arsenic in personal vanity, interior design, medicine, and crime all receive significant coverage. The alarming methods of arsenic production are vividly described as well as the impact of the process on the natural environment. The author highlights the problems of changing drinking water standards for arsenic and returns to Bangladesh to examine what the options are to combat the current mass arsenic poisoning. The latter provides a frank and sober assessment of the magnitude of the problems that need to be surmounted in reaching a solution.

"Popular science" is frequently a convenient foundation on which an author builds an edifice of speculation, exaggeration, and factual ambiguity. This book contains none of these faults and should be read by all environment professionals, academics, and students. It is an excellent illustration of how to flesh out the bare bones of scientific fact by integrating it with a

wider perception of human existence. No one who reads this will finish disappointed. Any pedant expecting a deep and discursive treatment of the situation in Bangladesh will have disappointment tempered by the rich seam of material on the multifaceted interactions of arsenic with mankind. Those who like a good, informative read will depart satisfied, and those of us who try to interest students in the study of biogeochemistry will have discovered a rich seam of material to enhance our lectures. Go out and buy it.

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