

Book Reviews

The Vegetative Key to the British Flora.

J. Poland and E. Clement. 2009. Published by John Poland, Southampton, in association with the Botanical Society of the British Isles, Botany Department, The Natural History Museum, Cromwell Road, London. 526 pages. 24 color plates. \$40.00 (£25.00), Softcover. ISBN 13: 978-0-9560144-0-5.

Becoming an expert on identifying naturalized plants in an area is a task that may literally require years of training or practice. Flowers are the key for taxonomic guides, and it may take several seasons before the flowers of a certain plant can be observed in bloom. The British, however, are lucky. John Poland and Eric Clement have provided an excellent tool for identifying British flora not by flowers, but by vegetative characters—characters that are present the majority of the growing season.

This reference is purported to be the most comprehensive vegetative tool for British flora, and it covers nearly 3000 taxa of Great Britain and Ireland. By using a polychromatic key, the manual is well organized and easy to navigate. Plants are divided initially into *Divisions* based on basic vegetative characteristics (e.g., A, B, ... U). Each *Division* is further divided into *Groups* based on more specific vegetative characteristics (e.g., AA, AB, ... UC), and these groups are broken out into species. Most *Groups* are contained on one or two pages; so, if selections are made correctly, using the key usually requires no more than three turns of a page.

In the case of a few genera or morphologically similar species that key out in more than one group or division, the key will reference the user to the back of the book where these genera are organized into separate keys, labeled with the first few letters of each group name (e.g., RAN keys out all the species in *Ranunculus*). However, some group abbreviations are not based on scientific names (e.g., DOCK is used for Polygonaceae). Although this organization might confuse someone who goes instantly to one of these groups of similar species, it has little effect on the usefulness of the guide when directed to the group by an earlier part of the key.

Due to the nature of vegetative characters, some of the useful differences between species are very minute, and identification hardly can be done in the field. Although most plants do not require such detailed study, line drawings of stem and leaf cross-sections are provided for difficult species. For the large genus *Carex*, color photographs of leaf cross-sections are included. In these cases, of course, the book is less useful as a field guide, but by and large, the usefulness and size of this book would make it a very handy backpack book for field botany.

Overall, this key seems to work incredibly well. In the midwestern United States, the reviewers were able to put this book into action, identifying a fine array of spontaneously occurring European plants (that is, weeds of European origin), and also found it to be a useful guide to the correct genus of most non-European plants. The British are fortunate to have such a quality guide of this type, designed specifically for their flora. The rest of the world can only hope that botanists in their region will take notice and aspire to create similar guides.

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The Study of Plant Disease Epidemics.

Laurence V. Madden, Gareth Hughes, and Frank van den Bosch. 2007. APS Press, St. Paul, MN. 432 pages. \$89.00 Hardcover. ISBN 978-0-89054-354-2.

This book is essentially a second edition of *Introduction to Plant Disease Epidemiology* by the late C. Lee Campbell and Laurence V. Madden (1990, John Wiley and Sons, New York, 532 p.). Larry Madden has taken on two outstanding epidemiologists as co-authors for the latest book. The book follows an organizational pattern similar to the earlier one, but is extensively updated and expanded. Nearly half of the references cited were published subsequent to the earlier book and a significant number of topics have been added, e.g., a nice treatment of epidemic models originating in human epidemiology and their application to plant disease systems. The typeface, page layout, and 8.5 x 11-inch page size provide for a large amount of information per printed page.

The first three chapters cover an introduction to and history of plant disease epidemiology, disease measurement, and introduction to modeling. These are followed by three chapters on temporal analysis of epidemics and three chapters on spatial analysis of epidemics. The book then concludes with three chapters on sampling, decision-making, and yield-loss relationships. In addition to the section of main references cited at the end of the book, several key references are provided at the end of each chapter. The authors chose to focus on epidemiology *sensu stricto* and not to venture significantly into related areas such as specific disease management tactics or genetic analyses. This focus allowed for the significant depth of coverage and completeness that are hallmarks of this book, and represents a very wise decision in my opinion.

This book is largely organized around mathematical models. It also contains a wealth of information on modern statistical approaches to data analysis. Thus, the publication provides a comprehensive reference for those analyzing epidemiological data for plant diseases. Though focused on models,

the chapters also contain much useful information on biological concepts and research approaches; it is not a book just about modeling for its own sake.

This book is remarkably thorough and well written. Essentially every published model used in the plant disease epidemiology literature (as well as some not previously published) appears to be included. The authors have made an effort to provide multiple mathematical forms of the models as well as to use mathematical notation that is clear, consistent, and logical. They cite approximately 800 references; there are over 1000 entries in the index, and numerous illustrations and tables are included in each chapter. The illustrations are most often graphs of empirical data (published or unpublished) or model outputs and do an excellent job of demonstrating major concepts and models addressed in the book. The introductory chapters and initial text of subsequent chapters set the stage well for the beginner. However, the chapters advance from topics of substantial basic value to those requiring much experience in the field. As someone who has analyzed epidemiological data for decades, I find this book to be an essential reference.

The Study of Plant Disease Epidemics should be in all biological libraries and on the shelf of any researcher who has occasion to analyze epidemiological data. It would serve as an excellent text for graduate courses in plant disease epidemiology, especially those organized around models. Though heavily oriented toward agricultural examples, the approaches and techniques covered also should be highly useful to those who study plant disease in natural ecosystems and to those who work with human and animal epidemiology. The book is very reasonably priced, and the amount of information provided per dollar make it a true bargain. The authors and APS Press are to be commended for the tremendous effort that must have been required to bring this outstanding book to fruition.

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Chemistry of Spices. V.A. Parthasarathy, B. Chempakam, and T.J. Zachariah. 2008. Oxford University Press, 198 Madison Avenue, New York, NY 10016. 400 pp. \$190.00. Hardcover, ISBN13: 9781845934057; ISBN10: 1845934059. Hardcover, 400 pages

Spices have been with humankind since ancient times. The importance of spices and spice trades is reflected in the search for alternative sea routes to India and China, bringing about some of the greatest discoveries of new lands in the last six centuries. The efforts of individual countries to control spice centers and routes have caused skirmishes and wars between European nations.

Spice trade in ancient times was important commercially but was also a cultural exchange activity. Nowadays, with the increase in interest in ethnic foods and healthy lifestyles, people in North America and elsewhere have increased exposure to spices. Hence, spices continue to play an important role in cultural exchange at present. We are all fascinated with their aromas and tastes from lands and places that we like to visit, and with the continuous research results indicating the health benefits of spices.

Chemistry of Spices is an up-to-date, informative book on chemical aspects of major spices, with special emphasis on important crops in India. The book includes 24 chapters. The first chapter is the introduction, and every chapter after that is dedicated to a particular spice or spices (a genus, a plant species, or several related plant species).

The spices include black pepper, small and large cardamom, ginger, cinnamon and cassia, clove, nutmeg and mace, coriander, cumin, fennel, fenugreek, paprika and chili, vanilla, ajowan, star anise, aniseed, garcinia, tamarind, parsley, celery, curry leaf, and bay leaf.

In each of the chapters, the authors provide information on botany and uses, content and composition of chemical constituents (most detailed sections), medical and pharmacological properties (including antimicrobial, antibacterial, antioxidant, anti-inflammatory, insecticidal, and other biological activities), and on cultivars and quality grading or specifications. The chapters end with a small summary as a conclusion and with an extensive references list. The chemical structures are provided for many of the constituents. Also, tables with the chemical constituents of various volatile oils from the

spices are included. The tables with chemical composition are in most instances sourced from recent publications in scientific journals. The medicinal and pharmacological uses sections of each chapter are also quite detailed and discuss a number of references from scientific journals. The last ten pages of the book include an index. Overall, the book is an excellent information source for chemistry of spices. The book can serve as a useful reference book for a diverse audience of students, researchers and extension people, people in academe, natural healers, and practitioners and also for the general public.

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