Book Reviews

Pocket Guide to Rhododendron Species.

J.F.J. McQuire and M.L.A. Robinson. 2010. Published by Kew Publishing, Royal Botanic Gardens, Kew; distributed by the University of Chicago Press. 704 pages; 700 color plates. \$97.00, Hardcover. ISBN 13: 978-1-84246-148-8.

For anyone interested in identifying rhododendrons currently in cultivation to species, this is the field reference for you. It is a complete guide to the taxonomy and characteristics of over 1,000 rhododendron species and is presented in an easy-to-follow format with over 700 color photographs. McQuire and Robinson have condensed the work of H.H. Davidian, the original author of the *Rhododendron Species* volumes, into an abbreviated guide. Incidentally, the authors note that Davidian was working on a similar condensed guide prior to his death in 2003 at the age of 96. The book is quite humorously titled a "pocket guide" when in fact you would need an awfully large pocket to carry it in. The hardcover text measures 22 cm x 13 cm x 3.4 cm, has over 700 pages, and weighs 970 g (over 2 lb), so it is more of a "backpack guide," although much easier to tote around than a large, standard text reference.

The *Rhododendron* genus is divided up into nine subgenera (*Hymenantes*, *Azaleastrum*, *Pentanthera*, *Tsutsusi*, *Candidastrum*, *Mumeazalea*, *Therorhodon*, and *Rhododendron*; *Vireya* is not included) beginning with the elepidote (non-scaly) rhododendrons first, followed by the lepidote (scaly and usually evergreen) rhododendrons. The guide does not contain an identification key, so the user will have to first narrow down the subgenus of an unknown plant based on two pages of general characteristics located in the beginning of the text. After the subgenus is identified, 16 pages of more specific Section and Subsection characteristics are included. Bright blue tabs at the bottom right of each page label the Section and Subsection of each plant, so it will take a flip through the guide to find them. Although the authors mention the guide is intended as an introduction for the non-specialist, it will require a good base in botanical knowledge to use this reference easily. Readers should also note that this is a reference for rhododendron species, and only a handful of cultivar names appear in photograph titles, possibly limiting its use in the commercial trade.

Each plant has detailed descriptions of its characteristics, with important structures listed in bold text. With the guide lying open, these descriptions appear on the left page,

and a photograph of the plant flower and leaves appear directly across on the right page. No plant descriptions fall on two separate pages. Characteristics important for identification in the photograph are also in bold text. Only the middle quarter of the book would lie open without being held down on my brand-new copy. However, stretching the back binding out did help keep the other sections flat. The plant hardiness scale is from 1 to 4, relating to UK growing locations, but there is a translation of this scale to USDA hardiness zones in the beginning of the guide. Flowering times are also in reference to UK growing locations. Additional comments relating plants to similar species and locations of cultivation also appear for most all the plants listed and are very informative. In the back of the guide, there is an extensive listing (only) of species not in or rarely in cultivation or of doubtful provenance. This section is followed by a standard glossary of terms, line drawings of flower and leaf shapes, bibliography, internet resources, and an index.

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Understanding Flowers & Flowering: An Integrated Approach. Beverly Glover. 2007. Oxford University Press, New York. 256 pages, with illustrations. \$75, Softcover. ISBN-13: 978-0-19-856596-3. ISBN-10: 0198565968

This book covers the latest research in molecular studies of flowering in all its aspects. From floral induction to development of floral organs, to flower color and floral organ morphology, the genetic types and gene expression are explained in detail via a thorough review of the research literature. The diagrams and illustrations are very helpful in providing complex concepts in a simplified, easy-to-understand format.

A history of flower induction and flower development is provided at the beginning of the book. The origin of flowering, fossil evidence, and evolutionary models are presented. The second chapter provides a historical context for the study and understanding of flowering by examining the development of floral organs as well as the transition from the vegetative state to the flowering state. The theory of florigen is addressed in this chapter.

In following chapters, the molecular mechanisms of flowering are examined. Methods of floral induction and inhibition of flowering are discussed. Photoperiod and vernalization are reviewed thoroughly. Discussion of the development of flowers follows in the next five chapters. The subject of self-incompatibility occupies most of a chapter, along with other

forms of prevention of self-fertilization. Four chapters are devoted to how and why floral forms vary. Pollen vectors are discussed, as is plant pigmentation, floral shape and size, and inflorescence development. Pollinators and their influence on floral form are discussed in the final three chapters. The topics covered include what bees and birds see, the effect of floral scent on pollinators, the perception of sweetness of nectar, and so on. All of the references are listed at the back of the book, covering 21 pages.

Throughout the book flowering is presented from an evolutionary, biological, and molecular perspective. Each topic is given a historical context, and discussion then progresses to the most recent research. The author is thorough in her coverage, a reflection of her scientific interests in the molecular genetics of plant development and how floral features have evolved to enhance their attractiveness to pollinators. All of this information comprises a valuable treatise on the topic of flowering that is recommended reading for any student of this subject. The book would prove particularly useful to the graduate student interested in flowering and possibly could serve as a textbook or supplemental reading in a floral biology or closely related course. In addition to 36 line drawings there are 10 black and white photos and 26 color plates.

The writing is not for the uninitiated, as it uses, by necessity, many scientific terms and involves complex discussion of gene activity, using abbreviated forms for genes. However, each term is defined or explained within the text, so reading this book does not require the otherwise informed reader to look up terms with which they are not familiar. This necessity may be the case, for example, where evolutionary biology terms are encountered by the plant physiologist, who may not have had training in evolutionary biology.

While reading the book in its entirety would provide the reader with a thorough understanding of floral biology, it is not necessary to read it this way. For example, if one is interested only in floral induction and the development of flowers but not in the interaction with pollinators, one can read only the chapters of interest and have a complete understanding of the topic. The book also could be used this way in a course that focuses on one or the other area. Nevertheless, a reader who is truly interested in flowering would probably end up reading the book in its entirety. As a review of the literature, this book would be a valued addition to any library or book collection of the plant sciences.

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