

New Titles

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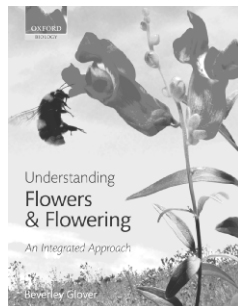
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genetic pathways. This section begins with a useful introduction to *Arabidopsis* biology and genetic manipulation as well as to the often confusing terminology used in flowering time control. Glover defines three major pathways—autonomous, photoperiodic, and vernalization—which feed into the floral pathway integrators that actually promote flowering. In this regard, Glover does not do herself any favors by using atypical terminology when discussing the flowering-repressor gene *FLC* (*FLOWERING LOCUS C*), included as part of the “autonomous inhibition” pathway. The odd point here is the use of the term “autonomous” in relation to *FLC*. There is also a well-characterized floral induction pathway that is more commonly referred to simply as the “autonomous” pathway. These autonomous loci act through several different genetic mechanisms to deactivate the floral repressor *FLC* and thereby allow flowering to occur. This is the first time I have seen *FLC* termed an “autonomous inhibitor,” and I can understand Glover’s logic, but, as a rule, *FLC* is discussed in the literature as a component of the vernalization pathway.

One can always quibble about terminology, but I found the use of autonomous inhibition versus autonomous induction to be tricky in two regards. First, readers have to pay very close attention to catch which pathway is being discussed at any particular time (not necessarily a bad thing), and second—and more problematically—it may lead to confusion when readers go to the primary literature and do not see the same usage. This being said, the complexities of flowering time control in *Arabidopsis* make it one of the hardest subjects to explain clearly. Glover has achieved that quite well, and the data covered are very up to date, which will extend the shelf life of this text.

The latter part of the molecular genetic section focuses on the genetic control of floral meristem and floral organ identity. This subject is the one area that has been thoroughly covered in many other texts and literature reviews, so it is hard to add much that is new, but Glover does an excellent job of explain-

ing the work from first principles. In particular, she gives full coverage to the fact that the A-class component of the ABC model of floral organ identity, which is often considered essential to the development of sepals, does not actually appear to be well conserved. This point often gets short shrift in other reviews, but it is very important for students to grasp as early as possible.



The last section, covering variation in floral form, represents the most integrative material. What is the ecological value of zygomorphy (bilateral floral symmetry), and how is it genetically generated? What are the biochemical, genetic, and morphological bases for floral color, and how do the components interact with floral ecology? These questions are among the best-addressed points in this section and are very useful for students coming from both sides of the genetics/ecology divide. (The first half of the section could benefit from labeled illustrations of the genetic models, and the figures throughout the book are of variable quality.) The second half of the section focuses more on evolutionary- and ecological-minded questions concerning the role of pollination interactions in plant fitness. In particular, Glover takes on some of the controversy concerning “pollinator syndromes,” and she presents both sides evenly.

Flowers and Flowering is a well-written text that would well serve undergraduates, early graduate students, or anyone with a solid biology background who is interested in floral biology. Although I found some points to criticize, I would still recommend the book, especially for those from an ecology per-

spective who want to learn more about floral genetics. I do think that further integration is needed among the disciplines of evolution, genetics, and ecology—both in this text and in others to follow—but this work will initiate that important process.

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Design with Constructal Theory. Adrian Bejan and Sylvie Lorente. Wiley, Hoboken, NJ, 2008. 552 pp., illus. \$135.00 (ISBN 9780471998167 cloth).

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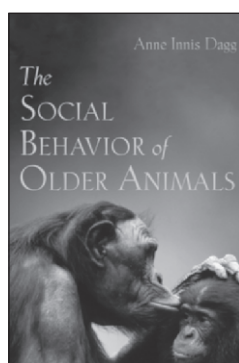
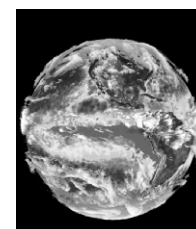
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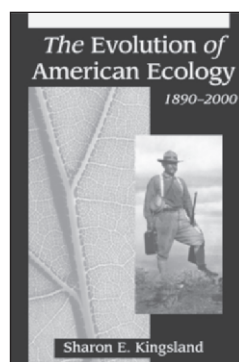
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