

detailed comparisons of the arrangement of florets, and the involucre. A second, particularly well-illustrated chapter, discusses the variety of shapes, sizes and colors of the florets, and how this diversification can be directly linked with effectiveness of pollination. An entire chapter is also devoted to the wide variety of shapes and sizes of stamens, styles and stigmas. This chapter points out the importance of the structural differences of these organs, and how pollinators have influenced the evolution of those differences. Chapters on nectaries and pappus complete the discussion of the specializations found in composite capitula. Mixed in with the chapters on each of the floral organs is a section on sexual polymorphism within the Compositae. In this author's opinion, this chapter is a bit misplaced, and would better fit in with the discussion on the overall structure of the capitulum. However, other than being misplaced within the overall context of the book, the chapter is well written and well referenced. The final three chapters bring all of this information together with a well-presented discussion of floral biology, pollination and evolutionary trends within the family. This book is very well written and thoroughly researched. It includes a glossary of terms which is quite useful, especially for those not familiar with terminology specific to the Compositae. The entire volume is well referenced, with nearly 450 citations contributing significantly to the importance of this work. I would recommend this volume to all students of the Compositae, and to anyone who is interested in pollination biology in general.—*Debra Trock*.

ALAN HOPKINS (Editor). 1999. **Grass: Its Production and Utilization. Third Edition.** (ISBN 0-632-05017-9, pbk.). Blackwell Science Ltd., 350 Main Street, Malden, MA 02148-5018, U.S.A. Distributed for Blackwell Science by Iowa State University Press, 2121 South State Street, Ames, IA 50014-8300, U.S.A. (Orders: 800-862-6657, 515-292-0155; [www.isupress.edu](http://www.isupress.edu)). \$49.95 pbk. xiii + 440 pp., numerous figures.

It has been a treat to review this book, and here is why: for many years I was a biology professor at Kansas State University, which is located in the tallgrass prairie of a notably grassy state. There I was familiar with the native grasslands, plus the management and utilization of grasslands for many purposes. The book under review centers upon British grasslands, and it offers a different dimension to an American's thinking about grasslands.

The text consists of fifteen chapters that are essentially free-standing essays of about 15–30 pages, each with a several page list of references. Most of the cited papers are from the past decade. There are chapters on pastures, herbage production, weeds & pests in grasslands, feeding values of grass (50 pages), conservation, forage and grazing behavior, landscape and wildlife, etc. There is no coverage of grassland systematics. Two chapters drew my attention; one on sward establishment and renovation, and the other on amenity grassland. The climate of Britain comfortably supports lawns of great expanse (swards), and tough turf for athletic or decorative purposes (amenity grass), and the approach to lawn and turf management is rather different from what we are accustomed to. The introductory chapter is an absolute gem for summarizing the thrusts of book and for supplying a grass-oriented land-use map of Great Britain.

How useful would this book be to a North American biologist? Anyone dealing with the applied ecology and physiology of grasslands would find it relevant, especially anyone whose studies focus on intensely managed grasslands. The literature citations are particularly valuable, for they are largely from the European literature that is less commonly surveyed by Americans.—*Theodore M. Barkley, Botanical Research Institute of Texas.*



Barkley, T. M. 2000. "Grass: Its Production and Utilization. Third Edition by Alan Hopkins." *SIDA, contributions to botany* 19, 427–427.

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