BRYOPHYTE BIOLOGY

A. J. Shaw and B. Goffinet (editors). 2000. Cambridge University Press, UK. 476 pp. Paperback edition £23.

This is the latest book on the state of the art of bryology prepared by an international group of distinguished contributors and succinctly edited by two well-respected American bryologists. The intention of the book is to provide a modern textbook of bryology to newly initiated university students and at the same time to serve as a up-to-date reference for professionals who need a one-stop access to pertinent information and the most recent literature in all fields of bryological research. To this end, the book has brilliantly produced a balanced fulfilment of these two disparate needs.

The broad coverage of the book is shown by the titles of its 13 chapters: anatomy, development and classification of hornworts by K. S. Renzaglia and K.C. Vaughn, morphology and classification of the Marchantiophyta by B. Crandall-Stotler and R.E. Stotler, morphology and classification of mosses by W.R. Buck and B. Goffinet, origin and phylogenetic relationships of bryophytes by B. Goffinet, chemical constituents and biochemistry by R. Mues, molecular genetic studies of moss species by D. Cove, control of morphogenesis in bryophytes by M. L. Christianson, physiological ecology by M.C.F. Proctor, mineral nutrition, substratum ecology, and pollution by J.W. Bates, peatlands: ecosystems dominated by bryophytes by D.H. Vitt, role of bryophyte-dominated ecosystems in the global carbon budget by K.P. O'Neill, population ecology, population genetics, and microevolution by A. J. Shaw, and bryogeography and conservation of bryophytes by B.C. Tan and T. Pócs.

The focus of the book includes not only the historical perspective of bryophyte classification, but also modern phylogenetic analyses based on DNA sequencing evidence. Newly developed topics in bryology, such as molecular genetics, molecular morphogenesis, micro-evolution, origin of embryophytes, and the relationship of bryophytes and Polysporangiophyta, are also given ample attention. With the participation of sixteen authors, the resulting chapters are variable in their writing style with some chapters being more technically written in the form of a review paper, while other chapters read more like a textbook. Nonetheless, the text of all thirteen chapters is comprehensively written, of the right length, well illustrated, and current in the summary of information. Indeed, the figure 7.1 on p. 217 is a good case in point. It illustrates how our knowledge and concepts of bud formation in mosses has progressed in four decades from a simplistic picture of cytokinin exerting action on the caulonema to the current view of a complicated pathway of interaction and feedback interaction between

cytokinin and calcium ions with mediation from light and ABA growth regulator to produce buds on caulonema.

I did not see any errors in my first cursory reading of selected chapters but my university colleague in plant chemistry spotted an error on p. 156. The acorane and pacifigorgiane sesquiterpene skeletons were indicated as unique to liverworts. However, the acoranes are, as their name suggests, common in the seed plant *Acorus* (as well as in other plant species), while the first example of a pacifigorgiane was from a marine gorgonian of the genus *Pacifigorgia*.

The book is printed on good quality paper and in correct textbook size, measuring 6 x 9 inches and is a little more than one inch thick. It comes in both hard and paperback editions. The price of the paperback edition is reasonable for a university textbook today.

This new book is to be recommended to students and professionals alike. Cambridge University Press is to be lauded for producing a scientific volume that provides an inclusive overview of recent advances in bryology.

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