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## BOOK REVIEW

by Rowland D. Burdon

*Scion, Private Bag 3020, Rotorua 3046, New Zealand*

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**Book Title:** Conifer Reproductive Biology  
**Author:** Claire G. Williams  
**Publisher:** Springer, Dordrecht, Heidelberg, London, New York ([www.springer.com](http://www.springer.com))  
**Pages:** xii + 169  
**ISBN:** 978-1-4020-9601-3

This book has been eagerly awaited, addressing a long-standing gap. In this, it does not disappoint. Conifers have tended to be left out of leading-edge biology, largely because of difficulties posed by their size and longevity. Yet they are extremely important. Ecologically, they are keystone species of vast areas of forest, which cover a very significant portion of Earth's land area. Their commercial importance derives from the area occupied, the volume of wood they produce, and the ease with which the wood can be used for a wide range of purposes. At the same time, their reproductive biology is in itself a topic of great interest, both practical and scientific. There is the big question of how conifers have remained so ecologically important for so long, often in essentially the same outward forms. Specifically, there are the puzzles posed by their huge genomes, the delays that often exist between pollination and final seed development, and the phenomenon of polyembryony whereby many embryos can be formed where only one remains in the mature seed.

In recent years there have been big advances in the reproductive biology of conifers, but fresh textbook coverage has been minimal. This has now been made good in an excellent, attractively presented book. Despite a seemingly specialised topic, this book will be very valuable for a broad readership that includes evolutionary biologists, botanists, ecologists, conservationists, forest geneticists, tree breeders and seed-orchard managers.

After an opening chapter giving general background on conifers, including the fossil record, Prof. Williams reviews the various aspects of the reproductive biology in eight further chapters. Perhaps the most fascinating of all is the final chapter, addressing the typical abundance of embryo lethals, and their postulated role as a mechanism that helps the vast majority of conifers to remain outbreeding. While conifers are often viewed as quite primitive plants this mechanism looks marvellously flexible. Mysteries remain, but the nature of the mysteries is very well spelled out.

The presentation is liberally signposted with headings. Also, each chapter begins with a Summary and ends with a Closing section, and there is a separate Concluding section. References are listed separately for each chapter. While these features may be a slight distraction for reading the book strictly as a text, they make for great ease of reference, and inevitably the book will be widely used for reference rather than purely as a text. Boxes are used effectively for illustrating a number of points, although I am not enthusiastic about shaded backgrounds. There have been some hiccups in the copy editing, but these are only minor blemishes in an admirable contribution to the literature.