

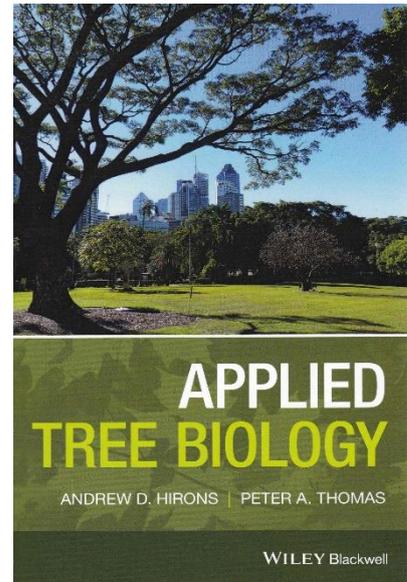
# A Book Review

By Gervais Sawyer

## “Applied tree biology”

by Andrew Hiron and Peter A Thomas

Wiley Blackwell ISBN 978-1-118-29640-0 ca £45 softback



An earlier book on trees by Peter Thomas called 'Trees: their natural history' should have been a best seller because although a serious scientific book, it was so accessible to all. All the chapters were beautifully linked. However, it was clear that the publishers had restricted the number of pages allowed. So, I was very eager to see this new book that is much more comprehensive and detailed.

This book is right up to date and covers all the issues that we want to know about trees in 2020. For example, the first chapter discusses the value of trees globally and in our urban environment. Straight away we are introduced to a style feature of this book, namely 'Expert boxes' which are authored by other leading scientists in the field. The whole style imparts a valuable balanced view and summary of the state of knowledge that never takes the simplistic view presented by many, politicians included.

Sensibly the book starts with a detailed study of the trunk and branches and how trees grow. Full use is made of excellent illustrations in full colour. Every detail is covered of cell types and their functions. I was particularly taken with the explanations of how water is moved around the tree. The next section considers the leaves and crown of the tree, their arrangement and function. Of particular importance is how trees resist wind and maintain verticality as well as the science of correct pruning and its consequences.

The root system is investigated with equal thoroughness. I was left with a sense of wonder how trees survive with the abuse we inflict on them such as root damage and soil compaction. Possible solutions are discussed. The next chapter tackles the major subject of reproduction. The mechanisms of seed and seedling production may seem simple enough, but what then? The extraordinary failure rate in replanting has so many causes and this chapter is worthy of very close study. I now have a greater appreciation of selection of the right tree for the right site, correct planting, and essential aftercare such as tree/water relations. After the tree has survived all that, there is just the small matter of browsing animals!

Timber traders would do well to study the chapter on tree/carbon relations. 'Plant a tree and lock up carbon' is the current mantra, but it just is not that simple. Trees need more than water, CO<sub>2</sub> and sunlight. Many micronutrients are needed, and these may not be sufficiently available in a given site. Even if they are, are they accessible? The fascinating subject of soil microbial symbiosis is discussed.

Trees provide habitat and food to many organisms, some symbiotic but some potentially harmful. Some of these are current threats to our native trees and strategies for control are discussed.

The final chapter appropriately discusses the environmental challenges facing trees and what we can do about it. When I finished the book, I was left in awe of what trees do and how they survive. There is far more information contained within than I can remember, so this will always be to hand for reference.

**Gervais Sawyer FIMMM**