Trees are familiar, and often beautiful, components of many landscapes, vital to the healthy functioning of the global ecosystem and unparalleled in the range of materials that they provide for human use. Yet how much do we really understand about how they work? This book provides a comprehensive introduction to the natural history of trees, presenting information on all aspects of tree biology and ecology in an easy-to-read and concise text. Fascinating insights into the workings of these everyday plants are uncovered throughout the book, with questions such as how trees are designed, how they grow and reproduce, and why they eventually die, tackled in an illuminating way. Written for a non-technical audience, the book is none the less rigorous in its treatment and will therefore provide a valuable source of reference for beginning students as well as those with a less formal interest in this fascinating group of plants.

Peter Thomas is a lecturer in environmental science at Keele University, UK, where his teaching encompasses a wide range of tree-related topics including wood structure and identification, tree design and biomechanics, tree ecology and identification, and woodland management. His research interests focus on the reconstruction of past environments from tree rings, the role of trees in nature conservation and the interaction of fire with trees.
But blessed is the man who trusts in the Lord, whose confidence is in him. He will be like a tree planted by the water that sends out its roots by the stream. It does not fear when heat comes; its leaves are always green. It has no worries in a year of drought and never fails to bear fruit.

Jeremiah 17:7–8
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Preface

Why write a book on trees? The motivation for me came from the frustration of trying to teach a subject where much is known but is scattered over a huge range of journals and books from many countries. There are so many fascinating stories to be told about the ways in which trees cope with the world and the problems of being large and long-lived: they are extremely well designed. Someone had to write this book!

My goal was to draw together strands of information to create a readable book that would answer common questions about trees, set right a number of myths and open up the remarkable world of how trees work, grow, reproduce and die. It is for you, the reader, to judge whether I have been successful. Please let me know where you find errors or would wish to argue with the logic.

I am indebted to all those who helped with this book, especially Roger Davidson and Bill Williams who read and commented on the whole manuscript and numerous colleagues who commented on parts. Val Brown, P.B. Tomlinson, Colin Black and K.J. Niklas kindly provided detailed information. Maria Murphy and Lynn Davy at Cambridge University Press are to be congratulated for their extreme patience with a faltering author. And, of course, my wife and sons are thanked for putting up with my pet project.

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