This enumeration of topics of the 20 chapters cannot give but a rough idea of the stimulating treatment of numerous aspects of plant life encountered in this compilation. Although unambiguous answers on such questions as 'Does a given environment favour plants whose traits tend to maximise the difference between the benefits and their costs' or 'How do individual plant traits contribute actually to the plant's competitive ability and ecological superiority' cannot be given yet, the approach in this book is most meritorious and makes for fruitful reading for anyone interested in plant structure and function. Because all chapters are clearly, concisely and comprehensibly written also non-specialists can profit from these proceedings.

J. J. Sauter


This book is the third in the Springer Series in Wood Science edited by T. E. Timell. It addresses the universal, but relatively neglected field of growth stresses and strains in trees and timber. In the introductory chapter the early literature is very briefly reviewed and relatively simple models for residual stresses in planks are explained. The second chapter gives a thorough treatment of the measurement and interpretation of surface growth strains. The third chapter is perhaps the most interesting for the readership of this Bulletin, since it deals with the mechanism of generation of surface strains. It ends with a rather enigmatic quotation from a recent paper by Kubler that 'the dispute about the origin of growth stresses ... appears to be undecided.' In the subsequent three chapters on internal residual stresses in tree stems, experimental verification of internal residual stress distributions, and redistribution of growth stress states due to cutting, mathematical modelling becomes an increasingly dominant part of the text. Five appendices provide further background information to help understand the derivation of some of the functions playing an important part in growth stress theory and modelling.

For wood anatomists much of this book may be beyond their grasp (it was beyond mine), but this is a reflection of our own shortcomings rather than of the author's. However, for the initial chapters one might wish that the author would have explained the (ultra)structural background of the different theories on growth stress generation more clearly and comprehensively. Now the text is written in a way which takes it for granted that the reader is familiar with for instance the involved debates on lignin swelling or cellulose crystallisation by Boyd and Bamber, partly recorded in the pages of the IAWA Bulletin. It would have been helpful if this debate had been summarised in this book, and that Dr. Archer would have given the uninitiated some guidance which theory to embrace on the basis of his doubtlessly vast experience and undisputed authority in this field.

In other respects one must welcome this book which brings together information on a biologically fascinating phenomenon with vast practical implications for the behaviour and defects of green timber.

Pieter Baas