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BOOK REVIEW

HALLÉ, F., OLDEMAN, R. A. A., TOMLINSON, P. B.: *TROPICAL TREES AND FORESTS. AN ARCHITECTURAL ANALYSIS.* — Springer-Verlag, Berlin—Heidelberg—New York 1978. Pp. 441. Figs. 111. Cloth DM 125,—; US \$ 62.50.

Not seldom has it be stated that if a botanist is eager to learn the potential ability of the plant kingdom, he has to concentrate on the tropical ecotopes, tropical rain forests in particular. No matter if he is an ecologist, physiologist or is fond of systematics, there he will see what the plant kingdom is able to perform. This statement is true in many respects, for not only the stress strategy in extreme ecotopes is to be admired and thoroughly studied. A similar interest is to be paid to the most favorable habitats, where most luxurious development of the genetic richness and physiological productivity is to be encountered.

The main topic of the book is the descriptive and adaptive geometry of tropical trees; the potential morphological models of the overground parts of tropical trees are discussed step by step starting with their genotypically induced features and ending with their morphology as it is controlled in the stand conditions of competition.

The book stands at the edge between describing forms and strategies of the overground growth of tropical trees and explaining them. Not too much attention is paid to the physiological morphology from the physiological point of view. On the other hand a tremendous amount of forms and (especially) their development is described and classified from point of view of comparative morphology, adaptive geometry and developmental strategy.

In introductory chapters, on what is a tree and what is a tree in the tropics, the tree architecture elements (apical meristems, seedling morphology, growth, phyllotaxis, branching, generative growth, radial growth) are discussed from the stand point of the developmental morphology. As too little is known about the root systems morphology, not enough attention is paid to roots.

The most extensive third chapter is devoted to the description of architectural tree models of more or less solitary tree individuals. These models are confined to different types encountered in the floristic realm of tropical trees. A very interesting chapter is devoted to what is called the opportunistic tree architecture: The behaviour of trees is described under different stress modifying their architecture such as pest attack, competition, damage, environmental stress and supraoptimal conditions. Here problems concerning the energetics of trees (e.g. the surface: volume ratio), their productivity and growth potential are discussed.

The last fifth chapter deals with the behaviour of individual trees in a stand: the architecture of forests is discussed from the point of view of homeostatic behaviour of tree stands. Selected cases of tree architecture are exemplified and attempt has been made to explain them both in causal and silvigenetic way.

A glossary, list of references, fairly detailed indexes of plant and model names and subject indexes are included.

On the whole, the book brings a very good review of the morphological richness of tropical trees stimulating the creative fantasy of botanists. As this fantasy represents undoubtedly a rich source for the scientific progress, the book contributes excellently to further development of many branches of botany.

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