Lüttge, U.: **Physiological Ecology of Tropical Plants.** - Springer, Berlin - Heidelberg - New York 1997. 384 pp. DM 68.00. ISBN 3-540-61161-4.

The man-caused destruction of tropical ecosystems became a hot topic in international public opinion, comerce and even in diplomatic activities during the last two decades. The interest was promoted by scientists alarming on global climate change, unsustainable agriculture and silviculture and threatening reduction of biodiversity especially in tropical plant communities. Thus, the role of unbiased scientific information on tropical plant ecosystems is rising. The book is certainly an invaluable source of such information.

The basic terms and the main contemporary employed methods in ecopysiology of tropical plants are surveyed in the first two chapters. Emphasis is given to remote and large scale sensing, gas analysis and stable isotopes techniques.

The book deals with all basic tropical plant ecosystems in seven chapters. Most space is given to tropical rain forests, their physiognomy, structure, diversity and plasticity, successions, plant types and life forms. The chapter deals also with soil specificity of tropical forests and mineral nutrition and, especially with light as a key environmental factor controlling life forms, seed germination, growth and development and photosynthesis rate. Thornbush and succulent forests are described separately in this chapter focussing on CAM physiology and phylogeny. Abundant flora of epiphytes, lianas and curtains of areal roots form the most popular view of tropical forest. Ecophysiology of these highly specialised species is summarised in Chapter 4 together with overview of the plant water relations. Physiology of nutrition-stress-driving adaptations in carnivorous and myrmecophytic tropical species is also included.

Majority of tropical coastlines is occupied by mangroves. Chapter 5 is devoted to the group of about 60 tree species called 'mangroves', to their global distribution and strategies of coping with high salinity and constricted oxygen access to the roots. The next chapter is focused on vegetation of salinas and inland salt marshes, especially on vegetation at the northern caribbean coast of Venezuela. The salt-coping strategies of small perenial halophytes, cacti, tank-forming bromelias and epifitic CAM plants are explained.

The specificity of open, grass dominating habitats is treated in chapter 'Savannas'. The shortage of water, mineral nutrition and fire are the most important drivers of ecophysiological adaptations and got most attention here. The author explains the adaptations in terms of water and nitrogen use efficiency; describes nitrogen cycle in savannas and phosphorus and aluminium effects. The last two chapters deal with life of plants grown in habitats exposed to uttermost extremes and fluctuations of temperature, with inselbergs and páramos.

Author keeps a balance in description of various ecosystems reflecting their significance in tropical globe vegetation. Perhaps, the old-world tropical forest (South-East Asia) would deserve more concern and information. The book is written as a comprehensive reading suitable for both students and scientists in plant ecophysiology: it includes numerous explanations of relevant physiological, biochemical and biophysical terms and processes in the form of 'boxes' with references for more details. Abundant figures, schemes and photographs make the book self-explanatory and attractive. The book is good in every aspect.

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