

Lüttge, U.: **Physiological Ecology of Tropical Plants.** - Springer, Berlin - Heidelberg - New York - Barcelona - Budapest - Hong Kong - London - Milan - Paris - Santa Clara - Singapore - Tokyo 1997. ISBN 3-540-61161-4. 384 pp., DM 68.00, £S 496.40, FF 60.00, GBP 31.50, USD 49.95.

Tropical plants exhibit a remarkably rich variety of physiological adaptations to their environment. The author, an outstanding researcher and teacher of tropical ecophysiology, Professor of the Darmstadt University of Technology, Germany, intended to write a simple and readily flowing text, useful for a wide audience interested in the tropical environment. However, the reviewed book is more: a richly illustrated monograph, useful for scientists as well as students interested in tropical plant physiology, ecophysiology, and ecology. The volume deals with the physiological ecology of plants in all major tropical ecosystems - from rainforests to savannas. It describes the characteristics of tropical plants and examines the ways in which these features represent adaptive responses to the distinctive habitats in the tropics.

The book contains 9 chapters. The first one makes the reader acquainted with the main problem of tropical ecology, the still continuing and increasing rate of destruction of tropical ecosystems by man, and particularly the continuing destruction of tropical rainforest. Chapter 2 is devoted to large-scale sensing and diagnosis in relation to tropical environment (vegetation modelling, radiation reflection, absorption, and fluorescence, leaf and canopy gas exchange, methodology and data analysis, *etc.*). Further chapters cover plants of all major tropical ecosystems: tropical forests, epiphytes and lianas, mangroves, salinas, savannas, inselbergs, páramos, *etc.* In Chapter 3, features of tropical forest plants are dealt with in detail (organization of photosynthetic apparatus, chloroplast pigments, C₃, C₄ and CAM plants, light and its signalling functions, roles of visible radiation in photosynthesis and in phytochrome system, sun and shade plants, stress factors including high-irradiance stress, light absorption and distribution in canopy, canopy and plant architecture, growth processes, soils and mineral nutrition, *etc.*). Many of these problems are discussed also in the chapters dealing with other plants, together with special problems of individual ecosystems treated (conquest of space - epiphytes, lianas, climbers; salinity - mangroves, salinas; dinitrogen fixation - savannas; desiccation and frost tolerance - inselbergs, páramos; *etc.*).

Individual chapters contain references to recent literature, and the book is provided with a subject index. Lüttge's book—produced in traditionally good standard of Springer's publications—will surely be welcome by scientists and students interested in plant physiology and physiological ecology, as well as tropical biologists.

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