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Lüttge, U. (ed.): **Vascular Plants as Epiphytes. Evolution and Ecophysiology.** (Ecological Studies, Volume 76). – Springer-Verlag, Berlin–Heidelberg–New York–London–Paris–Tokyo–Hong Kong 1989. 270 pp., 69 fig., in English, DM 168.00

During the XIV International Botanical Congress in July 1987 in Berlin a special Symposium on "The Evolution and Ecophysiology of Vascular Plants as Epiphytes" was organized. Some of speakers were asked by the editor of this monograph to prepare individual chapters. Hence the first comprehensive evaluation of the ecological adaptations in epiphytic plants originated.

General aspects including the taxonomic diversity, the life forms, the biomass production and the economic use are discussed in the opening chapter. The second chapter is devoted to the evolution of epiphytism. The characteristics of the CO₂ concentrating mechanism and the development of CAM as one of the most important physiological adaptations to special growing conditions of these plants are the main items of the third chapter. The following three chapters address in detail special problems of the gas exchange and the water relations and the dependence of these processes on environmental factors in major taxonomic groups (ferns – Chapter 4, bromeliads – Chapter 5, orchids – Chapter 6) separately. The seventh chapter covers the problems concerning the mineral nutrition of epiphytes. Information about the epiphytic associations with ants is provided in the eighth chapter. The book is closed with the overview of all known epiphytes (more than 850 genera) and their systematic distribution.

As is briefly shown above, the book affords the synthesis of the present knowledge of ecophysiology of this specialized plant group. In addition it contributes to the solution of general problems concerning the adaptation of plants to environmental conditions. It is richly illustrated by perfect black-and-white photographs and supplemented with instructive diagrams and tables. The extensive bibliography facilitates getting information about special problems. The high quality of printing should also be mentioned.

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