Bookreviews

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ENVIRONMENT AND PLANT ECOLOGY

John Wiley et Sons, London, New York, Sydney et Toronto 1975, 347 pp.

The reviewed book is devoted to problems connected with the relationships between environment and plants from the physiological and ecological point of view. Functions and reactions of plants to different ecological factors are explained as a complex species-environment interaction, coupled either with sharp geological or topographical discontinuity or with large-scale climatic gradients. The problems are presented in the light of the individual species' behaviour and competitive interaction, i.e. not in terms of energy fluxes, elemental cycles and control system.

The first chapter called "The aims and development of plant ecology" contains a brief survey of different concepts on physiological ecology and ecosystem research with a historical introduction. Problems of energy exchange and productivity are presented in the second chapter. The following part of the book is of a descriptive character; it discusses the morphology and typology of soils and chemical and physical properties of soils. Physiological and ecological aspects of problems concerning plant-water relationships are explained in the following two chapters. The water transfer from soil through plant to atmosphere is defined as a soil-plant-atmosphere continuum. Terms used to specify soil and plant water status, behaviour of water in soils, transpiration, plant water balance and water deficit belong to the most important questions in this part. A special contribution by W. ARMSTRONG deals with waterlogged soils, their physicochemistry and environmental properties. The chapter called "Mineral nutrition" treats the nutrient requirement of plants in general, different mineral nutrient in the soil, nutrient availability and absorption by plants and the function of the essential nutrients. Biogeochemical cycling and the ecology of mineral nutrient are analyzed in the following part of the reviewed book. The last chapter deals with competition. It discusses the structure of competition, factors for which plants compete, such as space, light, carbon dioxide, nutrients and water, factors causing competition, interaction with external factors, intraspecific and interspecific competition.

The text is accompanied by instructive figures illustrating the problems discussed. The publication has only a few negligible shortcomings. It contains a systematic survey of important environmental data with extensive references. The author's critical approach to the ecological problem should recommend this publication not only as a text for advanced students of environmental plant biology (see the book cover) but also as an important source of information for professional ecologists.

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