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BOOK REVIEWS

JARVIS, P. G., MANSFIELD, T. A. (ed.): *STOMATAL PHYSIOLOGY*. — Cambridge Univ. Press, Cambridge—London—New York—New Rochelle—Melbourne—Sydney 1981. 295 pp., hard cover £ 22.00, paperback £ 10.95.

Twenty-two contributors to this book were the invited speakers in a seminar organized by the Society for Experimental Biology at the University of Lancaster on 19–20 December 1979. The book appeared as Volume 8 of the "Seminar Series" of the Society for Experimental Biology. Fourteen papers collected in "Stomatal Physiology" concern stomata anatomy, methods of measurements of stomatal aperture and conductance, mechanisms of stomata functioning, responses of stomata to light, carbon dioxide, humidity, water stress, pollution and pathogenic microorganisms, stomatal behaviour in the field, and stomatal control of photosynthesis and transpiration. At the end of the book comments are given on further work to be done in stomata anatomy and physiology. A combined subject and plant index is added. The individual papers are well arranged, the text divided by different types of headings, and illustrated by numerous figures, photographs, schemes and tables; they contain lists of references.

The book was written with the aim to serve the students of Botany and Plant Sciences at the undergraduate and postgraduate levels. "Stomatal Physiology" is, however, an excellent summarization, evaluation and interpretation of our up-to-date knowledge on stomata action, so that it will be very useful to plant physiologists in general, and also to researchers whose main interest lies in other fields of plant biology.

INGRID TICHÁ (*Praha*)

ROTH, G., SCHWEGLER, H. (ed.): *SELF-ORGANIZING SYSTEMS. An Interdisciplinary Approach*. — Campus Verlag, Frankfurt—New York 1981. 186 pp., DM 34,—.

The volume contains fourteen contributions from the symposium "Problems of the theory of self-organizing systems", which was held at Bremen on March 1979. This symposium was focused on different approaches to understanding of the principles of functional organization of prebiotic and biological systems.

In the first paper some general principles of self-organization are presented by H. Haken. The similarity between self-organization phenomena within different physical, biological or even ecological systems is stressed. Unified mathematical approach based on the dominant mode analysis and on determination of order parameter is surveyed. The following four contributions present the models of self-organization within specific biological systems. The philosophical and epistemological implications of the description of biological systems as "functionally closed" are discussed in another three papers. Concepts and notions such as "self-organization", "synergetics", "self-referentiality" and "autopoiesis" are presented here and their mutual relations are discussed. Finally, the last three papers extend the biological principles of self-organization to the description of human development and of communicative and social interactions.

Although mathematical models are mentioned very often in all papers, the reader will find only a very simple mathematics scattered throughout the book. The approach presented at the symposium at Bremen to the problem in its title is rather methodological, which is reflected in the proceedings as well. The standards of contributions differ from each other. A majority of papers provide a sophisticated analysis of some important problem. The paper by Schwengler analysing the notion of stability of biological system and that by Massakowski and Nettman devoted to the analysis of hierarchy within biological systems should be mentioned as the most interesting. The scientific worker in the field of mathematical modelling of biological system evolution will find the book probably too philosophical for his purposes, but methodologists of science will find here answers to many of their problems.

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