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BOOK REVIEW

ARNOLD, G. W., de WIT, C. T. (ed.): **Critical Evaluation of Systems Analysis in Ecosystem Research and Management.** — Pudoc, Wageningen 1976. Pp. 109, 38 figures, 4 tables. Hfl. 20.00.

This publication has appeared as the 8th volume of Simulation monographs which is a series on computer simulation in agriculture and its supporting sciences. It is a collection of seven papers, most of which were presented at the 1st International Congress of Ecology at the Hague in September 1974.

The main object of the authors is to summarize the experience with the modelling method in the first phase of its development and to give a critical commentary to its misuse by many ecologists. In the introductory article: "Some speculation on simulation", the editors discuss several conceptions and aspects of simulation method and support the opinion that the purpose of a model is to explain — not only describe — a system. The second paper by D. W. Godall: "The hierarchical approach to model buildings" has a more instructive feature, giving information on a "modular" approach in construction of a model. Dividing a system into subsystems and a model into subroutines has many advantages, *e.g.*, with respect to the testing errors of the model outputs. The third article by M. van Keulen: "Evaluation of models" is concerned with testing the validity of a model and with possible errors met in modelling a procedure. The next paper by Donald A. Jameson: "Management of ecosystems: information supplied by simulation" contains general comments on the significance of model approach for biome research and lays emphasis on the use of models for "providing a clear identification of research priorities so that research can be more specifically directed to critical problem areas". This is one of important, though many times neglected, objects of modelling. The paper by P. C. Miller and A. Moony: "The origin and structure of American arid zone ecosystems. The producers: interactions between environment, form and function" is not of a methodological character but gives the results on modelling work concerning the ecosystem research in the Mediterranean regions of California and Chile. The paper by N. G. Seligman: "A critical appraisal of some grassland models" gives a critical review of 13 grassland models elaborated by various scientists. The author claims for scientific rigour in modelling work, which has often been replaced by pragmatic usefulness. In his pioneer paper Seligman has pointed out that the critical appraisal of models should become a permanent feature of modelling activity. The concluding article by Jeffers: "Future prospects of system analysis in ecology" reviews the present state of system analysis and suggests its future development. His prognosis is sober and realistic. Only models capable of verification have scientific value for ecological studies. The methods of verification of a model have not reached a satisfactory level up to now.

The book *Critical Evaluation of System Analysis in Ecosystem Research and Management* deserves most attention of those who are involved in modelling the ecosystems, especially of those who are over-optimistic exponents of this method and are incapable in their enthusiasm of seeing its pitfalls.

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