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BOOK REVIEW

PATTEN, B. C. (ed.): *Systems Analysis and Simulation in Ecology*. Vol. III. — Acad. Press, New York—San Francisco—London 1975. 601 pp., \$ 39.50.

The International Biological Programme (IBP), terminated in 1974, demonstrated that many fundamental problems concerning organisms and their environment require a comprehensive and interdepartmental research for their solution. The progress in most biological disciplines, including ecology, leads to decreasing the diversity of approaches and methods as well as to reducing the dispersion of problems arisen from different scientific schools. Hence, the necessity to integrate and coordinate investigations between the countries of the world and to focus attention on the central themes. One of the main themes, promoted by IBP, was the investigation of productivity of the major biomes of the world, which might facilitate the identification of potential uses of the existing and new natural resources. Modeling, simulation and system analysis very early proved to be integral parts of these investigations and became significant components of many national programmes of IBP. The main natural biomes, the range of problems they present and approaches to their solution were important items also of the U.S. IBP Analysis Ecosystems Programme. Some results of these systems analyses are reported in the volume under review.

The book contains 12 studies (divided into two parts) that grew out of the contributions presented at the symposium "Modeling and analysis of ecosystems" held at the University of Georgia in 1973. In Part I, the system models of grassland (by G. S. Innis), eastern deciduous forest (by R. V. O'Neill), desert (by D. W. Goodall), tundra (by P. C. Miller et al.) and coniferous forest (by W. S. Overton) are described. The last study of this part (by K. E. F. Watt) is devoted to the critique and comparison of biome ecosystem modeling. Part II deals mainly with freshwater ecosystems grading into the estuarine model under the stress of human impact.

Individual models introduced differ with respect to their conception and operation involving interactions, processes and mechanisms of various orders and time and spatial scales. They do not portray the final resolution but characterize the state-of-the-art in ecosystem modeling through its development. They give basic information on possibilities and capabilities of modeling and simulation technique as applied to the macrosystems and evidence that large bio-ecological systems would pose new problems of complexity and unmanageability necessitating new fundamental progress in system science.

The book is of a good editorial standard: it is well arranged, supplied with many figures, tables, schemes and computer records and completed with a detailed subject index. It successfully increases the number of books published on the initiative of IBP and is highly recommended to specialists in various scientific fields.

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