Othmer, H.G., Adler, F.R., Lewis, M.A., Dallon, J.C. (ed): **Case Studies in Mathematical Modeling in Ecology, Physiology, and Cell Biology**.- Prentice Hall, Upper Saddle River 1997. 410 pp. GBP 38.95. ISBN 0-13-574039-8.

This volume was prepared from lectures given by leading researchers in mathematical modelling during the academic year 1995-96 at the Department of Mathematics of the University of Utah within a special educational program entitled "A Special Year in Mathematical Biology". The presented case studies were designed to introduce advanced undergraduates and graduate students to application of mathematical modelling in studies of dynamic systems at different level of biological organization.

The book is divided into three parts. (1) Ecology and Evolution, (2) Cell Biology, (3) Physiology. Five case studies are presented in each of the three parts. Most of the contributions is oriented to problems of general interest, like life-history strategies in fluctuating environment, biomass dynamics in structured populations, signal transduction, or cell cycle modelling. The physiological studies, unfortunately, have nothing to do with plant physiology. They are focused only on problems of animal and human physiology as, *e.g.*, fluid dynamics of the heart or modelling of muscle mechanics.

The topics presented in the book may seem as too diverse for people specialized in distinct disciplines but, on the other hand, the broad coverage is essential to demonstrate unifying role of mathematics in biology and ecology. Similar mathematical techniques may be used for simulation of dynamic systems at the cellular, organ, or organism levels because the basic algorithms of their functioning are very similar. The book may serve as a primary text for mathematical modelling courses or as a reference volume for researchers and advanced students. The potential user should be familiar with differential equations and linear algebra. Nevertheless, their principles are outlined in the three appendices. The presented case studies will undoubtedly serve as an excellent starting point and motivation for application of the common modelling techniques in biology, as well as for their modification and further development.

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