Bellows, T.S., Fisher, T.W. (ed.): **Handbook of Biological Control. Principles and Applications of Biological Control.** - Academic Press, San Diego - San Francisco - New York - Boston - London - Sydney - Tokyo 1999. 1046 pp. GBP 89.95. ISBN 0-12-257305-6.

The use of biological control offers a way of controlling diseases which are difficult to control with chemical means, or where chemicals may find difficulty in meeting regulatory criteria. Besides, biological control has still increasing importance in ecology, and markedly helps in environment conservation. This handbook contains not only scientific information about theories, principles and mechanisms of biological control, but presents also practical applications.

In 1986, at a meeting of 22 scientists from the Berkeley and Riverside campuses of the University of California, an idea appeared to launch a new reference text on biological control, other than already published books dealing with classical biological control of 'California school'. Additional authors of many chapters were also recruited from the Vedalia Centennial Symposium on Biological Control held at Riverside in 1989. Finally, the editors of this book—both from the Department of Entomology, University of California, Riverside—succeeded in assembling internationally acclaimed experts to prepare contributions to this book. So, 58 scientists from 6 countries—mostly from the USA (49, including 29 from California), and from The Philippines (3), The Netherlands (2), Denmark, Israel, Malaysia, and the UK—have prepared 41 comprehensive review articles.

The articles have been arranged into five parts: the Part I summarises in two chapters introductory information on the scope and significance of biological control, and on theories and mechanisms of natural population regulation. The first 5 chapters of the Part II—Principles and Processes—deal with biological control in relation to taxonomy, molecular and experimental methods (molecular markers, serological methods, electrophoretic and isoelectric focusing methods, enzyme polymorphism, techniques for studying DNA, population biology and structure, gene flow, mating systems, *etc.*), exploration of natural enemies (natural enemy potential, impact and ecological roles of natural enemies, terrestrial vertebrates, scavengers, aquatic vertebrates and invertebrates, phytophagous arthropods and phytopathogens, parasitic and predaceous arthropods, *etc.*), quarantine (facilities, design, equipment, procedures, cultures of hosts and natural enemies, testing biological control agents, *etc.*), and culture and colonization. Other 7 chapters are devoted to life table construction and analysis for evaluating biological control agents, evaluation of results (estimating the benefits and costs of classical biological control, biological control as an alternative to pesticide use), periodic release and manipulation of natural enemies (augmentation, conservation, monitoring, rearing), genetic improvement of efficiency of biological control (pests, weeds, restoring a natural balance), enhanced biological control through pesticide selectivity (effects of chemicals on natural enemies), and environmental management to enhance biological control in agroecosystems. The Part III—Agents, Biology, and Methods—contains 11 chapters devoted mainly to individual groups of organisms involved in biological control: parasitic hymenoptera, terrestrial arthropod predators of insect and mite pests, arthropods and vertebrates in biological control (herbivory and weeds), pathogens as biological control agents for insect pests [viruses, bacteria (especially *Bacillus thuringiensis*), fungi, protozoa, nematodes], and nutrition of entomophagous insects (food utilization, developmental nutritional requirements, *in vitro* cultures of parasitoids and predators, continuous mass culture, *etc.*). Genetic and evolutionary prospective, and genetic mechanisms are treated in further four chapters [engineering host resistance to plant viruses (engineered viral resistance strategies, transgenic plant performance), sex ratio and quality in the culturing of parasitic hymenoptera, evolution of pesticide resistance in natural enemies, and hypovirulence to control fungal pathogenesis]. The Part IV is called Applications. This is the common aim of the 14 chapters in this part: biological control in subtropical and tropical crops, in deciduous fruit crops, of soil-borne plant pathogens, of foliar, flower and fruit pathogens, of insects in forests, agricultural, urban and glasshouse environments, of insects and mites on grapes, of weeds in terrestrial and aquatic environments, of medical, veterinary and vertebrate pests, *etc.* and, finally, the use of plant pathogens in weed control. In the last chapter discussion concentrates on past, present and future aspects of classical biological control in Latin America. Two chapters of the Part V deal with general problems of biological control: definition, problems in measuring, social and economic factors affecting research and implementation, and, last but not least, the future of biological control.

The book is produced in the first-rate standards of Academic Press publications. It is well edited, and is accompanied with detailed subject and taxonomic indexes. Each chapter is supplemented by extensive bibliography. I am convinced that the book will find numerous readers especially among entomologists, but also among botanists, plant pathologists, soil microbiologists, plant scientists and technicians working in agricultural research, and growers interested in biological control. However, this excellent handbook cannot cover all the aspects of modern biological control in sufficient detail (at random: mycoparasitism, relations among saprophytic microorganisms, mold mites and saprophytic phytotoxic rhizosphere microorganisms important, *e.g.*, in soil replant problem, *etc.*). These problems may be treated in a further edition of this handbook, or in another text on biological control. I have a feeling that appearance of this handbook could also stimulate a more intensive co-operation between scientists from the California University and other groups interested in biological control all over the world.

V. ČATSKÁ (*Praha*)