

BOOK REVIEW

DENT D.R. & WALTON M.P. (eds): *METHODS IN ECOLOGICAL AND AGRICULTURAL ENTOMOLOGY*. CAB International, Wallingford, 1997, xiv + 387 pp. Hb: ISBN 0-85199-131-9, price GBP 55.00. Pb: ISBN 0-85199-132-7, price GBP 24.50.

Manuals of ecological methods are probably available in the languages of all the nations that participate in scientific research in the field of ecology. Many of them are quite recent. Why then a new one? One reason of course is the need for compiling the reviews of newly-emerged methods. Advances in technology have made possible previously impossible studies, increase their precision and hasten their reliability by improving modelling and statistical evaluation of results. Although this material progress alone may substantiate the edition of Dent and Walton's *Methods in Ecological and Agricultural Entomology* this book satisfies more than the need for being technically "up to date". It is a critical and balanced review adorned with a lot of personal wisdom of the authors that only may be gathered by a long experience in a particular field.

The book was compiled by a group of 23 contributors, each of whom is a leading specialist in a particular area of research. Following the Introduction, the matter is divided into twelve chapters. The first three concern the general methods of establishing facts in field ecological entomology. Chapter 2 (by P. McEwen) deals with indispensable basics: sampling, handling and rearing insects. Presentation of this seemingly simple matter often has its pitfalls of reporting too trivial and repetitive information. The author successfully escaped this difficulty by presenting a condensed review provided with references that bring in-detail knowledge. Chapter 3 (T.D. Wyatt) reviews methods of the study of behaviour which is now an integral component of ecological studies. Chapter 4, on quantifying insect populations (D.R. Dent), is a successful overview of methods and underlying ecological theories. Reading this chapter may stimulate field work.

The remaining nine chapters deal with particular problems on which current ecological interest is focused. Chapter 5 (D.R. Reynolds, J.R. Riley, N.J. Armes, R.J. Cooter, M.R. Tucker, J. Colvin) describes techniques for studying insect migration with descriptions of both field mark-and-recapture methods and ecophysiological studies in the laboratory. Chapter 6 (S.D. Eigenbrode & E.A. Bernays)

concerns the study of insect-host-plant relationships with a stress on studying insect behaviour. Chapter 7 (J.N. Perry) provides a good introduction to field experiment design. Planning the experiments to obtain statistically-relevant results is a key problem of agronomy research which is often overlooked by entomologists. Chapter 8 (J.D. Mummford & J.D. Knight) presents an elementary introduction into evaluating crop damage and calculating the economic thresholds for crop protection. Chapter 9 (S.A. Corbet & J.L. Osborne) presents a theoretical introduction into studying insect pollination. Chapter 10 (G.A. Matthews) reviews the principles of laboratory and field testing of insecticide efficacy. Despite immense work spent on this field since the 1950's, and routine testing performed by chemical industries, the author presents a brief review whose reading is inspirational. Chapter 11 (N. Mills) evaluates specific problems of direct and indirect estimating the efficiency of natural insect enemies, with the stress on parasitoids. Chapter 12 (W.O.C. Symondson & J. Hemingway) reviews the application of serological, electrophoretic and DNA techniques in ecology and agricultural entomology – a very important review since most methods are relatively recent. This chapter is completed by a list of references which is more voluminous than in other chapters, and extended by appendices that describe laboratory techniques. The last Chapter 13 (J. Holt & R.A. Cheke) provides a conceptual basis and review of elementary mathematics for modelling various aspects of insect population biology.

The book is a very stimulative reading, useful not only for graduate and post-graduate students that start their scientific careers, but also for specialists who need to extend their research beyond the area of their current interest. One weakness it has is common to most contemporary English written textbook literature (including e.g. Begon, Harper & Townsend's "Ecology"): the references are taken from only a segment of bibliographic sources, mostly those cited by Current Contents. This may alleviate the situation of a student who finds maximum references within minimum journals. However, this selection also increases the "recognition" of the "core" science that tends, more and more, to overlook the contributions of the wide scientific community. It may impoverish at least the "horizontal" growth of scientific knowledge.

A. Honěk