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BOOK REVIEW

H.F. VAN EMDEN & M. ROTHSCHILD (eds): INSECT AND BIRD INTERACTIONS. Intercept, Andover (UK), 2004, xx + 301 pp. ISBN 1-898298-92-0. Price GBP 75.00, USD 154.00, EUR 124.00 (hardcover).

All folk know that both birds and insects fly, that some birds eat insects (good) and should we wish the birds to remain with us we must somehow cope with presence of insects as well (bad), and most are aware that the number and diversity of some birds seems to decline (bad) and that the same is true for insects (good, except for butterflies and large beetles). Thats roughly the sum of the popular knowledge of insect and bird interactions, which is not much higher for the average zoologist who is not focused on the subject, but could express it in more elegant technical language. I know this is a caricature, but where to look for concise information? In individual papers, would be the sad answer. The book being reviewed is a first attempt to ameliorate the situation.

The editors gathered twenty contributions written by 34 specialists and have them grouped into four sections: concerning population management issues (6 chapters), effects of insecticides on bird populations (4), foraging behaviour of insectivorous birds (8), and insect ectofauna of birds (3).

A variety of topics are discussed in the chapters on the management of populations of birds and insects on agricultural land, such as the importance and methods of identification of invertebrates in the diet of chicks, population trends in (mainly British) insects and birds, the impact of agriculture on these groups, the effects of farming practices on insect prey and birds as predators of caterpillars. These chapters are linked by two major ideas: managing bird populations by providing insects, and contrastingly, managing insects by using birds as control agents (see Preface by van Emden and Dame Miriam). Interestingly, the first of these chapters shows what we need to know about the availability and quality of insect prey for birds using a case-study of shorebirds foraging for non-insect prey. The chapters on the effects of insecticides provide a less comprehensive picture than readers are likely to desire. A link between the bionomy of birds and insects is provided in a review of modern agricultural technology of the application of pesticides; effects of fertilizers are not discussed. Indirect affect on bird populations of pesticides via their affect on prey abundance is discussed within the British agropolitical context. The benefits of using an environmentally-friendly insecticide is illustrated by the case study of a threatened species of Seychelles passerine, and the effect of organochlorine insecticides on raptors in Britain is well described.

The chapters dealing with the foraging behaviour of insectivorous birds provide fascinating summary of the current topical issues as well as the perennial ones approached from a different viewpoint.

There is a detailed account of the structure of the avian retina (Bowmaker) and a first review of avian UV vision relative to insect defensive coloration (Church, Cuthill, Bennett & Partridge), including a full bibliography. For those who may not immediately appreciate the importance of these topics, I provide short quotations from the concluding remarks of the former and latter chapters. "...behaviorists have only recently realised that birds perceive the world in a different manner from humans. Not only are avian species able to see considerably further into the ultraviolet than humans, they will also divide the spectrum into different 'colours'. ... Ultraviolet sensitivity and tetrachromatic colour vision ... relate to localization of prey and colour preferences", and "...if we are to comprehend the true nature of protective coloration ... we can benefit enormously by considering the nature of the visual task from the predator's perspective ... In the case of insect protective coloration that has evolved in response to selection by avian predators, this means at least considering UV wavelengths, and, ideally, also other differences between avian and human vision...". I consider the above two chapters the best and most stimulating in the book.

A common topic of the next four chapters is aposematism – warning colours and smells of insects: how they have evolved, how birds learn them and how some semiochemicals are distributed. The discussion is both theoretical and based on experimental case-studies. Another two chapters deal with the detailed analysis of the relationship between the availability and diversity of insect prey (wryneck – ants, great tit – caterpillars), and the fitness of birds.

The three chapters on ectoparasites provide a well documented review of avian defences against Amblycera and Ischnocera (no other taxa contrary to the title), an epidemiologically interesting case of the acquisition of host specific biting-lice by cuckoos and a detailed account of the association of keratophagous caterpillars of the Tineidae with bird feathers (G.S. Robinson) – the only chapter with a definite phylogenetic approach.

The book is fascinating, makes one aware of many problems and is important for both ornithologists and entomologists. The first two groups of chapters are necessary reading for environmentalists and applied zoologists, the third for evolutionary biologists and behavioural ecologists and the fourth for entomoparasitologists. This specific focusing jointly with the multiple authorships makes the book rather heterogeneous. However, we should thank the editors and authors for this valiant first attempt and await fully comprehensive treatment.

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