

Preface

Perhaps rather few books are truly canonical, helping to create and define a field and thus leave a lasting legacy. *The Evolution of Insect Mating Systems*, written by Randy Thornhill and John Alcock, and published in 1983, is certainly one of them. A crucial book in the emergence of behavioural ecology, Thornhill and Alcock brought mating systems and sexual selection alive for many, including ourselves as youthful PhD students starting out on our research careers. In their preface, Thornhill and Alcock promoted the virtues of insects as model systems for studying behavioural and evolutionary biology. Their hope was that by explaining the complex and often strange sex lives of insects, when viewed within an evolutionary framework, they would persuade their readers to both share their passion for entomology and the power of the 'adaptationist' approach in making sense of the world generally. This approach certainly worked on us, shaping our thinking and careers to this day. Many of the authors in this edited volume share a similar experience and a similar sense of gratitude.

The book was visionary. Thornhill and Alcock unashamedly argued that all of insect behaviour must have adaptive value. Often their observations led to the generation of hypotheses, rather than concrete proof of adaptive value. Their adaptationist approach was not met with unanimous approval, as is evident from Wade's (1984) review of Thornhill and Alcock (1983). Nonetheless, the book provided a gold mine of ideas that spawned a generation of insect behavioural ecologists, a mine that is far from exhausted. The researchers that were so profoundly influenced by *The Evolution of Insect Mating Systems* have, over the last thirty years, demonstrated beyond doubt that Thornhill and Alcock's enthusiasm was well justified.

While much in the original book remains relevant today, our aim in this edited volume is to bring together some of the World's leading insect researchers in order to update the empirical and conceptual scope of the original book. The developments made over the last thirty years do necessitate a shift in focus, in particular by moving away from the male-female dichotomy in terms of descriptions of mating systems (a dichotomy that many of us see as misleading), and by including some of the rich literature on behavioural mechanisms that have helped shape our view of behavioural function in new and exciting ways. Moreover, a number of fields have emerged since 1983. For example, we now more fully appreciate the role of females in shaping mating systems, and evolutionary conflicts of interest between males and females are now recognized as a strong source of selection. The role of parasites in sexual selection has also become evident, and in consequence the rise of the new field of ecological immunology has been driven forward by studies on insects and their mating systems.

Thornhill and Alcock's *The Evolution of Insect Mating Systems* is one of the great achievements of the functional, behavioural-ecological approach, but thirty years is a long time. We hope this update will both renew that achievement, and reveal many new questions to inspire a new generation of insect behaviour researchers, as we were inspired all those years ago.

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