In a series of papers published in 1970 on the yellow dung fly, *Scatophaga* (*Scatophaga* stercoraria), Geoffrey Parker conceptualized sperm competition, gathered information on the potential frequency of sperm competition in insects, and suggested evolutionary consequences in insect mating systems as a result of that sexual selection pressure. It was a revolutionary idea that stimulated and transformed the study of sexual selection. Parker proposed that intrasexual selection continued past copulation when females mated with more than one male (polyandry) during an oviposition bout. Different males’ sperm would then compete for fertilization of eggs; thus selection would not only act prior to copulation but also act on traits that increase a male’s postcopulatory success. Parker has continued to play a pivotal role in elucidating the evolutionary consequences of sperm competition through both empirical and theoretical contributions.

More than 30 years after Parker’s original manifesto, *Sperm Competition and Its Evolutionary Consequences in the Insects* (1970), Leigh Simmons has used the same title to review the contribution that insect studies have provided to sexual selection in the context of sperm competition and to acknowledge Parker’s influence on his career. Simmons himself has made important contributions to this area, and it is fitting that he should write this book as a tribute to three decades of study and the enormous role Parker has played in this field. Simmons’ book updates readers on the state of the field and outlines what we have learned, what we have ignored, and what is yet to be done. Simmons argues that, because of their astonishing range of reproductive and life-history traits, insects provide the best group of organisms to study how sperm competition shapes and is shaped by mating systems. He is correct in that the “extraordinary diversity of sperm transfer and storage mechanisms” in insects can help us understand patterns of selection (p. xiii). One problem with this stance, though, is that because insects have not been used as process-based models, we still do not have much understanding of sperm competition mechanisms and the female’s role in this process. However, Simmons recognizes the general lack of a mechanistic approach to insect sperm competition and previously has stressed the need for such studies, the interpretational problems encountered because of this lack of knowledge, and the misinformation generated by this inattention (Simmons and Siva-Jothy 1998).

Simmons’s book provides a basic introduction to sperm competition and selection in the first two chapters; discusses male traits thought to have evolved via sperm competition in the next six chapters; and devotes single chapters to cryptic female choice, the special concerns of sperm competition in social insects, and the potential impact of sperm competition on life-history traits and speciation. Whether intentional or not, the introduction to many chapters includes the genesis of that particular topic via Parker. The order of presentation of topics is logical, and the frequent cross-references to particular topics result in a topically cohesive and easily referenced volume. The treatment of topics is fair and thorough, but as with any comprehensive work summarizing other studies, readers need to remember that an author simply cannot reflect all the nuances of interpretation. An unfortunate design element is that the figures are rarely on the same page or near pages in which they are first referenced. This distracting and frustrating feature is clearly not the fault of the author.

Simmons’s book has two overall strengths. First, the writing is clear and accessible for laymen and professionals. For example, sperm competition is particularly intriguing in social insects, in which haplodiploid sex determination and kin selection are important. As the number of mates a queen has increases, relatedness between females within the colony decreases, thereby decreasing the indirect benefits of sociality. Polyandry therefore causes a paradox for the maintenance of sociality, and Simmons cogently presents the rather complicated hypotheses to resolve it (chap. 10). Second, throughout the book, Simmons presents alternative hypotheses to explain the evolution of a trait that is frequently interpreted as resulting from sperm competition. He is very clear about assumptions underlying some experiments and whether those assumptions are valid. Simmons generally begins by skillfully leading the reader down the path of adaptationist thinking and then pricks them with the thorns along this path. This approach will be useful for training undergraduates and graduates to be experimentally critical. For the uninitiated, the book provides relevant and easy to understand background information; for the specialist, interesting directions for subsequent work. Thus, assessing the evolutionary consequences of sperm competition in insects, again, is a useful contribution.

There will be a differential return on investment between those scientists unfamiliar with the topic and those actively studying it. Those unfamiliar with sperm competition, and students looking to study this phenomenon, will find the work a valuable compendium of insect and theoretical studies. Nearly every chapter has an extensive survey across insect taxa presented in tabular form on a topic and its relevance to fitness. These tables alone are worth the price of the book.

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