

Book reviews

Sex and Parthenogenesis — Evolutionary Ecology of Reproductive Modes in Non-Marine Ostracods. Koen Martens (ed.). Backhuys Publishers, Leiden. 1998. Pp. 335. Price \$75.50, hardback. ISBN 90 5782 017 X.

Driven by academic and financial forces, vehicles for the dissemination of science are transmutating. The rise in popularity of the edited volume among *fin de siècle* scientific circles surely reflects the increasing burden of academic responsibilities which permits the assembly of a chapter but not a book. The increasing restraint in library budgets surely explains the rise in Big Titles; the most introspective publications are now graced with titles which promise the broad thematic coverage sought by acquisitions staff.

Sex and Parthenogenesis is a symptom of the times — an edited volume with a Big Title. The real purview of this book is much more fairly represented by its subtitle — *Evolutionary Ecology of Reproductive Modes in Non-Marine Ostracods*. Edited volumes inevitably lack cohesion, but the best of the genre compensate for this deficit by assembling the perspectives of a ‘dream team’ on a major thematic area. *Sex and Parthenogenesis* has a different ontogeny; it derives from a group of conference participants who later gained a major grant to probe the reproductive biology of ostracods. The authors are all deeply immersed in ostracod biology, but most are novitiates to the field of breeding system evolution.

The taxonomic chauvinism of this book will undoubtedly concern those who approach sex from a conceptual perspective. Certainly, a similar tome on each group of parthenogens would strain the budgets and bookshelves of any aficionado of sex. However, ostracods do merit special attention; they provide one of the few opportunities to probe breeding systems in deep time and they show an inordinate fondness for dispensing with sex. Interest in ostracods has also been kindled by the supposed presence in their ranks of that rarest of beasts — a Methuselah asexual. The darwinulids hold iconic status among ostracodologists for their supposed celibacy since the Cretaceous! Despite these obvious attractions, the study of breeding system diversity in these organisms has been neglected.

This book reports the natal stages of work on breeding system evolution in ostracods. It is nicely assembled and the text is enlivened with colour plates, although it is a pity that the quality of these images is not higher. Viewed from the perspective of intellectual innovation, the book is less engaging. Its contents are a smorgasborg rather than a carefully orchestrated banquet and most readers will browse selectively. The first chapter provides a review of past work on breeding system transitions, which will be useful to readers new to this area. The following three chapters, which examine the

taxonomic diversity of modern and fossil ostracods, as well as their sex determination systems, will be of particular value to ostracod outsiders. Seven of the next 12 chapters are clearly relevant to the central theme, describing patterns of breeding system diversity in both living and fossil assemblages, as well as levels of genetic variation and phylogenetic affinities among asexual ostracods. Five other chapters, which examine issues such as bacterial symbionts, morphological variability of valves and limbs, and population dynamics are of lesser import. The success of the final chapter, which aims at a grand synthesis, is constrained by its failure to place ostracod research in a broad enough context. There is only a single reference to parthenogenetic organisms other than ostracods, and even that is to other crustaceans. The chapter is, as well, infected with an ostracodophilia which reaches its apogee in the prophecy that studies of their breeding systems promise a cure for cancer!

This book reinforces the earlier evidence that ostracods of inland waters have abandoned sexual reproduction with unusual enthusiasm. The group clearly provides an exceptional venue for comparative studies between closely allied sexual and asexual lineages. However, it now appears that the fossil research will provide only limited insights into the temporal trajectories of sex — dimorphisms in shell morphology are ordinarily too subtle to enable gender assignments. And what of ancient asexuals? Like dragons of old, the ranks of Methuselah asexuals are dwindling as exemplars are slain by molecular probes. How fareth the darwinulids? There are scandalous reports of males and 12S rDNA studies have revealed an unexpected lack of sequence divergence among lineages, suggesting a recent lapse in sexual restraint. However, darwinulid chastity is rescued by dismissal of the males as mere eunuchs, while the molecular results are explained by invoking a slowed pace of substitution. My confidence was shaken by the repetitiveness of assertions claiming that the group has persisted without sex for 100 million years or more — mantras are no substitute for critical investigations.

This book is, in a sense, premature, as the depth of information on ostracods is too shallow to provide any blazing new insights concerning breeding system evolution. However, if it serves as a beacon to lure more investigators to probe the reproductive systems of ostracods, its synthesis will have been justified.

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