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SELECTED ASPECTS OF SPIDER REPRODUCTION – POLYANDRY

Summary

Observations of animal mating strategies indicate that polyandry is common in many species. Spiders have been frequently used in experiments investigating different aspects of polyandric behavior and can therefore serve as models for studying this topic. Numerous studies have examined direct (material) and indirect (genetic) benefits of polyandry, considered as the main force behind the evolution and maintenance of this phenomenon. Despite of benefits, multiple mating generates costs suffered by both sexes. Female polyandry and the structure of spermathecae create opportunities for sperm competition. In response males have developed a range of morphological, physiological and behavioral adaptations. The fact that ejaculates of several mates can be stored in spermathecae of different morphology determines the first or last mate sperm precedence, assuming that sperm is stored with little or no mixing. In species with multiple sperm deposits, sperm mixing can be evaluated by observing paternity changes in offspring from subsequent cocoons. A paternity pattern in spiders is determined not only by the secondary mate order, but also by the duration of copulation and the quality and quantity of sperm in ejaculates.

Key words: benefits and costs of polyandry, mating plugs, sperm competition, sperm priority, spiders