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SÉMINAIRE

The evolutionary rate of a sexually selected trait: the case of sperm design

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Postcopulatory sexual selection is thought to be an important force driving the evolution of sperm design. Yet, despite numerous theoretical and empirical studies of the relationship between sperm design and sperm competition (as one postcopulatory sexual selection mechanism) is still poorly understood. A series of comparative studies in several taxonomic groups have found inconclusive and sometimes even contradictory results suggesting that in different taxonomic groups the evolution of sperm design in the context of sperm competition show markedly different patterns. We conducted the largest to date comparative study including over 250 species of passerine birds to investigate the relationship between sperm design and sperm competition and to determine the evolutionary rate of sperm design as a sexually selected trait. We did so in three ways: (I) we investigated the relationship between sperm design and sperm competition at different phylogenetic levels its association with the underlying phylogeny; (II) we tested the interspecific, the intraspecific and the intra-male variation of sperm design in the context of sperm competition; (III) we performed experiments to improve our understanding of the behavioural mechanisms influencing sperm design and function. Our results provide new insights into the evolution of sperm design as a sexually selected trait.