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Are microsatellite mutation rates higher in Orthopterans?

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Much remains to be learned about the mutational processes governing the evolution of microsatellite repeat regions. Empirical data on microsatellite mutation rates in insect taxa is notably lacking. Here we first analyzed microsatellite within-population diversity compiled from the literature. This survey of 210 insect species from six major orders revealed that within Orthopterans levels of genetic diversity were ~20% higher and microsatellite repeat arrays were longer than in any other group. Because of the mutation dependence on repeat length, this result suggests a higher microsatellite loci mutation rate in the Orthoptera. We then tested empirically this hypothesis in the Desert locust, *Schistocerca gregaria*, by estimating germline mutation rates at 10 microsatellite loci from pedigree data.

Keywords: microsatellite, mutation rate, Orthoptera, repeat number

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