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Sexual selection and the evolutionary implications of multiple introductions in an invasive lizard

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Recent research suggests that multiple introductions of distinct lineages are common in invasive species. Despite this, the impact of admixture on the fitness of introduced populations, and consequently its contribution to their evolutionary potential, has received little attention. Sexual selection should be of particular importance for understanding colonisation dynamics as it is fundamental to the maintenance of genetic variation, reproductive output, and hence population growth. Furthermore, sexual selection is predicted to be highly context-dependent. For example, variance in genetic diversity resulting from admixture should strongly influence the mating strategies employed by males and females, and thus, regulate both population dynamics and accelerate (or impede) the introgression of genotypes. We have shown that human introductions of wall lizards (*Podarcis muralis*) into the UK have brought into contact several genetically and phenotypically distinct lineages. This has significant implications for mating behaviours employed by individuals. Here we show that females do not discriminate behaviourally between males of different origins despite large differences in male morphology, pheromone profiles, and behavioural dominance between clades. Nevertheless, paternity in mixed-origin semi-natural populations was highly assortative. This could be due to male mate choice or male-male competition that results in assortative paternity in the absence of male choice per se. We discuss how these results could influence the evolutionary consequences of secondary contact in the context of formation of hybrid swarms versus reinforcement and completion of speciation.

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