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Title:	Drosophila melanogaster males evolve increased courtship as a correlated response to larval crowding
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Keywords:	Density-dependent selection Experimental evolution Drosophila melanogasterX
Issue Date:	2016
Publisher:	Elsevier
Citation:	Animal Behaviour, 120, pp. 183-193.
Abstract:	A competitive resource-based environment such as larval crowding is an important stress factor in the life history of holometabolous insects such as Drosophila melanogaster and can have major consequences for adult fitness through its direct effects on body size. We investigated precopulatory sexual behaviour, which is an important subset of adult fitness, using D. melanogaster populations adapted to larval crowding for 100+ generations. We found that selected males evolved significantly higher courtship frequency than their ancestral controls. While we found a negative correlation between larval density and adult courtship frequency using low, moderate and high larval rearing densities, we also found that supplementation of live yeast, which is an important dietary component in their life cycle, caused a significant rise in courtship frequency. We further dissected out the male and female behavioural components that contribute to overall courtship activity by factorially combining selected and ancestral male and female types, reared in both low and high larval densities, and found that courtship frequency of selected males was higher with selected females than with control females. We also quantified the mating frequency, a crude measure for mating success, and found that increased courtship frequency in selected populations did not lead to increased mating success. From the results of this and a previous study, we conclude that precopulatory sexual activity in these populations is not traded for life span.
Description:	Only IISERM authors are available in the record.
URI:	https://www.sciencedirect.com/science/article/abs/pii/S0003347216301646 (https://www.sciencedirect.com/science/article/abs/pii/S0003347216301646) http://hdl.handle.net/123456789/2452 (http://hdl.handle.net/123456789/2452)
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