Title:	Evolution of pre- and post-copulatory traits in female Drosophila melanogaster as a correlated response to selection for resistance to cold stress
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Abstract:	Exposure to low temperatures reduces gamete viability and fecundity in females of insect species like Drosophila. Hence, adaptation to cold stress can in principle involve modifications in reproductive traits in females. Studies on resistance to cold stress have mostly addressed the evolution of adult survivorship post cold shock. Very few studies have addressed the evolution of reproductive traits in females in response to cold stress. We have successfully selected replicate populations of Drosophila melanogaster for resistance to cold shock. After 50 generations of selection, we investigated pre- and post-copulatory traits i.e. mating latency, copulation duration, mating frequency and progeny production in female flies exposed to cold shock or control conditions. Post cold shock, females from the selected populations were better at recovery in terms of mating latency, mating success, and progeny production relative to females from the control populations. Performance of the two types of females was not different under control conditions. These findings clearly indicate that adaptation to cold stress involves rapid modification of the reproductive traits.
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