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| Title: | Indirect selection on cuticular hydrocarbon divergence in <i>Drosophila melanogaster</i> populations evolving under different operational sex ratios |
| Authors: | Dutta, R. (/jspui/browse?type=author&value=Dutta%2C+R.) Chechi, T.S. (/jspui/browse?type=author&value=Chechi%2C+T.S.) Yadav, A. (/jspui/browse?type=author&value=Yadav%2C+A.) N.G., Prasad (/jspui/browse?type=author&value=N.G.%2C+Prasad) |
| Keywords: | Indirect selection hydrocarbon <i>Drosophila</i> sex ratios |
| Issue Date: | 2021 |
| Publisher: | Zoological Society of London |
| Citation: | Journal of Zoology, 316(3), 188–196. |
| Abstract: | In experimental evolutionary studies, altering sex ratio in populations imposes sex-biased intrasexual and intersexual interactions, which is useful to study the effect of sexual selection and sexual conflict in such populations. We studied cuticular hydrocarbon (CHC) patterns of 170 generations-old operational sex ratio-altered <i>Drosophila melanogaster</i> population to investigate the evolutionary outcomes of such selection lines. Our results indicate that the competing sex in each of the selection lines has less variable CHC profile than the less abundant sex, potentially due to sexual selection. The intensity of sexual selection is possibly influenced by intense competition among the abundant sex as well as potential mate choice due to easy availability of mates for the rarer sex in the population. This result is even more striking since the male-biased replicates were previously shown to have diverged in terms of mate preferences due to sexually antagonistic coevolution (SAC). The precopulatory isolating mechanism underlying such divergent mate preference could be sexual signals such as CHCs since they evolve rapidly and are involved in <i>D. melanogaster</i> mate recognition. Therefore, we also investigate whether CHC profiles diverged in male-biased replicates in comparison to female-biased replicates. We found no evidence that cuticular hydrocarbon profiles of male-biased and female-biased populations have evolved due to SAC. This study indicates that the differentiation of sexual traits may not be credited to sexual conflict despite populations isolated due to high sexual conflict evolve divergent cuticular hydrocarbon profiles. |
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