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Bottleneck effect on courtship behaviour in *Drosophila malerkotliana*.

Krishna, M.S., and S.N. Hegde. Drosophila Stock Centre, Department of Studies in Zoology, University of Mysore, Manasagangotri, Mysore – 570006, India.

In *Drosophila malerkotliana* control and bottleneck lines were established (Hegde and Krishna, 1996) from 150 naturally inseminated females to study its role on sexual isolation and courtship behaviour. We found incipient sexual isolation between control and bottleneck lines and also between bottleneck lines. However, the effect of bottleneck on courtship behaviour has not been studied. Hence the present investigation was undertaken to study the effect of bottleneck on courtship behaviour in *Drosophila malerkotliana*. Virgin females and males were isolated within 4 hours of their eclosion from both control and bottleneck lines to study courtship behaviour. A single female and a male were introduced into a food vial (1" × 3") and observed for 60 minutes. We made 50 pair-wise matings for each of control and bottleneck lines and recorded courtship latency (time between introduction of male and female together in mating chamber until orientation of male towards female), mating latency (time between introduction of male and female together into mating chambers until initiation of copulation), and copulation duration (time between initiation of copulation to termination of copulation of each pair). We also quantified courtship acts such as tapping, scissoring, vibration, licking, circling, ignoring, extruding, and decamping following the procedure of Hegde and Krishnamurthy (1979).

The present study (Table 1) shows that courtship and mating latency increased with increasing size of the bottleneck, and they were least in control line and highest in eight pair bottleneck lines. Mean mating percentage decreased with increasing size of the bottleneck, indicating the control line is faster mating than bottleneck lines in *D. malerkotliana*. Furthermore, courtship patterns such as tapping, scissoring, vibration, licking, circling, etc., were decreased with the increasing size of the bottleneck. These results agree with the findings of Meffert and Bryant (1991), who while studying the housefly also observed significant divergence of the bottleneck lines from the control line with regard to mating propensity and courtship behaviour. However, in the present study the divergence was unidirectional in contrast to Meffert (1995) who noticed bidirectional divergence in house flies. Thus the present findings do not fully support Kaneshiro's hypothesis (1980), who observed loss of courtship elements in *Drosophila* during establishment of bottleneck lines.

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References: Charlesworth, B., R. Lande, and M. Slatkin 1982, Evolution 36: 498; Hegde, S.N., and N.B. Krishnamurthy 1979, Aust. J. Zool. 27: 431; Kaneshiro, Y., 1980, Evolution 34: 444; Meffert, L.M., 1995, Genetics 139: 374; Meffert, L.M., and E.H. Bryant 1991, Evolution 45: 293.