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Courtship behaviour of *Phorticella striata* (Drosophilidae).

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Courtships are complex and species specific (Sturtevant, 1921). Pattern of mating behaviour is one of the parameters which is a very useful tool in tracing evolutionary relationships of closely related groups of animals. *Phorticella striata* (Sajjan and Krishnamurthy, 1975) is a non-drosophilid genus of family Drosophilidae which is endemic to South India. No work has been done on the mating behaviour of this species. Hence, the present study has been made. The strain used is collected from Brindavan gardens of Mysore, Karnataka. The observation of courtship pattern is made directly and also under binocular stereozoom by introducing a single virgin female and male into a cavity block. Observation made on 10 successful pairs is reported here.

Courtship behaviour of *Phorticella striata* consists of fixed action patterns which are accompanied by orientation movements. Such pattern, referred to as courtship displays, are made up of a number of elements or signals, some of which are performed sequentially.

Following the visual orientation of the male upon a potential mate, the first element of the courtship is foreleg (tapping) by the orienting male against the body of the female. The non-receptive female either kicks or moves away from the male. Such responses are absent in a receptive female. Quick stationary displays are made by the male towards the rear of the female, at 90°, 135°, or 180° to her long axis. He then positions himself close to and facing the tip of the female's abdomen and the fluttering male grapples the female. If the female is non-receptive, she then decamps. In spite of this extent of rejection, the male usually chase and tries to grapple; then the female rocks to avoid the male. The female also depresses her abdomen. In many cases, though, the male mounts the female; intromission does not follow as the female is not receptive. In such a situation the female rocks terribly to dismount him. Males of this species attempt to mount and copulate with non-receptive females, but they invariably are unsuccessful. If she is receptive, the moment the male grapples she spreads her wings to accommodate the male. He then lunges onto her and copulates.

The moment the male mounts, the female vibrates both the wings for a few seconds continuously, then stays still, whereas the male vibrates his wings while grappling and stops soon after that. Later the male vibrates the wings intermittently for 1-2 seconds during the process of copulation. Copulating females may walk around, whereas the male stays still. While copulating he keeps his front pair of legs below her wings and holds her abdomen with his middle tarsi. The average duration of copulation is 2.88 ± 0.152 minutes. At the end of copulation, the male dismounts the female and both involve in cleaning.

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