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Study of *Drosophila* association with certain plant species in Islamabad, Pakistan.

Amin ud Din M^{1,3,4}, S.M.N. Khan², A. Bakhsh¹, R. Aleem³, S. Haque³, and A. Salam⁴

¹Department of Biology, G. C. DG Khan, Pakistan; ²Department of Zoology, AJK Univ., Muzafarabad; ³Department of Biology, QAU, Islamabad, Pakistan; ⁴Inst. of P&A Bio., BZU, Multan, Pakistan; For correspondence, [email: amin1158@hotmail.com](mailto:amin1158@hotmail.com).

The contributions of *Drosophila* as a model system for understanding basic biological mechanisms are even more evident today than in the previous years. It's why a number of workers have been busy exploring the various ecological aspects of *Drosophila* fauna like association with different plant species, because understanding of the pattern in which different species of *Drosophila* are distributed across and within different vegetation types is necessary for accurate interpretation of their local ecology and biodiversity (Van Klinken and Walter, 2001).

According to various studies, the restricted geographical distributions of many native and some cosmopolitan species of *Drosophila* have suggested that they may have specific habitat preferences, such as traps placed among oak trees, which attract five times as many *Drosophila pseudoobscura* as do those in a meadow or shady ravine (Dobzhansky and Epling, 1944) and *D. occidentalis* comes in greater numbers to traps placed near a stream than to those in drier areas (Cooper and Dobzhansky, 1956). Similarly, Montgomery (1975) found 77% of the pictured-winged *Drosophila* species to be specific to a single host family of plants. Similarly *D. repleta* has found to be associated with Cactaceae and *D. subobscura* restricted to fruit bearing plants (Monclus, 1978). Van Klinken and Walter (2001) and O'Grady *et al.* (2003) have also studied the ecological association of various *Drosophila* species and discussed the possible reasons of such associations with plants.

In Pakistan, a similar study was conducted during the favorable season (September to April) to know the association of *Drosophila* species with plants in Islamabad. Collections of *Drosophila* species like *D. immigrans* (D1), *D. hydei* (D2), *D. takahashii* (D3), *D. leontia* (D4), *D. melanogaster* (D5), *D. malerkotliana* (D6), *D. Suzuki* (D7), and *D. nepalensis* (D8) were made by using ripe fermented fruits from the plants *Cassia fistula*, *Callistemon citrinus*, *Dodonaea viscosa*, *Thevetia peruvirana*, *Eucalyptus lanceolatus*, *Bougainvillea spectabilis*, *Sambucus nigra*, *Punica granatum*, *Ficus carica*, *Psidium guava*, *Carissa carandas*, and *Lantana camara*, and information with respect to the plant species from which the flies were collected was recorded that is presented in Table 1.

The results indicated that the traps from two plant species (*Thevetia peruvirana* and *Sambucus nigra*) remained without flies. Actually these plants are poisonous and insecticidal. So these are not suitable for *Drosophila* collection. Three plant species (*Bougainvillea spectabilis*, *Ficus carica*,

Lantana camara) attracted all the *Drosophila* species, because these are bushes and their fruits are sweet laxative. Among *Drosophila* species, *D. immigrans* and *D. hydei* are found associated with maximum plant species and proved as generalists, while all the six remaining *Drosophila* species are restricted with certain plants like most of the Hawaiian Drosophilidae species group as studied by O'Grady *et al.* (2003). The possible reasons for their specific association may be the chemical nature of plant parts or differences in mouth parts of *Drosophila* species.

Table 1. Association of *Drosophila* species with different plant species.

Plants		D1	D2	D3	D4	D5	D6	D7	D8
Botanica Names	Family								
<i>Cassia fistula</i>	Caesalpinaceae	+	+	-	-	-	-	-	-
<i>Callistemon citrinus</i>	Myrtaceae	+	+	-	-	-	-	-	-
<i>Dodonaea viscosa</i>	Sanatha	+	+	-	-	-	-	-	-
<i>Thevetia peruviana</i>	Apocynaceae	-	-	-	-	-	-	-	-
<i>Eucalyptus lanceolatus</i>	Myrtaceae	+	-	-	+	-	-	-	-
<i>Bougainvillea spectabilis</i>	Nyctaginaceae	++	+	++	+++	+++	++	+	+
<i>Sambucus nigra</i>	Sambucaceae	-	-	-	-	-	-	-	-
<i>Punica granatum</i>	Puniaceae	+	+	-	-	+	+	+	+
<i>Ficus carica</i>	Moraceae	++	++	+	++	+++	++	+++	+++
<i>Psidium guava</i>	Myrtaceae	+	+	-	-	-	-	++	++
<i>Carissa carandas</i>	Apocynaceae	+	+	-	+	+	-	-	-
<i>Lantana camara</i>	Verbenaceae	++	++	++	+++	++	++	++	++

(Symbol - stands for absence; + for 1-5 flies; ++ for 6-10 flies and +++ for more than 10 flies per trap in proper season of *Drosophila* species)

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A new inversion in *Drosophila ananassae* population from Allahabad, Uttar Pradesh.

Singh, P., and B.N. Singh*. Genetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi-221005, India. * E-mail: bnsingh@bhu.ac.in.

Chromosomal polymorphism is very common in the genus *Drosophila*. There are intra- and interspecific variations with respect to the degree of chromosomal polymorphism. The commonest type of chromosomal variability is due to paracentric inversions. Chromosomal polymorphism has also been studied in certain *Drosophila* species found in India. The most noteworthy is *D. ananassae*, which is a cosmopolitan and domestic species. Previous studies on chromosomal polymorphism in *D. ananassae* from different places showed 71 paracentric and 17 pericentric inversions and 13 translocations (Singh, 1998; Singh and Singh, 2005). However, the three cosmopolitan inversions namely AL in 2L, DE in 3L and ET in 3R are of common occurrence in natural populations and have become coextensive with the species.

In the present communication, we report a new paracentric inversion named 'Iota' (IT) in the left arm of the third chromosome of *D. ananassae*. This new inversion was detected from a single F1