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Drosophila fauna of Dandeli and Ambikanagar.

Though some areas of India have been explored in regard to Drosophila fauna and their ecology, several parts of this country need to be extensively surveyed. North-Kanara is one such virgin area where congenial ecological conditions associated with a variety of flora provide a rich abode for insect fauna. Hence, the present investigation of Drosophila fauna was made in Dandeli and Ambikanagar during the first week of October, 1978 when Drosophila flies are usually found in abundance. Collections were made both by sweeping and banana trap methods, and the collected data are presented in Table 1.

Table 1. Distribution of different species of Drosophila at Dandeli and Ambikanagar.

	Species	Dandeli	Ambikanagar
1.	D. malerkotliana	208	198
2.	D. bipectinata	112	91
3.	D. nasuta	71	64
4.	D. anomelani	82	51
5.	D. jambulina	36	18
6.	D. mysorensis	29	9
7.	D. neonasuta	45	22
8.	D. eugracilis	4	1
9.	D. punjabiensis	29	10
10.	D. varietas	3	1
11.	D. busckii	-	1
12.	D. elegans	-	6
13.	D. sahyadrii	18	6
14.	D. meijere indicus	8	-
15.	D. rajasekari	-	11
16.	D. nigra	8	3
Total		653	492

A total of 1145 individuals comprised of 16 species of Drosophila have been collected. Most of the species belong to Sophophora and Drosophila. Among the species trapped, D. malerkotliana, D. bipectinata, D. nasuta, D. anomelani and D. neonasuta were found in abundance in order of decreasing density. The rare species collected include D. nigra, D. meijere indicus, D. busckii, D. rajasekari, D. eugracilis and D. sahyadrii. It is interesting to note that D. elegans, a member of elegans subgroup of melanogaster species group, was collected on flowers of Ipomea species. D. anomelani, D. punjabiensis, D. jambulina and D. mysorensis of montium subgroup are the other members captured. Collection records indicate that most of the species captured belong to either melanogaster or immigrans species group and this supports the view of Bock and Wheeler (1972) that both these species groups are always in abundance in southeast Asia.

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Reference: Bock, I.R. and M.R. Wheeler 1972, Univ. Texas Publ. 7213:1-102.

Nagaraj, H.J. and N.B. Krishnamurthy.
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Effect of crowding and temperature on the rate of development in D. nasuta.

In order to investigate the effect of crowding and temperature on the rate of development in a polymorphic strain of D. nasuta from Mavinagundi (North Kanara, India), eggs of the same age were collected following the procedure of Delcour (1969) and were distributed into four groups (A, B, C and D). Group A consisted of 40 vials each with 25 eggs, group B of 20 vials each with 50 eggs, group C of 10 vials each with 100 eggs and group D of 5 vials each with 200 eggs. Two sets of each group were employed. One set of four groups was permitted to develop at constant temperature of 21±1°C and another set of four groups at fluctuating temperatures of 24°C to 29°C. The flies were counted from the first day of eclosion to the last day. The patterns of emergence at constant and fluctuating temperatures calculated from each group are shown in Figs. 1 and 2, respectively. The mean developmental times at both constant and fluctuating temperatures are presented in Table 1.

Table 1. Mean developmental time of D. nasuta at constant and fluctuating temperatures

Group	Mean developmental times at	
	Constant temperature	Fluctuating temperature
A	9.90 ± 0.04	8.32 ± 0.04
B	10.97 ± 0.012	9.74 ± 0.109
C	13.48 ± 0.141	12.16 ± 0.374
D	17.17 ± 0.264	15.16 ± 0.192

At constant temperature the mean developmental times in groups A, B, C and D are 9.90 ± 0.04, 10.97 ± 0.012, 13.48 ± 0.14 and 17.17 ± 0.264, respectively, while at fluctuating temperatures the mean developmental times in groups A, B, C and D are 8.32 ± 0.04, 9.74 ± 0.109, 12.16 ± 0.374 and 15.16 ± 0.192, respectively. At constant temperature in the lowest density (25 eggs) the eclosion commenced on day 9 with a peak on day 10 and terminated on day 13, in contrast to the highest density (200 eggs) where the eclosion commenced on day 13, with a peak on day 16 and terminated on day 23. At fluctuating temperatures in the lowest density (25 eggs) the eclosion commenced on day 7 with a peak on day 8 and terminated on day 15, whereas in the highest density (200 eggs) the eclosion commenced on day 12 with a peak on day 15 and terminated on day 23. Thus, from the above mentioned data it is clear that the mean developmental time increases with the increase of density, and increase in temperature decreases the mean developmental time. Increase in mean developmental time is due to crowding. Hence it is concluded here that there is an effect of crowding and temperature on the rate of development in D. nasuta.

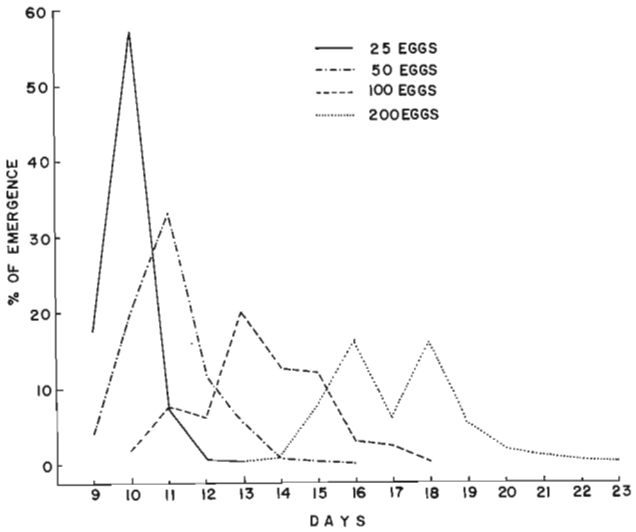

Fig. 1 Pattern of emergence of flies in different densities at constant temperature in *D. nasuta*

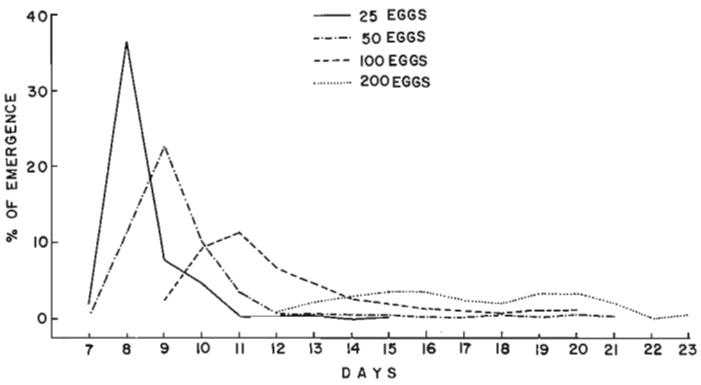

Fig. 2 Pattern of emergence of flies in different densities at fluctuating temperatures in *D. nasuta*

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Reference: Delcour, J. 1969, DIS 44:133-134.