Ranganath, H.A. and N.B. Krishnamurthy.
University of Mysore, Manasagangotri, India. Differential rate of development in Drosophila nasuta.

The rate of development in any organism is an outcome of several causes, both genetic and environmental. Environmental factors such as crowding, food and several others are known to influence the rate of development. The present communication deals with the differential rate of development and the effect of crowding on the rate of development in Drosophila nasuta. The strain of D. nasuta from Biligirirangana Hills has been used for these studies. The eggs of the same age were observed to exhibit differential rate of development in the same environment. In order to assess the effect of crowding on the rate of development the eggs of the same age were collected (± 4 hours) following the procedure of Delcour (1969). The eggs were then placed in 3" x 1" vials with yeast sprayed wheat cream agar media and permitted to develop at a constant temperature of 20°C (± 1°C). The eggs in different vials were distributed and divided into three groups - A, B and C. In the group A each vial has 10 eggs, B group has 50 and C has 100 eggs. The flies were scored each day right from the time of their emergence up to one month. The eclosion of the flies began from 13th day and continued even after 27th day. The effect of crowding has been measured by the number of flies emerged in each group. Thus the number of flies obtained in group A is 98%, while in B and C the number of flies emerged are just 50%. This is due to severe competition that existed in B and C groups. The percentage of flies emerged each day is graphically depicted in the figure 1. Survey of this graph reveals that in the group A the maximum eclosion of flies occurred on the third day followed by a sudden decline while in B and C there is approximately even distribution of emergence followed by a gradual decline.

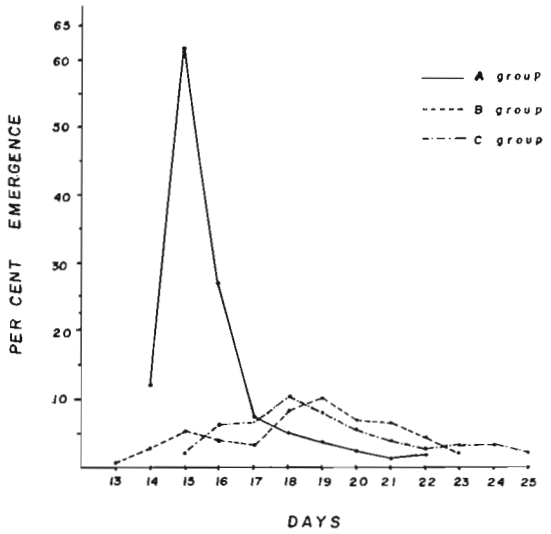


Fig. 1. Graph showing the percentages of flies emerged in the groups A, B and C of Drosophila nasuta.

It is probable that this difference in the pattern of emergence is under the influence of overcrowding.

Acknowledgements: The authors are highly grateful to Dr. M.R. Rajasekarasetty, Professor and Head of the Department of Zoology, University of Mysore, for all his help. One of us (H.A. Ranganath) acknowledge with thanks the award of Mysore University Research Fellowship.

References: Delcour, J. 1969 DIS 44:133.

Ranganath, H.A. and N.B. Krishnamurthy.
University of Mysore, Manasagangotri, India. Preliminary survey of Drosophila in Biligirirangana Hills (Mysore, India).

Biligirirangana Hills lie to the east of Mysore at a distance of 60 miles. The altitude from the base of the hills to the top ranges from 2525 feet to 4500 feet and has provided the cool and pleasant climate for the growth and existance of luxuriant and vast array of flora and fauna. This prompted the authors to undertake a preliminary survey of Drosophila in this terrain. The results of this survey are listed in the Table 1. Of the eleven spots selected for collection, the spot at 4165 feet yielded the richest haul of Drosophila both in number of species and density. Irrespective of the height the whole range is marooned with Drosophila nasuta and Drosophila melarkotliana. However Drosophila rajasekari is restricted to the lower altitudes while D. immigrans, D. mysorensis and D. varietas are maintained only at higher altitudes. It is an interesting fact that the density of Drosophila immigrans gradually ascends with the increase in height. D. nigra and D. jambulina are recorded at only one spot. Peculiarly enough D. melarkotliana alone was found in the traps tied at 3270 feet.