The LacZ expression in flies which genotypes contain YS was registered, but its intensity was weaker than in X/Y. An analogous experiment was performed with YL.

The data obtained lead to the conclusion that the YS but not the YL contains factors that control the expression of male fertility genes. However the possibility must be excluded that the Y-chromosome aneuploidy interrupts in a nonspecific manner the expression of the majority of genes involved in spermatogenesis by disruption of this process *per se*.

To test this assumption we use P[lArB] transposant stocks P103 (described earlier, Omelyanchuk, 1995) and Bg 9.61 (Lis *et al.*, 1983). In P103 individuals, staining was observed in neural ganglia, imaginal disks, ovaries and testes. The Bg 9.61 stock contains insertion of a construct where the LacZ gene is under control of heat-shock promoter. All tissues were stained after heat-shock in this stock.

The relults of testes staining in males containing different sets of sex chromosomes and insertions P103 and Bg 9.61 are shown in Table 4. The expression of LacZ in flies of X/O and X/Y genotypes is similar. So the possibility that the Y chromosome aneuploidy nonspecifically interrupts gene expression in testes may be excluded. And we can conclude that the YS arm contains factors responsible for the transcription of male fertility genes in *D. melanogaster*.

References:; Lis, J.T., *et al.*, 1993, Cell 35:403-410; Omelyanchuk, L., 1995, Rus.J.Genet. 31:1645-1649.

Singh, B.K., and R.S. Fartyal. Cytogenetics Laboratory, Department of Zoology, Kumaun University, Nainital-263002, India. A list of Drosophilid species so far described and recorded from Kumaun region, India.

The great importance of Drosophilidae in genetic and evolutionary studies evoked most of the countries of the world to study the Drosophilid fauna thoroughly. However, the Indian subcontinent still remains a virgin field to be explored.

The Kumaun region, a wild hilly area is located at an elevation of about 6,000 ft. (1828 meters) from the sea level on the north east periphery of the state Uttar Pradesh. This region includes four border districts of the state, Nainital, Almora, Pithoragarh and Udham Singh Nagar.

Although more than 300 species of Drosophilidae have been described and recorded so far from different parts of Indian subcontinent (Gupta, 1981, 1985), a vast area of great ecological interest still awaits exploration. Our knowledge in this field seems scanty in comparison with other countries of the world. Due to the above situation an extensive study of the Drosophilidae of Kumaun region was done, which is almost a virgin field for the above mentioned study. The following table shows the results of surveying studies of Drosophilids of Kumaun region since 1984 to 1996. The present surveying studies shows that the members of the Drosophilidae are fairly distributed in Kumaun region, particularly the members of the subgenus *Drosophila* of the genus *Drosophila*.

List of Drosophilid species so far described and recorded from Kumaun region:

GENUS *Amiota* Loew
Subgenus *Phortica* Schiner
1. *bandes* Singh and Negi, 1992

GENUS *Gitona* Meigen
2. *distigma*, 1830

GENUS *Leucophenga* Mik
3. *bellula* (Bergrowth, 1984)
guttiventris (de meijere, 1908) Syn. ref. Bock, 1979, Aust. J. Zool. Suppl. Ser. 71:25
4. *neolacteusa* Singh and Bhatt, 1988
5. *angulata* sp. nov. (In press)
6. *Okhalkandensis* sp. nov. (In press)
7. *Clubiata* sp. nov. (In press)

GENUS *Paraleucophenga* Hendel
8. *neojavanaii* Singh and Negi, 1992
Lissocephala Malloch
9. *parasiatica* Takada and Momma, 1975

GENUS *Scaptomyza* Hardy
10. *himalayana*, Takada, 1970
11. *quadruangulata* Singh and Dash, 1993

GENUS *Zaprionus* Coquillette
12. *indianus* Gupta, 1970 (for *indiana*)

Subgenus *Dorsilopha* Sturtevant
13. *busckii* Coquillette, 1901

Subgenus *Drosophila* Falle'n Str.
14. *analspina* Singh and Negi, 1995
15. *bishti* Singh and Negi, 1995
16. *bageshwarensis* Sp. nov. (In press)
17. *immigrans* Sturtevant, 1921
18. *lacertosa* Okada, 1956
19. *nainitalensis* Singh and Bhatt, 1988
20. *nasuta* Lamb, 1914
21. *paunii* Singh and Negi, 1989
22. *painaii* Singh and Negi, 1995
23. *repleta* Wollaston, 1858
24. *sulfurigaster* Duda, 1923
25. *trizonata* Okada, 1966
26. *serrata* Sp. nov. (In press)
27. *paramarginata* Sp. nov. (In press)
28. *hexaspina* Sp. nov. (In press)
29. *surangensis* Sp. nov. (In press)
30. *paharpaniensis* Sp. nov. (In press)
31. *khansuensis* Sp. nov. (In press)
32. *elongata* Sp. nov. (In press)

Subgenus *Scaptodrosophila*
33. *coracina* Kikkawa and Peng, 1938
34. *chandraprabhiana* Gupta and Ray-Chaudhury, 1970
35. *hirsuata* Sp. nov. (In press)

Subgenus *Sophophora* Sturtevant
36. *bifasciata* Pomini, 1940
37. *jambulina* Parshad and Paika, 1964
38. *kikkawai* Burla, 1954
39. *malerkotliana* Parshad and Paika, 1964
40. *melanogaster* Meigen, 1830
41. *nepalensis* Okada, 1955
42. *suzukii indicus* Parshad and Paika, 1964
43. *takahashii* Sturtevant, 1927
44. *neobaimaii* Sp. nov. (In press)
45. *neokhaoyama* Sp. nov. (In press)
46. *saraswatii* Sp. nov. (In press)

Acknowledgments: Thanks are due to Prof. T. Okada, Emeritus Professor, Department of Biology, Tokyo Metropolitan University, Tokyo, Japan, for his help in confirming the identification. This work was supported by U.G.C. and D.S.T., New Delhi to B.K.S.

References: Gupta, J.P., 1981, Dros. Inf. Serv. 56: 50-53; Gupta, J.P., 1985, Dros. Inf. Serv. 61: 86-88.

Additional Information:

Drosophila Stocks wild :

1. *Drosophila melanogaster*
2. *Drosophila jambulina*
3. *Drosophila kikkawai*
4. *Drosophila malerkotliana*
5. *Drosophila immigrans*
6. *Drosophila nepalensis*
7. *Zaprionus indianus*

Nongthomba, U., and N.B. Ramachandra. Drosophila Stock Centre, Department of Studies in Zoology, University of Mysore, Manasagangotri, Mysore 570 006, India. Induction and isolation of chromosome specific indirect flight muscle mutations in *Drosophila melanogaster*.

The indirect flight muscles (IFMs) of *Drosophila melanogaster* provide a unique model system to genetically dissect muscle structure and function (Sparrow *et al.*, 1991). These are the bulk of thoracic muscles consisting of two groups, namely dorsal longitudinal muscles (DLMs) which are composed of six fibers from dorsal to ventral and dorso-ventral muscles (DVMs), DVM I, DVM II, DVM III which are formed by 3, 2, and 2 fibers, respectively. The wild type IFM development has been studied (Crossley, 1978; Fernades *et al.*, 1991). *Drosophila* is also a suitable system because mutations that affect IFMs development can readily be isolated and these mutations do not affect much on the viability of the flies. Hence, the genetic analysis of mutants has greatly advanced the understanding of muscle development.

A number of mutations affecting the IFMs have been reported (Crossley, 1978; Lindsley and Zimm, 1992). Most of these mutations are quite general in their expression which affect all the flight muscles. However, the genes involved in the development of IFMs have not been identified systematically. So far no other chromosome 2 specific mutation has been reported which affects the IFMs development except *Mhc* gene. In view of this, investigations are made to identify and characterize genes involved in IFM development which reside on chromosome 2 by using ethyl methanesulfonate (EMS) mutagenesis. Here we report the induction and isolation of 16 new viable mutations on the second chromosome in *Drosophila melanogaster* which affect the indirect flight muscles.

Table 1. Scheme for Ethyl Methanesulfonate Mutagenesis

Generation	Cross		
	Females		Males
Parental	CyO / Tft	x	+ / + (EMS treated)
F_1	CyO / Tft	x	* / #
F_2	* / CyO	x	* / CyO
F_3	* / * males and females scored for abnormal wing and IFMs		* / CyO males and females females retained for stocks

CyO / Tft = Chromosome 2 marker; * = mutagenised chromosome # = CyO 0r Tft male.

The Canton-S strain and Curly Oster/Tufted (*CyO/Tft*) mutant strain of *Drosophila melanogaster* were used as wild type and dominant markers of chromosome 2, respectively (Lindsley and Zimm, 1992). All the stocks were cultured on standard wheat cream agar medium at 24 ± 1°C. 25mM of EMS was administered to the Canton-S male flies following the procedure of Grigliatti (1986). The protocol used for induction and detection of mutation on chromosome 2 is presented in Table 1. Control experiments for EMS mutagenesis were made using X^XY stocks. For muscle analysis, thoracic whole mounts were prepared following the procedure described by Fyrberg *et al.* (1995). Complementation analysis was done by crossing the virgins of each of the newly-isolated mutants reciprocally and analyzing the progenies for the defects in wings and IFMs.

The summary of the EMS mutagenesis on chromosome 2 which affect IFMs phenotypes in *D. melanogaster* is given in Table 2. A total of 3283 mutation induced lines were screened. Of these, 70.5%, 2.2% and 27.3% mutations were lethal, sterile and viable, respectively. Out of the 27.3% viable homozygotes scored, 3% were of wing mutants, of