The application of specific antibodies against gene products that play a role in developmental processes, here spermiogenesis in Drosophila, offers a good opportunity for elucidating the role of particular components involved in that process (cf. Glaetzer 1984; Melzer & Glaetzer, this issue). For example, there are indications that the cytoplasmic RNP particles have a regulatory function (Kloetzel et al., in prep.). This is paralleled by the localization of similar polypeptides on specific Y chromosomal formations known to exert regulatory functions in spermiogenesis.

Supported by DFG grant Gl 104/2-3 and DFG grant (Forschergruppe Gen-Expression) Ba 384/18-4.1. to P.M.K.

References: Glaetzer, K.H. 1984, Mol. Gen. Genet. 196:236-243; Hess, O. 1970, Mol. Gen. Genet. 106:328-346; Schuldt, C. & P.-M. Kloetzel 1985, Devel. Biol., in press.

González, A. and J.L. Ménsua. University of Valencia, Spain. Allelic rates and population sizes of two populations of **D.melanogaster** from cellar and vineyard.

Captures of **D.melanogaster** were carried out simultaneously in two sites, one cellar and one vineyard, both located in Requena (Valencia) in the east of Spain. In a previous study of these two populations, which are approximately four kilometres away, the relative viabilities of heterozygotes and homozygotes, frequency of lethals and D:L relation of third chromosomes were compared (Gonzalez & Mensua 1983). In this study the allelism rates of lethal third chromosomes from vineyard and cellar are presented, both intra- and interpopulations.

The effective size (N_e) of both populations was estimated according to Nei (1968). This formula assumes that the degrees of dominance of lethal genes and the mutation rates to lethals (u) per locus are the same for all loci:

$$\hat{N}_e = (1-\hat{I}_g) / 4(\hat{I}_g U-u) ,$$

where: I_g stands for the allelism rate of lethal genes. Can be estimated by:

$$I_g = \ln(1-I_C Q^2) / (\ln (1-Q)^2) .$$

I_C stands for the allelism rate of lethal chromosomes. Q is the frequency of the lethal chromosomes. U is the total lethal mutation rate; Wallace (1968) estimated this for third chromosome 0.005. u is the lethal mutation rate per locus; values of 10^{-5} and 0.20×10^{-5} were used in our calculation; the former estimate comes from the number of lethal producing loci per second chromosome (n=500); this value is assumed also for the third chromosome. The latter estimate is based on n=2.400 (Judd et al. 1972).

The results of allelism test are shown in Table 1. Low frequencies of allelism are observed in the two populations and between populations. There are no significant differences among the three estimates (5% level). Clusters of allelic lethals did not exist in any of the two populations.

The part of the allelism observed which is caused by chance mutations and the part due to consanguinity were estimated in the vineyard and cellar populations according to Wallace (1966), Table 2.

The allelism due to chance mutations was similar in both populations. The greater frequency of allelism observed in the cellar compared to the vineyard, although the difference between these frequencies is not significant, can be attributed essentially to the greater consanguinity inside the cellar habitat.

Table 1. Allelism tests of lethal third chromosomes from cellar and vineyard populations.

Populations crossed	No. of lethal chromosomes	No. of crosses completed	No. of allelic crosses	Frequency of allelic crosses
cellar x cellar	38	703	6	0.00853±0.00347
vineyard x vineyard	40	780	5	0.00641±0.00286
cellar x vineyard	79	1520	5	0.00329±0.00147

Table 2. Estimated values of allelic frequencies of lethals due to chance mutations and consanguinity.

	I_C	I_N	I_F
Vineyard			
n = 500	0.0064	0.0027	0.0037
n = 2400		0.00057	0.0058
Cellar			
n = 500	0.0085	0.0026	0.0059
n = 2400		0.00055	0.0079

I_C = Allelism frequency of lethal chromosomes; I_N = a.f. due to chance mutations; I_F = due to consanguinity.

Table 3. Estimates of the effective populations sizes.

Population	Cellar	Vineyard
Q	0.2452	0.2759
I_c	0.0085	0.0064
I_g	0.0065	0.0047
$N_e(u=10^{-5})$	11000	18500
$N_e(u=0.2 \times 10^{-5})$	8000	11500

The estimates of effective sizes are presented in Table 3. Greater values were obtained for the vineyard population than for the cellar population.

Differences in the allelic rates of cellar and vineyard populations do not exist although the distance between these populations is relatively great. This fact raises the possibility that these are two sub-populations of the same population, and that owing to the greater consanguinity the cellar population has a smaller effective size than the vineyard population.

References: Gonzalez, A. & J.L. Mensua 1983, DIS 59:43-44; Judd, B.H., H.W. Shen & T.C. Kaufman 1972, Genet. 71:139-156; Nei, M. 1968, P.N.A.S. 60:517-524; Wallace, B., The American Naturalist 100:565-578; Wallace, B. 1968, Genet. 60:389-393.

Gupta, J.P. Banaras Hindu University, Varanasi, India. Further additions to the list of drosophilid species from India.

The present communication is in continuation of the previous report appearing in 1981 (DIS 56:50) concerning the drosophilid species described and recorded from India. In the present list an attempt has been made to include all those species recorded thereafter and also the changes which have been made recently regarding the taxonomic status of certain species.

Genus **Acletoxenus** Von Frauenfeld
1. **indicus** Malloch, 1929

Genus **Amiota** Loew
2. **apodemata** Gupta and Panigrahy (submitted)
3. **creberii** Singh, 1976
4. **pictus** (Coquillett, 1904)

Genus **Cacoxenus** Loew
5. **perspicax** (Knab, 1914)
   Cacoxenus punctatus Duda, 1924
   Syn. Ref. McAlpine, 1968, Canad. Entomol. 100(5):514.

Genus **Chymomyza** Czerny
6. **pararufithorax** Vaidya and Godbole, 1973
   vaidyai Okada 1976, Junior Syn. Ref. Okada, 1981, Kontyu 49:171.

Genus **Hypselothyrea** de Meijere
7. **aptera** Papp, 1979
8. **fascipennis** de Meijere, 1906

Genus **Leucophenga** Mik
9. **pentapunctata** Panigrahy and Gupta, 1982
10. **abbreviata** (de Meijere, 1911)
11. **albofasciata** (Macquart, 1851)
   albicincta (de Meijere, 1908)
   Syn. Ref. Bock, 1979, Aust. J. Zool. Suppl. Ser. 71:4.
12. **angusta** Okada, 1956
13. **bellula** (Bergroth, 1894)
   guttiventris (de Meijere, 1908), Syn. Ref. Bock, 1979, Aust. J. Zool. Suppl. Ser. 71:25.
14. **insulana** (Schiner, 1868)
   New Comb. for **D.insulana** Schiner, Ref. Okada, 1977, Cat. Dipt. Orient. Reg. III:347.
15. **pectinata** Okada, 1968
16. **regina** Malloch, 1935
17. **rimbickana** Singh and Gupta, 1981
18. **globosa** Okada, 1965

Genus **Nesiodrosophila** Wheeler & Takada
19. **lindae** Wheeler and Takada, 1964
   pleurostriata Singh and Gupta, 1981
   Syn. Ref. Okada, 1984, Kontyu, 51(1):32.

Genus **Pararhinoleucophenga** Duda
20. **maura** (de Meijere, 1911)

Genus **Phorticella** Duda
21. **flavipennis** (Duda, 1929)
   D.bicolovittata Singh, 1974, Syn. Ref. Wheeler, 1981-83, Add. Cat. World's Drosophilidae:15.

   Zaprionus striata Nirmala Sajjan and Krishnamurthy, 1975. Syn. Ref. Wheeler, 1981-83, Add. Cat. World's Drosophilidae:15.