Trippa, G., A. Lovere, A. Micheli and I. Miola. Istituto di Genetica, Università di Roma, Italia. Frequencies of SD chromosomes in natural populations of Drosophila melanogaster.

Samples of wild flies of Drosophila melanogaster from eight natural populations were collected in Puglia (Castellaneta, Otranto and Corato), Calabria (Sambiase) and Sicily (Ranna, Pedalino, Vittoria and Archi) during September-October 1971. Males, with $+_I/+_{II}$ constitution for the second chromosomes, were individually mated with virgin bw;st females from a line selected for its high degree of sensitivity to SD^{R-1} chromosome (Nicoletti et al., Atti A.G.I. 14:29, 1969).

From the F_1 progeny of each cross, three males were collected and mated individually to bw;st females; from the F_2 progeny of only one cross, three males of the same constitution $+_I$/bw;st/st or $+_{II}$/bw;st/st were collected and mated to bw;st females. The k values (number of +/bw;st/st individuals/total progeny) were calculated in the F_3 generation.

The k values varied between 0.5 and 1.0, depending on whether the tested second chromosome behaved as a normal or as an SD chromosome. The results are presented in Table 1.

Table 1. The distribution and the properties of the SD-carrying chromosomes found in eight natural populations.

Populations	Number of tested chromosomes	$\bar{k}$*	Absolute frequency of SD chromosomes with k values between .65-.75	.75-.85	.85-1.00	TOTAL	Percent frequency of the SD chromosomes
Castellaneta	235	.52 ± .003	1	1		2	0.85
Otranto	221	.53 ± .003	3	1	5	9	4.07
Corato	162	.52 ± .004	6	3		9	5.56
Vittoria	10	.55 ± .017			1	1	10.00
Ranna	279	.52 ± .003	4	5	2	11	3.94
Archi	268	.51 ± .003	12	1		13	4.85
Pedalino	121	.52 ± .005	1	1		2	1.65
Sambiase	284	.52 ± .003	8	9	5	22	7.75

* the k values referring to the following progenies: 1) with less than 40 individuals; 2) with a k lower than 0.35; 3) with a k higher than 0.65 have not been computed while estimating the normal mean k.

As it can be seen, SD-carrying chromosomes have been found in all the eight populations examined. Though a SD chromosome would be expected to attain high frequencies in few generations, it is a common observation that this is not the case. There can be many ways by which natural selection might balance the effects of the behaviour of SD, such as a reduction of the reproductive fitness of SD heterozygous males (Nicoletti et al., Accad. Naz. Lincei XLII: 383, 1967) or the association of SD to lethal genes, or the spontaneous appearance of insensitive SD^+ alleles.

SD chromosomes with inversions (Sandler et al., Genetics 44:233, 1959' Hiraizumi, and Nakazima, DIS 40:72, 1965) as well as without inversions (Nicoletti and Trippa, Atti AGI 12: 361, 1967) have been identified by means of salivary gland chromosomes examination. The present material has not yet been examined from this point of view.

Counce, S.J. Duke University, Durham, North Carolina. Variation in germ cell number and distribution in primitive dipterans.

In dipterans, germ cells are derived from cells which bud off at the posterior pole during late cleavage or early blastoderm stages. The number of primary pole cells may be constant, e.g. one in Miastor, two in Sciara, or vary, as in Drosophila, where three or more primary cells form (see Sonnenblick in BIOLOGY OF DROSOPHILA). These pole cells continue to divide, and in the first group, the number of these divisions is usually constant also, producing a predictable number of definitive pole cells. Later, during gonad differentiation, the germ cells may also divide a set number of times. For example, in Miastor, there are three divisions of the pole cells (8 definitive pole cells) which, in the gonads, divide three more times, producing 64 oogonia.