Bocquet, Ch. and L. Tsacas, Gif-sur-Yvette, France. Tests of interspecific crosses between different stocks of Drosophila simulans and Drosophila melanogaster.

The following stocks have been used: Drama (Greece) Florida and St. Louis (U.S.A.), Narbonne (France) for D. simulans, and Gif, Banyuls, Roscoff and Colma (France) for D. melanogaster.

Every successful cross between ♂ melanogaster x ♀ simulans has given at F_1 steriles ♀♀. These resul confirm those of Sturtevant (1920).

In the direction ♀ simulans x ♂ melanogaster, the comportment of the different stocks is no identical, the resulting hybrids staying always sterile. The results obtained are summed up in the following table:

♀	x	♂	Offspring ♀	Offspring ♂	%	♀	x	♂	Offspring ♀	Offspring ♂	%
Drama	x	Gif	-	+	0	Narbonne	x	Gif	-	+	0
"	x	Banyuls	-	-	-	"	x	Banyuls	-	-	-
"	x	Roscoff	-	+	0	"	x	Roscoff	-	+	0
"	x	Colmar	-	+	0	"	x	Colmar	1	87	1
Florida	x	Gif	204	220	48	St Louis	x	Gif	3	81	4
"	x	Banyuls	257	398	46	"	x	Banyuls	-	+	0
"	x	Roscoff	94	217	30	"	x	Roscoff	-	+	0
"	x	Colmar	41	89	32	"	x	Colmar	-	-	-

It appears from this table that the Drama stock has given an exclusively male offspring. The stocks Narbonne and St. Louis have sometimes given some ♀♀ in supplement of the ♂♂, a fact which corresponds with Sturtevant's results. The Florida stock, against all expectation, has regularly given ♂♂ and ♀♀, the percentage varying from 32 to 48%, according to the stocks of melanogaster. The anomalous comportment of this stock urged us to pursue its study; these researches are underway.

The results summed up above were obtained with the technical collaboration of Mmes Louis, Devaux, Frey and Lobel.

Roberts, Paul A. Oregon State University, Corvallis, Oregon. Df(1)260-1 is not a terminal deficiency.

Recent editions of at least two genetics textbooks show sketches of a supposed terminal deficiency of the X chromosome of D. melanogaster taken from the original report of Demerec and Hoover (J. Heredity 27:206, 1936). Most radiation geneticists would agree with Muller (J. Genetics 40:1, 1940) that healing of broken chromosome ends occurs rarely, if ever. Reexamination of Df(1)260-1 has revealed that the X is indeed deficient in bands extending from the tip to 1B4 as described in the original report. However, a number of nuclei from two different larvae heterozygous for the deficiency show several faint bands capping the deficient chromosome.

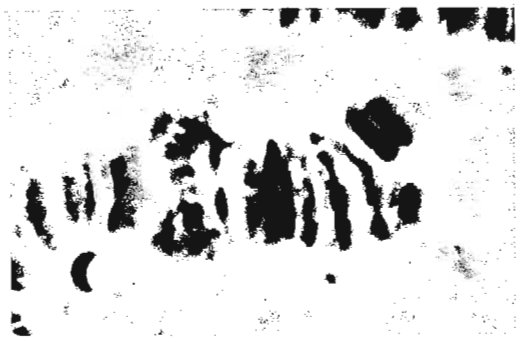

Fig. 1. Tip of X chromosome from Df(1)260-1 heterozygote.

Figure 1 shows that the most distal bands that are definitely common to both the normal and the deficient chromosome are 1B7-8. Proceeding distally, one faint band (1B5 or 6) can be seen in the normal X (possibly in the deficient X) before the very dark bands 1B1-4 which are absent from the deficient X. The tip of the deficient X carries three faint bands which are not synapsed with and do not resemble any bands at the tip of the normal X. The most likely explanation for the difference between this and the original report is that the faint bands capping the deficient X were overlooked in the original study. Nevertheless, the interesting possibility that the deficient X chromosome was as described in 1936 but has acquired additional material by translocation or transposition in the intervening 20 years cannot be excluded.

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