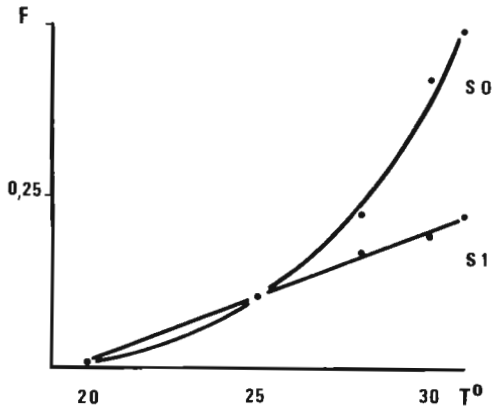
Periquet, G. Faculté des Sciences, Paris France. The maintenance of a semi-sterility factor in wild and experimental populations of D. melanogaster.

Penetrance and expressivity of ag character (see New Mutants) were investigated for their temperature dependency.

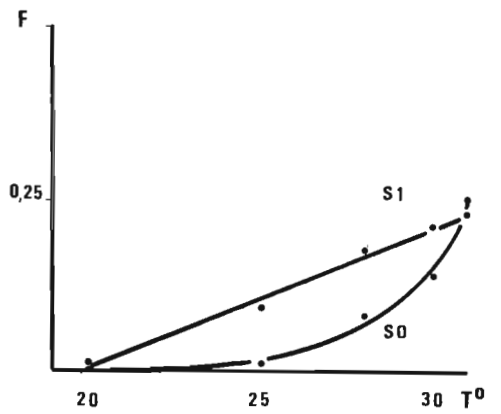
Six populations isolated from the same mutant strain were placed at different temperatures ranging from 20°C to 31°C (maximal non-lethal temperature for the strain). In every population there were flies with two normal gonads (S_2), one normal gonad (S_1) and none (S_0). The relative frequency of these types measured after one generation are given in the following table. (Curves No. 1 and No. 2).

	FEMALES					MALES				
T°	No. observed	S_1	S_0	Pene-trance	Expres-sivity	No. observed	S_1	S_2	Pene-trance	Expres-sivity
20°	210	0.014	0.014	0.028	0.50	250	0.024	0.004	0.028	0.14
25°	150	0.107	0.107	0.214	0.50	150	0.093	0.013	0.106	0.13
28°	65	0.169	0.231	0.400	0.56	61	0.181	0.082	0.262	0.31
30°	125	0.184	0.424	0.608	0.70	126	0.214	0.143	0.358	0.40
31°	217	0.221	0.489	0.710	0.69	266	0.233	0.252	0.485	0.52

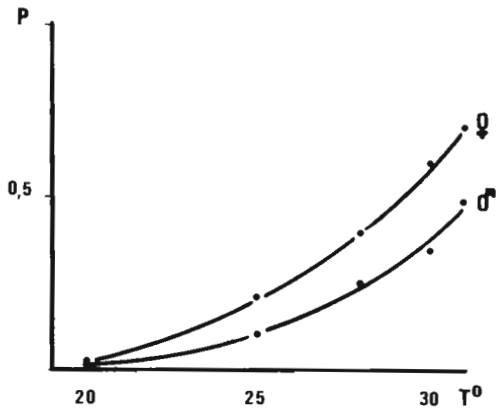
One may see that in both sexes, penetrance and expressivity increase with the temperature of development. They are more important in females than in males (curves No. 3 and No. 4)



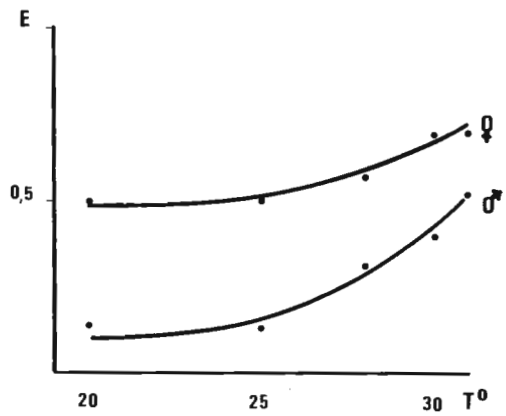
(1)



(2)



(3)



(4)

This character was seen to persist in a natural population during several years. As 20°C is nearly the environmental temperature of wild populations, the fact that both penetrance and expressivity are very weak at 20°C may partly explain the maintenance of the character.