Novitski, E., and E. Ehrlich, University of Oregon, Eugene, Oregon. Suppression of SD by Y;autosome translocations.

Modification of the k value of SD by rearrangements is well known. In order to see if there is any relationship between the position of the breakpoint of a translocation and its degree of modification, we have, over the past half dozen years, induced a number of translocations specifically for this purpose. Four of the translocations involve an SD-72 second chromosome; four others are Y-3 translocations. The series T(Y;2) A, B, C and E are included in this list although they are of ancient origin, having been induced by Dobzhansky in 1929 and are therefore of unspecified behavior with respect to SD. The six marked by an asterisk were induced in lines carefully selected for high k value.

Positions of breakpoints of Y-autosome translocations and the k values given by SD in combination with them

Translocation	Y-Chromosome	Breakpoint	Relative Position	k Value
T(Y;2),SD,EM106*	$y^{+}YB^{S}$	31D	middle of 2L	.555
T(Y;2),11-11N	$sc^{8}.Y$	34A	middle of 2L	.176
T(Y;2),12-4A	$sc^{8}.Y$	34A	middle of 2L	.116
T(Y;2),E	Normal	36D	near centromere 2L	.980
T(Y;2),11-26A	$sc^{8}.Y$	36F	near centromere 2L	.237
T(Y;2),SD,j-4*	$y^{+}YB^{S}$	37B	near centromere 2L	.337
T(Y;2),A	Normal	41A	near centromere 2R	.966
T(Y;2)B	Normal	41A	near centromere 2R	.337
T(Y;2)C	Normal	41A	near centromere 2R	.895
T(Y;2),SD,EM-135*	$y^{+}YB^{S}$	42A	near centromere 2R	.132
T(Y;2),SD, CB-1c*	Normal	44D	near centromere 2R	.456
T(Y;2),1	Normal	56E	end of 2R	.491
T(Y;2),7	Normal	57D	end of 2R	.583
T(Y;2),16	Normal	59F	end of 2R	.488
T(Y;3),12-4B	$sc^{8}.Y$	78F	near centromere 3L	.533
T(Y;3),12-26M	$sc^{8}.Y$	83D	near centromere 3R	.504
T(Y;3),j-3*	$y^{+}YB^{S}$	91A	middle of 3R	.881
T(Y;3),j-6*	$y^{+}YB^{S}$	91C	middle of 3R	.672

Several points seem clear from the table. In this sample, there appears to be no relationship between the degree of modification of the k value and the position of the breakpoint; this is emphasized by the fact that three of the four Y;3 translocations also suppress SD markedly. It would appear that a more general effect than simple pairing of homologs must be invoked.

Hughes, M. and M.P. Kambysellis. Harvard University, Cambridge, Massachusetts. Effects of ecdysone on RNA synthesis.

When salivary glands from middle third instar larvae of D. hydei are incubated in vitro with α-ecdysone, a series of changes in the chromosomal puffing pattern are set in motion. These changes are identical to those that occur in normal development during the six hours before puparium formation (Berendes, H.D. 1967, Chromosome 22: 274-293). Using animals which had been raised sterilly (Doane, W.W. 1967, Methods in Developmental Biology ed. Wilt, F.H. and Wessells, N.K. pub. Thomas Y. Crowell Co. pp. 219-245), we examined the effect of α-ecdysone on RNA synthesis in these glands by pulse labeling with H^{3}-uridine and analyzed the RNA on sucrose gradiants. We found that glands incubated in Schneider's medium (Schneider, I. 1964, J. Exp. Zool. 156: 91-104) containing 4µg/ml of α-ecdysone showed a rapid and specific decline in the rate of ribosomal RNA synthesis as compared to glands incubated in Schneider's medium alone.

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