Fig. 1. SEM of transformed female. Right: lateral thorax showing sternopleural bristles (SP) above first and second legs. Top left: Detail of prothoracic sternopleurals. Bottom left: Apical and pre-apical bristles on distal tibia.

Fig. 2. SEM of dorsal surface of transformed fly showing extra notum and scutellum (arrowed) between scutellum and first abdominal segment.

Flies of the genotype trx/Df(3)red, produced by crossing trx/trx ♀♀ with Df(3)red/+ ♂♂ always show the transformation, and with high expressivity. This is suggestive of this deficiency including the trx locus, and is consistent with the map position obtained by recombinational analysis, red mapping at 53.6 cMs.

It is interesting that the mutant tetrapter, which is described as having at least some phenotypic characteristics in common with trx, was also mapped to a similar region of the genome (Lindsley and Grell 1968).

References: Bownes, M. and M. Seiler 1977, J. Exp. Zool. 199:9-24; Capdevila, M.P. and A. Garcia-Bellido 1978, Wilhelm Roux. Archiv. 185(2):105-126; Lindsley, D.L. and E.H. Grell 1968, Carnegie Inst. Wash. Publ. 627.

Itoh, K. St. Mariana University School of Medicine, Kawasaki, Japan. Lack of chromosomal polymorphism and low frequencies of unique inversions in D. simulans.

Four hundred and forty-nine wild inseminated females of D. simulans were collected in a month from August to September of 1975, on the campus of Kyushu University, Fukuoaka, Japan. They were individually kept in vials to establish iso-female lines. Salivary gland chromosomes of one larva from each line were cytologically examined within half a year to find any changes in gene sequences. Although polymorphic inversions were not detected even in a heterozygous condition, three unique inversions, one for each of the X, 2nd and 3rd chromosomes, were found. Since D. simulans has similar banding patterns of D. melanogaster, except for a large inversion in 3R, Bridges' map of D. melanogaster was used for the location of their breakpoints. They were:

In(1), 15A; 18D
In(2LR), 24F; 57F
in(3R), 87B; 90C

It is not certain whether these inversions had been carried by the original wild females or were newly produced during the maintenance of lines in the laboratory. At any rate, the frequencies of unique inversions in D. simulans can be calculated as 1/448 = 0.00223 for the X chromosome (224 female larvae were tested) and 2/1796 = 0.00111 for the major autosome. These low frequencies seem to be consistent with the lack of polymorphism in this species.