



## THE RELATION OF THE QUANTITY AND QUALITY OF CHROMOSOMAL MATERIAL AND THE SIZE OF THE CELLS IN DROSOPHILA MELANOGASTER

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(Abstract)

Each ectodermal cell of the wing of *Drosophila melanogaster* possesses a single hair. Thus the number of cells within a given area may be counted easily and comparative data as to their size may be obtained. Data obtained by the authors as well as those previously obtained by Dobzhansky (1929) from flies of various chromosomal constitutions are given below:

	Average Number of cells in .0036 sq. mm.	Relative size of cells
Normal females	37.98 ± .36	1.000
Triploid IV females	24.86 ± .66	1.527
XXY females (stock No. 1)	27.68 ± .87	1.372
XXY females (stock No. 2)	28.57 ± 1.01	1.329
XXY females (Dobzhansky)		.990
Triploid females (Dobzhansky)		1.366
Haploid IV (Dobzhansky)		.771
Haploid IV (Dobzhansky)		.889

It will be noted that the cells were approximately 50 per cent larger than normal in the stock having in addition to the normal chromosomal content one of the small fourth chromosomes, and that the possession of a Y chromosome increased the cell size about one-third. Dobzhansky's flies

with an entire extra set of chromosomes had cells but a little larger than those of our  $\overline{XXY}$  stock and not as large as those of our Triploid IV stock. In his stock the presence of a Y chromosome made no difference. These discrepancies between the two sets of results are perhaps explainable by assuming the presence of genes influencing cell size and differing in the various stocks used.

Dobshansky, T. 1929. The influence of the quantity and quality of chromosome material on the size of the cells in *Drosophila melanogaster*. Arch. Entwickl. 115.

