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autosomal centromeres.

The distinction between weak vs. strong centromeres of the X chromosome depends upon the elimination of dicentric chromosomes from the meiotic products with the consequent production of a nullo-X egg, vs. the delivery of fractured

pieces of a dicentric to the products, followed by the lethality of those products. Such a test is not so simply carried out on one of the major autosomes since the first possibility (nullo-autosome) is not as easily detectable, but would ordinarily appear as a dominant lethal.

Males carrying compounds for an autosome produce a sizable number of sperm with both components, i.e., are diplo-autosome, and tests suggest that about 25%, the number expected if the compounds for the two arms segregate at random, are of this type. This makes it possible to set up a test for the production of nullo-autosome eggs by a female heterozygous for an inversion, since the absence of the autosome in the egg will be compensated for by its presence in duplicate from the male.

In(2R)bw<sup>VDe2</sup> is a large inversion running from the heterochromatin of 2R to the brown locus, and therefore should allow a small number of four strand doubles: Tests of some 48 females heterozygous for this inversion and b vg gave 8.7% crossing over between b and the inversion, and 0.6% (31/5391) detectable doubles within the inversion. Since 3/8 of all chromosomes recovered from double exchange tetrads are double crossovers, and 2/8 from doubles are nullo-chromosome, the ratio of doubles to nullos should be 3:2 (discounting the small number of doubles undetected because they occurred on the same side of vg). The expected number of nullo-autosome eggs is then 0.6% x 2/3 or 0.4%. If only 1/4 are recoverable, because only 1/4 of the sperm are diplo-autosome, the expected frequency of exceptions is about 0.1%.

Since matings of diploid females to males with compound autosomes usually produce no offspring, an estimate of the productivity of the females must be made by making a parallel run of such females to ordinary diploid males. Sixteen females, handled similarly to the experimental females, produced 2391 progeny, or 149.4 per female. 780 females mated to compound second chromosome males, produced only 33 progeny carrying the two compounds from the male. The expected number of progeny from this number of females is 116,561, so that the calculated frequency of exceptions 33/116,561 or .028%. This is about one quarter of the number expected, a fraction about the same as some of the strong X centromeres previously tested. From this, we can reasonably conclude that autosomal centromeres are strong.

With a suitable translocation-inversion combination, where the X (or Y) centromere is attached to a substantial part of an autosomal arm, with the corresponding autosomal segment of the homolog inverted, it should be possible to measure the relative strengths of the X, Y and autosomal centromeres.

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 $\alpha$ -amylases in a population of *D.*  
*melanogaster* from Dahomey.

Doane (J. Exp. Zool. 164:363, 1967) described isoenzymes of  $\alpha$ -amylase in *Drosophila melanogaster*. They were designated amylase 1, 2, 3, 4 and 6, 1 being the fastest anodically migrating enzyme and 6 the slowest.

In a population collected in March 1972 in Dahomey (West Africa) a further band was found between bands 4 and 6. This band was designated band 5.

By inbreeding, stocks were obtained with band 5 alone, (presumably homozygous Amy<sup>5</sup>), or in combination with band 6 (homozygous Amy<sup>5,6</sup>). Amy<sup>5</sup> and Amy<sup>5,6</sup> behave in crosses as alleles

amylase phenotypes	1	5	1,4	1,5	1,6	3,6	4,6	5,6	1,3,6	1,4,6	1,5,6	1,4,5	3,4,6	3,5,6	4,5,6	1,4,5,6	TOTAL
number of flies found	1	5	3	8	2	15	9	10	9	5	3	2	2	15	10	1	100

of Amy<sup>1,4</sup> of Doane. In population cages started with the Dahomey flies a larger number of Amy phenotypes was found than in any other population (e.g. McCune, DIS 44:77, 1969). The frequency of band 5 is rather high, band 2 has not been found (see Table).