

Hochman, Benjamin. The University of Tennessee. A note on the salivary chromosome 4 in *D. melanogaster*.*

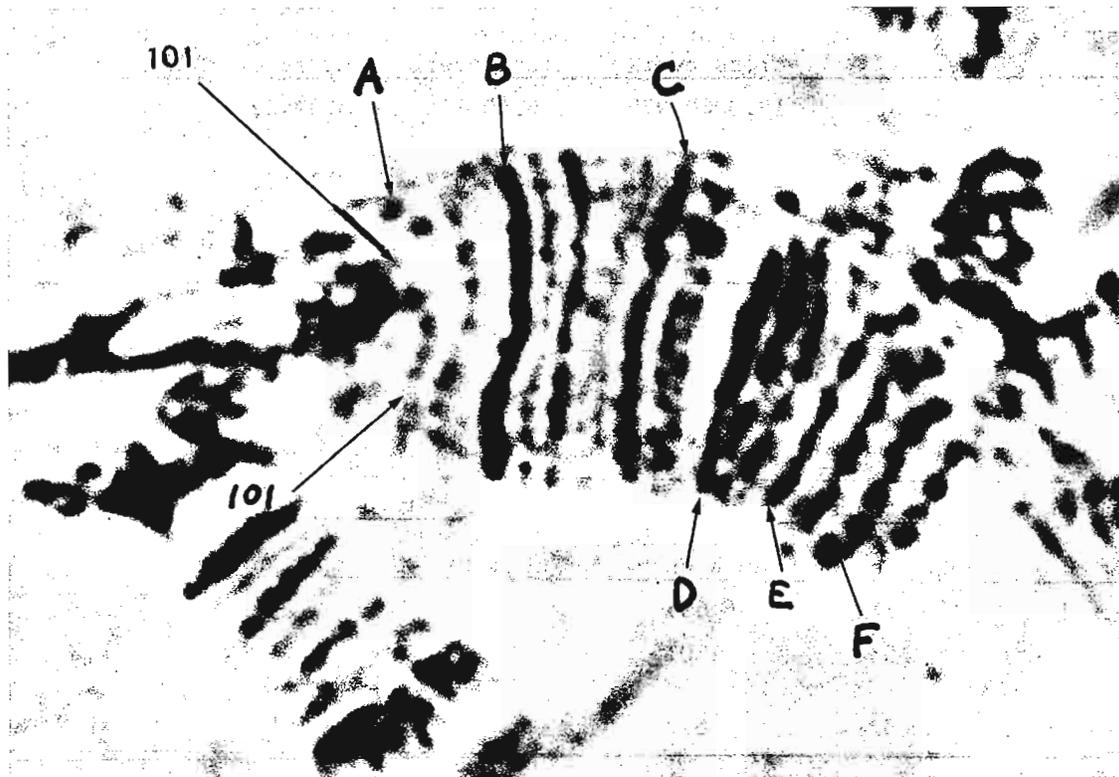
are deficiencies and, as expected, the salivary chromosomes of some of them lack one or more of the bands found on a normal fourth chromosome. Through the use of these aberrations it is hoped to eventually map most or all of the lethal loci, as well as the visibles, that have been detected on chromosome 4.

While the literature contains a few drawings of the fourth chromosome as it appears in salivary gland cells (e.g. Bridges, 1935 and Slizynski, 1944), I have been unable to locate a published photomicrograph of 4 that bears sufficient resemblance either to the aforementioned drawings or to what can be observed with the microscope. Utilizing (with some modifications) the method of Dr. J. Schultz as described by Nicoletti (DIS 33:181-182), I have obtained preparations that exhibit the banding details shown on the accompanying photograph.

If this picture is compared with the commonly reproduced Bridges' drawing (J. Heredity 26:60-64) a close agreement in banding pattern is readily discerned. Most of the darker lines in Slizynski's drawing (J. Heredity 35:322-324) of a greatly stretched fourth chromosome can also be matched to those appearing in the photograph.

In the illustration shown nearly all of the right arm of 4 can be seen extending from the chromocenter (at the left). (The proximal region of another chromosome is also in view). Additional chromocentric material may be observed adhering to the distal part of 4R (right, top). Unless the squash pressure is adequate both ends of 4R may remain embedded in the chromocenter giving the chromosome a C - shape and making cytological work virtually impossible. Although the left arm of 4 is not visible in this cell, it is seen frequently in our preparations. Its general appearance is much like that noted by Slizynski.

The arrows (A-F) superimposed on the photograph indicate the doublet bands that mark the beginning of each of the six subdivisions of the 102 division namely 102A1,2, B1,2...F1,2. The two arrows labeled 101 point to the last dark band in division 101 (F1,2 ?). A closer inspection of the figure reveals that one of the homologues lacks 102A1,2. The genotype of the dissected larva was M(4)^{63a}/ci^D. This Minute is viable over ci^D and it also uncovers ci.



Legend: The moderately stretched right arm of salivary chromosome 4 from a larva with the genotype M(4)^{63a}/ci^D.

One may tentatively conclude that the Minute and cubitus interruptus (recessive) loci are in or near band 102A1,2. Dr. M. J. Fahmy, in whose laboratory M(4)^{63a} was discovered, reports that the chromosome in question is deficient for bands 101 F6,7 and 102A1,2 (pers. comm.).

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