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Comparison of puffing patterns in proximal and distal parts of the salivary gland in D. melanogaster.

The salivary gland of Drosophila consists of two parts: the distal part where the mucoprotein secretion is synthesized and the proximal part where this secretion is absent (Berendes, 1965; von Gaudecker, 1972).

To study the puffs of the proximal part of the salivary glands, larvae of the Batumi-L stock were used at an age of 110, 115 and 118 hours after oviposition. The methods used were described earlier (Zhimulev, in press). Figure 1 is a diagrammatic representation of the differences in puffing patterns observed between the proximal and distal parts. Series of photographs also demonstrate these differences (Figures 2 and 3). A single specific puff ($61F_3$) was found in the proximal part (Figure 2) and only one very

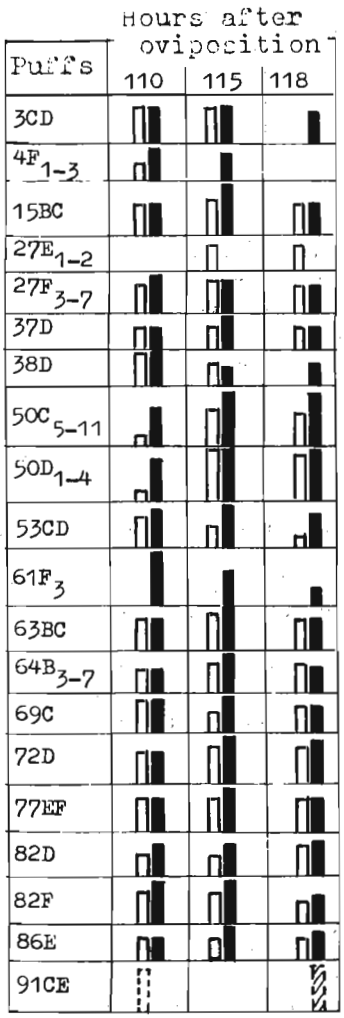

Figure 1. Histogram showing puffing differences between proximal and distal parts of the salivary gland. Height of bars gives the average puff size; black bars represent proximal part, white bars distal part, dotted bars irregularly occurring puffs.

small puff ($27E_{1-2}$) was observed in the distal part. Furthermore 18 puffs differ in size and in the time of appearance Figures 1-3). In the other 294 regions puffing pattern of the proximal part was similar to the one observed in the distal part of larvae at 110-118 hours (Zhimulev, in press).

Thus, during the last hours of larval development, when mucoprotein secretion appears in the cells, no specialized puffing was found in the distal part as compared with the proximal one.

References: Berendes, H.D. 1965, Chromosoma 17:35-77; von Gaudecker, B. 1972, Z. Zellforsch. 127:50-86.

See Figure 3 on next page.

Figure 2. Puffing differences between two parts of gland. a) proximal part, 110 hrs. b) proximal part, 115 hrs. c) distal part, 110 hrs.

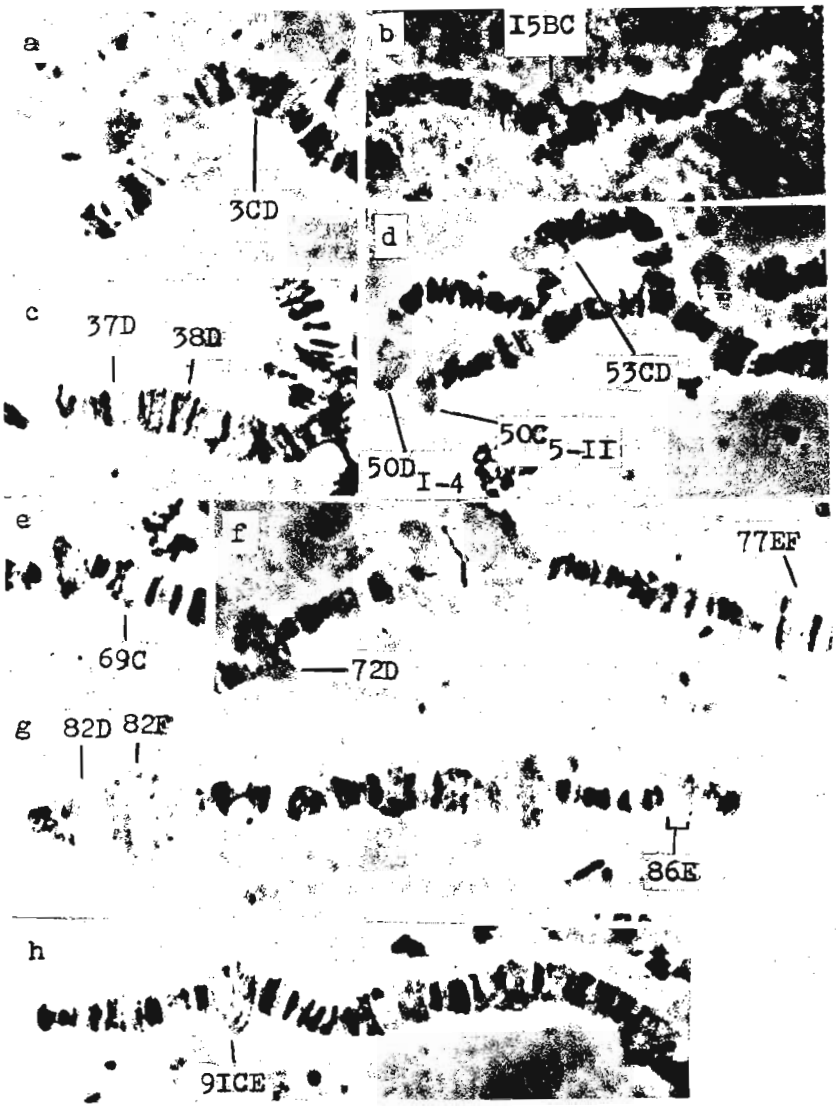

Figure 3. Some puffs of the proximal part differing in behaviour from the puffs of the distal part.
a, h - 118 hrs.
b, c, d, e, f, g - 115 hrs.

McDonald, J. Monash University, Clayton, Victoria, Australia. Selection for high and low percentage vibration in the courtship of D. melanogaster.

Earlier experiments by Crossley (1964) showed that there were individual differences in the male wing vibration component of courtship in D. melanogaster. The possible genetic basis of these differences is being investigated by selection for high and low percentage vibration in Oregon-R males, (based on the selection scheme of Manning (1963)). After four generations of selection, the high and low percentage vibration lines differ considerably from the control, in the expected directions, suggesting a genetic component in the control of this behaviour. The effects and significance of altered percentage vibration on mating success, courtship, and general activity are being investigated in both males and females of the lines as selection proceeds.

References: Crossley, S. 1964, D.Phil. thesis, University of Oxford; Manning, A. 1963, Anim. Behav. 11:116-20.