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DEOXY-GLUCOSE MAPS MOVEMENT-SPECIFIC NERVOUS ACTIVITY IN VISUAL GANGLION OF *DROSOPHILA*

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The deoxy-glucose method of "activity staining" has been used previously to map nervous activity in various areas of the vertebrate brain under various conditions of stimulation.

In a series of pilot experiments adult *Drosophila* were fed with tritium-labeled deoxy-glucose prior to visual stimulation.

A flickering disk of light and a moving grating were presented to the left and right eyes, respectively. Autoradiography reveals enhanced labeling solely in that part of the second optic ganglion (medulla) whose visual field was stimulated by movement.

Our results indicate that (a) the deoxy-glucose method may, successfully be applied to insect nervous systems, (b) there is distinct movement-specific activity in the medulla of *Drosophila* and (c) non-spiking cells such as receptors or monopolar cells in the lamina may be refractory to the method or require qualitatively different treatment.

We suggest that the movement-specific label in the medulla may perhaps originate from columnar cells corresponding to "elementary movement detectors" which have been postulated on the basis of behavioural experiments with *Drosophila*.