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FERTILIZATION IN *D. MELANOGASTER* AND *D. VIRILIS*

P. E. Hildreth and J. C. Lucchesi

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Early findings by Huettner (J. Morph. 39:249, 1924) concerning the occurrence of polyspermy in D. melanogaster have been supported by Counce. (DIS 33:127, 1959) and extended to eight additional species, including D. virilis; this author found an average of 5 to 6 spermatozoa in D. melanogaster and 50 to 100 spermatozoa in D. virilis eggs.

Using the Feulgen whole-mount procedure of von Borstel and Lindsley (Stain Technol. 34:23, 1959), preliminary work on D. melanogaster eggs failed to show polyspermy (Hildreth, unpublished); therefore further cytological examination of D. melanogaster and also D. virilis eggs was conducted. In D. Melanogaster, 96 eggs were found in meiotic stages; among these 92 had a single sperm, 1 had two sperms, and 3 had no visible sperm. This is consistent with the observations of Hinton and Lucchesi (Genetics 45:87, 1960). Among 127 meiotic eggs of D. virilis, 87 eggs had a single sperm, no sperm was visible in 40 eggs, and no case of polyspermy was observed.

The reasons for the differences between our results and those of Huettner and Counce are not known. Autoradiographic studies of fertilization in D. virilis are now being conducted in an attempt to obtain further information on the question of polyspermy. (This work was carried out under the auspices of the U.S. Atomic Energy Commission.)