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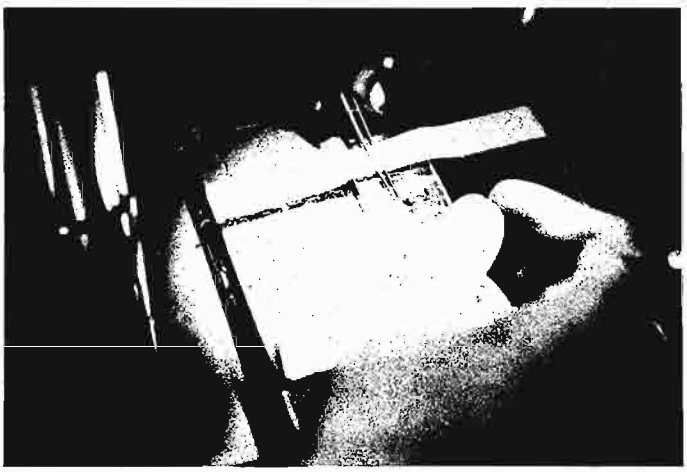
A microinjection technique for Drosophila.

A modified system for microinjection of larvae and adult Drosophila has been devised from the description of R. Félix and V. M. Salceda (D.I.S. 39: 135). The needle is a 3-5 millimeter long segment of - Santotube Q (Prager, D. J. "Constant volume, self-filling nanoliter - pipette". Science, Vol. 147, N° 3658: 607-608). A broken thermometer calibrated with a syringe of 50 microliters is used to measure the capacity of the needle which may be used several times ensuring the delivery of a constant volume of liquid. The volume contained in each self-filling needle depends on its length and oscillates from 0.5 to 1.0 microliters. The cohesion forces between the solution and the inner surface of the needle is considerably high due to the small amount of liquid to be injected, and requires an air compressor machine connected through plastic tubing to the syringe for such a purpose. A treadle actioned with the foot starts on the compressor delivering a 0.5 kg/cm^2 pressure to the syringe. Working under the microscope the needle is retired from the specimen as soon as the liquid is expelled from the needle. Following the procedure outlined above adults are injected dorsally between the fifth and sixth abdominal tergite with a survival of 80-90%.



Legend: The specimen is fixed with a forceps while the microinjection is applied by means of a compressor machine connected by plastic tubing to the microsyringe.

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Control of a gram negative bacterium in Drosophila cultures.

It was found that a rod shaped bacterium which colors the food brown and is commonly found in cultures of Drosophila melanogaster could be controlled or eliminated in stock cultures by adding Zephiran (a brand of refined benzalkonium chloride) to the nutrient medium at the time the propionic acid is added and rapidly transferring the flies. Usually 7 to 10 daily transfers (2 ♂♂ and 2 ♀♀ per vial) were enough at the concentration used to complete the elimination of the bacterium. Two mls. of the concentrated (17%) solution of Zephiran is used for 1000 mls. of H_2O in the nutrient medium. The nutrient medium in addition consists of agar, yeast, cornmeal, sugar, and propionic acid. A few tests were run on the production of flies allowed to develop in 3 different concentrations and there was no detectable lowering of production with increasing amounts of Zephiran. The cooperation of Dr. Paul Nicholes in the Department of Microbiology is greatly appreciated.