

A TIME-SAVING DEVICE FOR ADULT MOSQUITO BIOASSAYS¹

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Testing adult mosquitoes for susceptibility to insecticides is often a lengthy procedure involving many steps. The insects must be removed from holding cages, counted and placed in exposure chambers, and then transferred to observation containers.

In our laboratory adults are tested by exposing them to filter paper discs pretreated with various concentrations of insecticide (Georghiou and Metcalf, 1963; Georghiou and Gidden, 1965). The method involves the separation of CO₂-anesthetized adults into groups of 20 and their transfer with a glass suction tube to shell glass vials lined with the filter papers discs. We have recently developed a device which allows for the direct transfer of adults into the exposure vials while the mosquitoes are being counted. Use of this device effectively eliminates one step in the procedure thus reducing the handling time by about one third.

The device (Fig. 1) consists of a 12 cm.

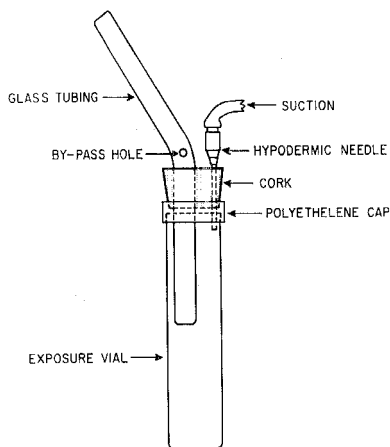


FIG. 1.—Diagram of mosquito aspirator device.

piece of glass tubing (6 mm I.D.) bent at an angle of 145 degrees and inserted through a cork stopper (24 mm top diameter, 15 mm in length). A 3.5 cm section of a hypodermic needle (15 gauge) is likewise inserted through the cork. Flexible tubing is attached to the base of the hypodermic needle. A hole, 2 cm in diameter, is made in a polyethylene cap which fits snugly around the lip of the exposure vial. The cap is glued around the lower edge of the cork so the device is firmly held in place when fitted on the vial. Light vacuum is applied via the flexible hose drawing the insects gently through the glass tubing and into the vial. Improved control of vacuum suction is gained by opening a by-pass hole in the glass tubing which can be partially or fully closed by touch during the operation. The use of this device is limited to laboratories equipped with a vacuum line; since air passes through the vial containing the insecticide-treated filter paper, aspiration by mouth should be avoided.

Although developed for mosquitoes, the device can be suitably adapted for use on a variety of insect species. Insects can be selectively drawn into the testing chamber making it unnecessary to separate them by species, sex or number beforehand.

References

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WIRTHOMYIA, A NEW SUBGENUS OF *CULICOIDES* (DIPTERA: CERATOPOGONIDAE)

L. VARGAS

Wirthomyia Vargas, new subgenus of *Culicoides* is proposed to include *Culicoides segnis* as type, *reconditus*, *riouxi*, *bottemeri* and *stilobezzioides*. These species are nearctic and palearctic. Male genitalia characters are stressed.

DIAGNOSIS. Female: Eyes separated. Thorax without notable markings, only the humeral pits are outstanding. Wings unmarked, densely covered with gray macrotrichia. Basal cell with numerous macrotrichia. The stalk of M₁₊₂ much shorter than the first radial cell in *reconditus*. Two spherical spermathecae, unequal in size, of about 40-60 μ in. max. width; a pair of internal sclerites of irregular outline.

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