NON-PARTICIPATION OF MALE *AEDES TAENIORHYNCHUS* (WIEDEMANN) IN VERTICAL TRANSMISSION OF REGULAR MOSQUITO IRIDESCENT VIRUS[1]

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The iridescent viruses are large, non-occluded, icosahedral, DNA containing viruses which replicate in host cell cytoplasm (Wildy 1971). The iridescent virus of *Aedes taeniorhynchus* (Wiedemann) was first discovered in Florida (Clark et al. 1965). Overtly infected larvae were easily identified in the 4th stage by their conspicuous iridescence. Two strains of the virus, subsequently recognized in Louisiana (Woodard and Chapman 1968), were designated the regular mosquito iridescent virus (RMIV) and the turquoise mosquito iridescent virus (TMIV) (Matta and Lowe 1970).

Vertical transmission of RMIV was first reported by Woodard and Chapman (1968) and was demonstrated to be transovarial rather than transovum (Linley and Nielsen 1968). Since overtly infected larvae died almost without exception (Hall and Anthony 1971), it was evident that covert infections must occur to effect vertical transmission. Linley and Nielsen (1968) provided convincing evidence that transmission of covert infections beyond the 1st generation after the initial *per os* exposure did not occur. They also observed that all progeny from isolated, vertically transmitting females, which had been infected as larvae by *per os* exposure, were overtly infected and died before pupation.

Hall and Anthony (1971) failed to find RMIV in testes of *Ae. taeniorhynchus* in ultrastructural studies, even when the fat-body tissue surrounding the testes was infected. The following experiment was conducted to test the hypothesis that male *Ae. taeniorhynchus* take no part in the vertical transmission of RMIV.

Four rearing trays each with 2500 *Ae. taeniorhynchus* larvae were used. Larvae were reared until the majority were in the early 4th stage and then were transferred to four 16 oz waxed paper cups. Larvae in 2 of the cups were exposed *per os* for 24 hr to an inoculum of RMIV made by triturating 100 moribund, overtly RMIV infected late 4th stage *Ae. taeniorhynchus* larvae. Larvae in the remaining 2 cups were sham exposed to triturated uninfected larvae. Following exposure, the larvae were rinsed thoroughly with tap water and placed in clean rearing trays, 1 tray for each cup of larvae, fed and allowed to pupate. Pupae from the 4 trays were collected and placed in emergence containers in separate cages. At 6 hr intervals, during emergence of the adults, newly emerged adults were immobilized in a cold room and separated by sex and on the basis of exposure to RMIV. Each of the 4 groups was placed in a separate cage. Separation at 6 hr intervals assured that no mating took place, because the male terminalia do not rotate to a functional position within the first 6 hr after emergence (Provost et al. 1961). When emergence was completed, the adults in each cage were again immobilized, divided into 2 roughly equal groups and recombined to result in the following experimental classes. Class I: Unexposed Males × Unexposed Females; Class II: Unexposed Males × Exposed Females; Class III: Exposed Males × Unexposed Females; and Class IV: Exposed Males × Exposed Females.

Blood meals and sugar-water were provided for the adults, and ova were collected on damp sphagnum moss for a 7-day period. The ova on the moss were removed from the cages and held for 10 days at 25°C. They were then hatched, and 2 trays of 2500 larvae from each class were reared to the 4th stage. At this stage, the larvae were immobilized in ice water and placed in black pans under a bright fluorescent lamp. RMIV infected larvae were identified by their iridescent color and were removed with a pipette and counted. The percent of RMIV infected larvae among the progeny of each class is given below:

	Number of Progeny Examined	Percent Infection
Class I	5000	0
Class II	5000	4.5
Class III	5000	0
Class IV	5000	4.8

It was concluded that males of *Ae. taeniorhynchus* played no part in the vertical transmission of RMIV. Males from the exposed group, when mated with unexposed

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females, did not produce infected progeny. When males from the unexposed group were mated with exposed females, the percent of infection in the progeny was not appreciably different from that occurring when exposed females were mated with exposed males. Although this might be accounted for by the scarcity or absence of RMIV in the testes, the structure and function of the spermatozoa could constitute an additional barrier. The head portion of the sperm, which enters the ovum, has very little cytoplasm in which the virus could be transmitted.

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OCCURRENCE OF *AEDES HENDERSONI* IN FLORIDA (DIPTERA, CULICIDAE)

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Aedes hendersoni Cockrell is the most widespread treehole-breeding mosquito in North America. Within the United States, it has been reported from 40 of the 48 contiguous states (Zavortink 1972). This paper records the species from northern Florida, a state from which it has not before been reported.

This new state record is based on one male (FLA 68-10) with associated larval and pupal skins that was collected at the Tall Timbers Research Station, near Tallahassee, Leon Co., Florida, on 8 April 1973, by J. N. Belkin (FLA 68). The larva was obtained from a small treehole in an oak tree, where it occurred in association with *Ae. triseriatus*.

The larval skin of this specimen is rotted, twisted and torn, so it can not be studied thoroughly. However, several of the diagnostic features of *Ae. hendersoni* larvae, as given by Zavortink (1972), can be discerned. The larva does appear, though, to have 11 hairs in the ventral brush rather than the normal 5 pairs. The pupa, adult male and male genitalia are typical for the species.

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