OCCURRENCE OF *Aedes atlanticus* DYAR AND KNAB IN INDIANA[1]

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Several female mosquitoes, believed to be *Aedes atlanticus* D. and K. were collected as biters in a small, flooded tract of woods south of Mt. Vernon, Indiana, on August 13, 1970. Additional specimens, also tentatively identified as *A. atlanticus,* were collected with a CDC trap baited with dry ice on this same date. The larval populations included: *Aedes vexans* (predominantly), *A. trivittatus, Psorophora confinnis,* and *P. ciliata.* No larvae of *A. atlanticus* were collected.

Larval, and adult collections (biting, CDC trap, and adult resting samples) were made at the same site on September 25, 1970. Again, no larvae of *A. atlanticus* were collected, and no clean, unrubbed *A. atlanticus* females were recovered. However, terminalia of two of the male specimens in the collection of September 25 were positively identified as *A. atlanticus.* These males were collected with a mechanical aspirator from emergent vegetation at the periphery of the flooded area.

The site is located only a few miles from Hovey Lake, close by the confluence of the Ohio and Wabash Rivers. The forest vegetation contains maple, ash, and catalpa, with buttonbush predominant in the shrub layer.

According to the U.S.D.A. Soil Conservation Service, the soil belongs to the Ginat Series, a light colored, very poorly drained soil with a compact fragipan. The floor of the flooded depression was quite firm, and appeared to have a high clay content. The water overlying the depression was quite clear, without turbidity, and immatures could readily be observed.

So far as it is known, this is the first published record of *A. atlanticus* in Indiana. This brings to 51 the number of reported species of mosquitoes from this state.

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SUPPRESSION OF MALE CHARACTERISTICS IN *Aedes Schizopinax* DYAR (DIPTERA:CULICIDAE) BY THERMAL STRESS

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Demasculinization, with varying degrees of feminization, of the male genotype resulting from exposure of developing larvae to abnormally high temperatures has been reported in more than a dozen species of Nearctic *Aedes* mosquitoes. The effects of thermal stress in the affected heterozygous male mosquito are expressed by modification or suppression of male tissues and the development of female tissues that replace those that should have been male. Such effects may be expressed by modification of appendages on the head, thorax, and abdomen including in the latter instance loss of parts of the genital tract and development of supernumerary genitalic structures.

All degrees of intergrades, identified by various authors as "intersexes," may be produced as a function of temperature. At the highest survival temperature, masculinity is completely suppressed and the resulting imaginal form is that of a female. Femininity of the homozygous female genotype is unaffected by thermal stress. Pertinent literature on previous studies dealing with thermal stress and anomalous development in mosquitoes is listed at the end of this report.

The intersex of *Aedes schizopinax* under consideration was among adults reared from first instar larvae collected in a marshy bog near Gunnison, Colorado, on June 2, 1970. Subsequently, the larvae were transported to Fort Collins, Colorado, where they were reared in the habitat water at a temperature of approximately 23° C. Although mortality was high among all larval instars and pupae, the one intersex and a few normal males and females were successfully reared.

Genitalic structures of the intersex (Figures 1–2) differ from those of the normal male (Figures 3–4) as follows: cerci well developed, setaceous, entirely replacing the paraprocts; claspette filament more elongate and of delicate structure; phallosome reduced; basistyle shorter,

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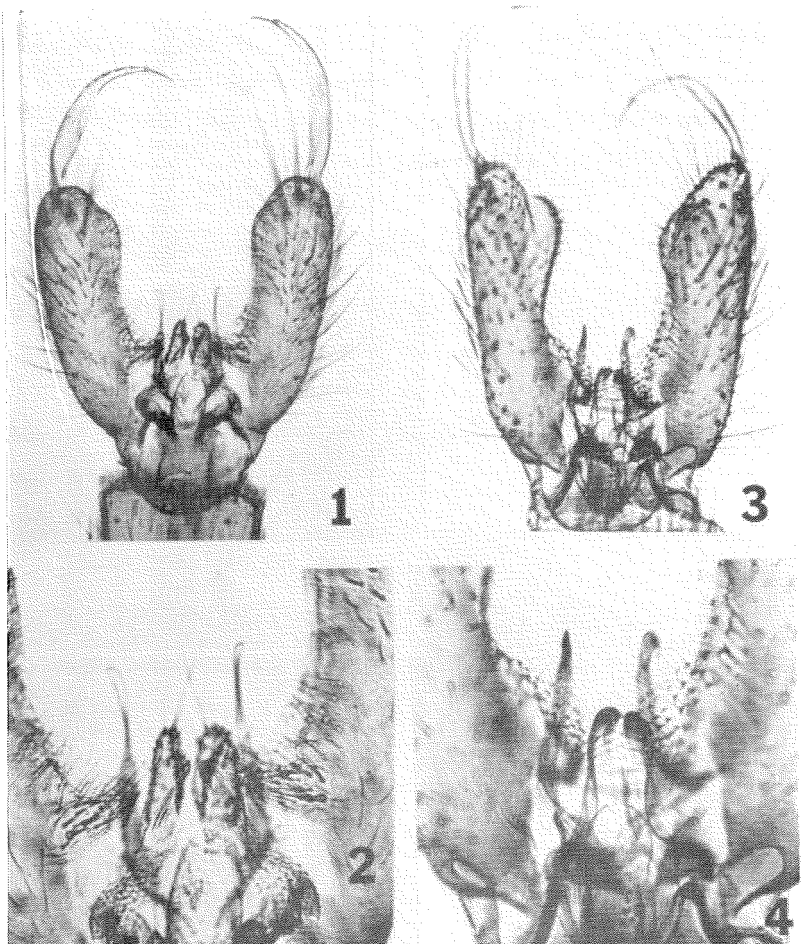

FIGS. 1–2, Genital segments of *Aedes schizopinax,* intersex; Figs. 3–4, of normal male. Fig. 1, configuration of terminal abdominal segments; Fig. 2, details of cerci, claspettes, and basal lobes. Fig. 3, configuration of terminal abdominal segments; Fig. 4, details of paraprocts, claspettes, and basal lobes.

of rounded configuration, with basal and apical lobes weakly developed; dististyle much broader than normal; lobes of 9th tergite much reduced, a few weak setae representing the normal strong, blunt, apical spines. The tarsal claws of the pro- and mesothoracic legs possess characteristics of both sexes. The palpi are feminized, with three basal segments shortened, broadened, approaching the structure of normal female palpi.

The described intersex has been cleared and is slide-mounted in the mosquito collection of the Ecological Investigations Program, Center for Disease Control, Public Health Service, Fort Collins, Colorado.

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THE OCCURRENCE OF *Aedes stimulans* (WALKER) IN KENTUCKY

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Although *Aedes stimulans* (Walker) is known from states bordering on Kentucky (Carpenter and LaCasse, 1955), it has apparently not been previously recorded from the Bluegrass State. Mosquito sampling throughout Kentucky has been rather sparse in the past, and most records are to be found in Quinby, Serfling and Neel (1944). Work has, however, been rather intensive in Jefferson County since the St. Louis encephalitis epidemic of 1956 (Covell, 1968). With the addition of *Ae. stimulans* the state list is increased to 48 species, and that of Jefferson County to 41.

The new state record is based on a single female in good condition collected during daytime on June 4, 1969, by Gerald H. Learn, Jr., student summer employee of the Louisville-Jefferson County Mosquito Control Project. The locality was given as "Shirley Swamp off River Road," which is close by the Ohio River in Louisville.

The specimen was tentatively determined as *Ae. stimulans* by the author; the determination was recently verified by Alan Stone of the U. S. National Museum of Natural History, whose assistance is gratefully acknowledged.

Since Jefferson County is rather thoroughly sampled for adult and larval mosquitoes each year, its absence in collections until 1969 suggests that it is present in extremely small local populations easily overlooked, or else is an occasional immigrant.

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