

KEY CHARACTERS FOR IDENTIFYING *Aedes bahamensis* AND *Aedes albopictus* IN NORTH AMERICA, NORTH OF MEXICO

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ABSTRACT. *Aedes bahamensis*, a species recently introduced into southern Florida represents the first member of the subgenus *Howardina* to be found in the United States. Its separation from all other Nearctic *Aedes* is the subject of this work, integrating it into the North American mosquito keys (Darsie and Ward 1981). The key revisions presented are expanded to include the other exotic species now found in the United States, *Aedes albopictus*.

According to Pafume et al. (1988), *Aedes (Howardina) bahamensis* Berlin was introduced into Florida from the Bahama Islands in 1986 and has been able to colonize areas of Dade and Broward counties. It is a container breeder and was collected from abandoned tires after its initial detection in ovitraps. It represents the first species of the subgenus *Howardina* to be found in the United States. Its known distribution in southern Florida and details of its biology in the invaded counties were reported by O'Meara et al. (1989) and description of its egg as compared to *Aedes aegypti* (Linn.) and *Aedes albopictus* (Skuse) was given by Linley (1989). Since it has become permanently established in the United States with no prospect of an eradication campaign to exterminate it, the necessity for identifying it is apparent.

albopictus from the species that follow which have pale and dark wing scales; then add a couplet (12) to distinguish these 2 species from each other and finally changing original couplet 12 to 12A. The revised key which supercedes that given by Darsie (1986) is as follows:

The first exotic species to become established in the United States in the last decade was *Ae. albopictus*. Its separation from the Nearctic *Aedes* was published by Darsie (1986). To benefit readers who have an interest in mosquito identification in North America, north of Mexico, portions of the keys by Darsie and Ward (1981) are revised to include both *Ae. bahamensis* and *Ae. albopictus* to distinguish them from the other 77 species of *Aedes* in North America. Information given by Berlin (1969) and Zavorzink (1972) has been utilized.

ADULT FEMALE IDENTIFICATION

Females of the subgenus *Howardina* are readily recognized by the scale pattern on the scutum. The background is reddish brown or black with a design of narrow white-, creamy- or golden-scaled lines (Berlin 1969).

Using the key on page 27 (Darsie and Ward 1981) to the adult females of the genus *Aedes*, characters found on *Ae. bahamensis* follow quite easily to couplet 10. There, it can be separated from the remaining species with broad basal pale bands on the hindtarsomeres by inserting couplet 11A to differentiate *Ae. bahamensis* and *Ae.*

- 10(9). Basal pale bands of hindtarsomeres narrow, covering 0.2 or less of tarsomere 2 11
- Basal pale bands of hindtarsomeres broad, covering more than 0.3 of tarsomere 2 11A
- 11(10). Basal pale bands on abdominal terga II-VI with 2 posterior lobes; tergum VII mostly dark-scaled; lower mesepimeral setae absent *vexans*
- Basal pale bands on terga II-VI not lobed nor clearly defined, tergum VII mostly pale-scaled; lower mesepimeral setae present *cantator*
- 11A(10). Wings entirely dark-scaled; hindtarsomeres 1-3 with broad pale bands 12
- Wings with white and dark scales intermixed, if all dark, then at least hindtarsomeres 1-4 with broad pale bands 12A
- 12(11A). Scutum with narrow lines of white, creamy and golden scales; hindtarsomeres 4,5 dark-scaled *bahamensis*
- Scutum with only narrow median stripe of white scales; hindtarsomere 4 with white basal band, 5 entirely white *albopictus*
- 12A(12). Wing with broad, triangular-shaped, dark and pale scales rather evenly intermixed dorsally 13
- At least some dorsal wing scales narrow, with dark and pale scales, usually unevenly distributed 14

FOURTH INSTAR LARVA

Identification of the fourth instar larva of *Ae. bahamensis* is a bit more difficult. Its morphology is similar to the species of the subgenus *Protomacleaya*, therefore to identify *Ae. bahamensis* one can proceed to couplet 51 in the key to *Aedes* larvae (page 134), with some vexation at couplet 43. The form of the comb scales in *Ae. bahamensis* larvae is fringed with short spinules, but its shape is short and blunt, not long and thin as in most species of *Protomacleaya*. Revised couplets 51 and 51A must be inserted to distinguish *Ae. bahamensis*. To include identification of *Ae. albopictus* here, key changes of Darsie (1986) [couplets 44-46A] are also given below.

- 44(43). Seta 1-A short, not reaching more than 0.75 of distance to apex of antenna; siphon without acus 45
 Seta 1-A long, at least reaching to near apex of antenna; siphon with large acus 46A
- 45(44). Abdominal segment VIII with 3-5 comb scales; seta 1-C stout, broad and short *papago*
 Abdominal segment VIII with 6-12 comb scales; seta 1-C long and thin 46
- 46(45). Setal support plate of setae 9-12-M,T with prominent spine; comb scales with strong subapical spines; seta 7-C simple *aegypti*
 Setal support plate of setae 9-12-M,T with short thin spine; comb scales with lateral, basal fringe of fine spicules; seta 7-C branched *albopictus*
- 46A(44). Integument of thorax and abdomen aculeate; with 3-7 comb scales *purpureipes*
 Integument of thorax and abdomen glabrous; with 8-12 comb scales *muelleri*

- 51(47). Setae 2-III-VI with at least 5 branches; setae 9-III-V longer and stronger than setae 7-III-V; seta 3-VII long, reaching al-

most to base of siphon, single; comb scales in single row in form of a chevron . . . *bahamensis*

Setae 2-III-VI single or double; setae 9-III-V shorter and weaker than setae 7-III-V; seta 3-VII short, not reaching middle of segment VIII, with 2 or more branches; comb scales in single short row or triangular patch 51A

51A(51). Seta 4-C weak, usually with 7 or fewer branches, nearer to seta 6-C than to middorsal line; comb with 20 or more scales *burgeri*

Seta 4-C strong, with 8 or more branches, nearer to middorsal line than to seta 6-C; comb with 15 or fewer scales 52

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