

## SCIENTIFIC NOTE

### SEPARATION OF TRAP-COLLECTED ADULTS OF *ANOPHELES* *ATROPOS* FROM SPECIES OF THE QUADRIMACULATUS COMPLEX

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**ABSTRACT.** The presence of a moderate- to large-sized patch of dark scales on the anterior surface of the fore coxa of *Anopheles atropos* can be used to separate this species from species of the Quadrimaculatus Complex collected in coastal areas of the United States. Identification of specimens is possible even if they have been collected in traps and are rubbed and faded.

**KEY WORDS** *Anopheles atropos*, Quadrimaculatus Complex, mosquito

*Anopheles atropos* Dyar and Knab occurs along most of the Gulf of Mexico and Atlantic Ocean coastal areas of the United States. This geographic range overlaps with the distribution of the sibling species of the Quadrimaculatus Complex (*An. diluvialis* Reinert, *An. inundatus* Reinert, *An. maverlii* Reinert, *An. quadrimaculatus* Say, and *An. smaragdinus* Reinert) that were described and illustrated by Reinert et al. (1997).

Adults of *An. atropos* collected in traps (e.g., light, CO<sub>2</sub>-baited, animal-baited, and so on) are often in imperfect condition and difficult to separate from those of the sibling species of the Quadrimaculatus Complex. Adults of *An. atropos* and all species of the Quadrimaculatus Complex have dark-scaled wings with small patches of darker scales. The darker-scaled patches are usually indistinct in the former species and usually well-defined in the 5 species of the Quadrimaculatus Complex. However, even in perfect specimens this feature may be difficult to discern, and positive identification of trap-collected specimens of these species that have the wings partially rubbed is difficult or impossible using this character. Similarly, the interocular tuft (dark-scaled in *An. atropos* and pale-scaled in Quadrimaculatus Complex species) also may be rubbed and no longer of value for identification.

An additional reliable character useful in separating these species, and seldom affected by collection in traps or rough handling, is the degree of scaling on the fore coxa. *Anopheles atropos* possesses a moderate- to large-sized patch of moderately broad brownish-black scales on most of the

anterior surface of the fore coxa, whereas scales are absent or represented by only 1–4 moderately broad brown scales dorsally in species of the Quadrimaculatus Complex. Trap-collected specimens of the Quadrimaculatus Complex usually have these scales absent. During this study females of *An. atropos* were examined from coastal areas of Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, and Texas. Females of the Quadrimaculatus Complex were examined from coastal areas of Florida, Georgia, Louisiana, Maryland, North Carolina, Texas, and Virginia. Even badly rubbed and faded specimens that had been stored for more than 90 years could be correctly identified using this feature.

Adults of *Anopheles walkeri* Theobald also have dark-scaled wings and a large patch of dark scales on the anterior surface of the fore coxa, and the range of this species partially overlaps with the above species, but adults of *An. walkeri* are easily recognized in the southern United States by the pale-scaled capitellum of the halter.

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#### REFERENCE CITED

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