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MANSONIA INDUBITANS DYAR AND SHANNON IN PANAMA¹

By STANLEY J. CARPENTER²

The females of *Mansonia indubitans* Dyar and Shannon are difficult to separate from those of *M. titillans* (Walker) unless the specimens are boiled in potassium hydroxide and the pattern of spines on the eighth abdominal tergite is examined under a microscope. Due to this tedious procedure necessary for accurate identification, *M. indubitans* has not generally been recognized in many areas in which it undoubtedly exists. Thus the distribution of *M. indubitans* and its relative abundance in relation to populations of *M. titillans* is not generally known.

Mansonia indubitans has been recorded in the literature from the following areas: BRAZIL—Several localities in central Brazil (Dyar and Shannon, 1925 and Shannon, 1934); PERU—Iquitos (Shannon, 1934); MEXICO—Mata Cabestra in Vera Cruz Province (Martini, 1935); BRITISH HONDURAS—Blue Creek

and Rio Cacao (Martini, 1935); PUERTO RICO—Lake Cartegena (Tulloch, 1937), Fort Buchanan and Camp Tortuguero (Pratt, 1945); JAMAICA BWI—Clarendon Parish (Pratt, 1945); FLORIDA—Avon Park, Fort Pierce and Boca Raton (Chamberlain and Duffey, 1945), Boca Raton (Pratt, 1945); BOLIVIA—Several localities in the departments of Santa Cruz, Chuquisaca, Beni, Cochabamba, La Paz and the territory of Colonias (Cerqueira, 1943); PANAMA—Buena Vista, La Jolla 2, Cerro La Victoria and Juan Mina (Galindo *et al.*, 1950).

Galindo *et al.*, (1950) point out that the number of *M. indubitans* taken in connection with forest mosquito studies in Panama was undoubtedly much greater than is shown since time was generally not taken to separate them from *M. titillans*.

The localities that were trapped are as follows, with the number of *M. titillans* and *M. indubitans* captured in each. The types of traps are indicated by the symbols LT (light trap), HBT (horse-baited trap) and HC (hand catch).

La Jolla, Republic of Panama: M

¹ Contribution from the Sixth Army Area Medical Laboratory.

² Colonel, MSC, 6th Army Area Medical Laboratory, Fort Baker, California.

titillans 504, *M. indubitans* 125 (HBT, LT. HC). Fort Clayton, Canal Zone: *titillans* 93, *indubitans* 0 (HBT). Fort Kobbe, C. Z.: *titillans* 0, *indubitans* 1 (HBT). Gamboa, C.Z.: *titillans* 20, *indubitans* 1. Fort Gulick, C.Z.: *titillans* 149, *indubitans* 0 (HBT). Fort Davis, C.Z.: *titillans* 66, *indubitans* 0 (HBT).

The specimens were boiled in potassium hydroxide and the pattern of the spines on the eighth abdominal tergite was observed; however after some practice the species could be separated by the length of the palpi. The highest incidence of *M. indubitans* found in these collections was at La Jolla 2, R. P. on the Pacific side, where its number was about one-fifth that of *M. titillans*, while in other localities it only occurred in small numbers when present. Although only 115 specimens were examined from the Atlantic side of the Isthmus (Fort Gulick and Fort Davis), it is interesting to note that not a single specimen of *M. indubitans* was found.

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