

THE TABANID FAUNA OF THE WEST INDIES

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The West Indian archipelago consists of three large islands: Cuba, Jamaica and Hispaniola, together with about a hundred smaller islands, which form an arc closing the eastern border of the Caribbean Sea. The Northern Islands, Cuba and the Bahamas, approach to within less than one hundred miles of the Florida coast, while the western tip of Cuba is hardly farther from Yucatan, Mexico. At the southern end of the chain, the first island is practically within sight of Trinidad. In spite of these apparently insignificant water barriers, the Tabanid fauna is both depauperate and peculiar.

About 50 species are at present known from the West Indies, compared to 138 from Panama, with a far smaller area. Of these, the bulk of the species are precinctive, and appear to be derivable from three or possibly four early immigrants.

1) The *Lophotabanus* group.

These are medium to large species characterized chiefly by narrow frons and the presence of a conspicuous black hairpatch on the scutellum and pre-scutellum. The species are chiefly forest inhabitants and known from the three larger islands, Cuba, Hispaniola and Jamaica, with one recently described species from the Bahamas.

2) The *Stypommisa* group.

These are small species related to *Stenotabanus*, but often with setose basicoxa. Species occur on all the three major islands and on Puerto Rico but there appears to have been an evolutionary burst on Jamaica, while one species occurs on Dominica.

3) The *Aegialomyia* group.

These are halophilic species confined to sea beaches, and are probably to be found throughout the islands.

The first two groups above have their closest relatives on the Central American mainland, and probably reached the West Indies by way of the Yucatan

peninsula. Neither group is represented in Florida. The *Aegialomyia* group may have originated in the West Indies or on the surrounding coasts. At the present time the species are distributed on the coasts from Florida around the gulf of Mexico to at least Trinidad, on the Pacific coast of Panama, on Bermuda and in Bahia, Brazil. The beach habitat has been little explored, and the range of the group may be more extensive. *Aegialomyia* is probably best regarded as a subgenus of *Stenotabanus*, which is, in my view, a fairly primitive group. Their adaptation to a beach environment has enabled them to persist in competition with otherwise more advanced forms, and to colonize islands unsuitable to other Tabanids. The West Indian species and those in Florida, the Bahamas, Bermuda and the coasts of the Gulf of Mexico in general seem to be the most specialized, while the more southern species are less modified and more similar to *Stenotabanus*.

I believe that all three of the above groups have been in the West Indies for a long time, probably since middle or early tertiary time. The more recent immigrants, with two exceptions, are not specifically distinct from mainland forms, and appear to have reached the area from at least two directions. They are as follows:

1) North American immigrants.

Forms of *T. lineola* have reached the Bahamas and Cuba, and are not distinguishable from specimens taken in Florida. *T. subsimilis* subspecies have also reached Cuba, Jamaica and the Cayman Islands, and I have seen a specimen of this group from Puerto Rico. They may have arrived via the Yucatan Peninsula, or by way of the lesser Antillean chain, or both.

2) South American immigrants.

Dichelacera alcis, from St. Vincent, of which only the Type is known, is closely related to forms from Venezuela and the Guianas, and must have reached the area directly, as no related species are known in Trinidad or elsewhere in the West Indies. *Chrysops frazari* is known from a few specimens from Cuba. Its closest relative seems to be *C. bulbicornis* from Trinidad and Brasil, so that it appears to have come up the Island chain. Possibly connecting forms may once have occurred in intermediate localities, and perhaps may still be found. The hand of man has fallen heavily on many of these once richly forested islands, and probably many forms requiring a forest environment have become extinct. *T. claripennis* has reached Cuba, Puerto Rico and a number of other islands. It is unknown in Central America, though widespread in South America, so must have entered the Antilles from the south.

3) Neotropical immigrants.

Lepiselaga crassipes and *Chrysops variegata* are both widespread Neotropical species, occurring from Mexico to Argentina. Both occur widely in the West Indies, and may have arrived via Central or South America more than once.

One of the striking characteristics of the Antillean Tabanid fauna is its lack of many groups well represented on the neighboring mainland. No *Pangoninae*

occur, while three genera and a dozen or so species reach Mexico, and many more inhabit South America. *Dichelacera* is represented by but one rare and local species, though it is a dominant group as far as southern Mexico on the mainland. *Chlorotabanus* is also widespread on the neighboring mainland, including Florida, but apparently absent in the Antilles.

One is tempted to suggest the lack of suitable large native mammals, needed as sources of blood, as an explanation for the depauperate fauna. Yet the same argument would fail in the case of New Guinea, with a hardly richer fauna of large land vertebrates, but a far richer Tabanid fauna. In fact, the Antilles, in spite of their proximity to the mainland, appear to have a long history of isolation. The Tabanidae only support the evidence from other groups which demonstrates that the fauna is derived from chance over-water immigrants.

In summary, the West Indian Tabanidae appear to be derived from isolated immigrants, belonging to several different groups. The older of these have diversified on the larger islands into groups of related species, the more recent have achieved hardly subspecific status, while the most recent are not separable from the mainland stock. With one exception, and that recent, immigration has been from South America or from Central America, with Central America being the more likely origin for the oldest elements, South America for those of more recent date.

In:

Proceedings of the First International Congress of Parasitology

(Roma, 21 - 26 September, 1964). Ed. by Augusto Corradetti.

Milano, Edit. Tamburini, 1966. Vol. 2, pp. 993 - 995.