

DIV. ENTOM.
U.S. DEPT. OF AGRIC.

NOTES ON FOREST MOSQUITOES OF PANAMA. I. HAEMAGOGUS SPEGAZZINII FALCO KUMM ET AL, HAEMAGOGUS IRIDICOLOR DYAR, ANOPHELES (LOPHOPDOMYIA) SQUAMIFEMUR ANTUNES, AND ANOPHELES (ANOPHELES) FAUSTI VARGAS, FOUR NEW RECORDS FOR THE COUNTRY.^{1, 2}
(DIPTERA, CULICIDAE)

By PEDRO GALINDO,³ STANLEY J. CARPENTER⁴ and HAROLD TRAFIDO⁵

NOTES ON FOREST MOSQUITOES OF PANAMA. I. HAEMAGOGUS SPEGAZZINII FALCO KUMM ET AL, HAEMAGOGUS IRIDICOLOR DYAR, ANOPHELES (LOPHOPODOMYIA) SQUAMIFEMUR ANTUNES, AND ANOPHELES (ANOPHELES) FAUSTI VARGAS, FOUR NEW RECORDS FOR THE COUNTRY.^{1, 2}

(DIPTERA, CULICIDAE)

By PEDRO GALINDO,³ STANLEY J. CARPENTER⁴ and HAROLD TRAPIDO⁵

The biology of the mosquitoes of the forests of Panama is little known. Published information is scant and not based on systematic all-year collections, with the result that the few observations that have been published are not always entirely accurate and new species and new records are still to be found, particularly on the forested mountains that arise along the isthmus.

The finding of active cases of yellow fever in the eastern part of the country has made it increasingly important that a thorough knowledge of the forest mosquitoes occurring in Panama be obtained. With this view in mind the authors have started an intensive study on the biology and taxonomy of these mosquitoes, which will be reported in a series of publications, of which this is the first.

Haemagogus spegazzinii falco Kumm *et al*

The species *Haemagogus spegazzinii* Brethes is widespread throughout South America, apparently breaking up into two subspecies, *spegazzinii* Brethes and *falco* Kumm *et al*. Both subspecies have been incriminated as vectors of yellow fever in several parts of South America.

Some years ago, Komp (personal communication) obtained a few larvae in a tree-hole in Barro Colorado Island, Panama Canal Zone, from which he reared typical males of *H. spegazzinii falco*, but the species was not found again.

During the present study the authors have frequently encountered females of this species on the forested mountain known as Cerro La Victoria, some twenty miles east of Panama City, between elevations of 400 and 2,000 feet above sea level.

¹The authors wish to express their appreciation to Dr. K. O. Courtney, Coordinator of the Yellow Fever Service, and to Dr. Herbert C. Clark, Director of the Gorgas Memorial Laboratory, who have made possible many of the trips where some of the species herein reported were obtained.

²Entire publication costs paid by Gorgas Memorial Institute to obtain immediate publication.

³From the Departamento de Salud Pública, R. de P. and the staff of the Gorgas Memorial Laboratory, Panama City, R. de P.

⁴Lieutenant-Colonel (MSC) USA.

⁵Biologist, Gorgas Memorial Laboratory, Panama City, R. de P.

No larvae have been found in nature but typical males have been obtained from eggs laid by females in the laboratory. This mosquito has definite arboreal habits, feeds avidly on man and is relatively common, especially between the 400 and 1,000 foot levels, but wherever it occurs it is greatly outnumbered by *H. equinus* Theobald and *H. lucifer* (Howard, Dyar and Knab).

A further note on the relative abundance of this species throughout the year will be published at a later date, together with an account of the methods used to sample the population of the different species of mosquitoes in the forest.

Haemagogus iridicolor Dyar

This species was originally described from the Atlantic Coast of Costa Rica and has not been taken elsewhere. According to Dyar (1928) the larvae live in the water in bamboo joints.

The senior author has reared this species on several occasions from larvae found in low, open tree-holes along sandy beaches of the Atlantic coast of Northwestern Panama. Females readily attack man, sometimes biting in full sunlight. Records of the species are as follows: Bocas del Toro Island, Bocas del Toro Province, I-15-46; I-17-46; I-12-47; I-13-47. Bahia Azul, Bocas del Toro Province, VI-16-49. Secretario, Bocas del Toro Province, VI-17-49.

Anopheles (Lophopodomys) squamifemur Antunes

This interesting species has been previously reported from Colombia, Venezuela, French Guiana and Brazil, always from a few females captured in the forest.

During a recent trip to the Upper Pequení River, the authors were fortunate in capturing four females of this species. All of the specimens were taken at night on a white sheet with the reflected light of a bright gasoline lantern. The record is as follows: Candelaria Hydrographic Station, Pequení River, III-24-49.

Anopheles (Anopheles) fausti Vargas

This anopheline was described by Vargas from southern Mexico and has never been reported outside of that country. The senior author reared a single male of this species from a pupa taken from a narrow, deep tree-hole in dense forest during the month of December. The pupa was associated with several larvae of *Anopheles eiseni* Coquillett and *Culex browni* Komp. A second collecting trip to the same hole in the month of April, toward the end of the dry season, yielded only several larvae of *Sabethes cyaneus* (Fabricius). The single record follows: Cerro La Victoria (1,000 feet elevation) 20 miles east of Panama City, XII-15-48.