

Culicoides filariferus, New Species

INTERMEDIATE HOST OF AN UNIDENTIFIED FILARIA
FROM SOUTHWESTERN MEXICO*

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DAMPF (1935) dissected 107 representatives of a species of *Culicoides* captured near Huixtla, State of Chiapas, the onchocerciasis infested district of southwestern Mexico. He found developing filariae (sausage stage) in the thorax of three. This species of *Culicoides*, due to its blood-sucking proclivities constituted at that time (June), a pest of no mean proportions to man. Incomplete data at present available do not permit a definite conclusion respecting the identity of the filariid concerned. It may possibly represent the immature form of *Onchocerca volvulus*, although this nematode is known to be transmitted only by certain species of Simuliidae; it may be some filariid of wild or domestic animals. However, the fact that the gnats were more abundant near stables than anywhere else leads one to suspect that this ceratopogonid may be the local intermediate host of an onchocercid that attacks equines, one of which, *Onchocerca cervicalis*, has been demonstrated by Steward (1934) to be transmitted by *Culicoides nebeculosus* in England. Thus far there is available no information pertaining to the presence of horse filariae in the region concerned. Filarial worms of cattle might also be considered since Buckley (1938) has shown that several species of *Culicoides* serve as intermediate hosts of *Onchocerca gibsoni* in the Federated Malay States. The presumed vector appears new, and is described here.

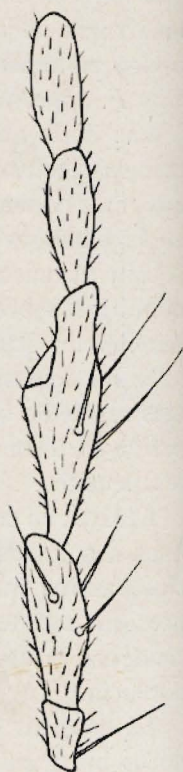


FIGURE 1
Palpus of ♀—

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Female: Head dark brown; eyes contiguous at midline; palpi (fig. 1), slightly longer than proboscis, third segment

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not greatly expanded, widest just beyond middle; scape of antenna brown, flagellum brownish yellow. Thorax (fig. 2): mesonotum yellow dorsally, a more or less square brown median area at the anterior margin,

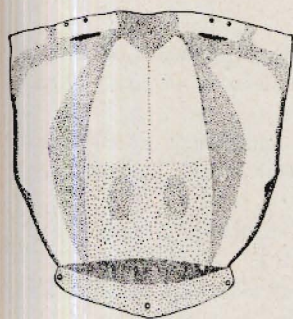


FIG. 2. Thoracic pattern of ♀ —



FIG. 3. Wing of ♀

reaching to about the line of the humeral pits, continued as a narrow line to the prescutellar depression; a dark brown transverse band enclosing the pits, continued laterally to the posterior angle of the mesonotum, this portion of the band thickened inwardly about midway, the transverse part with a short spur to the anterior margin; a lighter brown band beginning below the square area, and passing toward the posterior angle; a small area in front of the pit light yellow, with a pair of sockets, apparently of bristles, anteriorly, humeral angle almost white; prescutellar depression dark gray, with two darker longitudinal spots; scutellum yellowish brown, bearing three bristles, one central, one on each side. Legs light brown, each tibia with a basal yellow band; third metatarsus approximately twice the length of second segment. Wing (fig. 3); with macrotrichiae only on distal quarter, second radial cell almost attaining distal third; length, about 1.1 mm. from base of M. Abdomen brown, darker beneath. Spermathecae paired, spherical, with a diameter of approximately 0.049 mm., rudimentary spermatheca and ring present. Combined length of thorax and abdomen about 1.4 mm.

Described from a series of females collected by Dr. Alfons Dampf at El Vergel, near Huixtla, State of Chiapas, Mexico (700 meters), June 1935. The specimens, preserved in alcohol, were dehydrated in the higher alcohols, cleared in toluol, then mounted after drying, a technique devised

by Mr. H. S. Barber of the United States National Museum. Preserved material so prepared presents a more natural appearance, though there appears to be a tendency for colors of the palpi, antennae and abdomen to become somewhat lighter. This species appears to be closely related

to *C. venustus*, and to have affinities with *C. guttatus* and *C. diabolicus*. Type and paratypes in the United States National Museum; paratypes also returned to Dr. Dampf.

REFERENCES

1. DAMPF, A. 1936. Los Ceratopogonidos o Jejenos como Trasmisores de Filarias. vii Congreso Científico Americano. Sección de Higiene, 7 paginas, México, Spbre. de 1935.
2. STEWARD, J. S. 1933. *Onchocerca cervicalis* (Raillet and Henry, 1910) and its development in *Culicoides nubeculosus* Mg. Rpts. University Cambridge, Inst. Animal Path., iii, 272-284. Cambridge.
3. BUCKLEY, J. J. C. 1938. On *Culicoides* as a vector of *Onchocerca gibsoni* (Cleland and Johnston 1910). Jour. Helminthology 16:121-158.
4. HOFFMAN, W. A. 1925. A review of the species of *Culicoides* of North and Central America and the West Indies. Amer. Jour. Hyg., 5:274-301.
5. ROOT, F. M. and HOFFMAN, W. A. 1937. The North American species of *Culicoides*. Amer. Jour. Hyg., 25:150-176.