

TWO NEW SPECIES OF CHRYSOPS (DIPTERA : TABANIDAE)
FROM PANAMA.

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Chrysops alleni, n. sp.

♀ Length—5.6 mm., of wing, 5.5–6.5 mm.

Frons slightly wider than high, grey pollinose. The black callus at least twice as wide as high, almost lenticular in shape, and about $\frac{1}{2}$ as wide as the total width of the frons. Ocelli black, prominent. Fronto-clypeus shining yellow, cheeks greyish yellow, pollinose, except below, where they are shining yellowish brown. Eyes with a typical *Chrysops* pattern. Antennae a little longer than fore femora, the segments, beginning from the first, have length ratios of 1.75, 1, and 3. The first two segments are cylindrical, yellow, sparsely black haired, especially the apex of the 2d segment, 3d segment yellow basally, the annulate portion black.

Thorax steel grey pollinose, with 3 black shiny stripes, a median and a dorsolateral pair. Scutellum steel grey pollinose. Sides of thorax steel grey pollinose, except antealar tubercle, and a stripe on the pleuron, which are black.

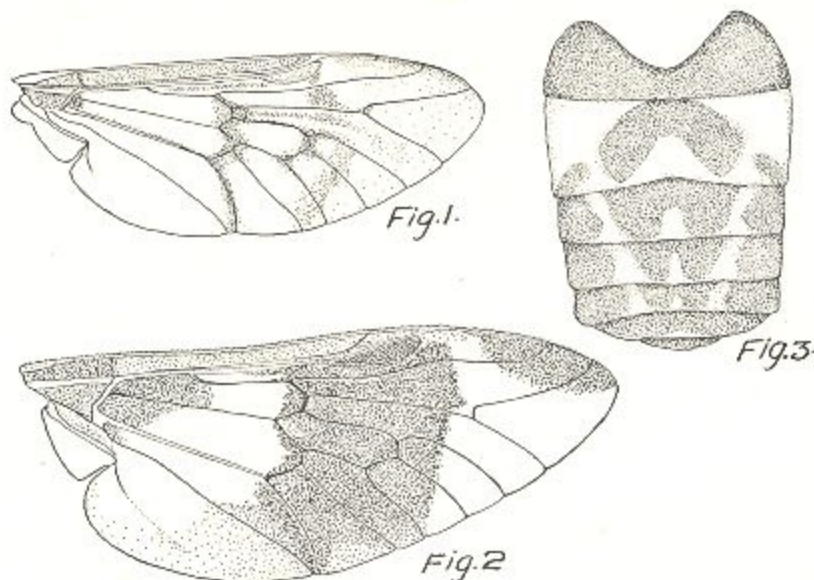
Fore coxae, at least basal half of all femora, apical halves of fore and hind tibiae, all of fore tarsi and apical segments of mid and hind tarsi black, rest of legs reddish to yellowish brown.

Wing (Fig. 1) hyaline with the following dark markings. Costal cell and stigma brown. An apical spot in the form of a dark narrow shading extends along the costa from the stigma to the apex. A narrow, somewhat broken, dark, crescentic band extends from the distal end of the stigma to near apex of the 4th posterior cell. Another more or less parallel band includes the veins forming the distal ends of the basal cells, and the distal end of the anal vein. In addition, there is a brownish streak down the middle of the 1st posterior cell from its base to beyond the fork of the 3d vein. The cross veins at the apex of the discal cell, and the fork of the 3d vein are all somewhat infuscated.

The abdomen is dorsally steel grey on the first two segments, with a dark spot beneath the scutellum on the first, and a broad inverted black V on the second, which reaches the anterior but not the posterior margin of that segment. The 3d to last segments are black with broad grey hind margins, somewhat wider in the middle and at the sides. Beneath, the abdomen is blackish with indistinct grey hind margins to the segments.

The male differs from the female in being considerably darker throughout. The fronto-clypeus is black, divided vertically by a broad pollinose yellow stripe. The dorsum of the thorax is nearly black, the usual lines indistinct, the scutellum dark grey to black. The abdomen is nearly black, the light hind margins to the segments being narrower than in the female and having a yellowish tinge. The wings are essentially as in the female, but markedly smoky throughout, so that the pattern is not so conspicuous.

Holotype ♀, Allotype ♂, and 5 ♀, 25 ♂, Paratypes from Old Panama, Rep. of Panama, V-1-39. G. B. Fairchild coll.



78 ♀ Paratypes from Matutela Swamp, Panama Canal Zone, V-20-39. P. Allen coll. (42 pinned and 36 in alcohol). 1 ♀ Paratype from Mangrove swamp near Bejuco, Rep. of Panama, VI-18-39. Holotype, Allotype and a series of Paratypes to be deposited in the Museum of Comparative Zoology. Paratypes in the U. S. National Museum, Instituto de Hygiene, Sao Paulo, Brasil, and the author's collection.

This species was first collected in a small patch of mangrove and salt marsh grass on the tide flats near the ruins of Old Panama and later taken in some quantity by Paul Allen of the Canal Zone Health Department in Matutela Swamp, an area of mangrove and mud fill on the west side of the Canal opposite Corozal. Mr. Allen found the species very annoying because of its numbers, but rather slow to bite.

This species seems most nearly related to *Chrysops caloptera* Hine of which I have seen two females from Morales, Guatemala, determined by Hine, in the U. S. National Museum collection. *Caloptera* has the frontal callus yellow, nearly as wide as the frons, the first two antennal segments subequal in length and together equalling or surpassing the third segment. The thoracic stripes are obsolete and the abdomen is black with narrow light posterior borders to the segments. The wings are darker than in *alleni*, more streaked, and with a dark spot in the discal cell.

Chrysops chiriquensis, n. sp.

♀ Length—8 mm., of wing, 8 mm.

Frons slightly wider than high, yellowish grey pollinose. The black or slightly yellowish callus nearly twice as wide as high, and almost as wide as the frons. The ocelli are black, and situated upon a large bare ocellar tubercle which is beset with long hairs. Fronto-clypeus shining brown, darker laterally, and with a narrow vertical median pollinose stripe. Antennae slightly longer than fore femora; the segments, beginning with the first, have length ratios of 1.37, 1, and 2.25. The first segment is dirty yellowish brown and slightly swollen, the second is darker and practically cylindrical, and the 3d is yellow only at the extreme base, the rest black. Only the terminal 4 or 5 annulations are clearly visible. The two basal segments of the antennae are rather thickly beset with black hairs.

Thorax black above, with a pair of very short yellowish dorsolateral lines on the anterior end, and clothed with sparse long greyish hairs. Pleura brownish with dark hairs. Legs dull reddish to yellowish brown throughout, except apices of femora and tarsi, which are blackish. All legs clothed with black hair, which on the hind tibiae forms rather prominent fringes.

Wing (Fig. 2) hyaline except as follows. Costal cell, basal half of first basal and basal 3d of second basal cells black. Cross-band broad, filling out half of 3d and all of 4th and 5th posterior cells, the apex of anal cell, and fading out proximally in the axillary cell. The outer border of the cross-band is fairly even, but there is a slight projection in the first submarginal cell. The hyaline crescent reaches the costa, the apical spot thus being separated from the cross-band. The apical spot is drop-shaped, and extends just to the apex of the wing.

The first segment of the abdomen (Fig. 3) is black, or with considerable yellow on the sides; the second is yellow, with a thick, black mid-dorsal inverted V, which reaches the anterior but not the posterior margin, and there is a small black diagonal mark extending from the hind margin on each side towards the center. The 3d to 5th segments are black, with a yellow W-shaped mark in the middle of each, and the 6th and 7th segments are black, with a narrow yellow hind margin. Beneath, the abdomen is blackish, with a pair of yellowish parallel lines, and is clothed with grey hairs.

Holotype ♀, Boquete, Chiriqui province, Panama, 3-4000 feet elev., V-7-39. 3 ♀ Paratypes, Sta. Emilia, Pochuta, Guatemala. 1000 metres, Feb.-March, 1931. In Dr. J. Bequaert's collection. Holotype to be deposited in the Museum of Comparative Zoology. This species seems nearest *Chrysops altivagus* O. S. and *C. subcaecutiens* Bell., but differs from both in the slender antennae and differently marked wings and abdomen. The pollinose stripe on the fronto-clypeus would seem to indicate a relationship with the North American forms with this character. The specimens mentioned by Hine under *subcaecutiens* (Occ. Papers Mus. Zool. Univ. Mich. No. 162, p. 20, 1925) as coming from Boquete, are in all probability this species, as he mentions the dark crossband as reaching the

hind margin in almost full intensity, a character which *subcaecutiens* lacks, according to Pechuman (Rev. Ent. VII, fasc. 2-3, pp. 138-140, fig. 2, July, 1937).
