

## TWO NEW THYSANOPTERA FROM CUBA

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*CEPHALOTHRIPS MERRILL N. SP.*

Measurements—Total body length 0.87 mm. Head, length 0.14 mm, width 0.11 mm; prothorax, length 0.10 mm, width (including coxae) 0.18 mm; pterothorax, width 0.177; abdomen, greatest width 0.16 mm; tube, length 0.08 mm, width at base 0.055 mm, at apex 0.025 mm; Antennae, total length 0.25 mm.

Segment .....	1	2	3	4	5	6	7	8
Length .....	18	36	40	41	40	35	31	19
Width .....	25	23	21	22	22	19	17	11 microns.

Color an almost uniform light olive gray (Ridgeway's color standard); head and tip of abdomen darker, antennal segment 3 and all tibiae and tarsi lighter except a black spot near the tips of tarsi; eyes and ocellar crescents deep red and very conspicuous. *Head* a little longer than wide, broadly rounded in front except for a projection of the vertex between the basal segments of the antennae; cheeks gently arched, slightly converging posteriorly, vertex smooth without bristles except the rather long (about as long as the eyes) but very slender, pointed post-oculars and two pairs of minute ones along the margins of the eyes, one directly behind and one in front of each posterior ocellus. *Eyes* rather small, not protruding, non pilose. *Ocelli* large, the posterior pair situated opposite the anterior third of the eyes, the anterior directed forward. *Mouth cone* short, reaching the middle of the prosternum, and rounded at the tip. *Antennae* nearly twice as long as the head. Segment 2 short barrel-shaped with a broad peduncle; 3, top-shaped; 4, obovate; 5, oval; 6, cylindrical; 7, cylindrical but tapering somewhat apically; 8, conical, broadly united to 7; 3-6 with short narrow pedicels, 8 with a somewhat broader one: 1, concolorous with the head; 2, lighter at apex; 3, much lighter except extreme base (but pedicel light); 4, about concolorous with the head; 5-8, darker, deep olive gray. Bristles and sense cones short, pale and inconspicuous.

*Prothorax*, somewhat wider than the head, shorter than the head; sides rather sharply diverging posteriorly. A rather long but pale bristle on each posterior angle, an equally long one midway between this and the median dorsal line. A pair of minute ones near middle of posterior margin.

*Pterothorax* at the anterior margin about as wide as the prothorax (including coxae) but sides converge sharply posteriorly. Wing membrane pale gray, constricted in the middle, reaching to about the 8th abdominal segment, sparsely provided with rather long hairs, 4 inter-located ones.

*Legs* rather short. Fore femora considerably enlarged. Fore tarsi unarmed.

*Abdomen* rather slender, sides nearly parallel to about 8th segment then tapering abruptly to tube. Bristles rather short, pale and inconspicuous; those on the last segment larger. Terminal ones but little longer than the tube.

Described from a single male taken from a scale-infested cocoon from Cuba by George B. Merrill of the Florida State Plant Board.

The color of this insect and the shape of the pterothorax, will enable it to be readily told from the other two species of this genus.

The following key will enable one to readily separate the species:  
 a.—Antennal segment 7 broadly united to 6.....*monilicornis* Reuter.

aa.—Antennal segment 7 pedunculate.

b.—Color dark brown; wings very short or entirely lacking; pterothorax narrower than prothorax, sides nearly straight and parallel, even; postoculars blunt .....*errans* Moulton.

bb.—Color light gray; wing membrane reaching abdominal segment 8; pterothorax wider than prothorax (exclusive of coxae), sides sinuate and sharply converging posteriorly; postoculars pointed

*merrilli* n. sp.

*FRANKLINELLA CEPHALICA BRUNERI* N. VAR.

*Female*

Measurements: Total body length (average of 33 individuals) 1.02 mm. (varies from .82 to 1.25 mm.). Head, length 0.11 mm., width 0.16 mm.; prothorax, length 0.14 mm., width 0.19 mm.; mesothorax, width 0.27 mm.; abdomen, greatest width .28 mm.

Antennal segments.....	1	2	3	4	5	6	7	8
Length .....	26	42	58	54	41	51	9	12
Width .....	25	25	23	23	20	20	8	6 microns

Total length 0.28 mm.

Color, almost uniform yellow, thorax and end of abdomen a shade darker than the basal segments, head considerably lighter, pale yellow. No orange or brown color anywhere on the body except the yellowish orange ocellar crescents and a small orange spot on the extreme tip of the abdomen. Eyes black by transmitted light, red by reflected.

Head nearly half again as broad as long, considerably retracted into prothorax; cheeks slightly arched, bearing a pale short spine at about the middle; vertex smooth; frons depressed. Postoculars and a pair of bristles in front of each posterior ocellus nearly as long as the eyes, sharply curved, brown and conspicuous. A pale, slender, inconspicuous bristle at the inner posterior angle of each posterior ocellus, and a pair of even smaller bristles in front of the anterior ocellus. Eyes rather large, nearly half as long as the head, not protruding, pilose, facets large. Ocelli large, pale, posterior pair situated a little in front of the posterior border of the eyes, anterior directed somewhat forward into the frontal depression. Mouth cone long and slender, almost reaching the mesosternum. Maxillary palpus 3-segmented, the basal segment the longest.

Antennae 2.5 times as long as the head. Segment 1 short, cylindrical; 2 barrel-shaped with a wide peduncle, produced dorsally and bearing at the apex of the elevation two heavy bristles. These bristles are not as heavy as in *F. cephalica masoni* and the elevation is much less marked and does not project over the base of segment 3; 3 widest at about two-thirds its length, thence tapering uniformly with nearly straight sides to a narrow peduncle with several constrictions and to a broad apex. It bears a colorless dorsal, forked, trichome and below the base of this a pair of bristles which are fully as heavy and considerably longer than the corresponding ones on segment 2; 4, similar to 3 in shape but peduncle wider and shorter and sides not as straight. This segment also bears a forked trichome but on the inner side; 5 much the smallest of the intermediate

segments with a narrower peduncle than 4; 6 conical, but little constricted at the base; 7 cylindrical, considerably shorter than 8; 8 conical. 1 almost colorless, 2 almost uniformly light brown except the paler peduncle; 3 light Marguerite yellow (Ridgeway's color chart) clouded with darker gray in the apical third; apical half of 4 and 6 mummy brown (Ridgeway) basal half of 4 and often all of 5 Marguerite yellow, 5 sometimes clouded with brown in apical third, 7 and 8 a little lighter than 6.

Prothorax wider than long and wider and longer than the head, sides strongly arched. One bristle on each anterior angle and a pair on each posterior angle are unusually large and strongly curved. The longest on the posterior angle often reaches a length of 80 microns or nearly half the width of the prothorax; another stout bristle (but only about a third as long) at the anterior angle; on the anterior margin are a pair of bristles nearly as stout and four pairs of minute colorless ones.

Pterothorax much wider than the prothorax, anterior angles evenly rounded to the posterior margin of mesothorax. Metathorax narrower, sides nearly straight and parallel. Two large bristles and two smaller ones between the wings and two large ones and about 12 smaller ones along the anterior margin. Legs light brownish yellow, considerably lighter than the body. Tibiae provided with a pair of stout spines near the apex.

Wing membranes reaching to about abdominal segment 9, fore pair very light grayish yellow, provided with heavy bristles, about 25 on costa, 19-21 on anterior vein, and from 14 to 21 (usually 19) on posterior.

Abdomen, rather short and thick, widest at about segment 8, thence rounding rapidly to tenth segment. The posterior segments (5-9) provided with heavy, but comparatively short, curved bristles at the posterior angles. The 10th segment split open for not over a fourth of its length, tipped with orange at the extreme apex. Provided with about a dozen large straight brown bristles which extend far beyond the tip.

*Male.* Much smaller than the female, about 0.8 mm., pale yellow. Head, length 0.11 mm., width 0.15 mm.; prothorax, length 0.15 mm.; width 0.19 mm.; mesothorax, width 0.20 mm.; abdomen, width 0.15 mm. Antennae, segment 1, 25; 2, 39; 3, 49; 4, 46; 5, 38; 6, 46; 7, 7; 8, 11 microns. Total length 0.26 mm. Wings with about 22 strong bristles on costa, 16 on anterior vein and 13 on posterior. Second segment of antennae much lighter in color than in female; lighter than the first. Testes yellowish brown by transmitted light, yellow by reflected.

Larvae brownish yellow, legs and tip of abdomen lighter. Eyes dark.

Described from thirty females and four males collected by Dr. S. C. Bruner in Santiago de las Vegas and on the Peninsula de Guanahacabibes, Cuba, on oranges, avocados, hibiscus, *Moringa*. Type in the author's collection.

Close to *F. cephalica melanommatus* Bagnal, of which it is probably only a Cuban race, but differs in the color and form of the second antennal segment which projects but little dorsally and not at all forward over segment 3, in the larger number of spines on the posterior vein of the fore wings (in both sexes) and in the split end of the last abdominal segment, and especially in the long, stout, curved bristles.

It can be told at a glance from *F. cephalica masoni* by the lighter color and the character of the second antennal segment.