

## NEW THYSANOPTERA FROM FLORIDA—XIII

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(Continued from Vol. IX, p. 60)

*Liothrips muscorum* n. sp. (Continued)

Antennae about twice as long as the head. Segment 1, cylindrical, dark brown, concolorous with the head; 2, with a broad curved peduncle, yellowish brown; 3, long clavate, tapering uniformly to a rather broad base, a uniform yellow; 4, clavate, a little shorter and darker; 5, barrel-shaped, contracted abruptly to a broad peduncle, brownish yellow in basal two-thirds, heavily shaded with brown in apical third; 6, yellowish brown in basal half, dark brown in apical; 7, ovate, abruptly contracted to a narrow peduncle, margin deeply crenated in upper half; dark brown; 8, conical, margin deeply crenated, dark brown.

Mouth cone long and sharp pointed, reaching the mesosternum.

Prothorax trapezoidal in shape, sides (including coxae) almost straight and sharply diverging. The sides of the prothorax proper form sharp angles where they meet the coxae at about half their length, and from these angles extend straight and parallel to the posterior border. Posterior angles (of the coxae) well rounded, each provided with a single short but thick bristle and two minute ones. Each posterior angle of the prothorax bears a prominent stout blunt bristle, a short very thick, blunt bristle at each median angle mentioned above.

Mesothorax, quadrangular, anterior angles quite square; dorsum striated.

Metathorax, a trifle narrower, sides arched, converging posteriorly.

Middle and hind legs of medium length and very slender; fore femora considerably thickened; tarsi unarmed.

Wings, long, membranes reaching beyond the base of the tube; fore pair not constricted in the middle, colorless except for a small brownish yellow area at the extreme base, fringed with hairs except for about the basal third of the anterior border where they end abruptly. These hairs are unusually long near the tip of the wing. Eight inter-located ones on posterior margin. On the hairless base of the anterior border are three conspicuous, blunt bristles.

Abdomen rather short and thick, widest at about the middle. Posterior lateral angles of the posterior segments armed with rather long brown bristles, those on segment 9 as long as the tube. Tube about two-thirds as long as the head; widest at about the middle. Thence tapering with straight sides to both apex and base. Two pair of terminal bristles about as long as the tube.

Described from a single male taken from moss and lichens on the trunk of a tree in a magnolia hammock. Gainesville, December 1925. Type in author's collection.

*Limocercyothrips* gen. nov.

Head about as long as wide, produced anteriorly in front of the eyes into a triangular projection which bears the antennae and projects slightly over their bases; cheeks slightly converging posteriorly. Antennae

8-segmented; maxillary palpi 3-segmented. Ocelli and wings present in female, ocelli absent in males and wings rudimentary. Prothorax about as long as the head; posterior angles provided with two strong bristles. Abdomen rather long and slender in female but short and thick in male. Segment 9 of female much the longest and provided (as is also segment 10) with long bristles, a short stout spine on each side of segment 10 above.

Type *Limocercyothrips bicolor* sp. nov.

This genus has characters intermediate between *Limothrips* Haliday and *Cercyothrips* Morgan. It differs from the former in the converging cheeks, the character of the antennae and the terminal segment of the abdomen of the female. It agrees with *Cercyothrips* in the elongated ninth segment of the female. But the antennae are not inserted far apart and close to the eyes nor directed somewhat laterally. It differs from that genus also in the presence of two stout spines on each posterior angle of the prothorax.

The following key will aid in separating the genera of the family:

- a. Head very small, noticeable smaller than the prothorax.  
  - Chirothrips* Haliday.
- aa. Head larger, as long as prothorax or longer.
  - b. Cheeks swollen posteriorly; terminal segment of abdomen of female approaching a tubular form; segment 9 not especially long. .... *Limothrips* Haliday.
  - bb. Cheeks converging posteriorly; terminal segment of abdomen of female conical; segment 9 elongated, much the longest of the abdomen.
    - c. Antennae inserted close together; two stout bristles on each posterior angle of the prothorax.... *Limocercyothrips* gen. nov.
    - cc. Antennae inserted far apart and close to eyes; no stout bristles on posterior angles of prothorax.. *Cercyothrip*; Morgan

95. *Limocercyothrips bicolor* sp. nov.

General color brown but very variable in shade, pterothorax usually much lighter in color than head and abdomen. Head dark brown, prothorax varies from raw umber (Ridgeway's color standards), almost as dark as the head, to yellow brown, almost as light as pterothorax; pterothorax varies from light grayish yellow to yellow brown; abdomen mostly dark brown but all but the posterior margins of the segments, and sometimes the entire basal half, often yellowish brown, as light as pterothorax.

Head a trifle longer than broad, widest across the eyes, cheeks slightly convex and converging posteriorly. Dorsum faintly striated. Two pairs of bristles, the postocular and one laterad to the anterior ocellus, nearly as long as the eyes; smaller ones near the anterior angles of the eyes and two near their posterior border and a pair near center of dorsum. Head prolonged in front of the eyes into a triangular projection upon which the antennae are carried. The lateral margins of this projection are straight, about two-thirds as long as the width of the first antennal segments, and extend inward and forward from the inner corners of the

eyes at an angle of about 45 degrees. The apex of the projection is rounded and usually covers the bases of the antennae. The space between the bases of the antennae not nearly as wide as the bases.

*Eyes*, large and much protruding; inner margins almost straight and sharply converging posteriorly. Eyes much wider posteriorly, pilose, black, facets large and widely separated. *Ocelli* large, yellow, flecked with orange and bordered with dark orange crescents; sub-approximate, situated far back, the posterior pair near, but not touching, the inner posterior angles of the eyes. *Mouth cone* large and long, reaching about three-fourths across the prosternum, rounded at the tip, maxillary palpus 3-jointed.

Antennae 1.5 times as long as the head, segments 1, 2, distal half to two-thirds of 6, 7, and 8 chestnut brown, concolorous with the head in lighter specimens; 3, 4, 5, base of 6, and often tip of 2, uniform pale straw yellow (naphthalene yellow—Ridgeway) 1 short-cylindrical; 2 cup-shaped with a very broad short peduncle; 3 oval, abruptly contracted to a thin peduncle; 4 oval with a short, thick peduncle; 5 oblong ovate with a short broad peduncle; 6 oval-ov lanceolate with a broad peduncle; 7 and 8 cylindrical, 7 a little broader and shorter than 8. Bristles pale and inconspicuous.

*Prothorax*, about as long as the head and (including coxae) 1.5 times as broad as long. Two strong bristles at each posterior angle of which the anterior is about a third as long as the width of the prothorax, the posterior is often considerably shorter. A third minute, curved bristle at each posterior angle and also anterior angle. Pronotum with a few striations along the anterior margin. *Mesothorax* considerably wider than the prothorax, sides rounded. *Metathorax* with nearly straight and parallel sides; posterior angles rounded.

Wings weak and narrow; membranes of anterior pair clear except for the brownish extreme bases of the costal margins. Both margins sparsely fringed; the hairs on the posterior margin rather long and wavy; about 5 rather heavy spines on the anterior vein, four near the base and one near the apex, and 9 evenly distributed ones (except the extreme basal portion) on the posterior vein. Three on the scale. *Legs* of medium length, femora (except base, and often basal half of middle and hind tibiae) yellowish brown, nearly concolorous with the pterothorax, bases of femora, tibiae, and tarsi (except dark spot near the base) light brownish yellow to sulphur yellow.

Abdomen rather slender, widest at about segment 6, thence tapering gradually to tip. Segment 9 very long, much the longest of all, provided with three pairs of very long bristles, a pair of short but heavy, black, curved bristles near posterior angles. Segment 10 conical, not at all tubular, split open above, also with three pairs of long dark bristles, and a pair of short, thick, dark spines near the tip.

*Measurements*: Total body length 1.2 mm. Head, length 0.17 mm., width 0.16 mm.; prothorax, length 0.13 mm., width 0.22 mm.; mesothorax, width 0.26 mm.; metathorax, width 0.23 mm.; abdomen, greatest width 0.27 mm. Antennae total length 0.26 mm.

| Segment | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8          |
|---------|----|----|----|----|----|----|----|------------|
| length  | 25 | 38 | 45 | 37 | 40 | 62 | 14 | 18         |
| width   | 28 | 33 | 21 | 20 | 19 | 22 | 10 | 6 microns. |

*Male.* Similar to the female but much smaller and ocelli absent and wings mere rudiments which barely reach the base of the abdomen. Head about as wide as long. In color the pterothorax and the legs are a more vivid yellow than in the female and the head and abdomen darker; the color contrasts are more sharp. Antennal segment 6 is sometimes entirely yellow and 7 and 8 a light yellowish brown. The abdomen is rounded at the tip but carries long bristles similar to those of the female.

*Measurements:* Total body length 0.85 mm. Head, length 0.15 mm., width 0.15 mm.; prothorax, length 0.16 mm., width 0.21 mm.; mesothorax, width 0.24 mm.; metathorax, width 0.22 mm.; abdomen, greatest width 0.25 mm. Antennae, total length 0.23 mm. Segment 1, 25; 2, 34; 3, 39; 4, 33; 5, 33; 6, 54; 7, 13; 8, 16.5 microns.

Described from six females and five males collected from under the leaf sheaths of Japanese cane and Napier grass at Gainesville. Jan. and Oct. 1925. Type in the author's collection.

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### PROF. OSBORN VISITS FLORIDA

Professor Herbert Osborn spent the last week in February and the first few days in March in Gainesville as the guest of Dr. E. W. Berger of the State Plant Board. He looked over the jassids in the collection of the State Plant Board and the Experiment Station and the Department of Biology of the University. Professor Osborn is a frequent visitor to Florida where a number of his former students are at work on various projects. Professor Osborn, the editor of the *Annals of the American Entomological Society*, is nationally known as a teacher and leader of a large number of America's economic entomologists.

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### FUMIGATION OF SATSUMAS

Mr. Carl B. James, Horticulturist of the L. & N. Railroad, in cooperation with the American Cyanamid Company, has been conducting some very interesting and successful experiments in fumigating satsuma trees for the camphor and other scales.