

base of head strongly, concavely arcuate; humeral angles broadly rounded or obtusely angulate; posterior margin before scutellum gently concavely arcuate. Scutellum but little longer than wide (15:14), the lateral margins subparallel for a little over one-third the way from base, thence very gently concavely arcuate; apex bluntly rounded; a small, smooth, calloused, yellow spot just within each basal angle. Corium a little shorter than scutellum; outer and inner apical angles rounded, apical margin truncate; space between costal margin and Sc+R nervure plainly narrower than space between this nervure and inner margin. Membrane reaching apex of abdomen. Length 7.40 mm.; diameter 3.08 mm.

Type male.—U. S. N. M. No. 44581, Victoria, Texas (J. D. Mitchell).

Paratypes males.—One with same data as type, two "Tex." (C. V. Riley); "Tex." (Belfrage); females: two "Tex." (C. V. Riley); Austin, Tex.

Somewhat larger than *S. microphthalmus* Flor. Easily differentiated from that species by the longer and narrower frontal region; more prominent tooth before each eye, more strongly elevated bucculae, and strongly produced anterior angles of the pronotum.

TWO NEW SPECIES OF EULACHNUS DEL GUERCIO (APHIDIDAE).

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The aphids of the genus *Eulachnus* Del Guercio feed on the leaves of *Pinus* and are widely distributed in the world. As far as my observations extend seven species including two new forms are now known, of which six are distinguished as follows:

KEY TO SPECIES OF EULACHNUS.

(VIVIPAROUS FEMALE.)

- (1) Hairs on the front nearly as long as or shorter than the first antennal joint.....(2)
- Hairs on the front much longer than the first antennal joint.....(3)
- (2) The third antennal joint of the apterous form with about 12 capitate setae.....*E. americanus* n. sp.
- The third antennal joint of the apterous form with about 20 slightly capitate setae.....*E. taiwanus* n. sp.
- (3) Head with capitate setae.....*E. tuberculostemmata* Theob.
- Head without capitate setae.....(4)
- (4) The third antennal joint longer than the fourth and fifth taken together, lacking sensoria in the alate and apterous forms.....
E. rileyi Williams

- The third antennal joint nearly as long as the fourth and fifth taken together, with sensoria in the alate form.....(5)
- (5) The third antennal joint of the alate form with 6-9 sensoria.....
E. agilis Kalt.
- The third antennal joint of the alate form with 1 or 2 sensoria.....
E. piniformosanus Takah.

Eulachnus thunbergii Wilson (Ent. News, XXX, 1919, p. 3) has been described from only the sexual forms and is not included in the key. It may be identical with *E. piniformosanus* Takah. (1921), the latter sinking as a synonym.

***Eulachnus americanus* n. sp.**

(Apterous viviparous female) Brownish yellow. Eyes red. Antennae of the same color as the body, but paler, somewhat dusky on the distal half of the fifth joint and on the sixth. Legs brownish yellow, somewhat dusky on the tarsi. Hairs pale yellow. (Color notes from specimens not treated with potash and mounted in balsam.)

Body elongate, narrow, with many stiff setae which are a little capitate and slightly or scarcely curved. Head divided on the dorsum, with some capitate stiff setae; those on the front longer, but a little shorter than the first antennal joint. Eyes protruding, without ocular tubercles. Antennae slender, with some capitate setae which are shorter than those on the front and nearly as long as those on the vertex; the first joint longer than wide, as long as the second, with 2 rather short capitate setae on the mesal side; the second with 2 similar, but longer, setae; the third provided with some 12 capitate setae, wanting sensoria; the fourth with about 7 similar setae; the fifth with a large apical sensorium and about 6 similar setae; the sixth with about 4 similar setae on the basal part, 3 very short stout capitate setae at the tip, and a large oval sensorium on the basal half of the distal part; the relative length of joints about as follows: III—62, IV—32, V—41, VI—24+20. Rostrum obtuse, reaching the hind coxae. Capitate setae on the posterior part of abdomen longer, nearly as long as those on the front. Cornicles small, very short, not on cones. Cauda rounded, with many very long fine hairs not capitate. Legs very long, slender, with many capitate stiff setae, most of which are nearly as long as those on the front; some simple setae also present on the distal parts of tibiae; hind tarsi as long as the fifth antennal joint, the basal segment with 2 fine capitate setae and about 5 shorter simple setae, the distal segment twice as long as the basal, with a few fine capitate and simple setae.

Length of body—about 1.55 mm. Width of abdomen—about 0.6 mm. Width of head including eyes—about 0.39 mm. Length of antenna—about 1.1 mm. Capitate seta on front—about 0.05 mm. Capitate seta on vertex—about 0.037 mm. Hind tibia—about 1.0 mm.

(Alate viviparous female) Color almost as in the apterous form. Mesothorax dark brown. Wings hyaline, veins and stigma pale yellowish brown. (Color notes from specimens not treated with potash and mounted in balsam.)

Body elongate, narrow, with many a little capitate setae. Head divided, with some capitate stiff setae which are as long as the first antennal joint and slightly

or scarcely curved. Antennae slender, with some capitate stiff setae a little shorter than those on the head; the first joint with 2 short mesal capitate setae; the second as long as the first, with 2 similar, but a little longer, setae; the third with 2-4 rather large circular sensoria in a row on the distal half and some 10 capitate setae; the fourth with 1 or 2 similar sensoria and about 5 capitate setae; the fifth with a large oval sensorium and about 4 similar setae; the sixth with about 2 similar setae on the basal part, a large oval sensorium about the middle of the distal part, and 3 short capitate setae at the tip; the relative length of joints about as follows: III—68, IV—36, V—45, VI—25+20. Rostrum reaching beyond the middle coxae, obtuse. Cornicles and cauda as in the apterous form. Legs very long, slender, with many capitate stiff setae which are as long as or a little longer than those on the front; tibiae stouter than the third antennal joint; hind tarsi as long as the fifth antennal joint, the distal joint twice as long as the basal. Wings narrow; media on the front wings obsolete on the basal part, once branched, faintly indicated; stigma normal; hind wings with 0-2 obliques and 2 or 3 hooklets.

Length of body—about 1.72 mm. Width of head including eyes—about 0.4 mm. Length of antenna—about 1.1 mm. Fore wing—about 2.0 mm. Hind tibia—about 1.2 mm. Capitate seta on front—about 0.06 mm. Longer capitate seta on antenna—about 0.046 mm.

Host.—*Pinus tanyosho*.

Hab.—Wyomissing, Pa., U. S. A.

Some specimens were collected by F. M. Trimble on Sept. 15, 1921, and were sent to me for study by Dr. T. L. Guyton. The type specimens will be preserved in the collection of the Department of Agriculture, Research Institute, Formosa.

***Eulachnus taiwanus* n. sp.**

Eulachnus rileyi Takahashi (nec. Williams), Aphididae of Formosa, part 2, p. 47 (1923); Ibid., part 6, p. 25 (1931).

(Apterous viviparous female) Yellowish brown. Eyes brown. Antennae pale yellowish brown, apices of the third, fourth and fifth joints and distal half of the sixth somewhat dusky. When placed in balsam many small dusky spots visible on the dorsum, from each of which arises a long yellowish brown bristle. Legs yellowish brown, tarsi somewhat dusky. Cornicles and cauda yellowish brown.

Body elongate, narrow, slightly covered with a powder, with many stiff setae which are straight or slightly curved and slightly or scarcely capitate. Head divided, with 4 long setae on the front arranged in a transverse row, and 14 dorsal setae a little shorter than those on the front; the setae on the front as long as the first antennal joint. Eyes large, protruding, without ocular tubercles. Antennae slender, with many slightly capitate setae which are shorter than those on the front; the second joint as long as the first, with about 5 setae around the middle; the third a little striate on the distal half, wanting sensoria, with about 20 setae; the fourth wanting sensoria, with about 10 setae; the fifth with a very large circular sensorium and about 10 setae; the sixth with a large circular

sensorium on the basal half of the distal part, about 3 very short apical setae slightly capitate, and about 5 setae on the basal part; the relative length of joints about as follows: III—90, IV—46, V—51, VI—24+17. Rostrum reaching beyond the middle coxae, obtuse. Posterior abdominal setae a little longer, but slightly shorter than the frontal ones. Cornicles very small, short, not on cones. Cauda broadly rounded, with many long setae not capitate. Legs very long, with many stiff setae which are slightly or scarcely capitate and slightly shorter than those on the front; tibiae stouter than the third antennal joint; hind tarsi striate, as long as the fifth antennal joint, the distal segment nearly twice as long as the basal.

Length of body—about 2.25 mm. Width of head including eyes—about 0.46 mm. Width of abdomen—about 0.74 mm. Length of antenna—about 1.2 mm. Hind tibia—about 1.2 mm. Seta on front—about 0.074 mm. Dorsal seta on basal part of abdomen—about 0.047 mm.

Host.—*Pinus massoniana*.

Hab.—Taihoku, Taiwan (Formosa).

Some apterous females were collected by me on July 30, 1922. This species was regarded as *Eulachnus rileyi* Williams in my previous papers, but differs from it as stated in the key. Closely allied to *E. americanus* Takah., differing, however, in the larger body, in possessing more setae on the antennae and legs, in the setae less distinctly capitate, etc. The winged form has not been collected. The type specimens will be preserved in the collection of the Department of Agriculture, Research Institute, Formosa.

A NEW MELANOPLUS (ORTHOPTERA : ACRIDIDAE) OF THE TEXANUS SERIES.¹

By V. A. LITTLE, *Texas A. and M. College, College Station, Texas.*

Melanoplus angularis, new species.

This is the most striking species of the Texanus series due to its angular and peculiarly shaped cerci, the presence of bullations on the supra-anal plate and its large size. The investigator is acquainted with three species of the series in Texas. *Texanus* is confined to the western areas, *warneri* is found in the post oaks of the east central section, while this species is found in the pine woods of east Texas. All three are found only in the spring and early summer.

Type.—Male: Walker County, Texas, May 28, 1930.

Size large for series; form robust. General color dark grayish brown dorsally, lighter ventrally. Antennae rusty brown about equal to the combined length of the head and pronotum. Eyes moderately large, oval, the width equaling

¹Contribution No. 28, Department of Entomology, Texas A. and M. College, College Station, Texas.



Takahashi, Ryoichi. 1932. "Two new species of Eulachnus Del Guercio (Aphididae)." *Proceedings of the Entomological Society of Washington* 34, 150–153.

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