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bristle; sides of interspaces and intervals between granules finely punctured and bearing short, stout, reclinate scalelike hairs. Declivity oblique, arcuate, unmodified.

*Male*.—Similar in habitus but readily distinguished by the character of the frons, which has a strong concavity, longer than wide, and bordered on each side by a sharp elevated margin, usually with a sharp toothlike projection just below the level of each antennal insertion.

This species was described by Leconte from specimens obtained from hickory twigs in Pennsylvania. The writer has studied specimens from New York, New Jersey, Pennsylvania, Maryland, the District of Columbia, West Virginia, Virginia, North Carolina, Georgia, and Mississippi. It is also reported from eastern Canada by Swaine. All specimens studied were obtained from twigs of various species of *Hicoria*.

### ***Chramesus asperatus* Schaeffer**

*Chramesus asperatus* Schaeffer, N. Y. Ent. Soc. Jour. 16: 220. 1908. Bruck, Bull. So. Calif. Acad. Sci. 35: 125. 1936.

*Female*.—Dark reddish-brown to piceous; 1.97 mm long, about 1.6 times as long as wide.

*Frons* feebly convex, transversely impressed below, arcuately elevated between the antennae, slightly flattened just above; surface moderately shining, very finely punctured, with inconspicuous, fine, short hairs. *Eye* narrow, elongate oval, moderately granulate, the inner line entire. *Antenna* testaceous, the scape long, slender, devoid of long hairs; the club nearly three times as long as wide (Fig. 2).

*Pronotum* obliquely descending from its base, actually 1.35 times as wide as long, but appearing shorter in dorsal view; posterior outline bisinuate, rather strongly extended at median line; sides arcuate and strongly converging anteriorly, moderately rounded in front, somewhat impressed just behind the front margin; surface rather shining, the disc asperate throughout except in the middle half of the median longitudinal line, which is slightly elevated, shining and devoid of punctures, hairs, and granules, the asperities stronger at the sides of the disc; sides granulate-punctate; the entire surface, except median line, clothed with thickened, semierect, cinereous bristles of medium length.

*Elytra* distinctly wider than pronotum, about 1.11 times as long as wide, the bases separately arcuate, the margins elevated and strongly serrate; the sides subparallel, moderately broadly rounded behind; dorsal outline arcuate, less oblique than in *hicoriae*; surface subopaque; striae rather narrow, distinctly impressed, the punctures fine and close; interspaces rather wide, subconvex, uniserially granulate-punctate, each with a median row of erect, stout bristles and at each side a row of small, rather narrow, reclinate scales. Declivity unmodified.

*Male*.—Pronotum more strongly, transversely impressed in front, the smooth median longitudinal line almost lacking, the front of the head shiny, broadly, rather deeply concave, with the margins rather sharply elevated and with a small tooth at each side opposite the insertion of the antenna.

Schaeffer described this species from a short series of specimens given to him by E. A. Schwarz, taken from a long series collected by H. G. Hubbard June 1–3, 1897, in Pine Canyon, Chiracahua Mts., Ariz. These were col-



lected in the twigs of *Robinia neo-mexicana*. The parent series contains 127 additional specimens. This is a common species in the twigs of *Robinia neo-mexicana* in Arizona. The writer has studied several hundred specimens from the Kaibab National Forest, Williams, Prescott, Santa Catalina Mts., Chiricahua Mts., and Huachuca Mts. The species as usual shows considerable individual variation in the degree of development of the frontal and antennal structures, and many specimens show little or no indication of the smooth longitudinal line of the pronotum.

Schaeffer's cotypes of this species were presented to the U. S. National Museum by the Brooklyn Museum. One of these cotypes, a female, is selected as the lectotype and the preceding description was taken from it.

*Type locality*.—Pine Canyon, Chiracahua Mts., Ariz.

*Host*.—*Robinia neo-mexicana* Gray.

*Lectotype female*, 2 male paratypes.—U. S. N. M., No. 42486.

### **Chramesus subopacus** Schaeffer

*Chramesus subopacus* Schaeffer, N. Y. Ent. Soc. Jour. 16: 221, 1908. Bruck. Bull. So. Calif. Acad. Sci. 35: 124. 1936.

*Female*.—Dark brown, almost black; 2.29 mm long, 1.66 times as long as wide.

*Frons* convex, broadly transversely impressed below, with this broad impression bordered at each side by an elevated line; surface subopaque, finely granulate-punctate, with fine, short, inconspicuous, cinereous hairs. *Eye* large, elongate oval, coarsely granulate, the inner line entire. *Antenna* yellow, the scape long and slender, the pedicel with a protuberance; the club very large (Fig. 1), 2.70 times as long as wide.

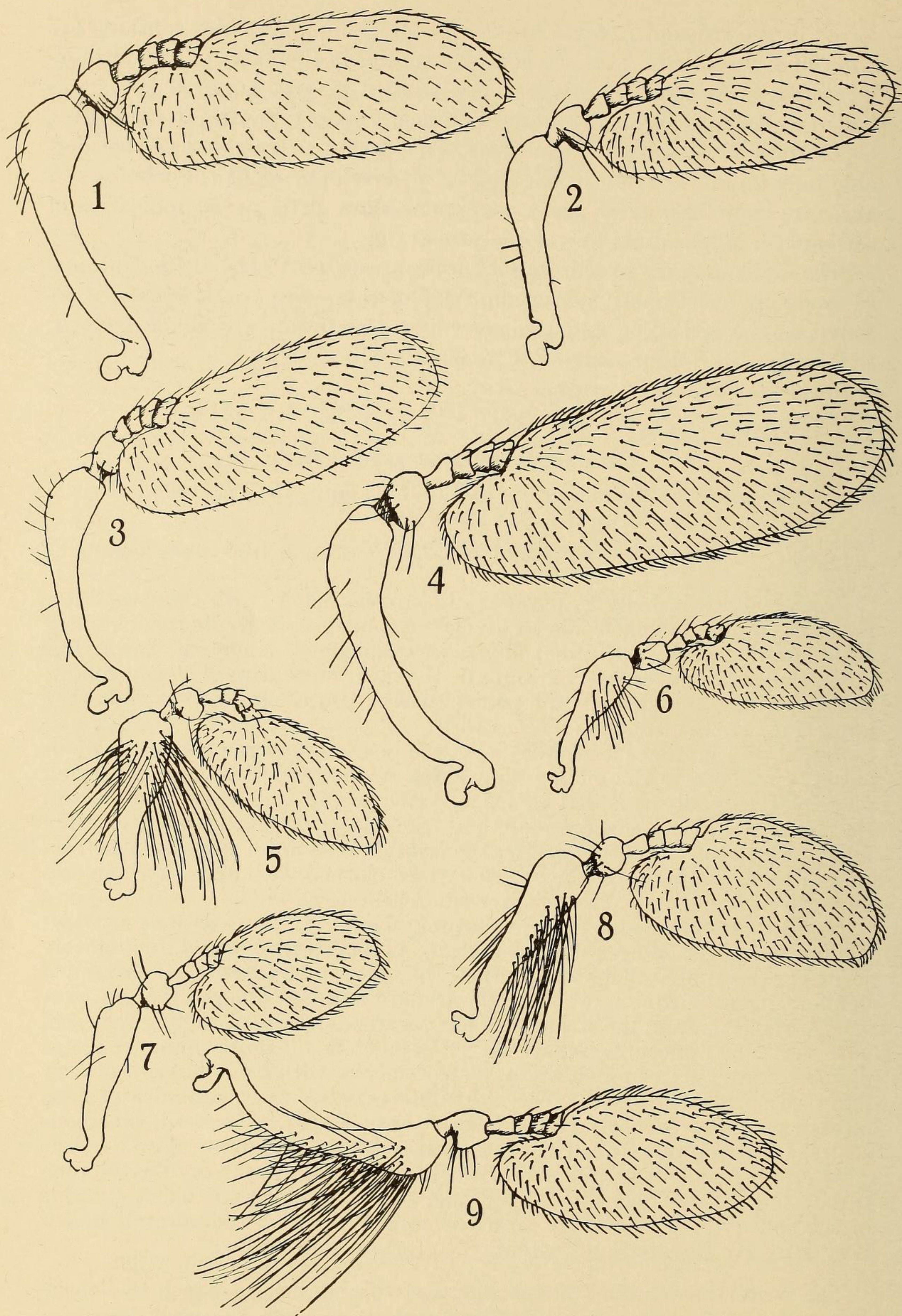
*Pronotum* 1.28 times as wide as long, the posterior outline bisinuate, moderately produced in the median line, sides arcuate and strongly converging anteriorly, broadly rounded in front, transversely impressed just behind the front margin; surface subopaque, the disc granulate-punctate, more finely and closely than in *hicoloriae*, the lateral areas more sparsely asperate; sides granulate-punctate; the entire surface clothed with appressed, cinereous scales varying from two to three times as long as wide.

*Elytra* distinctly wider than pronotum, about 1.12 times as long as wide; the bases separately arcuate, the margins moderately elevated, moderately serrate; sides subparallel on more than the basal half, very broadly rounded behind; dorsal outline more strongly arcuate and less oblique than in *hicoloriae*; surface opaque; the striae very narrow, moderately strongly impressed, with very fine punctures, separated by as much as, or more than, their own diameter; interspaces much wider, feebly convex, with a median row of very fine punctures bearing suberect, spatulate bristles, the remainder of each interspace rather densely clothed with short, broad, appressed, cinereous scales. Declivity unmodified, the interspaces devoid of granules as on the disc.

*Male*.—Frons deeply concave, with the surface shining, very finely punctured, and with sparse, short, very fine, reclinate, cinereous hairs, the side of the concavity bordered by a raised margin which on the anterior half is very strongly elevated and extended to form a sharp ridge.

The writer has studied 30 specimens of this species, of which two specimens, a male and a female, are Schaeffer's cotypes received from the





Figs. 1-9.—For explanation see opposite page.



Brooklyn Museum. Twenty-eight additional specimens were bred from wood of *Celtis*, taken at San Antonio, and La Grange, Tex., by W. F. Fiske in 1907. The female cotype has been selected as the lectotype.

*Type locality*.—Huachuca Mts., Ariz.

*Additional localities*.—San Antonio and La Grange, Tex.

*Host*.—*Celtis*.

*Lectotype female and 1 male paratype*.—U. S. N. M., No. 42934.

***Chramesus canus*, n. sp.**

*Female*.—Brown with grayish vestiture; 2.5 mm long, 1.66 times as long as wide. Closely allied to *Chramesus subopacus* Schaeffer.

*Frons* transversely impressed below, the impression bordered at each side by an elevated ridge, with an arcuate elevation between the bases of the antennae, convex above, with a distinct, large fovea in the median line just above the arcuate elevation; surface subopaque, very finely and closely granulate-punctate, with very fine, cinereous hairs, scarcely visible except in profile. *Eye* elongate oval, rather finely granulate, the inner line entire. *Antennal club* very large, 2.8 times as long as wide (Fig. 4).

*Pronotum* 1.3 times as wide as long; the posterior margin bisinuate, moderately produced in the median line; sides arcuate and converging strongly anteriorly, broadly rounded in front, feebly impressed behind the front margin; surface subopaque; disc with the median area finely, moderately closely punctate, scarcely granulate, the lateral areas more strongly asperate than in *subopacus*; sides finely granulate-punctate; the surface clothed with appressed scales which are rather more slender than in *subopacus*.

*Elytra* wider than pronotum, similar to *subopacus* in form and proportions, but with the basal margin more strongly elevated; the striae wider and with coarser punctures; the discal interspaces slightly flatter, each with a median row of fine granules and a row of suberect, spatulate, rather short bristles, inconspicuous except in profile; appressed scales large and rather slender.

*Male*.—Frons with the usual secondary sexual differences and differing from that of *subopacus* in the concavity being slightly narrower and deeper and the marginal ridge somewhat thicker.

*Type locality*.—Tallulah, La.

*Host*.—Unknown.

*Holotype female, allotype, and 1 male and 1 female paratype*.—U. S. N. M., No. 43841.

The holotype, allotype, and two paratypes bear the data—"Tallulah, La., 2-6-11; Hunter, No. 1984; G. D. Smith, Collector."

***Chramesus gibber*, n. sp.**

*Female*.—Yellowish brown (immature); 2.0 mm long, 1.66 times as long as wide.

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Fig. 1.—Antenna of *Chramesus subopacus* Schaeffer, male; Fig. 2.—Antenna of *C. asperatus* Schaeffer, female; Fig. 3.—Antenna of *C. hicoriae* Leconte, female; Fig. 4.—Antenna of *C. canus*, n. sp., female; Fig. 5.—Antenna of *C. mimosae*, n. sp., male; Fig. 6.—Antenna of *C. mimosae*, n. sp., female; Fig. 7.—Antenna of *C. dentatus* Schaeffer, female; Fig. 8.—Antenna of *C. dentatus* Schaeffer, male; Fig. 9.—Antenna of *C. chapuisii* Leconte, male.



*Frons* somewhat flattened, transversely impressed below, with an arcuate transverse elevation between the bases of the antennae; surface moderately shining, very finely punctured, and with very fine, short, inconspicuous hairs. *Eye* elongate oval, finely granulate, the inner margin entire. *Antenna* testaceous, the scape long and rather slender; the club moderately large, 2.36 times as long as wide.

*Pronotum* 1.34 times as wide as long, posterior outline bisinuate, weakly produced in the median region; sides arcuate, moderately strongly converging anteriorly, transversely impressed just behind the broadly rounded front margin; surface shining; median area of disc moderately punctured (more coarsely than in *hicoriae*) and without granules, lateral areas of disc sparsely, not strongly, asperate; sides moderately punctured; sides and disc rather sparsely clothed with rather short, stiff, moderately stout, semierect setae.

*Elytra* wider than pronotum, 1.07 times as long as wide; sides subparallel, broadly rounded behind; basal margins separately arcuate, strongly elevated and crenate; dorsal outline oblique, the declivity strongly arcuate; surface rather shining; the striae narrow, moderately impressed, the punctures deep, fine, separated by their own diameter or more; interspaces wide, weakly convex, devoid of granules, each with a median row of erect, spatulate bristles of moderate length, the surface sparsely clothed with rather slender, appressed scales. Declivity unmodified except that the striae punctures are finer and both striae and interspaces narrower.

*Male*.—*Frons* deeply, broadly concave, the side margins sharply elevated below, with a low tooth just mesad and ventrad of each antennal insertion; the antennal scape with a few hairs of moderate length not forming a tuft.

*Type locality*.—Cloudcroft, N. M.

*Host*.—*Robinia*.

*Holotype female, allotype and 1 male paratype*.—U. S. N. M., Mo. 43842.

The holotype, allotype, and paratype bear the data—"Hopk. U.S. 7208; W. F. Fiske, Collector; Cloudcroft, N. M., *Robinia*."

### ***Chramesus chapuisii* Leconte**

*Chramesus chapuisii* Leconte, Amer. Phil. Soc. Proc. 15: 375. 1876; Schwarz, Ent. Amer. 2: 54. 1886; Blackman, Miss. Agr. Expt. Sta. Tech. Bull. 11, p. 51, 1922.

*Female*.—Piceous to black in color; 1.48 to 1.97 mm long, 1.7 times as long as wide.

*Frons* convex, transversely impressed below, with a transverse, arcuate elevation between the bases of the antennae, and with a small but distinct pit or fovea in the median line just above it; surface subopaque, reticulate, with rather sparse, very fine punctures and scanty, rather short, appressed hairs. *Eye* elongate oval, rather coarsely granulate, the inner line entire. *Antenna* testaceous, the scape rather long and slender, with a few hairs of moderate length; the club little more than twice as long as wide (Fig. 9).

*Pronotum* 1.33 times as wide as long; posterior outline bisinuate, not strongly extended at the median line; the sides arcuate, rather strongly converging anteriorly, very feebly transversely impressed, moderately broadly rounded in front; surface subopaque, disc granulate-punctate in the median area, the lateral areas moderately strongly asperate; sides finely granulate-punctate; vestiture on sides and disc consisting of cinereous, spatulate-hairs, the latter slightly more slender in median area of disc.



*Elytra* wider than pronotum, about 1.12 times as long as wide; the sides subparallel, moderately rounded behind; anterior margins separately arcuate, elevated and strongly crenate; dorsal outline not strongly oblique, moderately strongly arcuate on the declivity; surface subopaque; striae rather narrow, moderately impressed, with fine, closely placed punctures; interspaces about four times as wide as striae, feebly convex, each with a median row of erect spatulate hairs, rather densely clothed with small, nearly circular, appressed, cinereous scales, the first three interspaces with a sparse, median row of small granules.

*Male*.—Similar in size and habitus, but with the frons concave, bordered at each side by a distinct carina which is elevated to form a small, sharp tooth just ventrad of each antennal insertion; the antennal scape with a tuft of long cinereous hairs.

This species breeds in hackberry and occurs in the Southeastern States. The writer has studied specimens from Texas, Louisiana (the type locality), Mississippi, Florida, Maryland, Pennsylvania, and Kansas. The Maryland specimens are from Plummers Island. All specimens were taken from *Celtis*.

#### **Chramesus dentatus** Schaeffer

*Chramesus dentatus* Schaeffer, N. Y. Ent. Soc. Jour. 16: 221. 1908. Bruck. Bull. So. Calif. Acad. Sci. 35: 124. 1936.

*Female*.—Dark reddish brown, 1.74 mm long, 1.78 times as long as wide.

*Frons* feebly convex; surface reticulate, subopaque; finely, rather sparsely punctured, with short, stout, scalelike hairs; with a small, toothlike epistomal process, and above it, in the median line, a small fovea. *Eye* elongate oval, rather finely granulate, the inner margin entire. *Antenna* paler in color, the scape slightly widened distally, with a few rather short hairs, not forming a tuft; the club much smaller and wider than usual, scarcely twice as long as wide, the distal end subacute (Fig. 7).

*Pronotum* 1.22 times as wide as long, obliquely descending from the base; posterior outline bisinuate, scarcely extended in the median line; sides arcuate, converging anteriorly; moderately transversely impressed just behind the front margin; surface subopaque, disc with the median area granulate-punctate, elevated in the median line on the posterior half; lateral areas of disc sparsely, rather finely asperate; sides more shining, granulate-punctate; the entire surface clothed with small, subreclinate, scalelike, yellowish-brown hairs.

*Elytra* distinctly wider than pronotum, 1.2 times as long as wide; the sides subparallel, broadly rounded behind; anterior margins separately arcuate, elevated and finely crenate; dorsal outline only slightly oblique, strongly arcuate on the declivity; surface subopaque; striae wider than in any of the preceding species, rather feebly impressed, the punctures of moderate size, separated by less than their own width; interspaces narrower than in preceding species, subconvex, with a median row of small punctures, bearing short, stout, suberect bristles and with very small, appressed scales rather sparsely covering the interspaces and occasionally arising from the striae between the punctures.

*Male*.—Frons broadly, moderately deeply concave, with the margins not sharply elevated, the surface somewhat shining, finely reticulate, with sparse, fine punctures bearing appressed, moderately short, cinereous hairs; epistomal process elevated to form a sharp tooth; scape of antenna bearing a tuft of long hairs (Fig. 8).



The type series in the National Museum consists of three male cotypes and one female cotype bearing the data "Huach. Mts., Ariz." and the Brooklyn Museum Collection label. They were obtained from oak twigs girdled by *Oncideres quercus* Skinner. Three other specimens bear only the Brooklyn Museum labels, without further data, but seem to be mounted identically and probably are from the same original lot. The female cotype has been selected as the lectotype.

*Type locality*.—Huachuca Mts., Ariz.

*Host*.—*Quercus* sp.

*Lectotype female and 3 male paratypes*.—U. S. N. M., No. 42487.

### ***Chramesus mimosae*, n. sp.**

*Female*.—Dark brown to piceous, with the elytra reddish brown basally; 1.57 mm long, 1.8 times as long as wide.

*Frons* flattened, very feebly concave between the eyes, the epistomal margin with a minute, sharp tooth; surface opaque, reticulate, with very fine punctures from which arise conspicuous, short, stout, appressed, scalelike, cinereous hairs; with a dense fringe of longer cinereous hairs extending from the epistomal margin nearly to the ends of the mandibles in front, and to about one-half of their length at the sides. *Eye* elongate oval, finely granulate, the inner line entire. *Antenna* testaceous, the scape moderately widened distally, with rather numerous moderately long hairs; the club scarcely more than twice as long as wide, the distal end subacute (Fig. 6).

*Pronotum* 1.25 times as wide as long, obliquely descending; posterior margin bisinuate, distinctly extended in the median line, sides arcuate, strongly converging in front of the center; moderately rounded in front and feebly transversely impressed just behind the front margin; surface opaque, feebly and sparsely asperate at sides of disc; median area very finely and rather closely punctured; entire surface clothed with closely placed, small, reclinate, cinereous, scalelike hairs.

*Elytra* wider than pronotum, about 1.23 times as long as wide; sides subparallel, rather broadly rounded behind; anterior margins separately arcuate, elevated and crenate; surface opaque; striae narrower than in *dentatus*, rather weakly impressed, the punctures fine and close; interspaces moderately wide, feebly convex, each with a sparse median row of moderately long, spatulate, cinereous bristles and rather closely arranged, appressed scales which are cinereous on the first interspace and on the sides and anterior disc, but light brown on second to fourth interspaces from basal third nearly to apices of elytra, the scales slightly larger and more slender than in *dentatus*; stria punctures at the sides larger than on the disc, interstitial bristles less numerous.

*Male*.—Frons broadly and rather deeply concave, with margins moderately but not sharply elevated, surface subopaque, reticulate, ornamented with appressed, cinereous hairs; epistomal margin with a small, sharp tooth; scape of antenna with a tuft of longer hairs (Fig. 5) much larger than in female.

*Type locality*.—Brownsville, Tex.

*Other locality*.—Monterrey, Mexico.

*Host*.—Mimosa (*Leucaena pulverulenta*)

*Holotype, allotype, and 638 paratypes*.—U. S. N. M., Mo. 52803.



The holotype, allotype and 637 paratypes were collected and bred from mimosa (*Leucaena pulverulenta*) at Brownsville, Tex., by H. S. Barber. A single paratype bears the labels "Monterrey, Mexico, 25.11; E. A. Schwarz collector."

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