

A REVISION OF THE GENUS *LARROPSIS* PATTON
(HYMENOPTERA: SPHECIDAE)

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Among the tachytine genera of Larrinae, the genus *Larropsis* Patton is a well defined group of North American wasps with a center of distribution in the Great Plains region of the United States. In a previous paper (Bohart and Bohart, 1962) we reviewed the related genus *Ancistromma* Fox which was then considered a subgenus of *Larropsis*, but which now seems sufficiently distinct to stand by itself.

There have been no recent comprehensive studies of *Larropsis*. Fox (1893) was the first major contributor and his keys were improved and enlarged by H. Smith (1908), Williams (1913) and Mickel (1917). Synonymy was brought up-to-date by G. Bohart (1951). We recognize eleven species from previous publications (all before 1918), and we have now increased the list to twenty-five.

We have examined all the primary types of *Larropsis* except that of *divisa* Patton and about 900 additional specimens kindly made available to us by the following individuals and associated institutions (including symbols used in distributions): W. F. Barr, University of Idaho; Robert Bechtel, Nevada State Department of Agriculture (NSDA); G. W. Byers, University of Kansas (KU): the late R. R. Dreisbach; H. E. Evans, Harvard Museum of Comparative Zoology (MCZ); G. R. Ferguson; H. J. Grant, Jr., Academy of Natural Sciences of Philadelphia (ANSP); T. H. Hubbell, University of Michigan (U. MICH.); P. D. Hurd, Jr., University of California, Berkeley (CIS); G. F. Knowlton, Utah State University (USU); K. V. Krombein, U. S. National Museum (USNM); A. T. McClay, University of California, Davis (UCD); L. W. Quate, University of Nebraska (U. NEBR.); E. S. Ross, California Academy of Sciences (CAS); the late H. F. Schwarz

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Illustrations were prepared by Mrs. Ellen Parker based on outlines by R. M. Bohart.

Type material is deposited as indicated in the descriptions.

Genus *Larropsis* Patton

Larropsis Patton, 1892. Ent. News 3:90. Type, *Larrada tenuicornis* F. Smith, original designation.

Generic diagnosis.—Ocellar scars "comma-shaped"; face raised somewhat along inner eye margins, especially in females; fore tarsal comb of female composed of thorn-like rather than flexible setae; pygidium of female with stiff, appressed bristles, becoming longer and thicker distally; male tergite VII with stiff bristles, not silvery pubescent; epipleural sinus ("auricular" area beneath wing bases) limited below by one or more longitudinal ridges on the upper mesopleuron (see Bohart and Bohart, 1962, fig. 2); least interocular area greater than length of pedicel and flagellomere 1 (about equal in *L. interocularis*); female clypeus gently and evenly convex; male genitalia with distal part of cuspis about equal to basal part.

Systematics.—The ridges of the upper mesopleuron and generally broad interocular area are the most useful characteristics from a generic standpoint. At the specific level there are very few structural characters in the usual sense. Chief among these are the proportions of the basal flagellomeres and the distance between the eyes at the vertex. For specific characters we have had to use details of pubescence, punctation and color, all of which are unreliable in varying degrees, depending upon the species. Division of the genus into groups is difficult, but the following seem to have affinities: I. the *rugosa* group with the combination of propodeal enclosure coarsely rugosostriate to rugose; punctation strong, close and uniform; female pygidium rather uniformly setose; and interocular space unusually wide. Included species are *rugosa*, *ater*, *divisa*, *elegans*, *greeni*, *sparsa* and *texensis*. II. The *vegeta* group with the combination of propodeal enclosure finely striate; flagellomeres I-II of female

each not more than 2.5 times as long as broad; and front femur extensively polished (except in some *consimilis*). Included species are *vegeta*, *arizonensis*, *consimilis*, *washoensis*, *deserta*, *chilopsidis*, *lucida* and *striata*. III. The *sericea* group with the combination of propodeal enclosure finely granulose; both sexes with silvery pronotal and tergal hair bands; and punctation fine and very close. Included species are *sericea* and *interocularis*. IV. The *testacea* group combining short flagellomeres as in *vegeta* with finely granulose propodeal enclosure and silvery pronotal and tergal hair bands. Only species: *testacea*. V. The *snowi* group with propodeal enclosure strongly, transversely striate; punctation coarse and moderately spaced (except on abdomen of female); and both sexes with silvery pronotal and abdominal hair bands. Only species: *snowi*. VI. The *conferta* group with the combination of punctation fine and well spaced on abdomen; males and some females with silvery pronotal and tergal hair bands, and rather slender body form. Included species are: *conferta*, *sonora*, *tenuicornis*, *uniformis*, *flicicornis* and *discreta*.

Biology.—Williams (1913) recorded *L. divisa* Patton as provisioning its ground nest with immature cave crickets of the genus *Ceuthophilus* obtained from rodent burrows. *L. flicicornis* Rohwer has been collected in Oklahoma with a paralyzed adult camel cricket, *Ammobaenetes* sp. (det. H. F. Strohecker), according to R. M. Bohart (1965).

Distribution.—The genus seems to be restricted to North America, ranging from coast to coast and from Montana to Durango, Mexico. A European species, *punctulata* Kohl, has been referred to *Larropsis* by several authors. However, it belongs in *Ancistromma*. At least six other palearctic species have been named, and these appear to be referable to *Ancistromma* also. We have not seen any Canadian specimens of *Larropsis* and only a few from Mexico in the states of Sonora, Chihuahua, Coahuila, Zacatecas, and Durango. It is possible to define three major distribution areas (fig. 1). One of these is a Pacific Coast area (A) with six species, five of which are endemic. The second is a central plains and prairie area (B) extending into the Chihuahuan and eastern Sonoran deserts and associated southern Rocky Mountain localities. This area contains the bulk of the

species (19), of which 17 are endemic. The third area (C) includes the Atlantic Coast states with two species, one endemic. One species of *Larropsis* (*uniformis*) broadly overlaps both areas A and B and occurs in much of the intermountain territory between. A peculiarity of the distribution picture as a whole is the complete absence of records from most of the midwest.

KEY TO MALES OF LARROPSIS

1. Flagellomeres I-II together about as long as or longer than least interocular distance 2
 Flagellomeres I-II together not more than four-fifths as long as least interocular distance 5
2. Vertex with obvious interpunctural areas which are shiny in postocellar depression 3
 Vertex including postocellar depression very closely punctate 4
3. Scutal pubescence partly to mostly coppery; appressed pubescence on basal two-thirds of tergites II-III dark; wings dark brown
 *tenuicornis* (F. Smith)
 Scutal pubescence silvery; appressed pubescence of basal two-thirds of tergites II-III silvery in some views; wings clear or somewhat clouded distally *uniformis* G. and R. Bohart
4. Fore femur with outer face nearly obscured by silvery pubescence; flagellomeres I-II together distinctly longer than least interocular distance; abdomen largely red with a silvery apical hair band on tergite IV *interocularis* G. and R. Bohart
 Fore femur with only a little silvery pubescence; flagellomeres I-II together about equal to least interocular distance; abdomen dark, no silvery hair band on tergite IV *sericea* G. and R. Bohart
5. Outer face of fore femur with punctures distributed uniformly, usually close but sometimes well spaced, particularly in species with an unusually short flagellomere I 6
 Outer face of fore femur with punctures distributed unevenly, at least becoming sparser anteroventrally, punctation of femur sparse in most species 14
6. Pronotal pubescence on posterior ridge reflecting brown to black 7
 Pronotal pubescence on posterior ridge reflecting silvery or golden as viewed from above; or if not, posterior face of propodeum divided by rugae into several large basins 8
7. Flagellomere I distinctly less than twice as long as broad; propodeal enclosure very finely sculptured, dull *consimilis* (Fox)
 Flagellomere I about twice as long as broad; propodeal enclosure coarsely rugostrate, especially toward middle *rugosa* (Fox)
8. Flagellomere I about two-thirds as long as II in outer view; tergites I to III with well developed silvery bands 9
 Flagellomere I at least three-fourths as long as II in outer view 10

9. Posterior face of propodeum with strong cross-striae but not divided into a number of large, shiny basins *filicornis* Rohrer
 Posterior face of propodeum with a number of large shiny basins
 *discreta* (Fox)
10. Punctuation of outer face of fore femur and of scutum remarkably close, fine, and even; apical hair bands of tergites I to III definite but rather dull golden *elegans* G. and R. Bohart
 Punctuation of outer face of fore femur medium to fine, many punctures separated by one or two diameters 11
11. Hair bands on tergites II and III coppery or dark golden and usually indistinct 12
 Hair bands on tergites II and III distinct and silvery or pale gold 13
12. Propodeum dorsolaterally and behind with a few extremely coarse rugae enclosing several large, irregular basins; flagellomere II slightly more than twice as long as broad *greeni* Rohrer
 Propodeum dorsolaterally and behind with some irregular rugae but not divided into large basins; flagellomere II not more than twice as long as broad *texasensis* G. and R. Bohart
13. Pronotal lobe and scutum with silvery pubescence; tergite II with minute and regularly spaced punctation toward middle; wings clear or lightly stained *conferta* (Fox)
 Pronotal lobe and scutum except posterolateral corners with coppery pubescence; tergite II with moderate and irregularly spaced punctation; wings dark brown *divisa* (Patton)
14. Pronotal pubescence on posterior ridge reflecting silvery or light gold as viewed from above 15
 Pronotal pubescence on posterior ridge reflecting brown to black 19
15. Hind femur and tibia extensively reddish to orange 16
 Hind femur and tibia dark brown to black 17
16. Propodeal enclosure with minute transverse striae, appearing silky or finely granulose; abdomen reddish orange; median cell of forewing with conspicuous microsetae *chilopsidis* (Cockerell and Fox)
 Propodeal enclosure with strong, well separated striae, abdomen dark; median cell with inconspicuous microsetae, appearing asetose in most views *snowi* G. and R. Bohart
17. Propodeal enclosure with rather fine striae which tend to be longitudinal laterally; punctures of tergite II extremely fine; wings mostly clear but conspicuously microsetose *sonora* G. and R. Bohart
 Propodeal enclosure coarsely and transversely rugostrate; punctures of tergite II moderate, distinct, irregularly spaced; wings dark brown 18
18. Tergites without silvery or off-silvery hair bands
 Tergites II to III, at least, with well defined silvery or off-silvery hair bands *divisa* (Patton)

19. Propodeal enclosure with striae diverging from a ridge just behind postscutellum and running obliquely backward, not crossing midline 20
 Propodeal enclosure with striae of anterior one-third or more crossing midline, sometimes in a moderately decurved bow 21
20. Flagellomere II slightly more than twice as long as broad; abdomen dark *deserta* G. and R. Bohart
 Flagellomere II slightly less than twice as long as broad; abdomen red *striata* G. and R. Bohart
21. Scutal punctures about twice as coarse as those of intercellular convexity which are about equal in size to those of tergite II; sculpture of propodeal enclosure coarse and irregular *ater* Williams
 Scutal punctures only a little larger than those of intercellular convexity which are much larger than those of tergite II; sculpture of propodeal enclosure consisting of fine, close striae 22
22. Scutum closely and rather evenly punctate, very few interpunctural areas broader than a puncture; wings dark brown *arizonensis* G. and R. Bohart
 Scutum with punctures at least somewhat spaced in notaulal (submedian) areas, many interpunctural areas broader than a puncture diameter 23
23. Pedicel and flagellomeres I-II together distinctly longer than least interocular distance (17: 15); wings slightly clouded especially toward margins; scutum with extensive polished areas *washoensis* G. and R. Bohart
 Pedicel and flagellomeres I-II together distinctly shorter than least interocular distance (15: 17); wings dark brown; scutum with polished areas inconspicuous *vegeta* (Fox)

KEY TO FEMALES OF LARROPSIS (LARROPSIS)

1. Hind femur reddish-orange on distal one-third at least; hind tibia orange 2
 Hind femur largely black or mahogany; hind tibia largely black or dark brown on outer surface 5
2. Scutellar punctures more than one puncture width apart 3
 Scutellar punctures very dense and uniform, less than one puncture width apart 4
3. Scutal and mesopleural pubescence silvery; femora entirely reddish *snovi* G. and R. Bohart
 Scutal and mesopleural pubescence coppery; fore and mid femora largely black *lucida* G. and R. Bohart
4. Fore femur with outer face polished; tergites smooth, without hair bands *chilopsideis* (Cockerell and Fox)
 Fore femur with outer face dull, evenly punctate (fig. 14); tergites closely punctate, I-III with silvery hair bands *testacea* G. and R. Bohart

5. Flagellomeres I-II each less than 2.5 times as long as broad, I at least as long as II 6
 Flagellomeres I-II usually nearly three times as long as broad; if shorter, I is distinctly shorter than II 10
6. Fore femur with outer face almost uniformly punctured or with a smooth, nearly impunctate area restricted to distal one-half *consimilis* (Fox)
 Fore femur with outer face smooth and nearly impunctate for almost entire length except dorsally 7
7. Propodeal enclosure in anterior one-third with striae diverging from anterior margin and not crossing midline (fig. 23); wings light brown *deserta* G. and R. Bohart
 Propodeal enclosure in anterior one-third with striae crossing midline in a decurved bow (as in fig. 21) 8
8. Mesonotum with punctures uniformly dense and coarse, less than one puncture width apart *arizonensis* G. and R. Bohart
 Mesonotum with sparser punctures, many of them a puncture width or more apart 9
9. Pedicel and flagellomeres I-II together a little less than (37: 40) least interocular distance; forewing uniformly brown *vegeta* (Fox)
 Pedicel and flagellomeres I-II together a little more than (38: 36) least interocular distance (fig. 10); forewing a little darker along distal margin *washoensis* G. and R. Bohart
10. Outer face of fore femur with shiny, sparsely punctured area apically and ventrally (fig. 11) *tenticornis* (F. Smith)
 Outer face of fore femur uniformly punctured or nearly so 11
11. Pygidium nearly uniformly covered with bristles, at least on apical two-thirds, bristles near apex somewhat longer than others (fig. 19) 12
 Pygidium nearly bare except for apical group of bristles; punctures of basal two-thirds bearing minute, fine bristles (about as in fig. 17) 16
12. Abdominal pubescence largely silvery or pale golden; abdomen red with tergite I dark; propodeal enclosure without a well marked posterior depression encircled by striae 13
 Abdominal pubescence largely dark brown, coppery, or black 15
13. Mid femur with a rather small but distinct, shiny, nearly impunctate area apicoventrally; many shiny interpunctural areas a little behind middle of scutum which are nearly as wide as punctures *ater* Williams
 Mid femur rather closely and finely punctured throughout; scutum closely punctured throughout 14

14. Pygidium closely beset with golden bristles throughout; propodeal enclosure with a rather deep, narrow median groove, more anterior striae diverted obliquely on either side rather than running transversely (fig. 16) *elegans* G. and R. Bohart
Pygidium becoming noticeably less closely setose toward base; propodeal enclosure with median groove weakly defined and crossed by more anterior striae *divisa* (Patton)
15. First abdominal segment largely orange or orange red *greeni* Rohrer
First abdominal segment black; second usually orange, remaining ones black *rugosa* (Fox)
16. Flagellomere I about as long as last and less than 2.5 times as long as broad 17
Flagellomere I distinctly longer than last and about three times as long as greatest breadth 18
17. Lateral face of propodeum with a few strong carinae above and extending toward apex of enclosure (fig. 22) *discreta* (Fox)
Lateral face of propodeum with fine, nearly uniform striae above *filicornis* Rohrer
18. Mesosternal pubescence silvery or nearly so 19
Mesosternal pubescence golden, coppery, or dark brown 20
19. Least interocular distance about equal to length of second hind tarsomere; outer face of fore femur nearly obscured by dense silvery pile; abdomen red *interocularis* G. and R. Bohart
Least interocular distance much greater than length of second hind tarsomere; outer face of fore femur not obscured by pubescence from most angles *sericea* G. and R. Bohart
20. Abdominal pubescence pale *conferta* (Fox)
Abdominal pubescence dark *uniformis* G. and R. Bohart

Larropsis arizonensis G. and R. Bohart, new species (Fig. 5)

Diagnosis.—Female: length 15 mm, forewing length 9.5 mm. Moderately robust, black, with abdominal segments I and II, basal and apical areas of III, apical areas of IV and V, apical sternite dark red; wings dark brown. Pubescence coppery to dark brown, not forming distinct apical hair bands on tergites. Punctures of head, thorax moderate, for the most part close, except coarse, sparse on preocellar area, apical two-thirds of clypeus; punctures of vertex, disc of scutum, mesopleuron generally less than one puncture width apart, but interpunctular areas distinct; punctures of mesopleuron closest dorsoposteriorly; outer face of fore femur polished, the anteroventral two-thirds with a few large scattered punctures; propodeal enclosure strongly, transversely striate, propodeal sides and posterior face rather strongly punctostriate, the striae more distinct but not coarser anteriorly. Abdominal tergites shining, with very fine punctures separated by several puncture widths medially and apically on each tergite. Propodeum polished, with about 25 scattered punctures but only microsetae,

except apically. Flagellomeres I and II together considerably shorter than least interocular distance (65: 81), I about equal to II and about twice as long as broad. *Male:* length 10-14 mm, forewing length 7.5-9 mm. Body black. Pubescence dark, not forming hair bands on tergites. Punctuation coarser and closer than in female except on clypeus; outer face of fore femur with somewhat smaller polished area; propodeal enclosure with moderate, irregular, transverse rugae, abdomen with tergal punctures fine basally, becoming coarser apically, those of tergite V nearly as coarse as on vertex. Pedicel and flagellomeres I and II together slightly shorter than least interocular distance (62: 64), II about equal to I and slightly less than twice as long as wide.

Holotype.—female (CAS), Kayenta, Navajo Co., Arizona, July 16, 1933 (S. Bee).

Paratypes.—8 males, 19 females, June to September at elevations up to 6,500 feet, ARIZONA: 7 mi. S.E. Keam's Canyon and Twin Buttes near Indian Well, Navajo Co. (Rehn, Pate, Rehn, ANSP, UCD); 8 mi. N. E. Cottonwood (R. H. Beamer *et al.*, KU); Joseph City (J. W. MacSwain, CIS); Navajo Mtn., Navajo Co. and Kayenta, Navajo Co. (S. Bee, UCD, CAS); Willcox (E. Ordway, AMNH, UCD; Butler and Noon, U. ARIZ.); 6 mi. S. E. Willcox (M. Cazier, R. Schrammel, AMNH); Rainbow Lodge, Coconino Co. (S. Bee, CAS); Tonalea (H. E. Evans, MCZ); Sedonia (L. D. Beamer, KU); Pierce (W. W. Jones, USNM); "Ariz." (UCD); NEW MEXICO: Pinedale (L. C. Wyman, USNM); Santa Rosa (M. J. White, UCD); 48 mi. N. Gallup (R. H. and E. M. Painter, MCZ); UTAH: Zion Natl. Park and Kanab (G. F. Knowlton, USU, UCD).

Systematics.—Females range in length from 12 to 16 mm and their abdomens from black to orange or reddish brown. On some the red color is confined to abdominal segments I to III. The black color on the legs and abdomen of some specimens proves to be dark mahogany brown on close inspection. On red integument, pubescence color tends to be gold instead of coppery or orange. The wings of some of the smaller specimens with red abdomens are not as dark as those of the holotype, and the infuscation is less uniform. This species is closely related to *vegeta* (Fox) from which it can be distinguished by the closer, more uniform punctures, the narrower interocular distance, and the slightly longer antennal segments.

The range appears to be confined mostly to the mountains of New Mexico, Arizona, and southern Utah (fig. 5).

Larropsis ater Williams

(Figs. 1, 19)

Larropsis ater Williams, 1914. Kansas Univ. Sci. Bull. 8: 146.

Holotype male, Wichita Co., Kansas (KU).

Diagnosis.—*Female*: length 16 mm. Robust, black, abdomen orange beyond basal segment, wings dark brown. Pubescence dark except diffuse golden micropubescence on tergites II to V. Punctuation moderately coarse, very close and uniform but postocellar depression shining and sparsely, finely punctate; abdominal punctuation about as scarce as on interocellar prominence and about a puncture width apart on tergite II; outer face of fore femur with scattered medium punctures and numerous uniform micropunctures. Flagellomeres I-II together equal to least interocular area, flagellomere I about 3.0 times as long as wide; propodeal enclosure coarsely, transversely rugosostriate, posterior face coarsely granulose; pygidium covered with coarse setae, more numerous and longer apically (fig. 19). *Male*: all black, micropubescence of abdomen dark; punctuation of vertex and scutum coarse, irregular, and sometimes well spaced, punctures of tergite II coarse and irregularly spaced; outer face of fore femur extensively polished, especially ventrad; pedicel and flagellomeres I-II together a little less than least interocular distance.

Distribution.—We have seen about 30 specimens, mostly males, divided about equally between the central Great Plains and desert areas of eastern Arizona, southern New Mexico and southwestern Texas (fig. 1).

Systematics.—From other members of the *rugosa* group, all of which have an extensively bristly pygidium in the female, *ater* differs by the partly shiny outer face of the fore femur, well spaced scutal punctures, red abdomen in the female, dark pronotal pubescence, and transversely striate propodeal enclosure.

Larropsis chilopsidis (Cockerell and Fox)

(Fig. 4)

Ancistromma chilopsidis Cockerell and Fox, 1897. Proc. Acad. Nat. Sci. Phila. 49: 137. Holotype female, "Rincon, N. M."

Ancistromma zerbelli Viereck, 1906. Trans. Amer. Ent. Soc. 32: 208. Holotype female, "Clark Co., Ks." (KU).

Ancistromma tachysphacoides Viereck, 1906. Trans. Amer. Ent. Soc. 32: 209. Holotype male, "Clark Co., Ks." (KU).

Diagnosis.—*Female*: length 13-15 mm. Robust, orange with frons, vertex, postociput black, rarely with thorax mostly dark except for orange legs and partially orange pronotum, wings clear or slightly yellowish.

Pubescence of clypeus, vertex, mesonotum golden, that of frons, pronotum, mesopleuron, propodeum, and abdomen silver, abdominal hair bands absent. Punctuation of thorax rather strong, very close, that of face irregular in size and distribution, that of abdomen extremely fine and well spaced, that of femora very sparse and moderately coarse. Flagellomeres I and II each a little over twice as long as broad and together about three-fourths as long as least interocular distance; propodeal enclosure extremely finely, closely, transversely striate. Pygidium with scattered coarse punctures and short, fine setae except long, coarse ones apically. *Male*: black except for orange mandibles, scape, legs (beyond mid femora), and abdomen. Pubescence entirely silvery but not forming hair bands on tergites; punctuation coarser, closer on face than on female but a little more spaced on scutum, and similarly fine and sparse on abdomen; pedicel and flagellomeres I-II together about three-fourths as long as least interocular distance, I about 1.5 times as long as broad.

Distribution.—We have studied about 40 specimens from Great Plains and southern Rocky Mountain localities (fig. 4) as follows: KANSAS: Clark Co.; COLORADO: Colorado Springs; TEXAS: Barstow, El Paso, Presidio, Fabens, McNary, Van Horn, Ward Co.; NEW MEXICO: Las Cruces, Rincon, Tornero, 45 mi. E. Roswell, Gallup; CHIHUAHUA (Mexico): Samalayuca.

Systematics.—The extensive brick-red coloration distinguishes this species from all others. However, males have the head and thorax mostly dark except for the legs, and some females may approach this condition. In this case the clypeus is red, at least. Structurally the species seems closest to *vegeta* and runs to it in the female key except for coloration. Minor points of difference are the more evenly convex surface of the clypeus in both sexes of *chilopsidis* and the conspicuous golden pubescence on the mesonotum.

Larropsis conferta (Fox)

(Fig. 3)

Ancistromma conferta Fox, 1893. Proc. Acad. Nat. Sci. Phila. 45: 494. Lectotype female, Montana ("Mon.") (ANSP).

Ancistromma paenerugosa Viereck, 1906 (July). Trans. Amer. Ent. Soc. 32: 210. Holotype male, "Clark Co., Ks." (KU).

Ancistromma bruneri H. Smith, 1906 (Sept.) Ent. News 17: 248. Lectotype male (bearing type label), West Point Nebraska (U. NEBR.).

Larropsis minor Williams, 1914 (1913). Kansas Univ. Sci. Bull. 8: 146. Holotype male, "Seward Co., Kan." (KU).

Larropsis gracilis Rohwer, 1915. Proc. U. S. Natl. Mus. 49: 244. Holotype female, Denver, Colorado (USNM).

Diagnosis.—*Female:* length 11-15 mm. Rather slender, black with abdominal segments I and II and sometimes III orange, wings light brown. Pubescence coppery on clypeus, mesothorax, except posterolateral corners of scutum, reflecting golden on frons, abdomen in part, silvery on pronotum, propodeum. Punctuation moderately fine, uniformly close except sparse, coarse on anterior one-half of clypeus, fine but rather close on postocellar depression, that of front femur and tergites fine, close, and uniform. Flagellomere I less than and II slightly more than three times as long as broad, together longer than least interocular distance (45: 38); propodeal enclosure with fine to moderate transverse striae, becoming granulose laterally, sides completely granulose, pygidium with strong setae confined to apical one-fourth. *Male:* black, sometimes red on tergites I to III, wings clear to lightly stained, pubescence silvery and coppery on clypeus, scutum, silvery on frons, pronotum, propodeum, tergites I-IV which have silvery apical bands; punctures of abdomen moderately strong, mostly about one puncture width apart; propodeum especially on small specimens, often with fine, diverging striae anteriorly; pedicel and flagellomeres I-II together about as long as least interocular distance, I about three-fourths as long as II.

Distribution.—Widespread in the Great Plains (fig. 3). Peripheral localities are "Mon.," which we have arbitrarily assigned to the southeast corner of Montana; Sioux City, Iowa; Alamosa Co., Colorado; Conlen and Midland, Texas. Also, we have seen a male from 5 mi. W. Durango, Durango, Mexico, which is probably this species. Altogether we have studied about 75 specimens.

Systematics.—This rather slender species is characterized by the fine, even, well spaced punctuation on the fore femur and tergites, silvery pronotal ridge and pale wings in the male, and extensive silvery micropubescence on the abdomen in both sexes. In females the basal three abdominal segments are usually red but some specimens are somewhat darker. Males have conspicuous red markings on the abdomen in 40 percent of the observed specimens.

Larropsis consimilis (Fox)

(Fig. 3)

Antromma consimilis Fox, 1893. Proc. Acad. Nat. Sci. Phila. 45: 496. Lectotype female, Texas ("Tex.") (ANSP).

Antromma vegetoides Viereck, 1906. Trans. Amer. Ent. Soc. 32: 208.

Holotype female, "Clark Co., Ks." (KU).

Diagnosis.—*Female:* Length 15 mm. Moderately robust, black, abdomen orange to reddish, wings brown. Pubescence dark except reflecting

golden on abdomen. Punctuation moderate and close except coarse and well spaced on clypeus, minute on abdomen, outer face of fore femur often with a polished anteroventral area. Pedicel and flagellomeres I-II together shorter than least interocular distance (35: 39); propodeal enclosure finely, closely, transversely striate, posterior face finely granulose; pygidium with small scattered setae except posteriorly. *Male:* black except for reddish abdominal segments I to III; tergal punctures fine and close but not minute; pedicel and flagellomeres I-II a little less than least interocular distance.

Distribution.—We have seen about 50 specimens from Texas and nearby localities (fig. 3) as follows: TEXAS: Fedor, McNary, Bastrop Co., Carrizo Springs; OKLAHOMA: Willis, Marshall Co.; NEW MEXICO: Las Cruces; KANSAS: Clark Co.

Systematics.—Notable are the short flagellomeres I-II, dark pronotal ridge, dense scutal punctuation, and brown wings. Nearly all observed specimens have had the abdomen entirely red (females) or mostly so (males). However, the type of *vegetoides* from Clark Co., Kansas is an all-dark female.

Larropsis deserta G. and R. Bohart, new species

(Figs. 4, 23)

Female.—length 16 mm, forewing length 9.5 mm. Body mahogany to black, wings light brown. Pubescence dark brown, inconspicuous. Punctures of clypeus coarse and well separated on shiny apical two-thirds, moderate and close on frons but sparser toward middle; coarse, irregular, and many well spaced on vertex, disc of scutum, and toward middle of scutellum; about a puncture width apart on shagreened surface of mesepisternum above coxa; sparse on shiny, outer, ventral face of femora for almost entire length; extremely fine and well spaced to obsolete on abdomen. Flagellomeres I-II together nearly four-fifths (23: 29) of least interocular distance, flagellomere I about 2.6 times as long as broad: enclosure of propodeum with fine, close, oblique striae, diverging from anterior margin in anterior one-third and not crossing midline; sides and posterior face finely, obscurely punctatostriate; hind tibial spines and tarsal segments unusually long and slender. Pygidium mostly smooth with scattered setal punctures, long setae on apical one-fourth. *Male.*—black, wings lightly stained, especially marginally. Middle one-third of clypeus shiny, sparsely punctate, punctuation in general closer and coarser than in female, especially on disc of scutum; those of abdominal terga also larger, but mostly two or more puncture widths apart. Antennae moderately short, flagellomeres I-II about equal, each twice as long as broad, together with pedicel slightly shorter (15: 17) than least interocular distance. Propodeal enclosure and sides a little rougher, posterior face with slight development of transverse rugae medially and dorsally.

Holotype.—female (CAS), Cabazon, Riverside Co., California, June 1, 1934 (E. C. Van Dyke).

Paratypes.—12 males, 7 females, April and May, CALIFORNIA: 6 mi. W. Indio (E. G. Linsley *et al.*, CIS, USNM, CAS); White-water (E. I. Schlinger, UCD); Hopkins Well, Riverside Co. (J. Powell, CIS, UCD, ANSP); G. A. Marsh, UCD, USNM; P. D. Hurd, ANSP); Cronise Valley, San Bernardino Co. (A. S. Menke, UCD).

Systematics.—Most closely related to *vegeta* and *washoensis* in the *vegeta* group on the basis of the somewhat sparse punctation. The rather light wings and the striation of the propodeal enclosure are characteristic. The species has been found only in Lower Sonoran localities of southeastern California (fig. 4).

Larropsis discreta (Fox) (Figs. 1, 9, 22)

Ancistromma discreta Fox, 1893. Proc. Acad. Nat. Sci. Phila. 45: 493.
Holotype female, Georgia ("Ga.") (ANSP).

Diagnosis.—*Female*: length 9.5 mm. Slender, black, wings light brown, paler toward base. Pubescence inconspicuous, mostly pale on head and notum, dark on abdomen except for weak silvery apical bands on tergites I to III. Punctuation medium and moderately spaced on head and thorax, clypeus somewhat shiny towards apex, fore femur with outer face finely and evenly punctate, tergites finely and a little irregularly so. Flagellomere I about 2.5 times as long as wide, shorter than II which is 3.0 times longer than wide, I-II together a little more (31:28) than least interocular distance; propodeal enclosure coarsely, transversely rugose, defining a row of anterior areolae, a group of anteromedian ones, and a posteromedian one (fig. 22); propodeum laterally granulate to striate above, posterior face with transverse areolae or shiny basins; pygidium extensively smooth with scattered large setal punctures, a few long setae posteriorly. *Male*: antennae and vertex as in fig. 9, flagellomere I about two-thirds as long as II in outer view.

Distribution.—We have studied five males and three females from southeastern United States (fig. 1) including the holotype, GEORGIA: "Ga" (ANSP); FLORIDA (May to November): Orlando (W. C. Griesel, USNM); Alachua Co. (H. V. Weems, FSPB); Tampa (UCD); Gainesville (A. Walker, U. Mich.; H. E. and M. A. Evans, MCZ); Crescent City (H. E. and M. A. Evans, UCD).

Systematics.—The shiny basins of the posterior face of the

propodeum and the unusually short flagellomere I characterize the species.

Larropsis divisa (Patton) (Fig. 7)

Larra divisa Patton, 1879. Bull. U. S. Geol. Geog. Survey 5: 368. Holotype female (location unknown).

Diagnosis.—*Female*: length 16 mm. Moderately robust, black with orange to reddish abdomen, wings brown. Pubescence dark except for reflective golden micropubescence and weak silvery apical hair bands on tergites I to III. Punctuation moderately coarse and generally close; punctures well spaced on anterior one-half of clypeus, fine but close in post-ocellar depression; fine and close on outer face of fore femur and on abdomen. Antennae unusually long, flagellomeres more than three times as long as broad, I-II together equal to least interocular distance; propodeal enclosure with transverse striae extending nearly to sides and across weak posterior depression; pygidium closely, coarsely punctate and setose. *Male*: black; pubescence dark except silvery on pronotal ridge, scutum posterolaterally, propodeum and apical bands on tergites I to IV; pedicel and flagellomeres I-II together a little less (35:38) than least interocular distance; flagellomere I less than twice as long as broad; punctuation of outer face of fore femur usually uniform but sometimes partly polished anteroventrally.

Distribution.—Great Plains (fig. 7). We have seen about 45 specimens from the following states: MONTANA: "Mon"; WYOMING: Worland; NEBRASKA: Alliance, Harrison, Halsey; COLORADO: Baca Co., Hasty; KANSAS: Seward Co., Stafford Co., Norton Co., Scott Co., Wallace Co., Morton Co., Grant Co.; NEW MEXICO: Magdalena Mts., Chavez Co.; Mesilla Park; TEXAS: Conlen.

Systematics.—Since the type has apparently been lost, we have identified this species on the basis of material named by Fox, Mickel, and Williams. In all the females we have seen the abdomen is red or mostly so, but the male is all black. Both sexes have dark wings and coppery pubescence on the scutum and pronotal lobe. It is very close to *elegans*, particularly in the female. The antennae of *divisa* are a little shorter in both sexes, males differ in punctuation of the fore femur, and females in setation of the pygidium.

Larropsis elegans G. and R. Bohart, new species (Figs. 1, 16)

Female.—length 16 mm, forewing length 12 mm. Body black, ab-

domen brownish red after basal segment, wings brown. Pubescence dark copper except on red areas of abdomen where it is golden, a little lighter on apices of tergites I to III where there are weak bands. Punctures of head and thorax moderate and extremely close, those on outer face of fore femur fine and even but dense, tergal punctation very fine, mostly even, and very close; propodeal enclosure with an anterior row of areolae and a well marked median row, anterior striae diverging obliquely (fig. 16), propodeum granulostriate posteriorly and laterally. Pygidium densely punctate and with close golden setae throughout. Flagellomeres I and II together equal at least interocular distance, II equal to I and three times as long as broad. *Male*.—length 11.5 to 13 mm, forewing length 8 to 9.5 mm. Abdomen dark with weak off-silvery hair bands on tergites I to III. Pronotal ridge reflecting off-silvery. Punctures of fore femur and tergites fine and very close as in female. Pedicel and flagellomeres I and II together about equal to least interocular distance, II slightly longer than I, II about twice as long as broad.

Holotype.—female (MCZ), Port Isabel, Cameron Co., Texas, June 23-27 (H. E. Evans, E. G. Matthews).

Paratypes.—one male, same data as type, one female, Roswell, New Mexico (UCD), one male, Brownsville, Texas (USNM).

Systematics.—The relatively long antennae, densely setose female pygidium, unusually dense punctation including the outer face of the fore femur and the tergites characterize the species and separate it from *divisa*, which is related.

Larropsis filicornis Rohwer (Fig. 5)

Larropsis filicornis Rohwer, 1911. Proc. U. S. Natl. Mus. 40:582. Holotype female, Lee Co., Texas (USNM).

Larropsis yatesi Mickel, 1917. Nebraska Univ. Studies 17:412. Holotype male, Mitchell, Nebraska (U. NEBR.).

Diagnosis.—*Female*: as described for *L. discreta* except as follows: wings a little lighter. Flagellomeres I-II together slightly less than least interocular distance; propodeal enclosure transversely and moderately coarsely striate, row of anterior areolae small; propodeum laterally granulose, posteriorly with moderate transverse striae, granulose between. *Male*: flagellomeres I-II and least interocular distance with the length relationship of 2:3:7 respectively.

Distribution.—We have seen about 25 specimens from western Nebraska, southern Oklahoma (Crawford, Valentine, Gering, Glen, Mitchell) and southeastern Texas (fig. 5).

Systematics.—Close to *discreta* with which it shares the relatively short flagellomere I but differing from it by the much less coarsely sculptured propodeum. In specimens from Nebraska the wings are somewhat paler than in Texan material. The paratype mentioned by Rohwer is a female specimen of *sericea* in the MCZ. collection.

Larropsis greenei Rohwer (Fig. 1)

Larropsis greenei Rohwer, 1917. Proc. U. S. Natl. Mus. 53:173. Holotype female, Riverton, New Jersey (USNM).

Diagnosis.—*Female*: length 15 mm. Robust, black with abdominal segments I and II orange, wings dark brown. Pubescence coppery to dark. Punctation moderate and close including vertex mostly, fore femur, scutum, scutellum and abdomen; postocellar depression shiny and finely, evenly punctate. Flagellomeres I-II together longer than least interocular distance (6:5); propodeal enclosure coarsely, transversely striate, with a row of basal areolae; pygidium covered with setae on the distal two-thirds, more numerous and longer apically. *Male*: pubescence reflecting pale gold on frons, pronotal ridge and propodeum; punctation of abdomen less close, especially at summit of tergite I; fore femur with punctures rather fine and even but all separated; propodeal enclosure covered with small rough areolae on either side of deeply areolate median groove, posterior face divided into shiny basins; pedicel and flagellomeres I-II together slightly less than least interocular distance.

Distribution.—We have seen a total of five males and two females of this eastern and midwestern species (fig. 1): NEW JERSEY: Riverton, September (C. T. Green, USNM); SOUTH CAROLINA: Columbia (C. F. Atkin, USNM); FLORIDA: Lake Placid, April, May (K. V. Krombein, Krombein Coll.; H. E. and M. A. Evans, MCZ); West Pauk, April (USNM); Gold Head Branch State Park, Clay Co., May (L. H. Krombein, Krombein Coll.); KANSAS: Blackjack Creek, Pottawatomie Co., July (H. E. Evans *et al.*, MCZ).

Systematics.—The four males from Florida differ from the two females by the much stronger sculpture of the propodeum, both dorsally and posteriorly. The male from Kansas is much less strongly punctate and striate. In general appearance, coloration, and punctation the two sexes are remarkably similar. One difference, noted also in some other species, is that the pronotum has reflective pubescence in the male but not in the female. Also,

the face in the male has abundant off-silvery pubescence but the female face is nearly all dark. Both sexes have considerable reticulation toward the base of the propodeal enclosure, but it is finer in the female. From the other eastern seaboard species it differs in the male by the proportionately longer flagellomere I (as long as II) and in the female by the extensively bristly pygidium.

Larropsis interocularis G. and R. Bohart, new species (Figs. 4, 8)

Female.—length 9 mm, forewing length 6.3 mm. Body moderately slender, grayish black to black, with abdomen reddish orange, tibiae, tarsi brown, wings clear. Pubescence dense, silvery, unusually short, forming silvery apical hair bands on tergites I to III. Punctures of head and thorax rather fine, very close, uniform except on apical one-third of clypeus; punctures of outer face of fore femur uniform, fine, close, nearly obscured by dense silvery pile. Propodeal enclosure finely, uniformly granulose, with weakly defined transverse striae, propodeal sides finely granulostrate, posterior face granulose, with about six widely separated, rather strong transverse striae. Abdomen with tergites very finely, moderately closely punctate; pygidium polished, with about 20 scattered punctures and a few coarse setae at posterior end. Flagellomeres I and II together considerably longer than least interocular distance (13:9), II slightly longer than I and about three times as long as broad (fig. 8). *Male*: length 6.8 to 8.5 mm, forewing length 5.5 to 6.2 mm. Body rather slender, colored as in female except for black abdominal segments IV to VII and darker brown tibiae. Pubescence as in female except with longer silvery pile on femora, silvery apical hair bands on tergite IV, and pubescence of tergites IV to VI otherwise dark golden. Punctures slightly coarser than on female and closer on abdomen. Pedicel and flagellomeres I and II together much longer than least interocular distance (41:34), II about one-fifth longer than I and 2.3 times as long as broad.

Holotype.—female (CAS), 3 mi. S. E. Willcox, Arizona, August 29, 1957 (R. M. Bohart).

Paratypes.—7 males, 1 female, topotypical, August 18 to 28, 1958 (R. M. Bohart, UCD, USNM, ANSP; P. D. Hurd CIS); 3 males, 1 female, Lakin, Kansas, August 29, 1964 (F. E. Kurczewski, UCD, KU). Metatype, Seward Co., Kansas (2,600 feet elev.), August 18, 1911 (F. X. Williams, KU).

Systematics.—The paratype females are larger than the holotype (10.5 mm), but otherwise similar. A relationship between *interocularis* and *sericea* seems evident on the basis of slender

antennae, sculpture, and the remarkably fine yet dense thoracic punctation. However, *interocularis* is a more extensively silvery species and the eyes are closer together. In this and in other ways it approaches *Ancistromma*, differing especially by the carina beneath the epipleural sinus. The species is found over a broad area of Great Plains and Chihuahuan Desert (fig. 4).

Larropsis lucida G. and R. Bohart, new species (Fig. 7)

Female.—length 13 mm, forewing length 8.2 mm. Body black except reddish orange on abdomen, reddish brown to light brown on tarsi, hind tibia, apices of fore and mid tibiae, apical one-third of hind femur; wings pale, lightly clouded on apical rim. Pubescence coppery except golden on face and abdomen, pale on propodeum, anteriorly on pronotum, extremely inconspicuous on abdomen, not forming apical hair bands. Scutum and sides of face above clypeus shining, with punctures mostly rather fine and sparse but intermixed with scattered coarser ones. Apical two-thirds of clypeus coarsely, rather sparsely punctate; mesopleuron coarsely and rather densely punctured, posteriorly as well as at middle; outer face of fore and mid tibiae shining, with a few widely scattered punctures. Propodeal enclosure finely but completely, transversely striate, propodeal sides and posterior face finely striatopunctate. Abdomen shining, practically impunctate. Pygidium with scattered punctures, bearing minute setae except for a few coarse ones near apex. Flagellomeres I and II together distinctly shorter than least interocular distance (30:37), II about as long as I and a little more than twice as long as broad (30:13).

Holotype.—female (CAS), Topock, Mohave Co., Arizona, April 13, 1958 (J. W. MacSwain).

Systematics.—Although this species runs out with *snowi* in the key to females, it is not closely related in our opinion. Differences in *lucida* are the deep rather than shallow and incomplete median groove on the frons and similarly on the posterior face of the propodeum; the rather evenly and finely striate propodeal enclosure; the three (rather than one) carinae below the epipleural sinus; and the abundantly evident microsetae of the forewing. Body markings and general conformation are similar to those of *striata* which is known only from the male. We doubt that they are the same species, however, because the punctation in *lucida* is much finer, and the propodeal enclosure is entirely different. The question can be settled only by collection of additional material, preferably from a single locality.

Larropsis rugosa (Fox)

(Figs. 1, 20)

Anctrostoma rugosa Fox, 1893. Proc. Acad. Nat. Sci. Phila. 45:496.
Lectotype male, "Montana" (ANSP).

Diagnosis.—*Female:* length 16 mm. Moderately robust, black, tergite II orange (black in Arizonan and Mexican specimens), wings brown. Pubescence dark. Punctuation moderately coarse and very close, but postocellar depression shiny with fine sparse punctures. Antennae unusually long, flagellomeres more than three times as long as broad, I-II together about equal to least interocular distance; propodeal enclosure cross-striate medially, posterior striae bending backward and encircling a well defined depression (fig. 20), enclosure coarsely granulate laterally, posterior face granulate to somewhat striate medially; pygidium closely, coarsely punctate and setose. *Male:* two geographical color variants as in female; pedicel and flagellomeres I-II together a little less than least interocular distance (13-15); posterior depression of propodeal enclosure as in female but less pronounced.

Distribution.—We have seen about 50 specimens, some from the Great Plains (red on tergite II), and many all-black ones from Chihuahua, Zacatecas, Durango, and Arizona (fig. 1). Data on the latter group are: CHIHUAHUA: Santa Barbara district, 6,300 feet (Schramel, NMNH), 18 mi. W. Jimenez (H. E. Evans, MCZ); DURANGO: 8 mi. S. Canutillo (H. E. Evans, MCA); ZACATECAS: near Sombretete (H. E. Evans, MCZ, UCD); ARIZONA: Dewey (G. Butler and Gerhardt, UCD); Douglas (W. W. Jones, USNM).

Systematics.—The well defined posterior depression with encircling carinae, the densely punctate scutum, and the stout flagellomere I of the male are distinctive. In material we have seen from the United States, tergite II is usually orange in both sexes, but the abdomen is all black in Mexican specimens.

Larropsis sericea G. and R. Bohart, new species

(Fig. 6)

Female: length 9 mm, forewing length 6.2 mm. Body slender, dark gray to black, legs brownish black, wings slightly stained with light brown, especially on apical one-half. Pubescence abundant, silvery, unusually short, apical silvery hair bands on tergites I to III. Punctures of head and thorax moderate to fine, very close, uniform except on apical one-third of clypeus; outer face of fore and mid femora with close, uniform, fine punctures and a few scattered, large ones. Propodeal enclosure mostly fine-granulate, finer medially, with short, weak, irregular striae diverging posteriorly from transverse, basal series of small, polished areolae; pro-

podeal sides uniformly fine-granulate. Punctures of tergites very fine, varying from close laterally to moderately well spaced medially and apically. Pygidium nearly impunctate, with few coarse setae posteriorly. Flagellomeres II and III together distinctly longer than least interocular distance (8:7), II about one-tenth longer than I and slightly more than three times as long as broad. *Male:* length 8 mm, forewing length 5.5 mm. Pubescence somewhat longer than in female, silvery hair bands of tergites I to III better defined. Punctures a little coarser and not quite as close, except on abdomen. Clypeus uniformly, closely punctate except on apical rim; outer face of fore and mid femora without large punctures; propodeal enclosure with nearly vertical fine striae basally, transverse ones on apical half, propodeal sides with distinct striae superimposed on granulae, especially anteriorly. Pedicel and flagellomeres I and II together greater than least interocular distance (6:5), I nearly four-fifths as long as II which is about twice as long as broad.

Holotype.—female (CAS), Luling, Gonzales Co., Texas, May 10, 1953 (M. Wasbauer).

Paratypes.—female, North Platte, Nebraska, August 18, 1949, (R. R. Dreisbach and R. K. Schwab, UCD); male, Bexar Co., Texas, May 13, 1930 (H. B. Parks, USNM); female, Lee Co., Texas, August 1910 (Birkmann, MCZ); female, Kearny Co., Kansas, August 23, 1951 (H. E. Evans, MCZ).

Systematics.—See remarks under *interocularis* which appears to be related. The widely separated localities in which *sericea* has been collected indicate a broad range through the Great Plains and southern prairies (fig. 6).

Larropsis snowi G. and R. Bohart, new species

(Figs. 6, 18)

Female: length 8 mm, forewing length 5.8 mm. Body rather slender, grayish black, except orange on abdomen and legs, brown on antennae and apical one-half of clypeus; wings clear with microsetae very inconspicuous, especially in median cell. Pubescence silvery, forming silvery apical hair bands on tergites I to III. Punctures of head and thorax mostly coarse and usually well spaced but seldom more than one puncture width apart, except on anterior two-thirds of clypeus and preocellar area; outer face of fore femur shining, rather evenly but very sparsely covered with minute punctures bearing prostrate, silvery hairs; propodeal enclosure sharply defined, strongly transversely striate, with deep median trench, propodeal sides coarsely striatopunctate, posterior face coarsely, closely punctate. Abdomen shining, covered rather evenly but sparsely, with minute punctures. Pygidium with about 25 punctures mostly bearing short but distinct setae except for apical longer ones (fig. 18). Flagellomeres I and

II together longer than least interocular distance (11:10), II longer than I (6:5) and about three times as long as broad. *Male*: length 6 to 8 mm, forewing length 4.6 to 5.8 mm. Body black, except brown to yellowish brown on scape, tegula, tibiae, tarsi, all or only apical one-third of femur; apical tergite and lateral margins of other tergites often reddish brown to brown. Silvery hair on propodeal sides long, on abdomen forming apical hair bands on tergites I to IV. Punctures of head and thorax very coarse, generally somewhat closer than one puncture width; mesopleuron not roughened between punctures except near dorsoposterior margin. Propodeal enclosure coarsely, transversely striate, propodeal sides more striate than on female. Abdomen with moderately strong punctures separated by about one puncture width at base of tergites. Pedicel and flagellomeres I and II together about equal to least interocular distance, II slightly longer than I (45:38) and about twice as long as broad.

Holotype.—female (CAS), 15 mi. E. Pierce, Arizona, July 10, 1955 on *Sapindus* (G. Butler, F. Werner).

Paratypes.—10 males, 1 female, April to August, ARIZONA: Tucson (F. H. Snow, KU); L. A. Strange, UCD, ANSP; R. H. Crandall, U. Ariz., USNM); Amado (G. Butler, UCD); Sabino Canyon, Pima Co. (G. Butler, F. Werner, U. Ariz.); Coyote Mts. (AMNH); 3 mi. N. W. Cascabel, Cochise Co. (J. E. Gillaspay, MCZ).

Systematics.—The red legs, clear and nearly asetose wings, and rough median groove of the propodeal enclosure characterize the species. The males are much more coarsely punctate than the female, but this is a normal tendency in the genus which has been carried to an extreme in this species. The range includes both Upper and Lower Sonoran life zones of southern Arizona (fig. 6).

Larropsis sonora C. and R. Bohart, new species

(Fig. 7)

Male.—length 8.5 mm, forewing length 6 mm. Body black with first two abdominal segments and basolateral area of tergite III orange; wings lightly stained with brown, especially in apical cell. Pubescence reflecting gold when viewed from in front, pronotal ridge reflecting silver from above, abdominal tergites I to IV with weakly developed silvery apical hair bands. Punctures of head and thorax coarse and mostly well spaced, those of vertex, disc of scutum, pre-ocellar area, anterior two-thirds of clypeus averaging about one puncture width apart; mesopleuron a little more closely punctate, with interpunctural areas strongly roughened; outer face of fore femur polished, with a few large scattered punctures; propodeal enclosure moderately finely but strongly and transversely striate, the striae turning strongly posteriorly lateral to median half, propodeal sides and posterior face strongly striatopunctate. Abdominal punctures

fine and moderately close on tergite I, becoming progressively finer and sparser on succeeding tergites, except distal two. Pedicel and flagellomeres I and II together slightly shorter than least interocular distance (97:110); I and II about equal in length, II slightly less than twice as long as broad.

Holotype.—male (AMNH), 30 mi. S. W. Sonoita, Sonora, Mexico, March 31, 1949 (G. M. Bradt).

Paratype.—male, 53 mi. S. Sonoita, Sonora, Mexico, April 21, 1948 (A. L. Melander, UCD).

Systematics.—There do not appear to be any very close relatives. There is a certain resemblance to *snowi*, the male of which is even more coarsely punctate. However, the fine rather than coarse striation of the propodeal enclosure in *sonora* as well as the plainly setose wings are immediate points of separation.

Larropsis sparsa G. and R. Bohart, new species

(Fig. 6)

Male: length 14 mm, forewing length 10.2 mm. Body robust, black, wings dark brown. Pubescence coppery to dark brown except mostly silvery on pronotal ridge, pale on propodeum; tergites II to IV with narrow, coppery, apical hair bands laterally. Punctures generally coarse, less than one puncture width apart on head and thorax except for small areas on vertex and broader ones on scutellum and disc of scutum where interpunctural areas are about as wide as punctures; outer face of fore femur with a few coarse and more numerous very fine punctures, becoming more polished ventrally; abdomen coarsely, mostly sparsely punctured, the punctures about as large as on vertex and ranging from less than one puncture width apart on basal and basolateral aspects of tergites I and II to irregular and several puncture widths apart at middle of tergite II. Propodeal enclosure coarsely, transversely rugose, propodeal sides rugosostriate anteriorly and dorsally. Pedicel and flagellomeres I and II together equal to least interocular distance. Flagellomere II slightly longer than I and a little more than twice as long as broad (21:10).

Holotype.—male (MCZ), 3 mi. E. Presidio, Texas, July 3, 1963 (H. E. Evans).

Paratypes.—7 males, May to August; TEXAS: 6 mi. S. Candelaria (J. E. Gillaspay, MCZ); NEW MEXICO: Las Cruces (J. L. Lopez, NMSU, UCD); ARIZONA: Dragoon (J. Bequaert, MCZ); COAHUILA (Mexico): 23 mi. N. Saltillo (L. Stange, A. Menke, UCD); DURANGO (Mexico): San Juan del Rio (H. E. Evans, MCZ, UCD).

Systematics.—The unbanded abdomen, reflective pronotal

ridge, coarse propodeal enclosure, dark wings, and extremely uneven tergal punctation are all features of this species. In a general way it resembles a stout *tenuicornis* to which it is obviously not closely related.

Larropsis striata G. and R. Bohart, new species

(Fig. 5)

Male: length 9.5 mm, forewing length 7 mm. Body robust, black except orange on abdomen, distal segments of tarsi; wings rather uniformly light brown. Pubescence coppery to dark brown except pale golden on abdomen; tergites without distinct apical hair bands. Punctures of head and thorax coarse and variable in density, with interpercutal areas often greater than a puncture diameter on mid clypeus, vertex, mid scutum, and posterior one-third of mesopleuron; outer faces of fore and mid femora with a few scattered, large punctures. Propodeal enclosure strongly, evenly striate, the striae diverging gently from a few transverse basal ridges; propodeal sides and posterior rather strongly striatopunctate. Abdominal tergum with punctures moderately fine on bases of tergites I to III, otherwise shining, with very fine, sparse punctures. Pedicel and flagellomeres I and II together shorter than least interocular distance (21:24), flagellomere II about as long as I and less than twice as long as broad.

Holotype.—male (CAS), Apple Valley, San Bernardino Co., California, May 8, 1958 (P. D. Hurd).

Systematics.—See comments under *lucida* which might be the corresponding female if the difference in striation should prove to be unreliable.

Larropsis tenuicornis (F. Smith)

(Figs. 1, 11)

Larada tenuicornis F. Smith, 1856. Cat. Hym. Brit. Mus. 4:293. Holotype female, California (BMNH).

Diagnosis.—*Female*: length 12 to 17 mm. Moderately slender, black with abdomen red in one out of three specimens, wings brown. Pubescence unusually short, dark except golden on red abdomens. Punctuation medium coarse and moderately close, well spaced on scutellum and distally on scutum; fore femur somewhat polished anteroventrally (fig. 11); tergites subshiny with very fine setal punctures. Flagellomeres three or more times as long as broad, I-II together more than (5:4) least interocular distance; propodeal enclosure evenly, rather strongly, transversely striate; pygidium with weak setal punctures medially, strong setae on distal one-fourth. *Male*: black, pubescence silvery on frons, pronotal ridge, scutum posterolaterally, propodeum, and apical hair bands of tergites I to III, sometimes IV; tergal punctures coarser than in female, mostly separated by nearly a puncture width; flagellomeres I-II together about equal to least interocular distance.

Distribution.—We have studied several hundred specimens of this relatively common western species from southern Washington to northern Baja California (fig. 1). Peripheral localities are WASHINGTON: Blue Mountains, Columbia Co.; IDAHO: Lewiston; NEVADA: Orovada; CALIFORNIA: Blythe; and BAJA CALIFORNIA: Descanso.

Systematics.—In the many specimens we have seen, two variants have been noted. Four males determined tentatively as an undescribed subspecies from Matachic, Chihuahua, Mexico (M. Cazier, AMNH, UCD) have about equal amounts of silvery and coppery scutal pubescence instead of mostly coppery. They have the wings unusually light toward the base, also. Secondly, we have studied about a dozen males, mostly small specimens, with varying degrees of lengthwise propodeal striae toward the base of the enclosure. These do not seem to differ in other respects and there seems to be no geographical significance. In *tenuicornis* there is considerable sexual disparity. This is especially true for the pubescence which is non-reflective on the pronotum of the female and does not form silvery tergal bands, contrary to the male. The relatively short interocular distance is a feature of both sexes.

Larropsis testacea G. and R. Bohart, new species

(Figs. 5, 14)

Female.—length 8.5 mm, forewing length 5 mm. Body orange except dark gray on head above clypeus and brown on flagellomeres and ventrally on mesopleuron. Pubescence silvery with some pale golden on scutum, inconspicuous except for broad, silvery, apical hair bands on tergites I to III. Punctures moderately fine but very dense and uniform except on pygidium and apical third of clypeus, somewhat finer on outer face of fore femur but uniform and not more than one puncture width apart (fig. 14). Propodeum finely granulose with enclosure poorly differentiated. Punctures of abdomen fine but very close, giving tergites a silky texture. Pygidium polished, with only a few moderate punctures, setae confined to a few at apex. Flagellomeres I and II together four-fifths least interocular distance, I in front view about 1.7 times as long as broad, a little shorter than II which is 2.0 times its breadth.

Holotype.—female (MCZ), Pottawatomie Co., Kansas, July 3, 1952 (H. E. Evans).

Paratypes.—2 female topotypes, June 25, 1952 and July 12, 1952 (H. E. Evans, MCZ, UCD).

Systematics. — The extensive brownish-red coloration, fine yet extremely dense punctation, the finely and thickly setose wings, the unusually short flagellomeres, and the sharply silvery tergal bands all mark this species. The propodeal enclosure is perhaps the most finely striatogranulose of any species in the genus.

Larropsis texensis G. and R. Bohart, new species (Fig. 7)

Male. — length 12.5 mm, forewing length 8.5 mm. Body black, with orange abdominal segments I, II, basal two-thirds of III; wings dark brown. Pubescence tarnished silvery to pale golden on head, tarnished silvery on pronotum, coppery on legs, mesothorax, abdominal segments IV to VII, off-white on propodeum, dark golden on tergites I to III where it forms golden apical hair bands; facial pubescence unusually well developed. Punctures of head, thorax mostly coarse and close but fine, close on lower frons, sides of clypeus, fine and sparse on postocellar depression, coarse, irregularly spaced on disc of scutum, vertex, anterior two-thirds of clypeus where average width of punctures and interocular areas are about equal; punctures of mesopleuron mostly about one puncture width apart, becoming closer near dorsoposterior margin; outer face of fore femur uniformly covered with moderate punctures, averaging slightly more than one puncture width apart. Propodeal enclosure coarsely, irregularly, transversely rugose, propodeal sides coarsely striatopunctate, becoming more striate anteriorly, posterior face coarsely striatopunctate. Abdominal tergites with punctures about equal in size to those of interocular prominence and averaging a little less than one puncture width apart. Pedicel and flagellomeres I and II together longer than least interocular distance (80:73). I about 1.7 times longer than broad, II one-seventh longer than I and about twice as long as broad.

Holotype. — male (USNM), Bexar Co., Texas, June 24, 1932 (H. B. Parks, USNM).

Paratypes. — 7 males, May to June, TEXAS: Luling (M. Wasbauer, CIS, UCD, CAS); Palmetto State Park, Gonzalez Co. (B. J. Adelson, CIS); "Tex" (ANSP); Brownsville (USNM).

Systematics. — Although known only from south Texan males (fig. 7), it is reasonably certain that *texensis* belongs in the *conferta* group. All the paratypes have the abdomen dark toward the apex, but in some the black markings may cover tergite III. Body length varies from 11 to 14 mm.

Larropsis uniformis G. and R. Bohart, new species (Figs. 2, 12, 13)

Female. — length 12.5 mm, forewing length 9 mm. Body mahogany to

black, wings brown. Pubescence coppery to grey, inconspicuous, reflecting dull pale gold in some lights on pronotal ridge and propodeum, coppery on scutum and abdomen. Punctures of clypeus coarse and well separated on shiny apical two-thirds; moderate and close on frons but sparser towards middle; fine, close, and rather evenly spaced on vertex except in partly shiny postocellar depression; moderate and close on scutum but a little spacy submedially; dense on mesopleuron; fine and somewhat spaced but even on outer face of fore femur; very fine to obsolete on abdomen. Antennae and vertex as in fig. 13; enclosure of propodeum with fine, close, transverse striae, sides granulose, posterior face weakly ridged; pygidium smooth medially with scattered setal punctures, long setae apically. *Male.* — black, wings very lightly stained, a little more so in distal one-fourth (all pale in northern variant); pubescence silvery on face, pronotal ridge, scutum, propodeum, and generally over basal four segments of abdomen in addition to apical hair bands on tergites I to IV; scutum discally somewhat more shiny, outer face of fore femur extensively so (rather dense and even in northern and southern variants); tergal punctures medium fine to moderate and somewhat irregular. Antennae and vertex as in fig. 12.

Holotype. — female (CAS), Ramsey Canyon, Huachuca Mts., Arizona, June, 1920. (F. X. Williams).

Paratypes. — 38 males, 5 females, April to October, ARIZONA: Huachuca Mts. (F. X. Williams, CAS, UCD, USNM, ANSP); Tucson (G. D. Butler, R. H. Crandall, U. ARIZ.); Texas Canyon (G. R. Ferguson, FERG. COLL.); Patagonia (R. M. Bohart, UCD; E. G. Linsley, CIS); Willcox, on *Wislizenia* and *Eriogonum* (G. Butler, F. Werner, G. Noon, U. ARIZ., KU; R. Bohart, UCD; W. Barr, U. IDAHO); Pinery Canyon, Chiricahua Mts. (G. Butler, F. Werner, U. ARIZ.); Skeleton Canyon, Cochise Co. (J. Rozen *et al.*, AMNH); 35 mi. N. E. Douglas (H. A. Scullen, OSU); Portal (M. Statham, AMNH); "Cochise Co." (V. Owen, CAS); CALIFORNIA: Morongo Valley and Riverside, Riverside Co., (P. H. Timberlake, UCR); Hopkins Well, Riverside Co. (P. D. Hurd, CIS); Gilman Hot Springs, Riverside Co. (E. C. Van Dyke, CAS); Olivehain, San Diego Co. (R. K. Washino, UCD); Scissors Crossing, San Diego Co. (R. Bohart, J. Hall, UCD); Warner Springs, San Diego Co. (H. E. Evans, MCZ); San Felipe Creek, San Diego Co. (H. L. McKenzie, UCR); Costa Mesa (M. E. Irwin, UCD); NEW MEXICO: Las Cruces and Mesilla (T. Cockerell, USNM); Cloverdale (R. R. Dreisbach, UCD); TEXAS: 3 mi. E. Presidio (H. E. Evans, MCZ); NEVADA:

Logandale (R. C. Bechtel, NSDA). In addition we have seen 45 specimens of a northern variant from ARIZONA: Oak Creek Canyon, Coconino Co., Flagstaff; NEW MEXICO: Pietown, Santa Fe, Monticello, Pinedale; COLORADO: Grand Junction, Great Sand Dunes, Alamosa Co.; UTAH: Delta, Dugway, Jericho, Salt Lake City, Kelton, Beryl, Josepa, Cornish; NEVADA: Alamo, Sutcliffe; IDAHO: Melba and Parma. We have studied, also, 16 specimens of a southern variant from TEXAS: Big Bend National Park; SONORA: Cocorit; COAHUILA: 23 mi. N. Saltillo; CHIHUAHUA: 18 mi. W. Jiminez; DURANGO: San Juan del Rio, Canutillo, Nombre de Dios.

Systematics.—The proportions of basal flagellomeres and interocular distance relate this species to *tenuicornis*. However, in *uniformis* the even punctation of the fore femur and the abundant silvery micropubesence on the abdomen in the male are characters of note. Although the wings are brown in the female, as in *tenuicornis*, they are light in the male.

We have observed three geographical variants based on wing color and punctation in the male. The northern form has clear wings, relatively dense scutal punctation, and uniform punctures on the outer face of the fore femur. The typical form has wings lightly clouded distally, the punctation is a little more sparse on the scutum, and the outer face of the fore femur is somewhat polished ventrally. The southern variant resembles the typical form in wing color and the northern one in punctation. Females of the three forms appear to be indistinguishable.

Including the northern and southern variants, *uniformis* occurs from west central Idaho to Durango, Mexico; and from southern California to west Texas (fig. 2). This very broad range is notable because *uniformis* is the only species shared by the Pacific Coast area and the Chihuahuan desert. It also occupies northern intermountain regions where it is the only known species of the genus.

Larropsis vegeta (Fox)

(Fig. 6)

Anctrostroma vegeta Fox, 1893, Proc. Acad. Nat. Sci. Phila. 45:497.
Lectotype female, Colorado ("Col.") (ANSP).

Diagnosis.—*Female:* length 13-15 mm. Robust, black, abdomen and

legs sometimes mahogany, wings dark brown. Pubescence entirely dark, no reflective pronotal or tergal hair bands. Punctation mostly fine, moderately sparse, many punctures of head and scutum separated by more than one puncture width; abdominal punctation exceedingly fine; outer ventral surface of femora extensively shiny and sparsely punctured; apical two-thirds of clypeus shiny with large, well separated punctures; frons and vertex shiny with punctures irregularly sized and spaced. Flagellomeres I-II together two-thirds as long as least interocular distance, flagellomere I about twice as long as broad; propodeal enclosure closely, finely, transversely striate, silky; remainder finely striatopunctate; pygidium mostly smooth, setae minute except terminally. *Male:* frons and scutum with rather coarse and only slightly spaced punctures; flagellomere I about four-fifths as long as II, together five-eighths least interocular distance.

Distribution.—The 55 specimens we have studied are from the central Great Plains in Wyoming and Colorado, western Nebraska, northern Arizona, and from the base of the Panhandle in Texas (fig. 6).

Systematics.—There is a close relationship to *chilopsidis* as discussed under that species. Characteristic are the dark wings, finely cross-striate propodeal enclosure, short flagellomeres, shiny fore femur and non-reflective pronotal ridge.

Larropsis washoensis G. and R. Bohart, new species (Figs. 3, 10, 15, 17, 21)

Female:—length 14.5 mm, forewing length 9 mm. Body black, tarsi dark brown, wings brown with somewhat darker apical rim. Pubescence coppery to dark brown, short, sparse, inconspicuous, not forming apical hair bands on tergites. Punctures of head, thorax non-uniform in size and distribution; clypeus, preocular area, vertex, central areas of mesonotum polished, with punctures mostly more than one puncture width apart; mesopleuron with punctures about one puncture width apart, dorsally roughened, ventrally somewhat polished; outer face of fore and mid femora extensively polished, with a few irregular-sized punctures (fig. 15); propodeal enclosure evenly, strongly, transversely striate (fig. 21), propodeal sides, posterior face evenly striatopunctate. Abdomen shining, with very fine punctures, ranging from about two puncture widths apart on sides of tergite I to widely scattered on tergite V. Pygidium almost uniformly covered with about 60 punctures, with conspicuous setae confined to posterior end (fig. 17). Flagellomeres I and II together shorter than least interocular distance (65: 72), II slightly shorter than I and about three-sevenths as broad as long (fig. 10). *Male:*—length 8.5 to 10 mm, forewing length 6 to 8 mm. Wings very light brown, somewhat darker on apical one-third. Tergites without apical hair bands. Punctures generally coarser, more uniform in size, a little closer than on female.

Pediceal and flagellomeres I and II together slightly greater than least interocular distance (29: 26), II about one-sixth longer than I and a little more than twice as long as broad (26: 12).

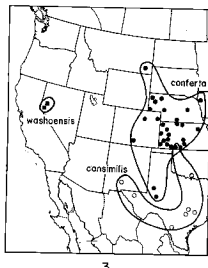
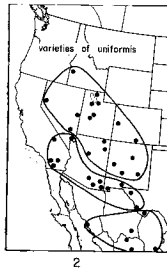
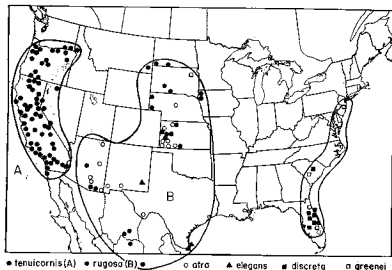
Holotype. — female, (CAS), Wadsworth, Washoe Co., Nevada, June 28, 1961 (F. D. Parker).

Paratypes. — 8 males, 21 females, June, NEVADA; Wadsworth (F. D. Parker, UCD, USNM, ANSP, NSDA), Nixon (F. D. Parker, UCD, CAS, USNM, CIS), Fernley (T. R. Haig, A. S. Menke, UCD).

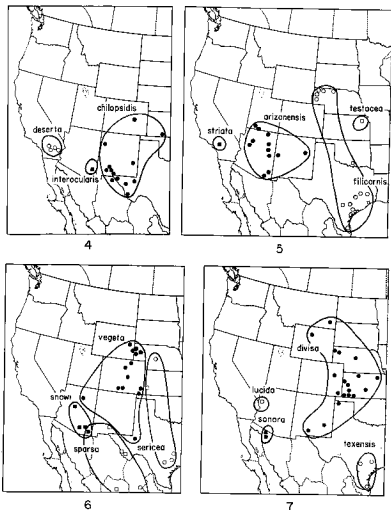
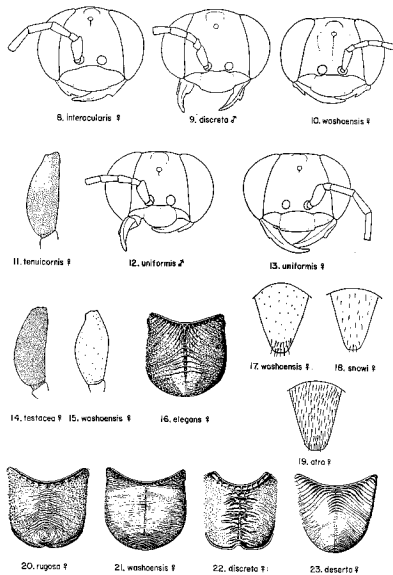
Systematics. — This western Nevada species (fig. 3) is related to both *vegeta* and *deserta* but can be distinguished by the combination of its unevenly clouded wings, transverse striae of propodeal enclosure, least interocular distance a little less than pedicel and flagellomeres I-II together, and scutum of male with conspicuous polished interpunctural areas. Female *washoensis* vary in body length from 12.0 to 14.5 mm and in forewing length from 7.8 to 9 mm. In one-fourth of our females the abdomen is deep red, and on these the abdominal pubescence is gold rather than coppery.

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Figs. 1-3. Distribution of *Larropsis* species.

Figs. 4-7. Distribution of *Larropsis* species.

Figs. 8-10, 12-13. Front view of head. Figs. 11, 14-15. Outer view of fore femur. Figs. 16, 20-23. Dorsal view of propodeal enclosure. Figs. 17-19. Pygidium, showing distribution of setae.