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Carl F. Baker

THE STATE AGRICULTURAL COLLEGE.

AGRICULTURAL EXPERIMENT STATION.

BULLETIN NO. 31.

TECHNICAL SERIES NO. I.

A PRELIMINARY LIST

OF THE

HEMIPTERA OF COLORADO

BY C. P. GILLETTE AND CARL F. BAKER

Approved by the Station Council,

ALSTON ELLIS, President.

FORT COLLINS, COLORADO:

MAILED JUNE 7, 1895.



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MAY, 1895.



THE AGRICULTURAL EXPERIMENT STATION.

FORT COLLINS, COLORADO

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INTRODUCTION.

Probably there is no state in the Union offering a richer field for the student of natural history than Colorado, whether it be in the line of mineralogy, paleontology, zoology, or botany. Its broad stretch of arid plains crossed by streams of living water, its high mountain ranges, broad plateaus, innumerable gulches and deep canons, all combine to give it a most exceptional topography with a consequent diversified fauna and flora.

The macro-lepidoptera of the state are very largely known, as a result of the extended collecting of Reakirt, Mead, Bruce, Snow and others. Lists of Coleoptera have been published from the collections of LeConte, Schwarz, Wickham, Snow and others. Lists of the Hymenoptera have been published by Cresson and Ashmead. But never before in any one publication has the attempt been made to list the Hemiptera of the state. Indeed, heretofore there have been no large collections of the Colorado species of this order to draw upon. During the past four years we have collected nearly all those previously known from the state and a very large number of additional forms. It has been our plan to make more than a simple record of the species known to occur in the state. With each species is given the bibliography of all published records of its occurrence in the state so far as known to us, also the name of the collector, locality, date of collection, and, wherever we have been able to ascertain it, the food-plant. Except in the case of Uhler, the authority for the determination of our specimens is given in the same line with the name. To avoid the repetition of the titles of papers, a numbered list of the papers referred to is given, the

author's name and the number of the paper only being given in the body of the list.

The determinations of specimens have been made by specialists in the different groups, the authors doing a large proportion of the systematic work on the Homoptera. It is hoped that this work will be found reasonably free from errors. In the preparation of the list we have been greatly aided by Mr. E. P. Van Duzee, who has made a large number of determinations for us, has made many helpful suggestions, and loaned us papers from his private library. We are under very special obligations to Dr. P. R. Uhler of Baltimore who has worked over our entire collection of Heteroptera and described the forty-seven new species and five new genera here published. Professor T. D. A. Cockerell of New Mexico, has determined nearly all our Coccidae and sent us many records of captures by himself, as well as valuable notes on species we had sent him for examination. The Membracidae have mostly been determined by Dr. Goding of Rutland, Illinois, and the Psyllidae by Dr. Riley. Professor Herbert Osborn of Iowa, also determined several species in the early part of the work. Mr. J. H. Cowen, a post graduate student, has done the work on the Aphididae, a large proportion of which he collected himself. Prof. W. A. Snow, of Kansas, has sent us a list of the Colorado Hemiptera in the Kansas University collection, which has added several species and many records to our list. Dr. Riley sent us a similar list from the United States National Museum.

It will be noticed that a great many species in the list, and especially of those that are new, are from mountainous localities where but little or no collecting had been previously done. All portions of the state still promise rich harvests to the collector, and especially those parts which have never yet been visited by "bug-net" and cyanide bottle. The list of new species here presented, although large, must be small compared with the forms yet unknown.

Work of a nature similar to this is being done in all orders. In view of this fact we most earnestly solicit correspondence from any quarter relative to the Colorado

insect fauna. Just at this time we especially desire notice of published records not given in this list, and data on correctly determined specimens in collections which have not been accessible to us. As the authors have undertaken a special study of the North American Jassidae, they would be pleased to examine specimens in that group from any portion of the country, and will give determinations for the privilege of retaining desiderata.

WORKS CITED.

CARPENTER, W. L.

- 1—1873—Report on Alpine Insect Fauna of Colorado.
U. S. Geol. and Geog. Surv. of Colo., p. 539.

COCKERELL, T. D. A.

- 9—1890—Notes from Colorado. Ent. News. Vol. I., p. 75.
10—1893—Entom. of Midalpine Zone of Custer Co., Colo.
Trans. Amer. Ent. Soc. XX., p. 305.

GILLETTE, C. P.

- 6—1892—Observ. on Inj. Insects. Bull. 19, Colo. Ag.
Exp. Sta.
7—1891—Two Insect Pests. Bull. 15, Colo. Agr. Exp.
Sta.

GODING, F. W.

- 1—1892—Studies in N. A. Membracidae I. Ent. News,
Vol. III., p. 108.
2—1892—Studies in N. A. Membracidae II. Ent. News,
Vol. III., p. 200.
3—1893—Bibl. and Syn. Cat. Membracidae N. A.

MONTANDON, A. L.

- 1—1893—Notes on Amer. Hemiptera-Heteroptera.
Proc. Nat. Mus., Vol. XVI., p. 45.

OSBORN, H.

- 1—Notes on Distrib. of Hemiptera. Trans. Iowa Acad.
Sci., Vol. I., p. 120.

PACKARD, A. S.

- 2—1875—Rep. on Rocky Mt. Locust and other insects
now injuring or likely to injure field and garden
crops in Western States and Terr. U. S. Geol.
and Geog. Surv. of Colo. and Adjac. Terr., pp. 5-90.

PUTNAM, J. D.

- 4—1878—Rem. on Habits of Several Western Cicadeae.
Davenp. Acad. Sci. Vol. III., p. 67.

RILEY & MONELL.

- 1—1879—Notes on Aphididae of U. S. with desc. of n.
spp. occurring west of Miss. Bull. No. I of U. S.
Geol. and Geog. Surv. of Terr. Vol. V., p. 1.

UHLER, P. R.

- 1—1871—Notices of the Hemip. of West. Terr. of U. S.
U. S. Geol. Surv. of Mont. and Adjac. Terr., p. 392.
- 2—1875—Rep. on coll. of Hemip. made in portions of
Nev., Utah, Cal., Colo., N. Mex., and Ariz.
Wheeler's Explor. west of 100th Merid., Vol. V.,
Zool., p. 827.
- 3—1887—Observ. on N. A. Capsidae with desc. of n.
spp. Ent. Amer., Vol. III., p. 67.
- 4—1888—Prelim. Surv. of Cicadeae of U. S. Ent. Amer.,
Vol. IV., p. 21.
- 5—1877—Rep. on Ins. coll. during 1875 incl. Mon. fam.
Cydnidae and Saldae, and Hemip. coll. by A. S.
Packard, Jr. Bull. U. S. Geol. and Geog. Surv.,
Vol. III., Nos. 2 and 4.
- 6—1875—List of Hemip. of Reg. w. of Miss. River incl.
those coll. during Hayden Explor. of 1873.
Hayden's Surv. Rep., p. 267.

- 7—1877—Rep. on Hemip. coll. during 1874 and 1875.
Appendix NN. in Rep. Chief Engineers, Part II.,
p. 1322.
- 8—1894—Observ. on Heter. Hemip. of Lower Cala.
Proc. Cala. Acad. Sci. Ser. 2, Vol. IV., p. 223.
- 9—1893—Summary of a coll. of Hemip. secured by Mr.
E. A. Schwarz in Utah. Proc. Ent. Soc. Wash.,
Vol. II., p. 366.

VAN DUZEE, E. P.

- 1—1889—Review of N. A. sp. of *Pediopsis*. Ent. Amer.,
Vol. V., p. 165.
- 2—1892—New N. A. Homop. V. Canad. Ent., Vol.
XXVI., p. 266.
- 3—1894—Desc. of New N. A. Homop. Bull. Buff. Soc.
Nat. Sci., Vol. V., No. 4, p. 205.
- 4—1894—Cat. desc. Jassoidea N. A. Trans. Amer. Ent.
Soc., Vol. XXI., p. 245.



ALTITUDES OF LOCALITIES MENTIONED IN THIS PAPER.

The altitudes given represent only average heights. Timber line is at about 12,000 feet in Southern and about 10,500 feet in Northern Colorado.

Aspen.....	8,000	Idaho Springs.....	7,400
Berthoud Pass.....	11,300	Lamar.....	4,000
Big Narrows of Poudre.....	6,000	La Veta.....	7,000
Boulder.....	5,300	Leadville.....	10,200
Cameron Pass.....	10,000	Livermore.....	6,000
Canon City.....	5,200	Manitou.....	6,300
Cheyenne Canon.....	6,200	Montrose.....	6,200
Colorado Springs.....	6,000	North Park.....	8,500
Denver.....	5,200	Ouray.....	8,000
Estes Park.....	8,600	Pueblo.....	4,600
Fort Collins.....	5,000	Rabbit Ears Pass.....	10,000
Four-mile Hill.....	7,000	Rist Canon.....	5,500
Garland.....	7,900	Rustic.....	7,000
Georgetown.....	8,700	Silverton.....	9,400
Glenwood Springs.....	7,800	South Park.....	7,200
Golden.....	5,700	Spring Canon.....	5,500
Gore Pass.....	10,000	Steamboat Springs.....	6,500
Grand Junction.....	6,000	Trinidad.....	5,900
Green Mountain Falls.....	8,700	Veta Pass.....	9,500
Horsetooth Gulch.....	5,600	West Cliff.....	7,800
Howe's Gulch.....	5,500		



A PRELIMINARY LIST OF THE HEMIPTERA
OF COLORADO.

WITH DESCRIPTIONS OF NEW SPECIES, BY DR. P. R. UHLER,
J. H. COWEN, AND THE AUTHORS.

Homaemus grammicus Wolff.

Colorado Springs (Tucker.)

Homaemus aeneifrons Say.

Colo. (Uhler, 1 and 6). Swept from rank weeds near water courses. West of Denver occurred in swampy spots near South Platte River, and on the high watered table lands near foot-hills. Also beaten from bushes near Beaver Brook Gulch and in Clear Creek Canon (Uhler, 5).

Estes Park, Bailey (Snow). Manitou Park (Snow and Tucker).

Homaemus bijugis Uhl.

Colo. (Uhler, 1 and 6). Foot-hills, September (Carpenter—see Uhler, 6). Near Denver (B. H. Smith—see Uhler, 6). Not uncommon in Denver, particularly on rank growing plants in damp situations (Uhler, 5). Willow Creek, Cusack Ranch, in midalpine of Custer County, August 21st, on timothy (Cockrell, 9 and 10).

Fort Collins, September 21st to October 15th; Horsetooth Mountain,* July 4th; Steamboat Springs, July 26th; Montrose, June 24th (Gillette), Fort Collins and adjoining foot-hills, May 13th to October 7th, on alfalfa, wheat, and various grasses (Baker).

Phimoderma torpida Walk.

Colo. (B. H. Smith—see Uhler, 6).

Eurygaster alternatus Say.

Hills of Colo., September (Carpenter—see Uhler, 6). Common in Colorado

*A mountain about ten miles south-west of Fort Collins. Collecting was done from 5,500 to 6,000 feet.

in September in the region of the foot-hills (Uhler, 5). Custer County, midallpine, and Summit County (Cockerell, 10).

Fort Collins, July 4th; North Park, July 20th; Steamboat Springs, July 26th (Gillette). Fort Collins, July 29th, on wheat; Steamboat Springs, July 14th (Baker).

Corimelaena albipennis Say.

Of this species Dr. Uhler says: "Prof. Gillette has most kindly sent to me the only specimen of this insect of which there is any record of capture since the time of Mr. Say. It is a species of prominent interest in many respects. In the first place, it is in an undeveloped stage of coloring, showing that oxydation of the outer integuments had not been completed when the insect was captured. It is also a female of unusually large size, in this section of the genus, and it is not in the first stage of exclusion from the skin of the nymph. The body is a little more bloated and consequently more convex above than in the fully dried insect. The contour is fringed all around with slender setae, as in *C. ciliata* Uhler. Its size is much less than that given by Mr. Say, but it agrees with his description in nearly every respect. The hemelytra are not 'white with a small rufous spot,' but white with a spot and tinge of black near the apex, such as occurs in the drying stage of *C. lateralis* Fab., a few hours after it has left the skin of the nymph. The 'small rufous spot' of Mr. Say suggests a more recently excluded condition of the species, in which the color beginning as white had oxydized to rufo-piceous on its way to the final piceous or black color of the fully matured insect. *C. unicolor* Pal. Beauv. becomes almost uniform castaneous, or rufo-castaneous, as it changes from the milky white of exclusion to the final black."

This specimen was first determined by Osborn, who recorded it as the first specimen found since Say's description (see Osborn, 1). Fort Collins, August 11th, on *Glycyrrhiza lepidota* (Baker).

Corimelaena anthracina Uhl.

Steamboat Springs, July 13th (Baker). Estes Park, July 12th (Gillette).

Corimelaena atra A. & S.

Colo. (Gillette—see Osborn, 1).

Rist Canon, April 16th (Gillette). Veta Pass, June 27th (E. A. Schwarz).

Corimelaena ciliata Uhler.

Foot-hills five miles west of Fort Collins, hibernating under stones, March 22d to April 12th (Gillette and Baker).

Corimelaena coerulescens Stal.

Colo. (Ridings, see Uhler, 6).

Corimelaena extensa Uhl.

Horsetooth Gulch,* May 18th (Gillette).

Corimelaena nitiduloides Wolff.

Above timber line in mountains. (Carpenter, see Uhler, 6). A few speci-

*A gulch about nine miles south-west of Fort Collins.

mens taken concealed among roots of Yucca and other plants growing on plains near foot-hills, during August, near Colorado Springs (Uhler, 5). Custer County, midalpine (Cockerell, 10).

Corimelaena lateralis Fab.

Fort Collins, June 4th; foot-hills five miles west of Fort Collins, May 18th to June 14th; Dolores, June 18th; Montrose, June 24th (Gillette). Steamboat Springs, July 26th (Gillette and Baker).

Corimelaena renormata Uhler n. sp.

"Form of *C. quadrisignata* Stal. Black, polished, ciliate all around but with longer and less blunt corium and no spots on the connexivum. Upper surface obsoletely rastro-punctate, with the punctures scarcely visible upon the disk of pronotum and scutellum. Head wide, convex near base, roughly, unevenly, rather coarsely, punctate excepting on the base, the anterior margin bluntly obliquely rounded, with the edge reflexed, and the tip notched at end of tylus, the margin inferiorly has a series of coarse setigerous punctures; rostrum rufo-piceous, reaching to middle coxae; antennae long, fulvo-testaceous. Pronotum transverse, very moderately convex, with the lateral margins little oblique and very slightly curved next the anterior angle, the surface crossed before the middle by a grooved line, which is very distinct each side and is there surrounded by an area of very coarse punctures, the ciliae are set beneath the decurved edge in very coarse sunken punctures. Scutellum bluntly rounded, feebly curved, shorter than the abdomen, with a broad oblique, punctate impression each side above the middle of the corium. The corium about three-fourths as long as the scutellum, with the apical portion of medium width, tapering, and obliquely rounded at tip, with about four lines of coarse punctures, base of both corium and clavus, nearly covered by an ivory white, remotely punctate, spot. Venter highly polished, with transverse remote series of small punctures on most of the segments, the apical segment impunctate.

Length to tip of venter nearly 4 mm. Width of pronotum $2\frac{1}{4}$ mm. Only one specimen, a female, has come to my notice. It will most likely prove to be the fully colored stage of *C. albipennis* Say."

Rist Canon*, April 16th (Gillette).

Homaloporus congruus Uhl.

Denver (B. H. Smith—see Uhler, 5). Near foot-hills west of Denver. August (Uhler, 5).

Fort Collins, March 24th to April 24th (Baker). Foot-hills five miles west of Fort Collins, April 21st; Trinidad, May 14th (Gillette).

Cydnus obliquus Uhl.

West of Denver (Uhler, 5).

Amnestus spinifrons Say.

Colo. (Gillette—see Osborn, 1).

Trinidad, May 14th (Gillette).

Amnestus subferrugineus West.

Foot-hills five miles west of Fort Collins, March 15th to

*A canon eight miles north-west of Fort Collins.

April 21st, under stones (Baker).

Perillus confluens H. Sch.

Custer County, midalpine (Cockerell, 10).

Perillus splendidus Uhl.

Colo. (Gillette—see Osborn, 1).

Dolores, June 18th (Gillette).

Perillus exaptus Say.

Colo. (Uhler, 1 and 6). Uta, Custer County, midalpine, November 12th (Cockerell, 10).

Fort Collins, August 4th (Baker). Foot-hills five miles west of Fort Collins, March 15th; under stones (Gillette). Garland, June 29th (E. A. Schwarz).

Perillus claudus Say.

Colo. (Uhler, 1). Colo. (Riley—see Uhler, 6). Near Denver (B. H. Smith—see Uhler, 3). Near Colorado Springs (Uhler, 3). Colo. (Gillette—see Osborn, 1).

Fort Collins, April 10th to October 6th; foot-hills five miles west of Fort Collins, April 9th to August 1st (Baker and Gillette).

Mineus bioculatus Fab.

Colo. (Snow).

Zicrona cuprea Dall.

Southern Colo., June (Carpenter—see Uhler, 7).

Podisus acutissimus Stal.

Colo. (Uhler, 6).

Podisus bracteatus Fitch.

Det. Ashmead.

Colo. (Cockerell).

Podisus cynicus Say.

Colo. (Gillette—see Osborn, 1). Colo. (Snow—see Van Duzee, 5).

Spring Canon*, August 1st (Baker). Bailey (Snow).

Podisus gillettei Uhler n. sp.

"Nearly ovate, dull pale brownish made fuscous by the bronze-black clove punctures on the head, fore part and sides of pronotum, base of scutellum and base and end of corium. Head finely and closely punctate with black, the tylus with a broad groove on each side, lateral lobes broad, rounded off on the outside of tip, a little longer than the tylus. Antennae a little longer than the head and pronotum united, the basal joint very short, not reaching the tip of the head, greenish yellow, a little dusky at base and tip, the second joint about three times as long as the basal, testaceous, a little dusky above, the third scarcely more than half as long as the second, blackish, paler at base, the fourth

* A canon eight miles south-west of Fort Collins.

and fifth blackish, both longer than the third, the fifth a little longer than the fourth. Rostrum pale testaceous, piceous at tip, reaching upon the middle coxae, the third joint very thick, a little longer than the fourth which is abruptly narrow. Pronotum more remotely punctate on the disk, with the lateral margins very oblique, thick, callous, broadly pale yellow, finely punctate and a little waved; the posterior margin feebly concave, and the humeral angles tumidly rounded. Pectorial areas remotely punctate with brown. Legs minutely punctate with brown, darker above and on tips of tibiae, tarsi piceous above, the nails also piceous. Scutellum long, minutely punctate, with an obsolete pale stripe on the middle, more conspicuous at tip, and with the usual pale callosity in the basal angles. Corium and clavus with bare spots continued on the costal area. Membrane bronze brown. Venter testaceous, remotely punctate with brown. Connexivum polished, testaceous, marked with black scallops inwardly. Ventral spine very short.

Length to end of venter 13.5 mm. Width of case of pronotum 9.5 mm. This species closely resembles a pale variety of *Jalla dumosi* Fabr. but the head is broader, basal joint of antennae longer, and there are ten longitudinal veins to the membrane. One specimen, a female, was captured in Colorado."

Rist Canon, April 10th (Gillette).

Podisus modestus Dall.

Swept from bushes in Beaver Brook Gulch and Clear Creek Canon during early part of August (Uhler, 5).

Fort Collins, September 27th, on *Clematis ligusticifolia* (Gillette). May 20th to June 24th, and September 14th on *Solidago* (Baker).

Podisus placidus Uhl.

Colo. (Gillette—see Osborn, 1).

Fort Collins, March 24th to May 4th (Gillette), and May 3d on box-elder (Baker).

Podisus serieventris Uhl.

Spring Canon, August 1st (Baker).

Podisus spinosus Dall.

Pueblo. Did not occur on the plains proper, but was swept from a bush in the bed of the river (Uhler, 5),

Liotropis humeralis Uhl.

From bushes near Manitou (Uhler, 5). Colo. (Gillette—see Osborn, 1),

Montrose, June 24th (Gillette),

Prionosoma podopioides Uhl.

Denver (B. H. Smith—see Uhler, 5 and 6). From bushes near Golden in August (Uhler, 5). Colo. (Gillette—see Osborn, 1). Pueblo (Uhler, 9).

Trinidad, May 14th (Gillette).

Podops dubius Pal Beauv.

Colo. (Gillette—see Osborn, 1).

Fort Collins, April 6th (Gillette).

Brochymena quadripustulata Fab.

Colo. (Uhler, 1).

Brochymena annulata Fab.

Colo. (Uhler, 6). Colo. (Gillette—see Osborn, 1).

Fort Collins, June 16th, on willow; Rist Canon, April 9th; Manitou, September 28th, on oak (Gillette). Fort Collins, September 26th, on ash (Baker).

Brochymena obscura H. Schf.

Pueblo, July (Wilkins—see Uhler, 7).

Canon City, August 31st (Gillette).

Aelia americana Dall.

Steamboat Springs, July 14th (Baker). Veta Pass, June 24th (E. A. Schwarz).

Neottiglossa undata Say.

Colo. (Uhler, 6). Clear Creek Canon, August (Uhler, 5).

Neottiglossa melanocephala.

Fort Collins, May 27th, on currant (Baker).

Cosmopepla carnifex Fab.

One specimen by sweeping weeds in region of Arkansas River, near Pueblo (Uhler, 5)]

Fort Collins, July 2d, on *Mentha canadensis*, and September 27th; Howe's Gulch*, June 14th (Gillette). Steamboat Springs, July 15th (Baker).

Cosmopepla conspiciaris Dall.

Hills and plains of Colo. September 19th and October 4th (Carpenter—see Uhler, 6). Colo. (Gillette—see Osborn, 1).

Fort Collins, July 2d, on *Mentha canadensis*; Howe's Gulch, June 14th (Gillette).

Mormidea lugens Fab.

On weeds near Canon City (Uhler, 5).

Euschistus fissilis Uhl.

Colo. (Uhler, 1 and 6). Southern Colorado, June—July (Carpenter—see Uhler, 7). Colo. (Gillette—see Osborn, 1).

Fort Collins, April 23d to October 24th; Rist Canon, May 14th, and Spring Canon, June 30th to July 12th; Montrose,

*A gulch six miles west of Fort Collins

June 24th (Gillette). Fort Collins, June 10th, at light; Boulder, September 4th (Baker).

Euschistus ictericus L.

Pleasant Valley, June 12th (Gillette.)

Euschistus impictiventris Stal.

Montrose, June 24th (Gillette).

Euschistus servus Say.

Near Arkansas River, August (Uhler, 5).

Euschistus tristigmus Say.

Colo. (Gillette—see Osborn, 1).

This was probably an erroneous determination.

Euschistus variolarius Pal. Beauv.

Colo. (Uhler, 1 and 6). Denver, August 18th (Uhler, 5). West Cliff, Custer County, May 23d, on *Thermopsis* (Cockerell, 10). Colo. (Gillette—see Osborn, 1).

Fort Collins, September 30th (Baker). Spring Canon (Gillette).

Coenus delius Say.

Colo. (Snow—see Van Duzee, 5).

Fort Collins, March 24th, and September 2d on *Solidago* (Baker). Estes Park, Bailey (Snow).

Hymenareys aequalis Say.

Near West Cliff, Custer County, July 30th (Cockerell, 10).

Lioderma ligata Stal.

Fort Collins, June 27th to August 18th; Rist Canon, May 29th to July 19th (Baker and Gillette), Golden, April 30th (Gillette). Estes Park, August (E. D. Varney). Steamboat Springs, July 15th (Baker).

Lioderma viridicata Uhl.

Roaring Fork (Rothrock—see Uhler, 6).

Pentatoma congrua Uhl.

Foot-hills of Colorado, September (Carpenter—see Uhler, 6).

Steamboat Springs, July 12th (Baker). Denver (Riley).

Pentatoma faceta Say.

Colo. (Uhler, 1).

Pentatoma juniperina L.

Estes Park, July 11th; Rist Canon, July 30th (Gillette).

Pentatoma sayi Stal.

Roaring Fork (Rothrock—see Uhler, 2). Foot-hills of Colorado, September (Carpenter—see Uhler, 6). Golden, August 6th (Uhler, 5).

Silverton (Nat. Mus. Coll).

Pentatoma uhleri Stal.

Colo. (Uhler, 6).

Carpocoris lynx Fab.

Fort Collins, June 20th to October; Estes Park, July 11th. Colorado Springs, August 1st (Gillette). Steamboat Springs, July 12th to 26th (Gillette and Baker).

Trichopepla atricornis Stal.

North-east of Denver, August 18th (Uhler, 5).

Trichopepla semivittata Say.

On weeds in vicinity of Arkansas River, August 10th (Uhler, 5).

Peribalus limbolarius Stal.

Colo. (Uhler, 1 and 5) Nymphs moderately common on several kinds of Flowering plants August 6th and 8th, in Beaver Brook Gulch and Clear Creek Canon. A few days later imagos taken near Colorado Springs and at Manitou. August 11th taken sweeping plants in mouth of Arkansas Canon (Uhler, 5). Colo. (Gillette—see Osborn, 1).

Steamboat Springs July 12th (Baker). Bailey (Snow). Veta Pass, June 24th (E. A. Schwarz).

Peribalus piceus Stal.

Rist Canon, July 30th (Gillette)

Holcostethus abbreviatus Uhl.

Colo. (Uhler, 1). Beaver Brook Gulch, August 6th (Uhler, 5).

Fort Collins, June 5th to October 7th (Gillette and Baker). Steamboat Springs, July 26th (Gillette). Rist Canon (Baker).

Thyanta custator Fab.

Colo. (Uhler, 6). Near Manitou, August 16th (Uhler, 3). Colo. (Gillette—see Osborn, 1).

Fort Collins, June 21st to October, (Baker and Gillette). Spring Canon, June 30th; Denver, July 20th; Lamar, May 7th (Gillette). Colorado Springs, Garden of the Gods (Tucker).

Thyanta perditor Fab.

Colo. (Uhler, 6). Pueblo, August 10th (Uhler, 5). Colorado, common (Uhler, 8).

Thyanta rugulosa Say.

Colo. (Uhler, 1). Colo. (B. H. Smith—see Uhler, 6). Southern Colorado, October (Uhler, 7). Moderately common in Clear Creek Canon and in Beaver Brook Gulch. Occurred on wild gooseberry, and several kinds of bushes near running streams (Uhler, 5).

Fort Collins, June 9th. in electric light globes (Gillette).

Murgantia histrionica Hahn.

Colo. (Uhler, 1 and 6). Colo. (Uhler—see Packard, 2). Near Denver, in irrigated region, and also Golden. August 6; none found south of Denver (Uhler, 5). Golden, July 3d (Packard—see Uhler, 5).

Banasa calva Say.

Larva in Clear Creek Canon, August 6th (Uhler, 5). Imagos near Blackhawk, July 2d (Packard—see Uhler, 5).

Fort Collins. September 30th; Ouray, June 22d (Gillette). Big Narrows of Poudre river, Larimer county, July 9th, on willow (Baker).

Banasa dimidiata Say.

Estes Park (Snow—see VanDuzee, 5).

Banasa sordida Uhl.

Glenwood Springs, August 24th (Gillette).

Chariesterus antennator Fab.

Colo. (Uhler, 6). Manitou, August 13th, on a small oak tree (Uhler, 5). Colo. (Gillette—see Osborn, 1).

Horsetooth Gulch, May 18th (Gillette).

Corynocoris distinctus Dall.

Colo. (Uhler, 1 and 6).

S. Colo. (Nat. Mus. Coll.).

Archimerus calcarator Fab.

Colo. (Uhler, 1). Foot-hills (Carpenter—see Uhler, 6).

Boulder, September 4th (Baker).

Leptoglossus corculus Say.

Colorado—as questionably cinctus (Gillette—see Osborn, 1).

Fort Collins. June 29th, and July 4th in flowers of Yucca; Pueblo, June 13th (Gillette). Boulder, September 4th; foot-hills 5 miles west of Fort Collins, August 1 (Baker).

Chelinidea vittigera Uhl.

Colo. (Uhler, 6). Beneath a mass of prickly pears on hillside near Colorado

Springs, August 10th (Uhler, 5). Colo. (VanDuzee, 5).

Foot-hills, 5 miles west of Fort Collins, March 15th to May 19th, common under stones and about plants of *Opuntia*: Fort Collins, April 23d to May 16th (Baker and Gillette).

Margus inconspicuus H. Schf.

Colo. (Uhler, 1 and 6). Near Manitou, August 13th (Uhler, 5). Near Denver (B. H. Smith—see Uhler, 5). Southern Colorado, June 5th (Carpenter—see Uhler, 7).

Montrose, June 24th (Gillette).

Catorhintha guttula Fab.

Fort Collins, May 7th to October 28th (Baker and Gillette). Foot-hills 5 miles west of Fort Collins, June 4th to August 3d (Gillette).

Catorhintha mendica Stal.

Colo. (Uhler, 1 and 6). Golden, July 3d (Packard—see Uhler, 5). Southern Colorado, June 5th to July 5th (Carpenter—see Uhler, 7).

Colorado Springs (Tucker).

Ficana apicalis Dall.

Manitou, July 24th, on *Clematis ligusticifolia* (Gillette).

Anasa tristis De G.

Colo. (Uhler, 6). Taken beneath rubbish on a farm a few miles west of Denver, August 18th. Not common (Uhler, 5). Colorado Springs, July (Yarrow—see Uhler, 7). Southern Colorado, June (Carpenter—see Uhler, 7).

Known as a common and serious pest almost everywhere squashes are cultivated. Hibernates under boards, stones, and rubbish.

Tollius curtulus Stal.

Horsetooth Mountain, July 4th (Gillette).

Alydus eurinus Say.

Foot-hills of Colo. (Carpenter—see Uhler, 6). Manitou, July 15th (Packard—see Uhler, 5). Near Denver (B. H. Smith—see Uhler, 5). Uta, Custer county July 30th; also high alpine; in Mesa county, at about 7,000 feet (Cockerell, 10)

Alydus quinquespinosus Say.

Foot-hills of Colo. (Carpenter—see Uhler, 6).

Fort Collins, September 30th; Boulder, September 4th (Baker).

Alydus pluto Uhler.

Colo. (Uhler, 1). Foot-hills (Carpenter—see Uhler, 6). Near Denver (B. H. Smith—see Uhler, 6). West of Denver, August 9th (Uhler, 5). Colo. (Snow—see VanDuzee, 5).

Spring Canon, July 12th; Estes Park, July 12th (Gillette).

Alydus conspersus Mont.

Colo. (Montandon, 1). Colo. (Montandon—see Osborn, 1).

Protenor belfraei Hagl.

Colo. (Uhler, 1 and 6).

Darmistus subvittatus Stal.

Fort Collins, June 25th (Baker). Foot-hills five miles west of Fort Collins, March 12th to June 12th (Gillette).

Dasycoris nigricornis Stal.

North-east Colorado (Riley).

Dasycoris humilis Uhler.

Colo. (Uhler, 1 and 6). Near Golden, August 6th (Uhler, 5). Colorado Springs, July (Yarrow—see Uhler 7).

Fort Collins, April 26th; foot-hills 5 miles west of Fort Collins, April 16th to June 13th (Gillette).

Scolopocerus secundarius Uhler.

Colo. (B. H. Smith—see Uhler, 6). Colo. (Gillette—see Osborn 1).

Foot-hills five miles west of Fort Collins, March 15th (Gillette). Fort Collins, May 20th (Baker).

Neides muticus Say.

Colo. (Uhler, 1 and 6). Clear Creek Canon, entrance to Beaver Brook Gulch, August 7th, flying in bright sunlight (Uhler, 5).

Manitou, June 25th; Montrose, June 24th (Gillette). Foot-hills five miles west of Fort Collins, May 19th and 21st; Steamboat Springs, July 15th to 26th (Gillette and Baker). Fort Collins, March 18th (Baker).

Jalysus spinosus Say.

Pueblo (Yarrow—see Uhler, 7). Not uncommon in the valley of the Arkansas east of Canon City, August 11th. Occurred in places slightly wooded, where wild grape vines abounded (Uhler, 5).

Colorado Springs (Tucker).

Harmostes propinquus Dist.

Fort Collins, August 18th and 26th (Baker). Foot-hills five

miles west of Fort Collins, July 12th and 30th (Gillette).

Harmostes serratus Fab.

Manitou, July 15th (Packard—see Uhler, 5).

Harmostes reflexulus Stal.

Colo. (Uhler, 1). Foot-hills, July to September (Carpenter—see Uhler, 6). Sweeping weeds on hills west of Denver August 5th. Beyond Canon City, August 11th. Colorado Springs, August 16th (Uhler, 5). Near West Cliff, Custer County, end of July (Cockerell, 10).

Fort Collins, September 30th (Baker). Steamboat Springs, July 14th and 26th (Baker and Gillette). The Rustic, Larimer County, August 11th; Dolores, June 18th; Montrose, June 24th; Glenwood Springs, August 24th (Gillette). Aspen (W. W. Willard). Colorado Springs (Tucker).

Harmostes reflexulus Stal. var. *virescens* Dall.

Howe's Gulch, June 14th; Dolores, June 17th (Gillette). All variations between this and the typical form occur commonly.

Auteius impressicollis Stal.

Swept from bushes in the suburbs west of Denver, August 18th. Not common (Uhler, 5).

Corizus hyalinus Fab.

Colo. (Uhler, 1). Foot-hills (Carpenter—see Uhler, 6). Pueblo, July (Yarrow—see Uhler, 7). Golden, July 3d, and on Arapahoe Peak, 11,000 to 12,000 feet, July 1st (Packard—see Uhler, 5). Widely distributed in Eastern Colorado. Lodges in flowers of various plants, and seems to be common on plains, foot-hills, and parks in the mountains. Less abundant in Clear Creek Canon, but found everywhere west of Denver, around Colorado Springs, and near Manitou. Lived singly in crowns of small flowers in Manitou Park. Common on weeds in Arkansas Valley, and near mouth of Canon of Arkansas, August 4th to 19th (Uhler, 5). Uta, Custer County, July 30th; also high alpine (Cockerell, 10).

Howe's Gulch, June 14th; Steamboat Springs, July 26th; Glenwood Springs, August 24th (Gillette). Fort Collins, May 18th to July 14th, on alfalfa, barley, *Sisymbrium canescens*, and *Oenothera biennis* (Baker). Colorado Springs, August (Tucker).

Corizus lateralis Say,

Colo. (Uhler, 1 and 6). Swept from weeds on low hills near Colorado

Springs, August 18th (Uhler, 5).

Fort Collins, March 20th to August 25th, and September 27th on *Bigelovia* (Baker and Gillette). Foot-hills five miles west of Fort Collins, June 5th and 14th; Steamboat Springs, July 26th (Gillette).

Corizus nigristernum Sign.

Golden, July 3d (Packard—see Uhler, 5).

Rist Canon, June 13th (Gillette).

Corizus punctiventris Dall.

Colo. (Uhler, 1 and 6).

Fort Collins, September 30th (Baker). Steamboat Springs, July 14th and 26th (Baker and Gillette). The Rustic, Larimer County, August 11th; Estes Park, July 12th; North Park, July 20; Montrose, June 24th (Gillette).

Corizus validus Uhl.

Steamboat Springs, July 14th (Baker).

Leptocoris trivittatus Say.

Colorado, common (Uhler, 1). Colo. (Uhler, 6). Southern Colorado, July (Carpenter—see Uhler, 7). Canon City, August 11th, at roots of cacti and yuccas (Uhler, 5). Colo. (VanDuzee, 5).

Canon City, August 31st (Gillette). Very common in Fort Collins and vicinity. Hibernates in large numbers about buildings. Commonly called "brick-bugs" or "box-elder bugs," although not found commonly on box-elder.

Jadera haematoloma H. Schf.

Colo. (Uhler, 6).

Nysius angustatus Uhl.

Colo. (Uhler, 1). Above timber line in mountains of Colorado in June (Carpenter—see Uhler, 6). Pueblo, July (Yarrow and Wilkin—see Uhler, 7). Fort Garland, July (Hunt—see Uhler, 7). Golden, July 3d (Packard—see Uhler, 5). Very abundant on tall weeds in cultivated grounds, near Denver, at Golden, in Manitou Park, and near Canon City, August 6th to 18th (Uhler, 5). Colo. (Gillette—see Osborn, 1).

Estes Park, July 12th; Leadville, August 23d (Gillette). Fort Collins, July 29th; Steamboat Springs, July 15th, on *Solidago* (Baker). Colorado Springs, Bear Creek Canon (Tucker).

Nysius californicus Stal.

Colo. (Uhler, 1 and 6). Found sparingly on weeds in moist places, as well

on the plains as in canons and parks. Swept from flowers west of Denver, in Clear Creek Canon, near Manitou and Colorado Springs, and more abundantly near Canon City. On a low composite with pale whitish flower, Manitou Park, August 14th (Uhler, 5). Golden, July 3d (Packard—see Uhler, 5).

Nysius minutus Uhler n. sp.

"Grayish fulvo-testaceous, pubescent, punctate with black, narrow, with the outer margin of the hemelytra nearly straight. Head of medium length, comparatively acute, pale dull fulvous, closely punctate, except on the immediate base, the punctures of the sides especially black, a grooved line midway between the eye and tylus; throat black, covered with small punctures, sericeous pubescent, with a white line next the eyes; antennae fulvo-testaceous, the basal joint mostly black, reaching a little beyond the tip of tylus, second joint about one-third longer than the third and both piceous at tip, the fourth long blackish; rostrum reaching behind the middle coxae, blackish piceous, sometimes paler at base. Pronotum subquadrate, a little wider than long, coarsely punctate with black, especially on the sides of disk, the fulvous color of the middle of the head carried back as a line between the callosities, the callosities and adjoining sutures and a line each side of the convex posterior lobe black, the humeral callosities and a short line on the middle of the posterior border whitish, humeri nearly surrounded by black. Pectoral areas black, minutely sericeous pubescent, coarsely punctate anteriorly, with a series of large white spots, including the coxae, extending from behind the throat to the metapleura, the outer angle and posterior margin of the metapleura and collar next the throat whitish or white, legs dull fulvo-testaceous, the femora mostly black beneath. Scutellum fulvo-testaceous, coarsely punctate and with a black mark on each basal angle, the middle line black, including the blunt base of the middle carina, which becomes very slender on the depressed apex of the scutellum. Hemelytra whitish, minutely pubescent, obsolete and minutely punctate, with the veins and inner and posterior margin interruptedly streaked with brown, the apex of the clavus with a brown dot; membrane long, whitish hyaline, with a few brown flecks near the middle and from thence outwards. Abdomen piceous or blackish, narrow, polished, closely covered with fine white pubescence. Length to tip of abdomen, male 3-3.5 mm. Width of pronotum, .75 mm.

This is a common species in many parts of the western states, from Dakota to Colorado, California and Texas. On the eastern side of the continent it inhabits Canada, New England, New York, New Jersey, Maryland, Virginia, and North Carolina."

Fort Collins, June 4th to October 15th, and September 27th on *Bigelovia*; Pleasant Valley, June 12th; The Rustic, Larimer County, August 11th; Estes Park, July 12th; Grand Junction, August 26th, on sugar beets; Colorado Springs, August 3d; Montrose, June 24th (Gillette). Steamboat Springs, July 14th; Fort Collins, July 29th, on sugar beets, and July 26th, very injuriously abundant on mustard (Baker).

Nysius thymi Wolff.

Estes Park, July 12th (Gillette).

Orsillus scolopax Say.

Fort Collins, August 11th, on *Glycyrrhiza lepidota* (Baker).

Ichnorhynchus didymus Zett.

Southern Colorado (Yarrow—see Uhler, 7). Denver and Canon City (Uhler,

5). Colo. (Gillette—see Osborn, 1).

Rist Canon, May 29th; Estes Park, July 12th; Montrose, June 24th; Manitou, June 25th to September 29th (Gillette). Fort Collins (Baker). Manitou Park, Cheyenne Canon (Tucker).

Cymus luridus Stal.

Swept from weeds near Arkansas river, east of Canon City, August 11th (Uhler, 5). Near West Cliff, Custer county, end of July (Cockerell, 10).

Cymodema tabida Spin.

Fort Collins, March 28th to April 26th under boards (Baker). Garland, June 18th (E. A. Schwarz).

Blissus leucopterus Say.

Pleasant Valley*, June 12th, a single specimen (Gillette). Dixon's Canon, February 28th, one specimen under a stone (Baker).

Ninyas pallens Stal.

Colo. (Riley).

Geocoris borealis Dall.

Fort Collins, March 24th, under board; Glenwood Springs, August 24th (Gillette).

Geocoris bullatus Say.

Pueblo (Yarrow—see Uhler, 7). Foot-hills, July (Carpenter—see Uhler, 6). Collected around the roots of weeds on foot-hills and plains west of Denver, August 18th. Very pale varieties of this species occur on light colored sand; those from canons and mountain altitudes are darker (Uhler, 5).

Geocoris decoratus Uhler.

Clear Creek Canon, August 3d, in warm, sunny spots on dark sand (Uhler, 5). Ula, Custer County, November 12th (Cockerell, 10).

Geocoris fuliginosus Say.

Denver, August 5th (Uhler, 5).

Geocoris griseus Dall.

Estes Park, July 10th (Gillette).

Geocoris limbatus Stal.

Steamboat Springs, July 26th (Gillette.)

Geocoris pallens Stal.

*Six miles north-west of Fort Collins.

Colorado Springs, August 3d; Lamar, May 7th; Glenwood Springs, August 24th; Dolores, June 18th (Gillette). Fort Collins, June 29th on sugar beet, and August 18th; foot-hills five miles west of Fort Collins, August 1st (Baker).

Geocoris piceus Stal.

Colo. (Uhler, 1 and 6).

Geocoris punctipes Say.

Colo. (Uhler, 6).

Oedancala dorsalis Say.

Valley of Arkansas near Canon City (Uhler, 5).

Crophius bohemani Stal.

Det. through Riley

Montrose, June 24th (Gillette.)

Crophius disconotus Say.

Foot-hills five miles west of Fort Collins, March 15th to August 1st, and May 12th abundant on *Pinus ponderosa* var. *scopulorum* (Gillette and Baker). Golden, April 30th (Gillette). Fort Collins, May 16th on alfalfa, May 31st on apple, and April 11th very abundant along a fence row, flying in the sunshine (Baker).

Ligyrocoris constrictus Say.

Southern Colorado June and July (Carpenter—see Uhler, 7).

Livermore, Larimer county, August 11th (Gillette).

Ligyrocoris sylvestris Linn.

Foot-hills (Carpenter—see Uhler 6). Near Manitou, August 15th (Uhler, 5). Colo. (Gillette—see Osborn, 1).

Fort Collins, August 18th (Baker). Steamboat Springs, July 15th and 26th (Baker and Gillette).

Myodocha serripes Oliv.

Valley of Arkansas river, east of Canon City, August 11 (Uhler, 5).

Heraeus insignis Uhler.

Colo. (Uhler, 1 and 6). Near Golden, at mouth of Clear Creek Canon, August 7 (Uhler, 5).

Pamera una Say.

Ouray, July 17th; Fort Collins, September 27th (Gillette),

Ptochiomera clavigera Uhler n.sp.

"Similar in form to *P. nodosa*, Say, but shorter and thicker, with a dull dark surface

and thicker clavate antennae. Color dark brown, closely and coarsely punctate with fuscous, pubescent. The head thick, abruptly contracted at tip, clothed with bronze pubescence, closely punctate; the rostrum thick, brown, reaching between the anterior coxae; antennae piceous, pale pubescent, blackish on the two long and very thick clavate apical joints, the basal joint thick, scarcely longer than the tylus, the second much shorter, more slender, growing thicker towards the tip; the ocelli very large and prominent, coarsely and densely granulated. Pronotum thick, a little longer than wide, almost flat above; the anterior lobe nearly twice as long as the posterior one, the two separated each side by a deeply incised line; the lateral edge moderately oblique, reflexed, a very little curved; collum distinct, but rather turned up than ridged; the middle of posterior margin indented, the anterior margin as wide as the head to the middle of the eyes; the humeral angles callous, long triangular. Pleural pieces reddish brown, somewhat coarsely punctate. Coxae dull yellow; femora obscure yellow, pale fuscous on the middle; the tibia tinged with brown; tarsi more or less piceous. Scutellum reddish brown, punctate, the apex with a long thick carina. Hemelytra thick, opaque, coarsely punctate in somewhat longitudinal lines, bare parts of the surface dull fulvous, the costal border testaceous, interrupted by about four black spots; the broad apex almost truncated, sometimes marked with two or three yellow dots; the membrane brown, very small or absent. Abdomen dark dull or brown, closely punctate, spread with minute bronze pubescence; the connexivum wide, sharp edged, with a yellow dot on the apex, and sometimes with testaceous specks at the outer end of the sutures; anal segment of the male large and prominently convex, very dark brown.

Length to end of abdomen 2.5 mm. Width of pronotum .75 mm. Three or four specimens are in the Colorado Agricultural College collection. In my own cabinet may be seen specimens from New York, Texas, and the vicinity of Denver and Manitou, Colorado."

Fort Collins, April 6th (Baker). Poudre Canon*, March 16th to April 22nd (Gillette). The specimens taken were found under boards and stones. This is the species recorded from Colorado as *P. diffusus* Uhler (see Uhler, 1).

Ptochiomera puberula Stal.

Denver, August 8th (Uhler, 5).

Cnemodus mavortius Say.

Colorado, August (Riley).

Trapezonatus nebulosus Fall.

Colo. (Uhler, 1 and 6). Southern Colorado, June, July (Carpenter—see Uhler, 7). Moderately common at Denver, also few from plants in Beaver Brook Gulch, August 6th (Uhler, 5). Custer county, mid-alpine (Cockerell, 10).

Fort Collins, February 19th to September 2d (Baker and Gillette). The Rustic, Larimer county, August 11th; Foot-hills seven miles north-west of Fort Collins, March 16th; Manitou, June 25th; Montrose, June 24th; Dolores, June 18th (Gillette). Steamboat Springs, July 14th (Baker). Colorado Springs, Manitou Park (Tucker).

Emblethis arenarius Linn.

Colo., seems to be quite common (Uhler, 6). Quite common in eastern

*The canon of the Poudre river, 10 miles north-west of Fort Collins.

Colorado as well on plains and foot-hills as in mountains. Near Denver and also in Clear Creek Canon, August 6th (Uhler, 5). Summit of Arapahoe Peak, 13,000 feet, July 14th (Packard—see Uhler, 5). Custer county, midalpine (Cockerell, 10). Colo. (Gillette—see Osborn, 1).

Fort Collins, February 19th to April 16th; Spring Canon, March 12th (Gillette).

Peritrechus fraternus Uhl.

Ula, Custer county, November 12th (Cockerell, 10).

Rhyparochromus floralis Uhler n. sp.

"Long-elliptical, rusty fulvous, opaque, minutely sericeous pubescent. Head piceous paler or rufo-fulvous at tip, subconic, nodding, smooth, shorter than the pronotum, minutely scabrous, strongly convex above, with the throat pale rufo-fulvous; antennae stout, about as long as the pronotum and corium united, dull fulvous, pale pubescent, with the fourth joint and apex of the third blackish piceous, the basal joint extending a little beyond the tip of the head, second much longer, the third about one-half longer but a little shorter than the second, the fourth about equal to the second; rostrum reaching upon the middle coxae, slender, pale fulvous, with the apical joint black. Pronotum subquadrangular, a very little wider at base than at tip, fulvous or rufo-fulvous, dull testaceous and punctate with black on the basal one-third, the lateral margins a little reflexed, black, slightly convexed next the apical angle, the submargin ivory white, expanding posteriorly where it abuts against a tumid black humeral spot, the inner boundary of this stripe and the anterior submargin finely punctate with black, disk not distinctly punctate, behind this is a feebly raised whitish line. Scutellum very long and acute fulvous, transversely indented on the middle, finely punctate before the middle and coarsely punctate with black towards the tip, the middle line more or less black. Corium whitish testaceous, with about nine slender black oblique lines (including the clavus) which are mostly composed of impressed punctures, the costal border and a transverse spot upon a wide black area, which also covers the cuneus, dull white, exterior reflexed edge of costal border dark brown; membrane smoke brown, with a short white spot next the tip of cuneus, and a double fainter one at tip. Legs pale fulvous, pale on middle of tibiae and base of tarsi, apices of tibiae and tarsi piceous. Pectus dark rust brown, paler anteriorly, the segments on the posterior border and a spot above each of the coxae pale yellow. Venter dull black, bordered above with testaceous or fulvous.

Length to tip of venter, 6-6.5 mm. Width of pronotum, 1.75-2 mm. This seems to be a common species in Colorado, Montana, California, etc."

Abundant at Fort Collins, throughout the season, under stones, etc., usually in company with *Formica neoclara* Em. (Baker).

Rhyparochromus (Dorachosa) illuminatus Dist.

Dixon's Canon, February 28th, under a stone (Baker).

Eremocoris ferus Say.

Custer county, midalpine (Cockerell, 10). Colo. (Gillette—see Osborn, 1).

Dolores, June 16th (Gillette).

Eremocoris tropicus Dist.

Fort Collins, March 26th; foot-hills five miles west of Fort Collins, March 15th and 16th (Gillette).

Peliopelta abbreviata Uhl.

Clear Creek Canon, August 6th (Uhler, 5).

Melanocoryphus admirabilis Uhl.

Colo. (Uhler, 6). Ula., Custer Co., Nov. 12 (Cockerell, 10).

Rist Canon, May 29th; Montrose, June 24 (Gillette).

Melanocoryphus bicrucis Say.

Colo. (Gillette—see Osborn, 1).

Horsetooth Gulch, May 18th; Dolores, June 16th; Montrose, June 24th (Gillette).

Melanocoryphus facetus Say.

Foot-hills, July (Carpenter—see Uhler, 6). Swept from yuccas near Denver; most common near Colorado Springs, August 13th to 17th, and were generally in shelter beneath dried dung, chips, stones or about the roots of yuccas (Uhler, 5). In a meadow at Nathrop, Chaffee County, August 14th (Cockerell, 10) Colorado (Gillette—see Osborne, 1).

Fort Collins, June 9th, on alfalfa and in electric light globes; foot-hills five miles west of Fort Collins, February 28th to August 1st (Gillette and Baker). Trinidad, May 14th; Grand Junction, August 28th; Leadville, August 23d (Gillette). Denver, at light (R. C. Stephenson).

Lygaeus admirabilis Uhl.

Colorado (Uhler, 1).

Pleasant Valley, June 12th; Fort Collins, June 10th (Gillette).

Lygaeus circumcinctus Stal

Colorado (Carpenter, 1).

Lygaeus kalmii Stal.

Custer County, midalpine (Cockerell, 10)

Lygaeus melanopleurus Uhl.

Foot-hills five miles west of Fort Collins, June 14th to September, 1st; North Park, July 20th (Gillette). Steamboat Springs, July 16th and 26th (Baker and Gillette).

Lygaeus reclinatus Say.

Found at 14,000 feet in abundance on surface of snow. Found above timber belt from May to October, throughout an area of 20,000 square miles (Carpenter, 1). Colorado (Uhler, 6). Pueblo, July (Yarrow and Wilkin—see Uhler, 7). Boulder, June 27th; Arapahoe Peak, 10,000 to 12,000 feet, July 1st;

Manitou, July 15th; summit of Pike's Peak, 13,000 feet, July 14th; Garden of the Gods, July 13th; Gray's Peak, about 14,000 feet, July 7th (Packard—see Uhler, 5). Everywhere, Denver to Canon City, August 6th to 18th. Among roots of yuccas, near Colorado Springs and Manitou. Swept from weeds near bunches of *Asclepias* in mouth of Arkansas Valley. Dwells on *Asclepias* (Uhler, 5). Uta, Custer County, November 12th (Cockerell, 10). Fort Collins (Riley and Blount, see Cockerell 10). Colorado (VanDuzee, 5)

Montrose, June 24th (Gillette). Fort Collins, March 20th to April 20th (Gillette and Baker). Manitou Park (Snow). Colorado Springs (Tucker).

Lygaeus turcicus Fab.

Lower end of Wet Mountain Valley, just in Fremont County (Cockerell, 10).

Largus cinctus H. Sch.

Colorado—as *succinctus* (Gillette—see Osborn, 1).

Lamar, May 7th (Gillette). Cheyenne Canon (Tucker).

Largus succinctus Linn.

Colorado (Uhler, 1). Southern Colorado (Uhler, 6)

Brachytropis calcarata Fall.

Near water, in weedy places on outskirts of Denver, August 4th (Uhler, 5).

Steamboat Springs, July 12th on *Carex* (Baker).

Megaloceroea debilis Uhl.

Berthoud Pass and other parts of Colorado (Uhler, 1). Colorado (Uhler, 5).

Fort Collins, June 4th to July 24th; Steamboat Springs, July 26th, and July 12th on *Carex* (Gillette and Baker).

Megaloceroea rubicunda Uhl.

Colorado (Uhler, 1 and 6).

Trigonotylus pulcher Reut.

Fort Collins, October 15th; Pleasant Valley, June 12th; Estes Park, July 12th; Lamar, May 7th; Trinidad, May 14th; (Gillette). Fort Collins, June 13th, on cottonwood sprouts, and July 29th (Baker).

Trigonotylus ruficornis Fall.

Colorado (Uhler 1 and 6). On weeds and grass in damp situations near Denver, and also on hills near water a few miles west of Denver (Uhler, 5). Colorado (Gillette—see Osborn, 1).

The last record perhaps refers to *pulcher*.

Miris affinis Reut.

Roaring Fork (Rothrock—see Uhler, 2). Hills, July (Carpenter—see Uhler,

6). Southern Colorado, July (Carpenter—see Uhler, 7). Yellow varieties on weeds near water, in suburbs of Denver. Green variety, marked with fuscous, from rank growing plants in Beaver Brook Gulch, August 6th (Uhler, 5). Ula, Custer County, July 30th (Cockerell, 10). Estes Park (Snow—see VanDuzee, 5).

Fort Collins, May 8th to October 7th and June 9th, on alfalfa and barley (Baker). Foot-hills five miles west of Fort Collins, May 11th to 19th; Manitou, June 25th (Gillette). Veta Pass, June 21st (E. A. Schwarz).

Teratocoris discolor Uhl.

Garland, June 18th (E. A. Schwarz—see Uhler, 3).

Teratocoris longicornis Uhler n. sp.

"Elongated, bright green, resembling a *Miris*. Head very slightly nodding, green, broad, the front tabulated above and bounded by deep sutures, black anteriorly along the depressed middle line and also each side, the vertex produced in an arch posteriorly, and with a black arc at base; tylus black, rostrum reaching midway between the middle and posterior coxae; mostly greenish-testaceous, piceous at tip; antennae long, the basal joint green, the other joints dull reddish, the basal one as long as the vertex and pronotum united, the second as long as the pronotum and clavus united, the third and fourth broken from the specimen. Pronotum trapezoidal, a little longer than wide, flat anteriorly, the sides gradually oblique, with the edge reflexed, a little constricted behind the line of the callosities and crossed there by a black band, the middle line unevenly impressed, black, connected behind with a broad black band across the base, which is obsoletely punctate and wrinkled, the submargin before the humeri tabulated and with the edge not reflexed, posterior margin very slightly sinuated. Sternum whitish along the middle. Legs green, the tibiae and the tarsi more or less yellow, with the nails and apex blackish. Scutellum black, with a large yellow spot near each basal angle. Hemelytra green, long elliptical, minutely rugulose and punctate, the costal border prominently reflexed; membrane long, dull whitish, faintly dusky at base, including the base of vein. Mesosternum, posterior coxae and middle and apex of venter, pale yellowish, the abdomen minutely pubescent.

Length to tip of abdomen 4.5 mm. To tip of membrane 5.5 mm. Width of pronotum 1.25 mm. This is a well marked species of which only a single male was sent to me from Colorado. The genital hook is placed on the left side, and is long, stout and moderately curved. In this specimen the base of the scutellum is broadly exposed. A series of both sexes is greatly desired for comparative study."

Steamboat Springs, July 12th on *Carex* (Baker).

Leptoterna amoena Uhl.

Steamboat Springs, July 14th and 26th (Baker and Gillette). Estes Park, July 10th; North Park, July 20th; Colorado Springs, August 3d (Gillette).

Resthenia atripennis Reut.

Foot-hills twelve miles west of Fort Collins, June 30th (Gillette).

Resthenia bivittis Stal.

Steamboat Springs, July 26th; North Park, July 20th (Gillette).

Resthenia contraterna Uhl.

Colorado (Uhler, 1 and 6). Beaver Brook, August 6th (Uhler, 5). Idaho Springs, July 6th (Packard—see Uhler, 5). Colorado (Gillette—see Osborn, 1).

Resthenia insignis Say.

Colorado (Uhler, 1 and 6). Colorado, as *insignis* and as *rubrivittata* (Gillette—see Osborn, 1).

North Park, July 20th (Gillette). Steamboat Springs, July 15th; Rabbit Ears Pass, July 20th (Baker).

Resthenia insitiva Say.

Colorado (Gillette—see Osborn, 1).

Resthenia maculicollis Reut.

Foot-hills twelve miles west of Fort Collins, June 30th (Gillette).

Oncerometopus nigriclavus Reut.

Colorado (Gillette—see Osborn, 1).

Dolores, June 18th; Estes Park, July 12th (Gillette). Steamboat Springs, July 13th (Baker). Colorado Springs (Tucker).

Oncerometopus ruber Reut.

Foot-hills five miles west of Fort Collins, September 1st (Gillette).

Lopidea confluens Say.

Estes Park (Snow). North-east Colorado (Riley).

Lopidea marginata Uhl.

Colorado (Uhler, 8).

Lopidea media Say.

Foot-hills and plains, September 19th and October 4th (Carpenter—see Uhler, 6). Plentiful at Denver, Golden, Colorado Springs, and in the valley of the Arkansas near Canon City, August 5th to 18th. Occured most frequently upon the wild rose bushes (Uhler, 5). August 12th at Cottonwood Creek, Pleasant Valley, Fremont County (Cockerell, 3). West Cliff, Custer County, July 31st on *Glycyrrhiza lepidota* (Cockerell, 10). Colorado (Gillette—see Osborn, 1).

Lopidea nigridia Uhler n. sp.

“Thicker and more compact than *L. media* Say, mostly dull black, pubescent, narrowly margined with rufo-fulvous or rufous on the outer border of the corium, including most of the cuneus. Head a little thicker than typical, dull black, pubescent, with a yellow spot on each side of the vertex next the eye, continued slenderly downward, a red spot on each side of the tylus, and the cheeks and sides below also red, with black sutures, the

gula black and the tylus shining black, antennae black, moderately stout, the basal joint much longer than the head, the second joint as long as from base of pronotum to front of eye, the third gradually decreasing in thickness, about two-thirds the length of the second, the fourth more slender, acutely tapering, about one-third as long as the third joint; rostrum all black or black at base, rufo-piceous posteriorly, reaching to posterior coxae. Pronotum wide, moderately short, the anterior lobe almost flat, with the front border reflexed, thick, whitish, and sinuated in the middle, callosities large, diagonal, prominent, black, with the deep space between also black, the posterior lobe convexly elevated transversely, faintly rufous on a smoky ground color, wrinkled, the posterior margin a little sinuated, with the edge depressed and thin and the middle of the submargin distinctly indented; the lateral margin reflexed throughout, including the border of the humeri; pleura rufous, a little fuscous anteriorly and on the sternum. Middle and posterior pectus black. Legs shining black. Scutellum dull black, tumid, indented at base. Hemelytra brownish black, irregularly granulated, and hairy, especially upon the clavus, outer border of the corium red, the color becoming wider posteriorly and covering nearly the whole cuneus. Abdomen black, shining, minutely pubescent.

Length to end of abdomen 5 mm. Width of pronotum 1.75 mm. Numerous specimens of this insect are present in the collection of the Colorado Agricultural College. It inhabits also New Mexico and Arizona."

Estes Park, July 12th (Gillette). Steamboat Springs, July 16th on willow and *Delphinium occidentale* (Baker).

Lopidea obscura Uhl.

Steamboat Springs, July 26th; North Park, July 20th (Gillette). Steamboat Springs, July 12th to 16th, on willow *Delphinium occidentale*, and *Artemisia tridentata* (Baker).

Lomatopleura caesar Ruet.

Colorado (Gillette—see Osborn, 1).

Fort Collins, July 24th to August 11th on *Glycyrrhiza lepidota*, and September 27th on *Rhus trilobata* (Baker and Gillette). Foot-hills five miles west of Fort Collins, June 5th to 14th; Colorado Springs, August 3d (Gillette).

Hadronema militaris Uhl.

Colorado (Uhler, 1). Roaring Fork (Rothrock—see Uhler, 2). Hills, July to September (Carpenter—see Uhler, 6.) Clear Creek Canon, well up on the mountain side, August 6th (Uhler, 5). Blackhawk, July 2d (Packard—see Uhler, 5). Smith's Park, Custer County, August 6th; also high alpine (Cockerell, 10). Colorado (Gillette—see Osborn, 1). Colorado (VanDuzee, 5).

Fort Collins, June 4th; Rist Canon, June 12th to July 30th; Estes Park, July 9th; North Park, July 20th; Steamboat Springs, July 26th; Georgetown, July 19th; Colorado Springs, August 3d; Montrose, June 24th (Gillette). Estes Park (Snow). Colorado Springs (Tucker).

Hadronema picta Uhler n. sp.

"Form nearly the same as in *H. militaris*. Having the antennae a little shorter, with

the second and third joints nearly of equal length. Head dull black, hairy, short, and transverse above, the vertex transversely impressed, prominently elevated behind; face tumid and convex, marked with a yellow stripe on the middle and a line of the same color on the groove next the inner margin of the eyes; cheeks, throat and bucculae pale greenish yellow; rostrum stout, greenish, black on the two apical joints, reaching upon middle coxae; antennae short, thick, the second not quite as long as the width of the base of pronotum, the third a very little shorter and not much thinner. Pronotum transverse, red or orange, set with erect black hairs, the collum white, and the band including the callosities black; lateral margins sharp, but not very prominent, pleural and sternal areas pale greenish, with the sutures and the areas between the coxae black. Legs pale fulvous at base, the apex of femora, and the tibiae and tarsi black. Scutellum pale rufous or yellow with the base blackish. Corium pale yellowish, with a large long black spot running back to tip, clavus nearly or all black, cuneus pale yellowish, bordered inwardly with black, membrane blackish. Abdomen pale greenish, with the ovipositor, genitalia and some short slender lines on the sutures of the segments black.

Length to tip of abdomen 3.5–3.75 mm. Width of pronotum 1.12–1.25 mm. Specimens of both sexes were kindly sent to me by Prof. Snow and Prof. Gillette. The first were collected at Colorado Springs, in July, by Mr. E. S. Tucker. Damaged specimens, from alcohol, were obtained for me in Dakota, and I captured a weather-worn specimen west of Denver in the month of August."

Hadronema princeps Uhl.

Fort Collins, June 4th; Rist Canon, June 13th to July 30th; Gore Pass, July 29th; North Park, July 20th (Gillette). Steamboat Springs, July 12th to 16th, on *Delphinium occidentale* and other low plants (Baker).

Hadronema pulverulenta Uhl.

Colorado (Gillette—see Osborn, 1).

Fort Collins, May 6th, about roots of a rose bush (R. C. Stephenson). Soldier Canon, May 19th; Golden, April 30th (Gillette). Fort Collins, September 26th, on elm (Baker).

Hadronema robusta Uhl.

Colorado (Cockerell—see Ashmead in litt.).

Pachytropis nubilus Uhl.

Steamboat Springs, July 26th (Gillette).

Phytocoris colon Say.

Colorado (Gillette—see Osborn, 1).

Phytocoris interspersus Uhler n. sp.

"In form similar to *P. eximus* Reut., but larger, and almost flat on the hemelytra. Pale delicate green, mottled with very pale brown all over the hemelytra, which are almost hirsute and the hairs interspersed with dark bristles. Head of medium size, convex, smooth, pubescent in front and on the sides; the eyes brown, prominent, reniform, placed almost vertical; front feebly grooved to near the back line of the eyes; rostrum thick at base, reaching well behind the posterior legs, dusky at tip; the antennae longer than the body, whitish, set with long bristles, the second joint longer than from the front to the posterior coxae, less hairy than the basal joint, the third a little more slender, about two-thirds the length of the second, the fourth much shorter and equally slender, the basal joint of medium thickness, about as long as the fore femur. Pronotum smooth, much wider than long, obsoletely veined with fulvous, contracted before the middle, a

little bristly on the sides and anteriorly, the region of the callosities transversely sunken, lateral margins deflexed, thick, fringed with dark bristles, collum narrow, whitish. Legs long, pale yellowish green, the posterior femora mottled with pale brown, tibial spines long, blackish. Scutellum convexly prominent, bald, polished, with the tip bent down, two black dots just back of it, and the lateral edge a little reflexed. Clavus and corium indented, rugose, set with silvery and dark hairs, the lateral margins gently curved, the costal submargin interrupted with pale brown lines; the membrane very large, faintly smoky, minutely flecked with brown. Venter whitish green, pubescent, polished.

Length to end of abdomen 4 mm. To tip of membrane 6 mm. Width of pronotum 2 mm. Only one specimen of this neat insect is known to me. It is a female taken in Cheyenne Canon, Colorado Springs, July (Tucker); it is somewhat above the average size of the species in this genus, and it bears a general resemblance to some of the green types of the genus *Oncotylus*, which might cause it to be confused with some of them."

Phytocoris pallidicornis Reut

Colorado (Riley).

Neurocolpus nubilus Say

Near Denver, August 4th (Uhler, 5). Colorado (Snow—see VanDuzee, 5).
Colorado (Gillette—see Osborn, 1).

Colorado Springs, Garden of the Gods (Tucker).

Neurocolpus inops Say.

On small plants in Beaver Brook Gulch, next to Clear Creek Canon, August 6th (Uhler, 5).

Compsocerooris annulicornis Reut

Colorado (Snow—see VanDuzee, 5).

Callodemus Uhler n. gen.

"Having the features of a greatly elongated *Calocoris*. Head vertical, wider than the collum, having a short neck, the vertex transverse, front broad tumido-conical, with the eyes reniform, prominent, and placed below the level of the vertex, line between the front and tylus deeply cut, the tylus long, thick, subcylindric, prominently curved at base; superior cheeks quadrangular, wide, almost flat, placed a little obliquely, the base of antennae very thick, deep seated directly above the quadrangular cheeks, against the inferior third of the eyes, lower cheeks rhomboidal, placed nearly horizontal beneath the eye; bucculae narrow, short, not extending beyond the inner line of the eye; rostrum quite thick at base, the basal joint reaching upon the anterior coxae. Anterior border of prosternum with a narrow, double, curved fold, mesosternum tumidly elevated. Pronotum transverse, abruptly sloping in front, the front border very narrow, carrying a prominent collum which is but little wider than the base of the head. Scutellum widely exposed at base, deeply incised across the disk, the posterior division triangular and almost equilateral. Hemelytra long and narrow, the costal border almost straight, veins distinct, regular, membrane long and wide, the looped vein fusiform in contour, round at the outer end, slenderly acute at the inner end, the adjoining areole but little shorter. Abdomen almost flat above, widely curving behind the base, with the connexivum broadly reflexed."

Callodemus laevis Uhler n.sp.

"Long-suboval, yellow tinged with green, bald, polished. Head highly polished, eyes dark brown, pale behind; rostrum pale testaceous, piceous on the apical joint, reaching to behind the posterior coxae; antennae filiform, very long, set with black stiff hairs, the basal joint thick, as long as from the front of the eye to the apex of the middle coxae, the second not quite as stout, longer than the corium, the other joints destroyed. Pronotum rapidly narrowing obliquely towards the front, the lateral margins sinuated, with the

humeri rounded, lobate, the posterior margin a little sinuated on the middle, and deeply excavated inwardly from the humeri, middle sometimes with two black dots. Scutellum long triangular, acute at tip, obsoletely punctate in parts near base, each side next the pronotum sometimes with a black spot. Clavus a little dusky, corium with a dusky large spot behind the middle which is triangularly forked on the posterior end, the surface remotely spread with minute silky pubescence; membrane dusky at base and apex, omitting the centre of the areoles, the veins pale yellow. Legs yellow, with the femoral and tibial spines darker; tip of tarsi and the nails piceous. Tergum black, excepting the sides and end which are greenish yellow. Venter light clear yellow.

Length to end of abdomen 8 mm. To tip of membrane 9 mm. Width of pronotum 2 mm. One specimen, a female, is in the collection from Colorado, and another from New Mexico."

Glenwood Springs, August 24th (Gillette).

Calocoris palmeri Uhl.

Southern Colorado (Uhler, 6).

Calocoris rapidus Say.

Colorado (Uhler, 1 and 6). Pueblo, August 10th (Uhler, 5). Pueblo, June (Yarrow—see Uhler, 7). Custer County, midalpine (Cockerell, 10).

Fort Collins, July 14th to August 11th; July 14th on alfalfa and *Oenothera biennis*; Steamboat Springs, July 14th, on *Solidago* and other low herbs (Baker). Rist Canon, July 14th; North Park, July 20th; Estes Park, July 12th; Steamboat Springs, July 26th (Gillette).

Calocoris superbus Uhl.

West Cliff, Custer County, July 27th (Cockerell, 10). Colorado (Gillette—see Osborn, 1).

Fort Collins, June 23th to August 25th, and September 27th on *Senecio douglassi* (Baker and Gillette).

Calocoris tinctus Uhler n. sp.

"Oblong-oval, olive brownish, moderately pubescent, mostly bald above. Head long nutant, contracted obliquely on the front, the vertex a little sunken, longitudinally incised, bounded behind by a prominent ivory white carina, the front most compressed next the line of the tylus, tylus smooth, dark brown; rostrum reaching behind the posterior coxae, pale rufo-piceous; antennae long and slender, as long as pronotum and corium united, pale dull fulvous, a little darker on the last two joints and tip of second joint, the second joint a little thicker than the following ones, as long as the head and pronotum united, the third and fourth filiform, together a little shorter than the second. Pronotum wider than long, trapezoidal, moderately convex, almost regularly punctate, with the collum, lateral and posterior margins almost straight, white, the submargin and callosities black, anterior angles a little rounded; pleural flaps deep, black, polished, coarsely remotely punctate and wrinkled, sternum blackish brown, the borders of pleural areas white. Legs brown, paler at base and on the trochanters, nails black. Scutellum moderately convex, brown, pale at tip, minutely wrinkled and obsoletely punctate. Clavus and corium covered with close shallow punctures, subcostal area with a broad and long pale almost hyaline stripe; membrane dusky, with a large whitish spot near the base, the veins dark; wings dusky. Venter purplish black, opaque, pale on the middle, fulvous on the last segment, all the incisures margined with white, and with a series of pale dots on the lateral submargin, pubescence hardly distinct.

Length to end of abdomen 6 mm. To tip of membrane 7 mm. Width of pronotum 2 mm.

Only one specimen, a female, was taken in Colorado. It is peculiar from the conical and compressed form of the clypeus, and the genital slit for the ovipositor extends back in a pale line to next base of venter. The male is a great desideratum."

Estes Park, July 15th, on *Pinus* (Gillette).

Megacoelum fasciatum Uhl.

Near Manitou, August 13th (Uhler, 5). Manitou, July 16th (Packard—see Uhler, 5).

Lygus annexus Uhl.

Colorado (Uhler, 1). Foot-hills (Carpenter—see Uhler, 6). Pueblo, July (Wilkin—see Uhler, 7). Several var. in Beaver Brook Gulch. Pale varieties common near Denver on *Euphorbia marginata* (Uhler, 5). Denver, July 28th; Idaho Springs, July 6th (Packard—see Uhler, 5). Custer County, midalpine (Cockerell, 10).

Gore Pass, July 29th; Montrose, June 24th (Gillette). La Veta, July 4th (E. A. Schwarz).

Lygus diffusus Uhl.

Custer County, high alpine (Cockerell, 10).

Lygus guttatipes Uhler n. sp.

"Form of *L. prasinus* Reut., but having a narrower head, the femora on the sides and the tibial spines at base marked with black dots. Ovate, convex, dull pale green, in some specimens obsoletely tinged with brownish around the base of membrane, obsoletely scabrous and effaced punctate, set with silky stiff pubescence which is mixed with dark bristles on the sides of the pronotum. Head polished, strongly convex; eyes large, brown; antennae green, stout, the basal joint thick, a little brownish, somewhat longer than from the eye to tip of tylus, second joint growing gradually thicker towards the tip, much shorter than the base of pronotum; rostrum greenish, broadly black at tip, reaching upon the middle coxae. Pronotum transverse, convex, remotely pubescent, unevenly and finely punctate, lateral margins acute, slightly curved, the pleural piece beneath them short, sunken, having a few punctures on the middle. Legs green, the femora stout, marked with round, black spots; tibial spines black, and with a black dot at the base of each, apex of tibiae and of tarsi also black. Scutellum moderately convex, a little wrinkled. Corium and clavus obsoletely rugose-punctate; cuneus with remote dusky pubescence, the tip sometimes minutely fuscous; membrane moderately long, pale greenish, with paler veins. Abdomen brighter green, minutely pubescent, the genital pieces blackish,

Length to end of abdomen, male 3.25, female 3.5 mm; to tip of membrane 4 mm. Width of pronotum 1.5 mm. Four specimens have been sent to me by Prof. Snow for examination. They were collected at Manitou, in August, by Mr. E. S. Tucker."

Lygus invitus Say.

Steamboat Springs, July 16th (Baker).

Lygus plagiatus Uhler n. sp.

"Robust, dull fulvo-griseus, or griseo-estaceous with fuscous obscure spots, opaque, pubescent. Head olivaceo-testaceous, polished, vertex incised on the middle, indented next the occipital carina, eyes brown, placed perpendicular, front convex, a little obsolete punctate, indistinctly marked with about four brown uneven strips, cheeks and tylus brown below; rostrum flavo-testaceous, piceous at tip, reaching to the middle coxae, antennae short and moderately stout, the basal joint dark brown, the second joint a little longer than the pronotum, darker and a little thicker towards the tip, the third

and fourth dusky, more slender than the second and together about equal to it in length. Pronotum broad, very moderately convex, bald, with coarse uneven punctures separated by wrinkled spaces in somewhat transverse lines, color dull, sometimes marked with a pair of black spots on the middle, a larger black spot in each humeral angle, and some faint, short stripes of brown on the disk, the lateral margins reflexed, whitish, a little curved, anterior angles well rounded and converging towards the elevated, ivory white collum, posterior margin pale, a little sinuated; pleural flap coarsely punctate, blackish on the middle; sternum and coxae pale greenish-testaceous. Legs testaceous, anterior coxae and sternum black, the usual two brown bands near tip of femora, the tibiae dark at tip and with black spines, tip of tarsi and nails black. Scutellum with an oblong pale spot each side near base, and the apex also pale. Corium finely pubescent, flecked with pale dots, more finely and closely punctate than the pronotum, costa dull testaceous, piceous at tip, inner angle with a pale spot on each wing-cover, tip of the broad cuneus with a dark brown spot; membrane brown at the outer end of the areole. Venter pubescent, greenish testaceous, with a dark stripe each side, and some pale dots on the connexivum.

Length to end of venter 4.5-5 mm. To tip of membrane 5.5-6 mm. Width of pronotum 2-2.5 mm. One specimen, a male, is in the collection from Colorado, others were sent to me from Indiana, Nebraska, Washington, Mackenzie River region, province of Quebec, and Maine. It is allied to *L. pratensis* Linn., but it differs in form, length of antennae, and markings."

Manitou, April 17th (Gillette).

Lygus pratensis Linn.

Colorado (Uhler, 1). Above timber line (Carpenter—see Uhler, 6, and Packard, 2). Common in cultivated districts (Uhler—see Packard, 2). Colorado, common (Packard, 2). During August, around Denver, near Golden, near Colorado Springs, and near Cannon City (Uhler, 5). Golden, July 3d; Blackhawk, July 2d (Packard—see Uhler, 5). West Cliff, Custer County, July 27th; also high-alpine (Cockerell, 10).

Fort Collins and adjoining foot-hills April 5th to September 30th, very common on alfalfa, sugar beets, and many wild and cultivated plants (Baker and Gillette). Steamboat Springs, July 26th; Trinidad, May 14th; Georgetown, July 19th; Manitou, September 29th (Gillette). Aspen (W. W. Willard). Manitou Park and Colorado Springs (Tucker). La Veta, July 4th (E. A. Schwarz).

Lygus sallei Sign.

Steamboat Springs, July 15th (Baker). Manitou, July (Snow).

Neoborops Uhler n. gen.

"Aspect of *Neoborus*, but with the eyes vertical, more prominent, the vertex and base of front narrower, the lateral margins of pronotum not decurved, and the anterior border of prosternum collum-like, with the inner borders of the pleural flaps carried far inward and leaving only a narrow space for the posternum."

Neoborops vigilax Uhler n. sp.

"Bright fulvous or fulvo-testaceous, oblong-oval, scabrous and obsoletely, minutely punctate on most of the upper surface. Head nearly vertical, narrow between the very prominent brown eyes, with a broad yellow line on the middle which is bounded each side

by a slightly punctate, impressed line; the front a little convex, widening beneath; tylus long, of nearly uniform width throughout, curving a little at tip; rostrum reaching to behind middle coxae, wax yellow; antennae of medium length, pale wax yellow, the basal joint moderately thick, longer than the head, the second joint black at tip, tapering slender towards the base, about as long as the clavus, the third joint abruptly more slender, about half the length of the second, also black at tip, the fourth at out equally slender, very short, black from beyond the base to the tip. Pronotum transverse, bluntly subtriangular, moderately convex, but steeply sloping anteriorly, punctate, polished, more or less distinctly marked with about four red stripes composed of spots; the humeri lobately rounded, marked with a black dot, the lateral margins callous, not reflexed, the posterior margin pale and slenderly reflexed; the collum prominent, deeply cut, abruptly narrower than the front of the prothorax; pleural flaps deep, subtriangular, spotted with red, white below, slightly wrinkled, and with a few punctures. Legs long, yellowish-testaceous, shaded with red, and with a broad brown band on the knee of middle and posterior femora and tibiae in common, tips of tarsi piceous. Scutellum yellow, marked with brown or rufous, or with a round spot on middle and a triangular one at base. Hemelytra testaceous, translucent, obsoletely punctate and wrinkled, marked with irregular, remote spots of brown or red, at base and apex of corium and with vestiges between these points, veins and sutures whitish, cuneus and membrane also with clouded brownish spots. Abdomen minutely pubescent, sprinkled with red, somewhat in stripes, leaving a linear space of yellow between, the outer submargin sometimes marked with brown spots in the suture, apical border of the last ventral ring yellow, the genital segment also yellow.

Length to end of abdomen 4 mm. To tip of membrane 5.5 mm. Width of pronotum 2 mm. I have examined two specimens from Colorado, and six of both sexes from Arizona. It seems to be common in Arizona and most of the specimens thus far seen have not been maturely colored."

Steamboat Springs, July 16th on willow (Baker).

Neoborus rubeculus Uhler n. sp.

"Oblong-oval, minutely pubescent, mostly yellowish or greenish-testaceous, marked with chestnut brown. Head normal, bald, polished grooved, between the eyes, the face nearly vertical, testaceous yellow, with a broad, curved, brown line on either side; tylus long, narrow, with a brown line on the middle; the cheeks yellow, smooth, the suture and a mark next the antennae rufous; rostrum rufo-testaceous, slender, reaching behind the middle coxae, piceous at base and tip; antennae stout, the basal joint much longer than the head, dark brown, the second joint about as long as the pronotum and scutellum united, a little thickening towards the tip, fulvous, dark at base and tip, the third and fourth much more slender, filiform, dark brown, conspicuously hairy, the third about one-half as long as the second, the fourth still shorter. Pronotum longer than normal, a little convex, strongly sinuated on the sides, the anterior width reaching to the middle of the eyes, with a sharply elevated ivory-white collum which corresponds to the space between the eyes; the surface transversely wrinkled, coarsely so and a little punctate on the posterior lobe, the region of the callosities dark, tumidly prominent, with the exterior submargin widely flattened, yellow, and the outer border strongly reflexed, punctate, the middle line yellow, each side, posteriorly, brown on a rufous ground, the posterior edge yellow; pleural flaps deep, triangular, brown and punctate above, yellow below; the sternum and pleural pieces clear yellow. The coxae and legs yellowish or greenish white, a little reddish on the posterior femora, the tarsi black at tip. Scutellum brown, feebly convex, pubescent, wrinkled, with a few remote punctures, the middle line and base yellow. Clavus coarsely wrinkled, dusky, paler exteriorly, pubescent, corium, closely wrinkled and punctate, testaceous for two-thirds of its length, red at the costal tip and angularly dark brown on the apical third, the inner border with a yellow line next base of cuneus, the cuneus yellow, margined exteriorly with red; the membrane dusky, paler at base exteriorly, the veins yellow, with the areole smoke brown. Exterior margin of venter with a line of brown spots which continue along the pleura to the stripe on the pleural flap; middle of venter yellowish-testaceous, the genital segment more or less marked with red and brown.

Length to end of abdomen 4.5 mm. To tip of membrane 6 mm. Width of pronotum 2 mm. This insect is quite variable in colors. The red is sometimes replaced by olive-

green or fuscous, and there is sometimes a broad black stripe along the whole submargin beneath. It inhabits Colorado, and is common in Northern Illinois, in June; it is also found in Michigan."

Steamboat Springs, July 16th on willow (Baker).

Poecilosectus basalis Reut.

Sweeping weeds at Colorado Springs, near Fountain Creek, August 16th (Uhler, 5). Colorado (Uhler, 8).

Manitou Park (Snow). Colorado Springs (Tucker.)

Poecilosectus diffusus Uhl.

North Park, July 20th; Estes Park, July 10th (Gillette). Steamboat Springs, July 12th to 26th, on Solidago and other low herbs (Baker and Gillette).

Poecilosectus intermedius Uhl.

Steamboat Springs, July 13th to 26th (Baker and Gillette). Estes Park, July 12th (Gillette).

Poecilosectus unifasciatus Fabr.

Smith's Park, Custer County, midalpine, August 6th (Cockerell, 10).

Steamboat Springs, July 12th (Baker) Veta Pass, July 1st (E. A. Schwarz).

Poecilocapsus goniphorus Say.

Fort Collins, June 23d to August 25th (Gillette).

Systratiotus americanus Reut.

Colorado (Gillette—see Osborn, 1).

Steamboat Springs. July 15th to 26th (Baker and Gillette).

Systratiotus venaticus Uhl.

Colorado (Uhler, 1 and 6).

Garland, June 19th (E. A. Schwarz).

Camptobrochis grandis Uhl.

Colorado (Snow—see VanDuzee, 5)

Camptobrochis nebulosus Uhl.

Colorado (Uhler, 6). Colorado (Gillette—see Osborn, 1).

Fort Collins, June 9th on alfalfa, May 3d and September 26th on box-elder; Big Narrows of Poudre River, Larimer County, July 9th on Bigelovia (Baker). Foot-hills five miles west of Fort Collins, April 10th to August 1st (Baker

and Gillette). Manitou, September 29th on Salix; Glenwood Springs, August 24th (Gillette).

Camptobrochis robustus Uhler n. sp.

"Short and thick, dusky testaceous, strongly marked with fuscous and black, coarsely, and in part densely punctate. Head almost vertical, vertex short, transversely grooved, bordered with a broken fulvous line in front, the occipital carina high, fitting into the collum, ivory yellow; front bordered with pale dull yellow, polished, remotely minutely obsolete-punctate and wrinkled, closely freckled with black, the inner border of the eyes also pale dull yellow, the lower part of tylus and the bucculae yellow; rostrum pale at base, piceous at tip, reaching to the middle coxae; antennae long and slender, as long as the corium and cuneus united, mostly pale fuscous, the basal joint dull pale fulvous, obscured with fuscous, the second very long, a little stouter than the third and fourth, slightly thicker towards the tip, the third and fourth together a little longer than the second, the fourth much the shortest. Pronotum convex, coarsely, deeply, irregularly punctate in somewhat transverse wavy lines, with about four obscure stripes which widen posteriorly, the lateral margins a little curved, the humeral angles broadly rounded, the posterior margin feebly curved and sinuated, and the anterior margin contracted and bordered with a somewhat pale collum, the callosities tumid, black, polished. Scutellum dark brown, closely and roughly wrinkled and unevenly punctate, convex, olive-fulvous at tip. Legs pale olive-brownish, the femora piceous, rough at a few points, having one or more yellowish dots near the tip, the tibiae spotted with dark brown, closely pale pubescent, with the spines, tip of tarsi and nails dark piceous. Clavus coarsely punctate and wrinkled, dark olivaceo-fuscous, corium a little paler, smoother, more finely punctate, almost bald, with the surface near the costa translucent, punctate with brown, the costal border dark brown, ending in a darker spot before the cuneus, the embolium broad and piceous black, the cuneus dark brown, bordered all around with pale testaceous; the membrane whitish, a little stained with brown at base and tip, and the veins mostly brown. Abdomen olivaceo-testaceous, finely pubescent, dusky at tip, with a line of black marks on the outer submargin, and a series of yellow dots on the connexivum.

Length to end of abdomen 5 mm. To tip of membrane 6 mm. Width of pronotum 2.5 mm. Three or four specimens have been brought to my notice. One specimen from Colorado is chiefly dark fulvous, others were mostly chestnut brown or nearly black. The pale stripe with black arrest at the end of costal area will go far towards quickly distinguishing this species."

North Park, July 20th (Gillette), and July 10th on *Artemisia tridentata* (Baker). Leadville, August 23d (Gillette). Cameron Pass, at 12,000 feet, on Salix (Baker).

Orthops scutellatus Uhler.

From bushes in Clear Creek Canon, August 7th. Not rare (Uhler, 5). Colorado (Uhler, 8).

Steamboat Springs, July 15th to 26th (Baker and Gillette). North Park, July 20th; Dolores, June 18th (Gillette).

Thyrillus brachycerus Uhl.

Colorado (Uhler, 6). Near West Cliff, Custer County, end of July (Cockrell, 10).

Estes Park, July 10th (Gillette).

Thyrillus pacificus Uhl.

Weld County (Uhler, 1).

Pamerocoris anthocoroides Uhl.

Near Denver (B. H. Smith—see Uhler, 5).

Monalocoris filicis L.

Swept from a small fern which grows in damp places among the rocks high up in the mountains near Beaver Brook, adjoining Clear Creek Canon. August 6th (Uhler, 5).

Eccritotarsus scabrosus Uhler n. sp.

"Compact, thick and short, somewhat resembling *E. vestitus* Dist., a little pubescent, the general color piceous-brown, with red head and legs, and nearly all of the upper surface roughly, and coarsely punctate. Head tumidly convex, with a callous ridge against the inner border of the eyes, and this continued along the border of the occiput; surface somewhat coarsely punctate, the front indented in the middle and grooved each side, a little obscured with brown; tylus a little more prominent than the front, placed almost vertical; the rostrum rufous, a little tinged with piceous; antennae blackish, short, stout, the basal joint shorter than the head, contracted at base, the second longest, growing thicker towards the tip, shorter than the pronotum, the third much more slender, about one-half as long as the second, the fourth much shorter. Pronotum strongly convex, a little longer than wide, steeply sloping towards the head; the anterior lobe abruptly contracted, separated by a transverse and curved series of indented points; surface tinged with rufous, coarsely, roughly punctate; lateral margins sinuated and steeply curved down; the posterior margin a little curved, feebly sinuated, bent down; pleural flaps very coarsely punctate. Legs stout, rufous, covered with pale pubescence. Scutellum small, tumid at tip, punctate basally. Hemelytra broad, thick, coarsely and roughly punctate, the cuneus long, depressed, curved on both sides, the membrane fuliginous, with a pale arc on the middle, the areoles rough and of thick texture. Sternum and venter somewhat rufous, the latter obsoletely punctate, highly polished, minutely pubescent.

Length to end of abdomen 2.5 mm. Width of pronotum 1.25 mm. Described from one specimen, a male, from Colorado"

Estes Park, July 10th (Gillette).

Pycnoderes insignis Reut.

Steamboat Springs, July 26th (Gillette).

Ilacora chloris Uhl.

On the flowers of a slender pale composite, growing in Manitou Park, August 14th. Also near Colorado Springs, in the low grounds near Fountain Creek (Uhler, 5). West Cliff, Custer County, sweeping herbage, July 25th (Cockerell, 10).

Estes Park, July 10th; Dolores, June 18th; Steamboat Springs, July 26th (Gillette).

Ilacora divisa Reut.

Steamboat Springs, July 14th and 26th (Gillette and Baker).

Ilacora stallii Reut.

Steamboat Springs, July 16th (Baker).

Ilnacora viridis Uhler n. sp.

"Bright grass green, narrow, not highly polished. Head flat as usual, set with black stiff pubescence, with the vertex more or less broadly impressed before the sharp occipital carina; front prominently convex, wider than long, grooved each side near the eyes; tylus short, inferior, placed much below the lower end of the eyes; rostrum dull green, broad and compressed at base with the basal joint protracted upon the anterior coxae, the tip black, reaching to the middle coxae; antennae dusky greenish, long, growing slender towards the tip, the basal joint thick, black at base and apex, much longer than the head, the second joint very long, black at base and tip, about equal to the corium in length, the third darker, more slender, less than half as long as the second, the fourth about equally slender, also dark, much shorter than the third. Pronotum trapeziform, almost flat, very gently sloping, set with erect blackish pubescence anteriorly and on the sides; the anterior margin reaching to about the middle of the eyes, with the collum raised in the middle; the callosities large, transverse, separated by a deep excavation, the anterior angles broadly rounded; the lateral margins oblique, reflexed and sinuated posteriorly; the humeral angles a little protracted, forming lobes a little recurved with the tip cut obliquely, surface wrinkled, hardly punctate. Scutellum feebly convex, acute at tip, sometimes a little whitish at base. Legs long, the femora green, somewhat spotted with white; the tibiae dull yellowish, armed with black spines; tip of tarsi piceous. Hemelytra long and ample with the costal border very slightly curved; surface of clavus and corium flat, obsoletely scabrous; membrane smoke brown. Coxae and base of venter whitish.

Length to end of abdomen 4.5 mm. To tip of membrane 5.5 mm. Width of pronotum 1.33 mm. I have examined four specimens of both sexes, from Colorado. They approach *I. (Sthenarops) malina* Uhler, but differ in the absence of the indented black dots on the pronotum, and of the black markings of face, in less convex front, and in the color of the antennae and scutellum. The form is somewhat variable, as is also the length of the hemelytra."

Steamboat Springs, July 14th (Baker).

Sthenarus rubidus Uhler n. sp.

"Ovate, thick set, dark piceous, polished, covered above with silky yellow, caducous scales and fine pubescence. Head broad, feebly convex, a little fulvo-piceous around the borders and at base and tip, vertex with a feebly impressed line on the middle, occipital posterior ridge distinct; face polished, covered with yellowish prostrate scales; cheeks and inner underside of eyes pale yellowish; rostrum piceous, paler rufous at base, reaching to the posterior coxae; antennae, basal joint piceous, thick, scarcely as long as the width of the eye, second joint fulvous or piceous, thick, about as long as the pronotum, the third and fourth abruptly more slender, pale piceous, together scarcely longer than the second. Pronotum convex on the middle and strongly curving down anteriorly, dark piceous, or black, polished, covered with yellow scales and fine pubescence, nearly twice as wide as long, with the callous humeri subacute, the posterior margin sinuated, with the lateral margins curving down; the surface minutely wrinkled, and the pleural flaps triangular, sunken, densely covered with scales and the margins raised in relief. Anterior coxae and a spot at tip of mesopleural segment whitish; femora pale rufous, piceous on the middle, tibiae paler, the spines black and placed on black dots, tip of the tibiae and of the tarsi black. Scutellum unevenly wrinkled, piceous, rufous towards the tip, invested with the yellow scales. Hemelytra dark brown, fulvous at base, on the suture of clavus and on the embolium, apex of the costal border and the cuneus red; surface roughly, shallow punctate, covered with yellow scales and finely pubescent; membrane fuliginous, white along the border and around the looped vein. Venter fulvous brown, minutely pubescent and spread with bronze-yellow scales.

Length to tip of abdomen 2.75-3 mm. To tip of membrane 3-3.25 mm. Width of pronotum 1.25 mm. One specimen from Colorado Springs, taken in August by Mr. E. S. Tucker, is darker and less rufous than the others that I have examined; it has also more white at the base of membrane. Other specimens have been collected in Illinois by Mr. Bolter and Mr. Stromberg; at Lancaster, N. Y. in August by Mr. VanDuzee; in Cuba by Dr. Gundlach, in San Domingo by myself, as also in Texas and Florida. A form appearing to be a variety of this species is also found in Mexico."

Tinicephalus simplex Uhl.

Colorado (Uhler 1). Foot-hills, July (Carpenter—see Uhler, 6). Mountains west of Denver, July and August (Uhler, 5).

Garland, June 30th (E. A. Schwarz).

Pilophorus gracilis Uhler n. sp.

"Narrower than usual, dark piceous, or nearly black, the pronotum longer than wide, and the corium distended and almost hyaline at the tip. Head depressed subconical, the vertex transversely depressed, with a central carina running back to the thick carina bounding the occiput behind; face convex, piceous, polished, becoming fulvous below; tylus narrow, pale rufo-fulvous like the cheeks; rostrum dark honey-yellow, darker at tip, reaching upon the middle coxae; antennae moderately long and slender, the basal joint short, dull fulvous, the second a little longer than the pronotum, of the same color, but darker on the gradually thickening tip, the apical joints more slender, but not abruptly decreasing, the two united scarcely longer than the second. Pronotum highly polished, semi-cylindric, with the sides a little sinuated, almost of equal width throughout, dark piceous, minutely wrinkled on the disk and behind, with the humeral angles acute and the anterior ones rounded off. Scutellum depressed behind the middle, black, and minutely scabrous. Hemelytra long, dark brown, sometimes almost black, minutely pubescent, velvety, not banded, distinctly sinuated on the sides, the membrane a little dusky, with a dark brown spot near the base, the inner border of apex of corium with a curved callous line. Legs pale dull piceous, paler on the tibiae. Abdomen black, highly polished.

Length to end of abdomen 3.5 mm. Width of pronotum 1.25 mm. One specimen, a female, lacking the tarsal joints and two apical joints of the antennae, was sent to me from Colorado. It lives on *Pinus inops* in summer, June to September, in Maryland, Virginia, New Jersey; and is also found in Massachusetts. Maturely colored specimens do not have the reddish clypeus and cheeks observed in the specimens from Colorado."

Colorado Springs, August 3d (Gillette).

Globiceps angustata Uhler n. sp.

"Black, highly polished, delicate, slender. Head transverse above, convex, having a few remote punctures, the eyes large and prominent, much elevated above the line of the head, the face nearly vertical, with the front a little convexly prominent, the tylus moderately narrow; rostrum very stout at base, with the basal joint long, stout and blackish-piceous, the middle testaceous and the tip piceous; antennae long, slender, dull black, the basal joint longer than the head, testaceous at base, the second barely thicker at tip, nearly as long as the costa and cuneus united, the third a little more slender, about half as long as the second, the fourth broken off. Pronotum sub-campanulate, highly polished, about twice as long as the eye; the collum contracted, narrow; the callosities very large, tumid, with a groove between, which is partly occupied by a blunt carina that runs back to posterior lobe; posterior lobe wide, convex, transversely wrinkled, with the anterior slope high, the sides steep, oblique, and gently sinuated, the humeri a little turned up and acute. Scutellum high, almost flat above, with steeply sloping sides, acute at tip. Legs pale fulvous, whitish at base, the ends of tarsi piceous. Clavus dusky, corium whitish-yellow at base, dusky on the remaining two-thirds; the cuneus pale yellowish, dusky at tip; membrane long and wide, pale fuliginous, white at the extreme base, with the looped vein dark brown. Abdomen black, highly polished.

Length to end of abdomen 2.75 mm. To tip of membrane 4 mm. Width of pronotum .87 mm. Described from a single male specimen from Colorado. It is closely related to, if not the same species as one which I found in the Province of Quebec. The female is earnestly desired for study, to complete the description of this species. This insect might readily be mistaken for one of the small Chalcididae which have black bodies and yellow legs."

Steamboat Springs, July 12th (Baker).

Cyrlorrhinus marginatus Uhler n. sp.

"Long and narrow, black, moderately flat above, pale pubescent, bordered with green on the abdomen and corium. Head black, highly polished, much wider than the front of pronotum, indented and grooved in front of the carina of vertex, the carina sharp and high; face almost vertical, the tylus prominent; eyes large, brown, prominent, placed a little obliquely, the border of their inner side pale yellowish; tylus, bucculae, and rostrum greenish-testaceous, the latter reaching upon the middle coxae, blackish at tip; antennae moderately stout, as long as the head, pronotum and corium united, the basal joint much longer than the head and stouter than the second, the second joint as long as the clavus, the third more slender and about half as long as the second, the fourth still more slender and much shorter. Pronotum shining black, sometimes with a yellow line, the sides gradually contracting, rather strongly sinuated, the callosities large and prominent, the surface transversely wrinkled, convex posteriorly, longitudinally impressed near the humeri, the margin sometimes broadly yellow. Legs pale greenish, the tibiae dark at tip, the anterior pair with stout spines, tarsi piceous at tip. Scutellum black, moderately convex, transversely wrinkled, acute and pale at tip. Clavus dull black minutely pubescent, corium dull black as far as next to the cuneus, also pubescent, broadly margined with greenish yellow, the cuneus mostly yellowish, the surface of the hemelytra granulate throughout; membrane long, smoke brown, with the veins pale yellow at tip. Middle line of the sternum and disk of venter pale greenish-yellow, finely pubescent.

Length to tip of abdomen 4 mm. Width of pronotum 1.25 mm. Only males of this insect have been brought to my notice. Should the female prove to be of the inflated type, with the spherical head, this insect will have to be transferred to the genus *Globiceps* Flebr. This species is common in the province of Quebec, and it occurs as far north as Great Slave Lake, in British America."

Steamboat Springs, July 16th, on willow (Baker).

Diaphnidia Uhler n. gen.

"Near *Actorhinus* Fab., elongate subelliptical, tender, opaque. Head gently sloping and curved anteriorly, the face almost vertical, a little longer than the width between the eyes; tylus projecting beyond the line of the face, curving beneath, the upper bounding line placed nearly on the level of the lower end of eyes; eyes prominent, sub-reniform, nearly vertical, with somewhat swollen neck behind their line; occiput with a carina sometimes arched in the middle, and with the surface flattened in front of it, cheeks diagonal, acutely narrowed at tip; gula almost horizontal, swollen at base; bucculae narrow and short, followed behind by a waved surface, basal joint of rostrum much shorter than the under side of head; antennae longer than the head, pronotum and corium united. Legs long. Pronotum trapeziform, with the lateral margins moderately oblique, the anterior margin forming a narrow, flat, sinuated collum; the transverse impressed line behind the callosities shallow. Hemelytra long and wide, contractingly curving towards the base, semi-diaphanous, with a sharply reflexed costal margin; cuneus large and long, with the outer border reflexed. Abdomen very narrow."

Diaphnidia debilis Uhler n. sp.

"Delicate green, or greenish-white, indistinctly and very minutely pubescent around the sides of head, pronotum and beneath. Head a little grooved on the middle line, and a little callous each side between the eyes; antennae yellowish, the basal joint much longer than the head, thicker than the second joint and contracted at base, the second of uniform thickness throughout, as long as the outer margin of the corium; rostrum yellowish, black at tip, reaching between the anterior coxae. Pronotum wider than long, almost flat on the disk, gently sloping, with the surface a little wrinkled, the lateral margins a little sinuated in front of the prominent humeri; the anterior submargin occupied by the transverse ridge of the almost contiguous callosities. Legs pale green, more yellow upon the tibiae, upon which the spines are dark, and the base and apex of the tarsi piceous. Clavus, corium and cuneus minutely, remotely and obsoletely scabrous. Abdomen silvery greenish.

Length to end of abdomen 3.33 mm. To tip of membrane 5.5 mm. Width of pronotum 1.5 mm. Two males from Colorado are the only specimens I have seen."

Steamboat Springs, July 14th (Baker). Later we also

received specimens (which were afterwards determined by Uhler) from Snow, taken by Tucker at Colorado Springs in July.

Diaphnidia pellucida Uhler n. sp.

"Elongate, very pale green, delicate, with minute whitish pubescence on the pronotum and hemelytra. Head short and small, with the eyes nearly globose, very prominent, very pale brownish; middle of vertex incised, the incision running back to an impressed line which extends across to the base of the eyes; base of head thick, curvedly contracting to base of occiput, surface next to inner line of eyes incised; front vertical, forming a rounded lobe as far as to below the middle of the eyes; tylus short, tapering and curving beneath, a very little more prominent than the front; rostrum pale green, slender, reaching behind the posterior coxae. Antennae long and slender, pale green or yellowish, the basal joint longer than the head, sometimes a little dusky at tip, the second joint cylindrical throughout, a little longer than the pronotum and scutellum united, third joint a little more slender and about two-thirds the length of the second, the fourth still more slender, very short, sometimes a little dusky. Pronotum nearly trapeziform, a little wider than long, gently sloping anteriorly; the lateral margins sinuated directly before the prominent humeri; surface a little uneven, the callosities distinct and with an indented space between them, the impressed line behind them deep and clearly defined, arrested by the thick carinate lateral edge which stops against the end of the callosities; the anterior angles rounded off, the anterior edge a little sinuated, callous, extending to about the middle of the eyes; posterior margin a little yellowish, hardly sinuated. Clavus and corium minutely scabrous, almost transparent, very ample as compared with the abdomen; cuneus long, bordered exteriorly with a thick green line; membrane very thin, whitish green, the vein deeper green. Legs greenish, the tibiae sometimes yellowish, dusky at tip; apex of the tarsi and the nails piceous.

"Length to end of abdomen 2.25-2.5 mm. To tip of membrane 3.5 mm. Width of pronotum 1-1.25 mm. Numerous specimens have been brought to my notice. The first of these I found near Montmorency, in the province of Quebec, others were obtained near Washington, D. C., by my friend Otto Heidemann, and a male specimen has been sent from Colorado. The specimen from Colorado has the callosities near together on their inner ends."

Fort Collins, September 26th on box-elder (Gillet).

Dacota hesperia Uhl.

Colorado (Uhler 1 and 6).

Diommatius angulatus Uhler n. sp.

"Long, almost parallel-sided, nearly flat above, black or dark smoke-brown, minutely pubescent, rather broader than *D. congrex* Uhl., with stouter and longer antennae. Head moderately convex, highly polished between and before the eyes, piceous anteriorly and upon the tylus, the latter becoming paler below; the occipital carina pale piceous, bounded in front by an arcuated, punctate impression; eyes large, prominent, dark brown; rostrum wax-yellow, piceous at tip, reaching to behind the middle coxae; antennae long and stout, longer and thicker in the male, black or dark brown, the basal joint a little longer than the head in the female, much longer in the male, the second joint a little thinner than the first, about as long as the corium, the third still more slender, about two-thirds the length of the second, the fourth thinner and much shorter. Pronotum a little wider than long, very slightly convex, with the lateral margin oblique; the surface finely pubescent, very gently sloping, the anterior lobe distinctly defined, with the callosities large, prominent, black; the collum indistinct; posterior lobe large, obsoletely wrinkled and with a few faint punctures, the posterior margin feebly sinuated, with the humeral angles a little prominent and broadly rounded; the pleural flaps moderately short, grooved vertically. Scutellum small, black, convex, acute. Coxae and legs yellowish, a little dusky towards the knees, the tarsi more or less piceous. The clavus pale yellow; corium with a large, triangular, black spot on each wing-cover which covers most of the surface to next the base of cuneus, the cuneus yellowish, but dusky at tip. Abdomen black, polished, the base, disk, and a part of the apex of venter yellowish.

Length to end of abdomen 3-3.25 mm. To tip of wing-covers 4.5 mm. Width of pronotum 1.25 mm."

Fort Collins, June 24th; Montrose, June 24th (Gillette).

Diommatus congrex Uhl.

Steamboat Springs, July 16th, on willow (Baker).

Tuponia subnitida Uhler n. sp.

"Whitish-green, long oval, minutely pubescent, with the costal margin of the hemelytra very feebly curved. Head broad and very convex, pressed back upon the thorax, smooth, not punctate; front nearly vertical, highly polished; the tylus short, compressed, but little prominent, curved beneath; the rostrum pale fulvous, reaching over the middle coxae, with the tip piceous; antennae long and slender, the basal joint short, blackish, second joint green, dark at base and tip, not much thicker than the following joint, about as long as from the front of the eye to the base of pronotum, the third a little shorter and slightly more slender, the fourth scarcely more than one-third the length of the third, equally slender. Pronotum transverse, uneven, steep, very slightly convex, smooth, impunctate; with the callosities forming an arc, preceded by a semicircular area touching the front margin; the lateral margins very oblique, sharp-edged and deflexed; the posterior margin sinuated at the base of the scutellum; the humeral angles broad and rounded. Scutellum very moderately convex, the base uncovered, the disk a little wrinkled and the tip acute. Legs greenish-white, the knees, tibial spines, dots at intervals, and the tips of tarsi black. Corium and clavus greenish-white, very minutely scabrous, and remotely effaced-punctate; membrane a little dusky behind the middle to the tip. Abdomen pale green, minutely white pubescent.

Length to end of abdomen 2.5 mm. To tip of membrane 3 mm. Width of pronotum 1.12 mm. Described from two specimens from Colorado."

Steamboat Springs, July 12th (Baker).

Stiphrosoma atrata Uhl.

Fort Collins, July 14th on alfalfa; Steamboat Springs, July 12th on *Carex* and *Artemisia tridentata* (Baker).

Stiphrosoma croceipes Uhl.

Big Narrows of Poudre river, Larimer County, July 9th on *Bigelovia* (Baker).

Stiphrosoma robusta Uhler n. sp.

"Black, polished, shorter, thicker, and more compact than *S. stygica* Say, with a more convex front. Head thick, convex from the vertex to end of upper cheek, the vertex with a low carina behind against the pronotum, and marked with a shallow impression each side, front highly polished impunctate, tylus narrowing a little towards the tip, deep seated in the cheeks; rostrum stout, a little piceous, reaching to the middle coxae; antennae slender, black, about as long as the head, pronotum and scutellum united, the second joint nearly the same length as the clavus, a little thicker towards the tip, the third more slender, nearly two-thirds the length of the second, the fourth about one-half the length of the second. Pronotum pubescent on the sides, with the lateral margins oblique and more bent down than in *S. stygica*, the surface scabrous, obsoletely punctate and transversely wrinkled, the callosities large, convex placed diagonally, and separated by a wide depression, the disk convex posteriorly, with the humeri acutely prominent. Pleura a little wrinkled and with a few punctures. Scutellum short, scabrous, a little punctate. Legs with stiff spines on both femora and tibiae. Clavus coarsely, closely scabrous, and obsoletely punctate, the corium a little less coarsely scabrous, and punctate, but with these features almost obliterated behind the middle, the sides and margins pubescent; membrane moderately short, brown. Abdomen broad ovate, highly polished, scarcely punctate.

Length to end of abdomen 4 mm. Width of pronotum 1.75 mm. Described from two specimens, both females, sent to me from Colorado. It inhabits also Texas and New Mexico."

Steamboat Springs, July 26th (Gillette).

Stiphrosoma stygica Say.

West Cliff, Custer County, July 27th; Ula, July 30th (Cockerell, 10).

Steamboat Springs, July 26th (Gillette). Garland, June 30th (E. A. Schwarz).

Halticus bractatus Say.

Manitou, July 24th; Colorado Springs, August 3d (Gillette).

Labopidea chloriza Uhl.

Howe's Gulch, June 14th; North Park, July 20th (Gillette). Steamboat Springs, July 13th and 26th (Baker and Gillette). Aspen (W. W. Willard).

Labops hesperius Uhl.

Colorado (Uhler, 1). Foot-hills and mountains, July and September (Carpenter—see Uhler, 6). From bushes growing among rocks on mountainside near Gray's Peak, August 6th (Uhler, 5).

Estes Park, July 12th (Gillette). Colorado, June, on pine (Riley). Veta Pass, July 1st (E. A. Schwarz).

Dieyphus californicus Stal.

North Park, July 20th; Montrose, June 24th; Colorado Springs, August 3d; Manitou, September 29th on oak and Salix (Gillette). Steamboat Springs, July 16th and 26th (Baker and Gillette). Fort Collins, May 20th (Baker).

Dieyphus californicus Stal. var. *agilis* Uhl

Beaver Brook Gulch, August 7th (Uhler, 5).

Steamboat Springs, July 16th (Baker).

Dieyphus vestitus Uhler n. sp.

"Resembling *D. famelicus* Uhler, but much less elongated, smaller, having nearly linear blackish antennae, with the apex of the second joint not thickened, and the colors darker, with a black head and mostly black scutellum. Head subglobose, a little fringed with pubescence, black, polished, with a pale spot on the vertex; rostrum dull testaceous, darker at tip, reaching to the middle coxae; antennae moderately stout, blackish, with the first joint pale towards the base, the second joint about as long as the pronotum, the third a little shorter, and not much thinner than the second, the fourth short, acutely tapering. Pronotum a little longer than wide, subcylindric anteriorly, with the sides sinuated and reflexed; the collum narrow and white; the surface highly polished, dark brown, with the middle broadly orange, which is replaced by dull white on the posterior segment; the humeri are sometimes also pale orange; callosities distinct, prominent, followed exteriorly by a swelling of the sides; posterior lobe wide, broadly sinuated behind. Base of scutellum wide, uncovered, black, the scutellum proper black with a yellow spot on each side at base. Coxae white, legs dull yellowish, with the tip of tarsi piceous. Clavus pale, with the suture dusky, corium long and narrow, obscure whitish, translucent, with a small brownish spot near the base, a dusky streak on the middle, a line of same color on the suture, and a double lobed spot of brown on the tip; cuneus white, bordered more or less with brown at tip; membrane

pale dusky, usually white in the areole and next the tip of the cuneus, also a little whitish next the posterior border. Posterior part of propleura, and upper part of mesopleura whitish. Abdomen fulvo-piceous, testaceous at tip.

Length to end of abdomen 3.3-2.5 mm. To tip of membrane 3.75-4 mm. Width of base of pronotum .75-1 mm. Described from two specimens, including both sexes, sent to me from Colorado. Mr. Coquillett also sent specimens from Los Angeles, and I have examined other specimens from Dakota and northern New York. It is variable as to the amount of yellow on the antennae, head and pronotum, and as to the brown clouding of the hemelytra."

Fort Collins, May 20th to June 4th (Baker and Gillette).
Montrose, June 24th (Gillette).

Orectoderus amoenus Uhl.

Near Denver (B. H. Smith—see Uhler, 5). Colo. (Gillette—see Osborn, 1).

Orectoderus longicollis Uhler n. sp.

"Piceous, opaque, elongate subfusiform, with the head broad subconical, as seen from above, the base abruptly contracted into a short neck, the prothorax campanulate, and the wing-covers widening behind the middle. Head very moderately convex above, much longer than wide, polished, piceous, rather minutely scabrous than punctate, the vertex moderately arched and obsoletely carinate in front, the neck shorter than the corresponding contraction of the pronotum, front broadly depressed each side near the middle of the eyes, upper cheeks placed superiorly; tylus narrow, moderately short, not separated above by a distinct suture, tip tapering; rostrum set much below the depressed gula, blackish-piceous, thick at the very base, slender from thence to tip, reaching behind the anterior coxæ; eyes low, close-set against the side of the head; antennae of medium length, the basal joint rufo-piceous, shorter than the head, the second rufo-piceous, with the apical third moderately clavate, and dull blackish, as long as the middle line of the corium, third abruptly more slender, almost setaceous, testaceous, scarcely more than one-half the length of the second, the fourth much shorter, dusky, equally slender. Pronotum dull black, minutely granulated and wrinkled, the two lobes of nearly equal length, the callosities large, tumid, separated by a very shallow line, but connected with the swelling of the sides, the line separating the lobes is placed behind this swelling; posterior lobe wide at base, having sinuated sides, and with prominently tubercular humeri; side flaps steep, rounded, coarsely wrinkled. Legs dull fulvo-piceous, with the spines, tip of tibiae and apical portion of tarsi black. Scutellum smooth, dull black, with sinuated sides, and a little tumid at apex. Clavus ivory white, coarsely scabrous, with a piceous band at base which also runs diagonally upon the base of corium; corium also ivory white, less coarsely scabrous, crossed behind the middle with an obliquely bounded piceous spot which covers the entire end; cuneus piceous, with an ivory yellow acute diagonal spot on the basal portion; membrane dark brown at base, gradually paler to almost white posteriorly. Abdomen black, highly polished.

Length to end of abdomen 5 mm. Width of base of pronotum 1.5 mm. Only a single specimen, a male, has thus far been brought to my notice. The female is a desideratum requiring the attention of collectors."

Steamboat Springs, July 14th (Baker).

Orectoderus obliquus Uhl.

Hills, June to September (Carpenter—see Uhler, 6). Estes Park (Snow—see VanDuzee, 5).

North Park, July 20th; Steamboat Springs, July 26th;
Montrose, June 24th (Gillette). In mountains south-west of
North Park, July 10th, on *Artemisia tridentata* (Baker).

Coquillettia insignis Uhl.

Steamboat Springs, July 13th and 26th (Baker and Gillette). Fort Collins, August 11th (Baker). North Park, July 20th; Dolores, June 16th; Howe's Gulch, June 14th (Gillette).

Orthotylus viridicatus Uhler n. sp.

"Oblong-ovate, grass green, opaque, minutely pubescent, pale green beneath. Head slightly convex, impunctate, broad between the eyes, the vertex transversely sulcate before the carina; the eyes brownish, moderately prominent, well rounded, placed nearly vertical; front convex, contracting below, the tylus narrow, prominent, separated above by a deep groove; rostrum stout, reaching to the middle coxae, pale green at base, black on apical third; antennae stout, the basal joint pale green, the second dusky, about equal to the clavus in length, the third and fourth joints dusky, more slender than the second, filiform, and together not as long as that joint. Pronotum wider than long, almost flat, with the lateral margins oblique, and the anterior angles a very little rounded, the callosities large and tumid, separated by a deep depression, the collum narrow, and confined to a narrow space of the anterior margin, the transverse impressed line behind the callosities slender, but distinct on the outer margin, behind it the margin of the posterior lobe is distinctly reflexed, the margin before this callous; posterior margin nearly straight, with the humeral angles oblique and a little curved; the pleural flap is deep and nearly triangular. Scutellum little longer than wide, feebly convex, faintly carinate at tip. Clavus faintly scabrous, with a few obsolete punctures next the coarse vein, corium minutely and obsoletely scabrous, the cuneus pale yellowish, smooth; membrane black, with the veins pale yellowish. Abdomen short, minutely pubescent.

Length to end of abdomen 3 mm. To tip of membrane 4 mm. Width of pronotum 1.25 mm. A few specimens of both sexes have been sent to me for examination. They have been mostly shriveled from immaturity at time of collecting. Three specimens are in the collection from Colorado. Others were obtained in the vicinity of Denver, and in New Mexico. The pale color of head, thorax, sides of corium and cuneus, is owing to fading of color after death of the insect."

North Park, July 20th; Dolores, June 18th; Trinidad, May 14th; Estes Park, July 10th (Gillette). Steamboat Springs, July 16th and 26th (Baker and Gillette).

Oncotylus guttulatus Uhl.

Colorado Springs, August 3d (Gillette).

Oncotylus longipennis Uhler n. sp.

"Elongated, sub-elliptical, pale greenish testaceous, with a long cuneate, dusky stripe on the middle of corium, polished, minutely pubescent. Head moderately convex, bald, highly polished, subconical, sometimes with a semicircle of blackish spots between the eyes; front yellowish, the tylus narrow, black; the vertex with a high carina in the male and a transverse groove before it; eyes brown, large, prominent, placed a little obliquely; bucculae pale; rostrum slender, obscure testaceous, piceous at tip, reaching to the middle coxae; antennae long, moderately slender, black, the basal joint longer than the head, the second as long as the clavus, the third a little more slender, about two-thirds the length of the second, the fourth of the same thickness, much less than half the length of the third. Pronotum subtrapezoidal, polished, obsoletely wrinkled behind, feebly convex, the sides rapidly narrowing towards the front, and a little sinuated, causing the humeral angles to appear prominent, callosities distinct, directly transverse, approximate, lateral edge decurved, the pleural flaps deep, subtriangular, black on the middle. Legs greenish-testaceous, the femora with a black band near tip, and the knees, spines, tip of tibiae, and tarsi blackish. Prosternum each side, and pleura also, with a black stripe which continues back to the posterior segment; the venter each side with a series of diagonal black streaks. Scutellum feebly convex obsoletely wrinkled, usually black at

tip and in each basal angle. Clavus dusky, with the outer vein pale, corium a little granulated translucent, with a dusky tapering spot on the middle, the veins pale, cuneus a little dusky on the inner border; membrane very long, dusky, with the veins pale yellow.

Length to end of abdomen 4 mm. To tip of membrane 6 mm. Width of pronotum 1.33 mm. Described from three specimens from Colorado. It is notable for the extreme length of the wing-covers."

Gore Pass, July 29th; Steamboat Springs, July 26th (Gillette). Rabbit Ears Pass, Routt County, July 20th; Steamboat Springs, July 14th (Baker).

Oncotylus repertus Uhler n. sp.

"Blunter than *O. sericatus* Uhler, clear bluish green, distinctly pubescent, moderately flat, with the costal margin more broadly curved than in the species cited, with the head, base of scutellum and outer border of corium almost white, yellowish when less fresh. Head broad, subconical, polished, closely white pubescent, vertex feebly convex, the carina low, a little curved back of the line of the eyes; grooved in front of the carina; eyes brown, of medium size, moderately prominent, placed nearly vertical; the front transverse, wrinkled, moderately convex, becoming a little narrower below, separated from the tylus by a deep incision, which crosses the entire face; tylus subconical, wide at base, curving beneath; rostrum greenish-white, piceous and acute at tip; the inferior cheeks very long and wide, incised, a little swollen, bucculae minute, antennae having the basal joint thick, shorter than the head, the second joint very long, much more slender, almost as long as the clavus the last two joints lost. Pronotum transverse, pubescent, the anterior border almost straight, a little callous and abruptly separated from the head, the surface very uneven, with the anterior angles rounded off, the callosities are oval, flat and far apart, the transverse impressed line sinuous, placed about one-third the way back; the sides diagonal, callous, and the pleural flaps subtriangular, narrow at tip, granular on the middle, a little hirsute; humeral angles with a small knob; posterior margin feebly sinuated in the middle, obliquely curved each side. Scutellum triangular, nearly equilateral, with the base exposed. Legs pale green, the tarsi yellow, piceous at tip, spines dark. Corium, clavus, and cuneus a little hairy, minutely and remotely granulated, the exterior margin strongly reflexed and bristly; cuneus a little longer than wide, pale exteriorly; membrane moderately short, smoke-blackish, whitish on the base and on the margins basally, the veins green. Venter with longer bristles posteriorly.

Length to end of abdomen 4 mm. To tip of membrane 5.25 mm. Width of pronotum scant 2 mm. Described from two specimens, both females, sent to me from Colorado. A variety of this species with hyaline membrane occurs near Los Angeles, California."

Steamboat Springs, July 12th on *Artemisia tridentata* (Baker). Foot-hills six miles west of Fort Collins, June 14th (Gillette).

Oncotylus sericatus Uhler n. sp.

"Similar to *Macrotylus vestitus* Uhler, but larger and with a less acute and wider head, the second joint of antennae much shorter and a little thicker; the color grass-green above, closely covered with stiff white pubescence, greenish-white beneath. Head closely pubescent, depressed across the vertex in front of the carinate line; the front a little convex; the tylus wide and almost vertical, distinctly pubescent, rostrum slender, reaching midway between the middle and anterior coxae, pale at base, piceous at tip; antennae moderately stout, prominently pubescent, the basal joint clear green, longer than the head, the second dull yellowish, but little longer than the distance from the tip of scutellum to apex of clavus, the third and fourth joints a little dusky, becoming gradually more slender, the fourth quite short. Pronotum very moderately convex, wider than long, finely wrinkled, in front almost as wide as the distance across the eyes, the humeral angles subacutely prominent, a very little rounded, with the outer border callous, white, and sinuated, the transverse impressed line placed just behind the callosities and not reaching the sides; the pleural flaps long triangular, with the apex a little

curved forwards. Scutellum small, moderately convex. Hemelytra very long, the costal margin gently curved, so as to be widest back of the middle, the surface of clavus, corium and cuneus, minutely and remotely granulated, with the exterior margin a little paler than the general surface; the membrane long, very faintly obscured, translucent, with the veins green. Legs pale green, with the nails, spines, and tip of tarsi piceous. Abdomen closely set with white pubescence.

Length to end of abdome. 4 mm. To tip of membrane 6.5-7 mm. Width of pronotum 2 mm. Several specimens have been sent to me from Colorado, where the species appears to be rather common."

Steamboat Springs, July 12th on *Artemisia tridentata* (Baker). We have also received specimens (determined by Mr. Uhler) taken at Colorado Springs in July by E. S. Tucker.

Macrocoleus coagulatus Uhler.

From wild gooseberry and other bushes in Clear Creek Canon August 7th (Uhler 5). Colo. (Gillette—see Osborn, 1).

Manitou, September 29th, Lamar, May 7th; Foot-hills five miles west of Fort Collins, June 12th (Gillette). Fort Collins, July 4th to October 7th: mountains south-west of North Park, July 10th on *Artemisia tridentata* (Baker).

Macrotylus affiguratus Uhler n. sp.

"Robust, grayish testaceous, finely pubescent, obscure fuliginous on most of the hemelytra. Head conico-triangular, pale fulvous in front, greenish on the vertex, with a diagonal black line each side converging anteriorly, from this a divaricating black line runs downward each side upon the cheeks below to the eye, cheeks and tylus black, polished; rostrum slender, piceous-black, reaching to the middle coxae; antennae stout, black, moderately short, tapering continuously to the tip, the second joint a little longer than the pronotum, the third a little shorter, the fourth very short, acute at tip. Pronotum broad, well rounded off towards the sides on the posterior lobe, the lateral margins oblique, gently curved, broadly pale, the surface greenish, uneven and wrinkled posteriorly, set with short black bristles at remote intervals, the anterior submargin flat, pale with the margin recurved, a little sinuated in the middle, the callosities prominent, surrounded with black and set in a blackish depression, behind the middle is an obscure arc of broken spots, humeri oblique, a little rounded at tip, the posterior margin very gently curving toward the humeri; the pleural flaps deep, sunken, black, excepting the margins, the flap of prosternum also black bordered with pale yellow; sternum and a long stripe on the outer border of pleura also black. Legs obscure yellowish, with flecks, the spines, knees, tip of tibiae and tarsi black. Scutellum greenish, widely exposed at base, with a few scattered points, a faint middle line and the sparse bristles black. Clavus dull pale greenish, minutely sparsely granulate and punctate, with but few indications of hairs, the corium more obscure, similarly granulate and bristly, with the costal margin and veins pale; the cuneus, its callous inner angle, and thickened short inner margin of the corium and the basal margin of the membrane pale yellowish; membrane short a little dusky, with the veins pale. Venter pale greenish, with the sutures, and border of the ovipositor black.

Length to end of abdomen 4.5 mm. Width of pronotum 1.75 mm. Decribed from one specimen, a female, sent to me from Colorado."

North Park, July 20th (Gillette). Steamboat Springs, July 12th, on *Delphinium occidentale* and other low herbs (Baker).

Macrotylus moerens Uhl.

Steamboat Springs, July 16th and 26th (Baker and Gillette). Spring Canon, June 30th; Estes Park, July 10th; North Park, July 20th; Manitou, June 25th (Gillette).

Macrotylus verticalis Uhl.

Montrose, June 24th (Gillette).

Bolteria picta Uhl.

North Park, July 20th; Leadville, August 23d (Gillette). On Grizzly Creek, in mountains south-west of North Park, July 10th, on *Artemisia tridentata*; Steamboat Springs, July 12th (Baker).

Episcopus ornatus Reut.

Colorado Springs, August 3d (Gillette).

Plagiognathus annulatus Uhler n. sp.

"Closely related to *P. arbustorum* F., but narrower and smaller, brownish-black, long-oval, polished, with palpi yellow legs, having the femora streaked and the tibiae annulated or spotted with black. Head longer than wide, acute in front, convex, highly polished, faintly tinged with brown; vertex concurrently convex with the front; the occiput arched and with the edge obscure fulvous; tylus scarcely more prominent than the front, curved, highly polished; rostrum reaching to the middle coxae, yellow, with the basal joint black and the apex piceous; antennae of medium length, the basal joint black, scarcely longer than the head, the second yellow in the middle, or nearly all yellow but the base, a little longer than from the front of the eye to the base of pronotum, third and fourth more slender, yellow. Pronotum deep black, highly polished, growing much narrower anteriorly, minutely, irregularly and obsoletely rugose, more convex posteriorly; the callosities large, very slightly prominent, with an indented space between, and a wavy impressed line forming the boundary between them; the lateral margins oblique, barely sinuated with the edge a little keeled, deflexed; anterior angles a little rounded, callous; posterior margin gently arcuated; the humeri prominent, almost acute, with an impression bounding them inwardly. Scutellum feebly convex, a little unevenly rugulose, the tip acute and set off by a transverse series of punctures placed a little way back. Corium deep black, long, highly polished, obsoletely and irregularly rugose over most of the surface, with some punctures on the depressed borders; the clavus obsoletely and coarsely rugose, with series of shallow punctures on the sutures; base of cuneus marked by an obscurely pale sutural line; the outer angle of base of membrane marked by a triangular white spot, remainder of membrane fuliginous black. Legs pale yellow, the base of anterior coxae, the knees, rings and spines of tibiae and the tarsi black.

Length to end of abdomen 3.5 mm. To tip of membrane 4 mm. Width of pronotum 1 full mm. Described from one female specimen sent to me from Colorado. It inhabits also northern Illinois, Canada west, and New England."

Steamboat Springs, July 16th (Baker).

Plagiognathus fraternus Uhler n. sp.

"Larger and more flat above than *P. obscurus* Uhler, color black, minutely sericeous pubescent. Head triangular, a little longer than wide, acute at tip, with the sides a little sinuated; occipital carina indistinct, pale yellow, front convex, a little roughened on the middle; the tylus prominent, highly polished, comparatively narrow, a little curved; rostrum reaching upon the middle coxae, basal joint stout, a little longer than the throat, blackish-piceous, the middle joints fulvo-piceous, the apical joint blackish; antennae

black, dull testaceous beyond the base of the third joint, the basal joint shorter than the head, the second rod-shaped, scarcely as thick as the basal one, about as long as the face and pronotum united, the third much more slender, about two-thirds as long as the second, the fourth about equally slender, a little shorter. Pronotum wider than long, with the lateral margins oblique; the front margin with a pale collum, reaching to the middle of the eyes; middle surface behind the collum uneven and depressed between the large oblique callosities; lateral margins reflexed, slender, pale; the humeral angles subacute and pale; disk a little wrinkled, not distinctly punctate; pleural flaps polished, black, with the segment next behind marked with a large greenish spot. Coxae mostly greenish-white, femora flattened, testaceous, more or less piceous towards the tip, but always omitting the apex of the posterior pair; tibiae testaceous with black knees, spines and their bases; tip of tarsi piceous. Scutellum obsoletely scabrous, acute at tip. Clavus black, roughly wrinkled and a little punctate; corium pale testaceous, or ivory white, marked with a large, somewhat ovate, ragged spot from before the middle to next the tip; cuneus pale with a small black spot at tip; membrane dark fuliginous with a large, clear spot on the middle, veins testaceous. Abdomen black, polished, the base more or less greenish, and the incisures of the connexivum slenderly bordered with greenish.

Length to end of abdomen 4.5 mm. To tip of membrane 5 mm. Width of pronotum 1.5-1.75 mm. Described from three specimens, including both sexes, sent to me from Colorado. This species is more robust and less tender than *P. obscurus*. It also lacks the yellow marking of the scutel, and has the callosities oblique, widely separated, and the collum yellow or greenish."

Steamboat Springs, July 12th, on *Solidago*, *Delphinium occidentale*, and other low herbs (Baker).

Plagiognathus obscurus Uhl.

Colorado (Uhler, 1 and 6). West Cliff, Custer County, July 27th (Cockerell, 10).

Fort Collins, September 27th, on *Bigelovia* (Gillette).

Plagiognathus politus Uhler n. sp.

"Black, narrow, oval, highly polished, the sides of hemelytra but little wider behind than anteriorly. Head short, acute at tip, including the eyes, but little wider than the front of pronotum, base with a pale yellow carina; front moderately convex; tylus wide, prominent; rostrum flavo-piceous, reaching upon the middle coxae; antennae long and slender, black, the basal joint thickest, the second as long as from the front of the eye to the base of the pronotum, the third more slender, about two-thirds the length of the second, pale piceous or yellowish, the fourth equally slender, of the same color as the third, and about one-half the length of the second. Pronotum a little wider than long, faintly wrinkled, with the transverse impression interrupted and faint on the middle continued to a sinus inward from the lateral margin; the lateral margins oblique, turned down, sharply defined, with the interior angles rounded; posterior margin gently curved; the humeral angles subacute. Scutellum convex, a little longer than wide, acute at tip. Femora piceous black, the anterior ones pale at tip, coxae, in part and tibiae testaceous, the spines and their bases black, tip of tarsi piceous. Clavus highly polished, remotely and coarsely punctate and wrinkled; corium more minutely scabrous and obsoletely punctate, very highly polished, the callous linear apex of the inner border testaceous; the membrane dusky brown with the vein pale yellowish. Abdomen black, highly polished, obsoletely scabrous.

Length to end of abdomen 3 mm. Width of pronotum 1.25 mm. Only one specimen, a female, was sent to me from Colorado. A variety with yellow face and a pale lunule at base of the cuneus was collected near Buffalo, N. Y., by Mr. VanDuzee. The type from Colorado has also a faint, very narrow, curved band at base of cuneus."

Fort Collins, July 24th (Baker).

Atomoscelis seriatus Reut.

Fort Collins, September 27th, on *Bigelovia* (Gillette).

Maurodactylus angulatus Uhler n. sp.

"Mostly pale obscure testaceous above and black beneath, long oval, minutely sericeous pubescent. Head nearly triangular, wider than long, dull black, irregularly testaceous at base, face almost vertical, minutely, sparsely pubescent, feebly convex, not apparently punctate, the occipital edge sharp, nearly straight, not carinate; the tylus narrow, almost acute at tip; rostrum yellow from base to middle, black from thence to tip, reaching to behind the middle coxae, the basal joint reaching to the end of the arched mucro, swollen at tip; the bucculae slender and pale yellow; antennae blackish, moderately stout, reaching as far as to the middle of the venter, the basal joint projecting little beyond the tip of the head, the second joint stout, of uniform thickness throughout, a little longer than the vertex and pronotum, the following joints shorter and more slender. Pronotum short, trapezoidal, transverse, a little polished, impunctate, minutely and remotely pubescent, pale greenish testaceous, almost flat, with an abbreviated black line crossing the line of the callosities, the anterior and posterior margins almost straight, the lateral margins a very little sinuated, the pleural flaps deep, obscure black, bordered with testaceous; pleural and sternal areas black, also partly margined with whitish. Legs including the coxae, greenish yellow, the middle of femora, the spines, and apex of tarsi black. Scutellum dull black, uncovered at base, and with a pale fulvous spot in each basal angle. Hemelytra obscure testaceous, minutely pubescent, placed almost flat, with the costal border a very little curved; clavus dusky towards the tip, corium with a double, long, dusky, widening spot running back to tip, cuneus with a dusky spot near tip; membrane long, pale dusky, darker in the basal cell. Venter polished, black, narrow, with the edges of the segments obscure whitish.

Legth to end of venter 3 mm. To tip of membrane 3.5 mm. Width of pronotum 1 mm. Only one specimen has thus far been brought to my notice. It is a male, and bears some resemblance to *Maurodactylus alutaceus* Fieber., of Europe."

Steamboat Springs, July 12th (Baker).

Maurodactylus consors Uhler n. sp.

"Form narrow, almost parallel sided on the hemelytra, very slightly pubescent above, black, polished. Head triangular, wider than long, acute at tip; the occipital edge sharp, a little raised at the middle; the face moderately convex, not apparently punctate; eyes prominent, large, placed nearly vertical, set close to the pronotum, dark brown; the tylus prominent, curving beneath; rostrum fulvo-piceous, darker at base and tip, reaching upon the middle coxae; the bucculae pale, narrow; antennae black, long, with the two basal joints stout, the second as long as from the scutellum to inner angle of the corium, the third a little more slender, about three-fourths as long as the second, the fourth scarcely more slender than the third, hardly one-half the length of the third. Pronotum small, moderately convex, a little wider than long, minutely scabrous and a little wrinkled; the anterior lobe short, tumidly elevated, with the impressed line feebly defined; the lateral margins oblique, hardly sinuated; the anterior margin but very little wider than the space between the eyes, with the collum obsolete, and a slight indentation behind its middle; the forward slope of surface moderately steep; humeral angles wrinkled, a little callous and acute. Scutellum widely exposed at base, longer than wide, obsolete and remotely scabrous, acute at tip. Femora broad, black, yellow at tip, the anterior and middle parts. tibia and the tarsi pale piceous, with the spines black. Clavus obsolete scabrous; the corium a little more finely so; cuneus separated from the corium by a slender angular pale line; membrane dusky, iridescent, with the base next the cuneus and the looped vein pale. Venter black, short, polished.

Length to end of abdomen 3 mm. To tip of hemelytra 4.5 mm. Width of pronotum 1.25 mm. Only one specimen, a male with long, curved, acute genital hooks, has been sent to me from Colorado"

Leadville, August 23d (Gillette).

Agalliaestes apiatus Uhler n. sp.

"Long-oval, polished, dark brown or black, minutely pubescent. Head short, moderately wide, highly polished, with an indented line on the middle, the vertex prominent, and a little triangular at base; front moderately convex, nearly vertical; tylus short,

narrow, prominent, black; rostrum slender, testaceous, piceous at tip, reaching to the posterior coxae; antennae dull black, of medium length, the second joint nearly as long as the line from the tip of scutellum to the apex of clavus, the third joint a little shorter and slightly more slender, tapering, the fourth scarcely more than one-third the length of the third, still more slender. Pronotum transverse, polished, minutely pubescent, with a few sparse punctures on a line in front of the low callosities, lateral margins short, oblique, with the edge a little turned down, the collum confined to the middle of the margin, and fading into the raised surface before reaching the line of the eyes; humeral angles prominent, almost acutely callous; the posterior margin almost straight. Scutellum short, almost flat, clothed with pale pubescence, the base usually exposed, sometimes disclosing the yellowish spot at each basal angle. Legs dull yellow, the posterior pair having the femora black, all the tibiae with black spines and dots at base of spines; tarsi piceous at tip. Hemelytra covered with short yellowish pubescence, the clavus wide smoky fuscous; corium with a large fuscous, wedge-shaped spot, closed on the middle, the outer and inner borders and base and tip dull testaceous; the cuneus dusky, bordered all around with dull testaceous; membrane dusky, with the veins, base and sometimes the outer border pale. Abdomen black, polished, with a large greenish spot near the base, and some greenish spots on the pleura.

Length to end of abdomen 2.25-2.5 mm. Width of pronotum 1-1.25 mm. This species inhabits both Colorado and Kansas. It is no doubt quite common, but hitherto only a few less mature specimens have been sent to me for examination. It closely resembles *A. apicalis* Uhler, of the Atlantic States, but is a more robust and clumsy style of insect."

Fort Collins, June 4th; Maniton, June 25th (Gillette). Steamboat Springs, July 12th and 26th (Baker and Gillette).

Agalliastes associatus Uhl.

Colorado (Uhler, 6). Pueblo (Yarrow—see Uhler, 7). Various parts of Colorado (Uhler, 9).

Fort Collins, July 24th to August 18th; Steamboat Springs, July 12th (Baker). Horsetooth Gulch, May 18th; North Park, July 20th; Trinidad, May 14th; Montrose, June 24th; Glenwood Springs, August 24th (Gillette). Colorado Springs, July (Tucker).

Agalliastes decolor Uhl.

On Redstone Creek, twelve miles south-west of Fort Collins, August 1st (Baker).

Agalliastes fumidus Uhler n. sp.

"Oblong-oval, pale fusco-olivaceous, clouded with smoke brown. Head narrow, polished, almost vertical, black upon the clypeus and tylus, pale greenish above, vertex strongly convex; rostrum pale towards the base, slender, reaching to the middle coxae; antennae dusky testaceous, almost piceous at base, slender, about three-fourths the length of the body, the basal joint short, piceous black, the second fuscous, nearly as long as the head and pronotum united, pubescent, the third and fourth more slender, pale, much shorter than the second, eyes prominent, dark brown, placed diagonally. Pronotum trapezoidal, transverse, bald, polished, moderately convex, pale olivaceo-testaceous, not distinctly punctate, tinged with fuliginous each side anteriorly, the collum lower than the base of the head, a little curved, with a black callous curved transverse line behind its middle; lateral margins a little sinuated, slightly notched at the outer end of the transverse impressed line, the lateral margin acute and reflexed throughout, the humeral angles moderately prominent, pale; posterior margin a little curved. Exposed base of scutellum black in the middle, yellow on either side, the scutellum proper tumid in the middle, sunken and dark at base, pale on the acute apex. Legs smoky testaceous, dark

near the tip of upper side of femora, tibiae testaceous with black dots and spines, tarsi blackish; the coxae pale testaceous, the anterior pair with a black dot at base. Hemelytra pale dull testaceous, the clavus entirely and the corium with a large long diagonal spot reaching to the inner angle, two or three faint traces near the outer border, and the middle of the cuneus, smoke brown; membrane smoke brown, the tip, inner border and veins pale testaceous; a geminate pale short line occupies the point next the tip of the cuneus. Abdomen smooth, piceous black, pale pubescent, the venter with a pale greenish spot on the middle and another next the tip.

Length to end of abdomen 3.5 mm. To tip of membrane 4 mm. Width of pronotum 1.25 mm. A single specimen of the male was sent to me from Colorado."

Steamboat Springs, July 15th (Baker).

Agalliaestes signatus Uhler n. sp.

"Form closely resembling *A. associatus* Uhler, black, dull, minutely pubescent. Head short, acute, moderately convex, carinate on the occipital margin; the vertex with a yellow band between the eyes; summit of front indented; tylus prominent, bounded by deep incisions; bucculae and rostrum fulvo-testaceous, the latter reaching to the middle coxae, a little piceous at tip; antennae dull black, stout, tapering, the second joint shorter than the head and pronotum united, the third and fourth together shorter than the second, more slender and pale piceous. Pronotum transverse, feebly convex, pale pubescent, rough in the depressed space between the callosities and behind the anterior margin; middle of the anterior margin carinate; lateral margins oblique and curved down; posterior margin hardly sinuated, a little hollowed each side near the humeri. Scutellum short, subequilateral, apparently impunctate (damaged). Coxae and femora of the anterior and middle legs fulvo-testaceous, with the tibiae paler, and together with the posterior pair having black spines placed on black dots; posterior femora blackish; tips of tarsi piceous. Posterior margin of propleura pale, remainder dull black. Clavus dull fuscous, pale pubescent, scabrous; corium obsoletely scabrous, pale pubescent, brown, pale at base and along the costal border, with the inner suture a little paler than the adjoining surface; cuneus fuscous, with a pale band at base, and a small spot at tip; membrane dusky, with the veins pale testaceous. Abdomen black, polished, minutely pubescent.

Length to end of abdomen 2 mm. Width of pronotum .87 mm. The description is derived from a single male specimen sent to me from Colorado. The characters given will no doubt require modification when both sexes are sufficiently studied."

Manitou, June 25th (Gillette).

Agalliaestes simplex Uhl.

Steamboat Springs, July 14th (Baker).

Lycocoris campestris Fab.

Fort Collins, March 2d, under a board (Baker).

Triphleps insidiosus Say.

Suburbs of Denver, August 5th. Doubtless introduced into the west with raspberries, blackberries, and other small fruit (Uhler, 5).

Fort Collins, May 27th to August 22d, and May 18th to June 12th on alfalfa (Gillette and Baker).

Anthocoris antevolens B. White.

Leadville, August 23d; Montrose, June 24th (Gillette).

Anthocoris musculus Say.

Above timber line (Carpenter—see Uhler, 6). On wing and on plants on

steep side of mountain in pine woods, Beaver Brook Gulch; also on Clematis, August 6th (Uhler, 5).

Fort Collins, March 24th to April 26th; foot-hills five miles west of Fort Collins, April 20th to August 1st; Cameron Pass at 12,000 feet, July 5th on Salix (Baker). Estes Park, July 12th; Manitou, September 29th, on willow; Dolores, June 1st; Montrose June 24th; Leadville, August 23d (Gillette).

Acanthia hirundinis L.

Dolores, June 18th, common in swallow's nests (Gillette).

Acanthia lectularia L.

West Cliff, Custer County, too frequent (Cockerell, 10).

Fort Collins and Denver (Gillette). Colorado Springs (Tucker).

Piesma cinerea Say.

West Cliff, Custer County, July 27th (Cockerell, 10). Colorado (Gillette—see Osborn, 1).

Fort Collins, March 23d to October 15th, May 7th to June 9th on alfalfa, and August 18th on black walnut (Baker). Manitou, June 25th; Montrose, June 24th; Dolores, June 18th (Gillette). Colorado Springs (Tucker).

Agrammodes Uhler n. gen.

"Form conico-ovoid, similar to a broad Agramma, but widely different in venation, and having the head formed nearly as in Piesma. Head much narrower than the pronotum and curving down in continuity therewith, the base wide, with the clypeus abruptly narrower, protracted forwards in two slender tapering lobes in advance of the stouter tylus; eyes large, round, seated close against the pronotum. Antennae short, clavate at tip, the basal joint stout, contracted at tip the second very short, moniliform, the third longest and most slender, the fourth shorter, contracted on the basal portion. Rostrum tapering, reaching behind the anterior coxae. Pronotum gently curved, somewhat flattened near the anterior angles and depressed behind them, the anterior submargin inflated into a crescentiform low hood which does not extend to the lateral angles; lateral margin sharp cut, a little diagonal; surface coarsely granulated. Scutellum minute, tumid. Legs short and thick. Hemelytra broad suboval, granulated, coriaceous throughout, with the veins very coarse and prominent; clavus formed of one short triangular areole, bounded exteriorly by a long and moderately narrow areole which is oblique at tip, and from this the inner vein runs back to near the tip and forms an arrest for the two discoidal veins which bound wide triangular areas, and curve inward as they approach this inner vein; the costal area wide, depressed, continued to end of wing-cover, crossed by a few irregular veins, the inner veins are continued across the area which forms a substitute for the membrane."

Agrammodes costatus Uhler n. sp.

"Dull pale greyish-brown, with the pronotal submargin and a large spot on the base of each wing-cover white. Head blackish-brown, unevenly scabrous and granulated, the clypeus prolonged, acute and cleft; antennae honey-yellow, the apical joint piceous

black; rostrum and throat rust-brown. Pronotum fuscous, coarsely granulated, narrower than the base of the wing-covers, and somewhat quadrangular in outline, the lateral margins a little reflexed, the posterior margin distinctly curved, anterior angles a little rounded, the anterior margin wider than the breadth across the eyes. Wing-covers pale greyish-yellow, with irregular patches of dark brown granules aggregated more particularly near the base and along the disk; the large pale spots at base angular and tinged with greenish; veins mostly dark brown, very prominent, the area on the apical border pale, crossed by the divaricating inner vein and the one next outside from it, the areoles are continued to near the apex, and the discoidal one is crossed by four oblique veins. Underside rust-brown, obscured by some darker patches, and set with a few small granules, the orifices of the stigmata placed in knobs.

Length to end of hemelytra 2 mm. Width of base of pronotum .75 mm. Only one specimen has been brought to my notice. It is a male sent to me from Colorado. This is the most remarkable form of the family Tingidae which has yet been placed within my reach for study. It is a synthetic type which unites in itself a structure of wing-covers closely related to *Oxycarenus*, of the family Lygaeidae, and on the other hand, the characteristic head of *Piesma* and the granular surface of *Agramma*. Taken in all its features it is the most peculiar form of Tingid which has yet been discovered in North America. The other sex is unknown to me and it might add further characteristics to the genus if once brought to notice."

Estes Park, July 12th (Gillette).

Corythuca arcuata Say.

Colo. (Gillette—see Osborn, 1).

Fort Collins, July 29th (Baker). Foot-hills five miles west of Fort Collins, April 25th to August 1st (Gillette and Baker). Steamboat Springs, July 26th (Gillette).

Corythuca ciliata Say.

Custer County, midalpine (Cockerell, 10).

Fort Collins, May 31st on alfalfa (Baker). Steamboat Springs, July 16th and 26th (Baker and Gillette). Montrose, June 24th (Gillette).

Corythuca fuscigera Stal

Fort Collins, July 2d in all stages on Cnicus; Steamboat Springs, July 15th (Baker). Colorado Springs, August 3d (Gillette).

Gargaphia tiliae Walsh.

Rist Canon, May 29th (Gillette).

Aradus acutus Say.

Colo. (Uhler, 6). Roaring Fork (Rothrock—see Uhler, 2).

Fort Collins, March 31st (Gillette).

Aradus affinis Kirb.

Dolores, June 18th; Estes Park, July 9th (Gillette).

Aradus americanus Fab.

Colo. (Carpenter, 1).

Rist Canon, May 29th (Gillette).

Aradus debilis Uhl.

Colo. (Gillette—see Osborn, 1).

Aradus obliquus Uhl.

Rist Canon, April 9th (Baker).

Aradus rectus Say.

Colo. (Uhler, 1 and 6). From mountains near Beaver Brook Gulch, August 6th (Uhler, 5). Colo. (Gillette—see Osborn 1).

Fort Collins, August 19th; Steamboat Springs, July 26th; Montrose, June 24th; Dolores, June 18th (Gillette).

Aradus tuberculifer Kirb.

Colo. (Uhler, 6). Far up Beaver Brook Gulch, August 6th (Uhler, 5). Near Idaho Springs, July 6th (Packard—see Uhler, 5).

Phymata fasciata Gray

Colo. (Uhler, 1). Widely distributed over the west. Common around foot-hills and on plains wherever land is cultivated. Generally found on stems of Euphorbias and sun-flowers (Uhler, 5). Colo. (Uhler, 8).

Rist Canon, August 10th (C. E. Pennock). Foot-hills five miles west of Fort Collins, September 1st (Gillette). Boulder, September 4th (Baker). Colorado Springs (Tucker).

Coriscus ferus Linn.

Colo. (Uhler, 6). Colorado Springs, June (Yarrow—see Uhler, 7). Southern Colorado June to July (Carpenter—see Uhler, 7). Widely distributed on plains and in mountains and foot-hills, especially in settled portions. In damp situations in Beaver Brook Gulch, Clear Creek Canon, in Denver and around it at the lower levels, in the region of Colorado Springs and Manitou, near Canon City, and in the valley of the Arkansas, it is quite common in August (Uhler, 5). Denver, June 27th (Packard—see Uhler, 5). Ula, Custer County, November 12th; West Cliff (Cockerell, 10). Colo. (Gillette—see Osborn, 1).

Fort Collins, September 27th, on *Bigelovia* and *Rhus trilobata*, and October 7th (Baker and Gillette). Colorado Springs, Green Mountain Falls (Tucker).

Coriscus inscriptus Kirb.

Colo. (Uhler, 1). August 14th, Nathrop, Chaffee County (Cockerell, 3). West Cliff, Custer County, July 27th; also subalpine; also in Chaffee, Gunnison, and Pueblo Counties (Cockerell, 10).

Coriscus kalmii Reut.

Fort Collins, April 7th to May 13th, September 14th on Solidago, and September 27th on Solidago and Carex (Baker and Gillette).

Coriscus punctipes Reut.

Mesa County (Cockerell).

Coriscus rufusculus Reut.

Fort Collins, May 27th to August 18th, June 9th on alfalfa, September 2d on Solidago, October 7th on grass; Steamboat Springs, July 12th on Carex (Baker). Colorado Springs, August 3d; Montrose, June 24th; Dolores, June 18th (Gillette).

Coriscus sericans Reut.

Steamboat Springs, July 25th; Rabbit Ears Pass, Routt County, July 20th (Baker).

Coriscus subcoleopratus Kirb.

Colo. (Uhler, 1 and 6).

Sinea diadema Fab.

Colo. (Uhler, 6). From weeds in suburbs of Denver, August 8th (Uhler, 5).

Foot-hills five miles west of Fort Collins, March 15th to August 11th (Gillette).

Acholla multispinosa DeG.

Colo. (Uhler, 1).

Boulder, September 4th (Baker).

Fitchia nigrovittata Stal.

Colo. (Uhler, 6). Colo. (Gillette—see Osborn, 1).

Common near Fort Collins, and in the adjoining foot-hills, during winter, under stones and boards (Baker and Gillette).

Fitchia spinosula Stal.

Colo. (Uhler, 6).

Repipta taurus Fab.

Southern Colorado (Riley).

Milyas cinctus Fab.

Foot-hills, five miles west of Fort Collins, September 1st

(Gillette).

Diplodus luridus Stal.

Colo. (Uhler, 1 and 6). Colorado Springs, August 10th (Uhler, 5). Manitou and Garden of the Gods, July 13th to 16th (Packard—see Uhler, 5).

Fort Collins, July 4th; foot-hills five miles west of Fort Collins, June 30th (Gillette).

Diplodus socius Uhl.

Estes Park, July 16th (Gillette).

Apiomerus flaviventris H. Schf.

Larva from a bush in Clear Creek Canon, near mouth of Beaver Brook Gulch, August 7th (Uhler, 5). Brown variety on foot-hills at mouth of Clear Creek Canon, July 3d, in Garden of the Gods, and at Manitou, July 13th to 15th (Packard—see Uhler, 5).

Apiomerus pictipes H. Schf.

Foot-hills eight miles south-west of Fort Collins, June 30th to July 12th; Silverton, June 20th (Gillette).

Apiomerus spissipes Say.

Colo. (Uhler, 1 and 6). Valley of Arkansas, near Canon City, August 11th (Uhler, 5). Colo. (Snow—see VanDuzee, 5).

Apiomerus ventralis Say.

Colo. (Gillette—see Osborn, 1). Estes Park (Snow—see VanDuzee, 5).

Fort Collins, May 14th on alfalfa (Baker). Foot-hills five miles west of Fort Collins, March 12th to June 12th; Graymont, July 15th (Gillette).

Pygolampis pectoralis Say.

Fort Collins, April 6th under a board in edge of field (Baker).

Spilaloniis geniculatus Stal.

Pueblo (John Lansing).

Hygrotrechus remigis Say.

Colo. (Uhler, 1). Mountains in July (Carpenter—see Uhler, 6). From water on plains of Southern Colorado, June to July (Carpenter—see Uhler, 7). On still water along margin of Sloan's Lake; very abundant on surface of irrigating canal proceeding from Canon of Arkansas, in August (Uhler, 5). Denver, July 10th; Boulder, June 20th; Manitou, July 15th (Packard—see Uhler, 5).

Near Fort Collins and in the adjoining foot-hills, common

throughout the summer, especially on water in ditches; during winter hibernates under stones, rubbish, etc. (Baker). Dolores, June 16th (Gillette).

Limnotrechus marginatus Say.

On surface of puddles in western suburbs of Denver in August (Uhler, 5). Near Manitou, July 15th (Packard—see Uhler, 5). Common on Grape Creek, West Cliff, Custer County, May 25th (Cockerell, 10).

Limnotrechus productus Uhler n. sp.

"Larger and somewhat more robust than *L. marginatus* Say. with long, somewhat flattened, anal processes of a yellow color forming the prolonged ends of the flat, broad connexivum, and is of the same color as the last three segments. Color of the upper surface dark brown with a tinge of fuscous on the pronotum. Head of medium length, fuscous, covered with silvery, scaly pubescence on the lower sides and beneath. The antennae short and stout, rusty brown, the second and third joints a little thicker and darker at tip, the second shorter than the apical, but longer than the third, the basal one a little longer than the superior line of head, the fourth a little shorter, dark in color and tapering towards the tip. Rostrum swollen at base, reaching a little behind the anterior coxae, with the tip black. Pronotum with the anterior lobe quadrangular and flat, a very little shorter than wide, the anterior border a little thickened and raised, the middle line behind this depressed and marked with a short, yellow stripe, the posterior lobe evenly rounded off, a little flattened, destitute of a carinate line, lateral margins narrowly yellow; underside all silvery white. Legs of medium length, pale rusty beneath, the posterior femora as long as from the base of posterior coxae to the end of venter. Veins of corium prominent, two of the oval medio-apical areoles pale. Sutures of connexivum pale, outer half of the connexivum of the last three ventral segments including most of the segments themselves and the cerci, yellow, the middle line of venter with four indented spots.

Length to end of anal segment 10 mm. Width of pronotum 2 mm. A single female was sent to me from Colorado."

Fort Collins, April 13th (Gillette).

Limnoporus rufoscutellatus Latr.

From stagnant water above the Rio Grande (Rothrock—see Uhler, 2). Mountains, July (Carpenter—see Uhler, 6). Seems to be common in Colorado, where it attains to full proportions, and puts on its clearest russet-brown coat (Uhler, 6). On surface of small ponds and puddles in depressions of plains west of Denver, August 8th and later (Uhler, 5). Denver, July 28th (Packard—see Uhler, 5).

Hebrus concinnus Uhl.

Fort Collins, April 7th to October 15th (Baker).

Hebrus sobrinus Uhl.

On margins of ponds west of Denver (Uhler, 5).

Microvelia americana Uhler n. sp.

"Dark brown, velvety above, more or less powdered with plumbeous, body a little tapering behind the curved base of sides. Head short, triangular before the eyes, margined with silvery, prostrate pubescence from behind the eyes and along their inner border forward to the cheeks; the throat testaceous; middle line of head obsoletely callous-carinate; rostrum testaceous, piceous at base and tip, reaching to the posterior line of the anterior coxae; antennae slender, obscure testaceous, darker on the tip of the

first and second joints, the second joint shortest, the third and fourth much more slender, the fourth a little longer than the third. Pronotum triangular both before and behind the humeral angles, the anterior division very slightly sinuated on the sides, feebly notched at the end of the scutellum behind the anterior lobe; collum distinct, with an orange band on the middle; the surface rugulose and punctate behind this; the lateral and posterior margin orange, the tip a little rounded; the humeral angles moderately subacute, with the edge a little callous. Pleural pieces bordered with rufo-testaceous; the coxae, trochanters, border of sternum, and legs yellowish-testaceous, with the femora, tibiae and tarsi dusky or piceous above. Scutellum fuscous, almost completely concealed beneath the projecting pronotum. Hemelytra pale smoke-brown, narrower than the abdomen, with the veins darker, and a short streak at base of corium pale yellowish. Tergum rufous along the middle, blackish exterior to this; the connexivum both above and below, orange interrupted with black. The underside dull black with a tinge of plumbeous, a little sericeous, the posterior segments rufous on the middle, and the genital segment yellow.

Length to tip of venter 3 mm. Width of pronotum 1.25 mm. This is a common species in Maryland, and is also found in North Carolina. It has also been collected in Colorado, and in the vicinity of San Diego, California. In Maryland it occurs on the borders of small streams during summer, and is occasionally found full-winged in the month of June. The male is narrower and more wedge-shaped posteriorly than the female."

Foot-hills five miles west of Fort Collins, March 12th to April 21st (Gillette).

Macrovelia hornii Uhl.

Fort Collins, April 14th; Rist Canon, April 9th (Baker).

Salda coriacea Uhl.

Denver (B. H. Smith—see Uhler, 5).

Salda dispersa Uhl.

Comparatively abundant in various places west of Denver (Uhler, 9).

Salda humilis Say.

West Cliff, Custer County, July 31st (Cockerell, 10).

Salda interstitialis Say.

Roaring Fork (Rothrock—see Uhler, 2). Colorado (Uhler, 6). Ula, Custer County, November 12th (Cockerell, 10).

Fort Collins, August 27th; foot-hills five miles west of Fort Collins, March 12th to April 9th; Estes Park, July 12th (Gillette).

Salda pallipes Fab.

In western suburbs of Denver may be found in untold numbers on dark, damp, sandy and muddy soil, during August. Also near stream in Beaver Brook Gulch, and in Clear Creek Canon (Uhler, 5). Georgetown, July 8th, 9,500 feet (Packard—see Uhler, 5).

Colorado Springs, July (Tucker).

Galgulus oculatus Fab.

Colorado (Gillette—see Osborn, 1).

Boulder, September 4th: Fort Collins (Baker).

Ambrysus signoretii Stal.

Fort Collins, August 11th (Baker).

Zaitha micrantula Stal.

Fort Collins, August 27th (Gillette).

Belostoma americanum Leidy.

Occasional about electric lights at Fort Collins (Baker).

Belostoma annulipes H. Schf.

Pagosa, September 5th (Yarrow—see Uhler, 7).

Ranatra quadridentata Stal.

Fort Collins, August 27th (Gillette).

Notonecta insulata Kirb.

Mountains, July (Carpenter—see Uhler, 6). Quite common in several pools of water standing in hollows near bed of creek on outskirts of Denver. August 4th and 5th (Uhler, 5).

Fort Collins, August 27th (Gillette).

Notonecta mexicana A. and S.

Det. by Osborn.

Fort Collins (Gillette).

Notonecta undulata Say.

In several pools of water standing in hollows near bed of creek on outskirts of Denver, August 4th and 5th. Not so common as *N. insulata* (Uhler, 5). Larva, nymph and imago from Sloan's Lake, west of Denver, July 10th (Packard—see Uhler, 5).

Fort Collins, August 27th: foot-hills five miles west of Fort Collins, April 20th (Gillette).

Corisa calva Say.

Fort Collins, August 27th (Gillette).

Corisa expleta Uhler n. sp.

"Olivaceo-fuscous above, form of *C. alternata* Say. Head strongly and bluntly carinate above, the carina produced posteriorly on the base of the vertex; face moderately convex, a little peaked above in front of the blunt carina, marked with a line of punctures each side, a little hollowed beneath the eyes, and with a few shallow punctures there as well as towards the front; clypeus depressed, covered with long coarse, white bristles. Pronotum subcordate, wider than long, convex, obsoletely and minutely rastrated, with the transverse bands bounded in part by scratched lines, the black bands slender, bent anteriorly, about thirteen in number, the lateral margin and anterior angles broadly yellow, the middle behind the produced occiput marked with a short carina, the apex of posterior margin obliquely curved. Palae of female moderately slender, long, cultrate, strongly curved, subacute, with long bristles, the trochanter stout and moderately long, the coxae long, stout, compressed inwardly and growing wider towards the base. Clavus

finely rastrate, crossed by slender yellow lines, those of the case nearly straight, of the middle broken and irregular, of the posterior third wavy; yellow lines of the corium very short, wavy or irregularly sigmoid, beginning at base in two widely separated series and continued towards tip in about five, partly broken series; marks of the membrane short, uneven, sigmoid or irregularly wavy; the embolium (sic Fieber) is broad, whitish, marked at base with a streak, with an oblique stripe on the cross vein, a spot some distance before the tip and another at the tip, black. Beneath whitish yellow; tergum black, excepting the lateral border and tip, which are yellowish.

Length to end of abdomen 7-8 mm. Width of pronotum 2.25-2.75 mm. Two specimens, females, were sent to me from Colorado. A closely related species occurs in Texas and California, but my series of them is too imperfect to afford accurate deductions. The male is a desideratum."

Fort Collins, June 25th at light (Baker). Spring Canon, April 21st (Gillette).

Corisa inscripta Uhl.

Southern Colorado (Uhler, 8).

Corisa interrupta Say.

Sloan's Lake, west of Denver, August (Uhler, 5); same place in July (Packard—see Uhler, 5).

Corisa striata L.

Fort Collins, June 13th (Baker).

Corisa sutilis Uhl.

Mountains, July to September (Carpenter—see Uhler, 6), Sloan's Lake, west of Denver, August 5th (Uhler, 5). Common in the mountains of Colorado (Uhler, 9).

Corisa tumida Uhl.

Sloan's Lake west of Denver, July 10th (Packard—see Uhler, 5). Sloan's Lake, in August, and also in several pools of water on the low grounds of suburbs of Denver, August 5th and 8th (Uhler, 5).

Colorado Springs, August (Tucker).

Cicada dorsata Say.

Colorado (Thomas—see (Uhler, 6).

Cicada marginata Say.

Det. Baker.

Canon City, August 31st (Gillette).

Cicada tibicen L.

Mountains of Colorado (Uhler, 6).

Proarna valvata Uhl.

Canon City, July 3d (Riley).

Tibicen synodica Say.

Common in eastern Colorado (Thomas and B. H. Smith—see Uhler, 6). Near Canon City, August 11th (Uhler, 5). Southern Colorado, June to July

(Carpenter—see Uhler, 7). Denver and Boulder (Putnam, 4).

Fort Collins, June 21st (Baker), and July 5th (Gillette).
Manitou Park (Snow).

Tibicen rimosa Say.

Southern Colorado, June to July (Carpenter—see Uhler, 7). Near Denver (Thomas—see Uhler, 6). On Clear Creek at Floyd's Hill (Putnam, 4).

Spring Canon, July 4th (Gillette).

Tibicen cruentifera Uhl.

Colorado (Riley).

Platypedia putnami Uhl.

Clear Creek Canon (Uhler, 4). Near Clear Creek (Putnam—see Uhler, 5).
On Clear Creek, near Floyd's Hill (Putnam, 4).

Horsetooth Gulch, May 18th; Rist Canon, May 29th;
Howe's Gulch, June 14th (Gillette).

Melampsalta parvula Say.

Colorado (Snow).

Publilia modesta Uhl.

(*Publilia bicinctura* Godg. Ent. News, III, p. 200.

Colo. (Thomas—see Uhler, 6). Clear Creek Canon, August 6th; Colorado Springs and Manitou, August 17th, west of Denver, August 18th; Pueblo, August 10th (Uhler, 5). Cusack Ranch, Custer County, on *Gymnolomia multiflora* (Cockerell, 10). Fort Collins, June and August, on *Glycyrrhiza lepidota* (Gillette—see Goding, 2).

Foot-hills five miles west of Fort Collins, May 18th to September 1st (Gillette). Fort Collins, May 29th to October 7th on *Solidago*, *Glycyrrhiza lepidota*, alfalfa, *Helianthus*, *Iva xanthiifolia*, and *Artemisia*; Steamboat Springs, July 15th (Baker). Colorado Springs, August (Tucker).

Goding's *bicinctura* must be referred to this species. We have every gradation between the two, and also forms varying to a uniform deep chocolate. Furthermore, we have reared them in abundance together on the same food-plants from nymphs which were indistinguishable. Dr. Uhler, to whom we sent a complete series, corroborates the reference and states that he was previously acquainted with all the forms.

Ceresa bubalus Fab.

Det. Goding.

Near Pueblo (Yarrow—see Uhler, 7). Met with at every place affording

sufficient moisture for growth of willows. In Denver found on many weeds in low places as well as willows. Also found at Canon City and in Clear Creek Canon (Uhler, 5). Near Eagle River in August, and in other parts of Colorado, June to September (Carpenter—see Uhler, 6). Colorado (Riley—see Goding, 3).

Colorado Springs (Tucker). Glenwood Springs, August 24th; Canon City, August 31st; Fort Collins, September 27th on *Solidago spectabilis* and *Aster canescens*, September 31st female depositing eggs in apple twigs (Gillette). Fort Collins, July 24th on *Apocynum androsaemifolium*, August 4th on alfalfa, August 11th very abundant on *Glycyrrhiza lepidota* (Baker). Specimens of apple twigs with egg punctures have been received from several parts of the state, including Rocky Ford, Arvada and Windsor. From the last lot, which were placed in a breeding cage, there emerged on May 19th, numerous specimens of *Cosmocoma howardii* Ash. (determined by Ashmead). We have often found the imago infested with a minute red mite, *Eupalpus echinatus* Bks. (determined by Banks). Soft maple twigs in the vicinity of Fort Collins are also considerably infested with the eggs of this insect.

Ceresa turbida Godg.

Det. Goding.

Colorado (Gillette—see Goding, 3).

Steamboat Springs, July 26th; The Rustic, Larimer County, August 11th (Gillette).

Ceresa diceros Say.

Colorado Springs (Tucker).

Stictocephala festina Say.

Colorado (Riley—see Goding, 3).

Stictocephala franciscana Stal.

Steamboat Springs (Gillette—see Goding, 3).

Steamboat Springs, July 26th; Rist Canon, July 30th (Gillette).

Stictocephala gillettei Godg.

Det. Goding.

Colorado (Gillette—see Goding, 1 and 3). Trinidad, May 14th (Gillette—see Goding, 2).

Fort Collins, July 29th, on *Psoralea tenuiflora*; Four-mile

Hill eight miles south of Steamboat Springs, July 15th (Baker).

Stictocephala inermis Fab. Det. Goding.

Steamboat Springs, July 26th (Gillette).

Stictocephala viridis Godg. Det. Goding.

Rist Canon, May 29th (Gillette)

Thelia univittata Harr. Det. Goding.

Routt Co. (Gillette—see Goding, 3).

Steamboat Springs, July 26th (Gillette).

Telamona monticola Fabr.

Colorado (Goding, 3).

Telamona pyramidata Uhl. Det. Goding.

Southern Colorado, June to July (Carpenter—see Uhler, 7). Southern Colorado (Uhler—see Goding, 3). Colorado (Snow—see VanDuzee, 5).

Fort Collins, July 20th on cottonwood, and August 14th on Virginia Creeper (Baker). Colorado Springs, July 27th on cottonwood (Gillette).

Telamona querci Fitch.

Colorado (Carpenter—see Uhler, 6).

Telamona reclinata Fitch. Det. Goding.

Colorado (Baker—see Goding, 3).

Fort Collins (Baker).

Heliria scalaris Fm. Det. Goding.

Fort Collins, July 4th (Gillette—see Goding, 2). Colorado (Baker—see Goding, 3).

Fort Collins, July 5th (Baker). La Veta, July 4th (E. A. Schwarz).

Acutalis calva Say.

Colorado (Riley—see Goding, 3).

Cyrtolobus fenestratus Fitch.

Colorado (Thomas—see Uhler, 6). Manitou, on small oak trees, August 16th (Uhler, 5). Colorado (Uhler—see Goding, 3).

Cyrtolobus vau Say. Det. Goding.

Colorado (Gillette—see Goding, 3).

Manitou, June 25th; Montrose, June 24th (Gillette).

Steamboat Springs, July 12th (Baker). Garden of the Gods; Green Mountain Falls (Tucker).

Vanduzea arquata Say.

Det. VanDuzee.

Colorado (Gillette—see Goding, 3).

Dixon's Canon, five miles west of Fort Collins, September 1st (Gillette).

Vanduzea vestita Godg.

Colorado (Goding, 3).

Campylenchia curvata Fab.

Det. Goding.

Eagle River, August 29th (Carpenter—see Uhler, 6). Near Boulder, June 29th (Packard—see Uhler, 5). Denver, near Golden, near Colorado Springs, on small plants in low ground, and also in the valley of the Arkansas near Canon City in August (Uhler, 5). Colorado (Riley—see Goding, 3).

Steamboat Springs, July 26th; Rist Canon, August 8th; Dixon's Canon, September 1st; Estes Park, July 12th (Gillette). Fort Collins, August 11th on *Glycyrrhiza lepidota*, July 24th on *Psoralea tenuiflora* and *Apocynum androsaemifolium*; Steamboat Springs, July 15th (Baker). Colorado Springs (Tucker).

Scolops angustatus Uhl.

Det. Osborn.

The Rustic, Larimer County, August 11th (Gillette).

Scolops grossus Uhl.

Det. VanDuzee.

Fort Collins, July 24th to August 18th (Baker).

Scolops hesperius Uhl.

Southern Colorado (Thomas—see Uhler, 6). Denver (Smith—see Uhler, 6).

Scolops sulcipes Say

Det. Osborn.

On low ground, in suburbs of Denver, August 18th (Uhler, 5). Colorado (Uhler, 6).

Denver, July 21st (Gillette). Fort Collins, July 24th to August 18th (Baker). Colorado Springs (Tucker).

Cixius stigmatus Say.

Det. VanDuzee.

Colorado (Uhler, 6).

Lamar, May 7th (Gillette). Big Narrows of Poudre River, Larimer County, July 9th on *Bigelovia*; Steamboat Springs, July 14th (Baker). Colorado Springs (Tucker).

Cixius vicarius Walk.

Swept from weeds in west Denver, August 5th (Uhler, 5).

Oliarus franciscanus Stal.

Det. VanDuzee.

Montrose, June 24th (Gillette).

Helicoptera floridæ Walk.

Det. VanDuzee.

Dolores, June 16th (Gillette).

Pissonotus pallipes VanD.

Det. VanDuzee.

Fort Collins, August 25th (Gillette).

Stenocranus dorsalis Fitch.

Det. Osborn.

Foot-hills five miles west of Fort Collins, April 25th; Fort Collins, September 27th on *Carex*; Dolores, June 18th (Gillette). Fort Collins, May 18th on alfalfa; Steamboat Springs, July 12th on *Carex* (Baker).

Conomelus tricarinatus Say.

Det. VanDuzee.

Manitou, June 25th; Montrose, June 24th; Glenwood Springs, August 24th (Gillette). Steamboat Springs, July 14th (Baker).

Myndus impunctatus Fitch.

Det. VanDuzee.

Montrose, June 24th (Gillette).

Myndus n. sp.

Det. VanDuzee.

Manitou, July (Tucker). Mr. VanDuzee says, "Differs from all the species I know by the lunate pale area on the front."

Delphacinus obesus VanD.

Det. VanDuzee

Fort Collins, May 8th (Gillette).

Delphacinus zonatus VanD.

Det. VanDuzee.

Manitou, June 25th; Montrose, June 24th (Gillette).

Delphacinus vittatus VanD.

Det. VanDuzee.

Dolores, June 18th (Gillette).

Liburnia consimilis VanD.

Det. VanDuzee.

Lamar, May 7th; Dolores, June 18th (Gillette).

Liburnia gillettei Van D.

Det. VanDuzee.

Lamar, May 7th; Dolores, June 18th; Estes Park, July 12th (Gillette).

Lamenia californica VanD. Det. VanDuzee.

Montrose, June 24th (Gillette).

Tylana ustulata Uhl.

Colorado (Uhler, 6).

Bruchomorpha oculata Newm. Det. VanDuzee.

Colorado (Uhler 6).

Steamboat Springs, July 26th (Gillette).

Bruchomorpha pallidipes Stal.

Swept from plants on plains near Colorado Springs, August 13th (Uhler, 5).

Colorado Springs, August (Tucker).

Stiroma inconspicua Uhl.

Moderately abundant on small bushes in Clear Creek Canon, August 6th (Uhler, 5).

Philaenus abjectus Uhl.

Colorado (Thomas—see Uhler, 6).

Philaenus lineatus L. Det. VanDuzee.

In foot-hills near Golden, August 5th. Doubtless widely distributed through the mountain region of Colorado (Uhler, 5). Hills and high mountains (Carpenter—see Uhler, 6). Colorado (Thomas—see Uhler, 6).

North Park, July 20th; Gore Pass, July 29th; Steamboat Springs, July 26th; Estes Park, July 16th (Gillette). La Veta, July 4th (E. A. Schwarz).

Clastoptera binotata Uhl. VanDuzee.

Steamboat Springs, July 26th; Leadville, August 23d (Gillette). Steamboat Springs, July 12th on *Artemisia tridentata* (Baker).

Clastoptera delicata Uhl. Det. VanDuzee.

Near Colorado Springs, sweeping rank growths of plants in damp ground, August 16th (Uhler, 5). Colo. (Thomas and Smith—see Uhler, 6).

Steamboat Springs, July 26th (Gillette).

Clastoptera obtusa Say. Det. Osborn.

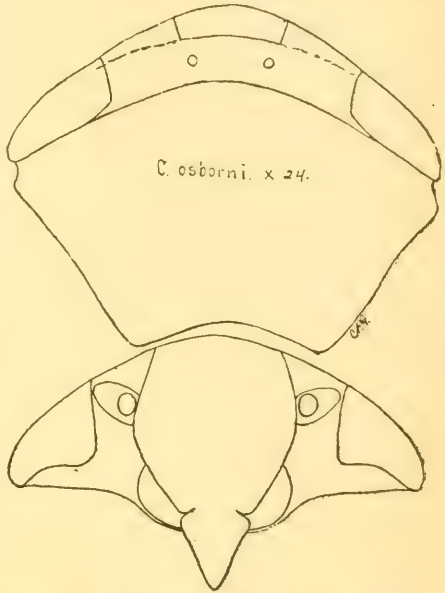
Beaver Creek, Larimer County, August (Gillette). Fort Collins, July 19th (R. C. Stephenson).

Clastoptera osborni n. sp.*

*All the illustrations are magnified 22 diameters unless otherwise marked.

Female: Face two-thirds wider than long, minutely, indistinctly sculptured; clypeus broad at base, gradually tapering to the pointed apex, one-fifth longer than broad, basal suture obsolete; lorae long, nearly as long and half as broad as clypeus; genae narrow, outer margin concave beneath eyes, convex below the lorae where they are very narrow, touching the clypeus at the broadest part; front but little longer than broad, superiorly very broadly and evenly rounded. Vertex very slightly transversely depressed, anterior margin carinately elevated, not longer at middle than at eyes. Pronotum transversely wrinkled, minutely scabrous, two distinct pits behind anterior margin near the median line, three-fourths wider than long, anterior curvature three-eighths of length. Scutellum finely and transversely wrinkled and minutely scabrous, longer than head and pronotum, twice longer than wide. Elytra with a fine, thickly set, golden pubescence, entirely finely, densely punctured. Color pale rufous throughout, tinged with olive green on pronotum and clavus, beneath more yellowish.

Length 5.5 mm. Described from two females. Large, but somewhat narrower across the hemelytra than is usual in this genus.



Manitou, July 24th on oak (Gillette). Cheyenne Canon, Colorado Springs, July (Tucker).

Leptopyronia angulifera Uhl.

Det. VanDuzee.

Howe's Gulch, June 14th and September 1st (Gillette).

Leptopyronia quadrangularis Say.

Det. VanDuzee.

Canon City, and the irrigated region west of Denver, August 6th to 17th (Uhler, 5). Colorado (VanDuzee, 6).

Fort Collins, September 27th on Solidago, Clematis ligusticifolia, and Carex (Gillette). Fort Collins, August 26th to September 14th, on Solidago (Baker).

Aphrophora permutata Uhl.

Colorado (Uhler, 6). Colorado (Snow—see VanDuzee, 5).

Manitou Park (Snow).

Pachyopsis laetus Uhl.

At Manitou and near Canon City, upon small bushes near water August 11th to 16th (Uhler, 5). Custer County, midalpine (Cockerell, 10). Colorado (Snow—see VanDuzee, 5). Colorado (VanDuzee, 4).

Pachyopsis robustus Uhl.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Dolores, June 18th; Estes Park, July 10th; North Park, July 20th; Steamboat Springs, July 26th; Fort Collins, September 27th on *Bigelovia* (Gillette). Mountains southwest of North Park, on Grizzly Creek, July 10th on *Artemisia tridentata* (Baker).

Bythoscopus fenestratus Fitch.

Det. Osborn.

Estes Park, July 12th (Gillette).

Bythoscopus pruni Prov.

Det. Osborn.

Mountains of Colorado (VanDuzee, 4).

The Rustic, Larimer County, August 11th (Gillette).

Pediopsis bifasciata VanD.

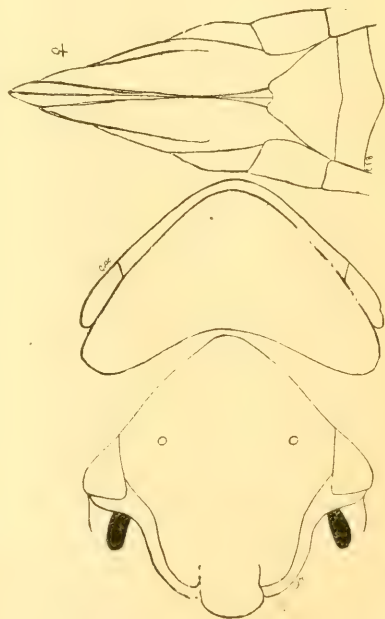
Steamboat Springs, July 15th on willow (Baker). Montrose, June 24th (Gillette).

Pediopsis erythrocephala n. sp.

Female: Large and robust. Face nearly as long as wide; clypeus short and broad, suddenly broadened and widely depressed before the rounded apex, sides parallel on basal two-thirds; front slightly constricted before antennae, rapidly narrowing towards clypeus. Clypeus, face, vertex, pronotum, and scutellum, feebly rugose. Vertex one-third longer at eyes than at middle, width between eyes nearly twenty times length at middle. Pronotum little more than twice wider than long, curvature nearly the entire length. Last ventral segment with hind margin distinctly notched. Head, pronotum, and scutellum dull red, concolorous. Elytra hyaline. Abdomen greenish. Eyes reddish brown. Legs greenish shading into reddish towards base. Propleura with a large black spot.

Length 6 mm. Described from two females.

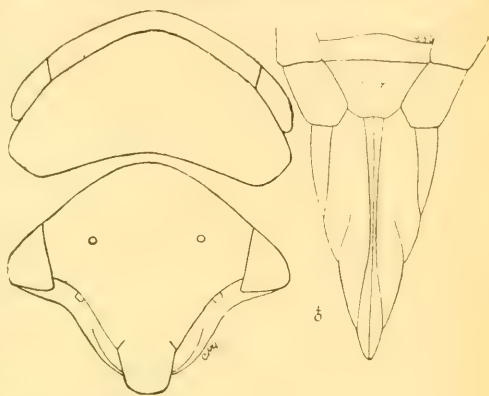
Fort Collins, August 11th (Baker). Colorado Springs, August (Tucker).



Pediopsis fumipennis n. sp.

Female: Form of *bifasciata*. Face little more than one-sixth wider than long; clypeus short and broad, suddenly broadened and widely depressed before the rounded apex, sides nearly parallel on basal two-thirds, but slightly broadening towards base; front slightly constricted before antennae, rapidly narrowing towards clypeus. Front and vertex finely rugose, with scattered inconspicuous punctures. Vertex one-fifth longer at eyes than at middle, width between eyes nearly eleven times length at middle. Pronotum two and one-fourth times wider than long, curvature three-fourths of length, sculpturing like that of front but coarser. Scutellum finely rugose, basal angles shagreened. Last ventral segment with hind margin slightly emarginate. Head, pronotum, legs and venter green, or yellowish green. Elytra deep smoky brown, costal margin greenish. Propleura without a black spot. Valves of ovipositor yellow at base, green at tip.

Length 5.5 mm. Described from one female.



Steamboat Springs, July 15th (Baker).

Pediopsis sordida VanD.

Det. VanDuzee.

Colo. (VanDuzee, 4).

Estes Park, July 12th; North Park, July 20th; Steamboat Springs, July 26th; Gore Pass, July 29th (Gillette). Steamboat Springs, July 15th on willow (Baker).

Pediopsis viridis Fitch.

Canon City; Clear Creek Canon, on willow (Uhler, 5). Colorado (Uhler - see VanDuzee, 1). Colorado (VanDuzee, 4).

Dolores, June 18th (Gillette). Fort Collins, August 11th; Steamboat Springs, July 15th on willow (Baker). Colorado Springs, August (Tucker). Some slightly smaller, more yellowish specimens from Montrose, June 24th (Gillette), we had considered distinct, but aside from these differences there are no characters on which they can be separated.

Idiocerus alternatus Fitch.

Colorado (VanDuzee, 4). West Cliff, Custer County, July 31st; also high alpine (Cockerell, 10).

Spring Canon, May 11th; Horsetooth Gulch, April 21st to May 18th; Rist Canon, June 12th; Fort Collins, June 14th; Estes Park, July 12th; Steamboat Springs, July 26th; Lead-

ville, August 23d; Trinidad, May 14th; Montrose, June 24th (Gillette). Fort Collins, October 7th; Dixon's Canon, May 6th; Steamboat Springs, July 15th, on willow (Baker).

A common species everywhere. There seems to be considerable variation in the form of the last ventral segment in the female.

Idiocerus amoenus VanD.

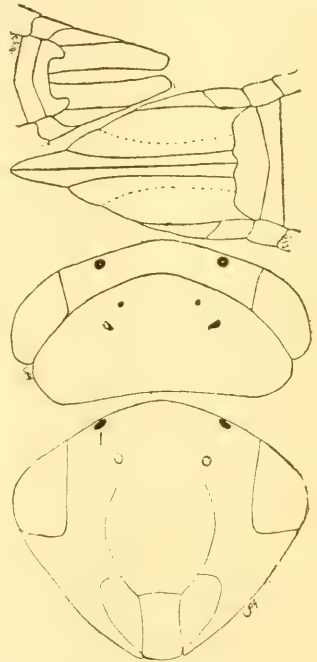
Det. VanDuzee.

Colorado (VanDuzee, 4).

Horsetooth Mountain, July 4th; Steamboat Springs, July 26th; Montrose, June 24th (Gillette). On Red Stone Creek twelve miles south-west of Fort Collins, August 1st (Baker).

Idiocerus interruptus n. sp.

Female: Face about a ninth wider than long; clypeus one-half longer than broad, gradually broader towards the almost truncate apex, basal suture straight; lorae a little longer and almost as broad as the clypeus; genae rather narrow, the outer margins straight, attaining tip of clypeus, moderately broad below the lorae; front one-fourth longer than broad and nearly three times as long as the clypeus. Face, pronotum and scutellum finely shagreened. Vertex finely, transversely wrinkled, about one-fourth longer at the eyes than at the middle, distance between the eyes a little less than five and a half times the length at the middle. Pronotum a little more than twice as broad as long, and three and a half times the length of the vertex; the curvature a little more than two-thirds the length of the pronotum; transverse groove of scutellum angularly bent forward and obsolete at the center, appearing as two oblique lunate depressions. Last ventral segment with the hind margin shallowly notched and the posterior angles obliquely cut off. Color pale yellow marked with brown and black; face mottled above with brown; eyes brown. Vertex brown with a yellowish white line next the eyes, and a median longitudinal white line, and a small black spot on either side. Pronotum brown with a broad median longitudinal white band, anterior margin whitish with about four small blackish spots on either side; scutellum whitish with a large black spot just within the basal angles on either side; a median brown line between base and transverse groove, forked beyond and extending nearly to the tip; a small black spot on either side just before the ends of the transverse groove. Elytra whitish subhyaline, with an oblique brown band on the middle extending down and forward, veins brown interrupted with white, a large white spot on the middle of the clavus, with a smoky spot in front and another on the tip; all beneath unicolorous, legs slightly washed with rufous, propleura with a black spot. Length 5 mm.



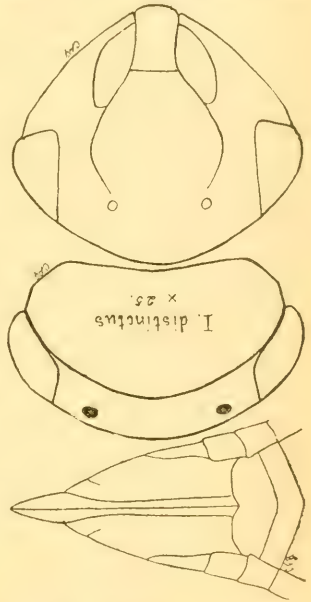
Male: Differs from female as follows: Below deeper yellow, white lines next the compound eyes obsolete, other light marking on the vertex and pronotum yellowish, most of the dark markings darker; front margin of anterior coxae with a large black spot, and narrow black lines on the outer sides of all the tibiae; compound eyes jet black; black

spots on propleura much larger. Length 4.75 mm.

Described from two females and one male.

Idiocerus distinctus n. sp. *

Female: Form that of a small and slender *alternatus*. Face a little less than one-eighth wider than long; clypeus two-fifths longer than broad, broadest at base; lorae a little longer than clypeus, and two-thirds as broad; genae rather deeply depressed beneath the eyes, lateral margins nearly straight, attaining the tip of the clypeus and broad beneath the lorae. Front but little longer than broad, two times as long as the clypeus, rapidly narrowing below the antennae; face rather coarsely shagreened. Vertex finely transversely wrinkled, length at the middle the same as at the eyes, width between eyes a little less than five times the length at the middle, apex very broadly rounded. Pronotum two times as broad as long, three times as long as vertex, curvature little more than two-thirds of the length; slightly concave behind; disc finely transversely shagreened, transverse groove as in *interruptus*. Last ventral segment with the hind margin broadly rounded, notched at the center, posterior angles rounded. Color brown and white above, yellowish beneath. Face and vertex pale yellow washed with pale rufous. Vertex with small round black spots on crest. Pronotum pale brown with about eight or ten small pale bluish spots. Scutellum rufous, dark near the posterior angles, with two small spots on the disc, and the apex pale. Elytra white next to scutellum and at tip of clavus deep smoky; two or three lines on the nervures below tip of clavus, and nervures at tip of corium, blackish. Venter yellow. Legs pale yellow, concolorous.



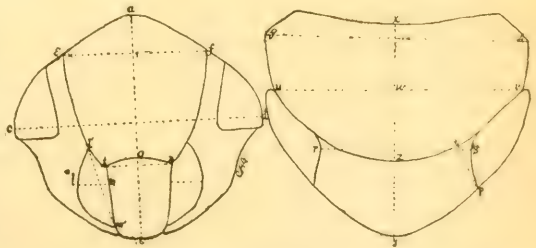
Length 4.75 mm. Described from one female.

Steamboat Springs, July 15th on willow (Baker).

Fort Collins, September 26th on elm (Baker), and September on grass (Gillette).

Variety A. We have a single female, identical in all respects with this species except that it is strongly suffused

*The lines drawn on the accompanying figure indicate where the measurements which are given in these descriptions are made. For example, a-b would be the length and c-d the breadth of the face; a-o the length and c-f the breadth of the front, &c. The width of the clypeus is always taken at its base, and the width of the lorae where they are widest measured



at right angles to the median line of the front. By length of vertex at the eye, we mean the shortest distance across the vertex at this point. By curvature is meant the distance w-z. The width of the front is always given where it is greatest. In *Idiocerus* the length of the front is taken from base of clypeus to the ocelli.

with rufous throughout and has no black on the propleura. Colorado Springs, August 3d (Gillette).

Idiocerus lachrymalis Fitch.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Estes Park, July 12th; Steamboat Springs, July 26th; Rist Canon, July 30th (Gillette).

Idiocerus mimicus n. sp.

Female: Face one-fifth wider than long, faintly shagreened; clypeus a little less than two-thirds longer than broad, moderately broadened at the rounded apex; lorae considerably longer and almost as broad as the clypeus; genae moderately depressed beneath the eyes, lateral margins straight, attaining tip of clypeus, broad beneath lorae; front slightly longer than broad, nearly twice as long as the clypeus. Vertex finely transversely wrinkled, length at middle same as next the eyes; width between the eyes five times the length at middle. Pronotum finely transversely shagreened, a little more than two and one-third times broader than long, three times longer than vertex, curvature little more than two-thirds of the length. Scutellum finely shagreened and with the transverse groove as in interruptus. Last ventral segment as in rufus. Color pale yellowish brown, unicolorous except two distinct black spots on the crest of the vertex, and the nervures of wings and basal angles of scutellum rufous.

Length 4.5 mm. Described from one female. Form of *alternatus* but more robust.

Fort Collins, August 18th on black-walnut (Baker).

Idiocerus nervatus VanD. Det. VanDuzee.

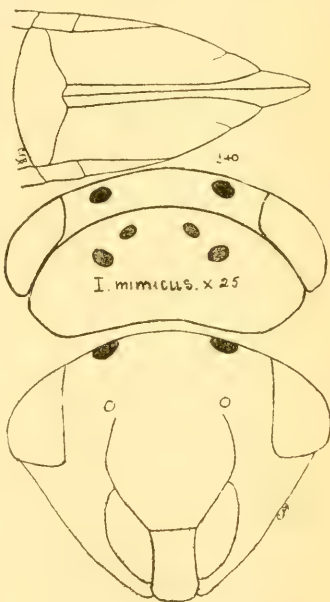
Colorado (VanDuzee, 1).

Lamar, May 7th; Trinidad, May 14th (Gillette). On Redstone Creek, twelve miles southwest of Fort Collins, August 1st; Fort Collins, September 14th on Solidago (Baker). The dark nervures of the wings are not a distinguishing characteristic of this species as certain forms of *pallidus* also possess them.

Idiocerus pallidus Fitch.

Quite common in Clear Creek Canon, also near the South Platte and its tributaries near Denver, and at Manitou and Colorado Springs, chiefly upon willows, August 6th to 18th (Uhler, 5). Mountains, June (Carpenter—see Uhler, 6). Colorado (VanDuzee, 4).

Female: Face an eighth wider than long, finely shagreened; clypeus one-half longer than broad, broadest near the tip where it is suddenly widened, apex rounded and broadly

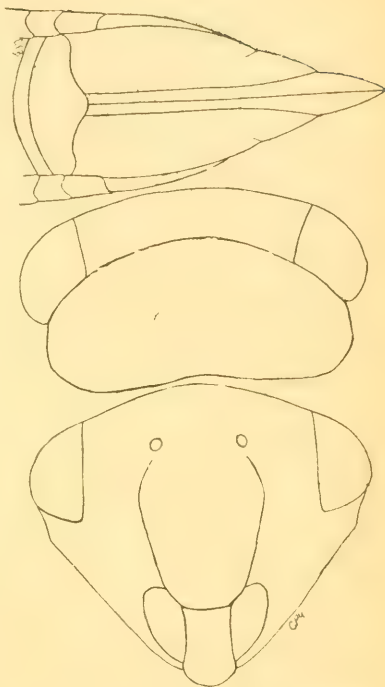


depressed within; lorae as long as clypeus and narrower than clypeus at base; genae narrow, narrowly but rather deeply depressed next to the compound eyes and beneath the antennae, lateral margins almost straight, slightly concave, not attaining the tip of clypeus, moderately broad beneath the lorae; front one-third longer than wide, two times the length of the clypeus, sides below the antennae nearly straight but rapidly incurved near the clypeus. Vertex minutely transversely wrinkled, apex very broadly rounded, length at middle slightly less than that at the eyes, width between the eyes four and a half times the length at the middle. Pronotum two and five-sevenths times the length of vertex, two and one-fourth times broader than long, curvature five-ninths of the length, posterior margin slightly concave, disc minutely transversely rugulose. Scutellum finely indistinctly shagreened, transverse groove rather broadly depressed and strongly angled forward. Last ventral segment with hind margin moderately produced at the middle, truncate, the edge either side gently curving to the rounded lateral angles. Color uniform pale green. Eyes brown. Basal angles of scutellum sometimes pale yellow. Nervures of elytra and wings colorless.

Length 5.5-6.5 mm. Described from seven females.

Male: With the greenish color below much more pronounced. Spots at basal angles of scutellum sometimes nearly obsolete.

Length 5 mm. Described from five males.



Colorado Springs August 3d (Gillette). Fort Collins August 26th on *Helianthus annuus*; Steamboat Springs, July 15th on willow (Baker). These specimens were examined by Mr. VanDuzee and said by him to be identical with the eastern form generally known under the name *pallidus*.

Variety A. We also have numerous males and females which correspond exactly in structure and general coloration with this species, which have the dark wing nervures of *nervatus*. Steamboat Springs, July 15th on willow (Baker).

Variety B. We have further three females which also correspond in structure, but are quite yellowish and have large spots within the basal angles of the scutellum black, and the tips of the elytra smoky. Leadville, August 23d (Gillette).

Idiocerus perplexus n. sp.

Near pallidus, differing from that species as follows: Genae sharply incurved beneath the eyes, then rounded to clypeus, and the clypeus more broadened out towards the tip. Last ventral segment produced on posterior margin very much as in pallidus, but rounded at extreme tip, not truncate. Color pale yellow, unicolorous throughout. This may prove to be only a variety of pallidus but the specimens we have examined seem quite distinct.

Length of female 6-7.5 mm., of male 5.25-6 mm. Described from two females and one male.

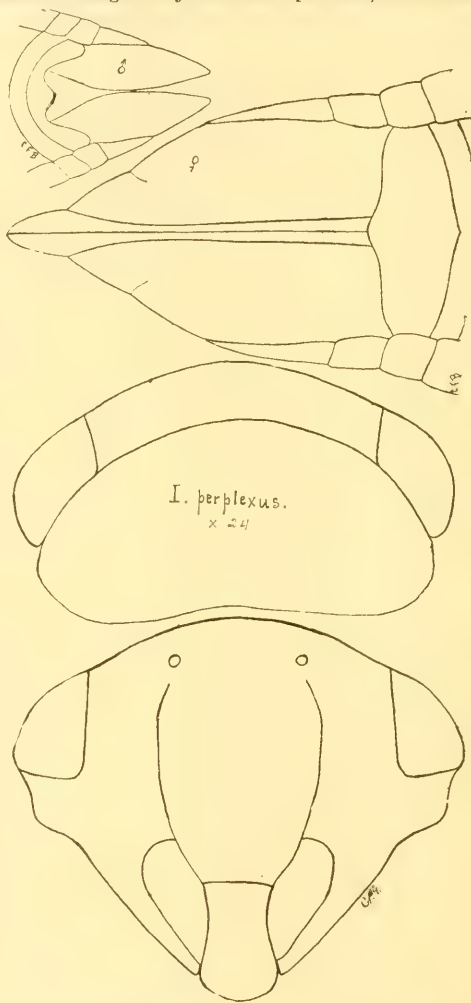
Fort Collins, August 26th on cottonwood, and September 20th ovipositing in box-elder (Gillette). Cheyenne Canon, Colorado Springs, August (Tucker).

We have one male of the same structural characters, quite distinctly greenish. Colorado Springs, August 3d (Gillette).

Idiocerus productus n. sp.

Male: Face as long as wide, finely shagreened; clypeus four-fifths longer than broad, much widened towards the rounded apex, basal suture curved; lorae slightly longer and nearly as wide as the clypeus; genae deeply depressed beneath the eyes, lateral margins straight, not attaining tip of clypeus and narrow below the lorae; front nearly one-half longer than wide, a little less than twice the length of clypeus. Vertex

finely transversely wrinkled, length at middle a half longer than next the eyes, with between the eyes little more than three times the length at the middle, apex rounded, but the angle nearly a right angle. Pronotum slightly more than twice as wide as long and two and one-fifth times as long as the vertex, curvature little less than five-sevenths of the length, disc finely transversely shagreened. Scutellum finely shagreened, transverse groove as in interruptus, except that it is more strongly depressed and with several transverse wrinkles just back of it. Color yellowish below, whitish above. Crest of vertex with a large black median longitudinal spot, disc whitish with a small black spot on either side next the compound eyes. Pronotum black with the posterior margin and a few small spots on disc whitish. Scutellum black with more or less of the lateral margins



and apex, and two small spots next the pronotum whitish. Elytra dark smoky, nervures black, on inner margin at middle of clavus a white spot, on second sector of corium two small white spots, and an indistinct whitish transverse band on the corium just beyond the tip of the clavus. Venter blackish, tips of basal segments and all of the last two segments yellow. Legs sordid yellow, tibiae slightly infusate, femora having a black line on outer margin, tarsi infusate.

Length 6 mm. Described from two males. Differs from all other species of the genus in the remarkable form of the head.

Leadville, August 23d (Gillette).
Steamboat Springs, July 15th on willow (Baker).

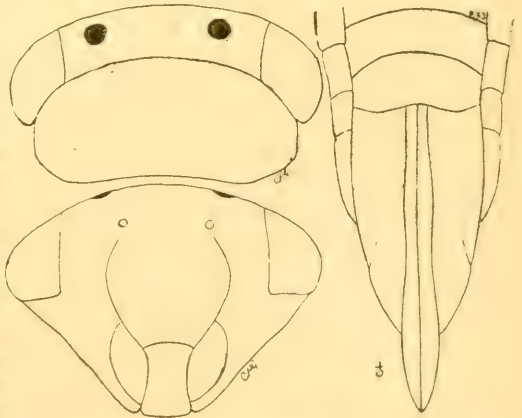
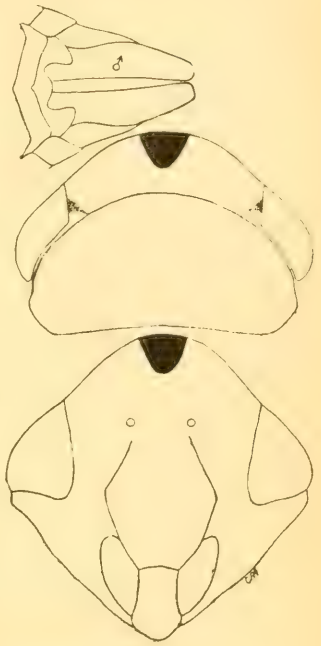
Idiocerus ramentosus Uhl. Det. VanDuzee.

On willows in Denver; also in Clear Creek Canon and at Manitou (Uhler, 5). Colorado (VanDuzee, 4).

Steamboat Springs, July 15th (Baker). Spring Canon, May 11th to June 30th; Estes Park July 12th; Steamboat Springs, July 26th; Manitou, September 29th on willow (Gillette).

Idiocerus snowi n. sp.

Face slightly more than one-third wider than long, indistinctly shagreened, and sparsely set with short, white, very weak hairs; clypeus slightly more than one-half longer than broad at tip, nearly as broad at base as at apex, strongly constricted at middle, truncate at the tip, basal suture nearly straight; lorae slightly longer and somewhat narrower than the clypeus; genae broad, outer margin slightly concave, attaining tip of clypeus and moderately broad below the lorae; front as long as broad. Vertex finely transversely rugose, as long at middle as next eyes, width between the eyes three and five-sevenths times the length at middle. Pronotum very minutely transversely wrinkled, with numerous fine scattered punctures, two and one-third times broader than long, two and one-fourth times the length of the vertex, curvature a little less than two-thirds of the length. Scutellum with the transverse groove as in *interruptus*. Last ventral segment with the hind margin broadly rounded. Color pale green, tips of tibiae, tarsi and pygofers, bluish green. Vertex with two round black



spots on either side near anterior edge, nearer to the compound eyes than to the median line.

Length of female 6 mm., of male 5 mm. Described from three females and two males. Readily distinguished from *pallidus* by the two black spots on the vertex.

***Idiocerus rufus* n. sp.**

Female: Face one-fifth wider than long, finely shagreened; clypeus little less than one-half longer than broad, broadened towards the rounded tip; lorae a little longer and nearly as broad as the clypeus; genae slightly depressed beneath the eyes, the lateral margins almost straight, attaining the tip of the clypeus, broad beneath the lorae; front about one-fifth longer than broad and twice the length of the clypeus. Vertex finely transversely wrinkled, length at the middle the same as at the eyes, width between the eyes nearly four times the length at the middle. Pronotum finely transversely shagreened, with numerous shallow, scattered punctures, slightly more than twice as broad as long, two and one-half times as long as the vertex, curvature slightly less than three-fifths of the length. Scutellum finely shagreened, transverse groove as in *interruptus*. Last ventral segment with hind margin broadly rounded, with a narrow median notch. Color bright chestnut, with the face, three small spots either side of the pronotum, a few spots on the scutellum, venter and all below, except the pygofers and sometimes the legs light yellowish.

Length 5 mm. Described from two females. Form of *alternatus*.

Rist Canon, September 27th on Solidago; Manitou, September 29th on oak (Gillette).

Colorado Springs, August (Tucker).

***Idiocerus suturalis* Fitch.**

Det. VanDuzee.

Colorado (VanDuzee, 4).

Spring Canon, June 30th; Estes Park, July 12th; Steamboat Springs, July 26th (Gillette). Steamboat Springs, July 12th (Baker). Manitou, July (Tucker).

***Idiocerus verticis* Say.**

Upon willows at Denver, August 9th to 18th (Uhler, 5). Colorado (VanDuzee, 4).

Estes Park, July 12th (Gillette).

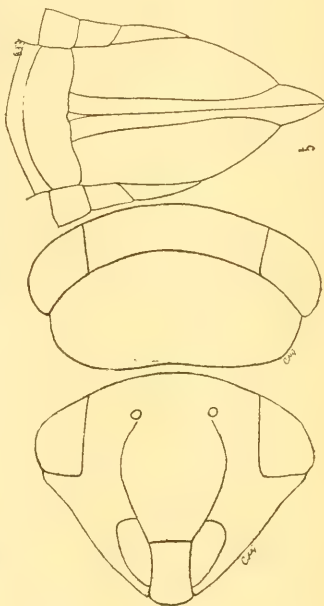
***Agallia novella* Say.**

Colorado (VanDuzee, 4).

***Agallia 4-punctata* Prov.**

Det. Gillette.

Fort Collins, June 4th to 14th (Gillette).



Agallia sanguinolenta Prov.

Det. VanDuzee.

Colorado, July 19th to September 6th; Eagle River, August; Denver, June (Carpenter—see Uhler, 6). Inhabits summits of high mountains (Uhler, 6).

Fort Collins, hibernating under boards during March; Spring Canon, March 12th under stones; Fort Collins, October 15th; Montrose, June 24th; Dolores, June 18th (Gillette). Fort Collins, May 16th to June 9th on alfalfa; Steamboat Springs, July 12th, on Solidago (Baker). Colorado Springs (Tucker).

Agallia uhleri VanD.

Det. VanDuzee.

Fort Collins, May 7th to October 15th, and August 15th at electric light; foot-hills five miles west of Fort Collins, July 12th to September 1st; Colorado Springs, August 2d; Manitou, June 25th; Lamar, May 7th; Trinidad, May 14th; Dolores, June 18th; Grand Junction, August 26th on sugar beet; Glenwood Springs, August 24th (Gillette). Fort Collins, June 8th on *Sisymbrium canescens*, May 16th to July 14th on alfalfa, and July 29th on cultivated beet (Baker).

Oncometopia costalis Fabr.

Det. VanDuzee.

Widely distributed throughout the region of Colorado less remote from the foot-hills. Extraordinarily numerous near Colorado Springs on low plants August 13th to 17th. On low hills west of Denver, near Golden, in Clear Creek Canon and in Manitou Park, less abundant (Uhler, 5). Larva at Boulder, June 29th (Packard - see Uhler, 5). Colorado (Uhler, 6). Uta, Custer County, November 12th; West Cliff, March 31st; also subalpine (Cockerell, 10). Manitou Park (Snow—see VanDuzee, 5).

Steamboat Springs, July 26th; Colorado Springs, August 1st; Leadville, August 23d; Minturn, August 24th; Fort Collins, March 20th to May 16th (Gillette). Fort Collins, during winter hibernating under dead leaves, stones, and boards, coming out to bask in the sun on warm bright days; taken copulating on March 2d (Baker).

Oncometopia limbata Say.

Custer County, midalpine (Cockerell, 10). Colorado (VanDuzee, 4).

Tettigonia hieroglyphica Say.

Det. Osborn and VanDuzee.

Beaver Brook Gulch, near Golden, in Denver, abundant near Colorado Springs, at Manitou, in Manitou Park, and less common near the mouth of

the canon of the Arkansas (Uhler, 6). Foot-hills and plains, August to October (Carpenter—see Uhler, 6).

Horse-tooth Gulch, May 18th to June 5th; Rist Canon, May 19th to August 5th; The Rustic, Larimer County, August 11th; Steamboat Springs, July 26th; Colorado Springs, August 3d; Manitou, June 25th to September 29th on willow and oak; Montrose, June 24th; Dolores, June 18th (Gillette). Fort Collins, June 13th to October 7th; on Redstone Creek, twelve miles south-west of Fort Collins, August 1st, exceedingly abundant, flying up in a cloud as one walked through the low herbage (Baker).

Diedrocephala mollipes Say.

Very abundant on grass and weeds in low spots near Denver, and near Golden, August 5th and later in the month (Uhler, 5). Colorado (Uhler, 6). Custer County, midalpine (Cockerell, 10).

Diedrocephala novaeboracensis Fitch.

Det. VanDuzee.

Near East River, August 29th (Carpenter—see Uhler, 6). More particularly a foot-hill and mountain species; Clear Creek Canon and Golden, August 5th to 7th; west of Denver, August 9th (Uhler, 5). Colorado (VanDuzee, 4).

Glenwood Springs, August 24th; Steamboat Springs, July 26th; Fort Collins, September 27th on grass and Carex (Gillette). Steamboat Springs, July 12th on Carex (Baker).

Helochara communis Fitch.

Det. VanDuzee.

Very common in grassy marshy spots in the bed of the creek passing through Denver, also in similar situations on farms west of Denver (Uhler, 5).

Fort Collins, April 7th to October 15th; Steamboat Springs, July 26th; Dolores, June 18th (Gillette). Steamboat Springs, July 12th on Carex; Fort Collins and the adjoining foot-hills, during winter, hibernating under stones and boards (Baker). Colorado Springs, August (Tucker).

Xerophloea peltata Uhl.

Det. VanDuzee.

Clear Creek Canon, August 7th (Uhler, 5). Custer County, midalpine (Cockerell, 10). Colorado (VanDuzee, 4).

Fort Collins, June 14th to October 15th; foot-hills five miles west of Fort Collins, March 12th to September 1st; Glenwood Springs, August 24th (Gillette). On Redstone Creek, twelve miles south-west of Fort Collins, August 1st; Fort Collins, August 26th on Helianthus annuus (Baker).

Gypona angulata Spang.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Dolores, June 16th; Rist Canon, June 12th (Gillette.)

Gypona cinerea Uhl.

Near Manitou, August 13th (Uhler, 5).

Gypona flavilineata Fitch.

Det. Osborn.

Colorado Springs, August 3d (Gillette.)

Gypona octolineata Say.

Clear Creek Canon, August 7th; Denver; Manitou, August 13th; in the mouth of the canon of the Arkansas (Uhler, 5). Foot-hills and plains (Carpenter—see Uhler, 6).

Eagle River and Two Elk Creek, Eagle County, September 7th (Cockerell—see Riley, in litt.).

Gypona rugosa Spang.

Det. VanDuzee.

Colorado (VanDuzee, 1).

Fort Collins, September 30th (Baker). Manitou, September 29th, on oak (Gillette).

Penthimia americana Fitch.

Det. Osborn.

Fort Collins, May 16th (Gillette).

Acocephalus maculatus n. sp.

Female: Face one-tenth wider than long; clypeus rectangular, once and a third as long as broad, rounded anteriorly, narrowly depressed before apex, medially elevated on posterior half; lorae as long and two-thirds as broad as clypeus. Entire head and scutellum finely shagreened. Front about one-fifth longer than wide, little less than two times the length of the clypeus, with sides rectilinear and almost parallel, gradually converging towards clypeus. Vertex with anterior margin distinctly elevated, length at middle once and three-fifths that at eyes, width between the eyes little less than two times the length at middle. Pronotum two and one-fifth times broader than long, once and a half the length of the vertex, curvature three-eighths of length, finely transversely wrinkled on posterior two-thirds, finely shagreened on anterior third except on the extreme anterior margin which is transversely wrinkled and without punctures, posterior margin broadly emarginate. Scutellum with a distinct transverse groove at middle. Elytra smooth, entirely without rugae. Last ventral segment with the hind margin deeply notched. Entire body, except the venter and elytra, black, irregularly marked with numerous small light yellow spots. Eyes black margined with reddish yellow. Ocelli rufous. Elytra black with tips paler, small white spots along the nervures and paler areas between. Venter black, tip of last segment yellowish. Legs less spotted than other portions.

Length 5 mm. Described from two females.

Ouray, June 22d; Dolores, June 18th (Gillette).



Paramesus vitellinus* Fitch.(Paramesus twiningi Uhl.)*

Estes Park, July 12th; Manitou, June 25th; Colorado Springs August 3d (Gillette).

The type of *twiningi* is a slightly faded male of *vitellinus*. In this species the second transverse nervure between the first and second sectors of the elytra is sometimes absent.

Paramesus jucundus* Uhl.(Eutettix jucundus Uhl.)*

Manitou, August 13th (Uhler, 5). Colorado (VanDuzee, 4).

Manitou, June 25th (Gillette).

***Paraboloocratus viridis* Uhl.**

Det. VanDuzee.

Near Golden, and on highlands west of Denver. Apparently rare (Uhler, 5). Colorado (VanDuzee, 4).

Lamar, May 7th; Dolores, June 18th; Rist Canon, June 13th (Gillette). Fort Collins, July 29th (Baker).

***Platymetopius acutus* Say.**

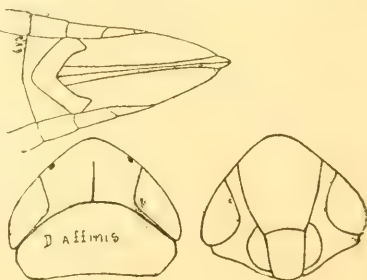
Det. VanDuzee.

Manitou, August 13th, swept from herbage near Fountain creek (Uhler, 5).

Rist Canon, June 12th to August 8th; Fort Collins, September 27th on *Rhus trilobata*; Steamboat Springs, July 26th; Manitou, July 24th on *Clematis*, and September 29th on oak; Grand Junction, August 26th on sugar beet (Gillette). Fort Collins, August 18th; Steamboat Springs, July 14th (Baker).

***Deltocephalus affinis* n. sp.**

Female: Face one-seventh wider than long; clypeus one-third longer than broad, somewhat more than one-half the length of the front, gradually narrowing to the rounded apex, basal sutures nearly straight; lorae subovate, as long and one-half as broad as the clypeus, genae broadly obtusely angled below the eye, rather broader than usual below the lorae, attaining the tip of the clypeus; front one-seventh longer than wide, gradually narrowing to clypeus, superior angle a right angle. Face and anterior half of vertex finely shagreened. Vertex one-half longer on the middle than at the eyes, width between the eyes once and a fourth the length at the middle, disc with the two depressed areas near the hind margin. Pronotum two and one-fourth times wider than long, but little longer than the vertex, curvature three-fifths of the length, posterior margin very slightly concave, anterior third glabrous with two distinct pits near the median line, posterior two-thirds indistinctly rugose. Scutellum as usual, transverse groove quite indistinct. Elytra barely exceeding abdomen. Last ventral segment with the hind margin very deeply and broadly notched.



posterior angles subacute and somewhat inclined towards the center. Color pale ashy green. Face slightly dusky with indistinct lighter transverse lines above. Genae with a small black spot near the loreal suture. Vertex and pronotum concolorous, with a broad light median stripe and a dark stripe on either side, on the vertex the median light stripe with a median dark line. Scutellum darker on the disc. Elytra ashy subhyaline with a few faint fuscous markings along the middle of the disc and on the median portion of the clavus. Venter pale yellowish. Legs pale yellow.

Length 3.25 mm. Described from one female. Related to *melshimeri*.

Leadville, August 23d (Gillette).

We have also a single male which probably belongs to this species. It differs from the female as follows: Front one-fourth longer than wide, two and a half times as long as the clypeus. Face darker on discs of clypeus and genae, front very light chocolate brown, the light transverse lines above distinct. Elytra with costa and veins more distinctly yellowish, the apical cells faintly margined with fuscous. Venter black. Legs as in *monticola*.

Length 3.5 mm. Described from one male.

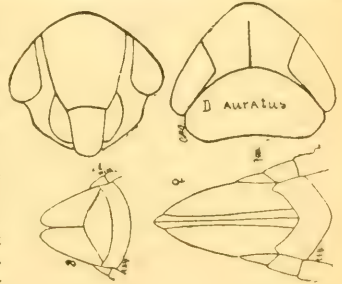
Estes Park, July 12th (Gillette).

Deltocephalus argenteolus Uhl.

Quite common on willows at Colorado Springs and near Manitou (Uhler, 5). Colorado (VanDuzee, 4).

Deltocephalus auratus n. sp.

Female: Face an eleventh wider than long. Clypeus about a third longer than wide, gradually narrowed to the rounded apex. Lorae subovate, as long as the clypeus and half as broad. Genae broadly and very obtusely angled, attaining the end of the clypeus. Front one-eighth longer than wide, about two times the length of the clypeus, sides nearly straight, rapidly narrowing to the clypeus below, superior angle rather strongly produced and rather more than a right angle. Face and anterior third of vertex finely shagreened. Disc of vertex with a depressed area on either side next the compound eye, length at middle once and a half that next the eye, width between eyes once and a seventh times the length at middle. Pronotum twice wider than long, as long as vertex, curvature two-thirds of length, with the glabrous anterior margin somewhat elevated, posterior margin slightly concave, posterior three-fourths obscurely rugose and sparsely and indistinctly punctate. Scutellum broader than long, very minutely sculptured. Last ventral segment with the hind margin deeply and broadly notched, posterior angles rounded. Color pale yellow throughout. Tip of rostrum, eyes, spots at bases of tibial spines, and ungues, black. Ocelli rufous. Elytra exceeding abdomen by somewhat less than one millimeter, yellowish subhyaline, nervures lighter.



Male: Differs from female as follows:—Color deep golden yellow. Elytra yellowish subhyaline, nervures and costa bright yellow. Genital organs below tipped with black.

Length 3.25 mm. Described from two males and one female.

Fort Collins, June 14th (Gillette). Steamboat Springs, July 15th (Gillette).

Deltocephalus bilineatus n. sp.

Face a twelfth wider than long; clypeus long and narrow, one-half longer than broad, nearly one-half as long as the front, sides parallel, apex rounded, basal suture straight; lorae subovate, nearly as broad and long as the clypeus; genae very broadly and obtusely angled outwardly, attaining the end of the clypeus; front two-fifths longer than wide,

sides rectilinear, gradually narrowed towards the clypeus, superior angle rather long, and more than a right angle. Face and vertex finely shagreened. Disc of vertex with two distinct pits near the eyes, nearer to the eyes than to each other, length at middle a half longer than that next the eye, width between the eyes equal to the length at middle. Pronotum twice as wide as long, one-seventh longer than the vertex, curvature four-ninths of the length, posterior margin very slightly concave, anterior one-fourth glabrous, posterior three-fourths transversely subobsoletely wrinkled and with scattered indistinct punctures. Scutellum broader than long, shagreened more coarsely than the face. Last ventral segment with the hind margin broadly and deeply notched, the sides of the notch slightly sinuated. Color ashy gray sometimes tinged with fuscous. Face light yellow to dusky, the sutures sometimes darker. Two broad dark longitudinal lines extending over vertex and pronotum, these bands on the anterior two-thirds of vertex bordered internally with black, and adjoined externally by a black spot. Vertex with a fine black median line on the posterior two-thirds. Scutellum varying from brown-marked to black. Elytra little longer than the abdomen, whitish, nervures white throughout, bordered with dusky or testaceous, apex with three black spots, one internally and two externally, each elytron with seven white spots, two on the external apical border, two in the center, one large one basally and two on the internal border of the clavus. Venter light to dark yellow, sometimes bordered with blackish, the last segment with black spots on the sides of the notch. Legs yellow, tibial spurs arising from black spots, posterior tibiae black tipped internally.

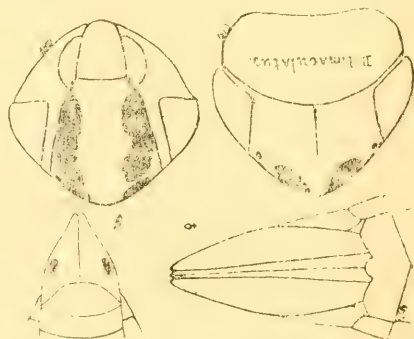
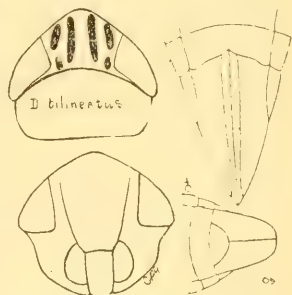
Length of female 4 mm., of male 3.5 to 3.75 mm. Described from four males and three females.

Steamboat Springs, July 12th on *Carex* (Baker).

Deltocephalus bimaculatus n. sp.

Female: Face about as long as wide; clypeus short and broad, one-seventh longer than broad, not quite half as long as the front, gradually narrowing towards the rounded apex, basal suture straight; lorae subovate, two-fifths as wide and nearly as long as the clypeus; genae broadly rounded outwardly, attaining the end of the clypeus; front one-eighth longer than wide, sides almost straight, superior angle nearly a right angle. Face and vertex roughly shagreened. Disc of vertex slightly transversely depressed, length at middle once and a half that next the eye, width between eyes once and two-sevenths the length at middle. Pronotum two times wider than long, length slightly less than that of vertex, curvature nearly one-half of length, posterior margin very slightly concave, anterior fourth glabrous, posterior three-fourths very finely transversely wrinkled. Hind margin of last ventral segment with a broad short tooth, on either side of which is a shallow notch, posterior angles rounded, obtuse. Pale yellowish green. Face with sutures black, four or five transverse black dashes on either side of the front above, which may run together forming a longitudinal band just within the margin. Vertex with two large oval black spots on the apex nearer the center than the eyes. Elytra greenish, subhyaline. Tergum black. Venter black with lateral and apical margins of segments yellowish. Ovipositor black, pygofers more or less streaked with black longitudinally. Legs light yellow.

Male: Differs from the female as follows: Front without black markings except in some specimens a spot on either side beneath antennae. Front two and a half times as



long as the clypeus. Sutures, other than those bounding the front, lighter. A small black spot on either pygofer.

Length of female 4.5 mm., of male 4 mm. Described from three females and ten males.

Estes Park, July 12th (Gillette). Steamboat Springs, July 13th on *Carex* and willow (Baker).

Deltocephalus concentricus VanD. Det. VanDuzee.

Mountains of north-western Colorado (Gillette—see VanDuzee, 3). Colorado (VanDuzee, 4).

North Park, July 20th (Gillette).

Deltocephalus configuratus Uhl. Det. Osborn.

Steamboat Springs, July 14th (Baker).

Deltocephalus debilis Uhl. Det. VanDuzee.

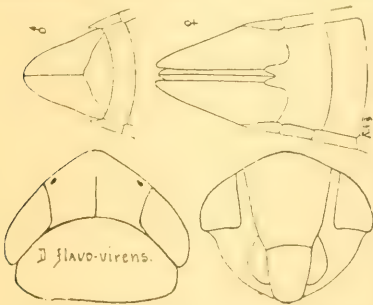
Sides of high mountains, and near Fair Play, South Park, July (Carpenter—see Uhler, 6). Colorado (VanDuzee, 4).

Horsetooth Gulch, June 5th; North Park, July 20th; Steamboat Springs, July 26th; Estes Park, July 12th; Graymont, July 16th (Gillette). Steamboat Springs, July 13th on *Carex* and *Solidago* (Baker).

Deltocephalus flavo-virens n. sp.

Face one-seventh wider than long; clypeus one-fourth longer than broad, about three-fifths the length of the front, gradually narrowing to the rounded apex, basal suture slightly convex; lorae subovate, nearly as long and about one-half as broad as the clypeus; genae broadly rounded at the sides, attaining the apex of the clypeus and broad below the lorae; front

nearly as wide as long, sides straight past the antennae, narrowing to the clypeus below, superior angle considerably more than a right angle. Face and anterior margin of vertex finely shagreened. Disc of vertex rather strongly depressed on posterior half, length at middle about once and a half that next the eyes, width between the eyes about one and a third times the length at middle. Pronotum nearly twice wider than long, about one and a fourth times the length of the vertex, curvature four-sevenths of the length, posterior margin very slightly concave, anterior fourth glabrous, posterior three-fourths very faintly transversely wrinkled. Scutellum faintly scabrous. Last



ventral segment with the hind margin greatly produced at the center, ending in two short acute points. Color greenish yellow. Face smoky with lighter concentric lines above, sutures of the front black. Vertex yellow, ocelli with a very small black spot on the sides next the eyes. Pronotum greenish yellow, darker on the disc. Scutellum immaculate. Elytra yellowish hyaline, nervure; yellow. Basal segments of venter with apical and lateral margins narrowly yellowish, the apical segments yellow, the last one with the produced part black. Ovipositor black, pygofers very hairy. Legs yellow, except small black spots at base of tibial spines.

Length, female, 4.75 mm., male, 4.25 mm. Described from one male and one female.

Steamboat Springs, July 12th on *Carex* (Baker).

Deltocephalus melsheimeri Fitch,

Det. VanDuzee,

Colorado (VanDuzee, 4).

Fort Collins, June 4th to October 15th; Horsetooth Gulch, June 5th; Rist Canon, April 25th to June 12th; North Park, July 20th; Steamboat Springs, July 26th; Lamar, May 7th; Minturn, August 24th; Montrose, June 24th; Dolores, June 18th (Gillette). Fort Collins, May 16th to June 13th on alfalfa; Steamboat Springs, July 12th on *Carex* and *Solidago* (Baker).

Deltocephalus monticola n. sp.

Female: Face nearly as long as wide; clypeus nearly as broad as long, slightly more than three-sevenths the length of the front, rapidly narrowing to the rounded apex, basal suture straight; lorae subovate, nearly as long, and two-fifths as broad as the clypeus; front one-sixth longer than wide, sides nearly



straight above, superior angle obtuse, more than a right angle. Face and anterior half of vertex finely shagreened. Disc of vertex flat, length at middle once and two-thirds that next the eye, width between the eyes one-fifth more than the length at middle. Pronotum two and one-eighth times wider than long, length about the same as that of the vertex, curvature about three-fifths of the length, posterior margin very slightly concave, smooth on the anterior third, posterior two-thirds feebly rugose. Scutellum minutely sculptured. Elytra scarcely exceeding the abdomen. Hind margin of last ventral segment with a large median tooth, posterior angles strongly produced, swollen, rounded and somewhat exceeding the tooth. Color yellowish green, about the same as in *melsheimeri*. Face smoky with concentric broken light lines above. Disc of clypeus, margins of lorae, and genae next the eyes, dark brown. Vertex light, with four short oblique black dashes on the apex. Pronotum darkened on the disc. Elytra pale greenish subhyaline, nervures lighter. Venter except last segment, with apical and lateral margins of the

segments yellow. Last ventral segment yellow at the sides and black on the disc. Ovipositor black, pygofers yellowish green and slightly streaked with black. Legs yellowish, anterior and middle femora spotted and annulated with black. Posterior femora with a black line down the outside. Tibiae more or less spotted with black.

Length 3 mm. Described from one female. Near *melsheimeri*.

Leadville, August 23d (Gillette).

Deltocephalus sayi Fitch.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Fort Collins, July 4th (Gillette). Steamboat Springs, July 14th (Baker).

Deltocephalus sexmaculatus n. sp.

Female: Face nearly as long as wide; clypeus about a fourth longer than broad, half as long as the front, considerably narrowed towards the rounded apex, basal suture

straight; lorae large, subovate, as long and one-half as broad as the clypeus; genae unusually narrow, narrow below the lorae and attaining the tip of the clypeus. Front two-ninths longer than wide, broad below, the superior angle more than a right angle. Face and anterior third of vertex coarsely shagreened. Disc of vertex deeply depressed, length at middle once and about two-thirds that next the eye, width between the eyes once and a fifth the length at middle. Pronotum two and one-sixth times wider than long, length slightly less than that of the vertex, curvature about one-half of the length, posterior margin slightly concave, anterior fourth glabrous, posterior three-fourths obscurely transversely wrinkled with scattered feeble punctures. Scutellum finely scabrous. Last ventral segment with the hind margin very broadly and deeply emarginated, the emargination nearly rectangular at the bottom, posterior angles obliquely sloping backward. Color ash gray, head and pronotum tinged with rufous. Face black, clypeus with one median and two lateral light spots, lorae with one median light spot, and genae with a transverse light spot next the lorae. Front with about six short transverse light lines on each side. Eyes black. Vertex with two large black spots posteriorly, in front of these two smaller black spots on either side, the anterior ones extending nearly to the crest of the vertex, and a narrow median line not attaining the apex. Pronotum dusky rufous. Scutellum with four large black spots on the disc. Elytra scarcely exceeding the tip of the abdomen, pattern of coloration the same as in *bilineatus*, white spots at base very small. Venter dark, marked with yellowish. Legs yellowish, coxae and basal half of anterior and middle femora blackish, posterior femora with a longitudinal black stripe beneath. Tibiae all dark with a longitudinal yellowish stripe on the outer margin. Tarsi blackish.

Length 2 mm. Described from one female. Readily separated from weedi by the form of the last ventral segment in the female.

Leadville, August 23d (Gillette).

Deltocephalus signatifrons VanD.

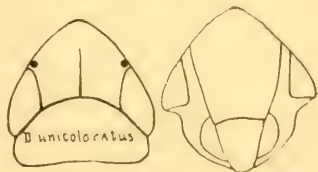
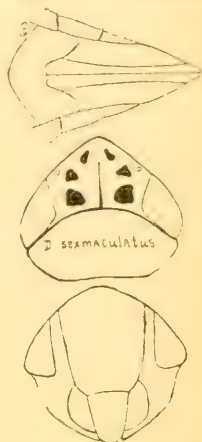
Det. VanDuzee,

Colorado (VanDuzee, 4).

Fort Collins, July 2d on beans; Horsetooth Gulch, June 5th; Estes Park, July 12th; Steamboat Springs, July 26th; Lamar, May 7th; Trinidad, May 14th; Montrose, June 24th (Gillette). Fort Collins, May 16th on alfalfa; Steamboat Springs, July 14th (Baker).

Deltocephalus unicoloratus n. sp.

Female: Differs from the female of *auratus* as follows: Face one-twentieth longer than wide; clypeus nearly as wide as long and rapidly narrowing to the rounded tip; front one-fifth longer than wide and two times as long as the clypeus. Vertex greatly produced, the angle in front slightly less than a right angle, once and two-thirds as long at the middle as next the eyes, width between the eyes the same as the length at the middle, with a narrow black median line on the posterior two-thirds. Ocelli jet black, margined on the side towards the eyes by a small black spot. Hind margin of last ventral segment truncate with a median, slightly sunken, obtuse tooth, the immediate region of the tooth thin and coriaceous, posterior angles obtuse. Color light lemon yellow.



Length 3.25 mm. Described from one female. Distinctly separated from *auratus* by the last ventral segment and by the proportions of the head.

Pleasant Valley, six miles north-west of Fort Collins, June 12th (Gillette).

Deltocephalus vanduzeei n. sp.

Female: Face one-ninth wider than long; clypeus two-fifths longer than broad, three-fifths the length of the front, gradually narrowing to a rounded apex; lorae subovate nearly as long and two-thirds as wide as clypeus; genae normal except the outer margin which is strongly obtusely angled, attaining the end of the clypeus. Front as long as wide, sides below the antennae rapidly narrowing to the clypeus, superior angle more than a right angle, obtusely rounded. Face and vertex coarsely shagreened. Disc of vertex slightly convex, sloping to the margins, length at the middle once and a half that next the eye. Pronotum two and a fourth times wider than long, an eighth longer than the vertex, curvature half of the length, posterior margin slightly concave, anterior fourth finely scabrous and elevated, posterior three-fourths very finely transversely wrinkled, disc with two small distinct pits near the anterior margin. Scutellum finely scabrous. Hind margin of last ventral segment with a broad deep median notch, posterior angles rounded. Color dark smoky above, black below. Eyes black. Face black, above with a row of transverse light dashes on either side, genae mostly margined with yellowish. Vertex yellow with two large black spots behind the apex which is margined with black, a broad black transverse median band, produced posteriorly at the sides to near the hind margin, running between ocelli and along the margins of the eyes, and two black spots on either side within the hind margin near to each other, posteriorly a dark median longitudinal line. Ocelli black on a circular yellow field. Pronotum dark yellowish smoky, anteriorly with a black spot near the median line, and laterally, near the anterior margin, two elongate black dashes. Scutellum with a median spot and two spots within the basal angles black, extreme posterior point jet black. Elytra smoky, nervures lighter, narrowly margined with darker. Venter black. Legs black, extreme tips of coxae, distal half of anterior and extreme tips of middle and posterior femora yellow, anterior tibiae yellow, infuscated; middle tibiae yellow annulate with black, hind tibiae black with spines yellow, tarsi all dark.



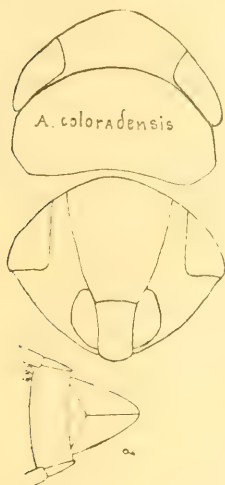
Male: Differs from female as follows:—Clypeus somewhat longer. Yellow markings on the face much heavier, a small yellow spot on the median line of the front near the clypeus, also two on the clypeus near the basal angles. The parts of the transverse band near the apex of the vertex of the female are here separated as two large rectangular black spots.

Length of female, slightly exceeding 2.5 mm., of male 2.5mm. Described from one male and one female. Near weeds.

Leadville, August 24th (Gillette).

Allygus coloradensis n. sp.

Male: Clypeus less than twice as long as broad, constricted in the middle, nearly as broad at apex as at base, half as long as the front, basal suture somewhat curved; lorae subovate, as long and as broad as the clypeus; genae gently and evenly rounded at the sides and attaining the tip of the clypeus; front a fifth longer than wide, sides inwardly curved



at the antennae, narrowed towards the clypeus, superior angle very obtuse; face and anterior margin of vertex finely shagreened. Disc of vertex slightly transversely depressed, length at middle nearly once and a half that next the eyes; pronotum broadly rounded in front, distinctly concave behind, twice as broad as long, posterior angles very broadly rounded, opaque, not distinctly sculptured. Scutellum broader than long, transverse suture arcuated. Color dull smoky yellow; eyes dark; face somewhat smoky with narrow concentric light lines above; on genae at middle of loreal suture a small black spot; vertex smoky yellow mottled with darker shades; two small black spots within hind margin near compound eyes and a narrow black median line; pronotum with anterior fourth lighter, and with four short black dashes on either side, posterior three-fourths heavily and somewhat transversely mottled with dark; scutellum yellowish with basal angles and transverse groove blackish; elytra subhyaline, nervures dark brown, clavus with cells mottled with blackish and with three distinct pearly white spots on the inside margin, two more indistinct ones on the outside; disc of elytra with scattered black mottling within the cells; transverse veins on costal margin broadly black; elytra pearly, wings brilliantly iridescent; venter

yellow with apical margins of segments black; legs light yellow, anterior coxae with a large black spot on anterior portion, anterior femora with numerous small black spots; tibiae with spines arising from black spots, posterior tarsi annulate with black.

Length 4 mm. Described from one male.

Glenwood Springs, August 24th (Gillette).

Athysanus anthracinus VanD.

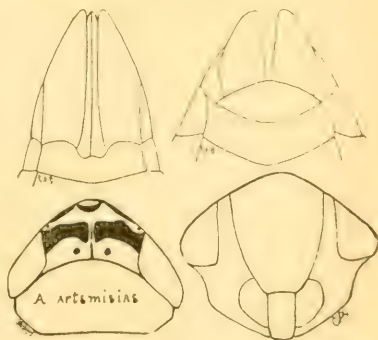
Det. VanDuzee.

Colorado (VanDuzee, 4).

Montrose, June 24th (Gillette).

Athysanus artemisiae n. sp.

Female: Clypeus one-half longer than broad, broadly and shallowly depressed below the middle, sides nearly parallel, tip truncate; lorae about as long but not quite as broad as the clypeus; genae broad, scarcely depressed beneath the eyes, outer margin broadly angled, attaining the tip of the clypeus and broad beneath the lorae; front one-fifth longer than broad, superior angle rounded and more than a right angle, face and anterior half of vertex finely shagreened; eye with a narrow and acute emargination within near the antennae; disc of vertex not depressed, sloping at sides, length at middle once and a half that at eyes. Pronotum with two small approximate pits near the anterior margin, posterior two-thirds very indistinctly transversely wrinkled; scutellum finely shagreened; hind margin of last ventral segment with posterior angles broadly rounded, slightly produced, with a rather large narrow notch having at its center a small blunt tooth. Color black; front with about six



narrow transverse yellowish lines on either side; clypeus with a small yellow spot on either basal angle; genae laterally margined near the eyes with yellow. Vertex with a broad transverse band on the posterior margin between the eyes, and a narrow band along anterior margin of vertex yellow, the latter having three black spots upon it, one at the middle and one at either end. Pronotum and scutellum yellowish, indistinctly mottled with black; elytra dark smoky with the nervures and central portions of cells paler; abdomen black; legs black, knees and tibiae yellowish, the tarsi streaked with black.

Length 3 mm. Described from one female.

On Grizzly Creek, in mountains south-west of North Park, July 10th, on *Artemisia tridentata* (Baker).

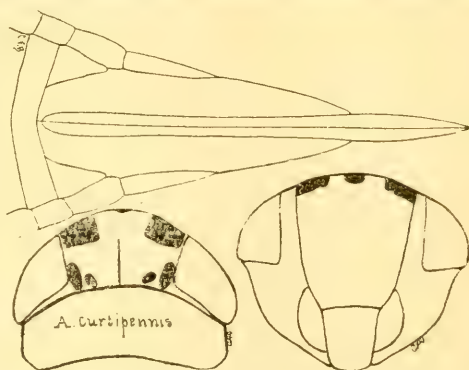
Athysanus comma VanD.

Det. Osborn.

Fort Collins, July 4th (Gillette), and July 24th to August 18th (Baker).

Athysanus curtipennis n. sp.

Female: Clypeus about one-fourth longer than broad, transversely depressed before the tip, sides nearly parallel, apex truncate, basal suture slightly curved; lorae as long and nearly one-half as broad as the clypeus; genae broad, strongly depressed beneath the eyes, outer margin broadly and evenly rounded, attaining tip of clypeus and rather broad beneath the lorae; front one-eighth longer than broad and twice the length of the clypeus; superior angle broadly rounded; face finely shagreened. Disc of vertex smooth and shining, broadly transversely depressed on posterior half, length at middle once and one-third that at eyes. Pronotum short and broad, somewhat shorter than the vertex, anterior one-fourth very finely rugose, posterior three-fourths rather coarsely rugose with broad scattered punctures. Scutellum very small, shorter than pronotum, transverse groove wanting.



Elytra subquadrate, as broad as long, not attaining the tip of the second segment. Hind margin of last ventral segment with posterior angles long and subacute, entire central portion between the angles wanting; ovipositor, beneath, half the length of the whole body; valves a third longer than pygofer, the latter with a row of short stout spines, the former with numerous fine hairs near the tip. Color pale yellowish with dark markings; front with several short transverse darker lines on either side, lower angles each with a black spot; vertex with a large black spot on either side at crest and a small black spot at the apex; disc of vertex with two large black spots near the middle and with a narrow black line next the compound eyes; pronotum almost concolorous, a rather distinct dark spot just back of the compound eye and another outside of the basal angle of the scutellum, two minute approximate black spots close to anterior margin; scutellum concolorous; elytra with about four longitudinal dark lines on corium between the nervures; tergum with three longitudinal black bands on either side, outer ones narrow, inner broadest and containing a row of irregular pale green spots; venter with middle portion of three basal segments black; pygofer with two black lines on sides, valves black, margins brown; legs concolorous.

Length 5 mm. Described from one female.

Colorado Springs, August 3d (Gillette).

Athysanus gammaroides VanD.

Det. VanDuzee.

Colorado (Gillette—see VanDuzee, 3). Colorado (VanDuzee, 4).

Foot-hills, five miles west of Fort Collins, April 25th (Gillette).

Athysanus instabilis VanD.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Steamboat Springs, July 26th; Leadville, August 23d (Gillette).

Athysanus plutonius Uhl.

Clear Creek Canon, August 6th (Uhler, 5). Colorado (VanDuzee, 4).

Athysanus relativus n. sp.

Near obsoletus. Female: Clypeus fully one-third longer than broad, sides nearly parallel, apex nearly truncate; lorae as long and nearly as broad as clypeus; genae broad, slightly depressed, outer margin broadly rounded, attaining tip of clypeus and moderately broad beneath the lorae; front as long as broad, less than twice as long as the clypeus, superior angle rather sharply rounded; face and anterior third of vertex rather coarsely shagreened, posterior two-thirds of vertex medially longitudinally wrinkled; disc of vertex nearly flat, at middle nearly two-thirds longer than at the eyes. Pronotum smooth on anterior third, transversely wrinkled on posterior two-thirds, width more than twice the length, anterior margin broadly rounded, posterior rather strongly concave, posterior angles rounded, sides feebly carinated. Scutellum coarsely shagreened, transverse groove curved forwards. Hind margin of last ventral segment with posterior angles produced, acute, with a broad shallow median notch, having a short blunt tooth at the center. Color pale sordid yellowish; face with six smoky transverse lines on the front; vertex unicolorous; pronotum without distinct marking; scutellum with two small, more or less distinct, darker spots near base; elytra with nervures whitish, arcoles more or less distinctly broadly margined with fuscous or blackish; venter yellow; lateral margins and apex of last ventral segment black; legs nearly concolorous, spots at bases of tibial spines black, tarsi infuscate. Length 5 mm.

Male: Clypeus a little narrower than in female; venter sometimes almost entirely black.

Described from two females and one male.

Fort Collins, September 27th on grass (Gillette).

**Athysanus 6-vittatus* VanD.

Det. VanDuzee.

Colorado (VanDuzee, 4).

*In Trans. Amer. Ent. Soc, XIX, Mr. VanDuzee separates *Athysanus* on "Elytra short, without an appendix," giving no exceptions. In his arrangement of the species of the

- Acinopterus acuminatus* VanD. Det. VanDuzee.
 Colorado (VanDuzee, 4).
 Steamboat Springs, July 26th (Gillette).
- Scaphoideus immistus* Say. Det. VanDuzee.
 Fort Collins, August 18th, on black walnut (Baker).
- Phlepsius cinereus* VanD. Det. VanDuzee.
 Colorado (VanDuzee, 4).
 Fort Collins, August 25th (Baker).
- Phlepsius excultus* Uhl.
 Denver, August 18th; Pueblo (Uhler, 5). Colorado (VanDuzee, 4).
- Phlepsius irroratus* Say.
 Suburbs of Denver and Valley of the Arkansas (Uhler, 5).
- Phlepsius ovatus* VanD. Det. VanDuzee.
 Colorado (VanDuzee, 4).
 Horsetooth Gulch, ten miles south-west of Fort Collins, April 25th to May 18th; Rist Canon, eight miles north-west of Fort Collins, June 13th; Dolores, May 18th (Gillette), Fort Collins, October 7th; foot-hills five miles west of Fort Collins, during the winter hibernating under stones (Baker).
- Thamnotettix atridorsum* VanD. Det. VanDuzee.
 Colorado (VanDuzee, 4).
 Spring Canon and Dixon's Canon, June 30th; Montrose, June 24; Dolores, June 18th (Gillette).
- Thamnotettix belli* Uhl. Det. VanDuzee.
 Manitou (Uhler, 5). Colorado (VanDuzee, 4).
 Fort Collins, May 8th; Soldier Canon, five miles west of Fort Collins, May 19th; Estes Park, July 11th; North Park, July 20th; Steamboat Springs, July 26th; Trinidad, May 14th; Silverton, June 20th; Ouray, June 22d; Dolores, June 18th (Gillette). Fort Collins, May 18th to August 18th on alfalfa and July 29th on cultivated beet; Horsetooth Gulch.

genus in Can. Ent. XXV, p. 285, one division is stated as having "longer elytra with well developed appendix." It would seem that in the former paper the genus is properly characterized while, between those species which have elytra as long as abdomen or longer and with a well developed appendix, such as *anthracinus*, *bicolor*, *striatulus*, *instabilis* and *obtusus*, and some species of the genus *Thamnotettix*, we find no good generic differences.

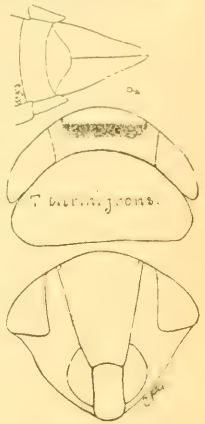
ten miles south-west of Fort Collins, May 21st; mountains south-west of North Park on Grizzly Creek, July 10th, on *Artemisia tridentata*; Rabbit Ears Pass, Routt County, July 20th; Steamboat Springs, July 12th, on *Artemisia tridentata* (Baker).

Thamnotettix citrinifrons n. sp.

Face one-ninth longer than broad; clypeus two-thirds longer than broad, constricted at the sides, widened near the apex, basal suture curved; lorae as long and nearly as wide as the clypeus; genae very slightly depressed below the eyes, feebly rounded at the sides, attaining the tip of the clypeus, moderately wide below the lorae; front one-fourth longer than broad, once and three-fourths the length of the clypeus, gradually narrowing below, superior angle very obtusely and evenly rounded. Face and anterior one-half of vertex finely shagreened. Disc of vertex slightly depressed, length at middle but little more than at the eyes, width between the eyes two and one-fifth times the length at middle. Pronotum about twice wider than long, length about twice that of the vertex, curvature five-ninths of the length, slightly concave behind, sides short and not carinated. Scutellum shagreened. Color yellow and deep smoky. Face, anterior and middle legs, and posterior femora, deep yellow. Vertex yellow with a transverse black band not attaining the eyes. Pronotum dark smoky, the tip tinged with yellow. Elytra smoky subhyaline, nervures darker. Tergum and venter black with narrow lateral and apical margins yellow. Posterior tibiae and tarsi dark smoky yellow. Sternum black.

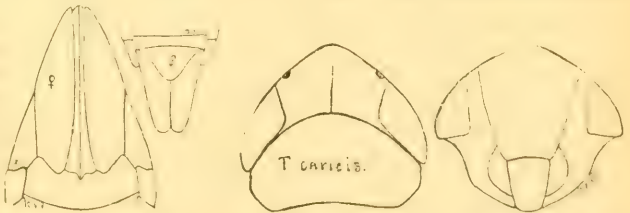
Length 4.5 mm. Described from one male.

Leadville, August 23d (Gillette).



Thamnotettix caricis n. sp.

Female: Face somewhat more than one-eighth wider than long; clypeus about one-fourth longer than broad, gradually narrowed to the rounded apex, basal suture nearly straight; lorae one-half as wide and nearly as long as the clypeus; genae broad, hardly depressed beneath the eyes, outer margin evenly rounded, attaining the tip of the clypeus but much wider below the lorae than in longula; front one-eighth longer than broad, twice the length of the clypeus, gradually narrowing below, superior angle obtuse and broadly rounded. Face and anterior third of vertex finely shagreened. Disc of vertex flat, sloping, length at middle once and three-fifths that at eyes, width between eyes a third greater than the length at middle. Pronotum two times wider than long, the length once and a third that of the vertex, curvature three-fifths of length, finely transversely wrinkled and with scattered shallow punctures on the posterior three-fourths, hind margin very slightly concave, sides short and not carinated. Scutellum coarsely shagreened. Hind margin of last ventral segment with the posterior angles produced, medially but little produced, with two blunt, short and broad, black teeth. Color pale yellowish green. Face slightly dusky with distinct transverse lines on either side of the front. Vertex pale yellowish with a



Color pale yellowish green. Face slightly dusky with distinct transverse lines on either side of the front. Vertex pale yellowish with a

median dark line on the posterior three-fourths, and a small more or less distinct dark spot on either side of the center close to the posterior margin. Ocelli black. Pronotum greenish on the disc, the margin yellowish. Scutellum yellow. Elytra hyaline, nervures more or less yellow. Venter and eyes pale yellow. Tibial spines arising from black spots, tips of the tarsi infuscate.

Male: Face, vertex, venter, and legs sulphur yellow.

Length of female, 4.25 mm., of male 4 mm. Described from four males and one female.

Steamboat Springs, July 12th on *Carex* (Baker).

Thamnotettix elitellaria Say.

Custer County, midalpine (Cockerell, 10).

Thamnotettix emarginata n. sp.

Face one-seventh wider than long; clypeus one-half longer than broad, sides parallel, apex rounded, basal suture nearly straight; lorae as long as the clypeus and two-thirds as broad; genae strongly depressed below the eyes, the outer margin strongly obtusely angled, attaining the tip of the clypeus, very narrow below the lorae; front one-fourth longer than broad, once and three-fifths the length of the clypeus, gradually narrowing below, rapidly near the clypeus, the superior angle broadly rounded. Face and anterior half of vertex finely shagreened. Eye distinctly and narrowly emarginate within at the antennae. Disc of the vertex flat, length at the middle once and a third that at the eyes, width between the eyes one and four-fifths times the length. Pronotum twice wider than long, the length once and three-fifths that of the vertex, curvature one-half of the length, indistinctly transversely wrinkled posteriorly, hind margin concave, sides short and very feebly carinated. Scutellum finely rugose, transverse groove curved forward. Color pale greenish yellow. Face pale yellow with a small speck on the genae next the lorae and a large spot beneath the antennae, black. Front slightly infuscate, with about six pale dashes on each side. Vertex yellow with a large dark spot near the compound eyes just within the hind margin. Pronotum yellow, disc darker. Scutellum unicolorous. Elytra smoky subhyaline, veins yellowish basally, smoky apically. Venter yellow, with the middle basal portion and narrow lateral margins of each segment, black. Pronotum and meso-sterna black. Legs yellow, bases of tibial spines and tips of tarsi blackish.

Length 5 mm. Decribed from one male.

Steamboat Springs, July 26th (Gillette).

Thamnotettix flavicapitata VanD.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Steamboat Springs, July 26th (Gillette).

Thamnotettix flavomarginata n. sp.

Face one-fourth wider than long; clypeus one-half longer than broad, sides concave, apex obtusely rounded, basal suture nearly straight, lorae subovate, three-fourths as broad and four-fifths as long as the clypeus; genae not distinctly depressed beneath the



eyes, outer margin broadly angled, attaining the tip of the clypeus, unusually broad beneath the lorae; front one-sixth longer than broad, twice as long as the clypeus, gradually narrowing below, superior angle rather broadly rounded. Face and vertex finely shagreened. Eyes with a small but distinct emargination at the antennae. Disc of the vertex shallowly and broadly depressed, length at middle once and one-third that at the eyes, width between the eyes once and a third the length at the middle. Pronotum about two and two-fifths times wider than long, length one-seventh greater than that of the vertex, curvature two-fifths of the length, feebly wrinkled on the posterior three-fourths, slightly concave behind, sides short and not carinate. Scutellum finely shagreened. Hind margin of the last ventral segment truncate, with a median slit, the hind angles produced and broadly rounded. Color black, with yellow markings. Front with five light dashes on either side and the lower margin yellowish. Crest of the vertex yellow, back of this are two black and two yellow lines extending from eye to eye, a black median line on posterior one-half. Pronotum with a median transverse band and the hind margin yellow. Scutellum with the sides yellow. Elytra dark smoky, nervures and a broad line on the costal margin bright yellow, middle of the cells paler. Abdomen black. Propleura with a yellow spot. Legs black, distal end of anterior femora and a line on outside of posterior tibiae, yellow.

Length 4.5 mm. Described from one female.

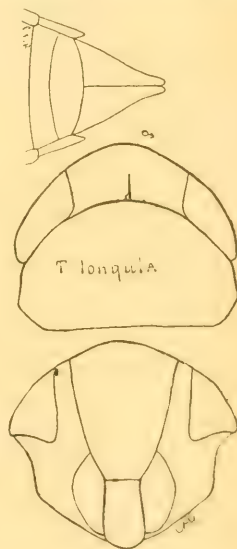
Leadville, August 23d (Gillette).

Thamnotettix longula n. sp.

Face one-ninth wider than long; clypeus two-thirds longer than broad, gradually broadening to the apex, sides nearly straight; lorae as wide as the clypeus, and one-fourth longer; genae broad, nearly flat beneath the eyes, outer margin sharply rounded, hardly attaining the tip of the clypeus, very narrow below the lorae; front one-fourth longer than broad, twice the length of the clypeus, gradually narrowing below, superior angle obtusely rounded. Face and vertex finely shagreened. Disc of vertex flat, sloping, one-third longer at the middle than at the sides, width between the eyes little less than twice the length at the middle. Pronotum one and three-fourths times wider than long, length two and one-fourth times that of the vertex, curvature about one-half of the length, smooth on anterior one-fourth, finely transversely wrinkled and with shallow scattered punctures on posterior three-fourths, hind margin slightly concave, sides carinate. Scutellum finely shagreened, transverse groove curved forwards. Color fulvous brown, nearly immaculate. Face with about six indistinct transverse bands on either side of the front. Vertex with a median dark brown line, and a dark spot near the compound eyes on either side just within the posterior margin. Pronotum with a faint yellow longitudinal line, anterior margin whitish in the center. Scutellum with two longitudinal pale lines running forwards from ends of transverse groove, between these lines are two dark spots, tip pale. Elytra uniform smoky subhyaline with nerves and central portions of cells pale. Venter and legs unicolorous.

Length 5 mm. Described from two males.

Fort Collins, September 26th on *Carex* (Gillette).



Thamnotettix geminata VanD.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Dolores, June 18th (Gillette).

Thamnotettix gillettei VanD.

Det. VanDuzee.

Colorado (Gillette—see VanDuzee, 2). Colorado (VanDuzee, 4).

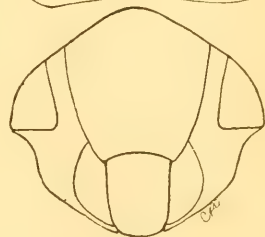
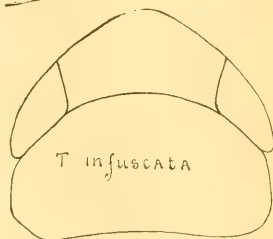
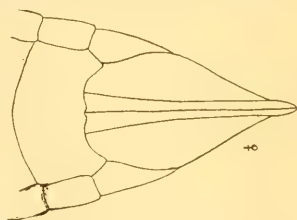
Steamboat Springs, July 26th (Gillette).

Thamnotettix infuscata n. sp.

Face about an eighth wider than long; clypeus one-fourth longer than wide, not at all contracted in the middle, sides parallel, very slightly narrowed towards the tip, basal suture slightly curved; lorae as long and slightly more than one-half as broad as the clypeus; genae broad, somewhat concave below the eyes, outer margin evenly rounded; front scarcely longer than broad, four-fifths longer than the clypeus, gradually narrowing below, superior angle little greater than a right angle and rather pointed. Face and anterior half of vertex shagreened. Disc of vertex with a transverse median depression and with a small pit on either side basally close to the eyes, length at the middle once and two-thirds that next the eyes, width between the eyes once and three-fourths the length at the middle. Pronotum eight-ninths wider than long, length once and two-thirds that of the vertex, curvature five-elevenths of the length, smooth anteriorly, posterior two-thirds finely transversely wrinkled and with numerous scattered subobsolete dark punctures, posterior margin slightly concave, sides little longer than in *T. atridorsum*, and with a distinct carina. Scutellum finely shagreened, the transverse groove curved forwards. Last ventral segment with hind margin concave, posterior angles subacute, obliquely cut off. Color yellowish. Face and vertex smoky yellow. Pronotum dark with yellow anterior and lateral margins. Scutellum yellow, within the posterior angles smoky, two dark dots before the posterior line. Elytra dark smoky, subhyaline, darker on the shoulders, veins yellowish. Abdomen with segments black, margined apically and laterally with yellow. Venter with two last segments and pygofers yellow. Legs sordid yellow, tips of tarsi infuscate, black spots at base of tibial spines.

Length 6 mm. Described from one female.

Estes Park, July 12th (Gillette).

*Thamnotettix kennicotti* Uhl.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Fort Collins, May 8th; Spring Canon, May 11th (Gillette).

Thamnotettix laeta Uhl.

Det. VanDuzee.

From mountains near Beaver Brook, August 6th (Uhler, 5). High mountains, June 19th to September 6th (Carpenter—see Uhler, 6). Colorado (VanDuzee, 4).

Steamboat Springs, July 26th (Gillette).

Thamnotettix longiseta VanD.

Det. VanDuzee.

North-western Colorado (Gillette—see VanDuzee, 2). Colorado (VanDuzee, 4).

Steamboat Springs, July 26th (Gillette).

Thamnotettix montanus VanD.

Det. VanDuzee.

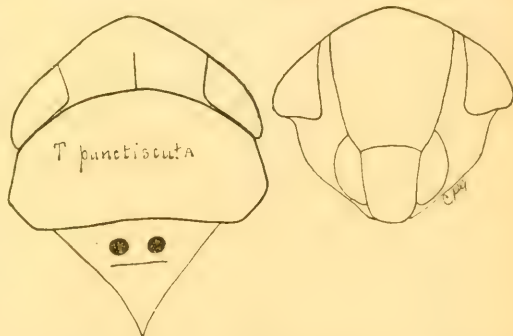
Mountains of South-western Colorado (Gillette—see VanDuzee, 2); Colorado (VanDuzee, 4).

Steamboat Springs, July 26th (Gillette). Steamboat Springs, July 14th on *Carex*, *Solidago* and *Delphinium occidentale* (Baker).

Thamnotettix punctiscuta n. sp.

Face about one-ninth wider than long; clypeus one-third longer than broad, sides almost parallel, broadly rounded at the apex, basal suture nearly straight; lorae two-thirds as wide and almost as long as the clypeus; genae moderately depressed beneath the eyes, outer margin evenly rounded, attaining the tip of the clypeus, very narrow below the lorae; front nearly as broad as long, once and three-fifths the length of the clypeus, rapidly narrowing below, superior angle very obtuse. Face and vertex finely shagreened. Disc of vertex flat, sloping, length at the middle once and a half that at the eyes, width between the eyes once and four-fifths the length at the middle. Pronotum twice wider than long, length once and three-fourths that of the vertex, curvature three-sevenths of the length, posterior two-thirds finely transversely wrinkled and with scattered shallow punctures, hind margin slightly concave, sides rather long and carinate. Scutellum finely shagreened, transverse suture nearly straight. Color yellowish and smoky. Face yellow with sutures and a spot beneath the antennae black, a small brown spot on the upper end of the lorae and one on the genae beneath the eyes. Vertex yellow with two small approximate brown spots on the disc. Pronotum with disc dark green, front and lateral margin yellow. Scutellum yellow with two black spots in front of the transverse groove. Elytra smoky tinged with green, nervures yellow. Tergum black, margins yellow. Venter black, segments apically margined with yellow, next to the last segment with two large yellow spots on either side. Genital organs yellowish below. Legs light yellow.

Length 5 mm. Described from one male.



Steamboat Springs, July 26th (Gillette).

Thamnotettix sonora n. sp.

Face one-sixth wider than long; clypeus one-half longer than broad, slightly constricted at the middle, basal suture curved; lorae three-fourths as broad as the clypeus and slightly longer; genae broad, hardly depressed beneath the eyes, outer margin broadly rounded; front a third longer than broad, two times the length of the clypeus, gradually narrowing to the clypeus, superior angle rather sharp. Front and anterior half of vertex rather coarsely shagreened. Disc of the vertex scarcely depressed, a third longer at the middle than next the eyes, width between the eyes twice the length at the middle. Pronotum two times wider than long, length little less than twice that of the vertex, curvature one-half of the length, scattered shallow punctures on the posterior two-thirds, posterior margin concave, sides short. Scutellum with a small depression just before the apex. Last ventral segment with the hind margin truncate with a deep narrow notch. Color pale yellow. Face pale yellow. Two small transverse spots on the base of the clypeus, and a large spot beneath the antennae, black. Vertex pale yellow with two large approximate black spots on the apex, and a small black spot on either side back of the ocelli. Pronotum greenish yellow washed with sulphur yellow. Scutellum pale sulphurous yellow with transverse groove broadly black. Elytra smoky subhyaline, nervures sometimes darker towards the tip. Venter pale yellow, first segment black. Legs pale yellow, tips of tarsi infusate.

Length 4.5 mm. Described from two females.

Dolores, June 18th (Gillette).

Thamnotettix (Jassus) tenella Uhl.

Det. VanDuzee.

Grand Junction, August 26th, common on sugar beet.

This species, the description of which we have not seen, is referred to *Thamnotettix* on Mr. VanDuzee's suggestion, though it seems to be a *Limotettix*.

Eutettix clarivida VanD.

Det. VanDuzee.

Colorado (VanDuzee, 4).

Montrose, June 24th (Gillette).

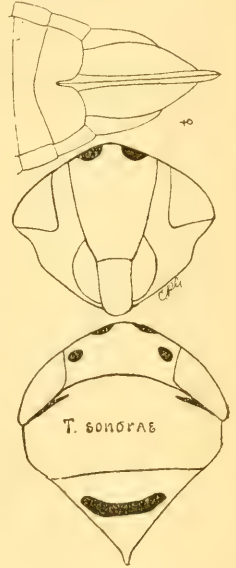
Eutettix (Limotettix) exitiosa Uhl.

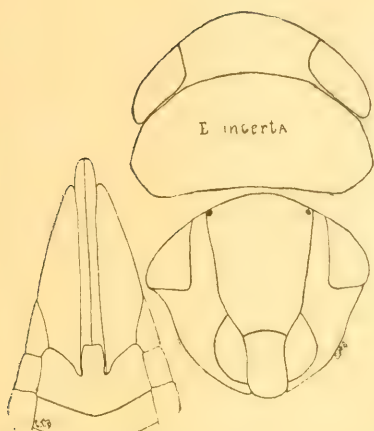
Colorado (VanDuzee, 4).

Colorado Springs, August (Tucker).

Eutettix incerta n. sp.

Face one-eleventh wider than long; clypeus fully one-half as long as broad, considerably constricted on the basal two-thirds, broadest near the rounded apex; basal suture curved; lorae as long and nearly as broad as the clypeus; genae broad, feebly depressed





beneath the eyes, outer margin concave near the eyes, broadly rounded below, attaining the tip of the clypeus, quite narrow below the lorae: front two-fifths longer than broad, twice as long as the clypeus, superior angle very obtuse and evenly rounded. Face and vertex finely shagreened. Disc of vertex not depressed, one-third longer on the middle than next the eyes, width between the eyes twice the length at the middle. Pronotum two and one-eighth times as broad as long, length one and six-sevenths that of the vertex, curvature three-sevenths of the length, smooth anteriorly, posteriorly with scattering obsolete punctures. Scutellum as in querci. Hind margin of the last ventral segment with the tooth more nearly rectangular than in querci. Color fuscous. Vertex, anterior margin of pronotum, and all beneath forward from the tip of the clavus. Inner margin

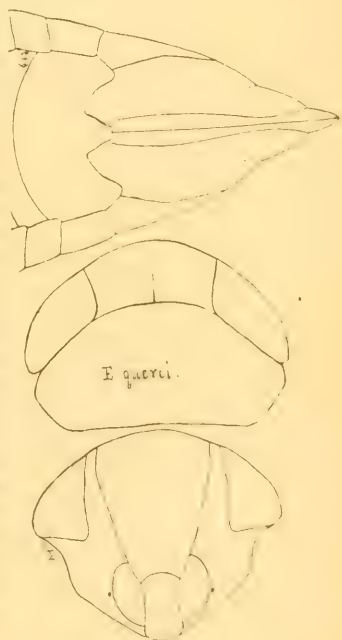
of the clavus with two oblique pale spots.

Length 5 mm. Described from one female. Near querci.

Manitou, July (Tucker).

Eutettix querci n. sp.

Female: Face one-sixth wider than long; clypeus fully two-thirds longer than broad, constricted in the middle, broad near the apex, basal suture curved; lorae as long and four-fifths as broad as the clypeus; genae broadly expanded laterally, a broad shallow furrow extending from eyes to lorae, outer margin sharply rounded; front nearly one-third longer than broad, fully twice as long as the clypeus, rapidly narrowing below the antennae, superiorly very obtuse and evenly rounded. Face and vertex finely shagreened, less distinctly on the latter. Disc of the vertex transversely and narrowly depressed just back of the anterior margin, slightly longer on the middle than next the eyes, width between the eyes once and five-sixths the length at the middle. Pronotum little more than twice wider than long, length two times that of the vertex, curvature six-elevenths of the length, anterior one-fourth smooth, posterior three-fourths faintly transversely rugose, posterior margin slightly concave. Scutellum with the black transverse groove curving forward. Hind margin of the last ventral segment with two deep sharp notches, including between them a large blunt median tooth, posterior angles rounded. Color fulvous brown. Face and vertex pale yellow, a small black spot on the genae next to the lorae, vertex with an indistinct brown mottling. Pronotum fulvous brown, yellowish on the anterior margin, with an indistinct pale median line. Scutellum yellowish with the basal angles, two spots between, and apex, fulvous brown. Elytra uniform pale smoky brown, subhyaline. Abdomen except the first ventral segment, yellowish brown, pygofers reddish, pale on the lower margin, with whitish hair arising from black spots. Prosternum with a large black spot. Legs pale yellow, tibial spines arising from black spots, tips of tarsi infuscate.



Male: Differs from the female as follows:—Generally darker colored. Basal joint of antennae distinctly margined internally with black. Vertex more strongly depressed. Elytra with veins dark brown. Venter black with tips of segments yellowish. Plates yellowish brown streaked with black. Black spots on tibiae larger.

Length of female 6-6.5 mm, of male 5 mm. Described from seven females and one male.

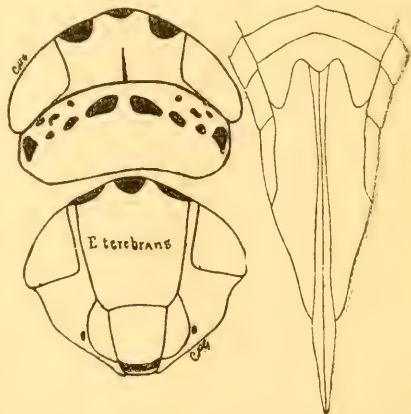
(Glenwood Springs, August 24th; Manitou, September 29th on oak (Gillette).

Eutettix seminuda Say.

Montrose, June 24th; Fort Collins, September 11th on apple (Gillette).

Eutettix terebrans n. sp.

Face one-eighth wider than long; clypeus one-sixth longer than broad, narrowing to a truncate apex, deeply transversely depressed near the apex and broadly and shallowly depressed near the base, the lateral margins curved; lorae as long and one-half as broad as the clypeus; genae slightly depressed near the eyes and toward the lorae, outer margin rounded, strongly margined, and slightly exceeding the clypeus; front scarcely longer than broad, once and four-fifths the length of the clypeus, gradually narrowing to near the clypeus, superior angle obtusely rounded. Face and anterior third of vertex coarsely shagreened with scattering shallow punctures. Disc of the vertex with a small depression at the tip and a broad transverse depression before the tip and between the compound eyes, length at the middle once and a fourth that next the eyes, width between the eyes once and a half the length at the middle. Pronotum considerably more than twice as broad as long, length once and a fourth that of the vertex, curvature about one-half of the length, shagreened on the anterior third, transversely wrinkled on the posterior two-thirds, posterior margin slightly concave. Scutellum coarsely shagreened, slightly shorter than the pronotum. Last ventral segment with the hind margin broadly and very deeply notched, the notch with a short, strong, rounded tooth at the center, the lateral angles produced and subacute. Ovipositor extremely long, as long as the body back of the head, exceeding the pygofer by about 1 mm., and the wings by .3 mm. Color tawny yellow. Face light brownish yellow, about six transverse dark dashes on either side of the front; genae with a dark spot below the eyes and a dark point near the lorae. Vertex with a large rectangular spot either side next the eyes and a smaller one at the apex, the sunken pit just back of this spot blackish, and about four indistinct infuscated spots between the eyes near the hind margin. Pronotum with two small transverse black spots near the median line and about one-third of the length back of the front margin, back of the compound eyes on either side are about six small black spots, back of these spots the disc is brownish yellow. Scutellum yellowish, transverse groove black. Elytra yellowish subhyaline. Tergum yellowish with six longitudinal black bands. Venter yellowish with basal segment black. Pygofer yellow streaked with black, valves yellow on the lower margins, black at the sides. Legs dirty yellow, tibial spines brown, tips of tarsi infuscate. Propleura with a black spot.



Length 4.75 mm. Described from one female. This unique form introduces a very novel element into the genus *Eutettix*.

North Park, July 20th (Gillette).

Eutettix vanduzeei n. sp.

Face two-elevenths wider than long; clypeus one-third longer than broad, slightly constricted at the middle, nearly as broad before the apex as at the base, basal suture curved; lorae somewhat shorter and much narrower than the clypeus; genae broad, nearly flat, very broadly rounded outwardly; front about one-fourth longer than wide almost twice the length of the clypeus, gradually narrowing to the clypeus, superior angle very broadly rounded. Face and vertex finely shagreened. Disc of the vertex flat, two shallow pits immediately back of the large black spots near the anterior edge, once and a half as long on the middle as next the eyes, width between the eyes little more than twice the length at the middle. Pronotum two and a sixth times wider than long, length once and a half that of the vertex, curvature about one-half of the length, posterior two-thirds finely transversely wrinkled, with scattering shallow black punctures, posterior margin shallowly concave. Scutellum finely shagreened. Last ventral segment of the female with the hind margin nearly truncate, posterior angles obliquely cut off. Color pale greenish yellow. Face light yellow, sutures, spot beneath antennae, two transverse spots at the extreme base of the clypeus, two V-shaped marks on the genae, and two large curved spots immediately beneath the crest of the vertex, black. Vertex pale yellow with two large black spots on the disc, a little nearer to the eyes than to each other. Pronotum yellowish, with two more or less distinct transverse black lines, one just before the middle and the other next the posterior margin. Scutellum light yellow, transverse suture black. Elytra greenish subhyaline with nervures yellowish. Tergum black, with broad lateral and

narrow apical margins yellow. Venter pale yellow with median basal portions of first two segments black. Ovipositor black. Legs pale yellow with minute black spots at bases of tibial spines, tips of tarsi infuscate.

Length 5 mm. Described from one female.

Rabbit Ear Pass, Larimer County, July 20th (Baker).

This species may prove to be *Thamnotettix* (sensu strict.). It is certainly congeneric with *E. clarivida*.

Chlorotettix unicolor Fitch.

Det. VanDuzee.

Steamboat Springs, July 26th; Colorado Springs, August 3d (Gillette).

Neocoelidia n. gen.

Allied to *Tinobregmus*. Body short and robust. Head narrower than pronotum, short conical, rather obtuse and tumid; vertex expanded posteriorly behind the eyes, ocell on extreme front edge, front very broad below, the sides nearly parallel. Antennae as long as head, pronotum, and scutellum together. Pronotum short, length at middle four-fifths that of vertex, anterior and posterior margins nearly parallel. Scutellum large, normal. Elytra semicoriaceous, without an appendix, but extending beyond the tip of the abdomen; the first sector but once forked in the proximal two-thirds, the inner branch connected with the second sector by a single transverse nervure, the latter entering an antepical cell; apical areoles four. Wings well developed, margined, the nervures very strong, second and third sectors uniting before the marginal nervure, thus forming but one apical cell; a transverse nervure between second and third sectors forming a single, short, triangular, apical cell. Rostrum longer than the clypeus. Posterior tibiae outwardly with two rows of moderate spines. Type, *N. tumidifrons*.

Neocoelidia tumidifrons n. sp.

Face a thirteenth wider than long; clypeus two-thirds longer than broad, sides nearly parallel, apex nearly truncate, basal suture strongly curved; lorae nearly as long and two-thirds as broad as the clypeus; genae broad, somewhat depressed below the lorae, outer margin broadly rounded, very broad below, one-fourth longer than broad, nearly twice the length of the clypeus, superiorly obtusely rounded. Face shagreened. Vertex tumid, elevated, coarsely shagreened, a shallow longitudinal depression on either side, three-fifths longer on the middle than next the eyes, width between the eyes once and two-sevenths the length at the middle. Pronotum coarsely transversely rugose, three times as broad as long, four-fifths the length of the vertex, curvature three-sevenths of the length. Scutellum with lateral margins broadly, sharply, and deeply depressed, the scutellar suture subobsolete, nearly straight. Last ventral segment long, narrowing to an acute point, nearly equalling the pygofers. Color light green, unicolorous below, except the black tips of the pygofers. Two small black spots within the basal angles on the edge of the elevated portion of the scutellum.

Length 3.5 mm. Described from two males.

Fort Collins, June 6th (Baker). Pleasant Valley, seven miles north-west of Fort Collins, June 12th (Gillette).

Gnathodus abdominalis VanD.

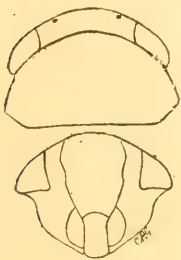
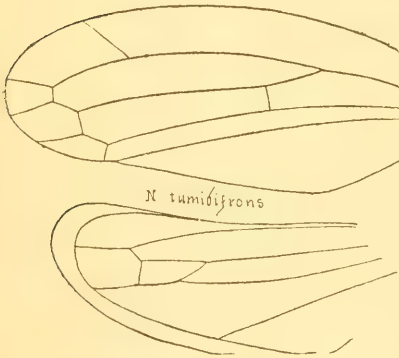
Det. VanDuzee.

Colorado (VanDuzee, 4).

Colorado Springs, August 2d; Glenwood Springs, August 24th; Grand Junction, August 26th, on sugar beet (Gillette). Fort Collins, June 9th on barley; Steamboat Springs, July 16th (Baker). Colorado City, August (Tucker).

Gnathodus confusus n. sp.

Face one-fifth wider than long; clypeus twice as long as broad, basal suture strongly curved, somewhat constricted near the base, broadest near the tip; lorae about three-fourths as broad and three-fourths as long as the clypeus; genae broadly depressed beneath the eyes, margin beneath the eyes inverted, broadly rounded below, moderately broad below the lorae and attaining the tip of the clypeus; front one-fifth longer than broad, once and two-thirds the length of the clypeus, superiorly broadly rounded. Face, vertex, and pronotum finely shagreened. Vertex scarcely longer on the middle than next the eyes, width between the eyes slightly more than four times the length at the middle. Pronotum slightly less than twice as broad as long, length nearly four times that of the vertex, curvature about one-half of length, consider-



ably wider than the head, hind margin slightly concave. Transverse groove of scutellum black. Hind margin of last ventral segment of female truncate. Color yellowish green. Face sordid yellow, basal angles of the clypeus with an infuscated spot. Vertex of the same color as the face, with three indistinct longitudinal smoky bands, the ocelli in light areas. Pronotum light yellowish green on the anterior and lateral margins, darker green on the middle, two dark brown spots medially just back of the anterior margin, the latter in some specimens entirely obsolete. Scutellum pale yellow, basal angles darker. Elytra greenish subhyaline, slightly maculate with brown near the clavus, somewhat smoky towards the tip. Tergum black with the apical margins of the segments yellow. Venter yellow with the first two or three segments black at the base, pygofers yellowish. Sternum black. Legs yellowish throughout, with infuscated lines on the outside of the femora.

Length 3.75 mm. Described from seven females.

Pleasant Valley seven miles north-west of Fort Collins, June 12th; Estes Park, July 12th (Gillette). Steamboat Springs, July 12th on *Carex* (Baker).

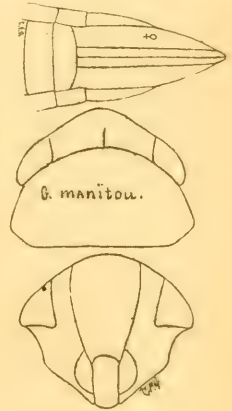
We have a single female specimen which seems distinct from this species, but to which at this time we hesitate giving a name. It differs as follows: The color more yellowish. Pronotum distinctly less than twice broader than long. Length 4 mm.

Estes Park, July 12th (Gillette).

Gnathodus manitou n. sp.

Face finely shagreened, a seventh wider than long; clypeus nearly twice as long as broad, rounded at the tip, slightly constricted before the base, basal suture strongly curved; lorae nearly as long and three-fourths as broad as the clypeus; genae moderately broad, rather deeply depressed beneath the eyes, outer margin angularly incised below the eyes, sharply rounded below, attaining the tip of the clypeus; front one-half longer than broad, twice as long as the clypeus, gradually narrowing below, obtusely rounded above. Vertex one-half longer on the middle than next the eyes, width between the eyes two and one-half times the length at the middle. Pronotum five-sixths broader than long, two and three-fifths times longer than the vertex, curvature two-fifths of the length, posterior margin very slightly concave, anteriorly smooth, posteriorly with scattered feeble punctures, on the posterior median portion finely obliquely rugose, the lines converging backwards. Last ventral segment feebly rounded behind, nearly truncate, pygofers with numerous stout hairs along the whole length. Color pale green, unicolorous. Elytra hyaline.

Length 5 mm. Described from one female.

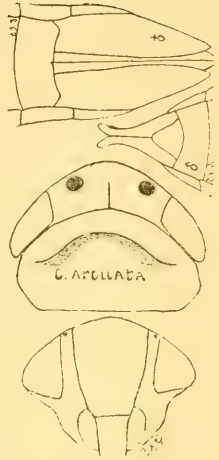


Manitou, July (Tucker).

Cicadula arcuata n. sp.

Female: Face finely shagreened, one-sixth wider than long; clypeus one-half longer than broad, sides parallel, rounded at the apex, basal suture curved; lorae three-fourths as long and one-half as wide as the clypeus; genae moderately broad, somewhat depressed beneath the eyes, outer margin angled above, straight below, attaining the tip of the clypeus, moderately broad below the lorae; front one-fourth longer than broad, once and

three-fourths the length of the clypeus, superiorly very obtusely and evenly rounded. Vertex a third longer on the middle than next the eyes, width between the eyes two and one-third times the length at the middle, finely shagreened anteriorly. Pronotum little less than twice as broad as long, and little more than twice the length of the vertex, curvature one-half of the length, posterior margin straight, disc with scattered shallow punctures. The black scutellar suture nearly straight. Hind margin of the last ventral segment nearly truncate, posterior angles obliquely cut off, pygofers with stout hairs on the distal half. Color greenish yellow. Face yellow, sutures of the front and clypeus and sockets of the antennae black, above dusky with several rather indistinct transverse lines. Vertex yellowish to brownish with a fine black median line on the basal half, and two large black spots anteriorly between the compound eyes. Pronotum greenish yellow, anteriorly with a transverse black line nearly parallel with the anterior margin, its lateral ends bent forward. Elytra pale greenish, hyaline, nervures yellowish. Tergum black, segments narrowly margined with yellowish. Venter and pygofers yellow. valves black. Sternum black. Legs pale yellow.



Male: Sutures of the face more heavily black, the face above darker with a small black spot on either side above antennae. Vertex with a black line margining the eyes. Basal angles of the scutellum with black spots within. Venter black, posterior margins of segments broadly yellow. One specimen lacks entirely the black arc on the pronotum.

Length of female 4.75 mm., of male 4.5 mm. Described from two males and one female.

Estes Park, July 12th; Leadville, August 23d (Gillette). Steamboat Springs, July 12th, on *Solidago* (Baker).

Cicadula divisa Uhl.

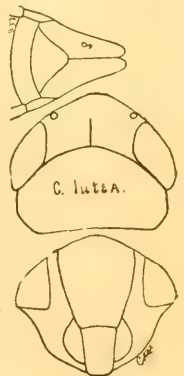
Abundant upon low herbage in damp fields near Denver, and near Sloan's Lake, west of Denver, August 17th (Uhler, 5).

Estes Park, July 12th; Leadville, August 23d; Minturn, August 24th (Gillette). Fort Collins, September 2d, on *Solidago*; Steamboat Springs, July 12th, on *Carex* (Baker). Colorado Springs (Tucker).

This species will probably prove to be, at the most, but a form of *C. 6-notata*.

Cicadula lutea n. sp.

Face one-seventh wider than long; clypeus one-third longer than broad, tapering to the rounded apex. sides nearly straight; lorae a little shorter and about one-half as broad as the clypeus; genae broad, outer edge incurved beneath the eyes, broadly rounded below, moderately broad below the lorae; front one-sixth longer than broad, three-fourth slonger than the clypeus, superiorly broadly rounded. Face finely shagreened. Vertex shagreened, punctured on a small median area, with an oblique pit on either side near the hind margin, one-third longer on the middle than next the eyes, width between the eyes little more than once and a half the length at middle. Pronotum smooth anteriorly, posteriorly finely transversely wrinkled with scattered punctures, four-fifths wider than long, one-half longer than the vertex, curvature six-tenths of the length



Color deep lemon-yellow. Face and all below concolorous. Vertex with a narrow median line and a small spot in the position of each ocellus black. Pronotum posteriorly dark greenish yellow. Scutellum greenish yellow. Elytra hyaline, nervures yellow, wings iridescent. Tergum black, with narrow apical margins of segments and the whole of the last segment yellow. Extreme tips of valves black.

Length 3.5 mm. Described from one male.

Steamboat Springs, July 12th, on *Carex* (Baker).

Cicadula 6-notata Fall.

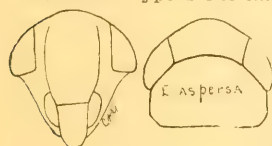
Det. VanDuzee.

Montrose, June 24th; Colorado Springs, August 1st (Gillette). Fort Collins, July 24th (Baker).

Cicadula variata Fall.

Leadville, August 23d (Gillette). Steamboat Springs, July 16th (Baker).

Empoasca aspersa n. sp.



Female: Clypeus one-third longer than broad, basal suture straight; lorae half as broad and two-thirds as long as the clypeus; genae long and narrow, moderately furrowed beneath the eyes, the furrow extending to the lorae, outer margin somewhat concave; front two-thirds longer than broad, twice as long as the clypeus, superior angle little more than a right angle and broadly rounded. Face and vertex without sculpturing, the latter glabrous. Disc of vertex once and a half

as long on the middle as next the eyes; pronotum slightly less than twice wider than long, front margin broadly rounded, hind margin slightly concave, disc very finely longitudinally aciculate. Scutellum broader than long, transverse groove straight and black. Last ventral segment with the hind margin evenly rounded and the posterior angles sloping. Color greenish; face yellowish green, front more or less distinctly marked with a pale median line and with transverse concentric pale lines; vertex and pronotum whitish or pale yellowish green, with about four more or less distinct deeper yellowish green and variously bent, nearly longitudinal lines, some-

times orange on the former and dusky on the latter; scutellum with basal angles dark or yellowish green, median portion whitish mottled with greenish; elytra greenish, hyaline at tip, nervures whitish, basal two-thirds finely spotted with dusky green; tergum black with more or less of sides and apical margins yellowish; venter pale green, pygofers darker; legs pale greenish shading to bright blue at tips. Length 3 mm.

Male: Markings which in the female are dark yellowish green, are dusky here

Described from six females and two males.

Fort Collins, on *Bigelovia*, September 27th (Gillette). In mountains south-west of North Park July 10th, and at Steamboat Springs July 12th, on *Artemisia tridentata* (Baker).

Empoasca aureo-viridis Uhl.

In large numbers at Denver and in Clear Creek Canon, on willows, August 7th to 18th (Uhler, 5). Colorado (VanDuzee, 4).

Empoasca clypeata n. sp.

Male: Clypeus one-half longer than broad, basal suture straight; lorae as in *T. sanguinea*; genae very narrow, attaining the clypeus as a very narrow line, lateral margins nearly straight; front nearly twice as long as its greatest width between the eyes, twice the length of the clypeus, superior angle very broad and obtusely rounded. Face and vertex finely shagreened. Disc of vertex flat, sloping, scarcely longer on the middle than next the eye. Pronotum slightly wrinkled on posterior two-thirds, glabrous in front, slightly more than twice as broad as long, anterior margin broadly rounded, posterior margin concave, posterior angles sharply rounded, sides long. Scutellum normal, transverse suture straight. Color yellowish; in light specimens front with a median white line, pronotum dusky on posterior half, scutellum with basal angles and transverse groove dark; elytra in light specimens yellowish subhyaline, in dark specimens shaded into deep smoky subhyaline; venter and legs entirely pale yellow, sometimes tibiae and tarsi slightly smoky.

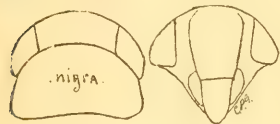
Length 4.5 mm. Described from six males.



Estes Park, July 10th (Gillette). Steamboat Springs, July 10th on willow (Baker).

Empoasca nigra n. sp.

Male: Clypeus about one-half longer than broad, basal suture straight; lorae as in *T. sanguinea*; genae suddenly broadening close to eye, lateral margin almost straight, attaining the clypeus in a very narrow line; front nearly one-half longer than broad, once and two-thirds the length of clypeus, superior angle broadly obtusely rounded. Face coarsely and obsoletely shagreened. Disc of vertex sloping, with a slight median depression on the posterior half opening into a slight depression on the anterior margin of the pronotum, length at the middle slightly more than next the eyes. Pronotum opaque, on anterior third smooth, on posterior two-thirds indistinctly transversely rugose; slightly less than twice as broad as long, anterior margin broadly rounded, posterior margin somewhat concave, posterior angles sharply rounded. Scutellum opaque, with a median pit just in front of the transverse groove, posterior half irregularly wrinkled. Color black; antennae whitish; ocelli surrounded by a narrow pale margin; elytra black, posterior third fading into smoky subhyaline; anterior tibiae, and all the tarsi, smoky.



Length 2.75 to 3 mm. Described from five males.

Mountains south-west of North Park, July 10th, on *Artemisia tridentata* (Baker).

Empoasca nigroscuta n. sp.

Female: Clypeus minutely transversely rugose, one-half longer than wide, basal suture straight, apex rather pointed; lorae two-thirds as long, and one-half as wide as clypeus, distant from tip of clypeus; genae narrow, a deep sunken furrow beneath the eyes extending to the lorae, not attaining tip of clypeus, outer margin nearly straight, very narrow below lorae; front smooth, nearly twice longer

than wide, once and three-fourths the length of the clypeus, superior angle somewhat greater than a right angle, rather sharply rounded. Disc of vertex smooth, once and a half as long on middle as next eyes. Pronotum very minutely transversely wrinkled on posterior three-fourths, anterior margin broadly rounded, hind margin nearly straight, sides short. Scutellum broader than long, transverse groove slightly curved backward. Last ventral segment with hind margin nearly truncate. Color pale yellow marked with smoky; face and vertex pale yellowish, posterior one-half of latter with a median black line; pronotum pale yellow on anterior and lateral margins, remainder darker; scutellum black. basal angles sometimes yellowish; clytra yellowish, subhyaline, apex smoky, clavus with a large deep smoky blotch at tip; venter blackish, last segment yellow; tergum blackish, with tips and lateral margins of segments more or less yellowish; prosternum black; legs pale yellow.

Length 3 mm. Described from two females.

Dolores, June 18th (Gillette).

Empoasca obtusa Walsh.

Det. Gillette.

Fort Collins, June 23d on Virginia Creeper; Estes Park, July 12th; Colorado Springs, August 23d; Manitou, September 29th, on willow; Minturn, August 24th; Leadville, August 23d (Gillette). Fort Collins, June 9th, on alfalfa, and August 4th on cottonwood; Steamboat Springs, July 15th, on willow (Baker). Colorado Springs, August (Tucker).

Empoasca pulchella n. sp.



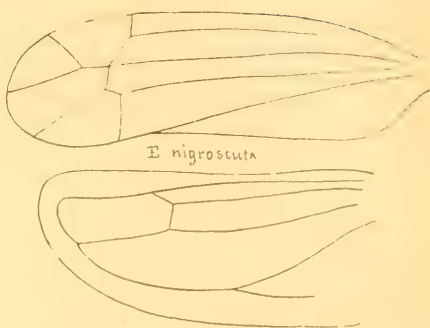
Female: Clypeus a third longer than wide, basal suture straight; lorae long and narrow, scarcely grooved, attaining the end of the clypeus; front two-thirds longer than broad, nearly twice the length of the clypeus, superior angle obtusely rounded. Face and vertex without sculpturing, opaque. Disc of vertex scarcely longer on the middle than at the sides. Pronotum twice as wide as long, front margin broadly rounded, hind margin decidedly concave, posterior



pulchella



angles broadly, rounded, sides rather short, without distinct sculpturing but with two small pits near the median line one-fourth of the distance back from the anterior margin. Scutellum broader than long, transverse groove black. Last ventral segment with the hind margin deeply and broadly notched, posterior angles rounded. Color steel blue varied with smoky and orange; head pale orange, genae and a large triangular mark on front extending onto and across vertex medially, ivory white; disc of vertex with a black median line on posterior two-thirds; ocelli rufous and distant from the eyes; pronotum pale blue washed



with white and pale orange on anterior and lateral margins; scutellum orange with whitish mottling; elytra subhyaline, smoky at base across median portion, and at tip, forming three broad indistinct transverse bands; clavus and corium posteriorly, each with a pale orange stripe, veins whitish apically; last ventral segment almost entirely whitish, pygofers rufous below; legs sordid white.

Length 3 mm. Described from one female.

In mountains south-west of North Park, July 10th, on *Artemisia tridentata* (Baker).

Although we would think it unadvisable, as a rule, to describe Typhlocybiidae from single specimens, we have concluded to do so with a few well marked uniques that we took the past season.

Empoasca pura Stal.

Det. Gillette.

Fort Collins, June 24th, and September 27th on *Clematis ligusticifolia*; Manitou, September 29th, on oak (Gillette).

Our specimens referred to this species may prove to be new as we have not seen types. Our specimens answer to the description of *pura*.

Empoasca (Kybos) smaragdula Fall.

Det. Gillette.

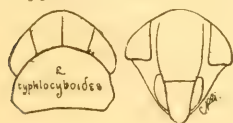
Colorado (VanDuzee, 4).

Spring Canon, eight miles south-west of Fort Collins, June 30th to July 12th; The Rustic, Larimer County, August 11th (Gillette). Steamboat Springs, July 15th on willow (Baker). Cheyenne Canon, Colorado Springs, July (Tucker).

The genus *Kybos* must fall under the older name *Empoasca*. Specimens of *K. smaragdulus* received through Mr. VanDuzee from France (Lethierry) show a typical *Empoasca* wing and elytron and we can find no generic characters to separate it from that genus.

Empoasca typhlocyboidea n. sp.

Male: Clypeus subacute at apex, one-fifth longer than broad, basal suture straight; lorae one-half as wide and two-thirds as long as clypeus; genae narrow, not attaining tip of clypeus, furrow shallow, outer margin slightly concave over coxae, slightly convex along lorae; front one-fourth longer than broad, nearly twice the length of clypeus, superior angle broadly rounded. Face and vertex nearly smooth. Length of vertex at middle nearly once and a half that next the eyes. Pronotum slightly less than twice as broad as long, posterior two-thirds minutely transversely rugose, front margin broadly rounded, hind margin concave, posterior angles broadly rounded. Scutellum broader than long, transverse groove straight. Color pale bluish or yellowish green; face and vertex pale yellow; pronotum pale yellow



or bluish green, with front and lateral margins yellowish, hind margin sometimes whitish; disc of pronotum sometimes with three faint longitudinal orange lines; scutellum yellowish, sometimes posterior angles bluish, elytra milky subhyaline, clavus with two faint longitudinal orange marks, another near tip, a faint broken longitudinal orange line on corium, veins whitish towards apex; abdomen pale greenish yellow; legs pale yellow at base shading into deep blue at tips.

Length 2.5 mm. Described from three males.

Steamboat Springs, July 12th, on *Artemisia tridentata* (Baker).

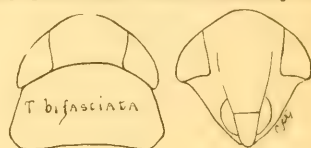
Empoasca viridescens Walsh.

Det. Gillette.

Fort Collins, September 27th, on *Solidago spectabilis* (Gillette).

Typhlocyba bifasciata n. sp.

Near *tricincta*. Female: Clypeus once and a quarter as long as broad, basal suture straight; genae long and narrow, with a broad deep groove from eye to clypeus, slightly concave outwardly, broadest at eye, attaining tip of clypeus; lorae as long and somewhat narrower than clypeus; front three-fourths longer than broad between eyes, three times as long as clypeus, superior angle more than a right angle and broadly rounded. Face and vertex very finely and obsoletely punctured, more distinctly on upper part of front. Disc of vertex flat, sloping, slightly less than one-half longer at middle than at eyes. Pronotum slightly less than twice as broad as long at middle, broadly rounded before, slightly concave behind, posterior angles rather sharply rounded, lateral margins long; disc of pronotum with anterior third smooth, posterior two-thirds very indistinctly transversely rugose; scutellum slightly shorter than pronotum, broader than long, transverse groove straight, black, ends bent backwards; last ventral segment with hind margin broadly rounded. Color yellow; face, vertex, and pronotum, light lemon yellow, concolorous; scutellum dark smoky; elytra light lemon yellow with a broad smoky transverse band just in front of middle, broader on inner margins, another broad smoky band at apex, lighter on middle portion; venter pale yellow; legs pale whitish yellow. Length 4 mm.



Described from one female. Minturn, August 24th. (Gillette). We also have specimens from New York (Lintner) Illinois (Forbes) and Iowa (Osborn).

Typhlocyba comes Say.

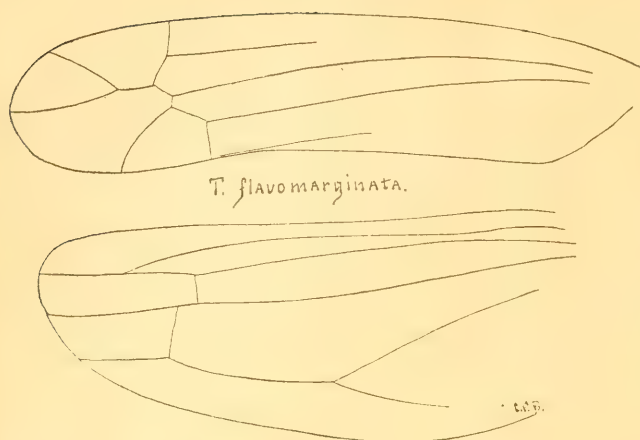
Det. Gillette.

Canon City, August 31st, on plum; Manitou, September 29th on oak (Gillette).

Typhlocyba flavomarginata n. sp.

Female: Clypeus a third longer than broad, basal suture straight, sides nearly parallel; lorae and genae as in *bifasciatus*; front three times the length of clypeus, one-third broader than long, superior angle greater than a right angle, broadly rounded. Face, vertex, and pronotum, sculptured as in *bifasciatus*. Proportions of vertex, pronotum and scutellum, same as in *bifasciatus*. Last ventral segment with posterior angles produced, acute, a broad deep emargination between them, the base of which is



*T. flavomarginata.*

notched. Color pale yellow or whitish; face, vertex, and pronotum whitish, concolorous, scutellum whitish with basal angles darker; elytra whitish subhyaline, nervures lighter, costal and internal margins flavescens, deeper on inner margin; venter and legs pale yellow; pygofers, sheaths of ovipositor, prosternum, and tip of

rostrum tinged with flavescens.

Length 4 mm. Described from three females.

Manitou, September 29th, on oak (Gillette).

Typhlocyba obliqua Say.

Det. Gillette.

Foot-hills, five miles west of Fort Collins, April 25th; Canon City, August 31st, on plum; Manitou, September 29th, on oak (Gillette).

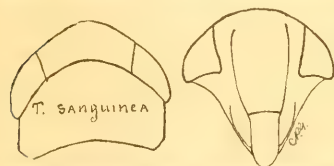
Typhlocyba rosae Harr.

Det. Gillette.

Fort Collins, October 11th, on apple; Denver, September 1st, on apple; Manitou, September 29th, on oak (Gillette). Cheyenne Canon, Colorado Springs, July (Tucker).

Typhlocyba sanguinea n. sp.

Near coccinea. Female: Clypeus one-half longer than broad, basal suture straight; lorae very long and narrow, a half longer than clypeus, reaching half the distance between base of clypeus and antennae; genae long and narrow, lateral margin concave, slightly grooved along sides of lorae. Front nearly twice longer than wide at widest place between eyes, two and one-fifth times as long as clypeus, superior angle greater than a right angle, very obtusely rounded; face and anterior half of vertex very finely rugose; length at middle of disc of vertex one-fourth more than length at eyes. Pronotum glabrous with obscure transverse wrinkles on posterior one-half, four-fifths broader than long, anterior margin broadly rounded, posterior margin distinctly concave, sides normal; scutellum broader than long; last ventral segment with hind margin broadly produced, very slightly notched at apex. Color pale yellow; face tinged with sanguineous above; vertex, pronotum except at sides, and scutellum, bright sanguineous; elytra hyaline, veins very light yellow; vertex at sides, and tergum, tinged with sanguineous; legs unicolorous.

*T. sanguinea*

Length 4 mm. Described from one female.

Manitou, September 29th, on Salix (Gillette).

Typhlocyba tricineta Fh.

Det. Gillette.

Fort Collins, September 27th, on grass (Gillette).

Typhlocyba vitifex Fh.

Det. Gillette.

Fort Collins, September 4th, on Virginia Creeper (Baker).
Fort Collins, September 27th, on grass; Spring Canon, eight
miles south-west of Fort Collins, May 11th (Gillette).

Typhlocyba vitifex Harr. var. *coloradensis* Gill.

Det. Gillette.

Fort Collins (Gillette, 6).

Fort Collins, March 8th, hibernating under dead leaves
in vineyard (Baker). Fort Collins, May 18th to August 19th,
on grape (Gillette).

Typhlocyba vitis Harr.

Colorado (Van Duzee, 5).

This record is certainly a doubtful one, and probably
refers to vitifex.

Typhlocyba vulnerata Fitch.

Det. Gillette.

Spring Canon eight miles south-west of Fort Collins, May
11th; Fort Collins, June 23d on Virginia Creeper (Gillette).
Fort Collins, March 8th, hibernating under leaves in
vineyard, and September 4th on Virginia Creeper (Baker).

Psylla coryli Riley Ms.

Det. Riley.

Steamboat Springs, July 26th (Gillette). Manitou, July
(Tucker).

Psylla gillettei Riley Ms.

Det. Riley.

Fort Collins, May 23d; Rist Canon, April 10th (Gillette).
Rist Canon, April 20th on willow; Fort Collins, May 7th on
alfalfa; Cameron Pass July, 5th, above timber on a dwarf
Salix (Baker).

Psylla negundinis Riley Ms.

Det. Riley.

Fort Collins, June 4th (Gillette). Fort Collins, June 9th
on alfalfa (accidental), and September 26th, abundant on
box-elder; on the latter date a black ant was found carrying
a living specimen from the tree to the ground (Baker).

- Psylla purshiae* Riley Ms. Det. Riley.
Rist Canon, May 29th; Steamboat Springs, July 26th; Trinidad, May 14th (Gillette).
- Psylla 4-lineata* Fitch. Det. Riley.
Soldier Canon, five miles west of Fort Collins, May 19th (Gillette).
- Psylla ribis* Riley Ms. Det. Riley.
Spring Canon, May 11th and June 5th; Fort Collins, October 15th and May 9th; Trinidad, May 14th (Gillette). Dixon's Canon, May 6th on *Ribes cereum* (Baker).
- Pachypsylla celtidis-umbilicus* Riley. Det. Riley.
Golden, April 30th (Gillette).
- Euphyllura arctostaphyli* Riley Ms. Det. Riley.
Spring Canon, July 24th, imagos and nymphs on *Arctostaphylos uva-ursi* (Cowen).
- Aphalara angustipennis* Riley Ms. Det. Riley.
North Park, July 20th; Steamboat Springs July 26th; Montrose, June 24th; Fort Collins, July 4th; Dolores, June 18th; Estes Park, July 11th; Colorado Springs, August 2d (Gillette). Fort Collins, June 12th, on alfalfa (Baker).
- Aphalara calthae* L. Det. Riley.
Fort Collins, May 8th; Rist Canon, May 29th (Gillette). Fort Collins, May 16th to 31st on alfalfa, and May 7th on gooseberry; Steamboat Springs, July 12th on *Carex* (Baker). Canon City, October 15th in all stages on tomato (John Gravestock). Green Mountain Falls, Colorado Springs, July (Tucker).
- Aphalara epilobii* Riley Ms. Det. Riley.
Ouray, June 22d (Gillette).
- Aphalara harrisii* Riley Ms. Det. Riley.
Near West Cliff, Custer County (Cockerell, 10).
North Park, July 19th; Fort Collins, June 14th; Estes Park, July 12th (Gillette).
- Aphalara marginata* Riley Ms.
Custer County, midalpine (Cockerell, 10).

- Aphalara occidentalis* Riley Ms. Det. Riley.
Ouray, June 22d (Gillette).
- Aphalara solidaginis* Riley Ms. Det. Riley.
Fort Collins, July 4th (Gillette).
- Aphalara utahensis* Riley Ms. Det. Riley.
Steamboat Springs, July 12th on *Artemisia tridentata* (Baker). (Green Mountain Falls, Colorado Springs, July (Tucker).
- Trioza amelanchieris* Riley Ms. Det. Riley.
Horsetooth Gulch, May 21st (Baker).
- Livia vernalis* Fitch. Det. Riley.
Trinidad, May 14th; Fort Collins, June 4th (Gillette).
- Chermes* sp.*

"Winged female: Body very dark brown, about 1 mm. long. Alar extent about 3.75 mm. Antennae about 0.20 mm. long, the third, fourth and fifth joints with about nine annulations each. Wings rather long and narrow. Fore wing with subcostal vein wavy, first and second discoidals slender, stigmal obsolete at base, stigma sharp pointed and oblique at base. Hind wings with the discoidal obsolete. Legs short."

Fort Collins, June 19th, winged and wooly apterous individuals on *Pseudotsuga douglassi* (Cowen).

Pemphigus fraxinifolii Riley.

Fort Collins, July 17th in typical pseudo-galls on *Fraxinus americana*. Mostly wingless (Cowen).

Pemphigus populeaensis Fitch.

Fort Collins, July 12th, in typical galls on *Populus monilifera*. In several cases *Chaitophorus populeicola* was found associated with this species in the partly open galls (Cowen).

Pemphigus populi-conduplicifolius Cowen n. sp.

"Winged viviparous female: Length 1.8-2.2 mm. Alar expanse 6.85 mm. Nearly black, pruinose. The abdomen is deep green when the glaucous matter is removed by placing the insect in alcohol. Antennae 1 mm. long, joints slender, fifth and sixth with about six or seven annulations each. Stigma short and broad. Unguis usually with a constricted neck. Similar to *ramulorum* but larger and the antennal joints not nearly so strongly annulated.

Apterous individuals yellowish, with a thick mat of wooly secretion enveloping the abdomen. Eyes black."

*In the Aphididae all the determinations were made by Mr. Cowen, who also wrote all the descriptions and collated the records. The undetermined and undescribed species mentioned in the Custer County List (see Cockerell, 10) are not referred to except in cases where there is a probability of their being identical with species mentioned in this list.

Fort Collins, July 12th, on *Populus monilifera*, forming a pseudo gall by causing the upper surfaces of the leaf to fold together along the midrib (Cowen).

Pemphigus populi-monilis Riley and Monell.

In Colorado, on narrow leaved cottonwood (Riley and Monell, 1).

Fort Collins, July 17th, in typical moniliform galls on leaves of *Populus angustifolia*; Hotchkiss, Delta County, July 14th, on the same host plant. Only one individual was found in each gall (Cowen).

Pemphigus populi-ramulorum Riley and Monell.

On *Populus balsamifera*, Colorado (Riley—see Riley and Monell, 1).

Fort Collins, July 12th, on *Populus monilifera*, in galls at base of petiole and on twigs. Sometimes the galls of this species are far enough up the petiole to be almost distinct from the twig, and are then quite similar to those of *P. populi-transversus* (Cowen).

Pemphigus populi-transversus Riley and Monell.

On *Populus monilifera* and *P. balsamifera*, Colorado (Riley—see Riley and Monell, 1).

Fort Collins, July 12th, in typical galls with transverse openings, on petioles of *Populus monilifera* (Cowen).

Pemphigus vagabundus Walsh.

Fort Collins, galls on *Populus* (Blinn).

Colopha ulmicola Fitch.

Fort Collins, July 8th, in "cockscorn" galls on *Ulmus americana*. Five of the specimens examined have the cubital vein of fore wings simple (Cowen).

Schizoneura americana Riley.

Fort Collins, June 17th, on *Ulmus americana* (Cowen).

Schizoneura lanigera Hausm.

Boulder, Denver, Canon City, Delta, and Grand Junction, on apple, common (Gillette). Hotchkiss, Delta County, August 23d, on young shoots of crab-apple (Cowen).

Schizoneura querci Fitch.

"Wingless form: Largest a little over 1 mm. long, very woolly, uniformly pale green, except eyes which are red, and black tip of beak. Beak reaching slightly beyond second

coxae. Antennae smooth. No fully developed individuals were obtained, so that the determination is somewhat questionable."

Hotchkiss, Delta County, August 19th. in woolly patches on young shoots of *Quercus undulata* (Cowen).

Lachnus pini L.

"Length 3.15 mm., width 1.80 mm. Legs and antennae slightly pubescent with short fine hairs. Body scarcely at all pubescent. Rostrum extending beyond middle of abdomen. Lengths of antennal joints: III, 0.60 mm.; IV, 0.20 mm.; V, 0.25 mm.; VI, 0.15 mm."

Estes Park, July 15th on twigs of *Pinus ponderosa* var. *scopulorum* (Gillette). These specimens differ from the description given by C. M. Weed (Art. V. Aphididae, p 118) in the characters given above (Cowen).

Melanoxanthus bicolor Oestl.

Fort Collins, September 30th on *Salix* (Baker).

Melanoxanthus salicis L.

Fort Collins, October 5th on *Populus balsamifera* var. *candicans* (Baker).

Chaitophorus negundinis Thos.

Fort Collins, common on *Negundo aceroides* throughout the season (Cowen).

Chaitophorus nigrae Oestl.

Fort Collins, June 21st on *Salix longifolia* (Cowen).

Chaitophorus populicola Thos.

Fort Collins, July 5th, on *Populus monilifera* (Gillette). Fort Collins, June 24th, on young shoots on *Populus angustifolia* (Cowen).

Drepanosiphum acerifolii Thom.

Fort Collins, July 2d on under side of leaves of *Acer dasycarpum*. Flies quickly when disturbed in the warmer part of the day (Cowen).

Aphis albipes Oestl.

Fort Collins, July 12th, on under side of curled leaves of *Symphoricarpos occidentalis* (Cowen).

Aphis armoraciae Cowen n. sp.

"Apterous viviparous female: Length of body 1.90 mm. Length of antennae about 1.10 mm. Antennae, head, extremity of beak, femora, tarsi, and honey tubes, deep dusky

to black. Beak reaching second coxae. Abdomen plump and obtuse, dark dusky green, with a marginal row of dots and otherwise barred and mottled with black on dorsum and pleurum. Honey tubes cylindrical, slightly larger at base than at apex, length 0.20 mm. Style conical. Tibiae and upper portion of tarsi white. Younger individuals of a pale reddish brown. Winged viviparous females: Length 2 mm. Length of wing 2.90 mm. Length of antennae about 1 mm., joint III 0.25-0.32 mm., IV 0.15-0.16 mm., V 0.15-0.16 mm., VI 0.12-0.13 mm., VII 0.23-0.27 mm. Head, thorax, and greater part of appendages brownish black. Third joint of antennae with an irregular row of about ten sensoria, fourth joint with fewer sensoria. Lateral tubercles of prothorax sometimes barely apparent. Wings rather broad, second branch of cubital nearer tip of wing than to base of first branch. Abdomen rounded and plump, pale yellowish brown, with small spots of black on dorsum and a row of three larger round black spots on each pleurum. Honey tubes about 0.18 mm. long, cylindrical, broadening at base. Style short conical, acute. Tibiae and upper portion of beak white."

Hotchkiss, Delta County, July 13th in large colonies on the petioles of horse-radish (Cowen).

Aphis asclepiadis Fitch.

Hotchkiss, Delta County, August 1st in small colonies on under side of leaves of *Asclepias speciosa* (Cowen.)

Aphis bakeri Cowen n. sp.

"Winged viviparous female: Length 1.80 mm., to tip of wings 3.30 mm. Antennae with all the joints annulated, third and fourth joints strongly tuberculate and with numerous sensoria, joint III 0.27 to 0.32 mm., IV 0.16 mm., V 0.14 to 0.15 mm., VI 0.10 mm. A frontal prominence between the antennae. Head and thorax black, venter green, dorsum darker, appendages dark. Venation of wings normal, second branch of cubital midway, stigmatal curved throughout. Honey tubes short, 0.09 mm. long, and 0.045 mm, thick at the somewhat swollen lower third. Style 0.08 mm., long, conical.

Apterous female: Length 1.7 to 2 mm. Some of the smaller individuals are of a rusty color. It resembles *Aphis marutea* Oestl."

Fort Collins, June 20th, on stems of *Trifolium pratense* in large colonies (Cowen).

Aphis brassicae L.

Custer County, midalpine, on cabbage (Cockerell, 10).

Abundant on cabbage wherever cultivated. Specimens from Hotchkiss, Delta County, differ in being lighter in color (Cowen).

Aphis cephalicola Cowen n. sp.

"Winged viviparous female: Length 1.70 mm., to tip of wings 3.60 mm. Head, antennae, joints of legs, thorax, spots on abdomen, and honey tubes, dark. A large quadrangular gray to green spot on dorsum. Back part of pronotum and most of abdomen yellowish. Third joint of antennae tuberculate with numerous irregular sensoria, fourth with few irregular sensoria, all joints strongly imbricated, joints III 0.33 mm., IV 0.14 mm., V 0.12 mm., VI 0.11 mm., VII 0.24 mm. Beak hardly reaching second coxae. Thorax arched, lateral tubercle present. Second branch of cubital midway. Honey tubes 0.10 mm. Style about 0.06 mm. Tarsi 0.10 mm."

Fort Collins, June 30th, usually solitary in heads of *Trifolium repens* (Cowen).

Aphis cerasi Fabr.

Fort Collins, July 16th on under side of leaves of Early Richmond Cherry. not abundant. Hotchkiss, Delta County, July 28th, a single individual on the same host plant (Cowen).

Aphis cerasifoliae Fitch.

Rist Canon, July 19th on under side of leaves of *Prunus virginiana*, causing them to curl (Cowen).

Aphis chenopodii Cowen n. sp.

"Winged viviparous female: Length, not including style, 1.30 to 1.70 mm. Alar expanse 4.60 to 5.20 mm. Head, thorax, and the larger portion of the appendages black, thorax green. Antennae strongly annulated, with a few short hairs, third joint with numerous irregular sensoria, succeeding joints of conspicuously less diameter and without sensoria except the usual ones at tips of joints V and VI; joints III 0.30 mm., IV 0.16 mm., V 0.16 mm., VI 0.12 mm., VII 0.24 to 0.28 mm. A frontal elevation occurs between the antennae. Beak about reaching the second coxae. Thorax arched, lateral tubercle small or obsolete. Cubital obsolete for only a very short distance at base, the base of second branch midway. Stigma rounded at apex but attenuate at inner end into the subcostal. Honey tubes 0.12 mm., distinctly wider two-thirds of distance from base than at base. Style constricted towards the base, with a few long hairs, 0.14 mm. in length. Legs black at joints, shafts mostly lighter, hispid, with short hairs. Tarsi 0.14 mm. Apterous female: Length 1.60-1.80 mm. Oval and plump, green with black eyes. Antennae about 0.70 mm., third joint longest, the fourth, fifth, and sixth joints subequal."

Fort Collins and Hotchkiss, Delta County, in July, in pseudogalls on *Chenopodium album*, formed by the Aphids locating on the upper surface of the leaf, causing the edges to curl together.

Aphis eriogoni Cowen n. sp.

"Winged viviparous female: Length of body 1.50 mm., to tip of wings 2.70 mm. Head and thorax black, abdomen lighter, somewhat hairy, femora mostly black, tarsi white with black joints. Antennae about two-thirds the length of the body, joints III 0.40 mm., IV 0.20 mm., V 0.14 mm., VI 0.09 mm., VII 0.18 mm. Beak reaching third coxae. Second branch of cubital midway. Stigmatal vein curved uniformly. Stigma long, attenuate at basal end and acute at outer end. Border of abdomen nearly completely black, a sub-quadrangular patch of yellow on dorsum. Style short conical. Honey tubes 0.10 mm., long, slightly incrassate. Apterous individuals: Smaller individuals bright red with dark eyes, larger specimens nearly black, concolorous. Sensoria on third and fourth joints of the antennae quite apparent. Abdomen with honey-comb like reticulations above and below, often made more prominent by a white secretion. Interspaces about 0.02 to 0.03 mm, in diameter. Head also finely reticulated. Some parts of the thorax reticulated. The winged individuals show this reticulation, but in much less degree."

Horsetooth Mountain, July 24th, a good sized colony on the stems and inflorescence of *Eriogonum altatum*. Specimens of apparently the same species were collected at Steamboat Springs, July 13th on *Eriogonum umbellatum* (Baker). These are somewhat smaller in size, perhaps due to alcoholic preservation (Cowen).

Aphis gillettei Cowen n. sp.

"Winged viviparous female: Length 1.70 mm. Antennal joints annulated, third joint tuberculate with numerous sensoria, joints III 0.34 to 0.36 mm., IV 0.18 to 0.23 mm., V 0.11 to 0.12 mm., VII 0.23 to 0.30 mm. A frontal prominence between the antennae. Beak nearly reaching second coxae, about 0.45 mm. long. Antennae, head, thorax, and greater portion of appendages black. Abdomen green, marked with transverse bars and with a marginal row of dots of deeper green or black, shafts of legs light. Lateral tubercle of pronotum small. Insertions of wings yellowish. Second branch of cubital nearer to apex than origin of first branch. Stigma pointed. Honey tubes slightly enlarged at base, about 0.35 mm. long. Style 0.12 mm. long. Tarsi 0.14 mm. Apterous viviparous female: Length 1.7 mm. Antennae about 1.10 mm. long. Pale green except eyes, tarsi, and tips of honey tubes, which are black. Dorsum with patches of darker green. Body broad in proportion to the length. Honey tubes about 0.33 mm. long, cylindrical. Style 0.12 mm."

Fort Collins, June 22d, on *Helianthus petiolaris* (Gillette). Hotchkiss, Delta County, July 24th, on *Helianthus* sp. in small colonies on the under side of the leaves (Cowen). The same species was found on the under side of leaves of *Amarantus retroflexus*, in colonies of one winged and two or three small young, at Hotchkiss, Delta County, July 26th (Cowen).

Aphis heraclii Cowen n. sp.

"Winged viviparous female: Length 1.40 to 1.50 mm. Head and thorax black, abdomen yellowish green with some deeper green spots on the dorsum, causing the whole abdomen to appear deep green. Beak nearly reaching third coxae, 0.50 mm. long. Third joint of antennae tuberculate and with numerous small sensoria, all the joints annulated, the group of sensoria at apex of fifth joint conspicuously elevated, length of joints III 0.33 to 0.40 mm., IV 0.21 to 0.23 mm., V 0.17 to 0.20 mm., VI 0.12, VII 0.27 to 0.31 mm. Thorax archet, lateral tubercle of pronotum small. Second branch of cubital vein nearer to the apex of the wing than to the origin of the first branch. Legs light except at the joints, length of tarsi 0.14 mm. Honey tubes 0.26 mm. long. Style 0.10 mm."

Fort Collins, July 9th in colonies in the umbels of *Heracleum lanatum*. A somewhat larger form of apparently the same species was found in the umbels of *Pastinaca sativa* at Fort Collins, July 28th.

Aphis maidis Fitch.

Fort Collins, September 14th on maize (Baker). Hotchkiss, July 27th on all parts of maize (Cowen).

Aphis mali Fab.

Hotchkiss, August 23d, colonies of apterous and winged individuals on young leaves and shoots of apple (Cowen). Fort Collins, on apple (Gillette).

Aphis medicaginis Koch.

Fort Collins, June 27th on *Astragalus bisulcatus*, principally in the racemes of flowers, and on *Glycyrrhiza lepidota*

(Cowen). This may be No. 900 of the Custer County List (see Cockerell, 10).

Aphis menthae-radicis Cowen n. sp.

"Apterous viviparous female: Length 2 mm. Head, thorax, and greater portion of appendages black. Beak reaching second coxae. Antennae about one millimeter long. Tibiae and upper portion of the beak white. Abdomen green, with a marginal row of black spots and barred on the dorsum with black. This *Aphis* appears to be of a dull lead color unmagnified. Honey tubes about as long as the tarsi, somewhat elongated at the base. Style short conical. Winged viviparous female: Size somewhat smaller than in the apterous form. Of the same color and marking except that it is not so heavily barred and dotted with black on the dorsum. Third joint of antennae with an irregular row of sensoria, fourth and fifth joints with a sensoria, length of joints III 0.25 to 0.30 mm., IV 0.14 to 0.17 mm., V 0.13 to 0.14 mm., VI 0.11 to 0.11 mm., VII 0.20 to 0.25. Lateral tubercle of pronotum very short. Second branch of cubital midway, length of the wing 2.30 to 2.60 mm. Honey tubes about 0.15 mm., slightly incrassate. Style short and conical."

Hotchkiss, July 14th, on the roots of *Mentha canadensis* and on the stems near the ground.

Aphis oenotherae Oestl.

Estes Park, July 18th on *Oenothera biennis* (Gillette). Fort Collins, August 13th on *Oenothera biennis* (Baker). Hotchkiss, July 27th, on *Oenothera biennis*; Crawford, July 29th, on *Oenothera caespitosa* (Cowen).

Aphis oxybaphi Oestl.

Fort Collins, July 26th on stems of *Oxybaphus angustifolius* (Cowen).

Aphis rumicis L.

Fort Collins, June 27th on *Rumex crispus*; Hotchkiss, July 21st on *Rumex crispus* (Cowen). Very variable.

Aphis salicola Thos.

Fort Collins, June 20th on young twigs of *Salix amygdaloides* (Cowen). This may be No. 892 of the Custer County List (Cockerell, 10).

Aphis valerianae Cowen n. sp.*

"Winged viviparous female: Length 1.80-1.90 mm. Body black. Third to fifth joints of the antennae with numerous irregular warty sensoria, length of joints III 0.39, IV 0.24, mm. V 0.21 mm., VI 0.18 mm., VII 0.12-0.21 mm. Beak nearly reaching the third coxae. Lateral tubercle of the pronotum prominent. Tarsi about 0.15 mm. Honey tubes about 0.19 mm. Style 0.09 mm. Apterous female: Black; younger, half grown, with about six pairs of white circular spots on the dorsum."

Foot-hills five miles west of Fort Collins, July 19th, on stalks of *Valeriana edulis* (Cowen).

*Measurements from specimens preserved in alcohol.

Aphis veratri n. sp.*

"Winged viviparous female: Length 2.20 mm. Length of wing 3.05 mm. Color black, the thorax somewhat lighter than the rest of the insect. Antennae about 1.35 mm. long, the third joint with numerous rather large sensoria, fourth often with two or three sensoria, fifth and sixth with usual groups of sensoria at the distal ends, length of joints III 0.39 mm., IV 0.25 mm., V 0.22 mm., VI 0.14 mm., VII 0.29 mm. Beak about 0.60 mm. long and reaching to the second coxae. Lateral tubercle of the pronotum prominent. Stigma elongate, second branch of the cubital nearer the apex of the wing than to the base of the first branch. Tarsi 0.12 mm. long. Honey tubes cylindrical, 0.28 mm long. Style about 0.12 mm. long. Wingless form very dark."

In south-west corner of North Park, July 22d very abundant on leaves of *Veratrum californicum* (Baker). This may be No. 895 of the Custer County List (see Cockerell 10).

Aphis yuccae Cowen n. sp.*

Winged viviparous female; Length 2.20 mm. Head, thorax, and greater part of femora, antennae and honey tubes, black; abdomen dull yellow with small black dots on dorsum and pleurum. Third joint of antennae with numerous small sensoria, length of joints III 0.42 mm., IV 0.25 mm. V 0.25 mm. V 0.23 mm., VI 0.15 mm., VII 0.30 mm. Beak black and nearly reaching the third coxae. Thorax strongly arched. Lateral tubercle of pronotum present. Second branch of cubital nearer the apex of the wing than to the origin of the first branch. Stigmatal vein curved for the first half and straight or recurved for the remainder of the distance. Tibiae white, tarsi dark. Style conical, hairy at the tip, about 0.15 mm. long. Wingless individuals from uniform dark green to reddish yellow in color.

Fort Collins, July 9th on inflorescence and stems of *Yucca angustifolia*.

This is probably the species found occurring on *Yucca* at Greeley by Riley (see Riley and Monell, 1). It is also perhaps the same species as that mentioned as *Aphis yuccicola* n. sp. by T. A. Williams in his "Host-Plant List."

Aphis sp.*

"Winged viviparous female: Length 1.60 mm. Length of wing 2.90 mm. Color pale Stigma short. Honey tubes short and broad, about 0.99 mm. long. Style acute and about as long as honey tubes. Apterous individuals with numerous black dots on the dorsum."

Fort Collins, September 20th on cultivated radish (Baker). This may be *A. brassicae*.

Aphis sp.*

"Winged viviparous female: Length 1.60 mm. Length of wing 2.70 mm. Pale brown. Veins robust. Honey tubes about 0.22 mm. long. Style slender conical, about 0.11 mm long. Apterous individuals dark brown. Length about 2 mm. Antennae 1.20 mm. long. Honey tubes 0.30 mm."

Fort Collins, August 6th, on cultivated radish (Baker).

Hyalopteris arundinis Fab.

Hotchkiss, July 12th, very abundant on *Phragmites* com-

*Measurements from alcoholic material.

munis (Cowen).

Hyalopteris pruni Fab.

Hotchkiss, July 6th, on plum and prune (Cowen).

Siphocoryne xanthii Oestl.

Hotchkiss, July 26th, on underside of leaves of *Xanthium canadense* (Cowen).

Myzus ribis L.

Fort Collins, July 9th, on leaves and young shoots of *Ribes aureum* (Cowen).

Rhopalosiphum dianthi Schrank.

In college greenhouse, February 21st, on leaves and stems of *Calla Lily* (Cowen).

Rhopalosiphum nymphaeae L.* ?

"Winged viviparous female: Length 2.20 mm. Length of wing 3.10 mm. Head and thorax dark, abdomen lighter. Antennae on short frontal tubercles, third joint with numerous irregular sensoria, no sensoria on the fourth joint, length of joints III 0.30 mm., IV 0.24 mm. Beak about 0.55 mm. long. Lateral tubercle of pronotum small. Stigma elongate, widest at the base of the stigmatal vein. The second branch of the cubital near the apex of the wing. Tarsi 0.14 mm. long. Honey tubes clavate, 0.35 mm. long. Style about 0.13 mm. long."

Fort Collins, September 15th, on *Sagittaria variabilis* (Baker). This species is doubtfully referred to *R. nymphaeae*, as a description of that species is not accessible.

Nectarophora artemisiae Cowen n. sp.*

"Winged viviparous female: Length 2 mm. Wing about 3.10 mm. long. Head and thorax black, abdomen somewhat lighter with the upper dorsum marked with four longitudinal rows of black spots. Antennae on distinct frontal tubercles, about 2.90 mm. long, third joint with numerous small sensoria, length of joints III 0.65 mm., IV 0.55 mm., V 0.50 mm., VI 0.15 mm., VII 0.80 to 0.90 mm. Beak about reaching third coxae. Thorax arched. Stigma dark, elongate. Honey tubes 0.55 mm. long. Style 0.20 mm. long and curved upwards. Tarsi 0.20 mm. long."

Estes Park, July 19th, on *Artemisia tridentata* (Gillette). More Aphis-like than most members of this genus.

Nectarophora asclepiadis Cowen n. sp.

"Winged viviparous female: Length 3.20 mm., to the tip of the style. Length of wing 4.50 mm. Head, prothorax, abdomen, and style uniform green. Mesothorax yellow, appendages mostly dusky. Eyes brown black. Antennae longer than the body, third joint with about ten or twelve sensoria in one row, length of joints III 0.90 mm., IV 0.85 mm., V 0.70 mm., VI 0.20 mm., VII 1.10 mm. Beak black tipped, hardly reaching the second coxae, about 0.50 mm. long. Honey tubes about 0.80 mm. long. Style long cylindrical. Apterous viviparous female: Length 3 mm., to the tip of the style. Uniformly green, eyes brownish-black, honey tubes and style of the same color as the abdomen. Antennae

*Description from alcoholic material.

about 3.80 mm. long, with a few short capitate hairs, and a few sensoria on the third joint. Beak reaching the second coxae, tip black. Legs and antennae dusky. Style long and falchion sharp."

Hotchkiss, July 24th, in small colonies on underside of leaves of *Asclepias speciosa* (Cowen).

Nectarophora erigeronensis Thos.

Fort Collins, July 22d, on *Lactuca pulchella* (Cowen).

Nectarophora rosae L.

Estes Park, July 16th, on rose (Gillette).

Nectarophora rudbeckiae Fitch.

Fort Collins, July 18th, on *Solidago*: Hotchkiss, on an unknown composite (Cowen). No. 896 of the Custer County list may belong here (see Cockerell, 10).

Nectarophora sp.

"Winged viviparous female: Length 2.50 mm. To the tip of the wings 4.75 mm. Color green, thorax yellowish. Third joint of antennae with a slight row of sensoria, remaining joints smooth except for a few short hairs, seventh joint annulated, length of joints III 0.62 mm., IV 0.48 mm., V 0.50 mm., VI 0.10 mm., VII 1.00 mm. Stigma short and broad. Honey tubes imbricated, cylindrical, 0.35 mm. long. Style 0.15 mm. long. Apterous viviparous female: Length about 2.5 mm. Mostly green. The eyes, ends of joints of antennae, tip of beak, and tarsi, black. Lower ends of femora, and tips of honey tubes darker than the body."

Fort Collins, July 21st, on *Gaura parviflora* (Cowen).

Nectarophora sp.

"Only wingless individuals, singly, or in small colonies. Wholly green, except that the eyes, tarsi, and ends of joints of antennae are black. Antennae longer than the body."

Horsetooth Mountain, July 23d on *Arctostaphylos uva-ursi* (Cowen).

Nectarophora sp.*

"Winged viviparous female: Length 2.70 mm. Color apparently uniform green. Stigma elongate, sharp pointed. Apterous female: Length 3.20 mm. Antennae longer than the body. Beak short, not reaching the second coxae. Honey tubes about 1.00 mm. long. Style 0.45 mm. long."

Estes Park, July 16th on *Epilobium spicatum* (Gillette).

Nectarophora sp.*

"Winged viviparous female: Length 2.20-2.40 mm. Wing about 3.40 mm. long, uniformly pale, perhaps green, in life. Beak short, about reaching second coxae. Third joint of antennae with a number of round sensoria, length of joints III 0.60 mm., IV 0.48 mm., V 0.43 mm., VI 0.16 mm. First branch of the cubital closer than usual to the origin of the cubital. Honey tubes 0.65 mm. long. Style about 0.25 mm. long."

*Descriptions from alcoholic material.

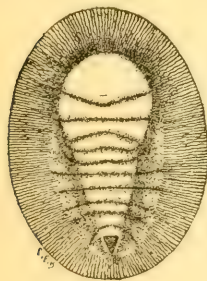
Fort Collins, September 15th on *Mentzelia nuda* (Baker).

"I have also taken a very anomalous Aphid, for which I can give neither generic nor specific determination, forming a gall on the leaves of *Arctostaphylos uva-ursi*. One side of the leaf is turned back and thickened for about half its length, thereby forming a smooth oblong gall about 10 mm. long and 3 mm. in diameter, which is often of a reddish color. Only apterous individuals were observed. Length about 1.50-1.80 mm. Beak reaching the second coxae. Antennae six-jointed, the third joint longest, the sixth second in length, all of the joints beyond the third with many fine annulations, sparsely hairy; the antennae would reach a little beyond the base of the wings. Honey tubes very small, broader than long, scarcely elevated above the abdomen. Legs short. Body elongate, dull green, legs a little darker. Individuals examined later in the season, which were evidently pupae of winged forms have the body more ovate with numerous short hairs. Antennae distinctly seven jointed and about one-half as long as the body. Honey tubes somewhat longer."

Foothills five miles west of Fort Collins, July 19th (Cowen).

Aleyrodes pyrolae n. sp.

Pupal scale. Length 1.25 mm.; width 1 mm. Color very pale straw yellow, somewhat darker toward the center. Elliptical, slightly broader at the center. Margin entire, without fringe. Within the margin all around, finely and densely wrinkled, the wrinkles extending radially inward about half way to the median line along the sides. Central portion with ten more or less well defined horizontal folds. Folds on anterior half, four in number, first semilunate, remainder linear. Line separating first and second folds obtusely angled in center, the angle directed caudad; line separating second and third straight; line separating third and fourth obtusely angled cephalad. Folds on posterior half of dorsum linear and six in number, the line separating the first and second folds with extremities bent cephalad; last three folds bent caudad at extremities. Anal plate darker than surrounding surface, unequally triangular, the longest angle directed caudad.



Described from several scales of different ages. Four-mile Hill eight miles south of Steamboat Springs, July 19th on *Pyrola rotundifolia* (Baker).

Coccus cacti L. var. *confusus* Ckll.

Det. Cockerell.

Probably this species (*Acanthococcus confusus*) in the midalpine of Custer County (Cockerell, 10).

Manitou, September 27th on *Opuntia* (Gillette).

Rhizococcus n. sp.

Under a rock at West Cliff, April 23d. Naked, pyriform, 2.25 mm long, dull lilac, legs clear red-brown, antennae reddish-brown. Caudal filaments short, but distinct (Cockerell, 10).

Daetylopius citri Boisd.

Det. Baker.

On *Habrothammus* and *Solanum jasimoides* in the college greenhouse, September 10th (Baker).

Dactylopius solani Cockerell.

Det. Cockerell.

Fort Collins, August 23d on roots of *Solanum rostratum* (Baker). Questionably this species on the crowns of sugar beet roots at Grand Junction, August 26th (Gillette).

Kermes galliformis Riley.

Det. Cockerell.

Manitou, November 27th on *Quercus undulata* (Gillette).

Kermes gillettei Cockerell.

"Scale of female 8 mm. long, 7.5 broad, 7 high. Distinctly segmented; dorsum with rounded tuberosities, not very shiny. Scale covered with minute dark brown specks. General color ivory-white and dark brown mottled, the extent of the white or the brown variable, but usually a distinct white dorsal band, and more or less broken-up subdorsal ones. Derm by transmitted light reddish brown, with large oval gland-pits. Young larva very elongate, subfusiform, with the greatest breadth anterior to the middle; pale purplish pink. Caudal tubercles large and broad, each presenting two stout bristles, of which the inner (mesad) one is much the shortest. There is also a moderately long bristle on the outer side of each tubercle, near its base. Segmentation distinct; each segment with a short spine or bristle on lateral margin. Antennae cylindrical, hardly at all tapering, 6-jointed; 3 and 6 equal and longest; 4 and 5 equal and shortest, these being about as long as broad; 2 very little longer than 4, and very much shorter than 3; 3 almost as long as 4 plus 5. Last joint rounded at the tip, bearing several hairs. Antennae colorless. Rostral loop extending beyond base of third pair of legs. Mentum at least two-jointed. Legs quite ordinary. Claws long, sharp, and a little curved. Tibia short.

Hab. Manitou, Colorado, U. S. A., on twigs of *Quercus undulata*. Collected by Prof. C. P. Gillette. Very distinct from *K. galliformis*, Riley, the only *Kermes* hitherto described from North America. Its nearest ally is evidently *Kermes gibbosus*, Signoret, which was found on oaks near Vienna.

The larvae described above were found inside the scale of the female."

We copy the above from a separate of Mr. Cockerell's paper in "The Entomologist," which bears no date. The practice of publishing original descriptions of single American species in foreign journals which are to a large extent inaccessible to American entomologists, cannot be too strongly condemned.

Physokermes coloradensis Cockerell.

"Female scale with the same general shape as *P. abietis* and attached in the same way to the twigs. Diameter 7 mm., smooth, shiny, rather pale brown, inflated, subreniform, with a median constriction. Derm yellowish brown, reticulate, the reticulations hexagonal. Large gland-pits looking like perforations. Mouthparts small, rostral loop short. Legs not to be found, apparently absent in the adult. Antennae small, six-jointed, but the joints obscure. Last joint with several hairs. Joints subequal, except the second and fifth, which are shorter; the second shortest, bearing a long hair; fourth perhaps a very little longer than third, and longest; fifth constricted, simulating second joints, the second of them shortest.

Habitat Manitou, Colorado, November 26th, 1894, on *Pinus edulis*. Collected by Prof. C. P. Gillette. It is attacked by a brownish Chalcidid parasite.

From European *P. abietis* it is distinguished by its size and by the antennae. No species of the genus has hitherto been found in America."

This species was described in "The Entomologist" with the preceding species. A spruce should have been given as

the host plant instead of *Pinus edulis*.

Orthezia annae Ckll.

Det. Cockerell.

Delta, August 30th on "greasewood" (Gillette).

Orthezia occidentalis Dougl.

Det. Cockerell.

Custer County, midalpine, in the nest of a dark brown ant with large head and shiny abdomen (Cockerell).

Near Fort Collins, at various times under stones in company with certain ants (Baker).

Lecaniodiaspis yuccae Twms. var. *rufescens* Ckll.

Det. Cockerell.

(*Prosopophora rufescens* Cockerell).

Grand Junction, October 18th, on "greasewood" (Dr. S. M. Bradbury, President West Colorado Acad. Sci.).

Pulvinaria bigeloviae Cockerell.

West Cliff, Custer County, June 16th, on *Bigelovia* (Frank Cusaek -see Cockerell, 10).

Pulvinaria innumerabilis Rath.

Denver, June 10th on box-elder, locust, and soft maple (John Tobias). Common on soft maple and honey locust at Fort Collins.

Lecanium (Bernardia) hemisphaericum Targ.

Det. Cockerell.

College green house, May, on *Neprolepsis exaltatus* and a liliaceous plant (Baker). Denver, November 24th on *Cycas* in green house (Gillette).

Lecanium hesperidum L.

Det. Cockerell and through Howard

College green house, September 10th on *Aralia*, *Abutilon*, *Ficus elastica*, and *Rhynchospermum jasimoides*: Fort Collins, in open air on *Veronica hendersonii* (Baker).

Lecanium longulum Dougl.

Det. Cockerell.

Denver, November 24th on rubber tree in green house (Gillette).

Lecanium (Bernardia) oleae Bern. Det. Cockerell and through Howard.

College green house, May, on *Solanum jasimoides* (Baker). Denver, November 24th on *Platyterium* in green house (Gillette).

Lecanium perforatum Newstead. Det. Cockerell.

Denver, November 24th on *Raphis* in green house (Gillette).

Lecanium sp.

Manitou, September 27th on rose (Gillette). Regarding this species Mr. Cockerell (in litt.) says: "It seems not to be *rosarum*, or the Santa Fe species, for its antennae are seven-jointed. In the Santa Fe species the antennae have eight joints. The antennal formula in your Manitou insect is 3 (24) (17) (56)."

Lecanium sp.

Manitou, September 27th on oak (Gillette). Regarding this species Mr. Cockerell says: "The antennae are eight-jointed and the antennal formula is 3 (24) (18) (567)."

Aspidiotus ancyllus Put. Det. through Riley.

Canon City, April 30th abundant on pear (G. M. DuBois).

Aspidiotus camelliae Boisd. Det. Cockerell.

College greenhouse, September 10th on Japanese Quince, *Aralia*, and *Ficus elastica* (Baker).

Aspidiotus dictyospermi Morgan. Det. Cockerell.

College greenhouse. September 10th on *Champaeropsis elegans* (Baker).

Aspidiotus ficus Ashm. Det. Cockerell.

Denver, November 24th on *Phormium tenax* in greenhouse (Gillette).

Aspidiotus howardii Cockerell. Det. Cockerell.

Canon City, August 31st on fruit of plum (Gillette).

Aspidiotus nerii Bouche. Det. Cockerell.

On lemons exposed for sale in the shops (Cockerell, 10).

College greenhouse, September 10th on oleander and *Dracaena* (Baker). Fort Collins, December 28th on California lemons and oranges in the market (Gillette).

Aspidiotus perniciosus Comst. Det. Cockerell.

Fort Collins, December 30th on California pears in the

market (Gillette).

Lepidosaphes (Mytilaspis) citricola Pack. Det. through Howard.

On lemons exposed for sale in the shops (Cockerell, 10).

Fort Collins, May, common on "rusted" oranges in market (Baker), and December 28th on California oranges and lemons (Gillette).

Chionaspis pinifolii Fitch. Det. Cockerell.

Fort Collins, October 6th, abundant on spruce; Manitou, September 29th on spruce (Gillette).

Chionaspis ortholobis Comst. var.

On willow at West Cliff, as *C. salicis* L. (Cockerell, 10).

Chionaspis ortholobis Comst. var. Det. Cockerell.

Denver, June 10th on cottonwood (John Tobias).

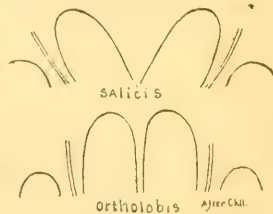
In regard to the above record Cockerell (in litt.) says:—"The Wet Mountain Valley *salicis* recorded by me, was not true *salicis* but *ortholobis* var."

Regarding the species *ortholobis* and *salicis* Cockerell (in litt.) further says:—"If you look at Comstock's descriptions you will find that he alludes to a difference in the position of the median lobes of *ortholobis* and *salicis*. *Ortholobis* has these lobes close together (see figure), whereas *salicis* has them divergent (see figure). Now we have a specimen of *ortholobis* from California, from Mr. B. W. Griffith, which shows the lobes close together as Comstock describes. But your Denver species show them wide apart, as in *salicis*. Yet your Denver scales are like the Nebraska *ortholobis* (see my article in Can. Ent.) to all outward appearance, and are not like *salicis*. But at this point we prepared some English *salicis*, from Mr. Newstead, and they have the lobes close together as in *ortholobis*.

All this seems rather to confirm what I have suspected for some time, that the so-called *salicis* of this country is not *salicis* at all, but a distinct species. If so, the synonymy of the species discussed will probably stand thus:

- (1.) *C. salicis* (L.) Europe.
- (2.) *C. ortholobis* Comst. U. S.
- (3.) *C. salicis-nigrae* (Walsh.) U. S. or 'equals' *salicis* Comst., not L.

It is by no means clear, however, that your Denver scale is specifically distinct from the Nebraska one, which we are calling *ortholobis* (vide Can. Ent.) and as it is certainly not true European *salicis*, I should advise you to call it *C. ortholobis* var. for the present."



Aulacaspis boisduvalii Sign. Det. Cockerell.

Denver, November 24th on palm in greenhouse (Gillette).

Palaeococcus simplex Scudder.

Fossil at Florissant (Scudder, Tert. Ins. N. A.).

SUMMARY.

Number of species previously reported from the state.....	298
Number of additional species reported in this list.....	349
Total number of described species known to occur in the state.....	647
Genera in the list.....	261
New genera described.....	5
New species described.....	111

ERRATA.

On page 64, in seventh heading for *Cidada*, read *Cicada*.

On page 85, in sixth line from bottom, for *Gillette* read *Baker*.

On page 118, line 29, for *marutae* read *marutea*.

On page 119, in fifth line from bottom, insert (*Cowen*) after *Eriogonum alatum* (not *altatum*). In line four from bottom for apparently read apparently.

On page 120, line 28, for *promotum*, read *pronotum*.

On page 124, sixth species, for *Neetarophora*, read *Nectarophora*.

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