

ART. XIV.—REPORT UPON THE INSECTS COLLECTED BY P. R. UHLER DURING THE EXPLORATIONS OF 1875, INCLUDING MONOGRAPHS OF THE FAMILIES CYDNIDÆ AND SALDÆ, AND THE HEMIPTERA COLLECTED BY A. S. PACKARD, JR., M. D.

BY P. R. UHLER.

[PLATES 27, 28.]

LETTER OF TRANSMITTAL.

BALTIMORE, *January 1, 1877.*

DEAR SIR: The results of my observations and collecting during the two weeks that I was enabled, through your courtesy, to spend on the plains and mountains of Eastern Colorado, are embodied, as far as possible, in the following pages.

Although much hindered by rains, hail, and snow-storms, I was able to extend rapidly a series of collecting trips from Denver, and a few miles north of it as far as the Grand Cañon of the Arkansas River, a few miles west of Cañon City. In all the sections visited, I had no occasion to complain of the scarcity of insect life. Indeed, in such places as were moderately supplied with water, either in the cañons of the mountains or on the farms and lands adjacent to the creeks and irrigating canals, many kinds of insects were as abundant as we find them to be in corresponding situations in the Atlantic States. It was only in the perfectly desert spots which afforded no sustenance for vegetation that an absence of these creatures was to be noted. An examination of the country in and adjoining Denver, particularly on the west side, showed that the common weeds of the eastern division of the continent had already established themselves there, and that, as was to be expected, many of the common insects dependent upon them were present in abundance. On the open commons of the suburbs of Denver I was delighted to see large patches of showy flowers, and to observe how certain insects of similar colors flew to and rested upon them. Very conspicuously was this the case with a delicately blue *Lupin*, with fine large heads, which occurred in vast numbers near a mill-race running through a low part of the plains. Two species of the little bluets, *Lycæna melissa* and *L. rapahoe*, settled upon these flowers, and when at rest were very difficult to recognize. *Danaï archippus* Cramer was widely distributed, except in the high mountains, and was generally observed to be mat-

Family PHYTOCORIDÆ.

MONALOCORIS Dahlb.

M. filicis.

Cimex filicis Linn., Syst. Nat., ii, 718, No. 20.

Acanthia filicis Wolff, Icon. Cim., 46, tab. 5, fig. 43.

Bryocoris filicis Kolenati, Meletemata Entom., ii, 129.

Monalocoris filicis Fieber, Europ. Hemipt., 237.—Douglas and Scott, British Hemipt., 279, pl. 10, fig. 2.

One specimen from the mountains adjoining Clear Creek Cañon, August 6. It was swept from a small fern which grows in damp places among the rocks high up in the mountains near Beaver Brook.

BRACHYTROPIS Fieber.

B. calcarata.

Miris calcaratus Fallen, Hemipt. Suec., 131, No. 5.

Brachytropis calcaratus Fieber, Europ. Hemipt., 241.

Near water, in weedy places, on the outskirts of Denver, Colo., August 4.

TRIGONOTYLUS Fieber.

T. ruficornis.

Miris ruficornis Fallen, Hemipt. Suec., i, 133, No. 8.

Trigonotylus ruficornis Fieber, Europ. Hemipt., 243.

Some specimens of the normal type occurred upon weeds and grass in damp situations near Denver, and also on the hills near water a few miles west of Denver.

MIRIS Fieber.

M. instabilis.

Miris instabilis Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 50.

The yellow variety occurred upon the weeds near water in the suburbs of Denver. A beautiful green variety, strongly marked with fuscous, was collected from rank-growing plants in Beaver Brook Gulch, August 6.

PHYTOCORIS Fallen.

1. *P. nubilus.*

Capsus nubilus Say, Heteropt. New Harmony, 22, No. 10.

Phytocoris nubilus Uhler, Bull. U. S. Geol. Surv., vol. ii, No. 5, p. 51.

A single specimen from near Denver, August 4.

2. *P. inops*, new sp.

More slender than *P. nubilus*, and more regularly elliptical, with the sides of the pronotum more oblique and not sinuated. Color pale ash-gray or light brown; the legs and antennæ very slender. Head long, triangular anteriorly, pale yellow, spotted with brown, the cheeks margined with brown, and the tylus with a reddish-brown spot, the upper surface clothed with grayish hairs; bucculæ dark brown; rostrum reaching the middle of the venter, slender, distinctly compressed at base, pale yellow, tinged with brown near the base and at tip, the basal joint much longer than the head, the second and fourth longer,

subequal, the third about equal to the basal one. Antennæ very slender, setaceous, long, the basal joint cylindrical, not thicker toward the tip, and very indistinctly thickened near the base, about as long as the head and pronotum united, pale yellow, mottled and obliquely banded with brown, and dark fuscous at tip; the second joint one grade more slender, evenly filiform, a little more than twice the length of the first, brown, banded at base and on the middle with pale yellow; following joints very slender, shorter, dark brown, the base of third pale. Pronotum gray or pale brownish, sprinkled and spotted with darker brown, clothed with hoary pubescence (or sometimes with the hairs ochreous), having the wavy posterior submargin marked with a black line, the center of which is triangularly emarginate and connected with a longitudinal impressed line, the margin depressed and whitish; collum whitish or pale yellow, marked each side with light brown; humeral angles a little prominent; sternum and middle of venter whitish almost to the tip, the pleural pieces and sides of venter fuscous, or paler brown, the latter and sometimes the two or three last segments mottled with brown. Legs and coxæ pale yellow, long and slender; the femora spotted with brown in uneven series, particularly near the tip; the fore and middle tibiæ thrice banded, and the posterior tibiæ mottled with brown; tarsi more or less brownish, with the tip darker, including the nails. Hemelytra lichenated, on a pale ground, with gray, fuscous, or greenish; the costal margin, nervures, and apical margin with brown interrupted lines; clothed with almost prostrate grayish or yellowish pubescence; membrane fuscous or brown, marbled with pale yellowish or white, the veins ferruginous. Tergum pale brown, more or less clouded with dark brown.

Length to tip of venter 5-6 millimeters. Width of base of pronotum 2 millimeters.

This is an exceedingly neat species of *Phytocoris*, of which I found specimens on small plants in Beaver Brook Gulch, next to Clear Creek Cañon, on August 6. It is quite common in Eastern Massachusetts, in Lower Canada, in Rhode Island, New Jersey, Texas, and Maryland. In the vicinity of Baltimore, I have swept it from umbelliferous plants in damp situations, and on dates ranging from June 26 to September 19. When at rest, it looks so much like some of the species of the Neuropterous genus *Psocus* that on one or two occasions I had nearly passed it by, mistaking it for that insect.

The less mature examples are of a paler, more ferruginous brown, marked with pale yellow and darker brown; and varieties occur in the South which have lead-colored or bluish markings near the tip of the corium.

LOPIDEA Uhler.

L. media.

Capsus medius Say, Heteropt. New Harmony, 22, No. 11.

Plentiful at Denver, Golden, Colorado Springs, and in the valley of the Arkansas near Cañon City, August 5 to 18. It occurred most fre-

quently upon the wild-rose bushes. Still, I did not find it upon the rose bushes in Clear Creek Cañon, although I swept them with much assiduity, and obtained various other insects therefrom.

HADRONEMA Uhler.

H. militaris.

Hadronema militaris Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 412.

One specimen from Clear Creek Cañon, well up on the mountain-side, August 6.

Dr. Packard collected one specimen on July 2 at Blackhawk, Colo. It seems to be a mountain-loving species, and did not occur to me on any of the lower levels on which I used the net.

LYGUS Hahn.

1. *L. lineolaris.*

Capsus lineolaris Palisot-Beauv., Ins. Afr. et Amér., 187, pl. xi, fig. 7.

Almost as common in the cultivated districts of Colorado as it is in the Eastern United States. Dr. Packard found it at Golden, July 3; at Blackhawk, July 2; in the American Fork Cañon, Utah, July 22; and very common in gardens at Salt Lake City, July 25. I found it myself, in August, around Denver, near Golden, in the vicinity of Colorado Springs, and near Cañon City.

2. *L. annexus.*

Lygus annexus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 413.

It occurred in small numbers in the mountains and cañons wherever I went. In Beaver Brook Gulch, it offered several very distinctly marked varieties, which I did not find elsewhere. Generally, the ground-color was pale olive or yellowish, marked with black or fuscous. Pale varieties were quite common near Denver on a species of *Euphorbia* with white-margined leaves.

Dr. Packard obtained it at Denver, July 28, and at Idaho, Colo., July 6.

CALOCORIS Fieber.

C. rapidus.

Capsus rapidus Say, Heteropt. New Harmony, 20, No. 4.

Capsus multicolor H. Schf., Wanz. Ins., viii, 19, fig. 795.

One specimen from near Pueblo, Colo., August 10. Dr. Packard collected it in the American Fork Cañon, Utah, July 22.

RESTHENIA Amyot ET Serv.

R. confraterna.

Resthenia confraterna Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 411.

One specimen from Beaver Brook, August 6, and another collected by Dr. Packard at Idaho, Colo., July 6.

LABOPIDEA, new genus.

Ovate, hairy, with the head broader than the pronotum, and the outer margins of the hemelytra strongly curved. Head transverse, triangular,

with the eyes subglobose and almost pedunculate; the face prominently convex, almost vertical in front, curving inferiorly; the tylus prominent; superior cheeks almost vertical, broad triangular, with the apex placed inferiorly; lower cheeks placed in large part behind the upper ones, thickened, blunt at the lower end; bucculæ slenderly lunate, concave inside, as long as the throat; rostrum short and stout, inserted on a line running direct from the base of the antennæ; occiput with a carinate collar, which is convexly elevated on the middle, and with an incised line bounding it in front; antennæ stout, about as long as the pronotum and body united, the basal joint about as long as the head, a little thickened beyond the base, second joint very long, less stout than the basal one, cylindrical, the two apical joints a little more slender. Pronotum transverse, the sides oblique, narrowing anteriorly, the anterior angles rounded, anterior margin moderately concave, with the callosities broad, bilunate, each lobe convex behind, and with the space uniting them concave behind. Femora broad, compressed; hind tibiæ very long. Scutellum triangular, the three sides almost equal, and the surface very feebly convex. Hemelytra short and wide, with the costal margin broadly accuated posteriorly, with the cuneus very large and broad, and the membrane short and attached to the inner side at the end of the corium.

L. chloriza, new sp.

Pale, clear-green, densely pubescent. Head yellowish; face with a blackish circle in front, which is interrupted above; each side of vertex with a dark-brown dot, and the base of tylus, the suture at the tip of lower cheeks, and the eyes dark piceous. Antennæ pale piceous, paler on the basal joint. Rostrum reaching to the intermediate coxæ, tinged with piceous at the ends of the joints and on the apex; the basal joint a little longer than the throat, the second a little longer. Pronotum narrower in front than behind, trapezoidal, the sides oblique, the posterior margin straight and the anterior one a little concave; surface green, somewhat yellow anteriorly, with a dark dot each side of posterior division, and a brown curved line bounding each lobe of the callosity posteriorly. Under side whitish-green, or very pale yellow, with a black spot at the base of the anterior coxæ, and one above; also a faint duskiness at base of the other coxæ. Legs bright yellow, or a little greenish, the tarsi somewhat infuscated at tip, and the nails piceous. Scutellum faintly tinged with yellow, closely coated with whitish hair. Corium green, unevenly punctate, the punctures shallow, and sometimes confluent, those of the claws coarser; the surface polished, but closely invested with pale, almost erect pubescence; membrane white, with a faint cloud of fuliginous outwardly. Tergum black on the disk, the broad connexivum and the apex orange, the disk smooth, and all the remaining surface invested with remote prostrate hairs, venter polished, remotely pubescent, yellowish, but a little obscured at base.

Length to end of abdomen $4\frac{1}{2}$ –5 millimeters. Width of pronotum $1\frac{3}{4}$ millimeters. Width across hemelytra $2\frac{1}{4}$ millimeters.

Collected in the American Fork Cañon, Utah, by Dr. Packard, on July 22.

This is a robust and hairy species, built much after the pattern of the genus *Labops*, but with less prominent and not fully pedunculate eyes. Doubtless many other equally interesting Phytocorids yet remain to be discovered in the cañons, parks, and on the foot-hills of the Rocky Mountain regions. They should be looked for as the different kinds of flowers begin to bloom. In the valley of the Arkansas, the grape grows luxuriantly, and when that is in bloom several species may be obtained from it, as in Texas and in the Atlantic region.

LABOPS Burm.

L. hesperius.

Labops hesperius Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 416.

One specimen from the mountain-side near Gray's Peak, August 6. I swept it from some bushes growing among the rocks, but the most assiduous labor failed to secure other specimens.

MACROCOLEUS Fieber.

M. coagulatus, new sp.

Apple-green; the color in the pronotum and hemelytra appearing as if coagulated, leaving the ground, in patches, bare and pale; the form normal, moderately robust. Head transverse, pale green, clothed with whitish pubescence and minute scales; the base with a stout, transverse carina, a little indented in the middle (♂), less elevated (♀), with an impressed line bounding it in front; tylus quite prominent; the face a little more contracted in the male than in the female. Antennæ yellowish, moderately slender, the length a little more than that of the head; pronotum and claws united, the basal joint stouter than the second, second of uniform thickness throughout and a little more than three times the length of the basal joint; third a little shorter than the second, and slightly more slender; fourth almost as thick as the third, and but little longer than the basal joint. Rostrum reaching upon the intermediate coxæ, slenderly tapering and very acute, green at base, yellow beyond, and blackish-piceous at tip. Eyes brown, oval, inclining to reniform, prominent, placed a little obliquely. Pronotum transverse, moderately flat, green in patches, the anterior half yellowish, clothed with white pubescence and scales; callosities large, separated in the middle by a depression; anterior margin short; the posterior margin long, with very angular shoulders; the lateral margins very oblique, with the edge carinate, the deflexed sides pressed in, and, like the other pleural pieces, smooth, pale, and bald. Legs pale, yellowish-green, the tips of tibiæ and the tarsi obscured, the tip of the last joint and the nails piceous. Scutellum pale green, smooth, feebly convex. Hemelytra green in coagulated patches on a paler ground; the corium and

clavus with a few scattered blackish punctures, closely whitish pubescent; membrane hyaline, with a large faint cloud near the apex, an obscure smoky spot on the loop of the nervure, and a darker spot exterior to the end of the areole; sometimes with the latter only, or with most of the membrane smoky; the nervure green. Wings clear hyaline. Abdomen pale green, more or less tinged with yellow, polished, remotely pubescent.

Length to tip of abdomen 3 millimeters. Width of pronotum $1\frac{1}{4}$ millimeters.

Beaten from the wild gooseberry and other bushes in Clear Creek Cañon, August 7.

The wing-covers are much longer than the body, the corium long and acutely angular, and the membrane is long and full. The male has a broad genital lobe on the left side, which is a little convexly arched, slightly angular on the upper end and bristly; next to this is a cup-shaped organ, and beneath this a longer, cushion-shaped piece. Perhaps, when these organs are unrolled, they may show teeth or processes on their inner edges.

TINICEPHALUS Fieber.

T. simplex.

Tinicephalus simplex Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 417.

A neat little green insect, which occurs on various kinds of plants in the vicinity of the mountains west of Denver in July and August.

It is one of the several forms belonging to the Rocky Mountain region, which, while generically different, so closely resemble each other as to make it difficult to discriminate the species. My materials are at present too incomplete and imperfect to enable me to designate them all; but, upon the receipt of clean specimens of both sexes, it will be comparatively easy to give their true characteristics.

STHENAROPS, new genus.

Outline similar to that of *Calocoris bimaculatus* Hoffg., elongate, almost parallel-sided, with the pronotum short campanulate as seen from above. Head wider than the front of pronotum, incisedly constricted at base, the front almost vertical, and, excepting the tylus and cheeks, nearly square, with the center like a convex shield, the back part of vertex flattened, and bounded behind by an arched, stout, carina; eyes large, globosely oval, each placed on a prominent base, a little oblique; face indented at base of tylus, convex, contracting inferiorly; the tylus very prominent, curving downward and backward, the superior cheeks broad, nearly vertical, triangularly rounded at tip, the inferior cheeks longer, prominently elevated like a ridge, subfusiform. Rostrum short and stout, the basal joint broad and compressed, geniculate, a little longer than the head; throat concave. Antennæ long and slender; the basal joint longer than the head, feebly curved, cylindrical; second very long, of uniform thickness throughout; third thinner and a little shorter;

fourth a little more slender, as short or shorter than the basal joint. Pronotum a little wider than long, broadly a little convex, the sides rounded off, the lateral margins concave; posterior margin arcuated, the anterior margin concave; callosities large, convex, transverse, bounded behind by an impressed line, separated in the middle by a transverse indentation. Legs stout, the thighs compressed, posterior tibiæ very long; basal joint of tarsi shorter than the second. Scutellum almost equilateral, the surface even, very feebly convex. Hemelytra flat, the costal margin strongly carinate, almost straight.

1. *S. chloris*, new sp.

Pale green, or greenish-white, elongate, pubescent. Head long, five-angled, almost vertical, pale green, polished, clothed with sparse, long, whitish pubescence; center of the vertex posteriorly with a short black line, indented in front, which connects with a subquadrangular black ring bounding the inflation of the cranium; face black, highly polished, the superior cheeks green; space beneath, before, and above the eyes also green; throat and base black. Eyes brown. Bucculae margined with green. Rostrum testaceous, reaching to the back of the posterior coxæ, the third and fourth joint piceous. Antennæ as long as the hemelytra including the membrane, black or piceous, with the two last joints dusky; basal joint a little shorter than the width between the eyes; second joint as long as from the front of cranium to the base of the pronotum; the third a little shorter; fourth shortest. Pronotum transverse, green, yellow anteriorly, clothed with erect, long, whitish pubescence, the middle longitudinal line a little depressed, and sometimes having a few black points anteriorly; each side of middle with a round black dot; anterior angles obliquely rounded, the posterior ones prominent, with the margin behind them arcuated. Scutellum bright green, sparsely clothed with white hairs, the basal middle with a black spearhead-mark. Sternum black; the deflected propleura green, polished; the other pleural segments blackish, margined with white. Coxæ more or less dusky, but green at tip; legs green, the tibiæ at the tip and the tarsi piceous, the nails black. Corium and clavus apple-green, sometimes a little sprinkled with black, obsolete rugulose, moderately clothed with white, long, oblique, pubescence; membrane smoky, paler at base, the nervures greenish; wings smoky. Venter black, broadly greenish-white each side of disk, neatly clothed with silky white pubescence, the segments more or less margined with white.

Length to tip of venter $3-3\frac{1}{2}$ millimeters. Width of pronotum $1\frac{1}{2}$ millimeters. Length of hemelytra $3\frac{3}{4}$ millimeters.

An elegant little Capsid, of which I found a few setting singly upon the flowers of a slender pale Composite, growing in Manitou Park, August 14. Another specimen was swept from some weed in the vicinity of Colorado Springs, in the low grounds near the Fountain Creek.

2. *S. malina*, new sp.

Larger and more slender than the preceding species, with longer an-

tennæ; deep green, highly polished, very sparingly pubescent. Head curved posteriorly, with the neck more defined than in the preceding species, greenish-yellow, indented on the vertex, the transverse carina a little arched, with the surface in front of it a little depressed; middle of cranium with a roundish, large, black shield, which connects with the black color of the face; the whole face, under side, and base of the head polished black; tylus abruptly elevated, prominent, a little scooped out each side, not impressed at base, pubescent at tip; eyes brown, prominent. Rostrum reaching upon the intermediate coxæ, greenish; the last joint piceous; the basal joint very broad, rounded at tip; bucculæ pale. Antennæ as long as the entire hemelytra; pronotum and vertex conjoined, black, excepting the basal joint, which is green excepting the black tip and under side next the tip; the basal joint longer than the width between the eyes; second very long; third a little shorter, dusky; fourth scarcely shorter than the first, also dusky. Pronotum campanulate, longer than wide, obsolete rugose, yellow anteriorly, clothed with white, remote, pubescence, with a large, round, black spot each side, the surface distinctly sloping toward the sinuated sides; posterior margin feebly convex, the lateral angles subacutely prominent, with the margin behind them almost sinuated. Scutellum green, feebly convex, with a slightly depressed black spot near the middle at base, from which a blunt faint carina runs backward to the tip. Propleura with a large black spot reaching to the base of the coxæ; sternum dull blackish, and sometimes also the greater part of the meso- and meta-pleuræ. Coxæ green, a little dusky at base; legs green, or greenish-yellow, the tips of tibiæ and tarsi and the nails piceous. Hemelytra clear, deep green, remotely whitish-pubescent, remotely punctate, with a blackish streak on the disk of the corium; costal margin thick and prominent; membrane black or blackish, with the basal margin and the nervures pale greenish; wings blackish. Tergum black, shining; venter blackish, or with the outer margins pale, the whole surface minutely sericeous pubescent. Genital segment of the male pale piceous or yellow, the right side with a long triangular lamina extending obliquely toward the left and terminating in a long slender hook, which curves far backward.

Length to tip of venter 4-5 millimeters; to tip of membrane 5-7 millimeters. Width of base of pronotum $1\frac{1}{2}$ -2 millimeters.

Inhabits Eastern Massachusetts, New York, Pennsylvania, Maryland, in places with long grass, in June; Ohio, Southern Illinois, and Texas. Fragments of a male, a little stouter than usual, were brought from the borders of Russian America, in the far northern part of the British possessions. Missouri, C. V. Riley.

ORTHOPS Fieber.

O. scutellatus, new sp.

Form of *O. pellucidus* Fieber. Greenish-yellow when fresh. Head yellow, smooth, highly polished, impunctate; tylus black and connecting with a long black spot, which runs back to near the base of vertex;

basal carina pale, nearly straight, narrower in the middle, and in front of this point is a faintly impressed longitudinal line; eyes dark brown, the throat and the suture between the cheeks blackish. Bucculæ black, the rostrum reaching to the posterior coxæ, greenish-yellow, with a small piceous tip. Antennæ moderately thick, yellow, tinged with piceous, the two apical joints darker, the base of third pale; second joint largest, about as long as the pronotum, the third a little longer than the basal one, and more slender than the second; fourth shortest. Pronotum with a regular curving slope toward the sides and front, smooth, polished, coarsely punctate, with a small black arc behind each callosity, a brownish cloud across the base, and a longitudinal, black, short stripe on the deflexed, punctate sides; surface a very little pubescent; posterior margin arcuated, the edge sharp, and faintly recurved; sternum blackish, the meso- and meta-pleuræ dull black, margined with yellow. Coxæ and legs greenish yellow, the knees and tips of tibiæ tinged with brown, and the apex of the tarsi with the nails piceous. Scutellum pale yellow, black at base, indistinctly and very minutely punctate, transversely rugulose, minutely pubescent. Corium dull yellow or yellowish-green, with a large brown cloud at tip and the whole clavus brownish, distinctly and closely finely punctate, minutely pubescent, the costal margin brighter yellow; cuneus dull yellow, margined behind with brown; membrane with a cloud at tip, the nervures and a tinge at base brown. Venter bright yellow, highly polished, impunctate, minutely pubescent, with a streak of brown each side, extending from the base, but not reaching to the tip.

Length to tip of venter $3\frac{1}{2}$ -4 millimeters. Width of pronotum $1\frac{1}{2}$ millimeters.

Beaten by myself from bushes in Clear Creek Cañon, August 7. It occurred singly, but was not at all rare. My short stay in that locality prevented me from collecting them in large numbers.

MERGACCELUM Fieber.

1. *M. fasciatum*, new sp.

Long-oval, yellow, stout, minutely and closely pubescent. Head broad and stout, five-angled, blunt, vertical, brownish-yellow, impunctate, broadly, obsoletely channeled transversely in front of the slender basal carina; vertex convex; tylus moderately prominent, curving inferiorly; face paler or orange, sometimes tinged with rufous; throat and bucculæ rufous. Rostrum reaching to the posterior coxæ; basal joint red, a little longer than the throat; remaining joints yellow, the second longest. Antennæ stout, reddish-yellow, paler at base; second joint a little longer than the pronotum, becoming slightly thicker toward the tip; third thicker than the preceding, and about one-third shorter; fourth thick, a little longer than the basal one. Pronotum short, minutely rugulose and obsoletely punctate, polished, pale chestnut-brown, more or less tinged with rufous; the lateral margins very oblique,

rounded off, destitute of a carina; the posterior margin a little arcuated, declivously rounded, with the lateral angles prominent, subtubercular, acute. Propleuræ punctate, rugulose, tinged with rufous; meso- and meta-pleuræ impunctate, dull rufous. Coxæ and legs yellow, the tibiæ tinged with rufous. Scutellum chestnut-brown, yellow at tip, finely pubescent, closely, minutely punctate, feebly rugulose. Corium and clavus yellow, with a brown transverse spot at base, omitting the outer margin, and a larger band extending from the middle to the tip obliquely, and omitting the forward part of the costal margin and the basal suture of the cuneus, but covering the cuneus; the surface minutely, evenly, densely rugulose and punctate, and finely whitish pubescent; abdomen rufous or pale brown, finely pale pubescent; membrane dusky, pale at base.

Length to tip of venter 2-2½ millimeters; to tip of membrane 2½-3 millimeters. Width of pronotum 1¼-1½ millimeters.

Two specimens were swept by me from bushes near Manitou, August 13. It occurs also in Texas; Missouri; Illinois, near Rock Island; in York County, Pennsylvania, in June, on hickory. In Maryland, it belongs to the central faunal district, and may be found in July, sometimes abundantly, on the *Carya alba* Mich. It varies very much in the depth and distinctness of the colors, and in the size of the brown bands of the hemelytra. The specimens from Colorado are lighter but more clearly colored than the average of specimens from Maryland. One specimen from Manitou, July 16, collected by Dr. A. S. Packard, jr.

PLAGIOGNATHUS Fieber.

P. obscurus.

Plagiognathus obscurus Uhler, Fifth Ann. Rep. U. S. Geol. Surv. for 1871, 1872, p. 418.

Found in the American Fork Cañon, Utah, by Dr. Packard, on July 22.

Comparison with sufficient series of the European species may show that this is only a form of one of them. It agrees in many respects with *P. bohemanii* Fallen, belonging to Switzerland and other parts of Central Europe, but the only specimens of that species in my collection are too much damaged to admit of full comparison.

PŒCILOSCYTUS Fieber.

P. sericeus, new sp.

A little less robust than *P. unifasciatus* Fab., with the sides of the hemelytra straighter. Clay-yellow, more or less tinged with brown or rufous, the upper surface, excepting the head, minutely and closely scabrous, finely punctate, golden sericeous pubescent. Head almost vertical, gently curved in front; eyes large, dark brown, the tylus curving down, prominent, with the incision of the base and sides very deeply cut, black or piceous, highly polished, narrowing inferiorly; the surface yellow, smooth, golden pubescent with a series of oblique wrinkles, colored brown, each side of a central, longitudinal, low ridge; vertex and cheeks

with some small brown streaks. Bucculæ orange-yellow; labrum piceous or black, the rostrum extending to the base of the posterior coxæ, bright yellow, with the tip or one or both of the last joints piceous. Antennæ dusky yellow or pale piceous; the basal joint thickest, piceous or black; the second very long, palest, piceous at base and tip; third more slender, a little darker at tip, more than one-half as long as the second; fourth still more slender, shorter than the third, but longer than the basal one. Pronotum wider than long, moderately convex; the sides obliquely arcuated, not carinated; the outer angles a little humped, and the surface adjoining postero-interiorly a little impressed; the posterior margin a little arcuated, the edge sharp, but faintly decurved; callosities bounded behind each by a brown, impressed arc, and with a brown indented point in the center of each; the submarginal surface frequently with a brown broad streak, or with a cloud and a darker streak in the anterior angle; deflexed sides pale yellow, scabrous and sericeous pubescent, generally with one or two brown spots (but sometimes without them); sternum and pleuræ more or less dusky, pubescent. Legs and coxæ yellow; the femora a little darker, crossed with two or three brown oblique bands, those of the posterior femora darker and jagged; sometimes with the knees a little brown; tips of tibiæ, two last joints of the tarsi, and the nails piceous. Scutellum with the posterior part of the disk a little raised, sinuated each side, brighter yellow, transversely wrinkled, the base brown in the middle and on each side. Corium pale dull yellow, clearer on the costal area, golden sericeous pubescent; the clavus, except at base and a long cloud on the disk extending to the apex, brownish; cuneus red, excepting on its margins, which are pale yellow; membrane pale smoky, margined at base and inward by a thickened fuscous edge, the inner continuation of this edge yellow, base pale, the nervules pale yellow, with the smaller areole sometimes dark brown. Venter yellow or reddish-yellow, polished, minutely pubescent, the disk with a large black area, and the outer submargin with a series of short black lines running from the base to the penultimate segment; the exterior margins of the posterior segments are oblique, and give the angles prominence, making the segments appear serrate.

Length to tip of venter 3-5 millimeters; to tip of membrane 5-6 millimeters. Width of pronotum 2-2½ millimeters.

Collected by me at Colorado Springs, while sweeping the weeds near the Fountain Creek, August 16.

It is a very variable and common insect in many parts of North America, extending from Quebec to Southern Florida, thence west into Texas and New Mexico. In Maryland, it may be met with from the first of June till the end of October, and it lives upon violets, weeds, and herbs in low grounds. I have found it in York County, also, in similar situations, and upon *Ambrosia*.

Specimens of both sexes occur with a few coarse and deep punctures on the base of the head in front of the occipital carina, and very often

the black lines of the venter are replaced by a broad continuous dark stripe, running the whole distance from the base to the tip. A marked feature in the structure of the female is the large size of the last ventral segment, which is broadly and deeply emarginated to admit the ovipositor. Each lobe of this is triangular, with the apex truncated, and on the tergal aspect the sides are very high, giving the segment the appearance of being hollowed out.

Specimens from the mountains of Georgia and North Carolina are sometimes very pale, with only a trace of rose-color in the cuneus, and with but faint indications of the brown markings of the upper and lower surfaces and bands of the thighs.

PAMEROCORIS, new genus.

Contour of the longer forms of *Anthocoris*, but with the pronotum and head closely imitating *Ozophora* and *Ligyrocoris* of the family *Lygæidæ*. Head horizontal, long-conical, constricted behind the eyes, compressed and tapering before the eyes; the eyes large, suborbicular, prominent, almost as wide as the vertical thickness of the head; the vertex convex between them, the carina connecting the base of the eyes obsolete; tylus oblique, a little arcuated, prominent, occupying the whole width of the tip of the head; superior cheeks flat, ligulate, running parallel to the tylus behind it, and almost reaching to its tip; the inferior cheeks very small, sunken, placed obliquely behind the end of the superior ones. Antennæ longer than the body with the hemelytra; the two first joints stout, the basal one a little longer than from the eye to the tip of the tylus, tapering at base; the second cylindrical, a very little shorter than the corium and cuneus together; third and fourth much more slender, filiform, each longer than the basal, the fourth a little longer than the third. Rostrum long and very slender, reaching to behind the posterior coxæ; basal joint a little longer than throat, a little stouter than the second; second joint longer than the basal; third still longer; fourth a little longer than the basal one. Pronotum campanulate, wide at base, narrow anteriorly, contracted in front, and with a narrow collum on the anterior margin; lateral margins sinuately carinate; anterior lobe convex, the callosities separated by a short, longitudinal groove; posterior lobe slanting toward the transverse impressed line; the posterior margin is concavely sinuated, and the postero-lateral angles produced, long and narrow. Prosternum a little depressed, the sides carinately elevated, converging to an acute angle between the anterior coxæ. Scutellum longer than wide, acute at tip, at base transversely elevated, and behind this there is a transverse impressed line. The sides are deeply sinuated and the edge slenderly carinate. Coxæ long, stout, compressed, the anterior ones longest and stoutest; femora compressed, slenderly channeled on the inner and outer faces, posterior pair longest; the tibiæ very slender; tarsi long, the basal joint longest, the intermediate one very short, the apical one shorter than the

basal. Hemelytra flat, scarcely wider posteriorly, the costal margin carinately raised, a little arcuated; cuneus long-triangular, very slender at tip; membrane long. Abdomen narrow.

P. anthocoroides, new sp.

Piceous-black elongate-elliptical. Head smooth, dull, impunctate; the eyes dark brown, margined at base with paler; the facets very large; cheeks and tip of tylus rust-red; antennæ yellow, more or less infuscated, the basal joint black or piceous, with a pale tip, the two apical joints dusky. Rostrum pale yellowish, more or less piceous at tip. Pronotum dull black, sparsely pubescent, a little polished on the elevated disk of the anterior lobe; the lateral margins very oblique, and with the marginal line wavy; the posterior side almost twice as wide as the anterior one; the posterior lobe a little scabrous, obliquely depressed, the humeral angles distinctly produced, somewhat ligulate, and rounded at tip; the deflexed sides wrinkled. Coxæ pale yellow; the femora piceous or rufous, with the apex yellow; tibiæ and tarsi pale yellow, sometimes a little infuscated. Scutellum piceous or rufo-piceous, with a bright orange spot each side of the disk, and the acute tip pale yellow. Hemelytra yellowish-white, minutely scabrous, and sparingly, finely pubescent, infuscated at base, and with a large fuscous cloud extending from the middle to the tip; cuneus fuscous, with a roundish yellow spot at base; membrane smoke-brown or pale brown. Postpectus and venter dull rufous, the latter piceous on the middle; the genital pieces more or less orange. The hemelytra are sometimes fuscous, with a pale disk to the clavus, and a large pale spot on the middle of the corium.

Length to tip of membrane 3-3½ millimeters. Width of base of pronotum 1 millimeter or a little less.

A fragment of a specimen was in the little lot kindly given to me by Mr. B. H. Smith, collected in the vicinity of Denver, Colo. From Grimsby, Canada, a specimen was sent to me by Mr. J. Petit, and I have a specimen, collected by myself, from a strip of woods near Baltimore, on July 8. Another specimen (♂) is in the collection of the late Dr. T. W. Harris, which was collected by him in Eastern Massachusetts on the 20th July, 1831. This is the most interesting Heteropter which has yet been found in North America. While being an undoubted Phytocorid in its details of higher group value, it yet presents the features and some of the characters of both the *Lygaeidæ* and *Anthocoridæ*. As far as I have yet been able to examine the structure of the *Phytocordidæ* in their various stages of development, they have strongly impressed me as the great central group of the order, in which the characteristics of all the other groups may be found, with some other features which they hold entirely peculiar to themselves.

IDOLOCORIS Doug. and Scott.

I. agilis, new sp.

Form of *I. pallidus* Fieber; black, highly polished, impunctate, but very minutely rugulose on the upper surface. Head normal, deep black,

shining; the tylus a little prominent. Rostrum reaching upon the posterior coxæ, pale yellow, a little dusky at tip; the basal joint broad, compressed, longer than the head; second a little longer; third a little the longest. Antennæ long and slender, black; the apical joint yellow, with the base blackish; basal joint highly polished, thickest a little longer than the head; second cylindrical, almost as long as the head and pronotum united; third a little more slender, filiform, of about the same length as the preceding; the fourth of the same thickness as the third, a little longer than the basal one. Pronotum short campanulate polished, black, with a quadrate yellow spot on the middle, which sends forward a linear branch as far as to the margin; the collum constricted, whitish; callosities transversely oval, convexly elevated, with the line between them impressed; posterior lobe usually separated from the anterior one by a transverse impressed line, sometimes with an obsolete, impressed, longitudinal line on the middle; posterior margin concave, a little wider than the length of the pronotum; the humeral angles produced into slightly depressed lobes. Pleuræ black; the posterior ones more or less margined with yellow. Coxæ and legs yellow; the tip of tarsi and the nails pale piceous. Scutellum black, with a yellow spot each side of base. Hemelytra dusky hyaline, tinged with yellow, minutely, remotely, obsoletely punctate; tip of the clavus, inner margin, and posterior margin as far as a brown spot on the costa behind the base of cuneus rufous or pale brown; cuneus hairy, margined inwardly with ochreous, and with a yellowish-brown tip. Venter yellow, black at tip, minutely sericeous pubescent; tergum blackish, yellowish on the disk.

Length to tip of venter $3\frac{1}{2}$ -4 millimeters; to tip of hemelytra $4\frac{1}{2}$ -5 millimeters. Width of base of pronotum 1 millimeter or less.

A beautiful, graceful form, of which I swept several specimens from plants in Beaver Brook Gulch, August 7.

OBECTODERUS Uhler.

O. amœnus, new sp.

More slender than *O. obliquus*. Orange-fulvous, polished, not distinctly punctate; the hemelytra dull, excepting the long, cuneiform silvery streak running from the base of the corium. Head longer than wide, polished, narrowed behind the eyes, the width between the eyes scarcely less than the expanse of the collum; face moderately decurving; eyes reniform, oblique, blackish, very prominent. Antennæ moderately stout, rod-like, the basal joint constricted at its origin, the second joint very long, infuscated, of even thickness throughout. Rostrum reaching upon the venter, slender, infuscated. Pronotum subcampanulate, longer than wide, very narrow in front, finely polished, the posterior margin concave. Legs long and slender, the tibiæ and tarsi tinged with piceous. Venter highly polished, orange, a little infuscated, a little clavate posteriorly. Marginal lines of the corium all around and of

the clavus brownish; cuneus infuscated at tip, with a large white spot at base; the membrane smoky brown, paler at the basal angle.

Length to tip of venter $4\frac{1}{2}$ millimeters; to tip of hemelytra 6 millimeters. Width of pronotum $1\frac{1}{2}$ millimeters.

A damaged specimen was in the lot kindly given to me by B. H. Smith, collected in the vicinity of Denver, Colorado. Other specimens have been secured in New Mexico, Texas, and Illinois.

Family ANTHOCORIDÆ.

ANTHOCORIS Fallen.

A. musculus.

Reduvius musculus Say, Heteropt. New Harmony, 32, No. 6.

A few specimens were flying about in Beaver Brook Gulch, of which I secured a pair; and I swept a few others from plants growing on the steep side of the mountain in the midst of the pine woods. One specimen occurred on a vine of Clematis, which festooned a rock on the steep declivity of the upper part of this gulch, on August 6.

TRIPHLEPS Fieber.

T. insidiosus.

Reduvius insidiosus Say, Heteropt. New Harmony, 32, No. 5.

Anthocoris pseudo-chinche Fitch, Second Report New York, 295.

A few specimens occurred to me in the suburbs of Denver, August 5. No doubt, it has been introduced into the West with the raspberries, blackberries, and other small fruit. In Maryland, it is found upon the Ox-eye, Daisy, and on some other wild flowers, and in gardens sometimes abounds upon the small fruits, sucking their juices and giving the berries a nauseous taste.

Family ACANTHIADÆ.

ACANTHIA Am. et Serv.

A. lectularia.

Cimex lectularius Linn., Fauna Suec., 909.—De Geer, Mém., iii. tab. 17, figs. 9-15

Acanthia lectularia Amyot et Serv., Hemipt., 311, No. 1.

One specimen, collected by Dr. Packard in Salt Lake City, July 27. He reports them to be very abundant. I did not meet with specimens in any of the places where I stopped in Colorado.

Family ARADIDÆ.

ARADUS Fab.

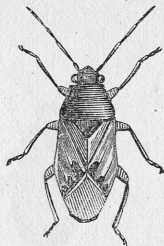
1. *A. tuberculifer.*

Aradus tuberculifer Kirby, Fauna Bor.-Amer., iv, 273, pl. 6, fig. 5.

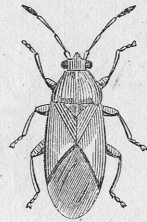
Collected by Dr. Packard near Idaho, Colo., July 6; one specimen found by myself on the mountain-side, far up the Beaver Brook Gulch, August 6.



1. *Nysius angustatus*.



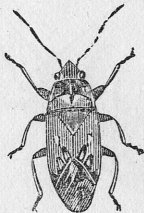
2. *Ischorocoris errans*.



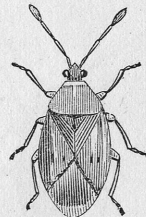
3. *Cymus clavicularis*.



4. *Zosmenus cinereus*.



5. *Trapezonotus agrestis*.



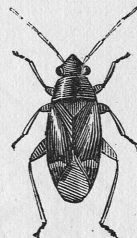
6. *Ischnorhynchus didymus*.



7. *Orthops scutellatus*.



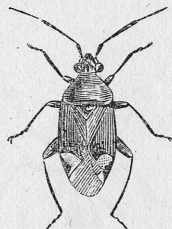
8. *Phygadicus behrensii*.



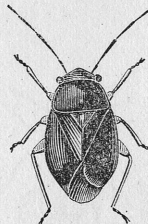
9. *Plagiognathus obscurus*.



10. *Camptobrochis nebulosus*.



11. *Capsus capillaris*.



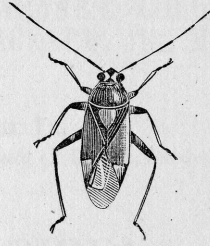
12. *Stiphrosoma stygica*.



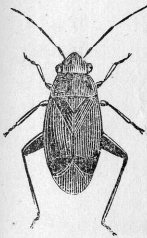
13. *Rhopalotomus brachycerus*.



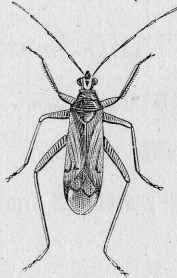
14. *Aneuris inconstans*.



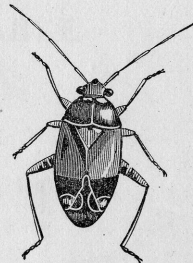
15. *Lopidea media*.



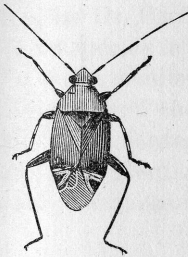
16. *Agallistis associatus*.



17. *Idoloris agilis*.



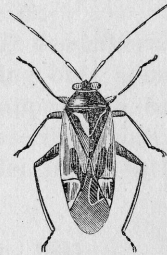
18. *Lygus annexus*, var.



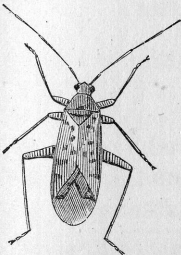
19. *Dacota hesperia*.



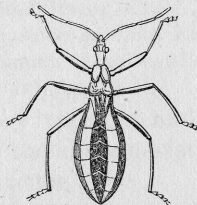
20. *Rhopalotomus ater*.



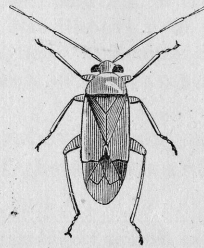
21. *Pocciloseytus unifasciatus*.



22. *Malacocoris irroratus*.



23. *Fitchia aptera*.



24. *Calocoris rapidus*.