

10. *C. Germarii*.

*Corixa Germarii*, Fieb., l. c., 38, No. 43.

Inhabits Alaska and Northern Europe.

11. *C. mercenaria*.

*Corixa mercenaria*, Say, Heteropt. New Harmony, 39, No. 3.

Inhabits Mexico, California, &c.

12. *C. Escheri*.

*Corisa Escheri*, Heer, Insektenfauna von Oeningen, iii, Rhynchoten, 87 (foot-note.)

Above blackish-fuscous; pronotum with eight transverse lines; lincoles of the hemelytra almost parallel, black, angularly waved; front, pectus, and legs pale-yellowish. Head pale-yellowish, with dusky, blackish eyes. Pronotum very short, with a not very distinct medial carina; the first five transverse lines simple and parallel; the succeeding ones branching. Clavus distinctly rastrated, having short, but parallel yellow, transverse lines, the sutural interval narrow and yellow; corium also rastrated, but the rastrated lines obsolete posteriorly; membrane smooth, not rastrated; the parallel lines are subparallel, but become shorter and less regular posteriorly. Mouth, pectus, and legs pale yellow; the palæ stout, narrowing toward the tip, inferiorly with two series of slender bristles. Venter pale-yellowish; the bases of the segments shaded with blackish.

Length, 5 lines.

Inhabits New Georgia, coast of Washington Territory.

This translation of the original description is introduced here for the benefit of the many entomologists who are not likely ever to see the rare volume in which it so unexpectedly occurs; also in the hope that it may meet with attention from those who are favorably situated for recovering and placing within the reach of American students this conspicuous representative of the fauna of the Pacific coast.

## SUBORDER HOMOPTERA.

Rostrum attached to the forepart of the head; the front situated either anteriorly or beneath, but not superiorly; the hemelytra homonomous, usually slanting in opposite directions, as the roof of a house.

The species are aërial and plant-feeders, and none are aquatic. Legs formed for walking or leaping.

### FAMILY STRIDULANTIA.

#### CICADA, Fab.

1. *C. rimosa*.

*Cicada rimosa*, Say, Journ. Acad. Phila. vi, 235, No. 2.

Obtained at Ogden, Utah, by Prof. Cyrus Thomas.

2. *C. synodica*.

*Cicada synodica*, Say, Journ. Acad. Phila. iv, 334, No. 6.

This pretty little species seems to be common in Eastern Colorado. The present specimens were collected in that region by Mr. B. H. Smith and by Prof. C. Thomas.

3. *C. dorsata*.

*Cicada dorsata*, Say, Journ. Acad. Phila. iv, 331, No. 3.

This is the grandest and most beautiful of the large western species of *Cicada*. Its note is said to be loud, piercing, and sustained, and from the great strength of the base of the wings and their fasciculæ of muscles the species must be one of the most vigorous and rapid in flight.

The specimens here noticed were collected in Colorado by Prof. C. Thomas.

4. *C. canicularis*.

*C. canicularis*, Harris, Insects of Mass. 217, fig. 88.

From the mountains of Colorado. The specimen corresponds in size, structure, and markings with those from Eastern Massachusetts and other parts of New England. New Jersey seems to be the region where it varies most in size and kind of marking.

5. *C. hesperia*. New sp.

Form and general appearance of *C. rimosa*. Fusco-piceous, or, when less mature, dull ochreous; the surface generally invested with yellowish prostrate pubescence, the sutures and depressions with erect pubescence. Head narrower than the front of pronotum; face densely pubescent; the outer margins, central line, orbital prominences, and basal joint of rostrum orange-yellow; frontal ridge and lower part of cheeks coated with prostrate pubescence; the outer region of the cheeks having long hairy pubescence. Rostrum reaching to the intermediate trochanters. Cranium with dense prostrate pubescence; central longitudinal line impressed; running from the ocelli each side obliquely is a similar impressed line; suprafrontal space tabulate, depressed, having the central ocellus deeply seated in a large lunate excavation. Antennæ black. Pronotum obliquely narrowing and declining anteriorly; the lateral and posterior margins yellow; oblique impressions each side of disk ochreous; anterior margin and posterior submargin linearly elevated; the posterior margin broadly sinuated each side; the posterior angles produced obliquely, and elevated in a broad flap with rounded angles, the surface of the flap obliquely striated; lateral margin in front of the flap sinuated, directed downward; anteriorly to this the margin proceeds upward, and is tabular as far as to the angularly-toothed anterior angle. Mesonotum smooth; the latero-posterior margins sinuated, yellow; the disk is marked with four angular yellow spots. Wing-covers infuscated on the basal half, the nervures fuscous, and the posterior basal flap bright red; costal edge yellowish; wings at base and nearly the whole of the basal flap red; beyond the base, the nervures are more or less bounded with fuscous. First apical areole shorter than the second, and about half as wide, elongate-elliptical, acute at both ends. Pectus pale yellowish; disks of the pleural pieces blackish. Legs testaceous, but more or less suffused with piceous, particularly upon the tarsi and upon the anterior pairs of femora. Tergum yellow on the posterior margin and sides of the segments, excepting the basal one; venter, excepting the base, but including the genital covers, testaceous. Apex of the last ventral segment bilobate. Posterior margin of the last tergal segment subentire. Penis-sheath elliptical, narrowed, and sinuated each side from beyond the middle to the tip, the apex curved downward; inferior genital-cover rounded at base, acutely tapering at tip.

Length, exclusive of genital-cover, 19 millimeters; expanse of wings, 51 millimeters; width of base of pronotum, 9 millimeters.

Collected in the vicinity of Denver City, Col., by C. Thomas.

This species is closely related to *C. rimosa*, Say, and must be referred to the same subdivision of the genus. It differs most from that species in the shape of the head, sides of pronotum, and form of genital pieces. Nevertheless, I do not doubt that, when all the heteromorphs of *C. rimosa* have been sufficiently studied in the regions which they affect, local forms will be discovered to connect all the extremes into one complete species-cycle. Enough is already known of the influences of soil, physical and chemical agencies, excess or insufficiency of nourishment, and of extremes or sudden emergencies of weather to show us that certain flexible types of insect-life are changed thereby, but which may continue fixed in a particular type in the region where the conditions remain stable. Transportation from one locality to another of a different kind also stamps characters suitable to the changed conditions of life of the species.

#### 6. *C. areolata*.

*Cicada areolata*, Uhler, Proc. Phila. Acad. 1861, 285.

Collected in Cache Valley, Utah, by C. Thomas, but previously known from San Mateo, Cal. (A. Agassiz); from Ogden, Utah; from Virginia City, Nev. (J. Behrens); and from Washington Territory.

### FAMILY MEMBRACIDÆ.

#### CERESA, Fairm.

##### 1. *C. dicerus*.

*Membracis dicerus*, Say, Long's Expedition, appendix, 299.

Obtained at La Bonte by C. Thomas. This species is very widely distributed throughout temperate North America.

##### 2. *C. bubalus*.

*Membracis bubalus*, Fab., Ent. Syst. iv, 14.

Common in most parts of the United States. The present specimens were collected in Wyoming Territory by C. Thomas. In Maryland, this species is exceedingly abundant in late summer on the twigs and leaves of the willows growing in damp and wet situations. It varies somewhat in colors, but remarkably in the form of the pronotum. The lateral angles of the pronotum are produced and curved in some; in others, short and blunt; in others, straight and acute; and, in still others, slender, acute, and with a hollowed space in front of the pronotum. Usually, they are almost uniform pea-green; but varieties occur which are more or less mottled, and marked with rufous or fuscous.

Lieut. W. B. Carpenter found this species in the vicinity of Eagle River, Colorado, in August, 1873, and also in various other parts of Colorado from June to September.

#### ENCHENOPA, Amyot & Serv.

##### *E. curvata*.

*Membracis curvata*, Fab., Syst. Rhyng. 13, No. 34.

*Membracis latipes*, Say, Long's Exped. ii, 302, 5.

One specimen from Eagle River, Colorado, August 29, by Lieut. W. B. Carpenter.

## TELAMONA, Fitch.

*T. querci.*

*Telamona querci*, Fitch, Fourth Annual Report of the State Cabinet New York, 51, No. 8.

A single specimen of a pale variety, destitute of the usual dorsal vitta, was collected by Lieutenant Carpenter in Colorado. It agrees in shape with specimens from New York and elsewhere, but differs in being pale brown, almost uniform. This may be an immature specimen, and the alcohol in which it was placed has deprived it of its original colors.

## ARCHASIA, Stål.

*A. galeata.*

*Membracis galeata*, Fab., Syst. Rhyng. 9, No. 13.  
*Smilia auriculata*, Fitch, Fourth Report, 49, No. 7.

Collected in Utah by C. Thomas. The species is widely distributed in the United States, but does not seem to be very abundant in any of the localities yet reported. It differs much in the altitude and degree of curvature of the pronotum, as well as in its breadth and sharpness. Specimens from Utah appear to be as large and high as any from the most favorable regions of Illinois and Georgia.

This and *Smilia camelus*, Fab., are the only conspicuous representatives of the great group of Membracids which form such a remarkable feature of the homopterous fauna of tropical America. In these, we have the most agreeable green color, delicately mottled with a lighter tone, or with rose, slightly flecked with black on the summit of the pronotum. In strong contrast with these, the South American species are black, with pale bands or spots, or of some pale color, with black stripes or spots. In a very few of them only do we meet with red markings.

## PUBLILIA, Stål.

1. *P. concava.*

*Membracis concava*, Say, Long's Expedition, appendix ii, 301.

From Utah, collected by C. Thomas. It inhabits most of the regions in the eastern part of the United States; but this is the first time that it has been recorded from west of the Missouri.

There is a system of reticulated raised lines on the sides of the pronotum, which give the appearance of neurulation as belonging to the eorium of certain Lepyrionias. This is quite deceptive to the unpracticed eye, and might lead to the supposition that the hemelytra have been soldered together. Such is not the case, however, and the true hemelytra, although largely covered by the pronotum, are still present and perfectly developed.

2. *P. modesta.* New sp.

General form of *P. concava*, Say, but more decidedly vertical in front, and with the dorsal outline scarcely depressed before the middle; apex of the pronotum more slender and acute. Color pale yellow; the head and fore part of pronotum clouded with pale brown; a spot above the humeri, a broad oblique band behind the middle, and a broad cloud on the apex grayish-brown; the dorsal edge irregularly spotted with dark brown, and the oblique band surmounted by a large brown spot. The surface closely beset with series of coarse sunken punctures; the longitudinal and reticulated surface-lines obsolete. Humeral margin of the

sinus waved. Under side picco-testaceous; the front, clypeus, pectus, and venter, excepting the edges of the segments, black-piceous. Legs dull yellow, closely pubescent, clouded, and spotted with brown.

Length, 4 to 4½ millimeters. Breadth of pronotum, 2 millimeters.

Colorado (C. Thomas); also discovered in Utah, Dakota, Arizona, New Mexico, and California.

In two specimens examined, the commonly raised lines on the surface of the pronotum were obliterated.

#### ACUTALIS, Fairm.

##### 1. *A. tartarea*.

*Membracis tartarea*, Say Journ. Acad. Phila. vi, 242, No. 1.

Utah; collected by Prof. Cyrus Thomas. It inhabits also the eastern region of the United States from Massachusetts to Florida. A variety of this species lacks the opaque-black color of the hemelytra, and has instead a clear hyaline throughout.

The other representatives of this genus in North America are the following, which, from their wide distribution, will probably be discovered hereafter in several of the Western Territories:—

##### 2. *A. semicrema*.

*Membracis semicrema*, Say, Journ. Acad. Phila. vi, 242, No. 2.

*Acutalis anticonigra*, Fairm., Ann. Soc. Ent. France, sér. 2, iv, 1846, 498, No. 7.

Thus far discovered in Florida, Mississippi, New York, and Mexico.

##### 3. *A. dorsalis*.

*Tragopa dorsalis*, Fitch, Fourth Annual Report Regents N. Y. State Cabinet, 52.

Originally described from New York, but it has since been found in Texas. Differs from *tartarea*, Say, in being more finely punctate, and in having more slender nervules, and larger areoles in the hemelytra.

##### 4. *A. calva*.

*Membracis calva*, Say, Journ. Acad. Phila. vi, 242, No. 3.

*Smilia flavipennis*, Germar, Silb. Revue Ent. iii, 240, No. 16.

*Acutalis flavipennis*, Fairm., Ann. Soc. Ent. Fr., sér. 2, iv, 497, No. 5.

Common in Pennsylvania and Maryland, on a species of *Eupatorium*, which bears a pink flower. Also found in Texas, Mexico, Florida, and Massachusetts.

It is variable in the arrangement of the black and yellow, particularly above. Such is also the case with the other species cited above.

#### CYRTOSIA, Fitch.

##### *C. fenestrata*.

*Cyrtosia fenestrata*, Fitch, Fourth Annual Report State Cabinet, 49, No. 2.

Colorado; collected by C. Thomas. Common in the Atlantic region, and also found in Dakota.

#### FAMILY CERCOPIDÆ.

##### APHROPHORA, Germ.

##### *A. permutata*. New sp.

Pale olive-brown; form of *A. parallela*, Say. Face soiled yellow; front prominent, the cross-ridges coarse and distinct, the middle

faintly embrowned and distinctly indented. Rostrum dull testaceous, piceous at tip, reaching upon the second ventral segment. Cranium scooped out, the anterior edge sharp and curved upward; the surface coarsely and irregularly punctate in the depressed spaces, but more regularly on the rounded central lobe, this lobe deeper brown, fuscous behind, and with a medial pale line; ocelli red; occipital margin triangularly excavated to receive the produced triangular front of the middle of the pronotum, the margin each side elevated, and the base of median line elevated. Pronotum a little shorter than in *A. parallela*, Say, the lateral margin deeply sinuated and not slanting so narrowly; surface a little clouded with brown, distinctly and irregularly punctate, the punctures more dense anteriorly and on the sides; the disk convexly elevated, deeply sunken before the anterior margin, and twice depressed each side, the middle line pale, slender, feebly elevated. Scutellum pale ochreous, finely punctate, depressed, and infuscated in the middle, and with the tip paler and very acute. Legs pale testaceous, the femora more or less clouded with brown, and the incisures of the tarsi piceous. Hemelytra pale brown to beyond the middle, the apical portion brownish-white, with dark nervures; base, an entire oblique band before the middle, and a similar shorter one behind the middle dark brown, both these bands margined posteriorly with whitish, coalescing spots, some of which are occasionally carried back upon the middle of the disk. Wings brownish-white. Tergum ochreous; venter and pectus pale testaceous, the latter sometimes with brown spots on the middle coxæ and disks of the posterior pleural segments.

Length to tip of hemelytra,  $8\frac{1}{2}$  to 12 millimeters. Width across base of pronotum, 3 to  $3\frac{1}{2}$  millimeters.

Collected in Colorado and Utah by the surveys; but sent to me on several occasions, from near San Francisco, by the kindness of James Behrens.

It varies so much in depth of colors and pattern of marking that it is almost impossible to characterize the varieties. One of these varieties is almost a fac-simile of the European *A. corticea*, Germar.

## 2. *A. quadrangularis*.

*Cercopis quadrangularis*, Say, Journ. Acad. Phila. iv, 335.

Colorado and Utah; collected by the surveys.

This species is found widely spread over the country from Maine to Florida and from Texas to Dakota.

## PHILÆNUS, Stål.

### 1. *P. abjectus*. New sp.

Fuscous, paler, with a tinge of ochreous on the head and front of pronotum, densely golden pubescent above, hoary pubescent beneath. General form of *L. coleoptrata*, Linn., but with a slightly more acute head. Cranium very finely punctate, densely pubescent, the frontal lobe margined with black, as also the occipital edge; ocelli black, placed on short, sunken, black lines; front ochreous, pubescent, the transverse ridges black, central line coarsely punctate, depressed; superior cheeks, with a broad whitish vitta, which is densely hoary pubescent; inferior cheeks piceous, paler below; rostrum pale piceous, darker on the sides, reaching to the posterior coxæ; antennæ piceous, paler at base. Anterior rim of head a little thickened, slightly raised above the surface of the cranium, and channeled from the central lobe to the eyes. Pronotum brown, clouded with fuscous, densely pubescent, irregularly and

unequally punctate, the posterior margin triangularly emarginate, the anterior margin angularly curved, the disk convexly elevated; in front of it the surface is broadly depressed, having on the submargin an indentation in which a pair of black, impressed dots are placed, and on each side two round indentations, and near the lateral margin a still smaller, less distinct one; lateral angles a little prominent, the edge acute. Scutellum reddish-brown, depressed in the center. Pectus yellow, the lateral pieces and sternum more or less piceous. Legs ochreous, the anterior and intermediate pairs brownish or piceous, the tips of the tibial spines and the ends of the tarsal joints black. Hemelytra pale reddish-brown, paler at tip, an angular spot near the base in the costal areole, and a large spot on the disk running to the inner margin, as also most of the clavus, piceous-blackish; between the spots on the costal areole is a large whitish spot; nervures of the apex a little ramose, dark piceous; costal margin at base pale; wings pale brownish, the nervures piceous. Venter rufo-piceous, with the incisures of the segments paler.

Length to tip of hemelytra, 6 to 7 millimeters. Width of base of pronotum, 2 to 2½ millimeters.

Collected in Colorado by Prof. Cyrus Thomas and others.

### 2. *P. lineatus*.

*Cicada lineata*, Linn., Systema Naturæ [ed. 12], 709, No. 31.

Collected on the hills and high mountains of Colorado by Lieutenant Carpenter, and in Colorado by Prof. C. Thomas and others. This species is widely distributed in North America. My friend, the lamented Robert Kennicott, collected specimens in the vicinity of the Yukon River, Russian America, as well as in many places along the route of his expedition from the Red River of Minnesota to the region of the Mackenzie River. On the eastern side of the continent, it extends from the Hudson Bay region to near Chelsea, Mass. Near Portland, Me., I found it to be very common on plants and low bushes in damp situations. It, also, inhabits Newfoundland, Nova Scotia, and Canada. A variety is the *Aphrophora bilineata*, Say (Journ. Acad. Phila., vi, 304). It was originally described from Sweden, and has been often reported from the various countries of the north of Europe, including Great Britain. As I have seen specimens also from Siberia, Kamtschatka, and Japan, it seems certain that this species is now spread around the circuit of the globe in the north-temperate and sub-arctic regions.

Suitable conditions of wind and current, as well as the medium of commercial transportation, have furnished agencies capable of distributing this insect from the Asiatic continent to the North American; and the abundance of specimens occurring in the localities where it is found shows how well it has adjusted itself to the variety of physical conditions with which it has had to contend.

### 3. *P. spumaria*.

*Cicada spumaria*, Linn., Fallen Hemipt. Suecicæ, 14, No. 5.

Originally described from Northern Europe. But it is now known to inhabit also England, Germany, and Switzerland. I have examined one or other of its numerous varieties from Utah, Dakota, Sitka, Lake Winnipeg, and on the eastern side of the continent from Nova Scotia, Canada, Maine, and New York. Near Brunswick, Me., it is quite common, and presents a great number of varieties, some of which are identical with those of England.

## LEPYRONIA, Amyot &amp; Serv

*L. angulifera*. New sp.

A broad, short, gibbous species, rather more inflated than the dwarf specimens of *L. coleoprata*, Linn. Pale fuscous or grayish-brown, closely coated with small, prostrate, golden or hoary, pubescence, the upper surface minutely and closely punctate. Head a little more than one-half as long as the width between the eyes; the cranium depressed, indented each side of base and on the basal prominence; each side of submargin, center of tylus, and a short transverse line near the anterior angle of each eye impressed; tylus with a short carina near the base; anterior edge of head a little recurved, triangularly rounded. Face and under side of body piceo-fuscous; the front broad, a little flattened on the middle line; antennæ piceous, and, excepting the basal joints, as fine as a hair. Pronotum short, the anterior margin straight, the latero-posterior margins feebly sinuated, the lateral margins short, direct, a little oblique; surface deeply impressed on the middle line as far as the center of the disk, the disk a little convex, each side of it anteriorly with about three round indentations, the anterior submargin with an impressed point each side behind the eyes. Scutellum obsoletely grooved on the middle, the apex whitish; just behind it is a blackish spot. Legs dark piceous, more or less rufescent, scabrous, sericeous pubescent; the femora with a medial and apical yellow band, the under side longitudinally grooved; spines of tibiæ and tarsi yellow, tipped with black. Hemelytra paler posteriorly, more or less clouded with fuscous, minutely punctured and shagreened, with an oblique, fuscous, macular band at the base of the membrane; nervures dark fuscous, or black, with the apical ends of a few of them forked; costal margin broadly arched, and with a pale spot before and another behind the middle, sometimes also with a few pale dots aggregated near the middle and inner margin. Abdomen dark fusco-piceous, margined with pale ochreous, the genital pieces usually ochreous, with the ovipositor and outer margins piceous.

Length to tip of hemelytra, 5 to 6 millimeters. Width of base of pronotum,  $1\frac{1}{2}$  to  $1\frac{3}{4}$  millimeters.

Collected for me in Northwestern Florida in July by Miss Modeste Hunter. Found by myself in a low marshy spot adjacent to spring-water, a few miles south of Baltimore, August 14; also in Ocean County, New Jersey, in *Sphagnum* swamps, in August. I have also examined specimens from Cuba, Texas, and Northern Mexico.

As the Mexican hemipterous fauna extends into New Mexico and Arizona, we may safely premise that this species will hereafter be collected in these Territories.

## CLASTOPTERA, Germ.

*C. delicata*. New sp.

Form of *C. proteus*, Fitch, but with a more prominent front. Pale greenish-yellow. Head broad, apparently impunctate; cranium short, transversely depressed, as is also the tylus; anterior edge of the vertex carinately elevated, bordered from eye to eye with a black line; eyes margined behind with black; front smooth, polished, bright yellow, rounded, the transverse rugæ substituted by slender black bands; lower down grooved, and with a broad black spot, adjoining which each side on the cheeks is a smaller spot; under side bright yellow; rostrum black, reaching almost to the posterior coxæ; antennæ black at base.

Pronotum banded on the anterior edge by a slender black line, and with five straighter and more slender lines, which stop just short of the lateral margins, these lines feebly impressed, and obsolete, minutely scabrous; surface not wrinkled, almost smooth, moderately convex, deeply emarginated behind, the lateral margin narrowly produced as far as the outer line of the eyes; the humeral margin recurved, and with a small black dot before it. Scutellum pubescent, yellow, transversely wrinkled, with a slender black line at base, and an interrupted one behind the middle. Hemelytra with short, remote, golden pubescence, coarsely punctate at base, more obsolete so posteriorly; the inner and posterior margins, the suture between the corium and clavus, an oblique short streak on the disk, and a spot on the middle of the costa fuscous; posterior margin of the corium with a sinuous brown band, the membrane and posterior one-third of the corium, and a spot at base of costa pale brown; the bulla very prominent, black; under side yellow; the mesostethium, disks of the pleural pieces, and middle line of genital segment pitch-black. Legs yellow, the tibiae having a band below the knee, another on the middle, and a third at tip, and the spines of tibiae and tarsi, including the nails, dark piceous.

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

Colorado and Utah; collected by C. Thomas and B. H. Smith.

#### FAMILY FULGORIDÆ.

##### SCOLOPS, Germ.

##### 1. *S. sulcipes*.

*Fulgora sulcipes*, Say, Journ. Acad. Phila. iv, 335.

Common in many parts of the United States, as well east as west of the Mississippi River. The specimens collected by these expeditions occurred in Colorado, Utah, Dakota, and Arizona. Specimens have been examined by me which were obtained in Maine, Massachusetts, Connecticut, Rhode Island, New York, Iowa, Illinois, Pennsylvania, and Minnesota. In Maryland and Virginia, they occur in sedgy and grassy low spots in the corners of meadows, particularly in places near woods, in July, August, and September.

This species may be known from its allies by the long and very slender cephalic prominence, acute at tip, by the first ulnar nervure giving off three forking branches, and by the second ulnar giving off two forking branches, and with numerous cross-nervures producing several series of small areoles adjoining the tip.

Length from tip of head to end of hemelytra,  $8\frac{1}{2}$  to 10 millimeters. Length of cephalic horn, 2 to  $2\frac{1}{2}$  millimeters.

##### 2. *S. hesperius*. New sp.

Straw-yellow or pale brownish, narrower than *S. sulcipes*. Cephalic protuberance shorter, broader, not compressed at tip; rostrum reaching upon the second ventral segment, the last joint black at tip; sutures of the face more or less infuscated; postocular process white, with a black dot inferiorly. Pronotum irrorated with pale brown and white, the sides and lateral pieces irregularly, obsolete tuberculate; tegular pieces minutely, confluent punctate. Mesonotum slightly guttate with pale brown, the apex tumid and emarginate just each side of the extreme tip; metapleura and sternum whitish. Carinate lines of the coxæ and legs whitish; the spaces between usually brownish. Heme-

lytra less gibbously convex than in *S. sulcipes*, the nervures stouter, pale, and interruptedly spotted with brown, the first ulnar nervure forked beyond the middle, the second ulnar forked before the middle; the apex with but two or three series of cross-nervures; the costal area sometimes with two or three cross-nervures at tip; the costal margin very moderately arcuated. Wings milky-white, the nervures brown. Tergum reddish-brown, darker in the center; the margins of the segments and the connexivum pale-yellow.

Length from tip of head to end of hemelytra, 8 millimeters. Width of pronotum,  $2\frac{1}{4}$  millimeters. Length of cephalic horn,  $1\frac{1}{2}$  millimeters.

Southern Colorado, C. Thomas; and Denver City, from B. H. Smith.

In the specimens which I have examined, there is an entire absence of the large black spot of the sides anteriorly of the pronotum, so conspicuous in *S. sulcipes*, Say.

### 3. *S. grossus*. New sp.

Shorter and more robust than *S. sulcipes*; the cephalic horn as long, but much stouter, than in that species; very wide on the upper face, and the apex blunt and vertically carinate. Sides of protuberance, cheeks, and anterior pleural pieces infuscated, guttate with whitish, the lateral keels distinctly sinuate a little distance in front of the eyes; rostrum tipped with black, reaching almost to the genital segment. Pronotum curved toward the front more narrowly than in *S. sulcipes*; the geminate indentations present, but not black; the sides a little granulate. Mesonotum short and broad, the apex feebly tumid; femora more or less dotted with brown; hemelytra short and wide, strongly arcuated, more oblique at tip than in *S. sulcipes*, clouded with brown, and with a few pale transverse patches across the corium; the nervures thick, remotely and irregularly spotted with fuscous; the first and second ulnar nervures forked on the same line just before the middle of the corium; the apical cross-nervures very few, and the costal area with four or five cross-nervures near the tip. Wings smoky-brown, with the nervures darker; tergum more or less orange, shaded with fuscous.

Length from tip of head to end of hemelytra, 8 to  $8\frac{1}{2}$  millimeters; width of pronotum, 2 millimeters; length of cephalic horn,  $2\frac{1}{2}$  millimeters.

Collected in Texas by G. W. Belfrage.

### 4. *S. angustatus*. New sp.

More slender than either of the species described; the hemelytra almost flat above, hardly gibbous on the sides; head more or less orange-yellow, with the face, sides of protuberance, and ridges of the front brownish; cephalic horn very short and narrow, but blunt at tip; cranium with two black, impressed dots between the eyes; rostrum reaching to the end of the fourth ventral segment, yellow, black at tip, the lobes behind the eyes with a small black dot. Pronotum with an arcuated series of indented black points, the lateral margins obliquely curved toward the head; pale, grooved, and brown behind the eyes, and with the carinate edge whitish. Mesonotum varied with brown, and with a series of black, indented points across it, the tegular pieces a little confluent punctate; pleura washed with pale brown and flecked with dark brown; legs flecked with fuscous, the tibiae with two or more dark, band-like shades; hemelytra infuscated, moderately flat, the costal margin very feebly arcuated, a broad longitudinal vitta extending to the tip, a streak on the suture of the clavus, several coalescing spots running

back from the apex interiorly, and the interrupted flecks on the nervures dark brown; the costal area whitish throughout, nervures stout, the first ulnar nervure forked considerably behind the middle, and the second ulnar forked at a little distance behind the middle. Wings smoky, the nervures darker. Disk of tergum black, with the sides orange-yellow. Venter faintly brownish, flecked with yellowish.

Length from tip of head to end of hemelytra, 7 to 8 millimeters. width of pronotum,  $2\frac{1}{2}$  to  $2\frac{1}{2}$  millimeters. Length of cephalic horn,  $1\frac{1}{2}$  millimeters.

Inhabits Nebraska, Dakota, Iowa, Massachusetts, and Connecticut.

#### SUBFAMILY DELPHACINA.

#### LIBURNIA, Stål.

*L. vittatifrons*. New sp.

Elongate-oval, pale green, bald, and polished. Apex of the head tumidly conical; cranium minutely, obsoletely punctate on the sides; the cranial shield triangular in front, so caused by the converging of the lateral carinæ; central carina high and thick, the lateral ones very high and divaricating anteriorly; the front oblique, depressed, banded twice with orange or rufous; the pair of central carinæ high, curving apart, abbreviated before the epistoma; the epistoma piceous or rufo-piceous at base; rostrum yellowish, piceous at tip, reaching to the tip of the intermediate coxæ. Eyes large, horizontal, subreniform, pale brown; antennæ greenish; the scapus and basal joint subequal, the former with a broad black line, the latter with two black lines and an anterior ring; second joint longer than the two former, with two black lines. Pronotum short, truncate in front, sinuate on the posterior margin, the central line and an oblique one each side carinated, the lateral edge sinuated to receive the tegulæ; tegulæ very minutely punctured. Mesosternum longer than the pronotum, with five carinated lines, the lateral ones a little curved, and the apex slightly elevated. Legs green; the femora and tibæ, excepting the posterior pair, lineated with black, and with the tips of the spines, the nails, a broad band near the tip of the anterior tibæ, and a large spot on each anterior coxa, black; hemelytra long and narrow, obliquely rounded at tip, yellowish-green, the nervures straight and wide apart, with only two or three cross-nervules near the tip; the radial nervure forked at the middle, the first and second ulnars forked near the tip. Wings white; tergum sometimes infuscated on the disks of the segments. Anus of the female armed with a long, acute stylet; both sexes with a few long bristles at the apex of the venter; hemelytra of the male with five longitudinal cells at the apex; the inferior genital segment divided into two curved, very acute, piceous hooks, and the anus with a still longer stylet than in the other sex.

Length to tip of hemelytra, 5 to  $8\frac{1}{2}$  millimeters. Width of pronotum,  $1\frac{1}{2}$  to 2 millimeters.

Inhabits Dakota, collected by Mr. Rothauer; Illinois, Robert Kennicott. It also occurs abundantly upon the salt-marshes of the sea-coasts of Maryland and New Jersey, living among the long, stiff grass. When fresh and not weather-beaten, it is of a vivid light green, but when old and weathered it becomes soiled yellow in color. It would be interesting to know if this species belongs to places in the West which were originally the beds of salt-lakes. The salt-marshes of Eastern Massachusetts have thus far failed to yield any specimens of it.

## CIXIUS, Latr.

1. *C. stigmatus*.

*Plata stigmata*, Say, Journ. Acad. Phila. iv, 333, No. 3.

*Cixius stigmatus*, Fitch, Catal. of State Cabinet N. Y. 45, No. 1.

Inhabits Missouri, Texas, Colorado, Illinois, Michigan, Canada, and the Atlantic region generally.

2. *C. Franciscanus*.

*Cixius Franciscanus*, Stål, Eugenes Resa, Entom. Bidrag, 273, No. 151.

Inhabits California, near San Francisco.

## ORGERIUS, Stål.

*O. rhyparus*.

*Orgerius rhyparus*, Stål, Eugenes Resa. 274, No. 154.

Inhabits California, near San Francisco.

## DELPHAX, Fab.

*D. tricarinata*.

*Delphax tricarinata*, Say, Journ. Acad. Phila. iv, 337.

Inhabits Nebraska, Missouri, and Illinois.

This may perhaps belong to the genus *Liburnia*, but I have not at present any specimens at hand to enable me to determine its precise characters.

## BRUCHOMORPHA, Newm.

1. *B. oculata*.

*Bruchomorpha oculata*, Newman, Entom. Mag. v, 399.

Inhabits Texas, Indian Territory, Colorado, Nebraska, Illinois, and the Atlantic region.

2. *B. dorsata*.

*Bruchomorpha dorsata*, Fitch, Third Report, 396, No. 114.

Inhabits Indian Territory and Texas.

## NASO, Fitch.

*N. Robertsonii*.

*Naso Robertsonii*, Fitch, Third Report, 396, No. 115.

Inhabits Indian Territory, Illinois, and Maryland.

## PHYLLOSCELIS, Germ.

*P. atra*.

*Phylloscelis atra*, Germar, Zeits. f. d. Entom. i, 192, No. 2.

Inhabits Texas, Indian Territory, Illinois, Pennsylvania, Maryland, Virginia, North Carolina, and Georgia.

## ISSUS, Fab.

1. *I. auroreus*. New sp.

Form similar to *I. aciculatus*; bright yellow, saturated with clear brown. Cranium pale brownish, transverse, quadrangular, with the margins prominently elevated, the front edge indented in the center, and the lateral edge obliquely indented posteriorly, the posterior margin concave; front a little longer than wide, slightly convex, a little wider infe-

riorly, and with the sides curving inward to concur with the margin of the epistoma, the lateral margins dotted with fuscous; on the disk are a few fuscous flecks; the central carina feeble, almost obsolete beneath; sides of the face smooth, yellow; epistoma shorter than the front, prominently convex and ridged, the middle line thick, pale yellow, each side of it obliquely striated with brown; antennæ fuscous; rostrum reaching to the posterior coxæ, ochreous, piceous at tip; pronotum longer than the cranium, ochreous, dotted with brown, on the middle with two indented points, the anterior margin broadly arcuated to fit the cranium, the posterior margin truncated; mesonotum pale yellow, with a blunt thick carina on the middle, the surface depressed each side, and the apex a little tumid; pleural pieces pale yellow, the anterior ones margined and spotted above with fuscous or pale brown; legs piceous at base of femora, and some patches, particularly on the forward surface, and the outer face of tibiæ pale testaceous; tips of the spines and the nails piceous-black; hemelytra short and broad, clear wine-brown, pale orange on the costal areole, the nervules of this part obsolete, apex bluntly rounded, base narrower than the width beyond the middle, the surface coarsely and irregularly scabrous, longitudinal nervures parallel, distinct, a few areoles present near the apex, and these irregular, reticulated, and indistinct; abdomen greenish-yellow, more or less saturated with rosy-orange; the genital segments fuscous, with the hooks rufopiceous.

Length to tip of hemelytra, 5 millimeters. Width of pronotum,  $1\frac{1}{2}$  millimeters.

Inhabits Texas; collected by G. W. Belfrage.

## 2. *I. aciculatus*. New. sp.

Short, robust, grayish testaceous, minutely punctate with fuscous; upper side of head about as long as the pronotum, transverse, quadrangular, ochreous, concave, each side with an arcuated fuscous line, and some fuscous points and specks, the anterior margin a little elevated, scooped out in the center, the posterior margin prominently carinate, broadly sinuate; front a little longer than broad, pale ochreous, irregularly punctate, a transverse band above, a geminate spot below, and numerous dots, more or less aggregated near the outer margins, fuscous, the lateral margins carinate, arcuated; central carina percurrent to the base of rostrum, pale, the carinæ each side not much elevated, the inferior margin triangular; epistoma shorter than the front, moderately convex, obliquely striated with fuscous, and infuscated inferiorly; antennæ infuscated; rostrum reaching behind the posterior coxæ; pronotum ochreous, regularly and remotely dotted with fuscous, the anterior margin broadly arcuated, and the posterior margin straight; propleura fuscous, but with the base and margins ochreous, remotely dotted with fuscous, and with some fuscous traces on the middle, the middle line sulcated; meso- and meta-pleura ochreous and white; legs pale ochreous, three bands on the femora, the exterior surface of the tibiæ somewhat, the spines and tarsal joints infuscated; the femoral grooves and tibial carinæ well defined; hemelytra short, broad, dotted with fuscous, narrower at base, the apex obliquely rounded; nervures stout, wide apart, pale, margined with fuscous; the areoles from behind the middle to the tip large, trapezoidal, or irregularly quadrangular, forming about five series; the inner and outer submargins and the disk a little washed with fuscous and pale testaceous; the genital pieces fuscous beneath.

Length to tip of hemelytra, 5 millimeters. Width of pronotum, 2 millimeters.

Inhabits Orange Springs, Florida, collected in June by Miss Modeste Hunter; also Texas, G. W. Belfrage.

This species closely resembles *Issusimmaculatus*, Fab.; but the shape of the front and its carinate lines will at once mark its distinctness.

TYLANA, Stål.

1. *T. ustulata*. New sp.

Resembles *T. conspersa*, Walker, but having the nervures much coarser and densely reticulated near the apex; short and robust; color pale or bright ochreous yellow, clouded with fuscous. Head ochreous, smooth, obsoletely rugulose, the cranium deeply scooped out, much wider than long, bounded each by high ridges, which are much elevated before and behind the eyes, and marked with large black spots; the middle indented, yellow, each side of it are two broad, irregularly arcuated, black spots, the lateral edge interruptedly piceous; posterior margin concave, yellow; anterior margin concave, piceous, indented in the middle, slenderly carinate; front minutely punctate, the middle longitudinally elevated, and with the central line slenderly carinated, each side of it longitudinally, broadly grooved and carinated, the carinæ abbreviated, slightly curving inward at the ends; the surface irregularly mottled with piceous, the upper angles entirely piceous, and below the line of the eyes is a broad piceous band, which continues along the sides and across the propleura upon the tegulæ; eyes pale brownish, the piece behind them yellow, with two piceous spots; epistoma piceous beneath, the central carina prominent, blunt, each side of it somewhat ribbed with piceous; rostrum piceous, pubescent, reaching beyond the middle coxæ. Pronotum about one-third as long as its width, dark ochreous, dotted with piceous and yellow, the middle scooped out, minutely scabrous, infuscated, with a fuscous band posteriorly, on which are two indented points, and the anterior submargin fuscous; mesonotum about half as long as its width, pale, rufo-piceous, more or less yellow each side of the central shield, and with the middle line slender and yellow, the shield minutely scabrous, impressed around the submargins and behind, the margins carinated; lateral angles infuscated, a little interiorly is a short, blunt carina, and the surface next to the shield depressed. Anterior pleural pieces broadly black above, and a little so beneath; the sternum yellow. Legs piceous, more or less yellow at base; femora banded thrice with ochreous, the tibiæ with two ochreous spots on the outer edge; tarsi and the spines and nails piceous. Hemelytra ochreous, clouded with fuscous, and with minute fuscous points; the nervures very thick and prominent, blackish piceous, interrupted with ochreous at base and on the disk, and with an ochreous dot at the tip of each cross-vein on the costa and tip; nervures from the middle to apex forming a close net-work of mostly pentagonal areoles. Tergum marked transversely with piceous; venter dotted and spotted with piceous and black, remotely pubescent.

Length to tip of hemelytra, 7 millimeters. Width of pronotum, 2½ millimeters.

Inhabits Colorado and Arizona.

The hemelytra are wider at tip than at base; the costal area is wide; the cross-nervules of the base slender, less conspicuous than the others, and generally testaceous; and the costal margin is angularly produced before the middle, as usual in this group.

2. *T. ustulipunctata*. New sp.

Form similar to that of *T. elliptica*, Germar, but a little more slender; color clear brunneous, with the longitudinal veins wide apart, straight, curving down at tips, with only a few cross-veins, and those chiefly near the tip. Head ochreous, subquadrate, a little transverse, tinged with fuscous, the lateral and posterior edges prominently carinate, pale yellowish, roundedly emarginated on the posterior margin, and angularly produced on the anterior margin; front subquadrate, much longer than broad, a little arcuately dilated, the lower angles bent inward; superior angles subrectangular; disk with an oval ochreous spot, the surrounding surface fuscous, dotted with pale yellow; middle carina high superiorly, the lateral carinate edges prominent, pale; cheeks pale ochreous; epistoma shorter than the front, acutely triangular, ochreous, infuscated on the disk, excepting the middle line; rostrum reaching to the posterior coxæ, the tip piceous. Pronotum short, pale ochreous, a little infuscated, the center with two impressed points, and the sides with a few pale granules, the anterior margin acutely triangular, the posterior margin truncated; mesonotum longer, embrowned on the disk, striped with yellow on the sides; pleural pieces ochreous, brownish on the disks, the anterior piece with a large round black spot behind the eyes; metasternum greenish-white. Legs dull ochreous, the spines and tarsi more or less piceous, anterior and middle coxæ bright crimson. Hemelytra a little flattened, long, and much narrowed posteriorly, the apex obliquely truncated; surface with short, golden pubescence; three round black spots behind the base arranged in a triangle, and near the tip three others similarly arranged; costal areole with several piceous irregular spots, the transverse veins indistinct, pale, but extending along its whole length; wings a little embrowned, the nervures darker. Venter and tergum pale ochreous, banded with brown, the margins of the segments yellowish-white, the sides of genital segments striped with fuscous.

Length to tip of hemelytra, 8 millimeters. Width of pronotum, 3 millimeters.

Inhabits Cuba (Professor Poey and Charles Wright) and Mexico.

It resembles *T. elliptica*, Germar, but has a longer front, and lacks the carinæ, which bound a central disk in that species.

## DICTYONISSUS. New gen.

Aspect of *Mycterodus*; the upper surface hispid. Vertex subquadrate, deeply scooped out, a little wider than long, prominent, the anterior angles rectangular, and with the bounding carinate lines high, the anterior margin arched in the center; front longer than wide, the sides convexly curved, the middle line carinated from the tip for about two-thirds of the length downward. Pronotum acutely triangularly narrowed anteriorly, and carried forward almost to the front line of the eyes, and deeply emarginated behind; mesonotum as long as the head and pronotum united, with the apex of the scutellum broad and bluntly rounded. Tibiæ grooved on the outer face, the posterior pair having three small teeth, exclusive of the apical one. Hemelytra long and narrow, vitreous, hispid, regularly parabolic on the costal margin, from the base to the inner apical angle, the inner margin straight; the whole surface filled with net-work of large rounded areoles composed of very coarse nervures, arranged somewhat longitudinally, but obliterating the usual series of longitudinal nervures; the costal area obliterated, excepting only at the base.

*D. griphus*. New sp.

Pale green, moderately long and narrow, hispid above, pubescent beneath. Head with a few coarse wrinkles on the fore part of the vertex, the anterior edge acute, interruptedly margined with fuscous; front longer than the epistoma, the lateral margins curving to conform to its outline, submargin each side with a longitudinal curved series of minute black points; epistoma transversely convex, narrow, the rostrum reaching to the posterior coxæ. Seta of antennæ black. Pronotum short, angularly lunate; anterior margin subtruncate, lateral margins greatly recurved, the sides deeply excavated to admit the eyes, middle line distinctly elevated; mesonotum very minutely scabrous, feebly carinate along the middle, the lateral carinæ almost straight. Spines of the tibiæ and tarsi tipped with piceous. Hemelytra long and narrow, strongly deflected, the nervures very thick and forming about six series of rounded areoles, the clavus with two series of areoles, but with a single series of three areoles at base. Abdomen fringed with short, stiff pubescence.

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

Inhabits Texas; collected near Waco by G. W. Belfrage.

This interesting little species presents a new facies in the group as represented in North America. The obliteration of the longitudinal nervures of the hemelytra and the rounded form of the areoles signalize it at once.

## NEÆTHUS, Stål.

*N. vitripennis*.

*Hysteropterum vitripenne*, Stål. Öfvers. Kong. Vet. Akad. Forhandl. 1854, 247; and Eugeniæ Resa, 279, No. 171.

Inhabits California near San Francisco, and Arizona.

## APHELONEMA. New gen.

Elongated, the sides almost parallel; head large, including the eyes a little wider than the base of the closed hemelytra; vertex very short, sublunate, with the anterior margin strongly carinate; front rounded, prominent, the central plate almost circular, flattened, and very much raised above the surrounding area; exterior margin strongly carinate, curved conformably with the margin of the central plate, the upper margin subtruncate, carinate, the middle line carinate, and continued to the tip of epistoma; epistoma prominently ridged, the inferior cheeks wide, impressed on the inner angle, the superior cheeks wide, scooped out. Pronotum longer than the vertex, lunate, bluntly curved on the anterior margin, the posterior margin deeply sinuated. Tibiæ slender, sulcate on the outer face almost to the tip. Hemelytra long and narrow, a little obliquely rounded at tip, the costal and sutural margins almost straight and parallel, the longitudinal nervures very straight, connected near the tip by a few cross-nervules, which form a transverse series of three large and one or two small, many-sided areoles, next after which is an apical series of four or five triangular areas; the costal areole with three slender cross-nervules near the tip.

*A. simplex*. New sp.

Pale ochreous; hemelytra faintly yellowish translucent. Vertex lunately hollowed out, the base slenderly carinate, the anterior margin bounded by a stout carina; front bright ochreous, densely minutely scabrous, the space between the central plate and the outer carinate

margin depressed, brown, spotted with yellow; epistoma very acutely triangular, brown, the margins and middle carina yellow; rostrum reaching to the middle coxæ, the superior cheeks a little brown. Pronotum shorter than the central plate of the front, a little embrowned, covered with coarse punctures set into annular orbits, the anterior margin slightly carinated, feebly waved each side of the middle; mesonotum pale brown, almost smooth on the disk, and on each side densely packed with prominent papillæ having punctured centers; pectus pale yellow, with the disks of some of the superior pieces brownish. Legs pale yellow, the femora and coxæ a little washed with brown, the tips of the spines piceous. Hemelytra pale yellowish translucent, a little dusky at tip, the nervures clearer yellow, stout, with about two series of large, irregular areoles at tip, and with three costal cross-veins behind the tip; wings yellowish, with very slender nervules. Abdomen dark brown, the segments margined behind and on each side with ochreous; the tergum in one specimen having yellow dots with ochreous centers.

Length to tip of hemelytra, 4 millimeters. Width of pronotum, 1½ millimeters.

Inhabits Dakota. Collected by Mr. Rothauer.

#### FAMILY TETTIGONIDÆ.

##### PROCONIA, St. Farg. & Serv.

###### *P. costalis.*

*Tettigonia costalis*, Fab., Ent. Syst. suppl. 516, Nos. 22-23; Signoret, Ann. Soc.

Ent. France, 3d ser. ii, 359, pl. 12, fig. 8; Fab., Syst. Rhyng. 39, No. 34.

*Cercopis marginella*, Fab., Syst. Rhyng. 96, No. 44.

*Cercopis lateralis*, Fab., Ent. Syst. suppl. 524, No. 24; Coquebert, Illustr. i, 35, tab. 9, fig. 3.

*Tettigonia lugens*, Walker, British Mus. Cat. Homopt. iii, 775, No. 108.

*Tettigonia pyrrhotelus*, Walker, l. c. iii, 775, No. 109.

Inhabits the Atlantic region from Canada to Florida, and in the West it occurs in Washington Territory, Oregon, British Columbia, Colorado, Arizona, and California. It occurs also in Mexico, Texas, and Central America.

A variety from the Southern States is black, and there is some variation noticeable in the depth and intensity of the red ground-color and in the yellow lateral stripe.

##### AULACIZES, Amyot & Serv.

###### *A. irrorata.*

*Cicada irrorata*, Fab., Ent. Syst. iv, 33, No. 24; Syst. Rhyng. 62, No. 6; Coquebert, Illustr. i, 32, tab. 8, fig. 4.

*Tettigonia irrorata*, Signoret, Ann. Soc. Ent. France, ser. 3, iii, 59, pl. 6, fig. 14.

Inhabits Texas, Georgia, Florida, Louisiana, Arkansas, Maryland, Pennsylvania, and New Jersey.

##### DIEDROCEPHALA, Spin.

###### 1. *D. coccinea.*

*Cicada coccinea*, Forster, Nov. Species Insect. 69.

*Tettigonia quadrivittata*, Say, Journ. Acad. Phila. vi, 312, No. 3.

*Proconia quadrivittata*, Fitch, Catal. of Ins. of N. Y. State Cabinet, 55.

Inhabits Texas, Indian Territory, the States east of the Mississippi River, Canada, &c.

It varies much in size and color; some specimens being even almost

entirely red above. Blackberry-bushes and low shrubs are its favorite resorts, on which it may often be seen in considerable numbers during the summer.

2. *D. noveboracensis*.

*Aulacizes noveboracensis*, Fitch, l. c. 56, No. 2.

Inhabits the vicinity of East River, Colorado, August 29.

Collected by Lieutenant Carpenter. It is common in many parts of the United States north of Maryland, and it extends far north in Canada and British Columbia.

3. *D. mollipes*.

*Tettigonia mollipes*, Say, Journ. Acad. Phila. vi, 312, No. 4.

*Aulacizes mollipes*, Fitch, l. c. 56, No. 1.

Inhabits Texas, Colorado, Mexico, and the southern part of the Atlantic region.

TETTIGONIA, Geoff.

*T. hieroglyphica*.

*Tettigonia hieroglyphica*, Say, Journ. Acad. Phila. vi, 313, No. 6.

Inhabits Texas, foot-hills and plains of Colorado) from August to October (Lieutenant Carpenter), and the Atlantic region throughout.

GYPONA, Germ.

*G. octolineata*.

*Tettigonia octolineata*, Say, Journ. Acad. Phila. iv, 340, No. 1.

Inhabits foot-hills and plains of Colorado. Collected by Lieutenant Carpenter. Also common in most parts of the Atlantic region.

SUBFAMILY JASSINA.

COCHLORHINUS. New gen.

Form similar to that of *Rhaphirhinus*. Head long triangular, produced forward into a long tapering ligula, with the surface depressed, the margins elevated, and the apex rounded. Superior cheeks sublunate, inferior ones oval, acute at both ends; front tapering superiorly and subcylindrical, subconical inferiorly, its tip much wider than the ligulate labrum. Ocelli situated on the margin in the suture between the vertex and front. Eyes placed obliquely, bordering the pronotum by most of their base, concave beneath, and bounded there by a deep suture. Second joint of the antennæ a little longer than the basal one. Pronotum short, the anterior margin arcuated, the posterior margin concave; posterior angles broadly rounded, the anterior ones almost rectangular. Hemelytra of the female about the same length as the abdomen, coarsely scabrous; behind the middle is a thick anastomosis, sending off stout branches on the costal and four longitudinal nervures; behind this are four long areoles, and beyond these are four short and wider ones arranged around the apex; the apex rounded, obliquely slanting toward the inner angle. Basal joint of the hind tarsi fully as long as the two others united.

*C. pluto*. New sp.

Form of *Tettigonia brevis*, Walker, but shorter, deep black, scabrous, highly polished. Head produced into a spoon-shaped tip, round at the

apex, with the margins elevated and the submarginal surface depressed, the tylus carinately elevated, reaching to the tip; front crossed by a broad yellowish band; base of rostrum pale piceous, the vertex with a broad rounded impression each side, and the occiput with a small depressed dot each side. Pronotum polished, transversely wrinkled, with an arcuated, transverse impressed line behind the anterior margin, and with about three indented points behind each eye. Scutellum dull black, very minutely rastrated, obsoletely, minutely punctured postero-exteriorly. Tibiæ, tarsi, apex of femora, and tips of the coxæ yellowish. Hemelytra shining black, coarsely scabrous, transversely wrinkled, the anastomosis behind the middle of the corium and a point at the tip of the clavus white. Abdomen black.

Length, 6 millimeters. Breadth of pronotum,  $1\frac{3}{4}$  millimeters.

Inhabits California. Received from James Behrens.

This species mimics the Tettigonias of the group of *T. brevis* so closely that it might readily be mistaken for one of them; but on close inspection, the position of the ocelli and the arrangement of the apical cells of the hemelytra will show its affinities to be with the *Jassina*.

Only females have thus far been inspected.

This is another of the striking instances of parallelism which occur in the *Hemiptera* in forms belonging to families whose affinities may be otherwise remote.

#### BYTHOSCOPIUS, Germar.

##### 1. *B. pallidus*.

*Idiocerus pallidus*, Fitch, Catalogue N. Y. State Cabinet, 59, No. 5.

Inhabits the mountains of Colorado in June. Collected by Lieutenant Carpenter. In New York, this species affects the willows and poplars.

##### 2. *B. siccifolius*. New sp.

Dull straw-yellow, short, robust. Head very minutely punctured, and transversely wrinkled; vertex with two median longitudinal approximate brown lines each side, with a black round dot, and against each eye is a brown subtriangular spot, which sends forth a short line to the ocellus, and lower down another slender line running to the front; the front bounded by a brown, slender line, and each side with a series of brown, short lines placed somewhat obliquely; sutures of the face brown; the middle line of the labrum and rostrum dark brown. Pronotum minutely, transversely wrinkled, with an arcuated series of indented, short, brown lines and points behind the anterior submargin, middle with two brown, approximate lines, each side of which is a less distinct line, and nearer the exterior margin a deeper, brown, curved line; anterior margin broadly rounded, the posterior margin truncated. Scutellum transversely wrinkled, with a slender, impressed line crossing the middle and connecting with a submarginal similar line each side, the disk with a large dark brown spot, and a smaller one each side of base, the lateral margins pale yellow. Legs straw-yellow, femora with two brown bands, the anterior and middle tibiæ brown beneath, but with a yellow band on the middle, and with the upper side a little clouded with brown; posterior tibiæ with small brown dots at the base of the spines. Hemelytra yellowish-hyaline, the thick streaks at base, the sutural and interior margins whitish, the sutures dark brown, as also the interneural lines and inner submargin of the clavus, the nervures paler brown; apical areoles four in number, three ante-apicals, of which the inner one is shortest and the middle one much the longest. Tergum black, with

the margins and sides of the segments pale yellow; venter less widely spread with black.

Length to tip of abdomen, 3 millimeters. Width of pronotum, 1 millimeter.

Inhabits the summits of high mountains in Colorado. Collected by Lieutenant Carpenter, July 19 to September 6. Also, at Eagle River, Colorado, in August, and at Denver in June.

This is a very variable little insect, which is not confined to the region of the Rocky Mountains, but which has been found likewise in Texas, in British Columbia, Canada, and New England.

#### JASSUS, Germar.

*J. laetus*. New sp. auctor.

Greenish-yellow, moderately long and slender. Head sublunate, a little peaked at the tip of vertex, the central line incised and a little impressed on the middle, each side of this with a short, oblique impression, a large black dot occupies each side of the middle, and two minute fuscous ones are at the tip; face pale, marked with black dots against the eyes, and with two black, arcuated lines superiorly, placed on each side of the middle; front faintly striated with brown each side and above, the sutures, and sockets of the antennæ also black. Pronotum larger than the head, arcuated in front, slightly sinuated on the posterior margin, minutely wrinkled, transversely impressed on the middle behind the anterior margin, and with an impressed dot exterior to this; an impressed, oblique line placed still nearer to the lateral margin. Scutellum depressed on the middle, with an arcuated, impressed, short line each side, and a very slender, incised line behind the middle; the base with a black dot each side, extending partly beneath the pronotum. Legs yellow, the beds of the spines, the nails, and the tips of tarsal joints piceous black. Hemelytra yellowish-hyaline, the costal margin broadly thickened, minutely scabrous; nervures thick and very distinct, the areoles long and narrow, the outer one at apex shortest, composed of a short triangle at base and a longer one at tip. Tergum black at base and beyond, omitting the sides and three last segments; venter greenish-yellow, the basal incisure, a spot upon the second segment, the ovipositor, and the impressed inner angles of the connexivum black.

Length, 4 millimeters. Width of pronotum,  $1\frac{1}{4}$  millimeters.

Collected by Lieutenant Carpenter in the high mountains of Colorado, from June 19 to September 6.

Some specimens have the black of the face, the pleura, and the abdomen more widely extended, and causing them to have a blackish appearance.

#### DELTOCEPHALUS, Burm.

*D. debilis*. New sp.

Bright grass-green, short and stout. Head, forepart of pronotum, and the scutellum whitish-green. The head triangular, longer than the pronotum, with the sides a little arcuated, the tip a little curved upward; cranium depressed, the median line incised; each side at base with a short impressed line; eyes continuous with the lateral line of the head, margining the pronotum almost to its base; front stained with black above and on each side, and in which are indications of striated lines; cheeks almost as wide as the eyes, black at base, the tip of labrum piceous, and the antennæ infuscated at base. Pronotum lunate, the surface a little wrinkled transversely, with a few indented points each

side and in front. Pleura blackish, margined with pale greenish. Legs yellowish, the base and tips of tarsi and the beds of the spines blackish. Scutellum a little depressed in the middle, feebly wrinkled, the lateral margin slightly elevated. Hemelytra green, paler at tip, obsoletely punctured next the nervures, the nervures stout and rather straight; four short apical cells and one costal cell, the discoidal one long and wider than either of the others. Tergum black, more or less margined with pale green, the three apical segments also pale green; venter pale green, stained with black, particularly on the disks of the segments and on the genital valves.

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

Inhabits Colorado, on the sides of the high mountains, and near Fair Play, in South Park, July (Lieutenant Carpenter.)

# LIST OF THE FIGURES OF HEMIPTERA ON PLATES 19, 20, 21.

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## PLATE XIX.

- FIG. 1. *Eurygaster alternatus*, Say.  
2. *Homæmus bijugis*, Uhler.  
3. *Pachycoris torridus*, Scop.  
4. *Odontoscelis catulus*, Uhler.  
5. *Stiretrus fimbriatus*, Say.  
6. *Corimelæna nitiduloides*, Germ.  
7. *Eysarcoris melanocephalus*, Fab.  
8. *Augocoris sexpunctatus*, Fab.  
9. *Strachia (Murgantia) histrionica*, Hahn.  
10. *Brochymena obscura*, H. Schf.  
11. *Chlorochroa ligata*, Say.  
12. *Prionosoma podopioides*, Uhler.  
13. *Thyanta custator*, Fab.  
14. *Podops dubius*, Pal-Beauv.  
15. *Neottiglossa undata*, Say.  
16. *Æbalus pugnax*, Fab.  
17. *Cydnus (Melanæthus) picinus*, Uhler.  
18. *Podisus cynicus*, Say.

## PLATE XX.

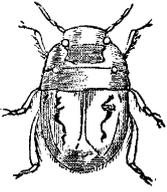
- FIG. 19. *Orectoderus amœnus*, Uhler.  
20. *Conorhinus variegatus*, Drury.  
21. *Phytocoris nubilus*, Say.  
22. *Lygæus reclinatus*, Say.  
23. *Acanthocephala femorata*, Fab.  
24. *Lygæus pilosulus*, H.-Schf.  
25. *Trigonotylus ruficornis*, Fallen.  
26. *Mozena lineolata*, H.-Schf.  
27. *Miris instabilis*, Uhler.  
28. *Lygus annexus*, Uhler.  
29. *Largus succinctus*, Linn.  
30. *Calocoris Palmeri*, Uhler.

## PLATE XXI.

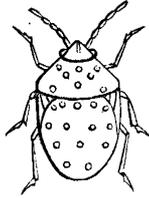
- FIG. 31. *Sinea diadema*, Fab.  
32. *Ranatra 4-dentata*, Stål.  
33. *Notonecta undulata*, Say.  
34. *Galgulus oculatus*, Fab.  
35. *Melanolestes picipes*, H.-Schf.  
36. *Ambrysus Signoreti*, Stål.  
37. *Monalocoris filicis*, Linn.  
38. *Belostoma americana*, Leidy.  
39. *Limnopus rufoscutellatus*, Lat.  
40. *Hygrotrechus remigis*, Say.  
41. *Anthocoris musculus*, Say.  
42. *Zaitha fluminea*, Say.  
43. *Corixa alternata*, Say.  
44. *Phymata erosa*, Linn.

All of these figures are much enlarged, some of them twice to three times as large as the natural specimens.

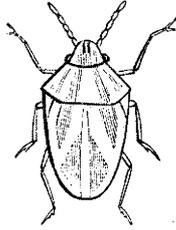
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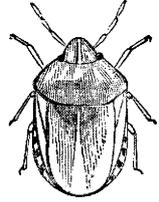
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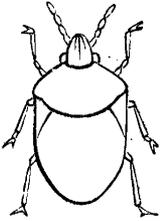
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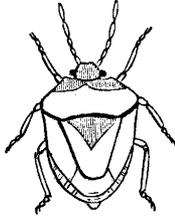
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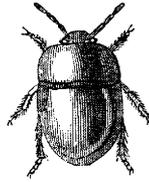
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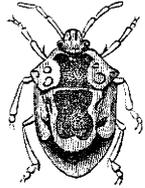
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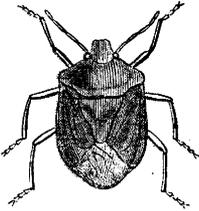
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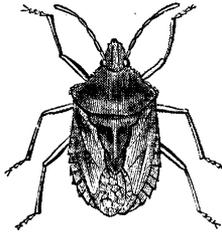
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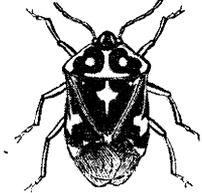
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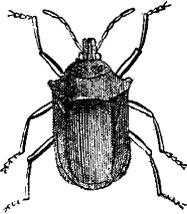
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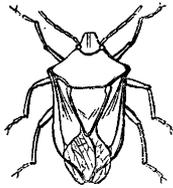
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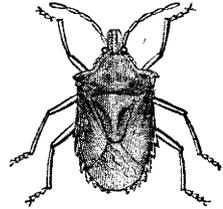
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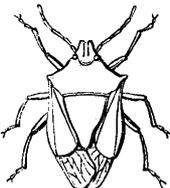
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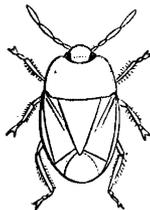
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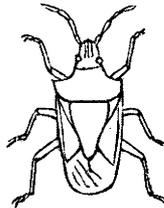
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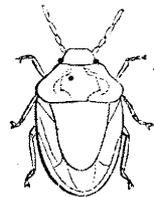
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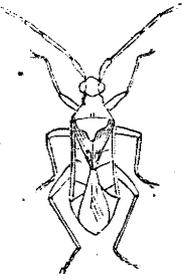
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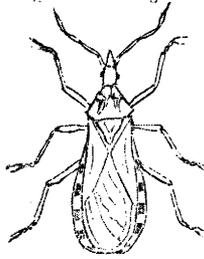
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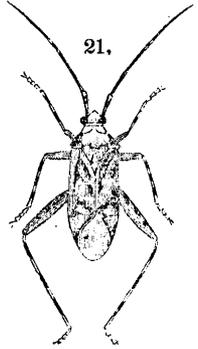
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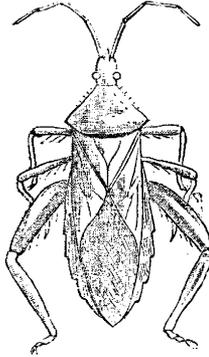
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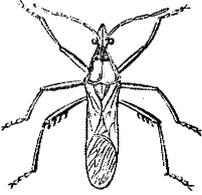
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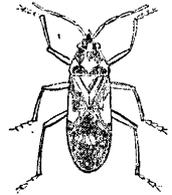
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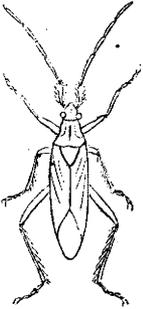
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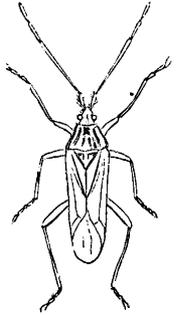
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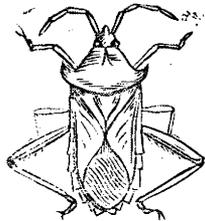
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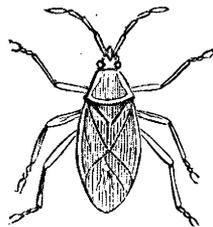
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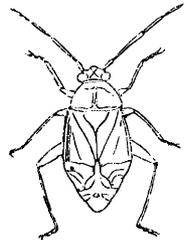
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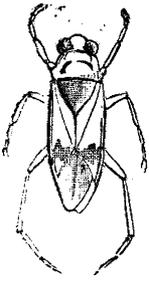
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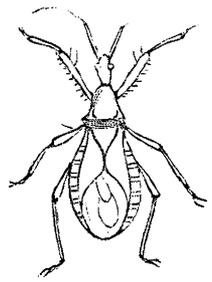
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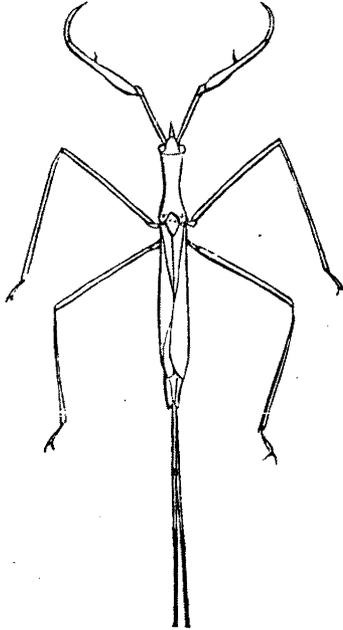
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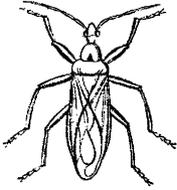
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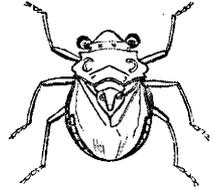
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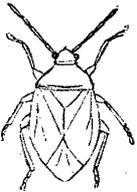
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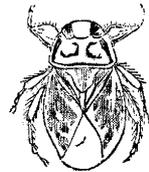
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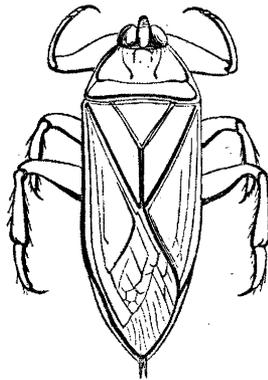
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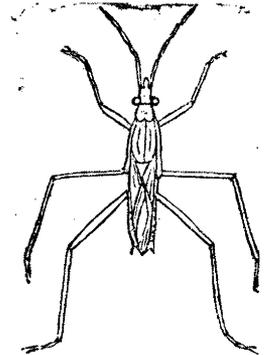
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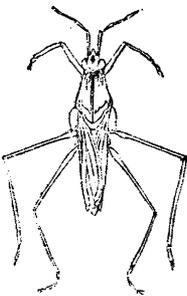
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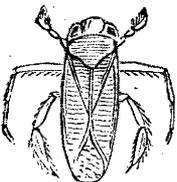
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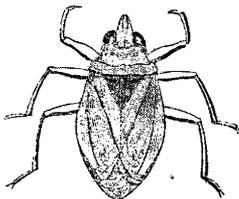
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44.

