

NEW JASSIDÆ FROM THE ROCKY MOUNTAIN AND
PACIFIC REGION.

BY E. D. BALL, FORT COLLINS, COLO.

The following species, with a few exceptions, were taken by Mr. E. P. Van Duzee and the author while on a very interesting and successful trip through southern and western Colorado during the latter part of July, 1900. These species are all strictly south-western in distribution as far as known, and most of them were found feeding on one or another of the peculiar plants of that region. While collecting in the valley of the Grand River, a number of species of Homoptera were taken, hitherto only known from the Californian region, and it is very probable that in turn several of these species, which were taken along with them, will, eventually, be found in California.

HECALUS BRACTEATUS, n. sp.

Resembling *brunneus*, the elytra shorter in the female, longer in the male. Head longer and thinner. Female, pale yellow. Male, milky white with fuscous lines. Length, ♀ 7 mm., ♂ 5 mm. Width, ♀ 1.5 mm., ♂ 1.25 mm.

Female.—Vertex long, with a foliaceous margin, disc transversely convex, the lateral margins but slightly narrowed for half the length, then forming a parabolic curve. Length and width in front of eyes about equal, two and one-fourth times the length of the pronotum. Elytra brachypterous, covering the first abdominal segment, as long as the vertex, their apices rounding. Venation reduced, a broad margin outside of the first section, which is once forked, no apical and rarely more than one anteapical cell present.

Male.—Vertex roundly triangular, its basal width one-third greater than its length, slightly longer than pronotum, margin not foliaceous. Elytra long and narrow, much longer than abdomen, venation distinct, somewhat irregular, usually the second cross nervure present, forming three anteapical cells, of which the second is much the longer.

Colour: female pale yellow or straw colour, the elytra with a few fuscous dots next the nervures; abdomen with a pair of olive stripes on each side, these stripes margined with dotted fuscous lines, a similar median line. Sometimes the olive stripes disappear, leaving the abdomen with nine dotted fuscous lines. Male milky white, sometimes with five olive stripes, dotted with fuscous, on vertex and pronotum. Elytra

with the milk-white nervures margined with fuscous dots. Upper half of the face fuscous.

Genitalia : ultimate ventral segment of the female as long as the penultimate, the posterior margin roundly emarginate, with a broad blunt tooth. Male, valve triangular, plates triangular, the margins slightly concave, fringed with stout spines ; plates about three times the length of the valve.

Described from numerous specimens from Rocky Ford, Colo. This species is apparently intermediate in structure between this genus and *Parabolocratus*. The females are all brachypterous and have the elongate head of a *Hecatus*, while the males are long-winged and have the short vertex of *Parabolocratus*.

✓*ATHYSANUS SYMPHORICARPÆ*, n. sp.

Form and size of *instabilis*, lighter coloured, resembling *striatulus*, but larger and lighter testaceous. Length, 4.5 mm.; width, 1 mm.

Vertex twice wider than long, half longer at apex than against eye, rounding to the broad almost parallel margined front, clypeus much narrower than apex of front, parallel margined. Elytra stout, longer than body as in *instabilis*, the central anteapical cell long, narrowed in the middle, more than half its length beyond the apex of clavus.

Colour : vertex and face yellowish testaceous, lines on front and irrorations on vertex fusco-testaceous. Pronotum and scutellum paler, with a slightly olive tinge. Elytra pale brownish or olive testaceous, subhyaline, the nervures light. Legs and all below pale orange testaceous.

Genitalia : ultimate ventral segment of the female little longer than the penultimate, the lateral margins narrowing, the lateral angles a little produced, triangular, between these the posterior margin is slightly rounding, shining black. One specimen has an acutely angular notch either side the middle, one-third the distance to the margin, leaving a broad central tooth ; one has only one notch ; and two, probably not having copulated, have none.

Described from four females from Ridgeway, Colo.

✓*ATHYSANUS VARUS*, n. sp.

Form and colour of *alpinus* and *extrusus*, but with a narrower body and longer elytra. Male darker, resembling *plutonius* female. Length, ♀ 5 mm., ♂ 4.25 mm. Width, ♀ 1.5 mm., ♂ a little over 1 mm.

Vertex roundly triangular, twice wider than long, two-thirds the length of the pronotum, disc convex, rounding to front, apex bluntly conical; front broad and flat, width between antennæ a little less than three-fourth its length. Elytra long, the outer margins almost parallel, their apices very broadly rounding. Venation strong, often accessory cross nervures along clavus and between sectors of corium; central antepical cell very long, the posterior end angularly enlarged.

Colour: ground colour a dirty straw-yellow; vertex with a transverse band just back of the ocelli, the ends of which do not reach the eye, but curve forward to the front; another interrupted band half way between this and the posterior margin and two dashes curving away from the apex and paralleling the other bands, black. Elytra with the nervures white, the cells mostly filled with dark fuscous, omitting a transverse, hyaline, band across the juncture of apical and antepical cells, a large milk-white patch on the cross nervures between the sectors, a smaller one at the apex of each claval nervure and sometimes another next to the claval suture. Face, dirty yellow arcs on front, especially on upper half; sutures, spots around the antennal sockets and the disc of the clypeus, fuscous. Male much darker than female, lower part of face and below black.

Genitalia: ultimate ventral segment of the female one-half longer than penultimate, posterior margin nearly truncate, the median third roundly produced; usually the segment is curved over the ovipositor so that it appears emarginate, with a quite pronounced median lobe; male valve less than half as long as its breadth at base, the apex rounding; plates no wider than the valve, slightly concavely triangular, the apex acute, two and one-half times the length of the valve, clothed with stout white spines.

Described from ten females and one male from Fort Collins, Colo.

Readily distinguished from any other American species by the genitalia and venation. There is a group of about six European species that possess the same milk-white elytral markings, of which *distinguendus* and *Schenkii* are similar in form, but none of them in venation and genital characters.

↓ *THAMNOTETTIX GRAECULA*, n. sp.

Form of *flavocapitata* nearly, but stouter; as large as *Coquilletti*, which it somewhat resembles in colour. Length, ♀ 5.5 mm., ♂ 5 mm.

Vertex roundly angular, the apex conical, scarcely two-thirds as long as its breadth at base, half longer than against eye; disc convex, rounding to the front except at apex; front broad, rather flat; clypeus broadest just before the rounding apex. Pronotum a little over half longer than vertex; elytra rather stout. Venation peculiar, resembling *longula*, except that the outer anteapical cell is pointed and petiolate anteriorly and the outer fork of first sector is very faint. Male smaller and with a blunter vertex.

Colour: pale yellowish olive; the female has two large spots within the basal angle and two smaller ones on the disc of the scutellum and the cross nervures between the sectors brown. Elytra with slight reddish cast. The males have no marking on scutellum, the elytra are distinctly embrowned, especially along the claval and apical areas. In both sexes there are a number of oval subhyaline areas. In the males there are three approximate pairs along the sutural margin.

Genitalia: ultimate ventral segment of female half longer than penultimate, the lateral angle rounding, the posterior margin triangularly emarginate from the lateral angles half way to the base; from the bottom arises a strap-shaped tooth equalling the lateral angles; male valve broadly evenly rounding. The plates, concavely, triangularly acuminate, about twice the length of the valve.

Described from one female and three males from Rifle, Durango and Colorado Springs, Colo.

SCAPHOIDEUS BLANDUS, n. sp.

Form and general appearance of *jucundus*, smaller and paler, lacking the reddish tinge of that species. Costal margin of elytra with numerous regular cells. Length, 5 mm.; width, 1.10 mm.

Vertex right-angled back to the eyes, which round off, not quite as long as its basal width, disc flat, margins straight, vertex and face forming an acute angle; front, margins straight, clypeus very slightly broadened below. Pronotum as long as vertex, more than half of its length within the curve of the vertex. Elytra, claval veins but slightly curved apically, usually a cross nervure from outer one to suture and often several irregular ones between the veins, outer anteapical cell usually with one cross nervure to the costa, sometimes several, costal margin with numerous, indistinct, almost equidistant nervures which are perpendicular to the margin.

Colour: almost uniform dull yellow, the anterior margin of vertex pale, faintly margined with brown. Elytra with oval light spots, which are milky on clavus and subhyaline white on corium; the three pairs along the sutural margin are very regular. Below pale yellow.

Genitalia: ultimate ventral segment of female twice wider than long, posterior margin rounding, variably trisinate either side of a narrow median incision; the inner pair of lobes usually largest, lateral angles rounding, disc with a dark spot, pygofer short, strongly inflated in the middle. Male valve small, bluntly triangular; plates rather broad, the basal half rounding, apical half triangularly narrowing to the blunt tips, two and one-half times longer than valve, the flat lateral margins separated from the convex disc by a dark line.

Described from numerous specimens from Rifle, Ridgway, Dolores and Durango, Colo. The quadrangular cells along the costa will readily separate this from any described form.

♂ SCAPHOIDEUS FUMIDUS, n. sp.

Resembling *blandus* in form and size. Colour rich testaceous brown, the margins of vertex and pronotum and apex of elytra white. Length, 5 mm.; width, 1.5 mm.

Vertex right-angled, slightly shorter than its basal width, lateral margins slightly rounding, disc flat or slightly transversely depressed on the middle; outline of face as seen from the side straight, front rapidly widening above antennal pits, regularly narrowing below; clypeus short, constricted in the middle, genæ broadly margining the loræ below. Pronotum slightly longer than vertex. Elytra rather long and narrow behind; outer claval vein nearly straight, venation obscured by the deep colour, except in the apical cells, nodal vein arising from beyond the middle of the outer anteapical cell.

Colour: rich testaceous brown, vertex lighter, the lateral margins of vertex and pronotum and the costal margin of elytra at base creamy white, the apex of corium from just beyond the clavus and including all the apical cells and the apices of the two outer anteapical cells, subhyaline white. Sometimes a few oval white spots in the testaceous portion of elytra. Face and below pale creamy yellow.

Genitalia: ultimate ventral segment of female with a broad, triangular, median notch, either side of which there is a broad rounding lobe which slopes away to a small triangular lobe next the lateral angle;

male valve small, not as long as the ultimate segment, roundly triangular; plates narrow, long, triangular, their apices acute.

Described from ten specimens from Rifle, Dolores and Durango, Colo. The white margins anteriorly and the sharply defined tip to the elytra against the rich ground colour render this an easily recognized species. The general shape and colour suggest the genus *Platymetopius*, but the shorter vertex and the face characters place it with *Scaphoideus*. Such species as this weaken generic characters and at the same time help us in that they show affinities.

✓ *PHLEPSIUS VANDUZEI*, n. sp.

Form and general appearance of *cinereus*, but much larger; stouter built than even *nebulosus*; grayish cinereous, with a trilobate commissural line. Length, 8 mm.; width, 2.75 mm.

Vertex very bluntly conical, one-fourth longer on middle than against eye, three-fifths the length of the pronotum, no visible line between it and front; front not quite as long as its basal width, the apex one-third the width at base; clypeus long, wedge-shaped, broadest below; pronotum two and one-third times wider than long. Elytra broad, longer than the body, compressed before the flaring apex; claval veins sometimes tied across.

Colour: dirty white, sometimes a pale yellow wash on vertex and pronotum. Vertex with a distinct round black spot on the middle of either side at the base, a few irregular dark vermiculations anteriorly, omitting a broad median line which extends down the front; numerous short arcs on front, a spot on clypeus, a pair on loræ, another pair just under eyes, fuscous. Pronotum and scutellum with very faint markings, elytral veins yellow and fuscous; between them the membrane is very finely, sparsely, and somewhat irregularly vermiculate, omitting a broad commissural line, which is divided into three lobes by the apices of the claval nerves. The outer apical and two costal veins often very much infuscated, the spaces between clear.

Genitalia: ultimate ventral segment of the female appearing only as a narrow strip along the pleura on either side; in its place is a thin membrane shaped almost like the segment in *apertus*, with its rectangular median excavation, and showing beyond its posterior margin the rounded apices of the plates, near the middle line, and the rounding lobes of a second membrane near the lateral angles; male valve triangular, the apex bluntly roundly produced; plates broad at base, roundly triangular,

their apices produced, compressed, slightly divergent; disc, convex, inflated, a few appressed hairs along the margin; plates equalling the pygofers, nearly five times the length of the valve.

Described from a pair taken at Rifle, Colo., by Mr. E. P. Van Duzee, and two females taken at Grand Junction the next day by the author. This large species is strikingly distinct in form, colour and genitalia, and it gives me great pleasure to name it after the man who has in the past so carefully worked out this genus for us, and whose energy and "Kansas umbrella" taken together did so much to make this mountain trip both pleasurable and profitable to the author.

✓ *PHLEPSIUS EXTREMUS*, n. sp.

Very small, oval, depressed, with a flat, thick margined vertex; resembling *decorus* and *areolatus* in general appearance, but much smaller. Smaller than *ovatus*, head as wide as the pronotum. Length, ♀ 4.5 mm., ♂ 4 mm.; width, 1.5 mm.

Vertex flat, over three-fourths the length of the pronotum, over half longer on middle than at eye, not quite twice wider than long, the anterior margin thick, angle with front acute; front broad, nearly flat, longer than wide. Elytra short, oval, claval veins distinct.

Colour: milky white, heavily irrorate with dark fuscous so that the general colour is dark without the reddish or brownish tinge so common in this genus; vertex very heavily irrorate, omitting a narrow margin and median line. Pronotum with large olive brown spots along the anterior margin as in *decorus* and *areolatus*. Elytra with numerous supernumerary veins and reticulations, irrorations almost obsolete except in a few dark spots around the apex and along the costa, one or two near the apex of clavus and two very distinct ones between the sectors of the corium. Front very heavily irrorate with brownish fuscous, rest of face and legs lighter.

Genitalia: ultimate ventral segment of the female twice the length of the penultimate, the lateral angles broadly, roundly produced, between these the margin is roundly emarginate with minute angular teeth at the bottom. In the natural position of the segment it appears to be angularly emarginate almost from the lateral margins; male valve very small, broad and short, about one-fourth the length of the ultimate segment; plates triangular, their apices hardly acute, a little longer than the ultimate segment.

Described from two males and two females, three from Rifle and one

from Durango, Colo. One Rifle specimen from Mr. Van Duzee. This is as short as *albidus*, but much broader, and is quite distinct structurally from any other species with a flat vertex and a broad head.

✓ *PHLEPSIUS DENUDATUS*, n. sp.

Resembling *ovatus*, but broader and shorter. Even lighter coloured than *albidus*. Head broader than thorax. Form stout. Length, 4 mm.; width, 2 mm.

Vertex blunt, rounding, twice wider than long; front broad, about one-fifth longer than wide, clypeus enlarged at apex. Pronotum very short, but one-third longer than vertex, lateral margin scarcely apparent. Elytra short, broad, flaring behind, giving the insect a square-set appearance. Venation very indistinct, somewhat variable.

Colour: milky white, very sparsely spotted and irrorate with fuscous. Vertex with a pair of round spots just inside the eyes; within and back of these a pair of oblique dashes, fuscous. Pronotum with a pair of fuscous spots in a line with the inner margin of the eye on either side, sometimes a row of fuscous markings inside of these. Scutellum with a pair of triangular spots within the basal angles and a smaller pair of round ones on the disc. Elytra with three pairs of equidistant approximate spots along the suture, the middle pair the largest, and a number of spots along the costa, black. Sometimes these are absent except the large pair on the suture, and a spot opposite the antepical cells on either costa. Veins pale yellow, indistinct. Face and all below dirty white.

Genitalia: ultimate ventral segment of the female about twice as long as the penultimate, the lateral angles feebly, angularly produced, the margin between them very slightly rounding, with a small semicircular median emargination; male valve small, triangular; plates broad, triangular, as long as the ultimate segment.

Described from numerous specimens from Grand Junction, Colo. (V. D. and the author.) This is another of the "white" Phlepsids, which seems to be strictly south-western in distribution. In structure it resembles *Vanduzeei*, but in size and colour it is very different.

(To be continued.)

I desire to acknowledge the Society's indebtedness for a perfect pair of *Plusia aeroides*, from Mr. C. H. Young, Hurdman's Bridge, through Dr. Fletcher. A very rare species in this district.

J. ALSTON MOFFAT, Curator.