

## NEW GENERA AND SPECIES OF N. A. FULGORIDÆ.

BY E. D. BALL, STATE AGRICULTURAL COLLEGE, FORT COLLINS, COLO.

*Anotia Kirkaldayi*, n. sp.—Form and general appearance of *Amalopota Fitchi*, but broader and less definitely marked. Form of *A. Burnetii*, but with a sharp head and blunter elytra. Length, including elytra, 6.5 mm.

Vertex slightly broader than in *Burnetii*, inclined upward, nearly flat, not rounding over at apex as in that species; elytra broader towards apices than in *Burnetii*; venation very similar, but with the median nervure not forked beyond the cross-vein, and the first branch of the post-costal nervure coming off close to the cross-vein and at nearly right angles to the nervure. Costal appendix larger than in *Burnetii*, obliquely truncate posteriorly.

Colour: pale creamy, slightly tinged with testaceous, a pale testaceous stripe runs from the eye forward to the apex of vertex, and another from below the eye downward to the front; elytra milky subhyaline, a faint smoky or testaceous spot near base, a smoky transverse band half way to apex of clypeus, another partial band extending to the sutural margin, down the median to the cross nervure, and then out that to the post-costal; beyond this nearly all the nervures are broadly smoky margined, leaving a light patch in each anteapical cell and a light spot on apex of each apical nervure; the costal margin beyond the middle, the costal nervures, the apical margin, the apical nervures, except their apices and a section of the postcostal beyond the cross nervure, testaceous.

Described from a single specimen collected by the author, at Ames, Iowa.

The custom of commemorating the distinguished workers in Hemiptera in the naming of the Derbidæ seems to me to be a good one, and I am pleased to add to this list the name of our colleague, whose careful nomenclatural work will place our Hemipterological classification at once upon a sound basis of fact such as it would not have otherwise enjoyed for years to come.

*Anotia Sayi*, n. sp.—Resembling *Burnetii* in form, but much larger, as large as *Otiocerus*. Costal appendage very long; colour yellowish; elytra white, with a transverse fuscous band before the middle. Length, 11 mm. to the tip of elytra.

Vertex but little rounded above, the apex slightly rounder than in *Kirkaldyi*. Second joint of antennæ very large, consisting of a long, flat plate thickest on the margins and studded with fine knobs; elytra very large, venation as in *Burnetii* nearly, the outer branch of the median nervure straight, the cross nervures at the apices of the elytra in a straight line; costal appendage as long as the second joint of antennæ, strap-shaped towards apex, the posterior margin nearly straight, anterior margin sloping off to the base of the costa; the whole appendix curved back across the corium, with the apex on the claval suture.

Colour: pale straw; eyes black; elytra milky at base, a fuscous band at one-third the distance from base, beyond this subhyaline, with the nervures faintly brown as far as the apical nervures. Posterior margin of appendage, and sometimes a spot near the outer corner of scutellum, fuscous.

Described from two females collected at Albion, N. Y., by E. P. Van Duzee.

*Patara Vanduzeei*, n. sp.—Form and general appearance of *guttata*, but with a smaller front and different venation; brownish purple, with a light line on vertex and pronotum, and light dots around the apex of elytra. Length, 4.75 mm.

Vertex and front together semicircular, about equally margining the eye all around as seen from side, front rising abruptly from clypeus, compressed, the margin slightly thickened; vertex expanded posteriorly; pronotum slightly carinate, broad and nearly parallel margined; venation closely resembling *guttata*, but with four cells between the postcostal and the median before the apical cell. There is a reflexed veinlet from the median into the anal area, and two reflexed veinlets from the outer branch of the mediastinal to the costal. This branch is interrupted just before the apex, making it appear as if the reflexed vein was the end of the nervure.

Colour: vertex white, front and antennæ brownish testaceous; pronotum brownish fuscous, with a broad, median, light stripe; scutellum bright testaceous, sometimes with a pale stripe; elytra brownish purple, the tuberculate nervure of clavus white, a light spot on the apex of each apical nervure and a broad one on the inner reflexed one. Nervures bright testaceous, the three cross nervures before the apical cells fuscous.

Described from three females in the collection of E. P. Van Duzee, from Gowanda, N. Y. The adding of this name to the list is peculiarly

appropriate, in that it adds that of one of our strongest Hemipterists, and at the same time the name of one who has contributed much to our knowledge of the American Derbidae.

*Cenchrea Heidemanni*, n. sp.—Resembling *dorsalis* in form, but larger and lighter coloured: pale orange yellow, with the elytra white. Length, 7.25 mm.

Vertex broad, slightly angled with the broad, parallel margined front, margins with distinct, slightly serrate carina; pronotum with the lateral margins broad, wing-like, posterior margin deeply, angularly emarginate; scutellum weakly tricarinate; elytra long; venation simple, all three veins with long narrow forks, the apices of the mediastinal not as strongly angled as in *dorsalis*, the claval nervure and the basal half of the mediastinal tuberculate, the posterior half of costal and the whole apical margin finely serrate.

Colour: pale orange yellow; elytra milky white, below pale.

Described from one female from Effingham, Kansas, collected by E. P. Van Duzee, and another from Washington, D. C., from Otto Heidemann. This is only one of the many fine specimens that Mr. Heidemann has turned over to me for study.

Neither this nor the preceding genus has before been recognized in our fauna. They were both founded on species from St. Vincent Island.

*Cenchrea Uhleri*, n. sp.—Size and form of *Lamenia Californica* nearly, slightly longer and narrower, much smaller than *Heidemanni*; pale creamy or slightly testaceous yellow, the elytra margined with fuscous. Length, 5 mm.

Vertex distinctly longer than in *Californica*, shorter and broader than in *Heidemanni*, definitely angled with front; front widening slightly below to the large clypeus; elytra long, strictly parallel margined; male plates long, strap-like, slightly widening towards apex.

Colour: pale creamy yellow, slightly washed with tawny, the abdominal segments both above and below black, with light margins; elytra creamy, a round fuscous spot just before the apex of costa, and usually a brownish or fuscous submarginal stripe along the costa, a brownish line along the sutural margin; the tip of the wing often tawny.

Described from six specimens from D. C. and Md. (Heidemann), two from Effingham, Kansas (Van Duzee), and three from Onaga, Kansas (Crevecoeur).

*Lamenia obscura*, n. sp.—Form and general appearance of *vulgaris* nearly, usually slightly smaller and paler. Readily separated on the male genitalia. Length, 4 mm.

Vertex short, sloping, half wider than long, separated from front by a slight carina; front rather broad, nearly flat, a faint median carina; clypeus convex in both diameters, rather prominent; median carina much elevated, acute; elytra about as in *vulgaris*, not as strongly sinuate on costa.

Colour: slaty black, pruinose, giving this species a powdered gray appearance. Head black, the carinate margin of vertex in front pale, lateral carinae of pronotum pale. Elytra slaty at base, smoky, subhyaline at apex, a spot on costa, where the mediastinal nerve touches it, and the two transverse nervures at the bases of the apical cells light. Legs pale; rostrum pale, apical segment black.

Genitalia: last ventral segment in male transverse, not enlarged, posterior margins straight; plates widely separated at base by an equilaterally triangular notch, their inner margins confluent from the apex of notch to the upturned tips, together transversely convex, forming a long, nearly parallel margined trough with a rounding apex. Their apices are furnished with long slender teeth set at right angles to the plate. In the normal position these teeth cross each other and close the end of the trough.

Described from twenty-two specimens taken at Greeley, Colo., by the author, and two specimens from How Creek and Lake Worth, Fla., in the collection of Mr. Heidemann.

*Lamenia inflata*, n. sp.—Form of *vulgaris* nearly, slightly longer and narrower, dark smoky brown, paler on pronotum and face. Length, 4.5 mm.

Vertex rather narrow, rounding to the retreating front; front full, without a median carina; elytra long and narrow, distinctly notched at the junction of the mediastinal and costa; venation as in *Californica*.

Colour: vertex, front and pronotum pale testaceous brown; clypeus smoky brown; elytra dark smoky brown, the costal incision and the transverse nervures before the apex faintly marked with light; legs and rostrum pale.

Genitalia: last ventral segment in the male longer than wide, convex, thickened, the posterior margin sinuate; plates distant from each

other at base, long, flat, narrow at base, gradually widening to the bluntly rounding apices, the apical spines just touching each other.

Described from eight specimens in the author's collection taken in Hayti by R. J. Crew.

*Peltonotellus rugosus*, n. sp.—Form and general appearance of *histrionicus* nearly, the vertex shorter and the venation reticulate. Length: ♀, 3.5 mm.; ♂, 2.5 mm. Width: ♀, 1.3 mm.; ♂, .9 mm.

Vertex shorter than in *histrionicus*; clypeus continued in same plane as front at the base, then sloping sharply backwards, the basal portion overhanging the rest in the form of a bluntly-pointed tubercle; elytra short, truncate; venation distinct, the veins raised and densely reticulate.

Colour: gray or fuscous maculate, a broad, pale yellow median stripe on vertex; pronotum and scutellum margined by four pairs of black dashes; vertex with a pair of ocellate spots at base, and the margins mostly dark lined; front pale yellow, sometimes irregularly washed or marked with dusky, lateral compartments black, with the pustules white; clypeus black, the base and a line down to the apex of the tubercle light; lateral areas of pronotum and scutellum dark, with pustules light; elytra brownish fuscous, nervures light; abdomen above with a narrow median and three pairs of lateral stripes, the two outer pairs broad and pustulate; below, pale straw in the female, the femora spotted and the tibiæ lined with fuscous, the anterior pair much the heaviest. In the male the legs are always red, with more or less of fuscous marking. In some specimens the whole under surface, including clypeus, is bright red.

Described from twenty-four specimens collected in various parts of Colorado.

*Peltonotellus bivittatus*, n. sp.—Resembling *quadrivittatus* in general form and colour, the front much narrower and black lined. Size of *rugosus*.

Vertex three times as wide as its median length, two-thirds the length of the pronotum, front long and narrow, space between the lateral carinæ nearly twice as long as its middle width, only one-fourth wider in the middle than at the ends; clypeus abruptly rounding back, nearly right angled with front; elytra either coriaceous and only about half the length of the abdomen, venation indistinct, or else subhyaline, and much longer than the abdomen, the nervures distinct.

Colour: striped yellow and black, the yellow shading out to green on the vertex and front, a median line, broad in front, narrowing out behind, extending from the vertex to the tip of the abdomen, and a pair of oblique lines rising under the eyes and meeting the median line on the last abdominal segment, yellow; vertex green, margin and pair of spots at base black; front green, the lateral carinae deep shining black; pustules on lateral areas of pronotum and scutellum black, lateral carinae of scutellum and a pair of stripes just within them black; legs pale yellow.

Described from two specimens from Colorado, four from Nebraska, three from Kansas, and one from Iowa. One Kansas specimen was received from Crevecoeur; all the rest were collected by the author.

*Kelisia salina*, n. sp.—Form of *pallidula* nearly, but longer and narrower, resembling *crocea*, but much smaller, pale, with the carinae of front margined with black. Length, 3.5 mm.

Vertex strongly carinate, one-third longer than wide, as long as the pronotum; front broader proportionally than in *crocea*, the margin slightly and regularly rounding, but little narrowed above; elytra long and closely appressed behind, the apex broadly rounded; venation as in *crocea*, the third apical nervure twice forked, the nervures studded with coarse dark hairs.

Colour: front pale smoky, the carinae light, narrowly margined with black, which extends into the lateral foveae of the vertex; basal part of vertex creamy; pronotum pale, with more or less of smoky clouding on the disc; scutellum creamy, often trilineate with pale. Legs and all below, except ovipositor and a few spots along margin, pale in the female, abdomen all dark in male.

Described from twenty-four specimens from various places in Colorado.

*Kelisia parvula*, n. sp.—Size of *pallidula* nearly, but with broader elytra, a shorter species than *salina*, with an unmarked front; front and above entirely pale. Length 3.25 mm.

Vertex weakly carinate, broad, but little longer than wide, rounding to front; front as in *salina*; elytra longer than abdomen, broad at apex; venation distinct, nervures strong and slightly setigerous, the third apical veinlet but once forked near the apex.

Colour: pale straw or whitish; vertex and scutellum tinged with orange, the abdomen in male smoky brown and black.

Described from one female from Coolidge, Kansas, and a pair from Ames, Iowa, all collected by the author.

MEGAMELANUS, n. gen.

Resembling *Megamelus*, but with the front of equal width above and below and the vertex sharply angled in front. Resembling *Delphacinus*, but with the side keels of the pronotum attaining the hind margin. Vertex 5-angular, but, with the lateral foveæ depressed and their inner carinae strong and meeting at the sharp apex, giving it the appearance of being acutely triangular; front broad, nearly rectangular, median carina distinct, not forked, a trifle the widest in the middle, the lateral margins gently evenly curving, the apical margin carinate just above the deep clypeal suture; clypeus small, rounding, without carinae; pronotum shorter than vertex, strongly tricarinate, the lateral pair just inside and parallel with those on vertex, extending to the posterior margin; elytra commonly brachypterous, covering the second abdominal segment. In the macropterous form long and broadly rounding posteriorly; venation nearly as in *Megamelus*.

Type of the genus *M. bicolor*.

*Megamelanus bicolor*, n. sp.—General appearance of *Delphacinus mesomelas*, but with a sharper vertex and straight lateral carinae on pronotum. Length: macropterous form, 3 mm.; brachypterous, ♀, 2.5 mm.; ♂, 1.6 mm.

Vertex flat, acutely triangular on the disc, slightly longer than the pronotum, more than half its length in advance of the eyes; median carina weak, obsolete before the middle; face slightly acutely angled with the vertex; front nearly half longer than wide, the carinae sharp, narrow; pronotum sharply carinate, slightly emarginate posteriorly; elytra one-third longer than the vertex and pronotum in the brachypterous form, their apices rounding; nervures simple, distinct, distinctly longer than the abdomen in the macropterous form, broadly rounding at apex, anteapical cells variable, apical veinlets straight and simple.

Colour: females varying from a pale to a very bright straw colour, male pale straw colour; elytra nearly white, the abdomen both above and below clypeus and under side of thorax black. Legs black, the tip of both femora and tibiae pale, tarsi pale.

A few males were found that mimic the females in size and colour. These were mostly parasitized, and it is possible that the others had been.

Described from twenty-five specimens from various parts of Colorado, and one female from California.

BOSTÆRA, n. gen.

Resembling *Stobæra*, but with a much broader vertex and front; vertex and front broader than in *Laccocera*, front bicarinate. Head transverse, wider than pronotum; vertex parallel margined, over three times as wide as long, not extending in front of eyes; front six-angled, widest at the lower corner of the eye, where it is a trifle wider than its median length, two and one-half times as wide as at apex, median carina forking at one-fourth its length from the apex and regularly diverging until its forks inclose over half the width at base; clypeus bearing an acutely-tipped, cone-shaped tubercle; antennæ very large, prominent, basal joint flat, second flat above, rounding below and tuberculate; pronotum transverse, slightly angularly excavated behind, lateral carinæ curving around behind eyes, not reaching the posterior margin; elytra about as in *Stobæra*, obliquely truncate behind, nervures with setigerous tubercles; tarsal spur broad, short, almost spoon-shaped.

Type *B. nasuta*.

The remarkably broad head, bicarinate front, and the "nose" on the clypeus, render this a very distinct and easily-recognized genus.

*Bostæra nasuta*, n. sp.—Slightly resembling *Laccocera vittatipennis*, but with a much broader head; pale creamy yellow, with a black band at apex of elytra and another before it. Length, 5 mm.

Vertex evenly rounding to the slightly-retreating front, slightly shorter than pronotum, not at all in advance of the eyes; elytra much longer than abdomen, as broad as in *S. tricarinata*, obliquely truncate at apex, the outer angle acute.

Colour: pale creamy yellow, the vertex and front shading to brownish on a line below the eyes. This line is margined below with white, which again shades out into brownish fuscous on the clypeus. Scutellum orange; elytra subhyaline, a spot on the suture before the apex of clavus; a band on apex and an oblique stripe before it, dark smoky brown or fuscous.

Genitalia: male plates strap-shaped, their inner margins notched before the apex; apical margins obliquely, roundly excavated, their outer angles acute, upturned.

Described from ten examples from Holly, Antonito and Fort Collins, Colo., all collected by the author.