

NOTES ON GENUS CATONIA (HOMOPTERA).

BY E. P. VAN DUZEE, BUFFALO, N. Y.

The synoptical table of the species of this genus published by me in January, 1908, has become rather antiquated on account of the discovery of a number of new forms. The following table includes all described species from America north of Mexico:

- Apex of the head more or less angled, with the carinæ sharp ; the lateral carinæ of the front following its basal margin and forming a distinct angle before the eye, where they join those of the vertex ; eastern species 1.
- Apex of the head tumid, with the vertex sloping and confounded with the base of the front in a common convexity, the carinæ obsolete there ; lateral carinæ of the front following the contour of the eyes ; western species 7.
1. Face conspicuously transversely banded 2.
Face not distinctly banded 6.
2. Front entirely black, the clypeus abruptly white ; elytra unicolorous brown, nervures impunctate 7, *dimidiata* VanD.
Front transversely banded with white opposite the antennæ 3.
3. Elytra unicolorous, nervures impunctate 6, *impunctata* Fitch.
Elytra variegated, nervures punctate 4.
4. Larger, 7 mm.; front distinctly narrowed at base, which is but obscurely banded 1, *nava* Say.
Smaller, 5-6 mm.; base of the front black 5.
5. Front much narrower at base ; vertex narrow, truncated before, its sides considerably produced before the eyes ; mesonotum variegated 2, *cinctifrons* Fitch.
Front hardly narrower at base ; vertex broad, obtusely angled before, the sides not produced before the eyes ; mesonotum unicolorous, castaneous 3, *picta* VanD.
6. Larger, 7 mm.; elytral areoles with numerous incomplete transverse veinlets ; apex of the mesonotum with a pair of ocellated black points 4, *grisea* VanD.
Smaller, 5 mm.; elytral areoles without transverse veinlets 5, *pumila* VanD.
7. Front banded, its basal carinæ indicated ; elytra fuscous, the areoles dotted and some of the transverse veins white 8, *fusca* VanD.
Front without transverse bands 8,

8. Colour ferruginous, inclining to castaneous; elytra with a transverse clitellate band. 12, *cara* VanD.
 Colour some shade of brown or fuscous; elytra not banded. 9.
9. Smaller, less than 5 mm; colour testaceous-brown, with the costa obscurely paler. 11, *costata* VanD.
 Larger, 6 mm.; not distinguished by a paler costa. 10.
10. Of a uniform ferruginous- or rufous-brown, sometimes marked with sanguineous on the abdomen and elytral nervures; apex of the elytra infuscated with contrasting nervures. 10, *rubella*, n. sp.
 Of a clear fuscous-brown; carinae of the pro- and mesonotum and elytral nervures mostly whitish. 9, *nervata*, n. sp.

I have omitted from this table the West Indian *intricata* Uhler, and the Mexican and Central American species described by Fowler in the *Biologia*. Below is a list of the species of *Elidiptera* and *Catonina* known from north of Mexico and the West Indies:

Genus ELIDIPTERA Spinola.

Ann. Soc. Ent. Fr., viii, p. 304, 1839

Helicoptera Am. & Serv., Hemipteres, p. 526, 1843.

Van Duzee, Proc. Acad. Nat. Sci. Phila., lix, p. 475, 1908.

1. COLORATA Van Duzee.—Proc. Acad. Nat. Sci. Phila., lix, p. 476, 1908.

Habitat.—N. Y. (Approaches genus *Pseudohelicoptera* Fowler.)

2. OPACA Say.—Jl. Acad. Nat. Sci. Phila., vi, p. 239, 1830; Compl. Writ., ii, p. 374, 1859.

vestita Prov.—Pet. Faun. Ent. Can., iii, p. 221, 1889.

pinorum Manee.—Ent. News, xxi, p. 117, 1910.

Habitat.—Canada to North Carolina.

3. PALLIDA Say.—Jl. Acad. Nat. Sci. Phila., vi, p. 240, 1830; Compl. Writ., ii, p. 374, 1859. Van Duzee, Proc. Acad. Nat. Sci.

Phila., lix, p. 477, 1908.

Habitat.—Eastern States, Canada.

4. HENSHAWI VanD.—Trans. Am. Ent. Soc., xxxvi, p. 83, 1910.

Habitat.—Washington State.

5. SLOSSONI VanD.—Proc. Acad. Nat. Sci. Phila., lix, p. 478, 1908.

Habitat.—New Hampshire.

6. SEPTENTRIONALIS Prov.—Pet. Faun. Ent. Can., iii, p. 220, 1889.

Habitat.—Canada, New England.

7. FLORIDÆ Walker.—List of Homop., ii, p. 326, 1851. Van Duzee, Trans. Am. Ent. Soc., xxxvi, p. 83, 1910.

Habitat.—Rhode Island to Florida.

8. *VARIEGATA* VanD.—Proc. Acad. Nat. Sci. Phila., lix, p. 479, 1908.
Habitat.—Canada to North Carolina.
9. *FUSIFORMIS* VanD.—Trans. Am. Ent. Soc., xxxvi, p. 82, 1910.
Habitat.—California.
- [NOTE.—Of the Biologia species, *Helicoptera longiceps* Fowl. appears to belong to this genus.]

Genus *CATONIA* Uhler.

- Proc. Zool. Soc., Lond., 1895, p. 61.
Van Duzee., Proc. Acad. Nat. Sci. Phila., lix, p. 480, 1908.
1. *NAVA* Say.—Jl. Acad. Nat. Sci. Phila., vi, p. 238, 1830; Compl. Writ.,
ii, p. 373, 1859.
Habitat.—Eastern States.
2. *CINCTIFRONS* Fitch.—Third Rept., Trans. N. Y. St. Ag. Soc., 1856,
p. 451.
Habitat.—New York, Pennsylvania.
3. *PICTA* VanD.—Proc. Acad. Nat. Sci. Phila., lix, p. 481, 1908.
Habitat.—New Jersey to Florida.
4. *GRISEA* VanD.—Proc. Acad. Nat. Sci. Phila., lix, p. 482, 1908.
Habitat.—New York to Canada.
5. *PUMILA* VanD.—Proc. Acad. Nat. Sci. Phila., lix, p. 483, 1908.
Habitat.—New York, Ohio.
6. *IMPUNCTATA* Fitch.—Cat. Ins. N. Y. St. Cab., Fourth Ann. Rept., p.
46, 1851.
Lintner's 9th Rept., in 46th Rept. St. Museum, p. 386;
1893.
Van Duzee.—Proc. Acad. Nat. Sci. Phila., lix, p. 482,
1908.
Habitat.—Eastern States.
7. *DIMIDIATA* VanD.—Trans. Am. Ent. Soc., xxxvi, p. 85, 1910.
Habitat.—Eastern States.
8. *FUSCA* VanD.—Proc. Acad. Nat. Sci. Phila., lix, p. 481, 1908.
Habitat.—California.
9. *NERVATA*, n. sp.—(See below.)
Habitat.—California.
10. *RUBELLA*, n. sp.—(See below.)
Habitat.—California.
11. *COSTATA* VanD.—Trans. Am. Ent. Soc., xxxvi, p. 86, 1910.
Habitat.—California.

12. CARA VanD.—Trans. Am. Ent. Soc., xxxvi, p. 86, 1910.

Habitat.—California.

[NOTE.—The following *Biologia* species seem to belong to this genus: *Helioptera sobrina* and *chiriquensis*; *Plectoderes basalis*, *excelsus*, *notatus*, *laticollis* and *fuscilineatus*, and possibly *montanus* and *asper*. Genus *Plectoderes* Spinola has the head as wide as the pronotum, which excludes all the species above mentioned.]

Descriptions of new species :

CATONIA RUBELLA, D. SP.

Form and size of *fusca* nearly. Of a uniform brown, more or less inclined to ferruginous and touched with sanguineous on the elytral nervures and abdomen. Front immaculate; apical border of the elytra fuscous crossed by pale nervures. Length, 5–6 mm.

Head more conical than in any of our other species. Vertex broad, transverse, sloping; produced in an obtuse rounded angle; base sub-angularly emarginate; carinae nearly straight, forming a regular triangle, but little broader than long, median carina abbreviated just before the apex. Front broad, scarcely widened apically, obviously convex, carinae prominent, but becoming obsolete on the tumid base; clypeus scarcely distinguished from the front, the sides narrowly laminate. When viewed from the side the head is produced in a blunt cone before the eye for a distance of about one-half the length of the latter, and the lateral carinae of the front lie close to and are concentric with the anterior and superior borders of the eye. Pronotum less than half the length of the vertex, with the carinae distinct and the hind edge deeply, angularly emarginate; mesonotal carinae parallel and distinct. Median tooth of the male genital segment short, abrupt, ligulate and rounded at apex, and less than half the length of the plates.

Colour: Head, pronotum, face, chest and legs testaceous brown, the eyes and tibial and tarsal spines black; mesonotum and elytra a little darker and obscurely tinged with ferruginous; elytral nervures more or less distinctly sanguineous; apex of the elytra somewhat infuscated, with the apical nervures (about seven in number) whitish or bordered with whitish. Wings quite strongly infuscated, with blackish nervures. Abdomen fuscous or black, with the genital pieces and margins of the segments testaceous or sanguineous.

Described from two male and two female examples from the Cornell University collection, taken at Felton, California, about May 22nd, 1907,

by Mr. J. C. Bradley. This species may be known by the subconical head, resembling that found in *Paracœlidia* in the Jassidæ, the uniformly brown or testaceous-brown colour sometimes tinged or marked with sanguineous in places, and the pale veins on the infuscated apex of the elytra.

CATONIA NERVATA, n. sp.

Form and size of *dimidiata*, but with a shorter and broader vertex. Colour a clear fuscous-brown, elytral nervures and all carinæ, except those of the head, whitish; base of the clypeus with a whitish mark on either side. Length, $5\frac{1}{2}$ mm.

Head very short and blunt; at apex rounded in both diameters. Vertex transverse, its length scarcely one-half the width between the eyes, sloping and confused with the rounding base of the front; carinæ inconspicuous, forming a transverse compartment rounded before and a little longer at the middle than next the eye; hind edge feebly arcuated. Front broad, a little constricted between the eyes; the carinæ distinct below, obsolete on the tumid base; apex rather deeply angularly excavated to receive the clypeus; the latter longer than broad, with prominent median carinæ and narrowly expanded margins. Viewed from the side, the base of the front is but feebly, conically produced, with the lateral carinæ closely following the contour of the eyes, as in *rubella*. Pronotum shorter than the vertex, deeply angularly emarginate. Mesonotal carinæ distinct, parallel. Median tooth of the male genital segment slender and acute, over one-half the length of the plates.

Colour clear fuscous-brown, a little tinged with castaneous on the mesonotum; carinæ of the pro- and mesonotum broadly whitish, the lateral angles of the latter ivory-white. Vertex and front more testaceous-brown, an oblique mark on each side of the base of the clypeus and its apex pallid, pleural pieces broadly edged with whitish; legs pale testaceous-brown; abdomen blackish-fuscous, the slender edges of the segments and genital pieces pallid. Elytra fuscous-brown, becoming paler along the middle of each areole; nervures strong, mostly whitish, but somewhat alternated by dusky in places, the transverse and apical more conspicuously white. Wings a little infuscated at apex with dark nervures.

Described from one male taken on Mt. Wilson, near Pasadena, California, on August 10th, 1909, by Mr. Fordyce Grinnell, jr. This species is very distinct from any other known to me, and is well characterized by the clear fuscous-brown colour veined with whitish. Allied to *Plectoderes lineaticollis* Fowler, but with a shorter vertex and immaculate front.

SOME NEW WESTERN THAMNOTETTIX (HOMOPTERA).

BY E. D. BALL, EXP. STATION, LOGAN, UTAH.

Thamnotettix reuditaria, n. sp.

Form and colour of *decipens* nearly. Slightly longer; green, with three large black spots in a triangle on the vertex. Length, ♀, 5.5 mm.; ♂, 4.75 mm.

Vertex bluntly angulate, with the apex slightly conically produced, twice wider than long, one-third longer on the middle than against the eye, disc slightly sloping to the rounded anterior margin, front slightly inflated, distinctly wider than in *decipens*, scarcely more than half longer than its basal width. Elytra not quite as long as in *decipens*, venation similar.

Colour: Vertex straw-yellow, with a pair of large, oval, black spots extending from behind the ocelli obliquely towards the middle of the disc. Another triangular black spot on apex usually narrowly bisected by the median line. Face pale yellow, with the sutures mostly narrowly black-lined, upper two-thirds of the front smoky, with a light median line and about six abbreviated arcs on either side. The front and vertex separated by an arcuated line. Pronotum green, the anterior margin dirty straw. Scutellum pale yellow, a pair of round black spots at the base half concealed by the pronotum. Elytra green, the nervures pale straw. Below straw coloured, with some dusky on the abdomen and the ovipositor black.

Genitalia: Female segment nearly as long as its basal width, roundly narrowing from the base to the truncate apex, which is narrowly marked with black. The lateral angles are semicircularly depressed, leaving an elevated median disc as wide as the black marking. Male valve very broad and short, obtusely angular; plates together, long, triangular, their margins slightly concave, and clothed with stiff hairs.

Described from two females and three males from Utah and Reno, Nevada, collected by the author. This species might easily be mistaken for a *Cicadula* in colour and marking, but is readily separated by the venation.

Thamnotettix viriosa, n. sp.

Size and form of *chiragrica* nearly. Broad, stout, powdery green, with five black spots on vertex. Length, 5.75 mm.

Vertex broad and short, nearly three times wider than long, the apex bluntly conical, disc slightly sloping, broadly rounding to the tumid front,

which is as wide as its median length. Pronotum broad and short, scarcely longer than vertex. Elytra broad, only slightly longer than the abdomen.

Colour: Vertex pale yellow, a pair of large, nearly quadrangular black spots on the margin just outside the ocelli, a still larger one on the apex, triangularly forking posteriorly, and two small round ones on the posterior margin equidistant from the median line and the eyes. Face pale, with the sutures black-lined, those around the loræ heavily so; a pair of black spots above the antennæ. Front smoky, set off from vertex by an arcuated black line, the median line pale, triangularly widening below, with about nine pale arcs on each side. Pronotum pale green, the anterior margin lighter, submargin sometimes with faint dusky spots. Scutellum pale powdery green. Elytra pale green, heavily powdered with white. Venation obscure.

Genitalia: Female segment as long as broad, slightly narrowing to the truncate apex; lateral margin depressed, a black line on the posterior margin, sometimes reduced to two spots. Male valve broad and short, bluntly angular, plates together, broadly triangular, their apices broadly, slightly roundly, truncate, scarcely exceeding the broad swollen pygofers.

Described from eight examples from Beaumont, California, collected by the author. A large and readily recognized species.

Thamnotettix Titusi, n. sp.

Size and form of *melanogaster* nearly. Slender, parallel, vertex right-angled. Green, with the face and tip of elytra smoky. Length, ♀, 5.5 mm.; ♂, 5 mm.

Vertex one-half wider than long, right-angled in front, the disc flat or transversely depressed, roundly angled with the front. Front much narrower than in *atridorsum*, wider and more nearly parallel margined than in *melanogaster*, distinctly longer than wide. Elytra long, narrow, inclined to be flaring at the tips, giving the insect a parallel-margined appearance. Venation simple.

Colour: Vertex pale straw, inclined to be greenish at base, and smoky or tawny at tip. The smoky front is visible from above on either side the apex of vertex, and often there are a pair of oblique spots at the base. Face pale, the front smoky, growing darker above, with numerous pale arcs. Pronotum green, rarely with dark spots on the submargin. Scutellum pale, sometimes a pair of small black spots at base. Elytra

green, the appendix and apical cells smoky, with the nervures light. Below smoky.

Genitalia: Female segment slightly longer than its basal width, roundly narrowing to half its basal width, then truncate and black-marked, curving around the long pygofers. Male valve short and broad, obtusely angled, plates together, slightly longer than their basal width, narrow and bluntly rounding at the apices, which slightly exceed the narrow pygofers.

Described from twelve examples from Colfax, California, and Medford and Grant's Pass, Oregon, those from the latter place collected by Prof. Titus, the remainder by the author. The black tip of the elytra and the angled vertex will readily separate this from any other described species. Named in honour of Prof. E. G. Titus, whose industrious collecting has brought to light many good things.

Thamnotettix vastula, n. sp.

Resembling *Titusi* in form and general appearance, slightly shorter and stouter, with distinct genitalia. Length, 5 mm.

Vertex slightly acutely angled in the female, scarcely wider than long, as long as the pronotum, about right-angled in the male; disc flat, roundly angled with the front. Front much more strongly retreating than in *Titusi*, distinctly narrowing below. Elytra broader and shorter than in the former species, and inclined to be appressed posteriorly. Venation simple, the apical cells not elongated.

Colour: Vertex pale, clear straw. Face in the female pale, the sutures and front pale, smoky, except for the pale arcs on the latter. In the male the face and venter are deep smoky, with a light spot on the clypeus. Pronotum and scutellum pale green, becoming straw-colour towards the margins, the appendix and apical cells abruptly deep smoky.

Genitalia: Female segment much narrower than the penultimate, constricted at the base, roundly narrowing towards the apex, which is narrow, slightly thickened, and a trifle excavated. The whole segment very much the shape of a blunt-tipped spoon. Male valve as in *Titusi*; plates together, slightly narrowing, and then extending into a long spatulate process between two and three times as long as wide.

Described from five examples from Chico and Salinas, California, collected by the author. The sharper pointed head and longer genitalia render this species quite distinct, and easily separated from the other members of the group.

(To be continued.)