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SOME NEW GENERA AND SPECIES OF LEAFHOPPERS RELATED TO EUTETTIX VAN DUZEE (*Rhynchota Homoptera*)

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The genus *Eutettix* Van Duzee has like most other Jassid genera been made a catch-all for a number of widely different groups of leafhoppers, with little in common other than a transverse furrow behind the vertex margin. As fixed by its type *lurida* Van Duzee this genus consists of a small group of about twelve North American species of rather large heavy bodied leafhoppers with short heads and definite transverse furrows, simple venation without reticulations, vermiculations or supernumerary costal veinlets. The other groups that have been placed here may be separated by the following key:

- A. Large heavy bodied species with short obtuse heads and a definite transverse furrow, venation simple, usually a black band on face or an ivory area on commissure or both. —1. *Eutettix* Van Duzee
- AA. Smaller and more slender species with more conical heads and the transverse furrow less conspicuous or wanting—usually with reticulations or extra veinlets or both; often with an intricate "saddle" pattern.
 - B. No extra veinlets to costa (the costal area may be reticulate.)
 - C. Species relatively plain without "saddle", usually small. —2. *Opsius* Fieber
 - CC. Species with intricate saddle pattern usually larger and broader. —3. *Norvellina* Ball
 - BB. Costal veinlets increased in number and expanded towards apex. —4. *Menosoma* Ball

EUTETTIX GONIANA n. sp.

Size and form of *subaenea* nearly with a short broad vertex as in *lurida*. Brownish straw with a black line on vertex margin. Length 4.5-5 mm.

Vertex broader and shorter than in *lurida*, more than three times wider than long, margins nearly parallel, dorsum sloping and rounding over to front with only a trace of the depression; front extremely wide at base, as wide as the median length. Elytra about as in *lurida* with similar vena-

tion except that the claval nervures are joined by a cross nervure. Female segment broadly roundly notched with a strap-shaped median tooth longer than in *turida*.

Color: uniform pale tawny or brownish straw, the elytra sub-hyaline with the dark tergum showing through and giving a smoky cast. Below pale yellow. A narrow black line just above the white vertex margin ending in the ocelli, a still narrower line on the face just below the vertex margin in the male; a hair line of black between the vertex and pronotum and sometimes a shorter one on scutellum.

Holotype ♀ allotype ♂ and 5 pairs of paratypes taken by the writer at Patagonia, Arizona, September 7, 1929. This species resembles *aurata* in the lines margining the vertex but is much larger and quite distinct.

EUTETTIX GLENNANA n. sp.

Resembling *subaenea* but with a shorter, broader vertex. Creamy with smoky brown elytra and four black spots. Length ♀ 6 mm ♂ 5 mm.

Vertex, scarcely longer on middle than against the eyes, two and one-half times wider than long, evenly rounding in front, with a definite transverse depression between the ocelli. Elytra long and narrow, much exceeding the abdomen, the second apical cell very broad, nearly three times as broad at base as the first and third. Female segment rounding posteriorly with a shallow excavation and a broad strap that exceeds the length of the segment. Male plates extremely long, roundly narrowing then attenuate, four or more times the length of the triangular valve.

Color creamy above and below. The elytra smoky subhyaline, iridescent with a coppery reflection and a faint ivory spot on the commissure. Vertex with four black spots on anterior margin, two round ones just inside the ocelli and two oblique ones between these, the latter reduced in the male. Scutellum with two black points on each side dividing the lateral margins into three equal parts. Sutures on lower part of face narrowly black lined, front smoky with light arcs.

Holotype ♀ allotype ♂ and 1 female paratype taken by the writer at Glenn Oaks, Arizona, October 7, 1929.

GENUS OPSIUS FIEBER

This genus was erected for *stactogalus* Amyot, an introduced species first found in this country in Texas and described as *Eutettix osborni* Ball, but now distributed from coast to coast. *E. clarivida*, *insana*, *paupercula*, *tenella* and *stricta* are here considered as belonging to this group.

GEN. NORVELLINA n. gen.

Resembling *Eutettix* in the transverse depression on vertex and single cross nervure; much narrower and trimmer in build with definite pattern or saddle markings.

Vertex much broader than long, almost parallel margined, broadly rounded or slightly angulate with front. Head with

the eyes equalling the pronotum or folded elytra in width. Pronotum decidedly longer than the head and much less produced in front than in *Platymetopius* and its allies. As seen from the side, the pronotum is strongly arched and sloping down in front, the vertex sloping in the same curve until just before the apex where there is a definite horizontal shelf which extends from eye to eye, anterior margin bluntly rounding and almost right-angled with face. Elytra closely folded at rest. Venation simple, regular, only one cross nervure, no true costal veinlets except the two at the ends of the first apical cell. Elytra covered by a "saddle" pattern made up of contrasting colors and reticulations.

Type of the Genus *Eutettix mildredae* Ball

This genus embraces some twenty or more largely western species of which *Eutettix seminuda* Say and *chenopodii* Osb. are the common eastern representatives. From *Eutettix*, sensus strict, they are readily separated by the saddle pattern the vermiculate reticulations and the narrower lighter form. The genital pattern is simple and of relatively little value in either group.

NORVELLINA OREGONA n. sp.

Resembling *pulchella* in form and saddle markings but much smaller and darker with heavy vermiculations on the ivory areas. Smaller than *helenae* with a more definite saddle. Length ♂ 3.7 mm.

Vertex slightly longer than in *pulchella*, a little longer on middle than at eyes with a deep furrow and a definite margin. Male valve short obtusely triangular, plates long triangular, as in *saucia*.

Color: face and anterior margin of vertex dark fulvous, rest of vertex, pronotum, scutellum and saddle marking dark brown as in *pulchella*, scutellum with a trace of fulvous. The ivory areas with coarse vermiculations and dark brown veins. Margins of saddle not definite as in *pulchella*, and the posterior light bands uniting back of clavus, leaving a broad dark area apically with two round white dots in disc and a large irregular spot near the outer angle.

Holotype ♂ and 1 paratype male taken at Unity, Oregon, July 11, 1927. This is a very distinct species in both size and color marking and warrants description from a single sex.

NORVELLINA HELENÆ n. sp.

Resembling *chenopodii* Osb. but much smaller with the much heavier vermiculations somewhat obscuring the saddle. Length 4-4.5 mm.

Vertex proportionally longer than in *chenopodii*, twice wider than long, slightly longer on middle than against eye. Elytra reticulate throughout so that the lighter areas bounding the saddle are coarsely reticulate in-

stead of ivory as in *chenopodii*. Female segment with a broad angular median notch in the apex of which arises a strap-like process as long as wide and slightly bifid at apex. In *chenopodii* the margin is only faintly indented either side the strap. Color brownish fulvous with a fulvous vertex and scutellum, a brown saddle set off by semi-reticulate ivory areas. Face and below sordid fulvous.

Holotype ♀ and allotype ♂ Sanford, Florida, June 17, 1926, and 6 paratypes from the same place at various dates all collected by W. E. Stone and the writer near Lake Helen. The writer has material from Florida, Texas, Missouri and Kentucky and is inclined to believe that this small species replaces *chenopodii* throughout the entire cotton belt.

NORVELLINA APACHANA n. sp.

Resembling *bicolorata* but smaller and with obscure markings throughout. Size and form of *nevada* but less heavily marked. Pronotum, scutellum and an oblique spot on apex of elytra heavily irrorate with brown, the saddle very obscure. Length 4-4.5 mm.

Vertex shorter than in *saucia* which it otherwise resembles, twice wider than long, scarcely longer on middle than against eye. Front narrower and less inflated than in *saucia*, much less than in *bicolorata*. Female segment rounding posteriorly, deeply triangularly excavated with a broad strap-like projection. Male plates long, triangular as in *saucia*.

Color: face and vertex pale creamy, the latter with three to five irregular irrorations on posterior half. Pronotum ivory, heavily and irregularly irrorate with brown. Scutellum almost solid brown with 7 white spots around the margin. Elytra with a very obscure saddle marking of pale brown, a brown wash over the ivory areas, a dark spot some distance back of the cross nervure on either side and a third one at apex of clavus. The vermiculations become more definite before the long oblique apical spot.

Holotype ♀ allotype ♂ and seven paratypes, Granite Dell, Arizona, August 17, 1929, and six paratypes Glenn Oaks, Arizona, October 9, 1929, all taken by the writer.

MENOSOMA n. gen.

Resembling *Eutettix* and *Norvellina* in general form and structure, but lacking the transverse depression on vertex and possessing a number of transverse or oblique veinlets to costa. Vertex broad, obtuse, sloping, usually little longer on the median line than against eye, as seen from side, rounding over to front to form an obtusely conical apex. Front broad and relatively short, much broader at base than in *Eutettix*. Pronotum longer than vertex the anterior margin evenly rounding, side margins moderately long. Elytra as in *Eutettix*. The venation simple, second cross nervure absent. The claval veins tied together and often connected with the suture. The outer anteapical cell angu-

larly expanded in the middle and narrowing posteriorly. The two outer apical veinlets reflected and expanded on the costa, three or four adjacent transverse veinlets with expanded apices along the costa. Sometimes the first cross nervure is doubled or even trebled. The general color is pale or tawny with more or less banding on front, vertex and elytra and a tendency to oval ivory spots in the ends of cells.

Type of the Genus *Menosoma stonei* Ball

This is a distinctly subtropical genus of which a considerable number of species occur in the Central and South American regions. Only four species are at present known from the United States, *M. cincta* widely distributed east of the Rockies and on to South America. *Stonei* from Florida, *tortolita* from Arizona, and *acuminata* Bak from the Southwest. *Athysanus litigiousus* Ball from Mexico also belongs here.

MENOSOMA STONEI n. sp.

Smaller than *cincta* with a shorter vertex. Pale tawny without bands. Length 5 mm.

Vertex definitely shorter than in *cincta*, almost parallel margined, more obtusely conical in profile. Female segment similar but slightly shorter than in *cincta* male genitalia similar. Color pale tawny, the elytral nervures red except for the reflexed ones along costa which have broadly fuscous ends.

Holotype ♀ September 16, 1925, allotype ♂ August 31, 1926, and twelve paratypes taken from May 5 to October 1 at Sanford, Florida, by W. E. Stone and the writer. This very distinct little species is named in honor of Mr. W. E. Stone whose inexhaustible energy was equally displayed in his economic and systematic work in this area.

MENOSOMA CINCTA var. BINARIA n. var.

Form and structure of *cincta* nearly but with the dark color intensified until it appears to be almost black with a broad white band. Length 5.5 mm.

Vertex slightly more angled than in *cincta* and the female segment shorter. Color much darker, the vertex and pronotum pale with definite brown or fuscous spots. Elytra milky with a black blotch either side resting on the junction of the claval nervures, two similar blotches near base of costa on either side, back of which is a broad transverse ivory band. The apical half of each elytron is fuscous except for a spot near the apex of clavus and a hyaline area running in from the outer apical cells.

Holotype ♀ Sanford, Florida, September 2, 1927, and two paratype females from the same place, August 30, 1926, all taken by W. E. Stone.

MENOSOMA TORTOLITA n. sp.

Structure of *stonei*, larger and darker, larger than *cineta* with definite dark and light bands on vertex margin. Length 5.5 to 6.5 mm.

Vertex, twice wider than long, almost parallel margined, slightly angled with front instead of rounding over, front very broad and flat. Pronotum long, nearly twice longer than the vertex, with a long straight lateral margin. Elytra longer and narrower than in *cineta* or *stonei*. Resembling genus *Scaphoideus* in form and venation. Outer anteapical cell long and narrow usually divided and sometimes triplicated. Female segment rather short on lateral, margins, the posterior margin produced into a triangle: male valve just visible behind the segment, plates together deep spoon-shaped with blunt apices.

Color dark tawny with black on face and apex of elytra. Vertex with the anterior and posterior margins white lined. Another white line, slightly angled, behind the anterior one, these white lines separated or set off by fuscous ones. Front, clypeus and lorae black, an angled or wavy white line a little more than its own width below the margin and about five pairs of short light arcs on front. Pronotum and scutellum irregularly mottled. Elytra pale with dark brown veins and brown clouds in the cells, becoming fuscous towards the apex. These clouds omit a number of oval and round ivory spots.

Holotype ♀ allotype ♂ and a pair of paratypes taken at Patagonia, Arizona, September 7, 1929 by the writer.

FLORIDA ENTOMOLOGICAL SOCIETY**Meeting, March 27, 1931**

The regular monthly meeting of the Florida Entomological Society was called to order by President Byers. There being no business, the meeting was turned over to Professor T. H. Hubbell who gave a very interesting talk on the group of cave-crickets or camel crickets (Order Orthoptera), discussing their geographic distribution and theories as to their evolution and migrations. An interesting feature of the program was the many examples drawn from other groups of animals and plants to show similarities in geographic distribution. This group seems to further substantiate the theory of an old Antarctic land mass connecting South America, Africa and Australia. The talk was well illustrated with maps, data, and specimens of various species of camel crickets.

Dr. Byers then gave a brief discussion of C. H. Kennedy's paper entitled "Evolutionary Level in Relation to Geographical, Seasonal and Diurnal Distribution of Insects" which was published in Ecology IX, 4, 367, 1928.

Adjourned at 5:10 P.M.

Approved April 24, 1931

L. W. ZIEGLER,

Secretary.