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**A SUPPLEMENTAL REVISION OF THE GENUS**  
**ATHYSANUS IN NORTH AMERICA**  
**(HOMOPTERA: CICADELLIDAE)**

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Ultra conservatism with reference to the establishment of genera on the part of the older systematic workers in the leafhoppers has been the greatest handicap to progress in these groups. From the time of Signoret, who lumped all the previously proposed genera in the Tettigonidae and dealt with three hundred and ninety-six species in a single genus, down to very recent times the workers have been content to struggle along with great unwieldy aggregations of very diverse forms under ill-defined genera such as *Athysanus*, *Thamnotettix*, *Deltocephalus* and *Phlepsius*. The Van Duzee catalog for example lists 1469 species of Heteroptera north of Mexico under four hundred and sixty-five genera, or an average of three species to a genus. In the Homoptera the same catalog lists 1476 species under two hundred and thirty-three genera or an average of six species to a genus. In the Cicadellidae alone he lists six hundred and ninety-eight species under sixty-eight genera, or an average of ten species to a genus. In the four genera mentioned above he lists two hundred and twenty-eight species, or an average of fifty-seven species per genera. Many

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more have been added since that time, making nearly one hundred species in this restricted area in the largest genus. Perhaps Melichar in his monograph of the Cicadellinae (Tet-

*Key to the Genera*

(*Genus Euscelis of Van Duzee Catalogue*)

- A. Vertex transverse much wider than long, margins nearly parallel or the anterior but slightly in advance of eyes anterior margin in profile obtusely rounding to front.
- B. Front wedge shaped below, narrowing regularly to clypeus. Species large finely irrorate with fuscous.  
1—*Remadosus* new genus
- BB. Front broad below, suddenly rounding into clypeus. Species smaller, often with black spots or lines.
- C. Vertex with black spots. Species relatively stout parallel margined.
  - D. Elytra straw or milky, nervures light—ovipositor normal.....2—*Athysanus* Burm.
  - DD. Elytra subhyaline nervures dark—ovipositor extremely long. ....3—*Exitianus* new genus
- CC. Vertex with one or more black bands—species elongate more or less wedge shaped—elytra often greenish subhyaline .....4—*Drylix* Edwd.
- AA. Vertex flat or conical, produced before eyes, not definitely transverse. Anterior margin in profile actually conical or angled.
  - E. Vertex distinctly wider than its median length much wider than the long diameter of eye.
  - F. Vertex and front obtusely conically pointed, vertex usually convex between the eyes, front inflated, markings on vertex in the form of transverse lines or absent.
    - G. Broad stout straw colored species with blunt heads, base of vertex flat.....5—*Euscelis* Brul.
    - GG. Narrow, smaller, brown or black species with acutely conical heads and transverse bands on vertex.  
6—*Ophiola* Edwd.
  - FF. Vertex and front angled, the vertex flat with a definite margin; front very flat in both diameters anterior margin with definite black spots or sometimes united into a single line. ....7—*Commellus* O&B.
- EE. Vertex narrow its basal width rarely equal to its middle length, often narrower than the long diameter of an eye.....8—*Stirellus* O&B.

tigoninae) has gone to the other extreme, for he recognizes one hundred and one genera, sixty-eight of which are new, in one subdivision of the material that Signoret placed in the single genus *Tettigonia* seventy-five years before. Melichar's genera however, are definable, recognizable, and indicate lines of evolution; which is more than could be said for the old aggregates.

Osborn and Ball in 1902 revised the North American forms of *Athysanus* (*Euscelis* of Van Duzee Catalogue) dividing these into four sub-genera. Since that time several additional genera have been designated, a number of species added, and progress has been made in knowledge of generic and specific relations, including some synonymy. Two additional genera have been established in this paper in order to properly indicate diverse lines of development and further study will probably indicate other distinct groups.

#### REMADOSUS new genus.

Intermediate in character between true *Athysanus* and true *Phlepsius* evidently related to *Selanocephalus* in the location of ocelli on front below the vertex margin. Large species with extremely broad short rounding heads heavily and very uniformly irrorate with fuscous sometimes omitting transverse bands on vertex and pronotum and a few definite spots on elytra.

Vertex transverse, almost parallel margined, broadly rounding to front; front very broad, about parallel margined to the antennae then wedge shaped to clypeus. Clypeus expanding towards apex, the margins of genae deep and broadly rounding below. Ocelli in suture, distant from eyes, well under the vertex level and situated in a broad depression which gives the impression of a slightly produced apex to head. Pronotum

#### *Key to species and Varieties of Remadosus.*

- A. A definite ivory white costal stripe and usually an ivory white band on pronotum. . . . . 1—*magnus* O&B.
- B. Ground color rusty straw. . . . . var. *magnus* O&B.
- BB. Ground color piceous. . . . . var. *piceous* Osb.
- AA. Costal margin of elytra of same shade as the disc, ivory band on pronotum faint or wanting. . . . . 2—*fumidus* Osb.
- C. Ground Color reddish straw. . . . . var. *drakei* Osb.
- CC. Color piceous . . . . . var. *fumidus* Osb.

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short, transverse, broadly curved in front, the lateral margins long and carinate. Elytra long, slightly narrowing apically; venation as in *Athysanus* the apical and antepical cells nearly parallel margined.

Type of the genus *Athysanus magnus* Osborn and Ball.

##### **Remadosus magnus** (Osborn & Ball)

*Athysanus magnus* Osborn & Ball, Proc. Ia. Acad. Sc., iv, p. 225, pl. 26, 1897.

This species has been taken from eastern Wyoming and Colorado to Minnesota and Iowa in the plains region and again along the gulf coast in Louisiana and Florida. The writer has taken it in Colorado and Iowa from the margins of slough grass (*Spartina cynosuroides*) areas. Mr. W. E. Stone and the writer found this species and its var. *piceous* abundant as nymphs and adults on a low meadow just above the tide flats at Tampa, Florida, September 10, 1927. They were taken on an almost pure stand of *Spartina patens*. The great majority of these were darker than typical *magnus* but only a few of the females were of the shiny black *piceous* form with the white band in sharp contrast.

##### **Remadosus fumidus** Osborn

*Athysanus fumidus* Osborn, Fla. Ent., vi, p. 19, 1922.

This species is almost as variable in color as *magnus* but lacks the white on costa and only rarely shows traces of the white band on pronotum. It is slightly smaller and has much more closely reticulate elytra. The males are concolorous, while the females of either the dark *fumidius* or the light *drakei* forms usually show a number of milky spots on the elytra arranged in two fairly definite transverse rows.

Mr. W. E. Stone, Mr. J. A. Reeves and the writer collected quite a number of this species from an isolated spot in a low flat-woods strip between cypress swamps. The males were taken from July 8th to Sept. 22nd, but only on the latter date and Nov. 9th were any females captured. These were all taken individually after hard sweeping around the borders of wet spots just below the limits of saw palmetto and pine and appeared to be associated with a grass with broad basal leaves later determined by Dr. John K. Small as *Rynchospora* n. sp. There was noted an occasional stalk of an undetermined *Spartina*

growing in this area and after the later discovery that the food plant of *magnus* var. *piceous* was a similar species doubts arose as to which plant was the true host.

#### ATHYSANUS Burmeister<sup>1</sup>

*Athysanus* Burmeister, Geneva Ins., 1, pl. 14, 1838.

*Athysanus frigidus* Ball, *almus* V. D. and *dentatus* O. & B. are all that are left in the genus *Athysanus* as here limited. Of these *frigidus* is probably the most typical. The writer has taken this species in abundance feeding on White Sage (*Artemisia frigida*) at Fort Collins, Colorado, and in limited numbers in Western Nebraska, Utah, Nevada, and in California east of the Sierra Nevadas.

#### EXITIANUS new genus

Resembling *Euscelis* and *Athysanus* but with blunter head, long flaring hyaline elytra with dark nervures and a long, acute exerted ovipositor.

Vertex at least twice wider the long, obtusely angular, the anterior margin broadly rounding; front not inflated, moderately broad, wedge shaped, the marginal sutures continuous with those of clypeus. Elytra extremely long, inclined to be flaring, transparent with dark veins. Female ovipositor extremely long, the acute apex exceeding the slender pygofers and often equalling or exceeding the elytra.

Type of the genus *Cicadula exitiosa* Uhl.=*obscurinervis* Stal.

#### Exitianus obscurinervis Stal

*Jassus* (*Thamnotettix*) *obscurinervis* Stal. Eug. Resa. Ins., Hemip., p. 293, 1858. (S. A.)

*Cicadula exitiosa* Uhler, Am. Ent., III, p. 72, 1880. (U. S.)

*Athysanus picatus* Gibson, Proc. Bio. Soc. Wash., xxxii, p. 26, 1919. (C. A.)

*Athysanus miniaturatus* Gibson, Proc. Bio. Soc. Wash., xxxii, p. 26, 1919. (C. A.)

Doctor Osborn has recently called attention to the fact that *obscurinervis* Stal. is the proper name for this widely dis-

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<sup>1</sup>Note—*Eutettix osborni* Ball equals *Athysanus stactogalus* of Europe, as Olsen has pointed out. This species is however the type of the genus *Opsius* Fieb. and should be known as *Opsius stactogalus* Am. It is much more closely related to *Eutettix* and *Thamnotettix* than to *Athysanus* and should be placed between these genera.

tributed and exceedingly variable species. The writer has studied the types of Gibson's species from Honduras and finds them simply color variations.

**DRYLIX** Edwards

*Drylix* Edwards, Ent. Mo. Mag., LVIII, p. 207, 1922.

This group with *striola* as the type is strikingly distinct in its extremely broad head and long narrow elytra. As the number of species has doubled since the former revision and a fifth one is at hand the following key may assist in placing them:

*Key to North American Species of Drylix Edwards*

- A. Vertex definitely but very obtusely pointed—species slender, pale green with a single black band on vertex.
  - B. Medium size (4-6 mm.)—vertex twice wider than long (U. S. Europe). . . . . 1—*striolus* Fall.
  - BB. Much smaller—vertex not twice wider than long. (N. J.)
    - 2—*cuneatus* S. & DeL.
- AA. Vertex but slightly advanced in the middle—species stouter, often heavily marked with black.
  - C. Elytra long, appressed posteriorly. Species larger than *striolus*.
    - D. Male plates large semicircular (Northern U. S.)
      - 3—*parallelus* V.D.
    - DD. Male plates caliper-like. (Mich.)
      - 4—*divaricatus* S. & DeL.
  - CC. Elytra little longer than the body. Species little longer than *striolus*. Male plates separated. (Utah.)
    - 5—*uneolus* new species.

***Drylix uneolus* new species**

Form of *parallelus* but smaller and shorter, slightly larger than *striolus*. Green with black bands on vertex. Length 4.5 mm.

Head distinctly wider than pronotum and scarcely as long; vertex almost parallel margined, rounding to the broad front, the apex bluntly conical. Elytra narrow as in *parallelus* but not as long, only slightly exceeding the abdomen.

*Color*—Greenish straw, sometimes almost straw in the females. Typically colored examples have a straight black band just back of the ocelli, a pair of dots at the apex of vertex and a broken vermiculate line before the base. The pronotum is olive with about four dots on the arcuated impressed line. Scutellum with a pair of triangular black spots just inside the angles and extending under the pronotum and sometimes four

dots on disc. The elytra are often smoky with light nervures, or this may be reduced to smoky margins to the principal nervures. Face pale yellow, with all the sutures and a median stripe on clypeus broadly black, an arcuated line above and about 9 interrupted arcs on the front black. Pale examples and especially females may lose all markings except the black band on vertex.

Ultimate segment in female long, the posterior margin nearly truncate with a semicircular black bordered median notch. Male valve obtusely triangular; plates very broad at base and almost as broad at apex, cut out obliquely from the inside to the widely divergent apices as in *Euscelis extrusus*.

*Holotype*.—Male; Peterboro, Utah, June 25. *Allotype* female and nine *paratypes* taken by the author sweeping a wet meadow near Peterboro, Utah, June 25th. The four males all agree in the strikingly distinct genitalia, the vermiculate line on vertex and the spots on scutellum. Types in author's collection.

#### EUSCELIS Brullé

*Euscelis* Brullé Exped. Sci. Moreé, III, p. 109, 1832.

This name will supersede *Metathysanus* Dahl and *Conosanus* O.&B. as the oldest generic name for the group which includes *obsoletus*, *extrusus*, *ovatus*, *alpinus*, *hyperboreus* and *varus*.

#### *Euscelis obsoletus* (Kirschbaum)

*Jassus obsoletus* Kirschbaum, Cicadinen von Wiesbaden und Frankfurt, p. 109, 1868.

*Athysanus relativus* Gillette and Baker, Hemip. Colo., p. 93, 1895.

*Euscelis deceptus* Sanders and DeLong, Ann. Ent. Soc. Am., x, p. 87, 1917.

This species occurs commonly in low meadows from Vancouver Island to Ontario and Woods Hole, Massachusetts, south to Colorado and Illinois. The writer has taken it abundantly in Colorado, Wisconsin, and at Woods Hole, Massachusetts. Provancher was the first to recognize this species in America. Osborn and Ball compared the Colorado and Iowa examples with European examples from Dr. Melichar and could find no difference, so substituted this name for *relativus* G.&B. Van Duzee in his catalog however did not recognize *obsoletus* as occurring in America and restored *relativus*. The writer has recently gone over European material from two sources and