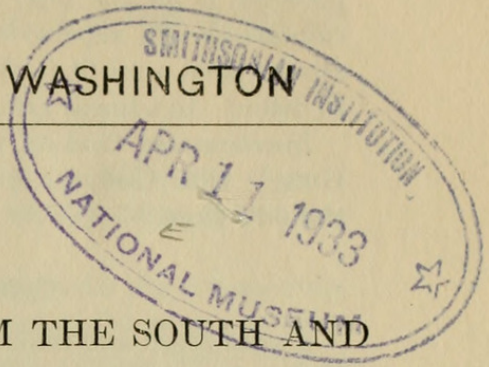


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SOME NEW TREEHOPPERS FROM THE SOUTH AND
SOUTHWEST.

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The small treehoppers of the genus *Cyrtolobus* and its allies occurring in the deciduous forest region of the eastern United States have received considerable attention in the past, thanks to the preliminary work of Goding and Van Duzee and the more detailed and critical studies of the late L. L. Woodruff. All the known species have been found on oaks and mostly on the deciduous species. The writer collected on the different species of live oaks in Florida and later in Arizona found that the species occurring on these oaks were in the main strikingly different from their relatives of the deciduous forest region and that the majority of them were new, including one new generic type.

***Grandolobus* Ball, n. gen.**

Resembling *Smilia* in general size and form but with the crest shorter and farther back from the metapodium, the apical process of the pronotum long and slender as in *Cyrtolobus*.

Face broader than in *Smilia*, as broad as in *Cyrtolobus*, the metapodium broader and rounding over above as seen from the front rather than triangular as in *Smilia*. Pronotum, as seen from side, long and slender with a rather short high, foliaceous crest arising just back of the line of the metapodium in a fairly symmetrical arch a little longer than its height. This crest occupies a little over half of the length of the pronotum arising with a slight sinuation in front and with an obtuse angle behind. There is a major inflation in the middle and a minor one near the posterior angle. The elytra are long and narrow with typical *Cyrtolobus* venation, the apical cell small, almost round with a long pedicel.

Type of the genus *Cyrtolobus grandis* V. D. *Cyrtolobus inaequalis* Fowl. described from a male is no doubt this species and *vittatipennis* Fowl. which

precedes it on the page is probably the female, in which case the name *vittapennis* will supersede both *grandis* and *inaequalis*. This species has always been a misfit in the genus *Cyrtolobus* and rendered that genus hard to define. In a linear arrangement it will come between *Smilia* and *Atymna*.

Evashmeadea Goding with a single species *carinata* Stal. (= *concinna* Godg., vide Goding) (= *discoidalis* Fowl. (not Emmons) vide Funk.) should follow.

***Cyrtolobus woodruffi* Ball, n. sp.**

A pale green and pink species in life, fading to greenish straw or creamy with a long narrow tawny saddle. Resembling *acutus* but with the crest much higher in front. Length ♀ 5.5 mm., ♂ 4.5 mm.

Metapodium almost upright, continued as a large foliaceous crest extremely high in front where it rounds over to an almost straight dorsal line which slopes with but a slight sinuation into the apical process. Viewed from above the pronotum is long, narrow and wedge-shaped. The venation is unstable, with a strong tendency to the formation of extra cells along costa, and an enlarged apical cell which may have an obtuse angle at the petiole.

Color, greenish or creamy, slightly mottled, almost unmarked except for a long narrow saddle of tawny or pinkish which may be interrupted by oblique pale bands. Nervures of elytra almost white.

Holotype ♀, allotype ♂, and 7 paratypes Santa Rita Mountains, Arizona, May 11, 1930, and 6 paratypes Patagonia, September 7, 1929, all taken by the writer.¹

This is a strikingly distinct species in both shape and color and is named for the late L. L. Woodruff, whose careful and painstaking work gave us the first real understanding of this group.

***Cyrtolobus oblongatus* Ball, n. sp.**

Form and color of *acutus* nearly, slightly longer and broader with the crest evenly rounding rather than highest anteriorly as in that species. Male testaceous rather than dark. Length ♀ 6 mm., ♂ 5 mm.

Pronotum a rather broad wedge as seen from above but narrower than in *intermedius*. Evenly rounding as seen from the front, not as elevated as in *acutus* nor as flat as in *intermedius*. Crest arising on the line of the humerals evenly rounding back to the posterior sinus, the highest point farther back than in *acutus* but anterior to that in *intermedius*. Venation normal, the apical cell short.

Color pale testaceous on a creamy base paler than in *acutus*, a pair of broad, tawny stripes on metapodium in the darker females, the usual oblique saddle pattern rather obscure in the females except for the two dark spots on crest which are emphasized. The males are nearly solid testaceous, except for the definite white saddle pattern.

Holotype ♀, allotype ♂ and nine paratypes taken by the writer in the Santa Rita Mountains, Arizona, May 11, 1930. The paler color and dark

¹All types in the author's collection, unless otherwise stated.

dorsal spot of the female and the testaceous instead of dark males will at once separate the species.

Cyrtolobus arizonae Ball, n. sp.

Size and form of *oblongatus* nearly tawny with a still more obscure pattern. Apical cell shorter and broader and usually extra cells along costal margin. Length ♀ 6 mm., ♂ 5 mm.

Pronotum resembling *oblongatus* slightly narrower with the metapodium higher. Crest long with the arch about as in *acutus*, the posterior sinus subobsolete. The clypeus has a strong carina which extends below into an acute point. Venation inclined to be irregular with supernumerary cells along costa. The apical cell very broad and short, angle at the petiole obtuse.

Color tawny, mottled on a creamy base in the female with even less pattern than in *oblongatus* and no dark spot above. Male tawny with the saddle pattern light.

Holotype ♀, allotype ♂ and eleven paratypes taken by the writer in Rustler's Park, Chiricahua Mountains, Arizona, July 5, 1930. The obtuse cell, uniform color and acute clypeus will readily separate this species.

Cyrtolobus coronatus Ball, n. sp.

Resembling *acutus*, but much larger with an exceptionally long and acute apical process and long petiole to the apical cell. Pale tawny almost unmarked or with a white crown on metapodium. Length ♀ 6.5 mm., ♂ 5.5 mm.

Pronotum broader than in *acutus*, long and slender with the lower line long and straight. Crest arising well back of the humeral angles, short, rounding, highest nearer front as in *acutus* with a definite sinus. Clypeus not carinate at apex, bluntly recurved. Apical cell small, the petiole extremely long.

Color pale almost uniform tawny except for the narrow dark line on the carinae and a broad dark margin to a white or creamy "crown" on the metapodium formed by the coalescing above of the testaceous stripes in a dark arch. Male slightly darker, lacking the crown, but with a definite saddle pattern, the anterior stripe of which extends as far forward as in *arcuatus*.

Holotype ♀ and three paratype females, Santa Rita Mountains, Arizona (label Tucson), April 27, 1930, allotype ♂ and six paratype females Santa Rita Mountains, May 11, 1930, and two paratype males and three females Santa Catalina Mountains, April 23, 1931, all taken by the author. The long apical process and long petiole render this a strikingly distinct species.

Cyrtolobus frigidus Ball, n. sp.

Resembling *clarus* in outline, but smaller and narrower, smaller and narrower than *acutus* with a higher crest. Pale tawny with an obscure saddle pattern. Length ♀ 4.5 mm., ♂ 3.5 mm.

Pronotum with crest as seen from side resembling *clarus*, higher in front than in *togatus*, which it otherwise resembles. Metapodium nearly upright, the median third inflated and strongly carinate so as to overhang the front. Crest arising on the metapodium continuing in a uniform arch with only a faint sinuation to the apex, as in *togatus*, but higher. Resembling *clarus*, but higher in front, and more compressed throughout. Pronotum as seen from above narrower behind than in *clarus*, resembling *acutus*.

Color, female pale tawny as in *fuliginosus*, two quadrangular smoky areas on crest set off by three equal white areas, these in turn set off at the ends by smaller smoky spots, a pair of irregular, often triangular spots of more definite red on the sides of the metapodium just inside the eyes. A broad, obliquely narrowing darker area on the lower part of the pronotum just under the median white spot. Apex of elytra dark: male with the face and pronotum black, three white spots on crest as in female, the outer ones continued as oblique bands that approach each other at the lower margin, the anterior band angled.

Holotype ♀ and eleven paratype females Glen Oaks, Arizona, July 19, 1929. Allotype ♂ and two paratype females Globe, May 18, 1930, all taken by the writer. This is one of the smallest and most striking species of the genus; the males are only about two-thirds the size of *parvulus* and quite different in marking.

***Ophiderma tricineta* Ball, n. sp.**

Size of *definita* nearly, slightly longer and narrower, much narrower and slightly smaller than *compacta*. Pale brown with two white bands, male very dark with three white bands, the median one widening below. Length ♀ 5.5 mm., ♂ 5 mm.

Pronotum as seen from side with a low almost straight dorsal line arising from a rounding metapodium; as seen from above long and tapering posteriorly much more than in the other species. Apical cell of elytra almost round, the pedicel much longer than the cell.

Color, female pale tan anteriorly, testaceous posteriorly, separated by an oblique white band that is broadened below, a second narrow band before the apex. Male metapodium tan or darker, all the rest of pronotum smoky or black with three white bands, the anterior one margining the metapodium in an oblique semicircle. The second one across the middle and definitely widening below, the third before the apex and parallel margined.

Holotype ♀, allotype ♂ and eight paratypes from the Santa Catalina Mountains, June 30, 1930, four paratypes from the Chiricahua Mountains, July 5, 1930, collected by the author, and one paratype from the California Academy of Sciences collected by J. O. Martin in the Huachuca Mountains, July 7, 1930, all taken at high elevations in Arizona. The three-banded male will at once identify this species.

***Ophiderma infantilis* Ball, n. sp.**

Resembling *australis*, but much smaller and somewhat darker. Smaller and more tawny than *definita* without the arch over the humerals. Pale

tawny with irregular creamy mottling, including two irregular transverse bands, a smoky band across middle of elytra. Length ♀ 5 mm., ♂ 4.5 mm.

Pronotum moderately pubescent; as seen from side with the dorsal line almost straight, except at the extremities; as seen from above regularly narrowing posteriorly, with less constriction before the apex than in *definita*. Apical cell of elytra of moderate size, longer than broad with a long pedicel as in *australis*.

Color slightly mottled reddish brown with a pink reflection in the female, a pair of pink crescents above the eyes, traces of four irregular creamy stripes running up over the metapodium and an irregular light band crossing the middle of pronotum becoming enlarged and oblique as it approaches the margin; a subapical band faintly indicated, the area between the two bands a little darker. Male very similar to the female, brown without the pink shade. The crescents black, the subapical band broad, and usually an area more definitely mottled with creamy behind the humeral angles and sometimes extending back to the first transverse band. A transverse smoky band on the middle of elytra in both sexes and a darker spot at apex involving two apical cells.

Holotype ♀, allotype ♂ and three paratypes April 3, 1927, and six paratypes May 5, 1928, all taken at Sanford, Florida, by W. E. Stone and the writer.

Examples of this species from Florida have been referred to *definita* in the past, but *definita* is a larger species with a dark male with a definite saddle pattern and is probably confined to the deciduous forest region, while *infantilis* and *australis* are southern and both have males that resemble the females.

Ophiderma stonei Ball, n. sp.

Resembling *flavicephala* in form and color, broader with the posterior third of pronotum definitely inflated and the lateral stripe broader, shorter and yellow instead of white. Length ♀ 6 mm., ♂ 5.5 mm.

Pronotum with long rather sparse pubescence, higher and more definitely arched than in *flavicephala* with a depression just back of the middle. As seen from above broad with two inflated areas, one very broad anteriorly and tapering to the middle, the other just behind this almost circular and about half its diameter from the apex. Apical cell of elytra longer than wide, oblique, its petiole attached above the middle and arching back to its attachment on the anteapical.

Color rich chestnut in both sexes, lighter and with a more definite reddish cast than in *flavicephala*. The lateral stripe, lemon yellow, broader than in that species, especially behind the humeri, where it is broadened and slightly arched and terminates abruptly rather than white, long, narrow and tapering at the apex as in *flavicephala*.

Holotype ♀ April 17, 1927, allotype ♂ April 9, 1927, nine paratypes from April 9 to May 15, Sanford, Florida, one Coca, May 22, all taken by W. E. Stone and the writer, and one male, Florida (Glasson). This is a strikingly distinct little species that has been confused with *flavicephala* in the past, the inflated pronotum and oblique apical suggest the

genus *Xantholobus*, and it may be necessary to transfer this species and *nigrocincta* V. D. to that genus when more careful studies of their biologies and food plant relationships have been made.

***Ophiderma panda* Ball, n. sp.**

Resembling *pallida* in form and irrorate pronotum but much larger, with extremely long and acutely pointed elytra and a white-margined brown saddle. Length of male 8 mm.

Pronotum in male almost destitute of hairs, long, low as in *pallida*, with a slight sinuation just behind the metapodium, then a trifle arched for one-half the distance to the long acute apex, metapodium even lower and more retreating than in *pallida*; humeral angles inconspicuous; as seen from above the pronotum is long, slender and tapering to a sudden constriction beyond which there is a long slender point. Elytra extremely long and slender. Exceeding the pronotum by one-fourth their length their apices oblique with an acute angle below. The apical cell about equally long and broad, the petiole equalling the length of the cell.

Color, male face creamy white with a broad, black sub-marginal band all around. Pronotum with the anterior third finely marbled with creamy and chestnut posterior two-thirds brown shading out to chestnut towards the center, an irregular white margin on either side which joins a narrow transverse white band that bisects the brown just before the constricted apex. Elytra milky hyaline the nervures dark.

Holotype ♂ taken in the Chiricahua Mountains, Arizona, July 5, 1930, by the writer. This is a strikingly distinct species in a number of characters; its only close relative is *pallida* the male of which has not been described. In order to bring out the striking difference it is characterized below.

***Ophiderma pallida* Van Duzee.**

Male resembling the female in form and color. Slightly smaller and darker. Length 5.5 mm.

Pronotum destitute of hairs, low, transversely rounding, the dorsal line slightly concave and the apex long and acute as in the female. Color, face creamy with interrupted black lines. Pronotum marbled with creamy and fuscous, a line on the base of metapodium, and the callosities black.

Allotype ♂ Tucson, Arizona, taken by the writer May 23, 1929. This species appears earlier in the season than its relatives, which may explain why no males have been taken previously. Out of some forty examples collected by the writer only the one male appeared.

***Xantholobus coconinus* Ball, n. sp.**

Resembling *inflatus* in size and general form, the carinae on pronotum high, foliaceous. Pale with two distinct chestnut bands. Length ♀ 5-6 mm.

Pronotum as seen from above slightly narrower than in *inflatus*, the anterior and posterior inflations similar. The median inflation definitely farther forward and fused with the apex of the anterior one. As seen from

side the dorsal line is an almost uniform curve and almost as high as in *Cyrtolobus ovatus* instead of a low and irregular hump on the posterior two-thirds as in *inflatus*. Elytra short, scarcely exceeding and almost concealed by the deep and abruptly terminated pronotum; apical cell short and broad with an obtuse angle at the petiole as in *inflatus*.

Color, pale dirty cream, with a chestnut band across the median and another across the posterior inflation, a faint tawny stripe running back over the metapodium from just inside either eye.

Holotype ♀, and five paratype females Flagstaff, Arizona, August 7, 1924, and four paratype females Grand Canyon, Arizona, August 1, 1930, all collected by the writer. This species has been confused with *inflatus* but a side view will instantly separate them. Collecting has been so late in the season that no males have been taken. Males of *inflatus* taken in June or early July are black with white ornamentation or colored like the females.

***Xantholobus altus* Ball, n. sp.**

Resembling *nitidus* but slightly larger and much more broadly inflated posteriorly. Form and color of *inflatus* nearly but much smaller and smoother. Length ♀ 4 mm., width 2 mm.

Pronotum from above almost parallel margined from behind the humerals to the posterior inflation, then abruptly narrowing to the blunt apex; in profile straight from the metapodium to the posterior inflation except for a slight hump over the median enlargement, then abruptly declivous. Elytra very slightly exceeding the pronotum but more exposed than in *coconinus*. The apical cell short and broad about right angled at the attachment of the short petiole.

Color of *inflatus* nearly pale brown with chestnut markings on the two posterior inflations set off by light margins.

Holotype ♀ and four paratype females Chiricahua Mountains, Arizona. July 6, 1930, and three females from Williams, Arizona, July 13, 1929, all collected by the writer. The small size and almost straight profile will at once separate this species.

***Xantholobus hirsutus* Ball, n. sp.**

Size and form of *nitidus* nearly broader posteriorly with the median inflation prominent. Reddish testaceous densely hairy. Length 4 mm.

Pronotum much narrower posteriorly than in *altus* but definitely more inflated than in *nitidus*, with a definite median inflation that is lacking in that species; in profile more arched than in *altus* but much less than in *inflatus*, whole pronotum and face densely hairy. Elytra exceeding the pronotum by the width of the appendix, the apical cell broad and obtusely angled at the pedicel.

Color, female, chestnut red unmarked, male a slightly darker shade with the hairs dark. Crescents above the eyes the lower part of the face and below smoky or black, a dark area behind the humeral angle on each

side, an oblique white dash behind this and a narrow white band behind the posterior inflation.

Holotype ♀ Patagonia, May 25, 1930, allotype ♂ Santa Rita Mountains, May 11, 1930, and one paratype male Tucson, April 27, 1930, all collected in the mountains by the writer. The dense hairy cover and the bright chestnut color will at once distinguish this species.

***Vanduzea laeta* var. *nolina* Ball, n. var.**

Form and structure of *laeta* nearly. Bright green in life fading to straw. Length 4-5 mm.

Slightly larger than typical *laeta*, with a broader and slightly more arched profile to pronotum. The pronotum is less pubescent, the apical cell is even broader and shorter.

Color bright green in life, fading to greenish straw, without markings. Occasionally an example will show the dark mark back of the humeri surrounded by the light crescent, a faint light band near the apex. In the darkest males there is a smoky cloud in the apex of the elytra.

Holotype ♀, allotype ♂ and nine paratypes. Patagonia, Arizona, July 20, 1930, and 5 paratypes, Yarnell Heights, Arizona, October 8, 1929, all taken by the author. This was at first included as the extreme reduction in color of var. *segmentata*, but later observations indicated that it was a distinct variety or probably a distinct species with a strikingly different food plant.



Ball, E. D. 1932. "Some new treehoppers from the south and southwest."
Proceedings of the Biological Society of Washington 45, 75–82.

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