

PROCEEDINGS
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SOME REMARKABLE NEW LEAF-HOPPERS OF THE
FAMILY FULGORIDÆ.

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While collecting Homoptera upon the burning sands of a Southern California desert a few years ago, the writer came upon a leaf-hopper of grotesque and unusual appearance, in that it stood almost upright upon its long and apparently unwieldy legs. Short and stout with a body almost as round as a pea, on which rested the rudimentary brachypterous elytra and above which projected a long, pointed, cephalic process, the insect would have attracted attention in any case. When, however, this bizarre form was coupled with an upright posture and a peculiar strut or swagger in locomotion, the resemblance to a pot-bellied Brownie of the children's page was complete.

Further collecting in similar situations in the arid West revealed a number of related forms possessing the elongated legs and a more or less upright posture. These forms also agreed in another particular, the rostrum in every case was remarkably long, in some of the more upright species extending beyond the tip of the abdomen. This, on further study, appeared to be an adaptation to the upright habit, as the insect instead of carrying its rostrum inclined forward as most leaf-hoppers do in feeding, fed with the rostrum running down along the abdomen, and extending beyond it into the plant tissue. The whole arrangement was apparently an adaptation for the purpose of raising the insect's body to escape the burning heat of the sands.

Ten species in all were found in the Western States, only one of which, *Orgierius rhypparus* Stal, has been described. The remaining nine species, the types of all of which are in the author's collection, are described below.

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Orgamara gen. nov.

Resembling *Orgerius* Stal but with the vertex produced into a long stylate process, similar to that found in *Scolops*, but stouter.

Vertex and front produced into an elongate, nearly rectangular process, several times longer than its basal width, straight or slightly upturned, the margins carinate, the lateral carinae of the front running obliquely from below the eye to the dorsal surface of the process before the middle. Lateral surfaces of the process below the carinae pustulate. Front with the tricarinate central tablet forming the lower surface of the process. Pronotum with the central raised tablet tricarinate, the lateral extensions sloping strongly downward and backward, pustulate. Elytra stout, coriaceous, irregularly reticulate, covering scarcely half the abdomen. Wings rudimentary. Legs all slender, hind tibia with about six or seven spines. Rostrum about equalling the tip of the abdomen.

Type of the genus *O. acuta*.

Orgamara acuta sp. nov.

Long, slender, dark, with a light spot on each elytron. Process slender, tapering. Whole insect resembling a dark *Scolops* larvae. Length, ♀ 5¾ mm.; ♂, 5 mm.

Cephalic process as seen from above, long, narrow, slightly tapering to the truncate apex, which is less than half the width between the eyes. Process as seen from the side, broad, slightly tapering, both margins straight to the truncate tip. Front long and slender, one-half its length before the eyes, the lateral carinae of the central tablet distinctly narrowing towards the clypeus. Clypeus slender, slightly convex, strongly carinate. Pronotum long and very slender, the lateral pieces curving around the mesonotum, forming an inverted V. Mesonotum very long. Elytra short, coriaceous, obliquely truncate, the inner angles rounded, covering less than half the abdomen. Venation irregularly reticulate. Abdomen convex, indistinctly tricarinate.

Color.—Dark smoky brown, the front, clypeus and plurae tawny brown, pustules on lateral face of process, pronotum, and a row on each abdominal segment outside the lateral carinae milky white. The nervures near the apex of each elytron are marked with white, forming an irregular white spot, and the lateral abdominal carinae are light.

Described from a pair from Ti Juana, Mexico, and a single male from San Diego, California, collected by the author.

Orgamara reducta sp. nov.

Resembling *acuta* but stouter, lighter colored and with a shorter process. Length, ♂, 4 mm.

Cephalic process slightly broader than in *acuta* and considerably shorter, tapering to the truncate tip; tip one-half the basal width. As seen from the side, the process is broad, distinctly tapering, the margins straight to the truncate tip. Front broader and shorter than in *acuta*. One-third its length extending beyond the eyes. Pronotum shorter and less curved

than in *acuta*. Mesonotum broader and shorter. Elytra longer and with the outer margin more flaring, obliquely truncate. Abdomen broader and shorter than in *acuta*.

Color.—Pale, peppered with dirty brown, a faint, broad, median light stripe from the basal third of vertex back onto elytra. A transverse light band just before the apices of the elytra. The abdominal carinae broadly light.

Described from a male from Cabazon, California, collected by the author.

Orgamara obesa sp. nov.

Resembling *reducta* but stouter, with a much stouter and slightly elevated cephalic process. Length, ♀, 6 mm.; ♂, 5 mm.

Cephalic process stout, almost parallel margined, with the apex slightly rounded. Whole process inclined upwards. As seen from the side, slightly tapering, the margins straight. The superior margin rounding over at the apex, the inferior apical angle slightly acute, accentuated. Front parallel margined, part above the eyes but little longer than that below. Central raised tablet occupying the entire apical portion, slightly narrowing to the weakly convex clypeus. Rostrum long, reaching to the base of the genitalia. Pronotum short, dorsal surface distinctly inclined in line with the cephalic process. Elytra abbreviate, the inner angles broadly rounding.

Color.—Pale straw, slightly washed with orange and sprinkled with smoky brown, giving the whole insect a dirty orange cast. Cephalic process pale, sparsely dotted with fuscous, about three pairs of heavier spots along the outer carinae just below the apex. Clypeus reddish orange. Pronotum and scutellum pale, sparsely dotted. Elytra with the nervures pale straw, the cells smoky.

Genitalia.—Lower half of anal tube in the male extending twice the length of upper half, expanding into a broad, flat plate with two rounding lobes which partly enclose the narrow, elongate plates, apex emarginate, surface smooth.

Described from three specimens from Parowan and American Fork, Utah, collected by the author.

Orgamara bipunctata sp. nov.

Resembling *obscura* but with a longer, less inclined process and darker color. Length, ♀, 6.25 mm.; ♂, 5.25 mm.

Cephalic process long, parallel margined to the apical third, where it is slightly tapering. As seen from the side, very long and slender, the apex rounding over from above, with the lower angle strongly produced. Whole process longer, less inclined than in *obscura*. Front, with a central raised tablet distinctly narrowing before the eyes, then parallel margined to the clypeus. The part of the front above the center of eyes almost double in length that below. Body slenderer than in *obscura*, the sides of the pronotum strongly sloping. Elytra short, slightly obliquely truncate.

Lower half of anal tube in male still longer and more appressed than in *obscura*. Apical margin strongly convex, surface rough and hairy.

Color.—Pale, heavily finely irrorate with fuscous brown. A pair of round white spots just inside the apices of the abbreviate elytra and a pair of light stripes extending from these to the apex of the abdomen. Front greenish, about four pairs of dark areas on the outer carinae. Clypeus orange.

Described from seven examples from St. George, Utah, collected by the author.

***Orgamara obscura* sp. nov.**

Resembling *bipunctata* in size and form, slightly shorter; paler, with a shorter process. Length, ♀, 6 mm.; ♂, 5 mm.

Cephalic process stouter and shorter than in *bipunctata*, parallel margined with the apex slightly roundly narrowing. As seen from the side, slightly tapering, the apex rounding above; right angled below. Front with the median tablet expanded before the apex, then tapering to clypeus. Part of front above the center of eyes one-half longer than that below. Pronotum and elytra as in *bipunctata*.

Color.—White, finely sprinkled with dark points, giving the whole insect an ashy gray appearance. Traces of the white spots and stripes as seen in *bipunctata*. Front greenish, the clypeus rusty orange.

Genitalia.—Lower half of anal tube in the male extended over one and one-half times the length of tube, broadly expanded and curved down to meet the margins of the long, narrow plates. Surface of the lower half furrowed and clothed with coarse hairs.

Described from eight specimens from Nampa, Idaho, collected by the author.

***Orgamara albida* sp. nov.**

Larger and lighter colored than *bipunctata*, with a long, stout, strongly curved cephalic process. Length, ♀, 7 mm.; ♂, 6 mm.

Cephalic process long, parallel margined to the apex. As seen from the side, stout, parallel margined or slightly widening toward the apex. Apex slightly obliquely truncate. The superior angle slightly acute. Front long, almost two-thirds of the length in front of the center of eyes, median tablet occupying the entire apical portion, narrowing to the clypeus where it occupies less than half the width of the front. Median carina elevated toward the apex of the process, rendering it pentagonal in outline. Pronotum broad, its interior margin less curved than in *obscura*. Elytra very short, scarcely as long as broad, truncate with the inner angles rounding. Legs very long, the rostrum extending to the apex of abdomen.

Color.—Pale straw, often scarcely marked above except for a smoky shade to the abdomen and a few black dashes along the margins of the segments. A pair of dark, smoky stripes commencing before the eyes and extending back along the sides of the face, and on below the margins of the elytra.

Genitalia.—Anal tube of male with the lower portion extending slightly obliquely beyond the upper, but not flattened or expanded. The inferior angles of the last abdominal tergum extended into acute spine-like processes.

Described from eight examples from Mojave, California, collected by the author. Readily separated from any other species of the genus by the paler color and the enlarged apex of the cephalic process.

***Timodema* gen. nov.**

Resembling *Ticidia* Uhler but with a broader outline and the first two pairs of legs broadly foliaceous.

Vertex short, horizontal, not extending to apex of head, broad with a median carina and an angulate anterior margin. Front but slightly produced in front of the eyes, scarcely angulate, as seen from the side. Median tablet distinctly elevated, tricarinate, the median carina extending but little below the middle. Clypeus broad, distinctly carinate. Pronotum broad and short, tuberculate. Mesonotum weakly tricarinate, tuberculate outside the lateral carinae. Elytra short, broad, shorter than the abdomen, coriaceous, with the two principal longitudinal nervures irregularly forked. Surface of elytra irregularly covered with reticulate veins. Wings rudimentary. Anterior femora and tibia broadly foliaceous, the tibia tapering down to the small tarsal segments. Middle femora and tibia similarly, but not so broadly foliaceous.

Type of the genus *T. miracula*.

***Timodema miracula* sp. nov.**

Superficially resembling *Ticidia cingulata* Uhl. Slightly larger, broader and darker. Short and stout, dark brown, with two white spots on the elytra. Length, ♀, 4 mm.; width, 2.75 mm. Male slightly smaller.

Vertex as broad as long, distinctly angled in front, half the length of the head, the margin sharply carinate. Front rounding over from vertex, as seen from the side, nearly parallel with eyes, slightly angulate at apex and elevated from the surface of the eyes about one-half its width. A tricarinate elevated median tablet extending from the apex of head to clypeus. Median carina wanting on the narrowed lower half, surface of front except the median tablet tuberculate. Clypeus large, slightly inflated, distinctly tricarinate. Pronotum broad, very narrow behind the eyes, pustulate. Mesonotum distinctly tricarinate with a single row of pustules from the outer angles to the lateral carinae. Elytra wider than long, truncate posteriorly, covering only one-half the abdomen, coriaceous with minute anastomosing veinlets and apparently two main longitudinal veins, the outer one irregularly forked. Abdomen broad with a median carina. Anterior femora nearly one-half wider than the front.

Color.—Dark brown with an ivory white band just before the apex of each elytron and irregularly yellowish white markings as follows: a dot against either eye, a transverse area at the base of the mesonotum, a tri-

angular spot on the first visible abdominal segment, the apex of the abdomen and the apical third of the tibia. Upper half of front brown with pale carinae, lower half pitchy black. A transverse band across upper part of clypeus orange, lower half of clypeus castaneous.

Described from two females from Tia Juana, California, collected by the author. A number of immature examples were taken in Los Angeles County, California.

Orgerius minor sp. nov.

Resembling *rhyparus* but smaller, paler, with a shorter, blunter vertex. Pale straw or slightly smoky. Length, 4.5 mm.

Vertex triangular, broad at base, much broader than in *rhyparus* and scarcely as long, less than twice as long as its basal width, the apex acute, lateral carinae elevated. Front broad, the median tablet narrow and elevated. As seen from the side, the front is straight and meets the vertex in an acute angle with the apex a trifle rounding. Elytra as in *rhyparus*. Anal tube of male short, the lower part produced into a pointed tip covering the plates. Plates narrow, strap-shaped, scarcely or not at all inflated. Described from twelve specimens from Colorado and Utah collected by the author.

Orgerius erectus sp. nov.

Resembling *minor* but smaller and with a rounding front. Smoky with the elytra paler. Length, 4 mm.

Vertex small, acutely triangular, but little in advance of the eyes and exceeded by the rounding front, lateral carinae distinct but not foliaceous. Front broadest below the eyes, the median tablet elevated, narrow, not reaching the vertex, from which it is separated by a polished area. As seen from the side the front is slightly rounding and the apex of head is bluntly rounded, almost truncate, two-thirds the width of an eye. Elytra rather long, the reticulate venation distinct. Anal tube moderately long, obliquely truncate on the lower portion slightly produced into a point which does not curve around the plates. Plates short, stout, appressed, their apices curved upwards and inflated, together forming a curved club.

Color.—Vertex pale straw, the lateral carinae against the eyes and again before the apex faintly lined with brown. Front pale smoky, the carinae of median tablet light, very faintly lined with dark and separated by dark stripes. Pronotum and scutellum smoky, the carinae and elevations light. Elytra dirty straw. Abdominal segments smoky with irregular dark markings.

Described from a single male from Kelso, California, collected by the author.

Orgerius compressus sp. nov.

Similar to *erectus* but slightly broader, with a longer, narrower and slightly upturned cephalic process. Length, 4 mm.

Vertex slender, anterior part elevated, acutely angular, with the apex

truncate. Front slender above, expanded below the eyes. The median tablet narrow, elevated. As seen from the side, the front is almost straight, slightly angled beneath the eyes and forms with the vertex a stout truncate cephalic process as long as the width of an eye. As seen from above, the cephalic process is much narrower than in *erectus*, the head is longer and slenderer and the eyes less prominent. Anal tube in the male with the lower portion spread out into a flat plate with the margins slightly curving around the plates. Plates short and stout, together forming an inflated club. A short, recurved tooth beyond the middle of the outer margin of each plate.

Color.—Grayish brown with the pustules on pronotum and some of the nervures of the elytra light. Abdomen smoky, with a few irregular light lines. Vertex and front with the dark lines as in *erectus*.

Described from a single pair from Helper, Utah, collected by the author.