

## SOME GUATEMALAN ORTHOPTERA, WITH DESCRIPTIONS OF FIVE NEW SPECIES.

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The twenty-eight species of Orthoptera reported in this paper were collected during the winter of 1905 by James S. Hine, of Columbus, O., who referred them to the writer for determination. Although the collection is but a small one it is very interesting since it contains specimens of at least four species which appear to be new to science and others that materially extend the range of known forms. One of the new species, *Cornops scudderi*, adds a South American genus hitherto not reported for North America.

### Family BLATTIDÆ.

1. *Pseudophyllodromia venosa* Sauss. This insect is represented by a single specimen taken at Mazatenango, February 3.
2. *Blabera trapezoidea* Burm. A single male of this large cockroach was collected at Santa Lucia February 1.

### Family MANTIDÆ.

3. *Stagmomantis dimidiata* Burm. The species is represented by a fine male which was captured March 5, at Puerto Barrios. A female nymph that was taken at San Jose on February 5 is also referred here.

### Family GRYLLIDÆ.

4. *Oecanthus nigricornis* Walk. (?) The collection contains two males of a tree-cricket which were taken on February 7, at Amatitlan. One of these has the greater portion of the antennae pale testaceous instead of black, as described by Walker. Both, however, lack the black lines or dots on the two basal antennal joints, thereby agreeing with the insect that Henri de Saussure takes to be Walker's *nigricornis*, but perhaps erroneously, as the types of Walker's insect came from Illinois.
5. *Oecanthus varicornis* Walk. (?) A single female with the two basal antennal joints unifasciate with black, but otherwise agreeing very closely with the preceding, is referred here. It was taken at the same time and place with them.
6. *Paroecanthus aztecus* Sauss. The single specimen, a female, of this species comes from Gualan where it was captured on March 3.

### Family LOCUSTIDÆ.

7. *Hormilia tolteca* Sauss. Three specimens, two males and a female, are at hand from Mazatenango. They were collected February 3.
8. *Orophus conspersus* Brunner. A single female of this species was taken at Mazatenango on February 8.
9. *Orophus tessellatus* Sauss. A single female taken February 2, is labelled as coming from Santa Lucia.
10. *Eriolus consobrinus* Sauss. et Pict. On February 1, a female of this species was taken at Santa Lucia.
11. *Thysdrus infirmus* Sauss. et Pict. The collection contains a pair of this delicate species. They come from Mazatenango, and were captured February 3.
12. *Idiarthron atrispinum* Stal. The insect before me is a little large as compared with the measurements given in Brunner's monograph, of the Pseudophyllidæ, but it agrees in other respects with Stal's *Meronicidius atrispinosus*. It comes from Santa Lucia, where it was taken February 1.

## Family ACRIDIIDAE.

13. **Paratetix mexicanus** Sauss. The collection contains a single male specimen of this species. It was taken on March 8, at Puerto Barrios.
14. **Tettigidea chichimeca** Sauss. A single female specimen represents the present species so far as the collection now before me is concerned. It also comes from Puerto Barrios, where it was taken on the same date as the last.
15. **Amblytropidia costaricensis** Bruner. The only representative of this rather common genus in tropical America is a single specimen of *A. costaricensis*. It was taken February 7, at Amatitlan.
16. **Orphula guatemalae** n. sp. Most nearly related to *O. azteca* Saussure, but differing from it in its smaller size and slenderer form. It differs also in the female by having a more uniform color—the tegmina maculations are fewer and smaller, and the basal joints of the antennae are less depressed. The hind femora of both sexes are also shorter and more graceful. The valves of the ovipositor are shorter and slenderer than in *azteca* or *meridionalis*. In its general color the present species varies from pale testaceo-feruginous to dark brown in the female, while the males have the dorsum of occiput, pronotum and tegmina testaceous or green. In the male the sides of the head, pronotum, pleura and costal and discal field of tegmina are unspotted brown; the lateral pronotal carinae are edged below with dark piceous in both sexes. Abdomen venter and face pale testaceous, the legs a little darker and somewhat infuscated at the knees. Sides of basal abdominal segments of male more or less piceous.

Length of body, ♂, 15.5 mm., ♀, 22.5 mm.; of pronotum, ♂, 3 mm., ♀, 4 mm.; of tegmina, ♂, 13.25 mm., ♀, 17 mm.; of hind femora, ♂, 9.5 mm., ♀, 12.25 mm.

*Habitat.* The types, male and female, come from Santa Lucia where they were collected February 1. The collection also contains an additional female from the same locality and a pair from Mazatenango, February 3.

The following table will show the relationship of the species:

## SYNOPTIC TABLE OF THE SPECIES OF ORPHULA.

- A1. Fastigium of the vertex with its antero-lateral edges decidedly rounded. Basal joints of antennae greatly depressed. Lateral carinae of the pronotum only gently divergent on the hind lobe. PAGANA Stal.
- A2. Fastigium of the vertex with its antero-lateral edges nearly straight. Basal joints of the antennae only gently depressed. Lateral carinae of the pronotum strongly divergent on the hind lobe.
- b<sup>1</sup>. Lateral carinae of the anterior lobe of the pronotum parallel (Costa Rica) MERIDIONALIS Bruner
- b<sup>2</sup>. Lateral carinae of the anterior lobe of the pronotum plainly divergent.
- c<sup>1</sup>. Larger and more robust (Mexico southerly) AZTECA Sauss
- c<sup>2</sup>. Smaller and rather slender (Guatemala) GUATEMALAE n. sp.
17. **Orphulella arctata** Walk.(?) There are four specimens, 1 female and 3 males, of a locust that are doubtfully referred to Walker's *arctata*. They come from San Jose, where they were taken on February 5.
18. **Orphulella meridionalis** Bruner. One male and one female, Puerto Barrios, March 3.

19. **Orphulella walkeri** n. sp. Below medium in size, rather slender, the antennae of male graceful and decidedly longer than the head and pronotum combined. Color variable, ranging from testaceous to green varied with brown and black.

Eyes prominent, considerably ( $\delta$ ) or a trifle ( $\text{♀}$ ) longer than the cheeks below them; fastigium of the vertex with the sides parallel two-thirds its length, acuminate even in the female and unusually deeply sulcate, lateral foveolae well defined, elongate triangular; frontal costa prominent above the ocellus where they are coarsely and paucily punctate; face rather oblique; antennae long and slender. Pronotum slightly expanding posteriorly, the two lobes about equal in length, the lateral carina in advance of the last transverse sulcus straight and very gently diverging anteriorly. Tegmina in the female provided with two rows of cells, of moderate width and gently surpassing the apices of the hind formora in both sexes, in the female rather sparsely and evenly maculate with fuscous, in the male unspotted but with the dorsal field pale testaceous, the hind femora without markings or bands save for the knees which are infuscated apically. Wings infuscated or cloudy.

Length of body,  $\delta$  13.5 mm.,  $\text{♀}$  19 mm.; of antennae,  $\delta$  6.5 mm.,  $\text{♀}$  6 mm.; of pronotum,  $\delta$  2.5 mm.,  $\text{♀}$  3.95 mm.; of tegmina,  $\delta$  11.5 mm.,  $\text{♀}$  14.3 mm.; of hind femora,  $\delta$  9.25 mm.,  $\text{♀}$  10.55 mm.

*Habitat.* The types,  $\delta$  and  $\text{♀}$ , were collected February 22, at Los Amates, while an additional male was taken at Puerto Barrios, on March 3.

If we should attempt to run this insect out by the synoptic table as given by the author in the "Biologia Centrali Americana, Orthopt. II, pp. 74-78," it would fall into the section A<sup>2</sup> under b<sup>2</sup> along with *prominula* and *robusta*, but the table would have to be modified as follows:

b<sup>2</sup>. Lateral carinae of the pronotum not arcuate, either straight throughout or parallel on the anterior lobe and more or less divergent on the posterior one.

c<sup>1</sup>. Antennae of the male more than ordinarily heavy; the insects rather robust.

d<sup>1</sup>. Lateral carinae of the pronotum gently and evenly divergent posteriorly. Eyes prominent, elongate. Face strongly oblique.

d<sup>2</sup>. Lateral carinae of the pronotum divergent on the posterior lobe only. Eyes less prominent, subglobular. Face only moderately oblique.

c<sup>2</sup>. Antennae of the male filiform, slender. The insect rather graceful.

PROMINULA Bruner.

WALKERI n. sp.

This might be one of Walker's species of *Stenobothrus* which he described in the Catalogue of the Dermaptera Saltatoria in the British Museum. It is almost impossible, however, to determine his species from the meager descriptions given.

20. **Heliastus guatemalae** Sauss. Several specimens, males and females, are in the collection. They come from Amatitlan, February 3, and Jan Jose, February 5. They do not differ very greatly in general color and form from *H. sumichrasti* Sauss., but the disk of the wings of guatemalae is yellow instead of red.
21. **Arnilia minor** n. sp. Very similar in form to *Arnilia chlorizans* Walker, but differing from it in the much smaller size and in the entire absence of the pale band along the sides of the head, pronotum and pleura. The last ventral segment of the male abdomen is also quite different.

Fastigium of the vertex elongate, triangular, with a moderately broad but shallow median longitudinal sulcus, the apex slightly acuminate; frontal costa rather deeply sulcate, widened above the antennae, nearly equal below, the face unicolorous, impunctate, strongly oblique; antennae only a trifle longer than the head and pronotum taken together; eyes moderately prominent, a little less divergent than in the males of *A. chlorizans*, about twice the length of that portion of the cheeks below them. Pronotum subcylindrical, rather closely and finely punctate, much more closely so in front and on the hind lobe, the latter with a prominent median carina and short shoulders, about four-fifths as long as on the anterior lobes. Tegmina narrow, extending one-fifth of their length beyond the apex of the abdomen. Hind femora slender, smooth, as long as the abdomen. The latter graceful, tapering, the last ventral segment short and provided with a lateral blunt tooth at each side, the center prolonged into a short boot-like projection in which the toe is directed to the rear. Hind tibiae slender, the lateral carinae poorly developed as compared with some of the other species of the genus. Prosternal spine slender, straight, the apex evenly rounded.

General color pale grass-green above, yellowish white below. Wings caerulean, the dorsum of the abdomen leaden gray. Antennae ferruginous, clypeus, labrum, tip of last ventral segment and hind tarsi pink.

Length of body, 22 mm., of antennae, 7 mm., of pronotum, 3.65 mm., of tegmina, 20 mm., of hind femora, 11.5 mm.

*Habitat.* A single male from San Jose, February 5.

This genus appears to be represented by quite a number of species—a dozen or more—when we consider the two Americas. They fall into two well defined sections or possibly into distinct genera.

22. *Arnilia* sp. The collection also contains a single female specimen of what appears to be a second species of *Arnilia*; but, since there are at least a half-dozen distinct species of similar size at hand as I write, it is difficult to definitely place it with certainty. The characters, so far as observed, are more pronounced in the males, and until I have had an opportunity to critically study the dozen or more species of the genus of which I have specimens no attempt will be made to determine the individual just referred to. It was taken February 6, at Amatitlan.
23. *Inusia obscura* (Thumb.) (?) Two pairs of a slender locust taken at Los Amates, February 25-27, are referred with some doubt to Thunberg's *Acridium obscurum*. Whether they are that insect or not, they belong to Giglio-Tos' genus *Inusia* which contains two or three representatives in tropical America.
24. *Cornops scudderi* n. sp. A moderately robust, medium sized, grass-green and testaceous insect with a broad piceous band on each side which extends from the back edge of the eyes along the upper half of the pronotum and pleura and is bordered below by one of greenish yellow. The costal margin and disc of the tegmina are dark brown or fuscous.

Head somewhat wider than the front edge of the pronotum; the eyes a little prominent and strongly divergent, a trifle longer than that portion of the cheeks below them; vertex nearly as broad as the frontal costa between the antennae, rather deeply sulcate to the tip of the fastigium, the latter a little wider than long, somewhat depressed and blunt in front; frontal costa prominent, a little widest above the ocellus, gently sulcate,

coarsely but shallowly punctate, as is in fact the whole face, the punctures brown; occiput rather long, the eyes distant from the front edge of the pronotum; antennae filiform, nearly as long as the hind femora, the basal joint robust and green, the balance brown. Pronotum subcylindrical, the surface coarsely punctate, on the anterior lobe distantly, on the hind lobe rather closely; front margin rather broadly rounded, hind margin widely obtuse angulate, anterior half of lower edges obliquely truncate; transverse impressed lines continuous, profound, the hind lobe much shorter than the anterior one, the median carina distinct throughout but most apparent on hind lobe. Tegmina of medium width, extending a little beyond the apex of hind femora, their tips rounded, with the upper portion a little truncate. Hind femora robust extending one-fourth their length beyond the tip of abdomen; hind tibiae seven-spined on the outside. Abdomen tapering, the last ventral segment short, upturned and contracted to a narrow prow-shaped projection; the supra-anal plate broader than long, the sides of basal two-thirds broadly rounded and strongly convergent, the apical third with straight sides and evenly rounded apex, middle of basal portion provided with two parallel lines and the sides with two dots of black; cerci of the usual form for this group.

Length of body, 18 mm., of pronotum, 3.8 mm., of tegmina, 16 mm., of hind femora, 11 mm., of antennae, 10 mm.

*Habitat.* The single male type was taken March 11, at Puerto Barrios.

25. *Vilerna aeneo-oculata* DeG.(?) Two males and two females of this genus are at hand from Mazatenango. They were taken March 3. Saussure described an insect under the name of *Xipicera pygmaea* (Revue et Magasin de Zoologie, Mars 1861, p. 131.) and gave as its habitat simply "Mexico." A specimen bearing Saussure's label is before me as I write. It is a *Vilerna* and undoubtedly distinct from *aeneo-oculata*. The four Guatemalan specimens in the present collection are distinct from Saussure's and are referred with some doubt to DeGeer's species from South America.
26. *Schistocerca pyramidata* Scudd.(?) There are specimens of a large *Schistocerca* in the collection from Los Amatas, which are placed here with some doubt. They were collected February 20. These insects vary from pale rufo-testaceous with scarcely any trace of maculation to dark gray-brown and strongly maculate on the tegmina—nearly or quite as plainly as *S. vaga* Scudd.
27. *Ailemona azteca* Sauss. There are four specimens of this very common and widely dispersed locust in the collection. They were taken at Mazatenango on the 3rd of February.
28. *Osmilia tolteca* Sauss. Every locality in southern Mexico and southward to Costa Rica, contains plenty of specimens of this locust. It is represented by about a score of individuals from all the localities where Orthoptera were taken by Prof. Hine.