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# First record of the Oxycarenidae from Venezuela and description of two new *Anomaloptera* species (Hemiptera: Heteroptera)

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**Abstract.** The family Oxycarenidae is recorded from Venezuela for the first time. Two new species of *Anomaloptera* Amyot and Serville, 1843, *A. meridana* sp. nov. and *A. sitesi* sp. nov., are described and illustrated, both collected in dead dry flower stalks of *Espeletia schultzii* (Asteraceae).

**Key words.** Hemiptera, Heteroptera, Lygaeoidea, Oxycarenidae, *Anomaloptera*, first record, new species, Venezuela, Neotropical Region

## Introduction

The family Oxycarenidae is primarily a Palaearctic taxon of Lygaeoidea, with 23 described genera distributed worldwide (Slater 1964, Slater & O'Donnell 1995, Péricart 2001). They are characterized by ventral spiracles on abdominal segments III to VII, only spiracle II is dorsal; lack of lateral trichobothria on sterna III, IV, and V, as well as the median trichobothrium on segment V, the three lateral trichobothria on sternum VI and two on sternum VII; a combination of lacking hamus and present intervannals on the hind wing; widely separated posterior coxae; absence of laterotergites; ostioles of dorsoabdominal scent gland situated between terga IV–V and V–VI; and abdominal sternal sutures complete to margin (fusion of sterna III to V is common) (Henry 1997, Henry & Dellapé 2009, Brailovsky & Cervantes 2011).

Six genera of Oxycarenidae are recorded from the Western Hemisphere, four of them being native: *Anomaloptera* Amyot & Serville, 1843 represented by 17 New World species (Slater 1964, Slater & O'Donnell 1995, Dellapé & Cheli 2007), all of which, except *Anomaloptera patagonica* Dellapé & Cheli, 2007, were previously included in the synonymic genus *Crophius* Stål, 1874 (Barber 1938, Kormilev 1950, Brailovsky & Barrera 1979, Hoberlandt 1987); *Dycoderus* Uhler, 1901 with one species recorded from western United States (Ashlock & Slater 1988); *Neaplax* J. A. Slater, 1974, represented by two species described from Mexico (Slater 1974, Brailovsky & Cervantes 2011); and the monotypic genus *Notocoderus* Henry

& Dellapé, 2009 described from Argentina (Henry & Dellapé 2009). Two additional Old World genera were introduced to America: *Oxycarenus* Fieber, 1837 represented by the cotton pest *O. hyalinipennis* (A. Costa, 1843) distributed in the West Indies and South America (Slater & Baranowski 1994, Smith & Brambila 2008); and *Metopoplax* Fieber, 1860 with *M. ditomoides* (A. Costa, 1847) introduced to the United States (Lattin 2002).

The family Oxycarenidae has not been previously recorded from Venezuela. In the present paper two new coleopteroid species of *Anomaloptera* are described, based on material collected in dead dry stems of *Espeletia schultzii* Wedd. (Asteraceae).

## Material and methods

The following abbreviations are used for the institutions cited here:

SEMC Snow Entomological Museum, University of Kansas, Lawrence, Kansas, USA;
UNAM Colección Entomológica, Instituto de Biología, Universidad Nacional Autónoma de México.

## Taxonomy

### *Anomaloptera meridana* sp. nov.

(Fig. 1)

**Type material.** Holotype: ♀, **VENEZUELA: Merida:** Paso Pico Aguila, Paramo de Mucuchies, (8°5′15″N 70°48′34″W), 3710 m a.s.l., 26.v.1998, J. Ashe, R. Brooks & R. Hanley (VEN 1 ABH98 130. Ex: in dead, dried samples of *Espeletia schultzii* flower stalks) (SEMC). Paratypes: 4 ♂♂ 3 ♀♀, same data as holotype (SEMC, UNAM).

**Description.** Body short, broad, ovate, above and below dull, covered with minute silver setae; hemelytra glabrous; pronotum, scutellum and hemelytra coarsely punctate.

***Female. Dorsal coloration.*** Head castaneous; eyes dark reddish brown; antennal segment I reddish brown with apical third pale castaneous, segment II pale castaneous with apical third darker, and segments III and IV dark reddish brown; pronotum castaneous, punctures reddish brown; humeral angles of pronotum yellowish white; pronotal disc with complete yellowish white longitudinal medial fascia; scutellum dark reddish brown; hemelytra (corium and clavus fused) yellowish white with castaneous to dark reddish brown punctation; castaneous to dark reddish brown color coalescing into 5 or 6 scattered maculae (in some specimens they are concentrated into an irregular C-shaped band posteriorly); veins mostly reddish brown.

***Ventral coloration.*** Head castaneous; bucculae grayish white; rostral segments dark reddish brown; thorax castaneous; acetabula yellowish white; coxae and trochanters dark castaneous; femora dark castaneous with apex paler; femoral spines reddish brown; tibiae pale castaneous with posterior third darker; tarsal segments I and II pale castaneous, segment III darker; abdominal sterna castaneous, with posterior margins of sterna IV to VII and inner margin of gonocoxae I dark reddish brown.

***Structure.*** *Head* wider than long, elongate, produced before eye to a distance slightly greater than length of eye to about two times length of eye; width of head including eyes lower than width at posterior margin of pronotum; non declivent, porrect, triangular; tylus extending beyond juga, apically truncated; antennal segment I robust, barely curved, exceeding slightly apex of tylus; segment II cylindrical, III gradually widening distally, IV narrowly fusiform; antennal segment IV longest, III shortest, and II longer than I; antenniferous tubercle unarmed,


Figs 1–2. Dorsal view of the Venezuelan *Anomaloptera* species. 1 – *A. meridana* sp. nov., male; 2 – *A. sitesi* sp. nov., female.

visible from above, extending beyond point of insertion of antenna, conspicuously separated from dorsal surface of vertex, and closer to ventral surface; eyes relatively large, rounded, not at all stylate, in lateral view located in middle third of head, separated from vertex, and touching the anterior border of pronotum; ocelli close to posterior margin of eye (hard to see); vertex convex, in lateral view extending above eyes; bucculae elongate, narrow, extending from apex of head to middle third of eye, encompassing all of rostral segment I and basal third of II; rostrum reaching posterior third of metasternum.

*Pronotum* wider than long, almost trapezoidal, densely punctate, deeply excavated; wider than head across eyes; anterior angles rounded; humeral angles obtuse; anterior and posterior border almost straight; collar-like region narrow, obscure; anterolateral borders emarginate, narrowly explanate; transversal impression obsolete. Metathoracic scent gland auricle elongate, rounded, slightly curved caudad; evaporatorium wide, extending beyond auricle, nearly attaining lateral callosity on metapleuron.

*Scutellum* wider than long, densely punctate, deeply excavated; longitudinal medial fascia impunctate; apex subacute, slightly convex; scutellar disk with shallow, broad median impression; lacking median carina.

*Legs.* Meso- and metacoxae widely separated; fore femur incrassate, armed below on distal third with two robust spines; middle and hind femora unarmed; fore tibiae cylindrical with apical third incrassate; middle and hind tibiae cylindrical.

*Hemelytra* wider than pronotum; coriaceous; clavus and corium fused, strongly convex, U-shaped; costal margin broadly emarginated, folded below abdominal sterna; evenly and coarsely punctate; each hemelytron meeting along midline for entire length, not overlapping; extending beyond apex of last abdominal segment; posterior hemelytral margin rounded; coleopteroid, hemelytral membrane absent.

*Abdomen.* Abdominal sterna III to VI fused; posterior margin of sternite VII with two transverse combs of glandular setae on either side of midline.

***Male.*** Color and habitus similar to female holotype. Genital capsule dark reddish brown.

***Measurements*** (mm). *Male*. Total body length 2.19. Head length 0.40; width across eyes 0.52; interocular distance 0.28; preocular distance 0.29; length of antennal segments: I – 0.26, II – 0.34, III – 0.18, IV – 0.38. Pronotum: length 0.46; width across humeral angles 0.64. Scutellum: length 0.20; width 0.28. Maximum width of hemelytra 1.04.

*Female*. Total body length 2.28. Head length 0.40; width across eyes 0.53; interocular distance 0.29; preocular distance 0.31; length of antennal segments: I – 0.25, II – 0.32, III – 0.18, IV – 0.34. Pronotum: length 0.44; width across humeral angles 0.64. Scutellum: length 0.18; width 0.25. Maximum width of hemelytra 1.06.

**Variation.** Pronotal disc with the yellowish white longitudinal medial fascia interrupted or broken near middle third.

**Differential diagnosis.** *Anomaloptera meridana* sp. nov. is similar to *A. coleopteroides* (Kormilev, 1950) and *A. patagonica* in overall appearance including the general shape of head, pronotum, coleopteroid hemelytra, body above and below dull and hemelytra clearly convex.

This new species can be distinguished by having the humeral angles of pronotal disk yellowish white with punctures castaneous to dark reddish brown; pronotal disk with complete yellowish white longitudinal medial fascia; and hemelytra yellowish white with castaneous to dark reddish brown punctures, coalescing into 5 to 6 maculae, absent in the other two species in which the pronotal disk lacks a yellowish white medial fascia, and the humeral angles are reddish brown to castaneous and of the same colour as the pronotal disk.

In *A. patagonica* (known only from Argentina) the ocelli and the hemelytral membrane are absent; in *A. coleopteroides* (from Argentina) the ocelli are small, and the hemelytral membrane is reduced; in *A. meridana* sp. nov. (Venezuela) the ocelli are small, and the hemelytral membrane is absent.

**Etymology.** Named after Merida, the type locality, adjective.

**Biology.** Collected in dead dry flower stalks of *Espeletia schultzii* (Asteraceae).

**Distribution.** Known only from Venezuela (Merida).

## *Anomaloptera sitesi* sp. nov.

(Fig. 2)

**Type material.** Holotype: ♂, **VENEZUELA: Merida:** Paso Pico Aguila, Paramo de Mucuchies, (8°51′05″N 70°48′34″W), 3710 m a.s.l., 26.v.1998, J. Ashe, R. Brooks & R. Hanley (VEN 1 ABH98 130. Ex: in dead dried items of *Espeletia schultzii* flowers stalks) (SEMC). Paratypes: 3 ♂♂ 4 ♀♀, same data as holotype (SEMC, UNAM).

**Description.** Body short, elongate to elliptical, strongly shining; head, pronotum, hemelytra, pro-, meso- and metapleura densely punctate; punctation not deeply excavated; surface covered with minute, erect, and scattered silver setae.

***Male. Coloration*.** Shiny reddish brown, punctures darker; following areas shiny pale to dark castaneous: antennal segments II and IV, bucculae, acetabula, apices of femora, apical third of tibiae, and costal margin of hemelytra; abdominal tergites shiny pale orange.

***Structure.*** *Head* wider than long, elongate, porrect, triangular; tylus produced beyond juga, apically truncated to rounded; antennal segment I robust, barely curved, exceeding slightly the apex of tylus, segments II slender, cylindrical, III gradually widening distally, and IV narrowly fusiform; antennal segments II and III subequal, III longer than I; eyes hemispheric, sessile, non protuberant, in lateral view located at same level as vertex and almost touching anterior margin of pronotum; antenniferous tubercle visible from above, unarmed, in lateral view separated from middle third of eye and close to middle third of head; vertex low, when viewed laterally leveling the highest point of eye; ocelli absent; buccula elongate, narrowed, extending from apex of head to middle third of eye, encompassing whole rostral segment I and basal third of II; rostrum extending to posterior third of metasternum.

*Pronotum* wider than long, slightly wider than head across eyes; subquadrate; anterior angles obtuse; humeral angles almost rectangular; anterior and posterior borders straight; anterolateral borders not emarginate, convex in middle third; transversal pronotal impression obsolete; collar-like region narrow. Metathoracic scent gland auricle elongated, rounded, slightly curved forward; evaporative area small, only surrounding scent glad auricle on metapleuron, with outer margin far from posterior margin of metapleuron.

*Scutellum* triangular, wider than long, apically subacute and lacking median carina.

*Legs.* Mesocoxae and metacoxae widely separated; fore femora strongly incrassate, armed ventrally on distal third with two robust spines; middle and hind femora unarmed; tibiae cylindrical, unarmed.

*Hemelytra* coleopteroid, wider than pronotum; clavus and corium fused, convex, parallel sided; costal margin broadly emarginated and deflexed ventrad beyond level of abdominal sterna; posterior hemelytral margin rounded, U-shaped; hemelytral membrane lacking; hemelytron consisting of convex, evenly undifferentiated coriaceous beetle-like structures; each hemelytron meeting along midline for entire length, not overlapping, and extending beyond apex of last abdominal segment.

*Abdomen.* Abdominal sterna III to VI fused; posterior margin of sternite VII with two transverse combs of glandular setae on either side of midline.

***Female*.** Color and habitus similar to male holotype. Antennal segment II longer than IV and I slightly longer than III.

***Measurements*** (mm). *Male.* Total body length 2.34. Head length 0.42; width across eyes 0.53; interocular distance 0.30; preocular distance 0.27; length of antennal segments: I – 0.20, II – 0.37, III – 0.26, IV – 0.38. Pronotum: length 0.54; width across humeral angles 0.57. Scutellum: length 0.20; width 0.23. Maximum width of hemelytra 0.98.

*Female.* Total body length 2.72. Head length 0.50; width across eyes 0.60; interocular distance 0.37; preocular distance 0.39; length of antennal segments: I – 0.25, II – 0.42, III – 0.24, IV – 0.39. Pronotum: length 0.64; width across humeral angles 0.68. Scutellum: length 0.14; width 0.22. Maximum width of hemelytra 1.02.

**Differential diagnosis.** *Anomaloptera sitesi* sp. nov., *A. patagonica*, and *A. meridana* sp. nov. are the only known species of *Anomaloptera* with the hemelytra coleopteroid, where the

clavus and corium are fused, densely punctate, covering the abdomen and with the hemelytral membrane absent or reduced.

In *A. sitesi* sp. nov. the body above and below is shining, almost entirely reddish brown, with the punctures not deeply excavated; the hemelytra in lateral view are not conspicuously swollen and convex. In the other three species the body above and below is dull, the punctures are deeply excavated; the head color is usually castaneous, and the pronotal disk and hemelytra have yellowish white background, with punctures, veins and marks irregularly distributed, castaneous to dark reddish brown; and the hemelytra in lateral view strongly swollen, and convex.

*Anomaloptera sitesi* like *A. patagonica* lacks ocelli and the hemelytral membrane is absent. In *A. patagonica* (from Argentina), the head, pronotum, and scutellum are dull dark brown contrasting with the dull yellowish hemelytra, and body is strongly and deeply punctate dorsally. In *A. sitesi* the body is entirely shiny reddish brown with punctures not deeply excavated.

**Etymology.** The new species is dedicated to Robert Sites, a distinguished American hemipterist.

**Biology.** Collected in dead dry flower stalks of *Espeletia schultzii* (Asteraceae).

**Distribution.** Known only from Venezuela (Merida).

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