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Notes on the Scirtidae of Guatemala. I. A new species of *Ora* Clark, 1865 (Coleoptera: Scirtidae) from Guatemala and Texas, USA

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Abstract

A new species of *Ora* Clark, 1865 is described from material from Guatemala and Texas, USA. This species was previously known as *O. cf. marmorata* Champion based on a single male specimen from Texas, USA.

Key words: Coleoptera, Ora, Scirtidae, Guatemala

Introduction

The Scirtidae of Central America remain poorly known, with the work of Champion (1897) being the most comprehensive, but with outdated taxonomy. More recently, Lanuza-Garay *et al.* (2013) reported on some Scirtidae from Panamá; Ruta (2019; 2023) has redescribed or described new taxa from Costa Rica and Guatemala; Epler & Gimmel (2019) dealt with *Ora* species that are also distributed in Central America; and the works of Epler (2009; 2010), Libonatti (2014; 2015; 2017), Ruta (2013) and Ruta *et al.* (2025) include species that are also found in Central America.

I have been fortunate to receive Scirtidae specimens from Guatemala provided by Dr. Richard Zack (Washington State University, Pullman, Washington, USA). It is my intent to gradually publish the results of my analysis of these specimens.

Epler & Gimmel (2019) reported a single male specimen of an *Ora* Clark, 1865, from extreme southern Texas that could not be placed with certainty. The specimen appeared to be similar to *Ora marmorata* Champion, 1897, based on Champion's (1897) brief description; Champion did not illustrate the species. The Texas specimen was listed by them as *Ora* cf. *marmorata* Champion; figures of its habitus and male genitalia were included.

Richard Zack later made available to me extensive material of Scirtidae that he and José Monzón Sierra had collected in Guatemala. In that material was an abundance of male and female specimens of the same taxon treated by Epler & Gimmel (2019) as *O*. cf. *marmorata*.

Subsequently, photographs of the habitus and genitalic structures of the two female syntypes of *O. marmorata* from the Natural History Museum (London, England, United Kingdom) were made available to the author by Dr. Rafał Ruta and it became obvious that the Texas specimen was not *O. marmorata*, but represented an undescribed species. Gimmel & Epler (2024) listed this taxon as *Ora* sp.1 Epler. This new species is described below.

Material and methods

Unless otherwise stated, measurements are in mm and consist of the range followed by the mean (if four or more specimens are included). Elytral W refers to maximum width across both elytra; total length is pronotal L plus elytral L. One pinned male and female were relaxed, dissected, cleared in 10% KOH, and mounted in Euparal on glass slides; other specimens that were dissected had their cleared parts placed in glycerin in microvials and pinned beneath the specimens after examination. Measurements and photos were done with a Leica/Wild MZ8 and a Leica

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DMLB; drawings were done with a drawing tube mounted on a Leica DMLB, inked and then scanned. Photos were taken with a Spot Idea camera, then stacked using Helicon Focus. Photos and drawings were adjusted with Affinity Photo 2.0 and Mac OS 15.6.1 Preview 11.0. The locality map was created with SimpleMappr (www.simplemappr.net). No AI tools were used in the production of this paper.

Abbreviations

L: length
W: width
EGRC: Edward G. Riley Collection, College Station, Texas, USA
FSCA: Florida State Collection of Arthropods, Gainesville, Florida, USA
HAME: Grupo HAME (a large land ownership group founded by Hugo Alberto Molina Espinoza, which includes palm oil plantations where collections were made)
JHE: J.H. Epler collection, Crawfordville, Florida, USA
UVG: Universidad del Valle de Guatemala, Guatemala City, Guatemala
WSUC: Washington State University, Pullman, Washington, USA

Results

Ora zacki **Epler sp. nov.**

Ora cf. *marmorata* Champion: Epler & Gimmel 2019: 525.
Ora sp. 1: Gimmel & Epler 2024: 322.

Type material (217 specimens): the holotype male and numerous paratypes are deposited in the FSCA collection in Gainesville, Florida, USA. Other paratypes in the EGRC, JHE, UVG and WSUC.

Holotype male: GUATEMALA: Escuintla Dept., Finca Santa Rosa, HAME, S of Tisquisate. 62 m, 14.243392º N, 91.374658º W, 28 Aug 2022, Light trap, J. Monzón collector (FSCA).

Paratypes: GUATEMALA: **Escuintla** Dept., Finca San Miguel ca 8 km SE of Escuintla. 530 m N14.30950º W90.68219º, 7 Dec 2020, R.S. Zack collr., light traps, 10 ♂, 57 ♀ (UVG, WSUC), 3 ♂, 3 ♀ (FSCA). **Escuintla** Dept., Finca Santa Rosa, HAME, S of Tisquisate. 62 m, 14.243392º N, 91.374658º W, 26 Aug 2022, Light trap, J. Monzón collr., 11 ♀ (UVG, WSUC). **Escuintla** Dept., Finca Santa Rosa, HAME, S of Tisquisate. 62 m, 14.243392º N, 91.374658º W, 28 Aug 2022, Light trap, J. Monzón collector, 14 ♂, 36 ♀ (UVG, WSUC), 3 ♂, 1 ♀ (FSCA). **Escuintla** Dept., "MarMaya", on beach, Sipacate. N13.92218º W91.114558º, 10 m, 25 Feb 2015, BL/MV light traps, R.S. Zack collector, 1 ♀ (FSCA). **Peten** Dept., Parque Nacional El Rosario, E of Sayaxche. N16.52414º W90.16009º, 2-3 Oct. 2013, BL/MV lights, R.S. Zack collr. 6 ♂, 4 ♀ (UVG, WSUC). **Peten** Dept., Parque Nacional El Rosario, E of Sayaxche. N16.52414º W90.16009º, 30 June 2014, BL/MV lights, R.S. Zack coll., 8 ♀, 23 ♂ pinned specimens (UVG, WSUC), 9♂, 1♀ pinned, 1 ♂, 1 ♀ on microscope slides (JHE), 1 ♂ (FSCA). **Peten** Dept., Parque Nacional El Rosario, E of Sayaxche. 180 m N16.52414º W90.16009º, 4 Dec 2021, Lt traps. R.S. Zack & J. Monzón, 5 ♀ (UVG, WSUC). **Santa Rosa** Dept., Maya Jade hotel. El Rosario E of Monterrico. 10 m, N13.84732º W90.36716º, 9 Dec 2020, R.S. Zack collr. Light traps. 1 ♂, 9 ♀ (UVG, WSUC). **Santa Rosa** Dept., Monterrico, hotel Portofino, 29 Jul 2022, nivel del mar, 13.885685N, 90.470554W, José Monzón Sierra collector, 1 ♀ (FSCA), 1 ♂, 2 ♀ (UVG, WSUC). **Santa Rosa** Dept. Parque Nacional El Pino**,** El Cerinal, 4 Dec 2008, 1020m, N14.34284º W90.39825º, R.S. Zack collr. light traps 1 ♀ (FSCA), 1 ♂ (JHE), 1♂ (WSUC). **U.S.A**., **Texas**, Hidalgo Co., Bentson Rio Grande Val[ley] St[ate] P[ar]k, Oct. 6, 1986, E. Riley & J. Negrón 1 ♂ (EGRC). See Fig. 22 for map of localities.

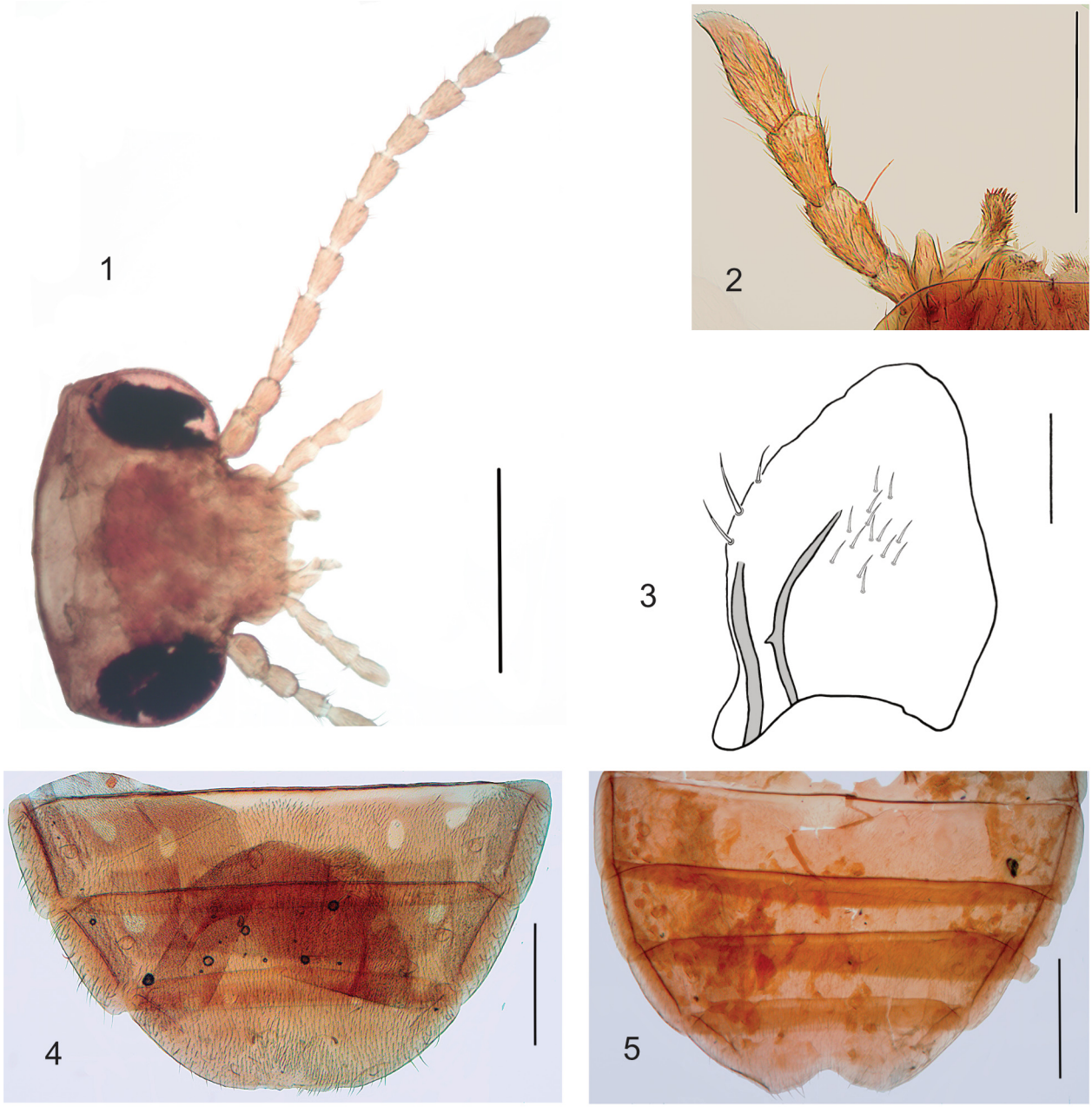
Etymology. Named for Dr. Richard S. Zack (Washington State University, Pullman, Oregon, U.S.A.), in gratitude for all the Guatemalan scirtid material he has made available to me.

Measurements. Males (n=7): Total L 2.56–2.85, 2.72; maximum W/total L 0.84–0.91, 0.88. Head W 0.78–0.85, 0.80; interocular W 0.43–0.50, 0.46. Pronotum L 0.43–0.50, 0.49; pronotum W 1.23–1.45, 1.33; pronotal W/pronotal L 0.34–0.38, 0.36. Elytral W 1.80–2.05, 1.95; elytral L 2.08–2.35, 2.23. Antennomere L/maximum W (n=3): 1:

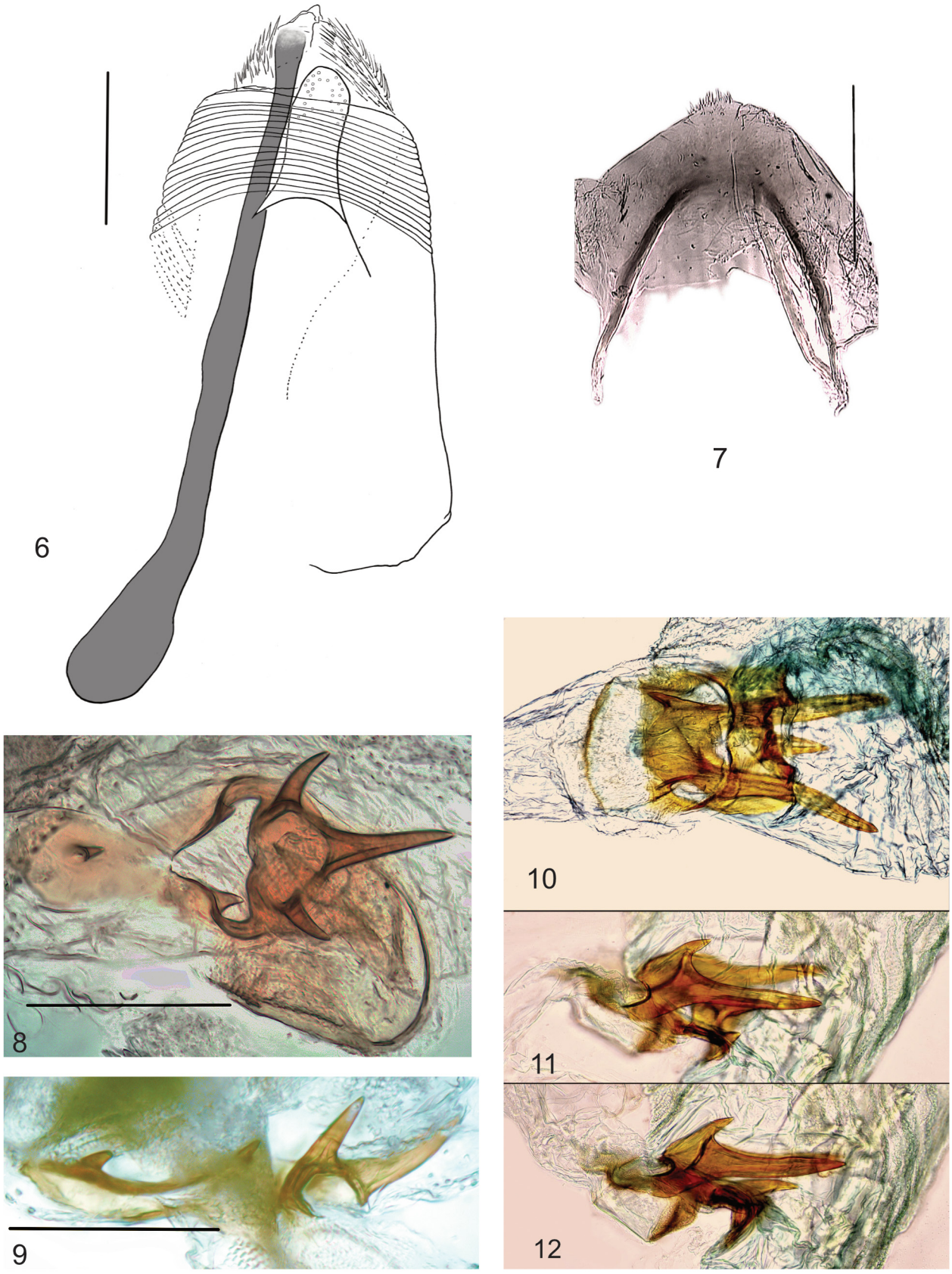
0.16–0.18/0.08–0.10; 2: 0.10/0.08; 3: 0.08/0.06; 4: 0.10–0.14/0.08; 5: 0.12–0.14/0.08–0.10; 6: 0.14/0.08–0.10; 7: 0.12–0.14/0.08–0.10; 8: 0.12/0.08–0.09; 9: 0.12/0.08; 10: 0.11–0.12/0.06–0.08; 11: 0.15–0.16/0.06–0.08.

Females (n=7): Total L 2.78–2.95, 2.85; maximum W/total L 0.8–0.89, 0.84. Head W 0.78–0.83, 0.81; interocular W 0.45–0.50, 0.47. Pronotum L 0.48–0.53, 0.49; pronotum W1.28–1.40, 1.36; pronotal W/pronotal L 0.34–0.40, 0.36; elytral W 1.95–2.00, 1.97; elytral L 2.20–2.45, 2.34. Antennomere L/maximum W (n=3): 1: 0.13–0.14/0.08; 2: 0.10/0.06–0.08; 3: 0.08/0.04–0.06; 4: 0.12–0.13/0.06–0.08; 5: 0.11–0.12/0.06–0.08; 6: 0.10–0.12/0.06; 7: 0.10–0.12/0.07–0.08; 8: 0.11–0.12/0.07–0.08; 9: 0.10–0.12/0.07–0.09; 10: 0.10–0.11/0.07–0.08; 11: 0.13–0.15/0.07–0.08.

Habitus. Oval, moderately depressed, widest at anterior third of elytra; moderately covered with pale yellow setae; clypeus weakly convex, with narrow anterior bead; pronotum weakly angulate anteriorly, weakly explanate laterally, with rounded posterior corners; elytra moderately explanate in anterior third. Abdominal ventrites mostly covered with short yellowish decumbent setae, setae much shorter medially, with posterior weak fringe of setae; ventrites 2–4 with 1–2 pairs of ovoid bare areas, as in Fig. 4; enlarged hind femora also covered with short yellowish decumbent setae.



FIGURES 1–5, *Ora zacki* sp. nov. 1. Head, frontal aspect; 2. Maxillary palp, dorsal; 3. Left mandible, dorsal; 4. Abdominal ventrites 3–5, female; 5. Abdominal ventrites 2–5, male. Scale bars: 0.5 mm for 1; 0.2 mm for 2; 0.05 mm for 3; 0.4 mm for 4–5.



FIGURES 6–12, *Ora zacki* sp. nov. 6. Male genitalia; 7. Tergite 8; 8. Female bursal sclerite, anterior aspect; 9. female bursal sclerite, dorsal aspect; Figs. 10-12, *O. marmorata* Champion. Female bursal sclerite, 10. Anterior aspect; 11–12 dorso/dorsolateral aspect. Scale bars: 0.10 mm for 6; 0.33 mm for 7; 0.15 mm for 8, 9. Figures 10–12 courtesy of Rafał Ruta.

FIGURES 13–21, *Ora zacki* sp. nov., ex Guatemala: 13. male; 14. female; 15, 16, 17, male; 18. female. Fig. 19, *Ora zacki* sp. nov., ex Texas, USA, male. Figures 20, 21, *Ora marmorata* Champion, ex Panama, female syntypes. Scale bars: 1 mm for 13–18; 19: 0.70 mm for 19; ~2 mm for 20, 21. Figures 20 and 21 courtesy of Rafał Ruta.

Color. Quite variable. Many specimens (Figs. 13–15) with head piceous to reddish-brown, often with weak, light transverse band between eyes; clypeus piceous to light reddish-brown with paler margins; maxillary palpi and antennae stramineous, with last 3–9 antennomeres darker; pronotum yellowish-brown with sublateral and medial reddish-brown maculae; elytra reddish-brown marked with yellowish humeral area, and maculae lateral to scutellar shield, along midline and subapically; fore and middle legs piceous to testaceous, femora piceous to reddish-brown to yellow-brown, sometimes lighter proximally, tibiae light reddish-brown, tarsi stramineous; epipleuron usually much lighter than sternites; abdominal ventrites piceous to reddish-brown to pale yellow-brown, with paler posterior margin.

Other specimens with pronotum fuscous to brown, elytra yellow-brown with variable amounts of black mottling/coalesced spots (Figs. 16, 17); on others elytra yellow with dark brown areas, with loosely organized rows of pale round spots (Fig. 18); or elytra yellow-brown with scattered darker maculae (Fig. 19), or elytra pale brown with light humeral areas, or elytra pale brown with slightly darker area with either variable mottling or pale spotted maculae.

Punctation on head weak, punctures separated by about 2–3× width of punctures; antennae filiform (Fig. 1). Maxillary palp with very short first palpomere; second palpomere about 3× as long as first; third palpomere shorter than second, about twice length of first; fourth palpomere longest, apically acute and gently curved outward (Fig. 2). Mandible (Fig. 3) with broad round apex, without teeth/denticles, with 3–5 setae mediolaterally and group of small setae dorsomedially. Pronotum and elytral punctation moderately dense, separated by slightly more than width of punctures.

Genitalia. Male tergite VIII with apodemes that weakly join medially, creating a U-shape (Fig. 7). Male aedeagus with rather typical New World *Ora* structure, with tegmen bearing a posteromedian digitiform lobe and a sclerotized penis (Fig. 6). Penis with a bulbous base and a weakly delimited apex that appears to fade away into the background tissue.

Female genitalia are characterized by the anterior portion of the bursal sclerite bearing three spines, median spine longest, with the posterior portion bearing two small lateral spines and one small medial spine (Figs. 8, 9).

Remarks

As noted above, Epler & Gimmel (2019) identified a single male specimen of a very small *Ora* species (length 2.89 mm) from Texas as *O.* cf. *marmorata* Champion, but noted that *O. marmorata* was a much larger species (length 4.0–4.5 mm). Dr. Rafał Ruta examined the two syntypes (both females) of *O. marmorata* in the Natural History Museum (London, England, United Kingdom) and made photos of the habitus (Figs. 20, 21) and the female genitalia (Figs. 10–12) available to me. Thus, *O. zacki* can be separated from *O. marmorata* by the size (2.56–2.95 mm vs. over 4.0 mm) and the structure of the bursal sclerite – most obviously that of *O. zacki* has the median spine of the anterior portion longer than the lateral spines, in *O. marmorata* the median spine is shorter, and it lacks the median spine on its posterior portion that is present in *O. zacki*. The male of *O. marmorata* is undescribed and not known to the author. Champion (1918) reported additional specimens of *O. marmorata* from Trinidad and Brazil, but offered no illustrations or further information; these specimens have not been examined by the author.

The penis of *O. zacki* has a bulbous base and a weakly delimited apex that appears to fade away into the background tissue. Penises of many other *Ora* have a distinctively shaped, fully sclerotized apex, such as the two-pronged fork-shaped apex of *O. discoidea* Champion, 1897, or the apically pointed, rod-like apex with a large subapical projection of *O. depressa* (Fabricius, 1801) (see Epler & Gimmel (2019), Figs. 16, 17 and the papers of Libonatti (2014; 2015)). The male of *O. marmorata* remains undescribed.

Ora zacki males can be distinguished from females by the posteromedial emargination of ventrite 5 (Fig. 4); females lack this emargination (Fig. 5) or the emargination is very weak. The color pattern seen in the specimen in Fig. 18 has only been observed in females. Some *Ora* species display distinct coloration differences between males and females (see *O. semibrunnea* Pic in Libonatti (2015) and Jorge *et al.* (2019)), but this is not the case with *O. zacki* where males and females share variable color patterns, except for the female pattern seen in Fig. 18, only observed in females. *Ora discoidea* Champion also shows partial sexual color dimorphism, as discussed in Epler & Gimmel (2019: 532). Most males showed the bivittate state (*ibid*: Fig. 1) and all examined females never had vittae, instead having rather plain elytra with irregularly scattered brown spots. (*ibid*: Fig. 3). However, several males, from collections from Costa Rica, Guatemala and Texas, were examined that showed the "female" coloration pattern.

Thus, if one has a specimen of *O. discoidea* without vittate elytra, one must examine the posterior margin of the last ventrite for a distinct medial emargination (male) or no or a very weak emargination (female).

FIGURE 22. Map of *Ora zacki sp. nov*. collection sites.

Specimens were collected adjacent to aquatic areas that usually consisted of a small lake or large pond that had marshy areas around the shore. Elevations of collection sites ranged from 10 m to 1020 m.

Ora zacki is among the smallest known species of *Ora* in the New World. At a length of 2.56–2.95 mm, it is similar in size to *O. bivittata* Pic, 1922, at 2.82 mm (see Libonatti 2015). It was one of the most abundant *Ora* in the Guatemala material sent to the author by Richard Zack.

Other *Ora* species present in the Zack Guatemala collections were *O.* cf. *brevenotata* (Pic, 1915), *O. depressa* (Fabricius, 1801), *O. discoidea* Champion, 1897, *O. mediolineata* (Pic, 1928), *O. obliqua* Champion, 1897, *O. semibrunnea* Pic, 1922, *O. texana* Champion, 1897, *O. trobertii* (Guérin-Méneville, 1861), and at least one additional apparently undescribed *Ora* (to be described in a subsequent paper, along with further notes on some of the other Scirtidae in these Guatemala collections). Other Scirtidae were also present: *Scirtes* cf. *angustatus* Champion, 1897, *S. oblongus* Guérin-Méneville, 1861, *S.* cf. *orbiculatus* (Fabricius, 1801), several other *Scirtes* species not yet identified and several *Contacyphon* group species, including *Contacyphon guatemalensis* (Champion, 1897). This last species will be placed in a new genus in a paper currently in progress by Ruta, Libonatti, Epler and Klausnitzer.

Acknowledgments

The author thanks Richard Zack for access to his Scirtidae material from Guatemala, and to Ed Riley for access to the single specimen of *O. zacki* from Texas. Rafał Ruta supplied photographs of the habitus and female genitalia of *O. marmorata* that were instrumental in elucidating the identity of *O. zacki*, granted permission to use them in this

paper, and provided a review of the manuscript. I also appreciate the review of the manuscript by Gabrielle Jorge and I am incredibly grateful to María Laura Libonatti for her insights and suggestions for this paper. I heartfully thank my wife Linda for her review of the manuscript and, especially, her love and support.

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