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from Chiapas, Mexico

Jacques Rifkind

California State Collection of Arthropods
3294 Meadowview Road
Sacramento, California, 95832 U.S.A.

Weston Opitz

Florida State Collection of Arthropods
1911 SW 34th Street
Gainesville, Florida, 32614-7100, U.S.A.

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A new species of *Madoniella* Pic (Coleoptera: Cleridae) from Chiapas, Mexico

Jacques Rifkind

California State Collection of Arthropods, 3294 Meadowview Road,
Sacramento, California, 95832 U.S.A.
clerid@aol.com

Weston Opitz

Florida State Collection of Arthropods, 1911 SW 34th Street,
Gainesville, Florida, 32614-7100, U.S.A.
opitz@kwu.edu

Abstract. Opitz (2011) revised the New World clerid genus *Madoniella* Pic, and recognized 74 species. We describe and illustrate *Madoniella fitzgeraldae*, new species (Coleoptera: Cleridae), recently discovered in Chiapas, México.

Key Words. Taxonomy, tropical deciduous forest, oak forest.

Introduction

In his recent revision of the genus *Madoniella* Pic, Opitz (2011) recognized 74 species (65 new) primarily on the basis of distinctive elytral markings (the “elytral insignia”) that appear to be remarkably consistent and species-specific, at least for subtropical and tropical members of the genus. Many of these species were described from a single specimen or a small series, and many were collected only recently. As a genus, *Madoniella* has adapted to a broad range of habitats (e.g. pine and oak forests, tropical deciduous forest, broadleaved hardwood forest, rainforest, and cloud forest) but its component species often appear to have limited distributions, which may reflect restricted ecological tolerances. This high degree of endemism, coupled with these beetles’ small size and cryptic coloration, suggest that many more species remain to be discovered. One such species, recently collected in southern Mexico, is described herein.

Material and Methods

The dry pointed holotype specimen was photographed through the eyepiece of a Zeiss stereo dissecting microscope using the camera in an Apple iPhone 7 Plus. The specimen’s abdomen was removed and its pygidium dissected following techniques described in Ekis (1977). After examination, the pygidium and aedeagus were placed on a drop of gelatin in a microvial, and this affixed to the specimen’s pin. The holotype male is deposited in the Florida State Collection of Arthropods, Gainesville Florida, U.S.A. (FSCA); the single paratype will be deposited in the junior author’s collection (JNRC = Collection of Jacques Rifkind, Valley Village, California, U.S.A)

Taxonomy

Madoniella fitzgeraldae Rifkind and Opitz, new species
(Fig. 1–3)

Diagnosis. The new species can be distinguished from congeners by its small size (less than 3 mm in length) and the unique shape of the posterior block of the elytral insignia (Fig. 1). It appears most similar to *M. disjuga* Opitz, from which it differs by having the posterocentral extension of the insignial block reduced to a small triangulate streak on each elytron (Fig. 1). In *M. disjuga*, the posterocentral extension of the insignial block is subtruncate, and only slightly inflected at the middle of the posterior margin (Fig. 239 in Opitz 2011). In addition, *M. disjuga* appears to be confined to the central Mexican

states of San Luis Potosí and Querétaro, whereas *M. fitzgeraldae* is known from Chiapas, in extreme southern Mexico. Opitz's (2011) key to the species of *Madoniella* is modified as follows to include the new species:

- 50(49). Posterocentral extension of insignial block reduced to a small, triangulate streak on each elytron (Mexico: Chiapas) *Madoniella fitzgeraldae* new species.
 50'. Posterocentral extension of insignial block fully formed 51

Description. Length 2.8 mm. Color: cranium and pronotal disc piceous; antennae testaceous basally, capitulum infusate from anterior half of antennomere 8 to apex of antennomere 10; mouthparts reddish testaceous; elytra brownish black (paler on apices and lateral margins posteriorly), with a pattern of testaceous markings (elytral insignia) as in Fig. 1; legs testaceous, femora brownish dorsally. Head: vertex moderately wide; surface densely, coarsely punctate and rugulose; front moderately densely clothed with short, adpressed silvery setae. Pronotum: broader than long (ratio of width to length 5:4), anterior margin broadly arcuate; lateral margin generally convex (slightly inflected anteriorly); posterior angles rounded; disc convex above (Fig. 2), without an anterior transverse depression; surface punctation as on head; integument moderately densely but inconspicuously set with fine, rather short, suberect and reclinate grayish setae. Elytra: elongate (ratio of length to maximum width 93:40); form oblong–subovoid / oblong–rectangulate; surface covered with large, subquadrate punctations, arranged serially in 10 rows; raised interstitial areas between punctures forming shallow longitudinal carinae laterally; epipleural margin minutely serrate along posterior 1/3 (Fig. 2); integument moderately densely but inconspicuously vested with testaceous and black, rather short subreclinate and erect setae, not formed into matted clumps. Legs: protibial anterior margin with 4 spines. Abdomen: Comprised of 6 visible sternites; 6th visible sternite partially beneath 5th; pygidium transverse-scutiform, well sclerotized; aedeagus (Fig. 3) with tegmen tubular, weakly sclerotized, phallobasic lobes short, not fimbriate, phallobasic rod well developed, linear, phallobasic apodeme well developed, flared laterally at basal limit, phallobasic struts contiguous with phallobasic apodeme, phallic plates slender; spicular fork well developed, spicular plates flared, intraspicular plate linear, spicular apodemes fused from middle to basal limit.

Variation. The female paratype is quite similar to the holotype, with the exception of the shape of visible abdominal sternite 6, which is triangulate, with its hind margin rather narrowly rounded, and visible abdominal tergite 6, which has the hind margin moderately broadly subtruncate.

Type material. Holotype, male. MEXICO: Chiapas, 3.7 km NE Cacahuanó, 988 m, N 17°01.238' W 093°07.990', vi–25–2016, on slash, oak / thorn, J. Rifkind, E. Martinez, colls. Holotype deposited in FSCA. Paratype: 1 (JNRC), same data as holotype.

Etymology. The specific name is a patronymic in honor of Ella Fitzgerald, the great American jazz singer, often called “The First Lady of Song.”

Distribution. Chiapas, Mexico, in the municipality of Chicoasén, north of the city of Tuxla Gutiérrez.

Natural history. The holotype male and paratype female were collected *in copulo* on a slash pile in an ecotone between tropical deciduous forest and oak forest, at an elevation of 988 m. Within the immediate vicinity, a recently felled and cut up oak tree (*Quercus* sp.), slash of various thicknesses on the ground, and a standing, partially cut and sapping leguminaceous tree, had attracted several other species of Cleridae, as well as Cerambycidae, Buprestidae, Cantharidae, foraging *Camponotus* Mayr ants and a host of parasitic Hymenoptera.

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Literature Cited

- Ekis, G. 1977.** Classification, phylogeny, and natural history of the genus *Perilypus* (Coleoptera: Cleridae). *Smithsonian Contributions to Zoology* 227: 1–138.
- Opitz, W. 2011.** Classification, natural history, and evolution of Epiphloeinae (Coleoptera, Cleridae); Part X. The genus *Madoniella* Pic, 1935. *Entomologica Basiliensia et Collectionis Frey* 33: 133–248.

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Figures 1–3. *Madoniella fitzgeraldae* new species. 1) habitus; 2) lateral aspect; 3) aedeagus.