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***Cymatodera ochlera* Barr, a junior synonym of *Cymatodera wolcotti* Barr, with a comparison to similar species (Coleoptera: Cleridae)**

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Abstract

Cymatodera ochlera Barr 1972 has been considered to be very similar to but distinct from *C. wolcotti* Barr 1950. We present evidence to show that these two species are conspecific and *C. ochlera* should be treated as a junior synonym of *C. wolcotti*. *Cymatodera wolcotti* is compared to *C. balteata* and *C. undulata*, two species remarkably similar to *C. wolcotti*. Morphological characters of significant value are presented that confirm *C. balteata* and *C. undulata* are separate species. Images of all characters discussed are provided.

Key words: Tillinae, synonym, abdominal segment, aedeagus, brachyptery

Introduction

After *Enoclerus* Gahan (Clerinae), *Cymatodera* Gray is the second most speciose clerid genus inhabiting the New World. Approximately 115 species have been described (Barr 1950; Corporaal 1950; Barr 1972; Barr unpublished checklist; Rifkind 1993; Rifkind *et al.* 2010; Burke 2013; Burke & Zolnerowich 2014). Given this substantial diversity, species that share remarkable similarities are not uncommon. One example is *Cymatodera barri* Rifkind and *C. maculifera* Barr, where only abdominal and aedeagal differences can be reliably used for separating these species. It is also possible to encounter species that display substantial intraspecific variation, with significant phenotypic differences among populations, yet abdominal and pygidial structures remain very constant, as in *Cymatodera bicolor* (Say) (Wolcott, 1909; 1921).

Here we present evidence that *Cymatodera ochlera* Barr is conspecific with *C. wolcotti* Barr and compare that species to the similar *C. balteata* LeConte and *C. undulata* (Say).

Discussion

Cymatodera wolcotti (Fig. 3) was originally described by Barr in 1950. Barr (1972) later increased the number of *Cymatodera* species from the United States and north Mexico by describing 14 new species. One of those species, *Cymatodea ochlera* (Fig. 2), is superficially similar to the allopatric *C. wolcotti* and *C. balteata* LeConte (Fig. 1), and to the sympatric *C. undulata* (Say) (Fig. 4). Based on 13 specimens, Barr indicated *C. ochlera* was closest to *C. wolcotti* and provided differences in abdominal segments as diagnostic characters. However, Barr did not provide any details of differences in the aedeagus. Furthermore, Barr did not make any further comments regarding characters to separate *C. ochlera* from the closely related species *C. balteata*, and he did not discuss *C. undulata*, another similar species. The observations discussed here indicate that the abdominal differences given by Barr do not represent a clear discontinuity between *C. ochlera* and *C. wolcotti*, but rather, it is possible to encounter intermediate forms among these two species. *Cymatodera balteata* and *C. undulata* can be readily separated from the *C. ochlera/C. wolcotti* complex based on abdominal and aedeagal differences.

procurved inward and the posterior margin subtriangularly emarginate, with a somewhat deep, longitudinal median carina that reaches the anterior margin (Fig. 11), this carina is absent in *C. undulata*; the sixth visible ventrite of *C. undulata* is longer than broad, feebly extending beyond the lateral margins of sixth tergite, surface convex, posterolateral angles rounded, posterior margin broadly truncate (Fig. 18); *C. wolcottii* has the sixth visible ventrite longer than wide, conspicuously extending beyond the lateral margins of the sixth tergite, surface concave, the lateral margins are strongly oblique anteriorly and feebly to moderately sinuate posteriorly, the posterolateral angles are extended, this extension ranges from folded inward (arrows, Fig. 15) to extended posteriorly (arrows, Fig. 17). Male genitalia of these two species are as follows: *C. undulata* has the aedeagus robust, the parameres are conspicuously triangular; strongly slender distally and gradually widening anteriorly, pointed at apex, copulatory piece is rounded distally, tegmen is reduced, partially covering phallus, leaving approximately one half of the phallus exposed, moderately emarginate distally, phallic plate unsuspectingly armed with few denticles irregularly arranged; and the phallobasic apodeme is slender distally (Fig. 8). *Cymatodera wolcottii* has the aedeagus moderately slender; the parameres are subtriangular, with the lateral margins moderately to strongly sinuate, feebly to moderately pointed at apex; the copulatory piece is pointed distally; tegmen moderately covering phallus, leaving approximately one half of the phallus exposed, distal emargination absent; phallic plate armed with two rows of denticles, denticles gradually reducing in size toward apex; and phallobasic apodeme robust distally (Fig. 7).

Based on the evidence presented here, *Cymatodera ochlera* and *C. wolcottii* are conspecific, and *C. ochlera* should be considered a junior synonym of *C. wolcottii*. Despite morphological similarities and partially overlapping populations, *C. balteata* and *C. undulata* are distinct and separate species. Morphological structures suggest *C. undulata* is less related to *C. balteata* and *C. wolcottii* than originally believed. A less differentiated sixth abdominal segment (Figs. 11–12, 15–18), more robust male genitalia, the absence of a developed row of denticles, stout parameres, a distally slender phallobasic apodeme, and a shorter tegmen in relation to the length of the aedeagus (Figs. 5–8) serve as evidence to indicate a rather distant relationship this species has with the closely allied *C. balteata* and *C. wolcottii*. Finally, it should be noted that variation in color and pattern of the elytra or habitus has proven to be of insufficient diagnostic significance when characterizing this genus.

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