



Gryllus mandevillus (Orthoptera: Gryllidae) is a valid field cricket species

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Walker (in Weissman, Walker, & Gray 2009) described a new species of *Gryllus*, *G. jamaicensis*, a second species recorded from Jamaica to the widespread *G. assimilis* (Fabricius 1775). The two taxa are apparent sister species and are morphologically indistinguishable. They can be separated by three calling song characteristics: pulses per chirp, average pulse rate, and dominant frequency.

Almost simultaneously with the publication of Weissman *et al.* (2009), Otte and Perez-Gelabert (2009) described a third species of *Gryllus* from Jamaica: *G. mandevillus*, known only from the holotype male. They separated this unique male from the sympatric *G. assimilis* by its higher file-tooth count. *G. mandevillus* is also distinguished from the three *G. assimilis* group species (see below) by its short vs long hind wings, shiny vs hirsute (dull) pronotum, and head not more narrow than pronotum.

Otte's subsequent (2009) synonymy of his *G. mandevillus* under *G. jamaicensis* prompted this paper. The type of *G. mandevillus* was examined at the Academy of Natural Sciences, Philadelphia (ANSP) and appears as described (Figs. 1a, b). Of note are the hind wings shorter than the fore (singing) wings. The removed right tegmen (Fig. 1c) was examined and the file photographed (Fig. 1d): there are some 177 teeth (Otte & Perez-Gelabert 2009, listed 194 teeth) in 3.6 mm of file length, or 49.2 teeth/mm.

Additionally the type has important label information not included in the original description: A. E. Wight was the collector (see label in Fig. 1b), but no collection date is given. A Google search of "A. E. Wight" yielded numerous hits indicating that Mr. Wight was a collector of numerous insects, especially beetles, during the early part of the 20th century on various Caribbean Islands, including Jamaica. Many of his specimens lack a collection date, although Harvard University has a Wight-collected beetle from Jamaica dated 1-31 March, 1924 (http://insects.oeb.harvard.edu/Caribbean/Mantisweb/FMPro?-DB=Event.DRD&-Lay=web&-Format=locality_DR.htm&Locality_ID=202502&-Find). The type of *G. mandevillus* apparently arrived at ANSP after 1915 since the specimen is not cited on page 318, from Jamaica, by Rehn & Hebard (1915), who appear to have tabulated all New World *Gryllus* in the Academy's collection at the time.

Weissman *et al.* (2009) presented file-tooth count ranges and teeth/mm calculations for the three *G. assimilis* group taxa: *G. assimilis* 94-125/26.4–38.0; *G. jamaicensis* 120-127/40.7-41.0; and *G. multipulsator* Weissman 98-143/26.7-44.0. No specimen in the *assimilis* group approaches the *G. mandevillus* file-tooth number of 177 or the file tooth density of 49.2. From over 30 years of work on North American *Gryllus*, such differences in file parameters are always consistent with different species (Weissman in preparation).

Morphologically, *G. mandevillus* resembles the United States eastern seaboard *G. firmus* Scudder 1902 with reference to file characters of total teeth and teeth/mm (<http://entnemdept.ufl.edu/walker/buzz/481dfil.htm>). Also, the lateral field of the tegmen is darker than the central (file) portion (Fig. 1c), a condition also seen in *G. firmus* (<http://entnemdept.ifas.ufl.edu/walker/buzz/481dwng.htm>). Unfortunately the song of *G. mandevillus* is unknown, and the unique specimen is probably too old for DNA determination. Additionally, the various Caribbean Islands contain four *Gryllus* species other than those (*assimilis*, *jamaicensis*, and *mandevillus*) discussed above: *G. arijua* Otte and Perez-Gelabert 2009, Montserrat/ 118 teeth; *G. bryanti* Morse 1905, Andros/only holotype female known; *G. cayensis* Walker 2001, Florida Keys/<110 teeth; and *G. bermudensis* Caudell 1903. The latter species presents another taxonomic problem: originally described from Bermuda, it was downgraded to subspecific status of *G. firmus* by Kevan (1980). He noted that its file was essentially identical to the nominal species, having from 140 to 170 teeth (not 118 teeth as indicated by Otte & Perez-Gelabert 2009). The Orthoptera Species File now treats *G. bermudensis* as a full species (Eades *et al.* 2011). Thus, *G. mandevillus* may have a close relative on Bermuda but we leave the possibility of its