Zootaxa 2032: 1–38 (2009)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Integrative taxonomy identifies new (and old) species in the *Lasioglossum (Dialictus) tegulare* (Robertson) species group (Hymenoptera, Halictidae)

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Abstract

An integrative taxonomic approach that utilizes the DNA barcode region of cytochrome *c* oxidase subunit 1 in conjunction with traditional morphological approaches identifies five distinct species previously recognized as *Lasioglossum (Dialictus) tegulare* (Robertson). Differences in DNA sequences and congruent, albeit minor, morphological variation support separation of *L. tegulare* into five species. Unique nucleotide substitution patterns for each species allows for character-based diagnostics using DNA barcodes. The names *L. ellisiae* (Sandhouse) and *L. lepidii* (Graenicher) are removed from synonymy. Two new species, *L. puteulanum* Gibbs **sp. n.** and *L. carlinvillense* Gibbs **sp. n.**, are described. A key is provided, which permits the identification of both males and females. The utility of the DNA barcode region as part of an integrative taxonomic framework is discussed.

Key words: Cryptic species, integrative taxonomy, DNA barcodes, *Lasioglossum*, *Dialictus*, Halictidae

Accepted by E. Almeida: 20 Feb. 2009; published: 11 Mar. 2009