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# A taxonomic revision of the augochlorine bee genus *Ceratalictus* Moure (Hymenoptera, Apoidea)

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## Abstract

The Neotropical halictid bee genus *Ceratalictus* Moure (Augochlorini) is revised. Five new species are described, *Ceratalictus argentinus* **n. sp.**, *C. camargoi* **n. sp.**, *C. culminis* **n. sp.**, *C. nitidus* **n. sp.** and *C. orthocarinatus* **n. sp.**; five species are redescribed: *Ceratalictus allostictus* Moure, *C. clonius* (Brèthes), *C. ischnotes* (Vachal), *C. psoraspis* (Vachal), and *C. stigon* (Vachal). *Ceratalictus lorenzinis* (Strand) is synonymized with *C. clonius*. All catalogued type specimens were examined. Illustrations of all species and an identification key for the 10 presently recognized species are provided.

**Key words:** Halictidae, Halictinae, Augochlorini, taxonomy

## Introduction

Augochlorine bees are among the most abundant bees in the Neotropical fauna (Danforth & Eickwort 1997; Engel 2000). One of the richest and most widespread clades of this tribe is the commonly called 'Augochlora genus-group', which includes the very speciose *Augochlora* Smith, plus *Augochlorella* Sandhouse, *Ceratalictus* Moure, and *Pereirapis* Moure (Eickwort 1969). The phylogenetic relationships within Augochlorini were studied by Eickwort (1969), Danforth and Eickwort (1997), and Engel (2000). However the affinities among the genera of the Augochlora group are still unsettled, and there are disagreements regarding their classification, particularly due to Michener's (2007) suggestion that *Ceratalictus* and *Pereirapis* should be considered subgenera of *Augochlorella*. Michener's classification is not followed here, because it results from an artificial group according to the topologies of Engel (2000), Coelho (2004), and unpublished results by one of the authors (RBG), in which these three genera are shown to be paraphyletic in relation to other augochlorine lineages.

Unfortunately, nothing is known about the nesting biology and putative eusocial behavior (according to Danforth & Eickwort, 1997) of *Ceratalictus*, in contrast to the relatively rich information available for other genera of the group. In Brazil, *Ceratalictus* is found from São Paulo southwards; it has also been recorded in Paraguay, eastern Bolivia, Peru and Uruguay (Michener 2007; Moure 2007). Recent records and additional ones presented here extend the distribution to northern Argentina and other Brazilian states (see distribution maps). Moure (2007) listed six species: *Ceratalictus allostictus* Moure, *C. clonius* (Brèthes), *C. ischnotes* (Vachal), *C. lorenzinis* (Strand), *C. psoraspis* (Vachal) and *C. stigon* (Vachal).

According to Eickwort (1969) and Engel (2000), the genus can be separated from the remaining genera of the Augochlora group by the combination of obtuse epistomal sulcus, obsolescent anterior border of the female basitibial plate, basal area of inner hind tibial spur of females not raised, and inner lobe of ventral process of gonostylus divided. Additionally, Coelho (2004) described four synapomorphies for *Ceratalictus* when studying the *Augochlorella* species: ventral surface of male hind tibia with setae approximately as long

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