

Scientific note

The first report of species of *Pheropsophus* Solier, 1833 and *Neoscapteriscus* Cadena-Castañeda, 2015 together in the same location in the Brazilian semi-arid region

(Coleoptera, Carabidae and Orthoptera, Gryllotalpidae)

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In Brazil, there are six species of the taxonomically unresolved ground beetles *Pheropsophus* Solier, 1833 (Carabidae, Brachininae) (Anichtchenko et al. 2024). Larvae are known to be ectoparasites of mole cricket eggs, which explains why these bombardier beetles are used for biological control of Gryllotalpidae in other countries (Erwin & Erwin 1976). The most diverse genus of mole crickets in Brazil is *Neoscapteriscus* Cadena-Castañeda, 2015 (Orthoptera, Gryllotalpidae), with eight out of the twelve species (Lhano 2024) yet to be revised. Surprisingly, this is the first report of species of *Pheropsophus* and *Neoscapteriscus* being found together in the same location in the Brazilian semi-arid, an area approximately 1.5 times the size of the Iberian Peninsula.

Specimens of *Pheropsophus* (n = 44) and *Neoscapteriscus* (n = 4) were captured by chance on March 19th and 20th by a pitfall trap installed in an urban area of the semi-arid region of Brazil (9°38'03"S, 37°12'19" W, 148 m a.s.l.). Specimens were analyzed with a portable magnifier using identification keys for Neotropical genera of Carabidae (Reichardt 1977) and for genera of Gryllotalpidae (Cadena-Castañeda 2015).

The beetles were confirmed as species of *Pheropsophus* (Fig. 1A), characterized by unisetosis of the mandibular scrobe (Reichardt 1977). The sex ratio is 0.454 (M:F) (n = 44), with all individuals being macropterous, and with an average body size of 1.96 cm, both for males (n = 5) and females (n = 5). The mole crickets of the genus *Neoscapteriscus* (Fig. 1B) were diagnosed by a trochanter blade elongated across the apical fifth to the apical half of the trochanter process (Cadena-Castañeda 2015). *Pheropsophus* species have been already recorded in the Brazilian semi-arid (Branco et al. 2016), but have never been reported together with *Neoscapteriscus* so far. Vouchers will be deposited in the "Coleção de Entomologia Prof. Pe. Jesus Santiago Moure" (DZUP), Universidade Federal do Paraná.

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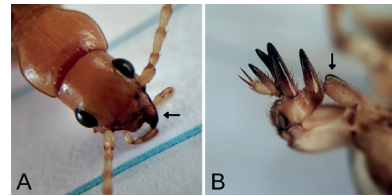


Fig. 1. A. The typical mandibular scrobe unisetosis (black arrow) of *Pheropsophus* Solier, 1833 (Coleoptera, Carabidae), and B. the elongated trochanter blade (black arrow) of *Neoscapteriscus* Cadena-Castañeda, 2015 (Orthoptera, Gryllotalpidae).

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References

- Anichtchenko, A., Botero, J. P., Vieira, L., Cruz, L. S., Monné, M. L. & Bulirsch, P. 2024. Carabidae in Catálogo Taxonômico da Fauna do Brasil. PNUD. Available at <http://fauna.jbrj.gov.br/fauna/faunadobrasil/158490> [accessed 17-Feb-2024].
- Branco, R. T. C., Silva, P. R. R., Portela, G. L. S., Pádua, L. E. M. & Santos O. A. A. 2016. Population survey of predatory insects in sugarcane in the municipality of União, Piauí state, Brazil, using light trap. *Científica* 44(4): 520–525.
- Cadena-Castañeda, O. J. 2015. The phylogeny of mole crickets (Orthoptera: Gryllotalpoidea: Gryllotalpidae). *Zootaxa* 3985(4): 451–490.
- Erwin, T. L. & Erwin L. V. J. M. 1976. Relationships of predaceous beetles to tropical forest wood decay. Part II. The natural history of Neotropical *Eurycoleus macularis* Chevrolat (Carabidae: Lebiini) and its implications in the evolution of ectoparasitoidism. *Biotropica* 8(4): 215–224.
- Lhano, M. G. 2024. Gryllotalpidae in Catálogo Taxonômico da Fauna do Brasil. PNUD. Available at <http://fauna.jbrj.gov.br/fauna/faunadobrasil/1058> [accessed 17-Feb-2024].
- Reichardt, H. 1977. A synopsis of the genera of Neotropical Carabidae (Insecta: Coleoptera). *Quaestiones Entomologicae* 13: 346–493.

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