

International Tenebrionoidea Virtual Symposium VI

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Porodes tuberculata (Fabricius, 1792)

taxonomy phylogenetics biogeography ecology evolution

Book of Abstracts

INTERNATIONAL TENEBRIONOIDEA VIRTUAL SYMPOSIUM VI

Book of Abstracts

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The role of *Nyctelia circumundata* (Coleoptera: Tenebrionidae) on litter fragmentation processes and soil fertility in Northeastern arid Patagonia

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Darkling beetles are the most abundant macrodetritivores in many arid environments worldwide, and it is widely suggested that these beetles are responsible for most of the nutrient cycling from accumulated litter. In this study, the role of *Nyctelia circumundata* (Lesne) (Coleoptera: Tenebrionidae: Pimeliinae) on soil fertility during warm-dry season was experimentally evaluated in northeastern Patagonia, using microcosm experiments in laboratory. Our results showed that litter presence alone is not enough to incorporate organic matter (OM), nitrogen (N) nor carbon (C) to the soil. *N. circumundata* consumed a significant fraction of the litter offered in the experimental pots ($\approx 10\%$) and this activity was also associated to increased soil N, C, and OM contents, and C/N ratio. These facts confirmed that, litter fragmentation, consumption, and its conversion into feces by adults of *N. circumundata*, positively affects soil fertility in northeastern Patagonia. Considering that darkling beetles are a major group of primary consumers in desert, these beetles seems to be very important into the base of the aboveground food web and a key energy conduit from plants (as litter) to higher trophic levels in this region.