

## The Impact of the African Dung Beetle *Digitonthophagus gazella* (Coleoptera, Scarabaeidae) on the Fimicolous Fauna of Brazil

Walter Mesquita Filho<sup>1</sup>; Wesley A.C. Godoy<sup>1</sup>; Carlos A.H. Flechtmann<sup>2</sup>

<sup>1</sup>ESALQ/USP, Av. Pádua Dias 11, 13418-900 Piracicaba/SP, Brazil. <sup>2</sup>FEIS/UNESP, Av. Brasil 56, 15385-000 Ilha Solteira/SP. Email: waltermesquita@usp.br.

The presence of exotic species in a community is subject of great concern for entomologists. Whether it is a result of a deliberate (as a biological control agent), or non-intentional introduction, the ecological consequences can be huge. Although there is a great number of studies of the impact of those species on the native fauna, most of them are inconclusive due to differences on the methodology of the experiments. *Digitonthophagus gazella*, an African coprophagous Scarabaeidae, was introduced in Brazil allegedly as a biological control agent of cattle pests. The first record of this species at the pasture area of the UNESP Farm, in Selvíria (Mato Grosso do Sul state) was in 1993. The aim of this experiment was to evaluate its impacts on the indigenous fauna of dung beetles. Since November 1989, once a week, we use a black light flight intercept trap to collect dung beetle species at the Farm. After the invasion, the diversity of species dropped significantly, with some species becoming locally extinct (*Dichotomius smaragdinus*, *Ontherus cephalotes*, and *O. dentatus*), while others showed changes in their population dynamic. Paracoprids species that used to be common and abundant had a decrease in their abundance. The same response was observed in some endocoprid species, while in others its abundance actually increased. Species that were common before the invasion were either not collected anymore or only in small numbers. One paracoprid species, *Dichotomius sexdentatus* was the only one to be positively influenced, with an increase in abundance. These results suggest that the invasion of the area lead to very negative impacts on the native fauna, and likely to the dung removal rate by them. Paracoprid species are the most important group in dung pad removal, hence a decrease in their abundance could reflect in a reduction in its removal. It appears that, 20 yr after the invasion of *D. gazella*, a new equilibrium was reached, but at a lower level than before 1993.

**Keywords:** native fauna, pasture, species extinction.

**Support:** CAPES