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High diversity of Drosophilidae (Insecta, Diptera) in the Pampas Biome of South America, with descriptions of new *Rhinoleucophenga* species

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Abstract

In the last three decades some faunal surveys of Drosophilidae have been done in several environments in the Neotropical region, especially in Brazil. But approximately 30 to 50% of the drosophilids in Brazil have not yet been described, and the degradation of some biomes causes a profound loss of species diversity, as well as the loss of information about the present structureof their communities. This is the situation with the pampas biome, which covers southernmost Brazil, all of Uruguay, and the central region of eastern Argentina. For the present study, seasonal collections were made in a natural area of pampas within the limits of the municipality of Bossoroca in the state of Rio Grande do Sul, Brazil (28°45'01"S 54°56'55"W), from April 2011 to April 2012. A total of 7,164 drosophilids of 51 species were collected, comprising 36 species belonging to *Drosophila* Fallén, ten of *Rhinoleucophenga* Hendel, two of *Amiota* Loew, two of *Zygothrica* Wiedemann and one of *Zaprionus* Coquillett. Some species were recorded for the first time in pampas: *Drosophila briegeri* Pavan & Breuer, *D. fuscolineata* Duda, *Rhinoleucophenga obesa* (Loew), *R. punctulata* Duda, *R. subradiata* Duda and *Zygothrica orbitalis* (Sturtevant). Furthermore, three new species of genus *Rhinoleucophenga* were described: *R. pampeana* **sp. nov.**, *R. missionera* **sp. nov.** and *R. sulina* **sp. nov.** A dichotomous key is given for the *Rhinoleucophenga* species recorded in pampas. An intensive literature search is reviewed of drosophilid species recorded in pampas of Brazil, Uruguay and Argentina, including taxonomic, genetic, evolutionary, and ecological studies. Despite Brazilian pampas being the richest when compared with Uruguay and Argentina, the three countries presented the same problem: huge areas with a barely surveyed Drosophilidae fauna. The combination of this information and the knowledge of the current state of preservation of pampas stress the necessity and importance of creating new conservation areas to preserve the natural biodiversity of pampas.

Key words: Neotropical Region, systematics, biogeography, *Drosophila*, biodiversity inventory

Resumen

En las últimas décadas algunos estudios faunísticos de Drosophilidae se hicieron en varios ambientes en el Neotrópico, especialmente en Brasil. Sin embargo, no se han descrito aproximadamente entre 30 a 50% de drosofílidos en el Brasil, y la degradación de algunos biomas provoca una profunda pérdida de la diversidad y la información acerca de la estructura de las comunidades. Esta es la situación del bioma pampa, que abarca parte del Brasil meridional, todo el Uruguay y la región centro-este de Argentina. En el presente estudio se presenta colectas estacionales en áreas naturales de pampas enclavadas dentro de los límites del municipio de Bossoroca en el estado de Rio Grande do Sul, Brasil (28°45'01"S

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presented lower species richness (Poppe *et al*. 2012), suggesting a loss of diversity. The creation of new conservation areas to preserve the natural biodiversity of pampas is thus, extremely important.

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