



The SBE meeting 2021's Book of Abstracts

Edited by the SBE meeting 2021's organizing committee

June, 2021

II Virtual Meeting of Systematics, Biogeography, and Evolution: The Research of Biodiversity and the Diversity of Researchers

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About

The I Meeting of Systematics, Biogeography, and Evolution (SBE) occurred from July 28 to July 30, 2020. The theme of the first meeting was *A Joint Effort in the Coronavirtual Era* (see <https://sbemeeting.weebly.com/>).

This abstracts book contains the abstracts of the second SBE meeting, from June 19 to 23, 2021. Our 2021's theme is *The Research of Biodiversity and the Diversity of Researchers*. Although the themes changed, our primary purposes remained the same.

First, to provide a high-quality international scientific meeting on systematics, biogeography, and evolution.

Second, to make the event accessible to people that could have difficulty attending other international scientific events due to financial constraints or the COVID-19 pandemic.

Third, to promote diversity and gender equality in science, technology, agronomy, mathematics, and medicine (STEAMM).

Come celebrate the richness of variety!

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Demographic processes, refugia and dispersal routes within the sigmodontine rodent assemblage from South American Pampas during the Pleistocene

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The geographical distribution of a taxon is the result of the interaction among geological, environmental and ecological processes in a space-time dimension. Theoretically, co-distributed species should have congruent phylogeographic patterns as a result of being subject to common environmental and geological changes. However, these patterns may be affected by ecological differences among the species, such as dispersal abilities and food or habitat preferences, and by the possible instability of the assemblage itself through time. South America presents one of the most extended subtropical-temperate grasslands in the world, the Pampas. In the Pleistocene, this biome would have experienced expansions over forest areas during cold and generally dry (glacial) periods and retractions during warm and generally humid (interglacial) climates. The sigmodontine rodents inhabiting the Pampas are one of the best known rodent assemblages in South America, being a good study model to analyze the impact of the Pleistocene climate changes in the evolutionary history of the region through comparative phylogeography. We studied the phylogeographic patterns of seven rodent species inhabiting the Pampas; our aims were to evaluate the concordance of phylogeographic patterns among them, assess if they experienced congruent demographic changes, estimate the time in which this demographic change occurred, and infer if the dispersal routes are shared among them. Four of the seven species evidenced recent demographic expansion. However, no temporal synchrony was observed since *Oligoryzomys nigripes* and *Oxymycterus nasutus* experienced a population increase about 250,000 years ago, whereas for *Calomys musculus* and *Oligoryzomys flavescens* it was about 125,000-100,000 years ago. We observed three common centers of origin for the species populations, which would have acted as grassland refugia where species would have developed isolated lineages. The reconstruction of lineage dispersal showed common dispersion routes for all of the species, following the grassland expansion to North, West and South. Our results support the idea that recent glacial cycles had a more moderate impact in South America because of its latitude and continentality, and that open biomes such as grasslands would have been more stable in comparison with tropical forests. In this context, ecological differences could have gained a greater prominence, producing a more complex scenario, like the one observed in the present study.
