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Distribution patterns of Phlebotominae fauna in the major biogeographical regions of Argentina.

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Abstract

In Argentina, the most common form of leishmaniasis is American Cutaneous Leishmaniasis (ACL), which has been recorded since 1930, with sporadic cases and outbreaks in 12 provinces. American Visceral Leishmaniasis (AVL) was initially observed only in scattered rural human cases until 1970. However, the first autochthonous case was reported in Misiones in 2006, and the disease has since spread to 8 provinces. Knowledge of Phlebotominae fauna in Argentina is still evolving. Before the 1960s, only 12 species were documented, but systematic surveys since the 1990s have increased this number to 46 species. Epidemiological transmission risks are influenced by Phlebotominae species assemblages. To date, Phlebotominae have been documented in 14 provinces across Argentina, spanning several biogeographic regions. Most leishmaniasis cases are concentrated in three main bioregions: Paranaense, Chaco, and Yungas, each with its own characteristics and transmission dynamics. In the Paranaense region, with *Ny. whitmani* as the primary vector, ACL outbreaks occur in Misiones, particularly in areas near deforestation. In the Chaco region, *Mg. migonei* dominates dry areas, while *Ny. neivai* is more common in humid zones, with variations in species dominance due to anthropogenic changes. The Yungas region, characterized by low Phlebotominae diversity, exhibits peri-domestic and peri-urban transmission cycles, with *Ny. neivai* as the dominant species, often associated with *Mg. migonei*. All three regions also host *Lu. longipalpis*, primarily in urban or peri-urban areas, which is considered the main vector of *Le. infantum*, though other species may contribute to sporadic transmission. Given the shifting transmission limits due to environmental changes, a better understanding of the factors shaping population assemblages could enhance efforts to prevent or control leishmaniasis transmission in Argentina.

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