

Molecular detection of *Bartonella bacilliformis* in *Lutzomyia maranonensis* in Cajamarca, Peru: A new potential vector of Carrion's disease in Peru?(Article)

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[Abstract_View references \(27\)](#)

Carrion's disease is a neglected, vector-borne illness that affects Colombia, Ecuador, and especially Peru. The phlebotomine sand flies *Lutzomyia verrucarum* and *Lutzomyia peruensis* are the main illness vectors described, although other species may be implicated in endemic areas such as some northern Peruvian regions, in which Carrion's disease vector has not been established. The aim of this study was to evaluate the presence of *Bartonella bacilliformis* DNA in *Lutzomyia maranonensis* from Cajamarca, northern Peru. This sand fly has not been defined as a vector yet. Centers for Disease Control and Prevention light traps were used to collect adult phlebotomine sand flies from 2007 to 2008 in the Cajamarca department. Female specimens were identified using morphological keys and were grouped into pools of five sand flies, taking into account district and sampling site (intradomicile or peridomicile). DNA was extracted, and then conventional and real-time polymerase chain reaction (RT-PCR) were performed to detect *B. bacilliformis* and subsequently confirmed by sequencing. A total of 383 specimens of *L. maranonensis* species were analyzed. Two of 76 pools were positive for *B. bacilliformis* by sequencing; all positives pools were from Querocotillo district. In

addition, *Mesorhizobium* spp. were identified in two pools of sand flies, which is an α -proteobacteria phylogenetically very close to *B. bacilliformis*. This study presents molecular evidence that suggests *L. maranonensis* is naturally infected by *B. bacilliformis* in the Cajamarca department. Further research should determine if *L. maranonensis* is a vector and could transmit *B. bacilliformis*. © 2018 by The American Society of Tropical Medicine and Hygiene.

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