SHORT COMMUNICATION

Presence of American Cutaneous Leishmaniasis Vectors Surrounding the City of Medellín, Colombia

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The presence of Lutzomyia (Helcocyrtomyia) hartmanni, *as a vector of* Leishmania colombiensis *and* L. columbiana *(Verrucarum group), recently incriminated in the transmission of leishmaniasis, and* L. pia *(Verrucarum group) are reported for the first time in a periurban area of Medellín city. There is thus a risk of leishmaniasis transmission in this town.*

Key words: *Lutzomyia* spp. vectors - urbanization - Medellín - Colombia

The annual number of cases of American cutaneous leishmaniasis (ACL) diagnosed in Colombia has increased during recent years to nearly 6,500 p.a. This is attributed to migration, deforestation, multiplication of illicit drug plantations, civil war and disorder and changes in the behavior of vectors. The latter may be linked due to climatic factors or human activities that favour vector colonization of new environments. Transmission of Colombian ACL typically occurs within forested areas, where people become infected whilst hunting, tree-felling, etc. In 1984 there were reports from the Colombian Andean region of vectors inside houses and epidemic outbreaks of ACL affecting whole families, with the highest incidence in children (Vélez et al. 1987, 1991, Montoya-Lerma et al. 1999). During the 1990's urbanization of the disease and its vectors led to cases of ACL in Colombia cities such as Bucaramanga (Sandoval et al. 1998) and Sincelejo (Bejarano et al. 2001).

Medellín lies in the Aburra Valley, where over 2 million people live, and is not considered as an endemic area, since autochthonous cases of ACL and its vectors have not been reported. But in May 1999 the observation of *Lutzomyia* biting man in a house in Medellín, at an altitude of 1,650 m.a.s.l., motivated a search for anthropophilic phlebotomines in the same area.

The study area is located on the western slopes of the central range of the Colombian Andes (6°10'N, 75°35'W). Landing catches on human bait were made in houses in urban and suburban areas and in a gallery forest within a radius of ca. 500 m of the house where the man had been bitten in May 1999. Catches were made from 18:00 to 1:00 h on five nights between May 1999 and October 2001. The collected sand flies were taken to the Entomology Laboratory, University of Antioquia (Programa de Estudio y Control de Enfermedades Tropicales, PECET - Study and Control Programe for Tropical Diseases) where they were cleared in lactophenol, mounted and identified.

Thirty two sand flies were captured landing on human bait: 15 *L. (Helcocyrtomyia) hartmanni* (Fairchild & Hertig), 10 *L. columbiana* (Ristorcelli & Van-Ty) and 7 *L. pia* (Fairchild & Hertig). Two specimens of *L. columbiana*, five *L. hartmanni* and one *L. pia* were caught inside houses and ten *L. hartmanni*, eight *L. columbian*, and six *L. pia* were caught in gallery forest.

L. hartmanni and *L. columbiana* are species of some public health importance: *L. hartmanni* was implicated as a vector of *Leishmania* (*Viannia*) *colombiensis* in Santander and of *Le. (V.) panamensis* in Ecuador (Hashiguchi et al. 1985, Corredor et al. 1990). *L. columbiana*, a highly anthropophilic species has been implicated as a vector of ACL (Montoya-Lerma et al. 1999) and Bartonellosis in Colombia (Young & Duncan 1994, Ferro 2000). *L. columbiana* belongs to the verrucarum group which includes other species involved in leishmaniasis transmission, such as *L. youngi* (Feliciangeli 1991), *L. evansi*, *L. spinicrassa* (Young & Duncan 1994, Ferro 2000) and *L. ovallesi* (Feliciangeli et al. 1988, 1994).

This is the first report of *Lutzomyia* in the surroundings of the city of Medellín. Sand flies were not found in a previous study using sticky traps performed by a PECET team in 1987 and 1999. Sticky-traps transects were carried out from the city northwards, at altitudes from 1,410 to 1,500 m.a.s.l. Each transect consisted of nearly 400 sticky traps that were placed in and outside of houses and suitable sites nearby.

In the present study, flies were collected at a higher altitude (1,650 m), in a deforested region used for cattle-grazing. There are some remnants of secondary forest, but no recent human settlement. Since the area had not been studied previously we cannot say that our finding of sand flies is due to a recent introduction. In the present study area, 200 sticky traps were left for 10 days in and around houses. No phlebotomines sand flies were caught. This result raises the question as to the suitability of us-

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Received 28 August 2001
Accepted 28 February 2002

ing sticky traps to determine the presence of sand flies in the city of Medellín.

Considering the recent finding of autochthonous ACL cases and the presence of *Lutzomyia* species in other Colombian cities, such as Bucaramanga and Sincelejo (Sandoval et al. 1998, Bejarano et al. 2001), it would seem that certain sand flies are beginnig to invade city environments, as observed elsewhere (Scorza et al. 1985, Aguilar et al. 1998, Silva et al. 2001).

Phenomena such as global warming could be a factor favouring the urbanization of phlebotomines. However, such assertions lack data, such as long term studies on the phlebotomine fauna and environments.

Although autochthonous cases of ACL have not yet been reported from Medellín, the findings in the present study suggest that there is a risk of active transmission in the city. Previous epidemiological studies carried out during *Le. (V.) panamensis* and *Le. (V.) braziliensis* outbreaks in the Colombian Andean regions, principally deforested areas and coffee plantations, suggested that the man may be playing a role as reservoir for these parasites (Vélez et al. 1987, 1991, Montoya et al. 1990). Due to the intense migration of man from rural endemic areas to the periphery of cities, such has occurred in Medellín, it is possible that autochthonous cases could soon occur if man is indeed a source of infection. City health authorities need to be aware of this risk and need begin clinical surveillance measures to ensure the early detection of cases.

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