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LEISHMANIASIS IN BOLIVIA – VI. OBSERVATIONS ON *LUTZOMYIA NUNEZTOVARI ANGLESI* LE PONT & DESJEUX, 1984 THE PRESUMED VECTOR OF TEGUMENTARY LEISHMANIASIS IN THE YUNGAS FOCUS

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The Yungas focus of tegumentary leishmaniasis due to *Leishmania (Viannia) braziliensis* is known from the beginning of the century (Balcazar, 1946, Epid. Bol., Buenos Aires: Imprenta La Paz, 250 p.) and has been extensively studied since 1982 (Desjeux et al., 1986b. Les *Leishmania* de Bolivie. I. p. 411-419. In: *Leishmania.* Taxonomie, phylogénèse. IMEEE, Montpellier); it lies on the forested eastern slopes of the Andes at an altitude of 1,000 to 2,000 meters.

Eleven anthropophilic sandfly species have been recorded in the forest pockets and peridomestic coffee plantations: *Warileya rotundipennis, Lutzomyia pia, Lu. brisolai,* two species of the *peruensis* series, *Lu. nuneztovari anglesi, Lu. nevesi, Lu. shannoni, Lu. dendrophyla, Psychodopygus geniculata, Ps. ayrozai.*

Lu. n. anglesi Le Pont & Desjeux, 1984 (*verrucarum* group) accounts for 48% of all sandflies biting man between 7 and 10 pm. This subspecies occurs all year long, with two peaks in September/October and in March/April, at the beginning and at the end of the rainy season. During the peaks the biting density may reach 44/man/hour. This sandfly has been observed to bite both in the canopy and at ground level, with a keen preference for tree-covered areas.

During studies in 1987/1988, in houses, *Lu. n. anglesi* accounted for more than 65% of the sandflies caught at night with CDC light-traps. Among the 50 houses surveyed in December 1986 in the village of Pararani, the mean number of this species was 10,8 females/house/night, reaching 80 females in some houses. The more deeply the houses are wedged in the coffee plantations, the more abundant is *Lu. n. anglesi.* Fifty three percent of the females were found engorged and among the 210 blood meals studied, 204 were from humans and the remaining six from donkey, dog and chicken.

All the *Lu. n. anglesi* were caught after 10 pm. and not a single female was found resting in houses during the daytime; it suggests that this sandfly enters houses late at night to feed on man, and leaves early in the morning. This hypothesis is further supported by the limited impact on *Lu. n. anglesi* of deltamethrin house-spraying, carried out in the village in January 1987.

During epidemiological investigations conducted in coffee plantations and in the nearby forest, between 1982 and 1983, several specimens of *Lu. n. anglesi* were found harbouring promastigotes in a peripyloric position, suggesting the parasite to be a *Leishmania* of the *braziliensis* complex. Conclusive identification of the parasite could not be made since monoclonal antibodies were not then available, and no conclusion could be drawn from the negative results of the rather unreliable method of parasite inoculation into hamsters.

In this area *Lu. n. anglesi* is the only anthropophilic sandfly found in houses. The few specimens of *Lu. longipalpis* caught inside dwellings were mostly unfed. This later species is not very anthropophilic. It was found infected, but the parasites found in suprapyloric position were *Le. chagasi,* prevalent among the village dogs. No sandfly of the *Psychodopygus* genus was ever recorded inside houses.

These observations strongly suggest that *Lu. n. anglesi* may be the vector of *Le. (V.) braziliensis* in the Yungas, where transmission takes place mainly inside houses. *Lu. n. anglesi* fulfils all the criteria of a good potential vector as defined by Killick Kendrick (1981, *Parasitology, 82:* 143-152).

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Lu. youngi (Scorza et al., 1984, *Bol. Dir. Malariol. Saneamiento Ambiental, 24:* 21-28) and *Lu. spinicrassa* (Young et al., 1987, *J. Med. Ent., 24:* 587-589), (two other species of the *verrucarum* group) have been confirmed as vectors of *Le. (V.) braziliensis* in coffee-growing areas on the Andean slopes in Venezuela and Colombia.