

LEISHMANIASIS IN BOLIVIA. VII. INFECTION OF SENTINEL PORCUPINES (*COENDOU PREHENSILIS*, L.) BY *LEISHMANIA* (*LE.*) *CHAGASI*

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Sentinel animals have been extensively used in Peruvian (A. Herrer, 1951, *Rev. Med. exp.*, 8: 87), Panamanian (A. Herrer et al., 1973, *Trans. R. Soc. Trop. Med. Hyg.*, 67: 870-879) and Brazilian (A. de C. Gomes et al., 1989, *Trans. R. Soc. Trop. Med. Hyg.*, 83: 193) leishmaniasis foci to survey the circulation of the parasites. Laboratory and wild rodents, as well as dogs, have been used for this purpose.

A tree porcupine (*Coendou prehensilis*, L.) caught in the Beni plain where visceral leishmaniasis does not exist was brought to a village in the Yungas, a well-known focus of *Leishmania* (*Le.*) *chagasi* (P. Desjeux et al., 1986, 411-419. In *Leishmania, Taxonomie et Phylogénèse*, INSERM/CNRS, IMEEE, Montpellier). It was kept near houses as a sentinel at an altitude of 950 m. It was first observed that this animal was very attractive for *Lutzomyia longipalpis*, the local vector of visceral leishmaniasis (F. Le Pont et P. Desjeux, 1985, *Trans. R. Soc. Trop. Med. Hyg.*, 79: 227-231). After 18 months, the porcupine began to decline and lose its spines. It became apathic and, before it could die, it was sacrificed and autopsied.

Biopsies of the liver and spleen were cultured on NNN medium and a strain (MCOE/BO/86/LPZ-2019) was identified by isoenzymes as *L. chagasi*. The strain from the porcupine is identical, according to biochemical typing, with strains isolated from humans, dogs and sandflies in this area; all of them correspond to the WHO reference strain of *L. chagasi*, MHOM/BR/74/M-2682.

It is well-known that porcupines, specially *C. prehensilis* (R. Lainson et J. J. Shaw, 1977, *Acta Amaz.*, 7: 51-57), harbour their own species of *Leishmania* belonging to the *hertigi* complex, non pathogenic for them, which can be isolated from the viscera. But these former data seem sufficient to exclude this specific *Leishmania* in the present case.

The pre-patent time was long (14 months), but similar observations have been made in experimental infestations of other animals, e. g. the jackal with *L. infantum* in Tunisia (J. P. Dedet, 1971, *Epidémiologie de la leishmaniose viscérale en Tunisie*, Thèse, Montpellier, 163 p.).

Another sentinel *C. prehensilis* brought from the same area and kept at the same place died with the same symptoms, but for logistic reasons the parasite could not be isolated.

In this village, the *L. chagasi* circulation was high and most of the dogs were dying in less than six months, but very few human cases have been reported (P. Desjeux et al., 1983, *Trans. R. Soc. Trop. Med. Hyg.*, 77: 851-852). The low incidence of human cases in the Yungas may be indicative of asymptomatic infections, as in Brazil (L. M. Toledo et al., 1983, XIX Congr. Soc. Bras. Med. Trop., Rio de Janeiro, Abstr. 134, p. 60) or, more probably, of a low man-biting rate of the vector.