

## LEISHMANIASIS IN BOLIVIA. V. HUMAN STRAINS OF *LEISHMANIA (V.) BRAZILIENSIS* FROM THE DEPARTMENT OF PANDO

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Cutaneous leishmaniasis is widespread in the Amazonian area of Bolivia, but the parasite involved has not so far been identified.

In a survey in January 1988, biopsies were taken from ulcers on the legs of seven patients; all of them usually worked in the forest, harvesting Brazil-nuts (*Bertholletia excelsa*). Each sample was crushed and then inoculated into the four paws of an hamster; the animals were then sent to the Laboratory of Medical Ecology, Faculty of Medicine, Montpellier, France.

Six months later, the animals were sacrificed. Liver, spleen, bone marrow and subcutaneous paw tissues were crushed and macerated in NNN culture medium. Two stocks of *Leishmania* were obtained, one from the paw tissue of one hamster, the other from the bone marrow of another hamster. Both stocks are *Leishmania (V.) braziliensis* according to isoenzymatic typification by starch-gel electrophoresis and based on twelve enzymes: ME, EC 1. 1. 1. 40; PGD, EC 1. 1. 1. 44; G6PD, EC 1. 1. 1. 49; DIA, EC 1. 6. 2. 2; NP1, EC 2. 4. 2. 1; NP2, EC 2. 4. 2. 1; GOT1, EC 2. 6. 1. 1; GOT2, EC 2. 6. 1. 1; PGM, EC 2. 7. 5. 1; FH, EC 4. 2. 1. 2; MPI, EC 5. 3. 1. 8; GPI, EC 5. 3. 1. 9 and six reference strains.

The zymodeme of the hamster paw stock (MON-43) is identical with the WHO reference strain for that species: MHOM/BR/75/M-2903. The zymodeme of the second stock (MON-44)

differs from the reference strain by only one enzymatic system (malic enzyme). This zymodeme has been already recorded from Colombia (G. Moreno et al., 1986, p. 165-172. In J. -A. Rioux *Leishmania, Taxonomie et phylogénèse. Applications éco-épidémiologiques*, IMEEE, Montpellier).

Finding *L. braziliensis* in the Amazonian area of Bolivia is not surprising as this parasite is widely distributed in the lowlands of the country (P. Desjeux et al., 1986, p. 401-410. In J. -A. Rioux *Leishmania, Taxonomie et phylogénèse. Applications éco-épidémiologiques*, IMEEE, Montpellier; P. Desjeux et al., 1987, *Trans. R. Soc. Trop. Med. Hyg.*, 81, 742-746). But it should be pointed out that the ulcers in the Pando are small and their scars present a very peculiar appearance, resembling a coin. The local name is "livra", meaning sterling pound; only two cases among 108 patients showed evolutive mucocutaneous lesions (obs. pers.). As leishmaniasis is a well-known disease, people use local plants for application to the sores, so it is difficult to know the actual percentage of evolutive forms. Similarly, in the lowlands (Yapacani focus) of the Department of Santa Cruz (M. Recacoechea et al., 1987, *Proceedings NATO ASI, Series A*, 163), and in the lowland rainforest of French Guyana (P. Chalchat et al., 1965, *Bull. Soc. Path. Exot.*, 58: 73-80) it has been observed that *L. braziliensis* rarely evolves into mucocutaneous forms.