

NATURAL INFECTION OF THE OPOSSUM *DIDELPHIS ALBIVENTRIS* (MARSUPIALIA, DIDELPHIDAE) WITH *LEISHMANIA DONOVANI*, IN BRAZIL

ÍTALO A. SHERLOCK,* JOSÉ CARLOS MIRANDA,* MOYSÉS SADIGURSKY*
& GABRIEL GRIMALDI JR**

An opossum, Didelphis albiventris, from Jacobina, Bahia State, was found naturally infected with Leishmania donovani, being the first non-canid wild mammal to be detected with the agent of kala-azar in the New World.

While searching for leishmanial infection in wild mammals in the well known focus of kala-azar in Brazil, the town of Jacobina, State of Bahia, we examined 57 opossums. The examination consisted in: a) the search for amastigotes in smears and sections of skin, spleen and liver, and b) culture and hamster inoculation of ground fragments of the same material.

Abundant amastigotes were found in skin, spleen and liver smears of a hamster necropsied 9 1/2 months after being inoculated with material from a specimen of *Didelphis albiventris* that had been trapped in a house-yard; direct examination of smears and sections of skin and viscera of the opossum was negative. From the tissues of the infected hamster, cultures were obtained in LIT and NNN media and later transferred to an enrichment medium (Schneider's complete, see Jaffe et al., in "Genes and antigens of Parasites", C. Morel ed., Fund. Oswaldo Cruz, Rio de Janeiro, pp. 47-91, 1984).

The isolated parasite was identified as *Leishmania donovani* by serodeme analysis based on its characteristic reactivity with *L. donovani* species-specific monoclonal antibodies using either an indirect radioimmune binding assay or immunofluorescence and immunoperoxidase techniques. Furthermore, this leishmania stock did not cross-react with a large panel of *L. mexicana* and *L. braziliensis* species-and/or subspecies-specific monoclonal antibodies.

D. albiventris is the most frequent wild mammal to be found around houses in Jacobina. In two houses close to the one where the infected opossum was captured, one human and two canine cases of kala-azar were encountered. *Lutzomyia longipalpis*, the known vector of neotropical visceral leishmaniasis, feeds readily on *D. albiventris*, as we verified in traps with opossums used as baits.

In the Americas, the only previously known wild hosts of *L. donovani* were the foxes, *Lycalopex vetulus* and *Cerdocyon thous*. We here report the finding of the first non-canid wild animal naturally infected with the agent of kala-azar in this Continent.

RESUMO

Um gambá, *Didelphis albiventris*, de Jacobina, Bahia, foi encontrado com infecção natural pela *Leishmania donovani*, sendo o primeiro mamífero silvestre não-canídeo a ser achado com o agente do calazar nas Américas.

ACKNOWLEDGEMENTS

Our thanks are due to Dr. Diane McMahon-Pratt, for providing us with the monoclonals; Prof. Leonidas M. Deane, for advice and revision of the manuscript; and Srs. Antonio Carlos Santos, Jorge Lessa Tolentino and Raimundo Ferreira, for their help in the field.

Work performed under the auspices of International Development Research Center of Canada, through Grant CF-3-P-80-0182 and with financial help from the Brazilian National Research Council (CNPq).

*Centro de Pesquisas Gonçalo Moniz, Rua Valdemar Falcão, 121, Brotas, 40000 Salvador, BA, Brazil.

**Instituto Oswaldo Cruz, Centro de Microscopia Eletrônica, Caixa Postal 926, 20000 Rio de Janeiro, RJ, Brazil.

Received for publication September 28th and accepted October 8th, 1984.