

**TRYPANOSOMA CRUZI DEVELOPMENT IN THE ANAL GLANDS
OF EXPERIMENTALLY INFECTED *LUTREOLINA CRASSICAUDATA*
(MARSUPIALIA, DIDELPHIDAE)**

MÁRIO STEINDEL & CARLOS JOSÉ DE CARVALHO PINTO

Departamento de Microbiologia e Parasitologia, Universidade Federal de Santa Catarina,
Caixa Postal 476, 88049 Florianópolis, Santa Catarina, Brasil

Marsupials of the family Didelphidae have an ample distribution in the Americas and species of its various genera are among the most important sylvatic reservoirs of *Trypanosoma (Schizotrypanum) cruzi* (Barreto & Ribeiro, 1979, *Rev. Inst. Adolfo Lutz*, 39: 25-36). A double development cycle has been described for *T. cruzi* in experimentally infected *Didelphis marsupialis*, the parasite multiplying as epimastigotes and differentiating into metacyclic trypomastigotes in the lumen of the anal (scent) glands of the opossum, while the usual vertebrate cycle goes on in its tissues (Deane et al., 1984, *Mem. Inst. Oswaldo Cruz*, 78: 513-515; 1986, *Parasitology Today*, 2: 146-147). The finding was confirmed in naturally infected *D. marsupialis* in Manaus, Amazonas (Naiff et al., 1987, X Congr. Soc. Bras. Parasitol., p. 234) and Arvoredo Island, Santa Catarina (Steindel et al., 1987, *Mem. Inst. Oswaldo Cruz*, Suppl. Vol. 82, p. 66) and in *D. albiventris*, in Bambuí, Minas Gerais (Fernandes et al., 1987, *Mem. Inst. Oswaldo Cruz*, Suppl. Vol. 82, p. 65). A similar double cycle has been found for another trypanosome, *T. (Megatrypanum) freitasi*, in naturally infected *D. marsupialis* (Deane & Jansen, 1986, *Mem. Inst. Oswaldo Cruz*, 81: 131-132).

We now report *T. cruzi* development in the anal glands of a didelphid marsupial of a different genus.

Two female *Lutreolina crassicaudata* were subcutaneously inoculated with feces of triatomine bugs infected with *T. cruzi* strain SC-42 isolated from a naturally infected *D. marsupialis* captured in the Arvoredo Island. The inocula

corresponded to 5 metacyclic trypomastigotes per gram of body weight. The follow-up included hemoculture and xenodiagnosis, as well as examinations of blood, anal gland secretion (obtained by manual expression) and rectal mucus, in fresh and stained preparations.

From the 7th day on both specimens had patent parasitemia and hemoculture and xenodiagnosis became positive. On the 34th day the anal glands and rectum were positive for the first time, but only for one specimen. From that day until its death on day 43, this animal presented large numbers of *T. cruzi* epimastigotes and metacyclic trypomastigotes in the material from the rectum, and a rising parasitemia that reached an average of 20 trypomastigotes per microscopical field.

In the second specimen the glands and rectum were negative throughout and parasitemia was maintained at the low level of about 1 flagellate per microscopical field.

The presence of large numbers of metacyclic trypomastigotes in the rectum suggests that continuous auto-infection was responsible for the rising parasitemia in the first specimen.

Our finding amplifies the range of hosts in which *T. cruzi* undergoes a double cycle. This, together with the afore mentioned report of a similar cycle for *T. freitasi*, indicate that a cycle in scent glands might be a common trait among mammalian trypanosomes, at least in their primitive hosts, as already predicted (Deane & Jansen, 1986, *Mem. Inst. Oswaldo Cruz*, Suppl. Vol. 81, p. 53).