

SHORT COMMUNICATION

Trypanosomes of Non-human Primates from the National Centre of Primates, Ananindeua, State of Pará, Brazil

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Trypanosome infections were sought in 46 non-human primates captured principally in Amazonian Brazil. Twenty-two (47.8%) were infected with four Trypanosoma species: T. cruzi, T. minasense, T. devei and T. rangeli.

These preliminary results confirmed the high prevalence and diversity of natural infections with trypanosomes in primates from Brazilian Amazon and were the first formal record of simian infections with trypanosomes in the State of Acre. The presence of T. cruzi-like and T. rangeli-like parasites are recorded in four new hosts.

Key words: *Trypanosoma cruzi* - *Trypanosoma rangeli* - *Trypanosoma minasense* - *Trypanosoma devei*

The trypanosomes are among the most frequent parasites reported in neotropical non-human primates. The prevalence, taxonomy, biology and transmission of most species, however, have been poorly characterized.

Trypanosome infections were sought in non-human primates captured principally in Amazonian Brazil and maintained in the National Centre of Primates, Ananindeua, State of Pará, Brazil, where animals are raised and maintained for biomedical research. Blood samples of 46 primates (41 wild-caught [w], 4 born in captivity [c] and 1 domicile donation [d]) were obtained from the following species: 10 mustached tamarins [w] *Saguinus imperator imperator* (Goeldi); 7 marmosets [w] *Callithrix penicillata* (Geoffroy); 6 saddle back tamarins [w] *Saguinus fuscicollis weddelli* (Deville); 6 howler monkeys [w] *Alouatta caraya* (Humboldt); 4 squirrel monkeys [w] *Saimiri boliviensis* (Geoffroy & Blainville); 4 Goeldi's monkeys [w] *Callimico goeldii* (Thomas); 3 sakis [c] *Pithecia irrorata* Gray; 3 bearded sakis [2w,

1c] *Chiropotes satanas utahicki* Hershkovitz; 2 pygmy marmosets [w] *Cebuella pygmaea* (Spix); 1 titi [d] *Callicebus donacophilus* (d'Orbigny). The nomenclature and systematics of the primates used here are those adopted by (Hershkovitz 1985, Coimbra Filho 1990, Wilson & Reeder 1993).

Examination was by way of Giemsa-stained thick and thin blood smears (BS), haemoculture (HC) made with Novy, McNeal and Nicolle (NNN) medium plus Liver Infusion Tryptose (LIT), and xenodiagnosis (XD) using six nymphs of *Rhodnius prolixus* Stal.

Fifteen *Trypanosoma* isolates were made, and subsequently cryopreserved in liquid nitrogen for further characterization.

Twenty-two (47.8%) of the animals were infected with trypanosomes. Four *Trypanosoma* species were detected: *Trypanosoma* (*Schizotrypanum*) *cruzi* Chagas, *T. (Megatrypanum) minasense* Chagas, *T. (Megatrypanum) devei* Leger & Porry (Figure) and *T. (Tejeraia) rangeli* Tejera.

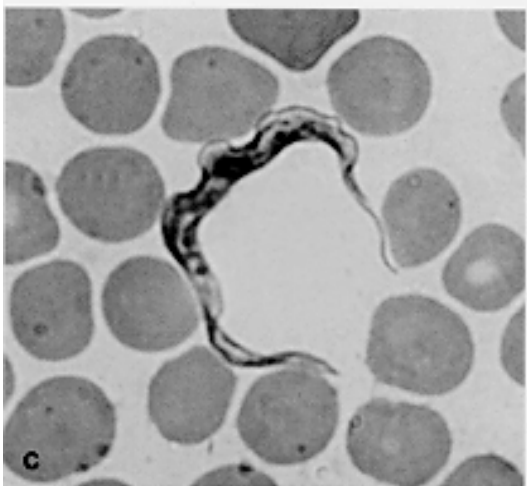
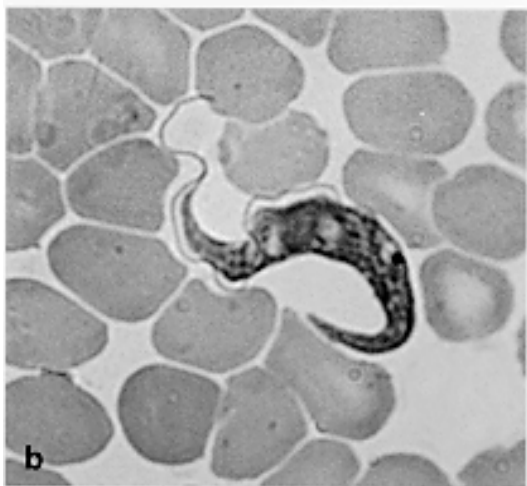
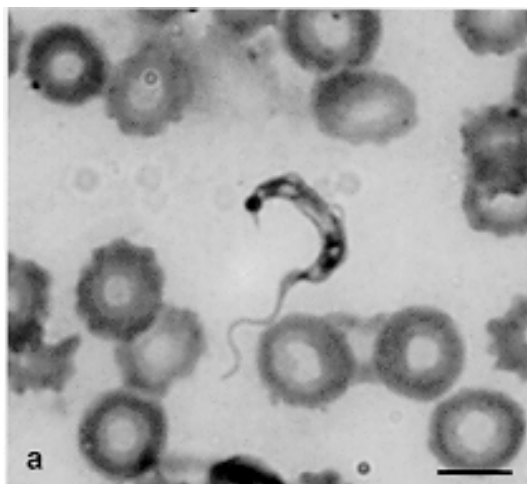
The most common trypanosome species infecting the primates was *T. rangeli*-like, found in 30.4% (14/46) of individuals, followed by *T. devei* (12/46) and *T. cruzi*-like (4/46) which accounted for 8.7% of the total examined. *T. minasense* was found in 4.3%.

T. cruzi were detected in one animal from three species: *C. pygmaea* (50%) by XD, *S. i. imperator* (10%) and *S. f. weddelli* (16.7%); both detected by BS and HC; all of them are from the State of Acre. One *C. penicillata* (14.3%) showed *T. cruzi* by HC;

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Photomicrographs of trypomastigotes found in thin blood smears from naturally infected tamarin, *Saguinus fuscicollis weddelli*, from Ananindeua, Pará. a: *Trypanosoma cruzi*; b: *T. minasense*; c: *T. devei*. Bar = 10 μ m.

this animal were from the State of Goiás, in Central Brazil. *T. rangeli*-like parasites were isolated by HC from 13 (28.3%) specimens of primates caught in Acre, as follows: 4 *S. i. imperator* (40%); 1 *S. f. weddelli* (16.6%); 4 *S. boliviensis* (100%); 1 *C. pygmaea* (50%) and 3 *C. goeldii* (75%).

Seven *S. i. imperator* (70%), 2 *S. f. weddelli* (33.3%), 1 *C. pygmaea* (50%) and 2 *C. goeldii* (50%) were infected with *T. devei*. *T. minasense* was detected in one *S. f. weddelli* and 1 *S. i. imperator*. These species of trypanosomes were detected only in the BS. All laboratory-raised primates were negative.

These preliminary results confirm the high prevalence and diversity of natural infections with trypanosomes in primates from Brazilian Amazon (Deane & Damasceno 1961, Deane et al. 1970, 1972, Lourenço-de-Oliveira 1988, Ziccardi & Lourenço-de-Oliveira 1997). The presence of *T. cruzi*-like and *T. rangeli*-like parasites are thus recorded in four new hosts: *C. pygmaea*, *C. goeldii*, *S. i. imperator* and *S. f. weddelli*. This is the first formal record of simian infections with *T. cruzi*-like and *T. rangeli*-like trypanosomes, *T. minasense* and *T. devei* in the State of Acre, Brazilian Amazon. The late Professor LM Deane examined 92 primates from Acre and found *T. cruzi*, *T. minasense* and *T. devei* among 81 individuals of 17 species (unpublished data).

Naturally acquired infections in animals used for experimental purposes are potential sources of accidental transmission to handlers and uninfected monkeys (Sullivan et al. 1993). They may also introduce confounding variables into experimental studies.

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