

**TRYPANOSOMA NUPELIANUS SP. N. (PROTOZOA, KINETOPLASTIDA)
PARASITIZING RHINELEPIS ASPERA (OSTEICHTHYES, LORICARIIDAE)
FROM PARANÁ RIVER, BRAZIL**

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It is described Trypanosoma nupelianus sp. n. parasitizing Rhinelepis aspera taken from Paraná river (Itaipu reservoir, Brazil). Morphometric characters such as body length, width of the body and nucleus dimensions show that T. nupelianus sp. n. is different from other trypanosomes described for fishes from tropical regions.

Key words: *Trypanosoma nupelianus* – *Rhinelepis aspera* – Paraná river – Itaipu reservoir – Brazil

Four specimens of the freshwater teleost *Rhinelepis aspera* Agassiz, 1829 (total length range: 40.2 cm – 45.7 cm) (common name: cascudo preto) were found infected by trypanosomes. Another specimen (total length: 49.0 cm) was not infected.

In one infected specimen the intensity of parasitism was high, over 150 parasites being observed in one blood smear. Other specimens had lighter infections, with less than 10 trypanosomes per blood smear.

The examination of the morphology and morphometry of the parasites showed that a trypanosome, with the characteristics reported in this paper, has not been previously described. Therefore, the consideration of *Trypanosoma nupelianus* sp. n. is proposed.

MATERIALS AND METHODS

Host specimens were net fished from Paraná river (Itaipu reservoir, Guaíra, Brazil, 24° 04' 44" S and 55° 18' 02" W). Smears were made with blood taken from the hearts of the specimens, fixed in absolute methanol and stained with May Grunwald and Giemsa. The parasite morphometric features were measured in 15 specimens.

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DESCRIPTION

Trypanosoma nupelianus sp. n. (Figs 1 and 2)

Diagnosis (all measurements in μm) – Monomorphic; body long, narrow, attenuated at both ends, 17.6 (15.6 – 20.0) x 1.67 (1.6 – 2.0); cytoplasm granular, with the posterior part of the body staining more deeply than the anterior part; posterior extremity degranulated to an extent of 1 μm to 2 μm before the kinetoplast; myonemes absent; small vacuoles present throughout the body; nucleus ovoid, 2.45 (2.0 – 2.80) x 1.67 (1.6 – 2.0) occupying the entire body width; karyosome not observed; kinetoplast round to ovoid usually placed at the extremity of the body (in three specimens placed at 0.6 μm from the posterior extremity) and intensely stained, 0.5 long; undulating membrane narrow, presenting 4-5 folds, its maximal width being observed near the nucleus; flagellum originating at the kinetoplast, running anteriorly as a border of undulating membrane, continuing as free flagellum; free flagellum 9.0 (8.0 – 10.0) long; distance from centre of nucleus to anterior body end, 6.0 (4.8 – 8.0); distance from centre of nucleus to posterior body end, 11.5 (9.6 – 12.8); distance from kinetoplast to nucleus, 10.7 (8.9 – 11.6); nuclear index (posterior extremity/anterior extremity), 1.97 (1.50 – 2.66); flagellar index (body length/free flagellum length), 1.95 (1.62 – 2.20); kinetoplast index (distance from nucleus to posterior extremity/distance from nucleus to kinetoplast), 1.06 (1.04 – 1.11).

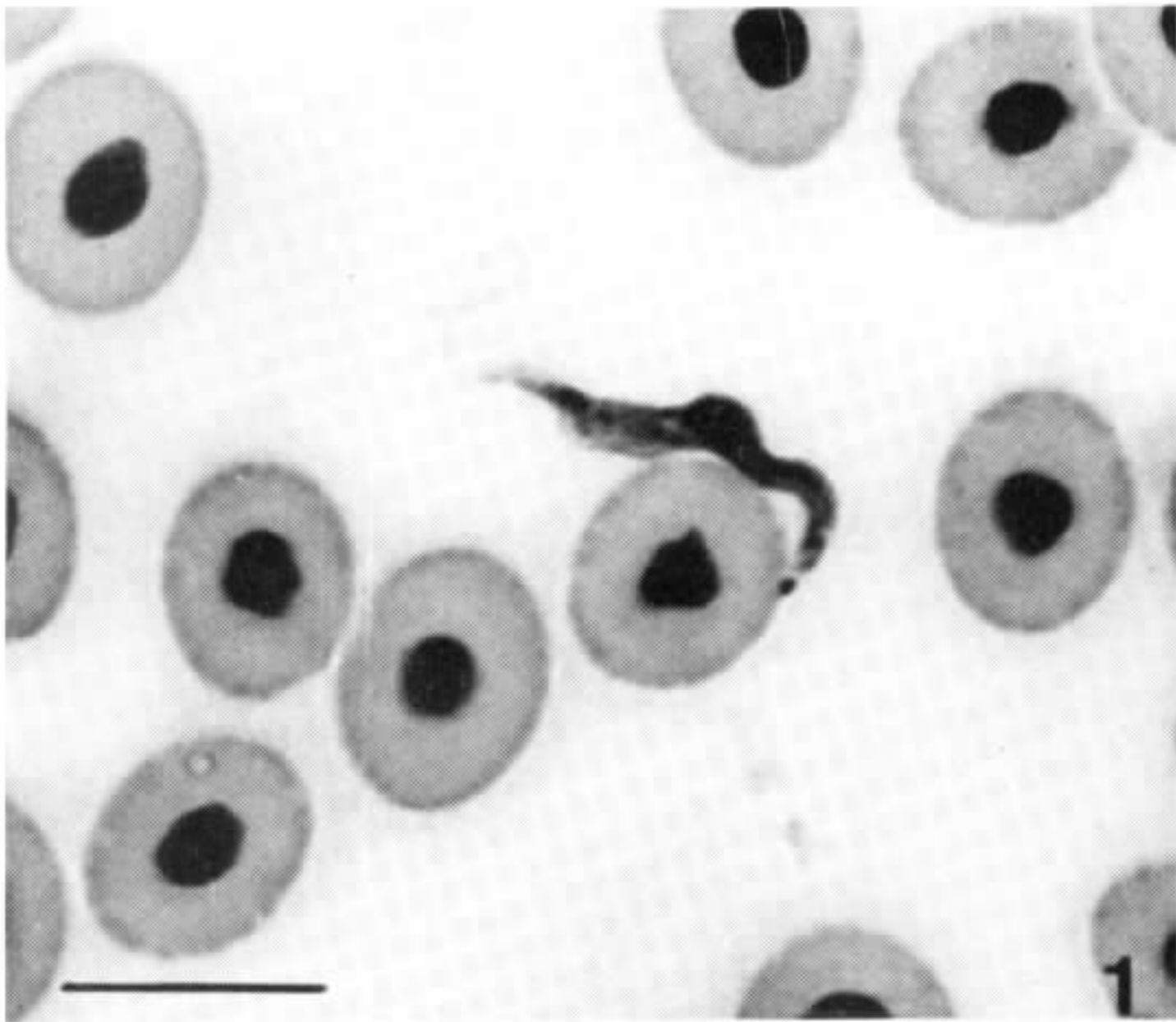


Fig. 1: *Trypanosoma nupelianus* sp. n. Bar = 10 μ m.

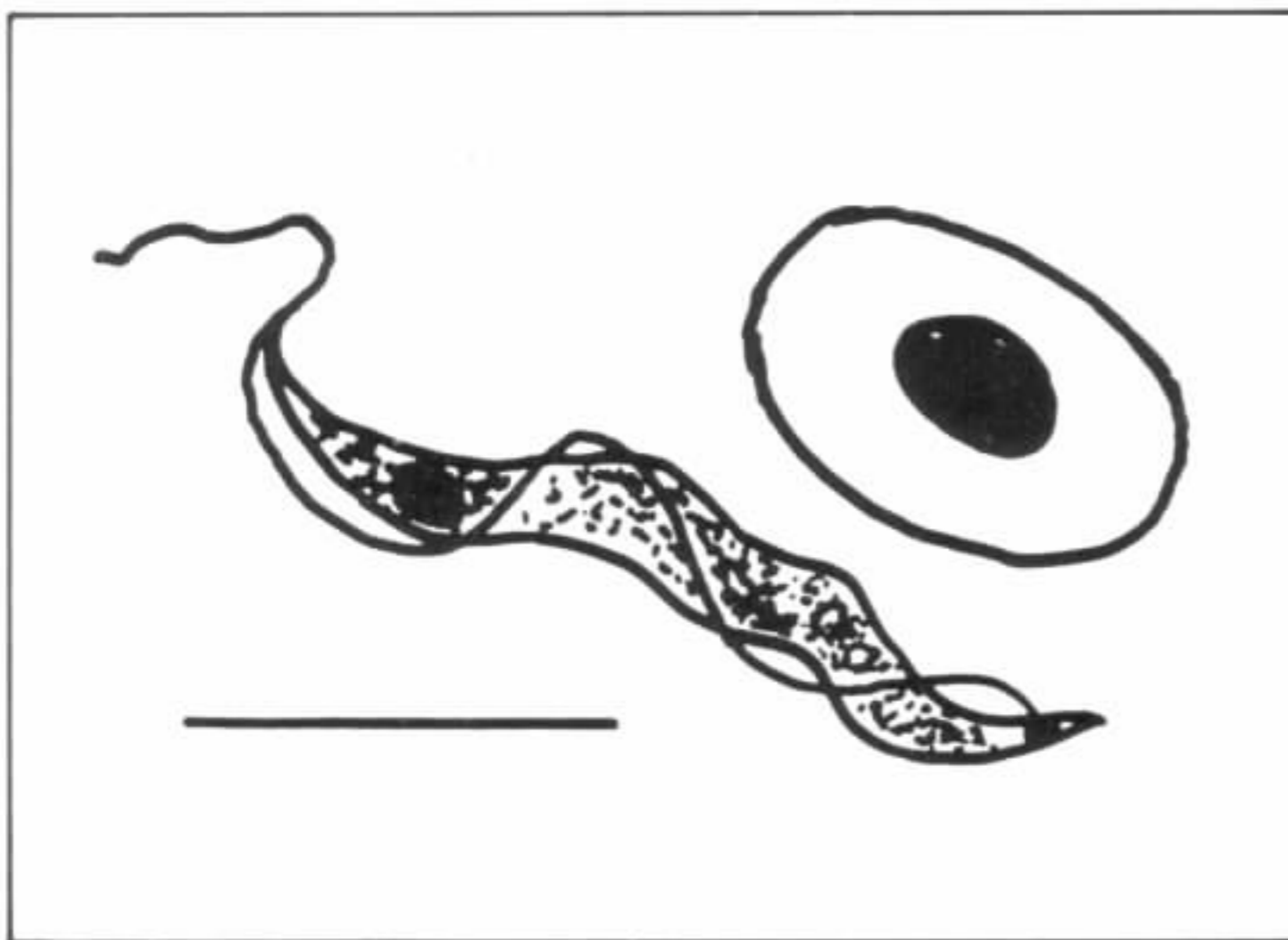


Fig. 2: *Trypanosoma nupelianus* sp. n. Bar = 10 μ m.

Dividing forms not observed.

Life cycle unknown.

Type host – *Rhinelepis aspera* Agassiz, 1829 (Osteichthyes, Loricariidae).

Type locality – Paraná river, Itaipu reservoir, Guaíra, Brazil.

Syntype slides in Zoology Institute, Faculty of Sciences, Porto University, Portugal, reference TB 11.

REMARKS

A literature survey showed that a trypanosome with the characteristics reported above was not previously described.

The present form is quite different from all the trypanosome species described from tropical regions. The principal distinctive feature is its small body length, which never exceeds 20.0 μ m. This value of body length is lower than the lowest one reported for pleomorphic trypanosomes of freshwater fishes from the tropics. Therefore, it is unlikely that our specimens could represent the initial period of infection by a pleomorphic species. The different intensity of infections indicates that at least two different phases of the development in the host were observed, thus supporting the monomorphism of the species.

Ribeiro et al. (1978) described *T. lopesi* from the same host, fished from the Paracatu river (Municipality of Brasilândia, MG). Despite the same host, the identity of the two forms can not be claimed because *T. lopesi* has a greater body length (23.6 μ m – 40.3 μ m), a wider body (2.0 μ m – 2.0 μ m) and a longer (2.9 μ m – 4.0 μ m) and narrower (1.0 μ m – 1.6 μ m) nucleus. On the other hand, it is important to state that there is not overlapping between the range of variation of these characteristics concerning the specimens of Ribeiro et al. (1978) and our own.

We are aware that morphological features alone, especially of such small populations as we have, are generally unsatisfactory criteria for designation of new species. Nevertheless, the structural differences between our specimens and other trypanosome species are considered sufficient justification to designate *T. nupelianus* sp. n. as a distinct entity.

REFERENCE

- RIBEIRO, R. D.; SATAKE, T; NUTI-SOBRINHO, A.; BRETENGANI, L. G. & LOPES, R. A., 1978. New trypanosome species from Acari *Rhinelepis aspera* Agassiz, 1829 (Pisces, Loricariidae). *Mem. Inst. Oswaldo Cruz*, 82 (Suppl): 37.