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Fish parasitology

**TRYPANOSOMA ARABICA SP. N. FROM THE FRESHWATER FISH
SILURUS TRIOSTEGUS HECKEL IN IRAQ^x**

**TRYPANOSOMA ARABICA SP. N. ZE SŁODKOWODNEGO SUMA
SILURUS TRIOSTEGUS HECKEL W IRAKU**

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A new species of trypanosome from heart blood flim of *Silurus triostegus* Heckel is found. It is one of four species recorded and described from Al-Hammar marsh, North West of Basrah City. Comparison between the newly found species and that of the exiting species is given.

The newly found trypanosome is denoted as *Trypanosoma arabica* sp. n. It is the first trypanosome to be recorded and described from the family *Siluridae* in Iraq.

INTRODUCTION

Trypanosomes were common in both marine and freshwater fishes (Hoffman, 1970; Kudo, 1971; Duijn, 1973; Al-Salim, 1980). Few new species of trypanosome has been recorded and described in Iraq (Warsi and Fattohy, 1976; Fattoy, 1978; Aljaffry and Rahemo, 1982; Al-Salim, 1985; Al-Jaffry, et al, 1988; Al-Salim and Al-Daraji, in press).

The present paper described a new species of trypanosome, *Trypanosoma arabica* sp. n. from the heart blood smear of a freshwater fish *Silurus triostegus* Heckel, 1843 collected from Al-Hammar marsh, North West of Basrah City. It is the first trypanosome to be recorded from family *Siluridae* in Iraq.

^xThis work is a part of M. Sc. thesis which was presented by the second auther to the University of Basrah, 1986.

MATERIALS AND METHODS

A total of 290 fish of five species (87 *Barbus luteus* (Heckel, 1843); 56 *Aspius vorax* Heckel, 1843; 42 *Silurus triostegus* Heckel, 1843; 70 *Barbus sharpeyi* Gunther, 1874 and 35 *Liza abu* Heckel, 1843) were collected by seining and transported alive before examination. Fish were measured, sexed and thin blood smears were made from each fish. Blood were taken directly from the heart, blood smears were air dried, fixed in absolute alcohol, stained in Giemsa's stain, dried again and mounted in D.P.X. Measurements were made by ocular lense micrometer under oil immersion objective. Photographs were taken by the aid of a photomicroscope.

RESULTS

A *Silurus triostegus* caught on November 1984 from Al-Hammer marsh was found infected with one organism of trypanosome.

Diagnosis: Monomorphic organism, C-shaped; body was elongated and big comparing with the other monomorphic species; flagellum relatively short; kinetoplast oval, relatively small; nucleus reniform; cytoplasm granular, staining bluish-white, darker at both sides of body and vacuolated; undulating membrane present; light infection.

Host: *Silurus triostegus* Heckel, 1843.,

Location: Blood plasma.

Locality: Al-Hammar marsh, North west of Basrah City.

Type material: One slide with the second author.

The measurements in microne of one organism (Plate 1):

The total length including the free part of the flagellum 48.75μ ; body length 39μ body width at the center of the nucleus 2.4μ length of the free part of the flagellum 9.75μ ; nucleus is well developed, occupies the entire width of the parasite, reniform, stains dark pink in Giemsa's stain, its length 4.5μ and width 2.4μ ; distance from the nucleus to kinetoplast 16.45μ ; kinetoplast oval, its length 1.35μ , and width 0.9μ and far from the posterior extremity by 1 nuclear index (posterior extremity-anterior extremity), 1.19μ ; cytoplasm stains bluish-white in Giemsa's stain, contains granules of different sizes and two large vacuoles, one of them located anterior to the nucleus and the other posterior, it contains few small vacuoles distributed over all the body and contains no myonemes; undulating membrane is well developed and generally lies around the outer margin and have eight undulation.

DISCUSSION

Traditionally, new species of piscine trypanosomes were proposed on the basis of host (Lima, 1976; Mandal, 1975, 1977). Backer (1967) mentioned that the identification of trypanosomes from fish involves the host and its geographical location.

In mansural analysis the present parasit does not seem to resemble any of the known silurid trypanosomes or trypanosomes from other fish families.

The present parasite differs from the Asian species *T. clariae var parva* and *T. clariae var magna* described by Laveran and Mesnil (1912) from *Clariae macrocephalus*, the present type is intermediat in size between the two varieties.

The present parasite differs from *T. gachuii* reported by Misra et al. (1973) in its body length, free part of flagellum and it is monographic while *T. gachuii* dimorphic.

The only known species recorded from the catfish in Iraq was *T. mystuii* from the freshwater fish *Mystus pelusius* (Family: *Bagridae*) which was found by Al-Jaffery and Rahemo (1982). The present parasite differs from *T. mystuii* in several respects, such as monomorphism, its short flagellum, body length, host species and family.

In Iraq few monomorphic trypanosomes were found, *T. acanthobramae* from *Acanthobrama marmid* found by Warsi and Fattohy (1976) and *T. basrensis* from *Aspius vorax* found by Al-Salim and Al-Daraji (in press). The present parasite differs from both of them by its measurements, the location of the nucleus, length of the free part of the flagellum and host species as shown in Table 1.

It seems clear from the above comparison that no known trypanosome similar to the present form. It is therefore named as *Trypanosoma arabica sp. n.* having the characteristics given before.

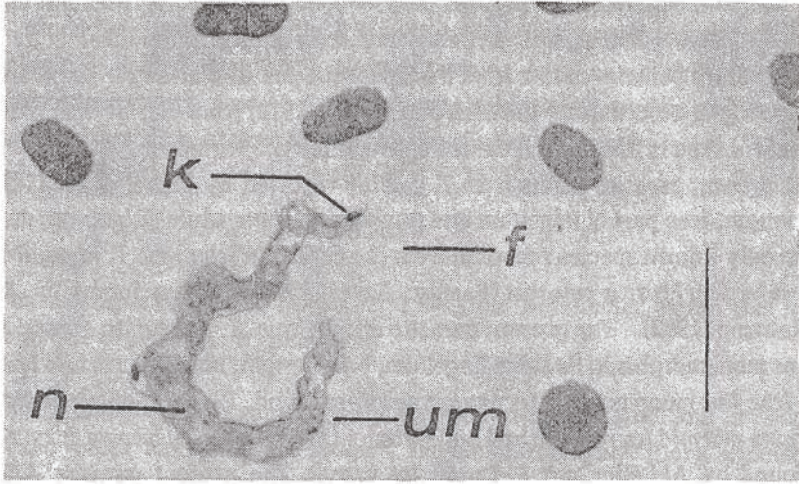
Table 1

Average measurements of *T. acanthobramae*, *T. basrensis* and *T. arabica*

	<i>T. acanthobramae</i>	<i>T. basrensis</i>	<i>T. arabica</i>
Body length	25.89	21.98	39
The free part of flagellum	20.37	14.59	9.75
Nucleus length	5.01	2.55	4.5
Nucleus width	2.71	0.85	2.4
Distance from nucleus to kinetoplast	7.6	10.68	16.45
Nuclear index	0.87	0.89	1.19
Fish host	<i>Acanthobrama marmid</i>	<i>Aspius vorax</i>	<i>Silurus triostegus</i>

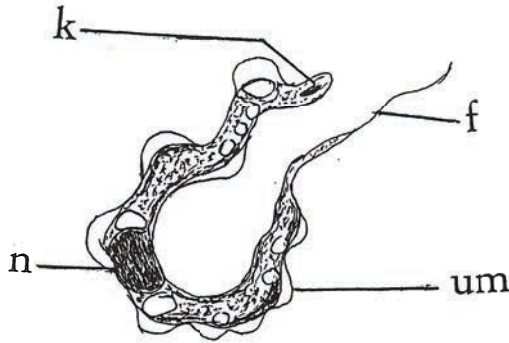
ACKNOWLEDGMENT

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Phot. 1. Photomicrograph of *Trypanosoma arabica* sp. n. from the heart blood of a freshwater fish, *Silurus triostegus* Heckel, 1843
 k - Kinetoplast um - Undulating membrane
 n - Nucleus f - Flagellum

Scale bar = 10 μ m



Phot. 2. *Trypanosoma arabica* sp. n. from the heart blood of a freshwater fish, *Silurus triostegus* Heckel, 1843

k - Kinetoplast um - Undulating membrane
 n - Nucleus f - Flagellum

Scale bar = 10 μ m.

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HECKEL W IRAKU

STRESZCZENIE

Nowy gatunek trypanosomy *Trypanosoma arabica* sp. n. został znaleziony we krwi sumy *Silurus triostegus* Heckel, na bagnach Al Hammar na półn. zach. od miasta Basrah. Jest to pierwszy przypadek znalezienia trypanosomy u sumów w Iraku.

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