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Occurrence of *Trypanosoma* sp. in wild African sharptooth catfish (*Clarias gariepinus* Burchell, 1822) in the River Asi (north-eastern Mediterranean), Turkey

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Abstract: Fifteen African sharptooth catfish (*Clarias gariepinus* Burchell, 1822) were collected from the River Asi (River Orontes) in Antakya (Hatay, Turkey) in November 2007, and fish blood samples were examined for the presence of blood parasites. The existence of infection with *Trypanosoma* (hemoparasite) was identified in 13 out of the 15 fish specimens. Currently there are no records of the presence of any species of *Trypanosoma* infecting *Clarias gariepinus* in Anatolia. Thus this study is the first report of *Trypanosoma* sp. infections in *Clarias gariepinus* in Turkey.

Key words: *Trypanosoma*, *Clarias gariepinus*, Asi River, Hatay, Turkey

Asi Nehri (Kuzeydoğu Akdeniz, Türkiye) karabalıkları (*Clarias gariepinus* Burchell, 1822)'nda rastlanılan kan paraziti, *Trypanosoma* sp.

Özet: Asi Nehri'nden Kasım 2007'de elde edilen 15 adet karabalık, kan paraziti varlığı yönünden incelenmiştir. 15 balığın 13 adedinde hemoparazit *Trypanosoma* sp. varlığına rastlanılmıştır. Anadolu'dan *Clarias gariepinus* için *Trypanosoma* enfeksiyonu daha önce bildirilmediğinden, bu çalışma ile ilk kez Asi Nehri karabalıklarında *Trypanosoma* sp.'nin varlığı bildirilmiştir.

Anahtar sözcükler: *Trypanosoma*, *Clarias gariepinus*, Asi Nehri, Hatay, Türkiye

African sharptooth catfish are widely distributed throughout Africa, inhabiting tropical swamps, lakes, and rivers (Olufemi et al., 1991). They also occur in Asia Minor (Israel, Syria, and south of Turkey) and were widely introduced into other parts of Africa,

Europe, and Asia. *Clarias gariepinus* Burchell, 1822 is considered one of the best examples of an omnivore (Holden and Reed, 1972; Clay, 1979) or predator feeding mainly on aquatic insects, fish, and higher plant debris (Micha, 1973; Bruton, 1979). *Clarias*

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gariepinus is also generally considered one of the most important tropical catfish species for aquaculture. However, several countries (in Europe) have reported adverse ecological impact after the introduction of *C. gariepinus* (Teugels, 1986; Robins et al., 1991).

Trypanosoma (haemoflagellate), as a piscine haemoparasite (Paperna, 1996), has been reported in all major water systems of Africa (Dias, 1952; Baker, 1961) in some fish hosts including *Clarias gariepinus* (Hassan et al., 2007). Paperna (1996) reported that piscine haemoflagellates swim freely in the blood.

Some species of trypanosomes (common transmission via leeches) have been found in South Africa and Egypt in freshwater fishes (Smit et al., 2000; Smit et al., 2004) including *Clarias gariepinus*.

To the authors' knowledge there are no records of any species of *Trypanosoma* infecting *C. gariepinus* in Turkey. Therefore, in the present study we seek to clarify the status of trypanosomiasis in *C. gariepinus* in the River Asi in Turkey.

Collecting site and blood smears examination

This study was performed in the River Asi (River Orontes) in Antakya (Turkey). The River Asi nears the city of Baalbek, Lebanon, and flows in a northerly direction between the Lebanon and Anti-Lebanon mountains into Syria. It flows north to the city of Antakya, Turkey, and then west to the Mediterranean Sea, through a total of about 400 km (Genç et al., 2008).

Fish samples were collected from the River Asi (Orontes) in (36°12'35"N, 36°09'43"E) Hatay (Turkey) during November 2007 and transported live to the laboratory. All fish were measured (digital scale with an accuracy of ± 0.1 g -live weight: W- and by millimetric ruler -total length; mm- respectively) by over-anaesthetisation in an aerated water bath containing 35 mg/L Quinaldine Sulphate (Sigma Chem. Comp., Germany) (Yanar and Genç, 2004). Blood was collected by cardiac puncture using 2 mL non-heparinised syringes.

In brief, the heart blood smears were air dried, fixed in absolute methanol for 5 min, and stained in diluted Giemsa (1/20 in pH 6.7-7.1 phosphate buffer) for 20 min (NCCLS, 2000; Garcia, 2001). Haemoparasites were observed with the aid of a compound microscope (Olympus CH40) using a 100 \times objective with oil immersion and images were captured by digital camera (Samsung E250). Giemsa-stained blood films from the trypomastigotes were identified from morphological characteristics of haemoparasites (Paperna, 1996; NCCLS, 2000; Smit et al 2004).

In total 15 wild African sharptooth catfish (W = 92.51 ± 50.74 g, TL = 24.22 ± 4.01 cm) were used for the haemoparasite examination. The one species of haemoflagellate was found in 13 (Wi = 85.15 ± 49.78 g, TLi = 23.7 ± 4.01 cm) out of the 15 (Wn-I = 140.35 ± 32.17 g, TLn-I = 27.6 ± 2.26 cm) fish specimens. From the morphology of the blood protozoan, it was classified and identified as a *Trypanosoma* sp. (pathogenic haemoparasite: haemoflagellate) (Figure).

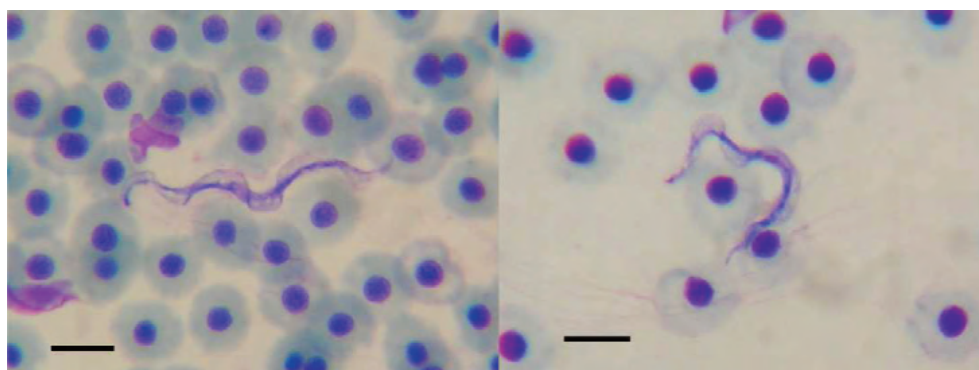


Figure. *Trypanosoma* sp. as seen in blood smears of *Clarias gariepinus*, Scale bar: 10 μ m.

Fish trypanosomes have been reported from different locations in the world (Baker, 1961; Teugels, 1986; Smit et al., 2000; Smit et al., 2004; Hassan et al., 2007) including *Clarias* sp. There was no record of the presence of any species of *Trypanosoma* in *Clarias gariepinus* in Turkey. Thus this is the first case report on the presence of *Trypanosoma* in wild African sharp-tooth catfish in the River Asi in Turkey.

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