

First record of *Trichophrya intermedia* Prost, 1952 (Ciliophora, Suctorina) in Iraq from the Mugilid fish *Planiliza abu*

Akeel Mohammad Kadim Al-Musawi

College of Veterinary Medicine, Al-Qasim Green University, Babylon province, Al-Qasim
Municipality

akeelmohammad84@yahoo.com

Keywords: *Trichophrya intermedia*, Protozoa, Suctorina, *Planiliza abu*. Iraq

Abstract

During the period from April 2016 till the end of July 2016, a total of 39 fish specimens belonging to *Planiliza abu* from the Babil drainage network Babylon province, were examined for parasites at laboratory at the College of Veterinary Medicine, Al-Qasim Green University. *Trichophrya intermedia* Prost, 1952 was recorded for the first time in Iraq from the skin and gills of *P. abu*. The description and measurements of this parasite were given. With the present record, number of *Trichophrya* species reached now three species in fishes of Iraq.

Introduction

Suctorians are a peculiar group of carnivorous or parasitic ciliates [1]. These ciliophorans have suctorial tentacles, which are used to feed on plankton and other ciliates in the water and on fish mucus and epithelial cells. *Trichophrya* species are horizontally transmitted from fish to fish. Water with high organic loads favors growth of these organisms [2]. Suctorians family has one or sometimes two or three bundles of suctorial organelles in the attachment surface [3]. The majority of these ciliophorans are commensals of various aquatic invertebrates or vertebrates [4]. *Trichophrya* species are sessile ciliophorans that attach to the host's gills with a sucker [5]. Some scientists consider *Trichophrya* species to be commensals and others view them as parasites that can stress fishes and cause mortality when present in large numbers [6]. *Trichophrya intermedia* was firstly described from *Salmo salar* in Poland by [7] [8 as well found *T.*

intermedia from *Silurus glanis*, *Salmo trutta*, *Perca fluviatilis*, *Lucioperca lucioperca* and *Coregonus albula* in Czechoslovakia. Also, [9] found *T. intermedia* from *Coregonus lavaretus* in the Leningrad district. [10] found *T. intermedia* in fry of *Esox* in Kujbysev reservoir in USSR. [11] found it in three fish species: *C. albula*, *Perca fluviatilis* and *Esox lucius* in several Mazury lakes in Poland. [12] found it on gill of rainbow trout *Oncorhynchus mykiss* in Holland. In Iraq, two species of the genus *Trichophrya* were previously reported, namely: *Trichophrya sinensis* Chen, 1955 which was reported by [13] and *Trichophrya piscium* Bütschli, 1889 which was reported by [14].

Materials and Methods

A total of 39 *P. abu* freshwater fish was collected from Babil drainage network (south of Babylon province). during the period from April 2016 till the end of July 2016. The collected fishes were transported to the laboratory in tank with good aeration. In a laboratory at the College of Veterinary Medicine, Al-Qasim Green university, the collected fishes (*Planiliza abu*) skin, fins and gills were firstly examined by the naked eye for detection of any macroscopically visible lesions. Samples of mucus were scraped gently from the skin, fins and gills, then spread on a clean slide and freshly examined under phase-contrast microscope for the presence of ectoparasitic ciliophorans. Parasite photography was done by a microscope camera. Parasites identification was done according to reference [11].

Results and Discussion

The inspection of the fishes revealed the occurrence of *Trichophrya intermedia* from skin and gills of the mugilid fish *P. abu* for the first time in Iraq. The following is the classification of this parasite

Kingdom Chromista

Phylum Ciliophora

Class Phyllopharyngea

Subclass Suctoria

Order Endogenida

Family Trichophryidae

Species *Trichophrya intermedia* Prost, 1952

This parasite was found in seven fish of the total fishes examined. So, the percentage of infection was 17%. Body shape irregular, it is ovoid, often pear-shaped, the anterior body end is rounded, the posterior one is of variable shapes depending on the place of localization. Body length 56-113 μ . Body width 27-76 μ , number of tentacles on anterior end 16-28, number of tentacles on posterior end 6-10, dimensions of macronucleus 24-44 μ and dimensions of micronucleus 4-5 μ (Figure 1). The measurements of the present parasite are in agreement with those of the holotype of *T. intermedia* given by [11] .

The information on the occurrence of *T. intermedia* and records of new hosts for these parasites were checked with the index-catalogue of parasites and disease agents of fishes of Iraq [12] (Mhaisen, 2018). Previously, two species of *Trichophrya* were reported from fishes of Iraq which were *T. sinensis* and *T. piscium* by [13] and [14], respectively. So, the present record of *T. intermedia* represents the third record of *Trichophrya* species from fishes of Iraq with *P. abu* as the host for two of them: *T. intermedia* and *T. sinensis*. More surveys in the future might result in record of more other species of this genus and/ or more hosts for such parasites in Iraq.

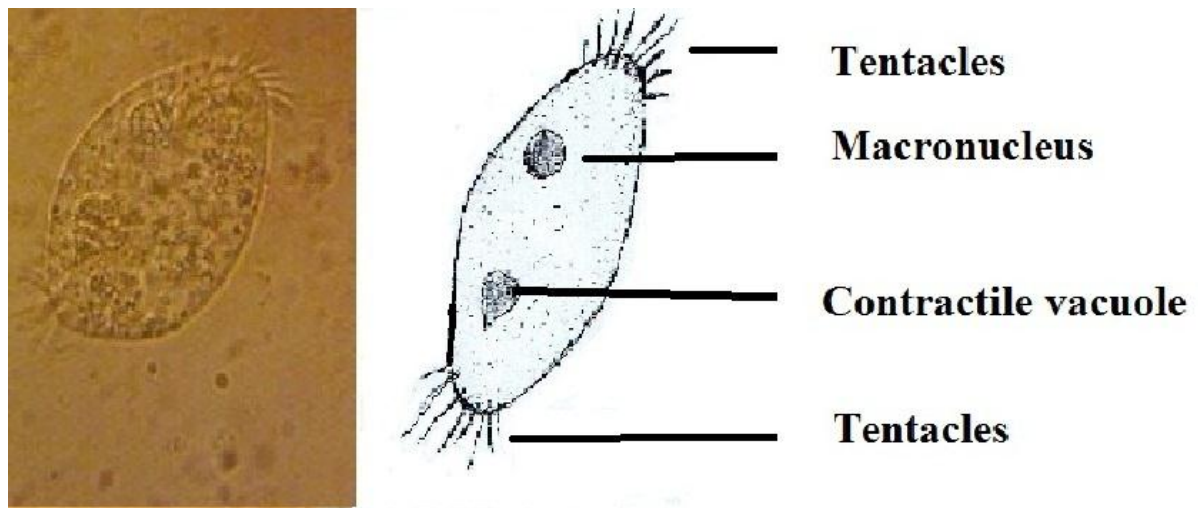


Figure 1: Photomicrograph and camera Lucida drawing of *T. intermedia*.

References

- [1] I. V. Dovgal, (2002). Evolution, phylogeny and classification of Suctorea (Ciliophora). *Protistology*, 2 (4): 194-270
- [2] T. R. Meyers,; Burton, T.; Bentz, C. and Starkey, N. (2008). Common diseases of wild and cultured fishes in Alaska. Commercial Fisheries Division, Alaska. Department of Fish and Game, Anchorage, AK.
- [3] L. Basson, and J. G. Van As, (2006). Trichodinidae and other ciliophorans (Phylum Ciliophora), in: Woo, P. T. K. (Ed.) *Fish diseases and disorders: 1. Protozoan and metazoan infections* Second Edition. CAB International, Wallingford: 154-182.
- [4] I.V. Dovgal, (2013). Fauna of Ukraine: in 40 volumes Vol. 36: Ciliates - Ciliophora. Issue 1: Class Suctorea. Naukova dumka, Kiev, 267 pp.
- [5] Klinger, R. E. and Francis-Floyd, R. (2002). Introduction to freshwater fish parasites, CIR, 716: Institute of Food and Agricultural Sciences, University of Florida. Available from: <http://edis.ifas.ufl.edu/pdf/FA/FA04100.pdf>.
- [6] R. M. Durborow, (2003). Protozoan Parasites. Southern Regional Aquaculture Center Publ. Vol. 4701.
- [7] M. Prost, (1952). Investigations on parasitic protozoa on the gills of fishes. I. *Trichophrya intermedia* sp. n. on the gills of salmon fry. *Annales Universitatis Mariae Curie-Sklodowska*, 6(2): 376-386. (in Polish).
- [8] J. Lom, (1961). Protozoan parasites found in Czech fishes I. Myxosporidia, Suctoria. *Zoologicke Listy*, 10: 45-58
- [9] E. A. Bogdanova, (1962). Sosuscie infuzorii roda *Trichophrya* kak vzbuditeli massovykh zabolevanij ryb. *Naucno-Techn. Bjul. GosNIORH* 16: 64-67.
- [10] O. D. Ljubarskaja, (1963). Dinamika parazitofauny rtiolodi śćuki Volzskogo otroga Kujbysevskogo vodohranilisca. *Sb. aspirantsk. rabot Kazansk. univ., estestv. nauki* 54-61.
- [11] J. Kozicka, (1966). Remarks on feeding and pathogeny of *Trichophrya* (Suctoria). *Acta Protozoology*, 4(2) IV, Fasc:269-277.
- [12] P. H. M. Balm,; T. R. Carrick,; A. J. M. Coenen, and T. G. Pottinger, (1996). *Trichophrya intermedia* on the gills of rainbow trout acclimating to low ambient pH. *Journal of Fish Biology*, 48: 147-150.
- [13] A. M. K. Al-Musawi, and A. L. Al-Rubaie, (2017). First record of *Trichophrya sinensis* Chen, 1955 (Ciliophora, Phyllopharyng-ea, Endogenida) in Iraq from the mugilid fish *Planiliza abu*. *Euphrates Journal of Agriculture Science (Second Veterinary Conference)*: 748-751.
- [14] A. H. Al-Duboon, and M. A. Disher, (2018). First incidence of the ciliophoran freshwater fish pathogen *Trichophrya piscium* Bütschli, 1899 as a human pathogen in Basrah, Iraq. *Biological and Applied Environmental Research*, 2 (2): In press.
- [15] F. T. Mhaisen, (2018). Index-catalogue of parasites and disease agents of fishes of Iraq. (Unpublished: mhaisenft@yahoo.co.uk).

التسجيل الأول لطفيلي *Trichophrya intermedia* Prost, 1952 (حاملات الأهداب،
الممصيات) في العراق من سمكة الخشني

عقيل محمد كاظم الموسوي
كلية الطب البيطري، جامعة القاسم الخضراء
محافظة بابل، قضاء القاسم

الخلاصة

خلال المدة من شهر نيسان ٢٠١٦ ولغاية نهاية شهر تموز ٢٠١٦ فحصت 39 سمكة خشني *Planiliza abu* من شبكة ميازل محافظة بابل، تم فحص الأسماك بحثاً عن الطفيليات في مختبر كلية الطب البيطري في جامعة القاسم الخضراء. تم تسجيل نوع من الجنس *Trichophrya* لأول مرة في العراق وهو *T. intermedia* من جلد وغلاصم سمكة الخشني *P. abu*. أعطيت مواصفات وقياسات الطفيلي. بهذا التسجيل الحالي، وصل الآن عدد أنواع الجنس *Trichophrya* في أسماك العراق إلى ثلاثة أنواع.
الكلمات المفتاحية: ترايكوفريا إنترميديا، حاملات الأهداب، مصصيات، سمكة الخشني، العراق.