

First Record of *Tripartiella rhombi* Shtein, 1961 (Ciliophora: Trichodinidae) in Iraq from Gills of the Common Carp *Cyprinus Carpio*

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Abstract:

The examination of gills of the *Cyprinus carpio* Linnaeus, 1758 which were placid from Al-Graiat location on the Tigris river at Baghdad province during the period from July 2015 until the end of March 2016, caused recording of the ciliophoran *Tripartiella rhombi* Shtein, 1961 for the first time in Iraq. The explanation and measurements of this parasite as well as its illustrations were given. With this record, two of *Tripartiella* species so far recorded from *C. carpio* as well as of all other Iraqi fishes.

Key words: Ciliophora, *Tripartiella rhombi*, *Cyprinus Carpio*, Tigris River, Baghdad.

أول تسجيل للطفيلي *Tripartiella rhombi* Shtein, 1961 (شعبة حاملات الأهداب:

عائلة ترايكودينيدي) في العراق من غلاصم أسماك الكارب الإعتيادي *Cyprinus Carpio*

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المستخلص:

أظهر فحص غلاصم أسماك الكارب الإعتيادي *Cyprinus carpio* Linnaeus, 1758 التي اخذت

من موقع الكريعات على نهر دجلة في مدينة بغداد خلال المدة من بداية شهر تموز 2015 وحتى نهاية آذار 2016 وجود الطفيلي حامل الأهداب *Tripartiella rhombi* Shtein, 1961 لأول مرة في العراق.

اعطيت مواصفات وقياسات هذا الطفيلي فضلا عن الرسم التوضيحي له.

البحث مستل من رسالة ماجستير للباحث الثاني

Introduction:

Trichodinid ciliophorans which parasitize or are aquatic invertebrate and vertebrate hosts are a widely distributed group of ciliated ectoparasites of mollusks, fishes and (9,11). The ciliates of this family are designated by proteinaceous cytoskeleton of the adhesive disc which have of a ring of hollow conical elements, recognized as denticles, which contain of three distinct regions: the distal blade, a central part and a

proximal ray. The denticles are injected into each other subsequent by a ring of fine skeletal rods, named radial pins. The disc is enclosed by border membrane, stable by fine skeletal rays looking as fine striations. The locomotory organelle contains a compound wreath of oblique ciliary rows (3,5). Today, more than 300 of trichodinid ciliophoran species, representing 11 genera have been described from the gills, skin, fins, urinary bladder as well as reproductive system of different fish species (1), one of these ciliophoran genera is the genus *Tripartiella* Lom, 1959, which are small trichodinids have hemispherical bodies. The delicate central part of the denticle allows a straight ray, heading for backwards in most cases. The blades are oblique more or less obliquely backwards their narrow bases, by which they joint the central parts of the denticles, spread out anteriorly in projections, which may be short. These projections fitting well into the corresponding notch in the preceding denticle (2).

Up to now, there is only one *Tripartiella* species reported in Iraq, which is *T. amurensis* on gills of *Cyprinus carpio* (7). So, the present paper papers the first record in Iraq of *Tripartiella rhombi* Shtein, 1961 from gills of *the Cyprinus carpio* from Al-Graiat location on in the Tigris river at Baghdad city.

Materials and Methods

A total of 42 specimens of the *Cyprinus carpio* were taken weekly from Tigris river at Baghdad city close Al-Graiat location throughout the period from July 2015 until the end of March 2016. Fishes were brought alive to the laboratory where smears were destined from skin, fins and gills, and then these smears were microscopically observed for the presence of trichodinids. Smears containing trichodinids were air-dried, fixed with absolute methanol and stained with Giemsa stain agreement with the method planned by Shuaib and Osman (10).

The systematic descriptions used in the present study were established on the comments of living as well as Giemsa stained specimens. Method of measurements and the terminology of *Trichodina* were mainly made as said by Van As and Basson (11). The detailing of denticle elements is presented in conformity with the method planned by Basson and Van As (2). Drawings were done by using a camera Lucida. The mean values of all measurements used in this paper used in the report are in the following arrangement: minimum- maximum (mean) values. The scientific name of the host fish was used agree to Eschmeyer (6). The information on the previous account records of trichodinids of fishes of Iraq were reviewed with the index-catalogue of parasites and disease agents of fishes of Iraq by Mhaisen (8).

Results and Discussion:

Tripartiella rhombus was gained from gills of *Cyprinus carpio* with a prevalence of 7.1 % and a mean intensity of 2. The following is an account on the characterization and measurements (in μm , based on five specimens) of this parasite as shown in Fig. (1).

***Tripartiella rhombi* Shtein, 1961**

Small-sized trichodinid, 27.3-29.3 (28.3) in diameter. Number of radial pins per denticle 3-4. Diameter of denticle ring 16.7-19.3 (18.1). Number of denticles 21-22 (mostly 22), length of blade 1.9-2.3 (2.1), length of ray 2.3-2.6 (2.4). External diameter of macronucleus 13.3-14.5 (14.1) and the distance between ends 8.5-8.9 (8.7). Width of central part 1.1-1.46 (1.28). Adhesive disc 23.4-24.2 (23.8) in diameter which is enclosed by finely striated border membrane, 1.2-1.4 (1.3) wide.

Blade thin and rounded spreading beside the axis y axes, tangent point located higher than distal surface of blade, anterior margin and arc-shape with clear apex, the posterior margin with narrow curve and the deepest point located at the central of this curve. Central part triangular and tapered to the sharp point spreads last Y-1 axes. Ray is long and straight spreads directly from central parts, almost in straight line with y axis and tapered gradually to the sharp point. The ray contact area of the central part is a distance of the contact area of the blade to the central part (Fig. 1).

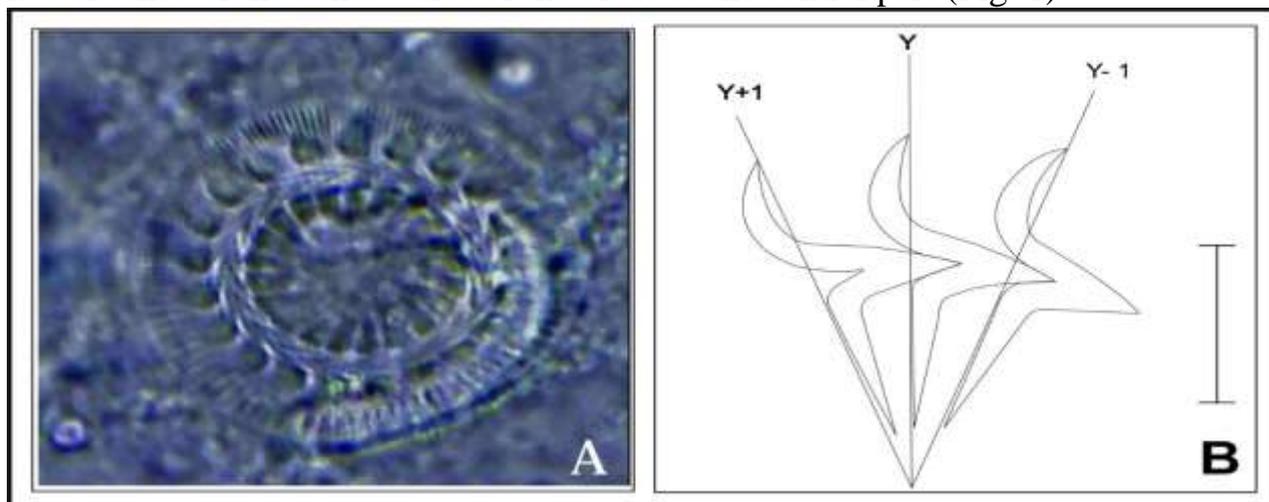


Figure 1: *Trichodina urinaria*

A- Photomicrograph (400 x); B- Diagrammatic drawing. (Scale bar = 2.8 μ m).

The description and measurements of the present *Tripartiella rhombi* are in concord with those described by Bykhovskaya-Pavlovskaya *et al.* (4) from gills of Turbot fish which are dispersed in Baltic Sea. No research has been undertaken on *Tripartiella* in Iraq except for the one record of *T. amurensis* (Chan, 1961) on gills of *C. carpio* in Al-Shark Al-Awsat fish farm from Babylon province (7). Agreeing to the index-catalogue of parasites and disease agents of fishes of Iraq (8), the present record of *T. rhombi* represents its first in Iraq as no previous record was given for this parasite from fishes of Iraq. So, *a T. rhombus* is now considered as the second species of the genus *Tripartiella* to be reported from *C. carpio* and from all fishes of Iraq.

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