

## ***DACTYLOGYRUS SCRJABINENSIS* (MONOGENEA: DACTYLOGYRIDE): FIRST OCCURRENCE ON THE GILLS OF *CAPOETA TRUTTA* FROM IRAQ**

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(Accepted for publication: December 22, 2014)

### **Abstract:**

The monogenean *Dactylogyrus scrjabinensis* Osmanov, 1958 was identified on the gills of the cyprinid fish *Capoeta trutta* (Heckel, 1843) from Sirwan river, southeast of Sulaimani governorate, Kurdistan region, during the period from April to August 2014, in the present study for the first time in Iraq. The full details of description and measurements of this parasite are given. The prevalence and intensity of infection were 3.94% and 3.66 respectively.

**Keyword:** *Dactylogyrus scrjabinensis*, *Capoeta trutta*, Sirwan river, Iraq.

### **Introduction**

The importance of fish parasites is directly related to the importance of fish that they affect (Hoffman, 1967). Monogenea are hermaphroditic, direct life cycle, generally permanent ectoparasites on body surface or gills of marine, brackishwater, or freshwater fishes, attached by posterior adhesive organ (Margolis and Kabata, 1984). The genus *Dactylogyrus* is the largest helminthes genus, with more than 900 species and generally has high host specificity (Neary *et al.*, 2012). Most *Dactylogyrus* species parasitize cyprinids although certain species are adapted to the more advanced fish families. Furthermore, commercial and aquaculture exploitation of cyprinids caused examination of these species for potential pathogens (Gibson *et al.*, 1996).

A major identifying characteristic of monogenean parasite is their haptor attachment, anchors, number of hooks, copulatory organ, gonads and four eye spots. These characters exhibit a range of intraspecific genetic or phenetic variation (Harris 1988). The first information on genus *Dactylogyrus* from the Iraqi freshwater fish was given by Ali *et al.* (1986), who recorded *D. cornu* from six species of fishes from Diyala river, southeast of Baghdad.

In the present study, we have described and reported the occurrence of *D. scrjabinensis* from the gills of cyprinid fish *C. trutta* in Sirwan river, Kurdistan region, Iraq.

### **Materials and Methods**

**Study area:** Sirwan basin situated between latitudes of 35° 05' and 35° 10' and between longitudes 45° 50' and 46° 05', it represents a boundary of Iraq- Iran at the northern east of Iraq. The basin bounded by Biyara watershed at the north and west, by Darbandikhan lake from the south and by Iran from the east. It's located within high folded and thrust zones, there were many mountains and valleys in this area especially in Hawraman area. Sirwan river stream is a perennial main stream which supply water to Darbandikhan lake. The main part of the area of this basin lies inside Iran (Barzinji, 2013).

**Sampling:** A total of 76 *Capoeta trutta* were collected from Sirwan river near Halabja city by local fishermen using gill netting twice monthly during the period from April to August 2014. The fishes were placed in a container with the local river water, and transferred immediately to the laboratory as soon as possible and were examined. The fishes were identified according to Coad (2010).

In the laboratory, gills of fishes were placed in a separate Petri dish with only small amount of tap water. Pieces of gill filaments were tiered by a fine needle. Worms (after leaving the gills) were removed from the water by a small pipette and placed on a slide, with a few drops of water. They were covered with a cover slip with glycerin-gelatin. A piece of melted glycerin-gelatin was dropped with cover slip onto the worms. The cover slip was dried by a blotting paper carefully, and the worms in glycerin-gelatin are cautiously thickened (Kritsky *et al.*, 2004). Smears from the skin were taken by slide

scraping and examined directly under the microscope. The measurement of worms was achieved by ocular micrometer. The parasite identification and the terms used were as recommended by Bykhovskay-Pavlovskay *et al.* (1962); Gussev *et al.* (1993); Pugachev *et al.* (2010). Photos were taken with Sony Optical Steady Shot Digital camera model DSC-W570, 16.1 mega pixels.

### Results and Discussion

The survey showed the occurrence of one monogenean belonging to the genus *Dactylogyrus*. The following is a brief account on this parasite.

*Dactylogyrus skrjabinensis* Osmanov, 1958 (Fig. 1):

**Host:** *Capoeta trutta* (Heckel, 1843)

**Site infection:** Gill filaments

**Prevalence of infection:** 3.94%

**Mean intensity of infection:** 3.66

**Locality:** Sirwan river, southeast of Sulaimani governorate, Kurdistan region, Iraq.

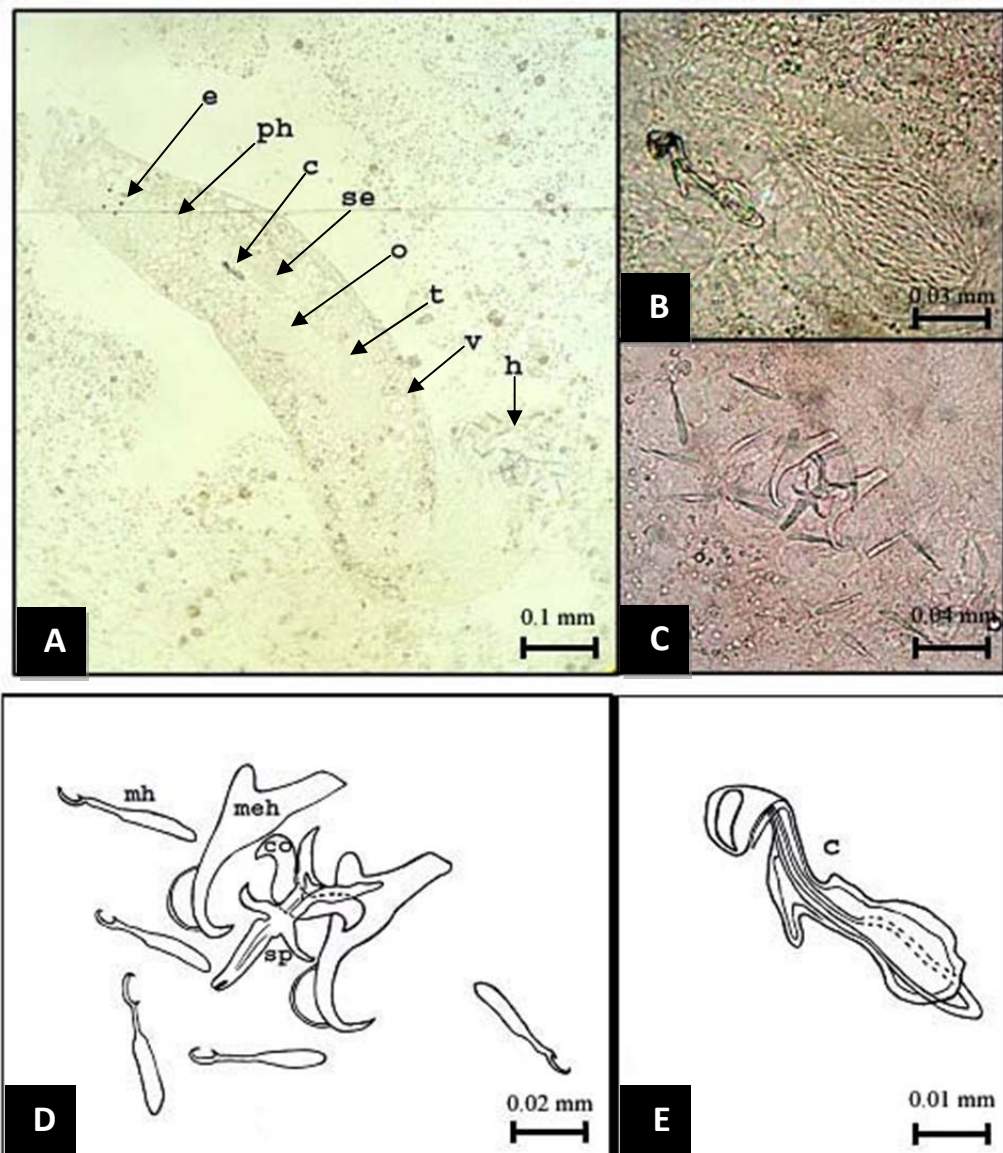
**Description:** worms small or medium. Total length about 0.7-0.8 mm, width 0.10-0.15 mm. Length of marginal hooks 0.030-0.035 mm. Length of median hooks 0.050-0.060 mm, main part 0.035- 0.040 mm, inner root 0.025-0.030

mm, outer root 0.005-0.008 mm, point 0.15-0.020 mm. Size of connecting bar 0.008-0.012 x 0.035-0.045 mm. Size of supplementary bar 0.030-0.034 x 0.050-0.054 mm. Total length of copulatory organ 0.060-0.065 mm.

The description and measurement of the present specimen are similar to those reported by Bykhovskay-Pavlovskay *et al.* (1962) and Pugachev *et al.* (2010) for *D. skrjabinensis* in which found on gill filaments of Aral barbel from Amu-Darya river in Russia and on gill filaments of *Luciobarbus brachycephalus* from Central Asia respectively. Also, this monogenean was recorded on the gills of *Barbus barbulus* and *Capoeta capoeta* from Armand river, Chaharmahal va Bakhtyari province, Iran (Raissy and Ansari, 2012).

This parasite was never been reported from any fish species in Iraq before. Therefore, the present parasite is considered as the first record in Iraq.

By recording this species of *Dactylogyrus* (*D. skrjabinensis*) in the present study, a total of 78 species of *Dactylogyrus* become known from different species of fishes in Iraq. Among this number, 48 species were recorded in Kurdistan Region and most of them were found on gills of cyprinid fishes (Mhaisen, 2014).



**Fig. (1):** *Dactylogyrus skrjabensis*

**A-** Photomicrograph of the worm

**B-** Photomicrograph of the copulatory organ

**C-** Photomicrograph of the haptor

**D-** Camera lucida drawing of the haptor

**E-** Camera lucida drawing of the copulatory organ

c= copulatory organ; co= connecting bar; e= eye spot; ha= haptor; meh= median hook; mh= marginal hook; o= ovary; ph= pharynx; se= seminal vesicle; sp= supplementary bar; t= testes; v= vetelaria

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پوخته

لهم ليكۆلينه وهيه دا كونكه رى تاك خانه خوى *Dactylogyrus skrjabinensis* Osmanov, 1958 بۆ يه كه م جار له عيراق تۆمار كرا له سه ريشووى ماسى *Capoeta trutta* كه له رووبارى سيروان له باشورى رۆژه لاتی شارى سلیمانی، ههريمی كوردوستان-عيراق كۆكراونه ته وه، له ماوهى نيوان نه وروز تا كه لاويژ ۲۰۱۴. وه سف و پيوانهى مشه خۆره كه له ليكۆلينه وه كه دا هاتوه، ليكۆلينه وه كه ده ريجست كه ريژهى تووش بوون و توندى تووش بوون بريتى بوون له ۳,۹۴٪ و ۳,۶۶ يه كه له دواى يهك.

اول ظهور للمخرم احادي المنشأ *Dactylogyrus skrjabinensis* على غلاصم اسماك النيلة المرقطة  
*Capoeta trutta* في العراق

الخلاصة

تم تسجيل المخرم احادية المنشأ *Dactylogyrus skrjabinensis* Osmanov, 1958 لأول مرة في العراق في الدراسة الحالية على غلاصم سمكة النيلة المرقطة *Capoeta trutta* (Heckel, 1843) التي جمعت من نهر سيروان، جنوب شرقي محافظة السليمانية، اقليم كردستان-العراق، خلال الفترة المحصورة بين شهر اذار الى شهر اب ۲۰۱۴، أعطي وصف وقياسات الطفيلي المذكور في هذه الدراسة، وكانت نسبة وشدة الإصابة ۳,۹۴٪ و ۳,۶۶ على التوالي.