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# RECORD OF *GYRODACTYLUS BYCHOWSKIANUS* BOGOLEPOVA, 1950 (MONOGENEA, GYRODACTYLIDAE) FOR THE FIRST TIME IN IRAQ FROM GILLS OF THE CYPRINID FISH *ARABIBARBUS GRYBUS*

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## ABSTRACT

The monogenean *Gyrodactylus bychowskianus* Bogolepova, 1950 is recorded in the present study for the first time in Iraq from the gills of the cyprinid fish *Arabibarbus grypus* (Heckel, 1843); which was collected from the Tigris River at Al-Taji Beach north of Baghdad Province during the period from July until November 2018.

Keywords**:** *Arabibarbus*, Cyprinid, *Gyrodactylus*, Iraq, Monogenea.

## INTRODUCTION

The genus *Gyrodactylus* is one of 23 genera of the family Gyrodactylidae, with 19 viviparous genera and four oviparous genera (Bakke *et al*., 2007); this genus has the widest host range of any monogenean family, being found on 19 orders of bony fishes (Bakke *et al*., 2002). Species of *Gyrodactylus* von Nordmann, 1832 which have direct life cycle (without intermediate hosts) are common ectoparasites of fishes, living on the skin, fins and gills of many of teleost fishes and occur in freshwater and brackish and marine environments, but relatively few species are euryhaline (Buchmann and Bresciani, 2006). Bakke *et al*. (2007) reported that some *Gyrodactylus* species infect only the gill filaments, others may occur on gill arches and in the pharynx; the initial colonisation appears random (parasites attach anywhere on the body surface), followed by migration to a specific site, the caudal fin followed by the pectoral and pelvic fins.

In Iraq, the first gyrodactylid species, *Gyrodactylus elegans* von Nordmann, 1832 was reported from gills of both *Cyprinus carpio* and *Planiliza abu* (which was reported as *Liza abu*) by Ali and Shaaban (1984); later on, many studies on parasites of fishes from different water bodies of Iraq revealed the record of 51 species which have been described from different freshwater fishes (Mhaisen, Pers. Comm.). Therefore, more surveys on fish parasites are needed to identify more species and to match the growing information on the parasitic fauna of freshwater fishes of Iraq.

The present study reported *Gyrodactylus bychowskianus* Bogolepova, 1950 from gills of the cyprinid fish *Arabibarbus grypus* (Heckel, 1843) which was collected from the Tigris River at Al-Taji Beach of north Baghdad for the first time in Iraq.

## MATERIALS AND METHODS

During the period from July until November 2018, a total of ten specimens of *Arabibarbus grypus* were collected weekly from the Tigris River at Al-Taji Beach north of Baghdad

province (33° 27' 19' N, 44° 20' 58' E). The fishes were transported alive to the laboratory and freshly examined for ectoparasites; skin and gill smears were microscopically examined; care was taken to isolate and flatten the parasite specimens which then were stained by aqueous neutral red, and permanent slides were prepared with glycerol-gelatin. The drawings of sclerotized pieces of the haptor were made by using a camera Lucida (Olympus).

Parasite identification was performed according to Pugachev *et al*. (2009); all measurements used in the description are presented in the following order: minimum-maximum (mean) values; the fishes were identified according to Coad (2010) and the scientific name of the fish was used according to Harris *et al*. (2004).

## RESULTS AND DISCUSSION

***Gyrodactylus bychowskianus*** Bogolepova, 1950

Two out of 10 of *Arabibarbus grypus*, were infected with this parasite which was found on the gills of the infected fishes; the measurements (in mm) were based on five specimens of parasites. The following is a brief description and measurements of this parasite as shown in Plate (1).

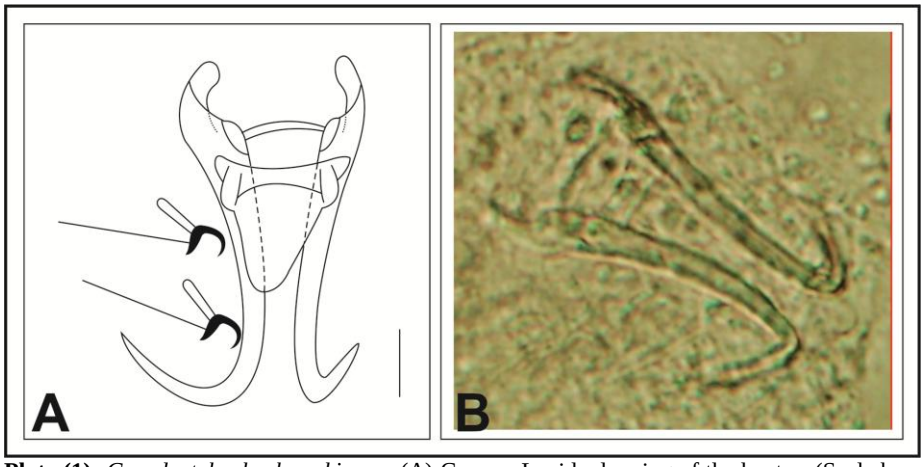


**Plate (1):** *Gyrodactylus bychowskianus*; (A) Camera Lucida drawing of the haptor, (Scale bar = 0.017mm), (B) Photomicrograph of the haptor (400 x).

Body length 0.39-0.43 (0.42); total length of marginal hooks 0.034-0.036 (0.035), hooklet 0.008; total length of anchor 0.08-0.084 (0.082), main part 0.074-0.076 (0.075), point 0.022-0.026 (0.024); size of ventral bar 0.006 x 0.035-0.038 (0.036), membrane 0.012; size of dorsal bar 0.002 x 0.016-0.02 (0.018).

The description and measurements of the present *G. bychowskianus* are in agreement with those reported by Pugachev *et al*. (2009) from gills of *Cottocemephorus grewingkii* and *C. inermis*, Lake Baikal.

The present report of *G. bychowskianus* reports the first record in Iraq, as no previous record has been given for this parasite from fishes of Iraq; with the present record of *Gyrodactylus bychowskianus* Bogolepova, 1950 number of *Gyrodactylus* species from the fishes of Iraq so far reaches 52 species in different parts of Iraq.

In Iraq, many species belonging to the genus *Gyrodactylus* were so far reported from freshwater fishes from various water bodies, among which some were reported from *A. grypus*; the following is list of these species with the mention of only the first record for each *Gyrodactylus* species from *A. grypus*: *Gyrodactylus elegans* Nordmann, 1832 from Diyala River (Ali *et al*., 1986), *Gyrodactylus markevitschi* Kulakovskaya, 1952 from the Euphrates River in Al-Musaib City (Al-Sa'adi, 2007), *Gyrodactylus sprostonae* Ling, 1962 and *Gyrodactylus tincae* Malmberg,1957 from Al-Graiat region at Tigris River at Baghdad province (Abdul-Ameer and Atwan, 2017), with the present record of *G. bychowskianus*, five of *Gyrodactylus* species so far reported from *A. grypus* in Iraq and the number of *Gyrodactylus* species from fishes of Iraq so far reaches 52 species in comparison with 25 *Gyrodactylus* species which were known from fishes of Iraq till 2013 according to Mhaisen and Abdul-Ameer (2013).

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# تسجيل النوع *Gyrodactylus bychowskianus* Bogolepova, 1950 (Monogenea, Gyrodactylidae) لأول مرة في العراق من غلاصم سمكة الشبوط *Arabibarbus grypus*

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**الخلاصة**

أظهر فحص غلاصم سمكة الكارب الاعتيادي سجل الطفيلي أحادي المنشأ *Gyrodactylus bychowskianus* Bogolepova, 1950 في الدراسة الحالية لأول مرة في العراق من غلاصم سمكة الشبوط *Arabibarbus grypus* (Heckel, 1843) من العائلة الشبوطية، التي جمعت من نهر دجلة عند منطقة شاطيء التاجي في مدينة بغداد في الفترة بين تموز و تشرين الثاني عام ٢٠١٨.