First record of *Gyrodactylus hrabei* Ergens, 1957 (Monogenea: Gyrodactylidae) in Iraq from gills of mugilid fish *Planiliza abu* (Heckel, 1843)

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**Abstract.** The A total of 118 specimens of the mugilid fish *Planiliza abu* (Heckel, 1843) were collected weekly from Al-Graiat region at the Tigris river in Baghdad city, during the period from July 2015-March 2016. In this study, investigated of fish gills of *Planiliza abu* and was noticed of Monogenean *Gyrodactylus hrabei*, Ergens, 1957 and registered for the first time in Iraq. The description and measurements of this parasite as well as its illustrations were given.

**Keywords.** *Gyrodactylus hrabei, Planiliza abu*, Gyrodactylidae, Tigris river, Iraq.

1. Introduction

The genus *Gyrodactylus nordmann*, 1832 belongs to the family Gyrodactylidae, class Monogenea, of the phylum Platyhelminthes [1]. This genus is one of 23 genera of the family Gyrodactylidae, with 19 viviparous genera and four oviparous genera [2]. Species of this genus have a direct life cycle and the young newborn has several generations of embryos within its uterus in consecutive stages of development. This “Russian-Doll” mode of reproduction, termed hyperviviparity, joined with a fast generation time (< 24hrs at 25°C for the 1st born daughter in some species), can lead to quickened parasite population outgrowth on a single host [3]. This directly transmitted viviparous gyrodactylids have high species richness but low morphological and biodiversity, this group has the broadest host range of any monogenean family, as it is found on 19 orders of bony fishes [4]. The 409 valid *Gyrodactylus* species are reported from about 400 host species from a wide diversity of fish groups [5]. Species of this genus are common ectoparasites of fishes, living on the gills, skin and fins of many of teleost fishes and place in freshwater and brackish and marine environments [6]. In Iraq, the first species of Gyrodactylidae, includes of *G. elegans* was described from gills of both *Cyprinus carpio* and *Planiliza abu* (which was reported as *Liza abu*) [7], Later on, many studies on fish parasites revealed the record of 56 Gyrodactylidae species from different water bodies of Iraq [8]. For this, more studies on parasites of fishes are in need to record further species and to increasing knowledge on the fish parasites of Iraqi freshwater. This paper documents the first record of *Gyrodactylus hrabei*, Ergens, 1957 in Iraq from gills *Planiliza abu* (Heckel, 1843) from the Tigris river at Al-Graiat region in Baghdad city.
2. Materials and Methods

During the period from July-December 2015, a total of 118 specimens of *Planiliza abu* (Heckel, 1843) were collected weekly from Al-Graiat region river at the Tigris in Baghdad city (33° 24’ 18” N, 44° 20’ 53” E). The fishes were transported alive to the laboratory and were identified according to an account on freshwater fishes of Iraq [9], then freshly examined for ectoparasites. Skin and gill smears prepared and microscopically examined. Care was taken to isolate and flatten the parasite specimen, which were then stained with aqueous neutral red. Permanent smears were prepared with glycerin. Drawings of the sclerotized pieces of the haptor were done by using a Camera Lucida. Parasite identification was performed in accordance [10]. In the current study, all the measurements used in the description of the parasite were mentioned as follows: minimum-maximum (mean) values. Updating the scientific name of fishes based on widely used electronic sites [11]. All recordings of Gyrodactylidae species in fishes of Iraq were reviewed with the index-catalogue of parasites and disease agents of fishes of Iraq [8].

3. Results and Discussion

3.1. *Gyrodactylus hrabei* Ergens, 1957

This parasite was found in the gills and fins of three out of 118 specimens of the *Planiliza abu* with a percentage of 2.5% and a density of 2.7. In the follows is a concise description and measurements of this parasite (in mm established on four specimens of parasites) as shown in Figure 1.

![Figure 1. *Gyrodactylus hrabei*. A- Photomicrograph of the haptor (400x), B- Camera Lucida drawing of the haptor (Scale bar = 0.02 mm)](image)

Body length 0.57-0.61 (0.59). Total length of marginal hooks 0.037-0.04 (0.038), hooklet 0.008. Total length of anchor 0.062-0.068 (0.065), main part 0.044-0.048 (0.046), point 0.031-0.035 (0.033); inner root 0.018-0.022 (0.02). Size of ventral bar 0.008-0.009 (0.0085) x 0.025-0.027 (0.026), membrane 0.018-0.02 (0.019); size of dorsal bar 0.002 x 0.019-0.023 (0.021).

The description and measurements of the present *G. hrabei* are in agree with those reported by [10] from gills of *Cottus gobio* and *C. poecitopus*. 
According to the index-catalogue of parasites and disease agents of fishes of Iraq [8], the present record of *G. hrabei* considers the first time in Iraq, as no previous report was given for this parasite in Iraqi fishes. Many species belonging to the genus *Gyrodactylus* were so far recorded from freshwater fishes in Iraq, among which some were reported from *Planiliza abu*. The following report, is the alphabetical arrangement list with the show of only the first registration from *Planiliza abu* for each *Gyrodactylus* species in order to economize space and references: *G. baicalensis* from Tigris river at Al-Rashidia, north of Baghdad [12], *G. cotti* from Tigris River in Baghdad city [13], *G. elegans*: from ponds and in Tigris-Al-Tharthar canal region [7], *G. jalalii* and *G. varicorhini* from Tigris river at Baghdad city [14], *G. markevitschi* and *G. masu* from Tigris river in Al-Kamirah region at north of Baghdad province [15], *G. menschikowi* from Hilla River [16], *G. sprostonae* from Tigris river at Baghdad city [17], *G. tincae* and *G. umbrae* from Euphrates river at Al-Qaim city Al-Anbar Governorate [18], and *G. vicinus* in a man-made lake at Baghdad area [19]. With the current record of *G. hrabei*, the number of *Gyrodactylus* species from Iraqi fishes has so far become 57 species [8] in comparison with 25 *Gyrodactylus* species which were known from fishes of Iraq till 2013 according to [20].

4. Conclusion

The present study revealed the monogenean *Gyrodactylus hrabei*, Ergens, 1957 from gills of mugilid fish *Planiliza abu* (Heckel, 1843) for the first time in Iraq.

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