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FINDING OF *GYRODACTYLUS PERCCOTTI* (PLATHELMINTHES, GYRODACTYLIDAE) IN WATER BODIES OF KYIV REGION

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Finding of *Gyrodactylus perccotti* (Plathelminthes, Gyrodactylidae) in Water Bodies of Kyiv Region. Zaichenko N. V. — Specific parasite of the introduced by accident fish the Amur sleeper, *Perccottus glenii*, monogenean *Gyrodactylus perccotti* Ergens et Yukhimenko, 1973 was found in Kyiv Region, Ukraine. Dimensions of haptor chitinous parts are given.

Key words: *Gyrodactylus perccotti*, *Perccottus glenii*, Ukraine.

Находка *Gyrodactylus perccotti* (Plathelminthes, Gyrodactylidae) в водоёмах Киевской области. Заиченко Н. В. — У случайно завезенного ротана, *Perccottus glenii*, на территории Киевской области Украины обнаружен специфичный для него паразит — моногенея *Gyrodactylus perccotti* Ergens et Yukhimenko, 1973. Приведены размеры хитиновых образований прикрепительного диска.

Ключевые слова: *Gyrodactylus perccotti*, *Perccottus glenii*, Украина.

Invasion is a natural process that has always been a part of evolutionary history, but nowadays growing rate of nature management led to increased speed of parasites spreading. Humans have been altering climate, transforming habitats, connecting previously isolated lands or waters, exterminating species, and transporting organisms worldwide.

The first stage of invasion is the reduction of diversity in the parasitic community. This process is realized by complicated life cycles of parasites that may include larvae or cysts. These stages can be realized within the other host species with the same ecological niche or physiological conditions. But other parasites without host replacement and no free stage travel along with their host. Invading of a new habitat by a host species infected with parasites may cause different effects on the parasite fauna: loss of original parasites burden by invader; introduction of new parasite species with invader; invasive species can successfully act as intermediate hosts or vectors for present parasites or diseases, and the loss of local parasite species, if invader replaces local host species, but can not act as intermediate or definitive host in parasite life cycles (Emde et al., 2012). Parasite species with life cycles including host change are less successful in non-native ecosystems as compare to species with simple life cycle. The example of such “simple life cycled” parasite species is *Gyrodactylus perccotti* Ergens et Yukhimenko, 1973. *G. perccotti* was described as a specific parasite of *P. glenii* in the Amur River. In Ukraine, *G. perccotti* was found in 2004 (Sabodash, 2004). Recently data on *G. perccotti* findings appeared in adjoining countries, such as Russia and Poland, that may indicate on occurrence of monogenean parasites in some Ukrainian water bodies (Sokolov, 2011; Ondračová, 2012).

Materials and methods

Host fish, Amur sleeper, was sampled on Shaparnja lake (50°16'46" N; 30°33'48" E), located in Golo-seevsky National park, with dip net (0.5 cm in cell diameter). The depth of fishing was approximately 1–1.5 m as far as fish prefer shore zone with dense aquatic vegetation. 112 Amur sleeper specimens were sampled, during spring-summer-autumn 2013–2014. Isolated monogeneans were kept in glycerin for further identification (Gusev, 1985), and analysis of the haptor hard parts was made with the use of light (Axio Imager A1).

Results and discussion

Perccottus glenii is an indigenous fish species of the Far East freshwaters of Eurasia in Russia, northeastern China and northern part of North Korea. The main part of its

native range is restricted to the Amur River. Now, the invasive Chinese sleeper is widely distributed in the freshwaters of Eastern and Central European countries. Absence of high environmental requirements makes the Amur sleeper one of the most successful invaders which occupies more and more water bodies (Reshetnikov, 2009). Recently, parasites of invasive Chinese sleeper have been thoroughly studied in Ukraine (Davydov, 2011; Kvach, 2013) from different water bodies: Danube, Dnister, Siverskiy Donets, Black sea, but *G. perccotti* was not recorded among parasites. Over the last 10 years this is the first *G. perccotti* finding in Ukrainian reservoirs. This situation can be explained by the fact that introduction of *P. glenii* continues, and new fish populations colonize reservoirs bringing native parasite fauna, and distributing it among already assimilated individuals of this species.

The parasite fauna of 112 Chinese sleepers were examined, and only 2 of them were infected with helminthes *G. perccotti* (1 per host), about 0.5 mm long (fig. 1).

Parasites were localized on gills. Species were identified as belonged to genus *Gyrodactylus* based on little differences in morphology of the opisthaptor hard parts (i. e. anchor, marginal hooks and ventral bar). However, it was shown that factors like



Fig. 1. *Gyrodactylus perccotti* detected in Chinese sleeper from Shaparnja lake; a — general view; b — anchor; c — marginal hook.

Рис. 1. *Gyrodactylus perccotti*, обнаруженный у ротана из озера Шапарня: a — общий вид; b — срединный крючок; c — краевой крючок.

Table 1. Measurements (mm) of the opisthaptor hard parts of *G. perccotti* of Amur sleeper from non-native and native area**Таблица 1.** Промеры (мм) хитиноидных образований прикрепительных дисков *G. perccotti* у ротана-голоешки из приобретённого и нативного ареала

Measurements	Shaparnja lake, 2014	Amur River, 1968
Anchor		
Total length	0.073–0.077	0.081–0.084
Shaft length	0.057–0.60	0.055–0.056
Point length	0.033–0.035	0.033–0.035
Root length	0.027–0.032	0.034–0.039
Marginal hook total length	0.030–0.032	0.033–0.035
Marginal hook sickle length	0.010–0.012	0.010–0.012
Ventral bar		
Total length	0.020–0.022	0.023–0.028
Median width	0.007–0.009	0.008–0.013
Membrane length	0.014–0.016	0.018–0.019

water temperature, host size or geographical location may influence the intraspecific phenotypic variation of the opisthaptor hard parts. Recorded monogeneans were identified as *G. perccotti* according to morphometrical characteristics. Measurements of the opisthaptor hard parts of *G. perccotti* from native (Ondračová et al., 2012) and non-native areal are given in table 1. These are the first data on morphology of *G. perccotti* from Ukrainian reservoirs.

Introduction of *G. perccotti* is rather predictable due of the direct life cycle, viviparity taking place on the surface of host's body, and no specialized transmission stage. There is no threat to native fish species because the majority of monogenean parasites has narrow host specificity and usually uses 1 host species, or relatively close one.

New interactions continue as long as the Chinese sleeper's invasion continues as well. There is a high probability of new species occurrence in rotan parasite fauna. That is why regular parasite examinations are necessary for accurate dynamic account of events taking place in appropriate water system.

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