

Research Note

First record of *Nippotaenia mogurndae* Yamaguti and Miyata, 1940 (Cestoda: Nippotaeniidea), a parasite of *Percottus glenii* Dybowski, 1877, from Europe

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Summary

The cestode *Nippotaenia mogurndae* Yamaguti and Miyata, 1940 (syn. *Amurotaenia perccotti* Akhmerov, 1941) (Cestoda: Nippotaeniidea) is reported from Europe for the first time. This specific parasite of the Chinese sleeper *Percottus glenii* (Perciformes: Odontobutidae) has apparently been introduced into the River Latorica in East Slovakia with its host, that was first reported from Slovakia in 1998. The morphology of the cestodes found is briefly described and their current distribution is discussed in relation to the rapid expansion of their fish host.

Key words: freshwater fish; *Percottus glenii*; cestode; *Nippotaenia mogurndae*

Introduction

Percottus glenii is a freshwater, non-indigenous, invasive fish species (Perciformes: Odontobutidae), recently introduced to rivers of East Slovakia from Ukraine. The negative impact of this carnivorous species on the native ichthyofauna is an important topic that has been studied on a world-wide scale (Koščo and Košuth, 2002). During parasitological examination of *P. glenii* from the Somotor – branch of the River Latorica in East Slovakia, tapeworms belonging to the genus *Nippotaenia* Yamaguti, 1939, order Nippotaeniidea, were found. This small order of cestodes includes about six species from freshwater fishes in Japan, China, Russia, and New Zealand (Bray, 1994). *Nippotaenia* has not previously been reported in Europe.

Material and Methods

A total of 52 *P. glenii* were examined from April to June, 2003. The tapeworms were found in the intestine of *P. glenii*, from Somotor – branch of River Latorica, East Slova-

kia, on May 2, 2003. Cestodes were fixed in hot formalin, stained with Mayer-Schuberg's carmine or acetocarmine and mounted in Canada balsam, after dehydration in alcohol series. Then the cestodes were measured and determined after Dubinina (1971).

Results and Discussion

Nippotaenia mogurndae Yamaguti and Miyata, 1940
Description (7 complete cestodes and 7 detached gravid proglottids; all measurements in millimetres): Length of scolex 0.46 – 0.63 (up to first proglottid), its width 0.27 – 0.46 (Fig.1a). Single apical sucker present, provided at its opening with strong circular sphincter (Fig.1b). Sucker 0.17 – 0.26 long by 0.20 – 0.33 wide. Neck short, wide. Body 0.61 – 2.20 long, consisting of 6 – 9 proglottids. Anterior proglottids much wider (0.30 – 0.35) than long (0.06 – 0.07), becoming longer posteriorly (Fig.1c). Gravid proglottids elliptical shape, 2.09 – 4.83 long by 0.46 – 0.95 wide, detached from strobila (Fig.1d). Terminal proglottids 0.27 – 0.68 long by 0.21 – 0.33 wide. Testes oval, 24 – 29 in number. Genital pore near lateral margin. Ovary bilobed, joined by a median transverse isthmus in mid-region of proglottid. Vitellaria preovarian, two symmetrical lobes. Uterus in transverse coils, posterior to ovary. Eggs spherical with three layers, outer layer delicate; middle layer rigid; inner layer membranous, enclosing oncosphere with one central and two pairs of lateral embryonic hooks. Diameter of outer membrane 0.10 – 0.15 x 0.09 – 0.15, embryo 0.015 – 0.023.

Prevalence – 19.20 % (10/52).

The cestodes found in *P. glenii* were identified as *N. mogurndae* on the basis of a double sphincter presented in the apical sucker of the cestode, presence of the neck, length of the strobila, typical shape and size of the proglot-

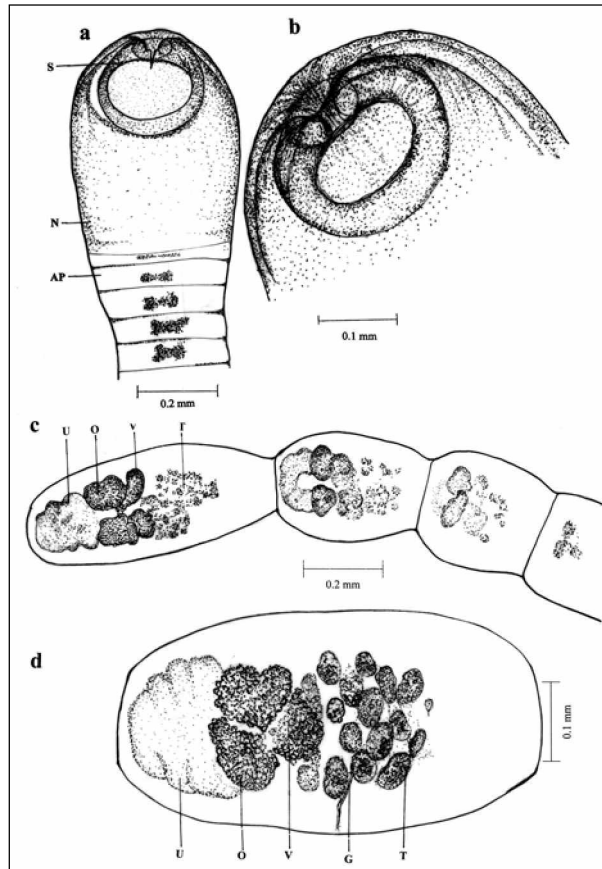


Fig.1. *Nippotaenia mogurndae* (Yamaguti and Miyata, 1940)

a – scolex (S-apical sucker, N-neck, AP-anterior proglottids); b – detail of apical sucker with sphincter; c – strobila (T-testes, V-vitellaria, O-ovary, U-uterus); d – detached mature proglottid (G-gonophore)

tids detached from the body, shape and size of the eggs and also on the basis of their typical host. In their general morphology and measurements, they correspond with those identified as *N. mogurndae* by Dubinina (1962, 1971, 1987).

The species was described by Yamaguti and Miyata (1940) from freshwater fish *Mogurnda obscura* (Perciformes: Eleotridae) caught near Nisinomiya, Japan. Akhmerov (1941) described *Amurotaenia perccotti* found in *P. glenii* from the Amur River, Russia, but later (1960) transferred this species to the genus *Nippotaenia*. Dubinina (1962, 1971, 1987) compared morphology and measurements of *N. mogurndae* and *A. perccotti* (syn. *N. perccotti*), synonymized both the taxa with the latter species becoming a junior synonym of *N. mogurndae*, because of negligible differences between them and similar definitive hosts (*P. glenii* and *M. obscura* – both species formerly included to the family Eleotridae – Dubinina, 1971). On the other hand, Hine (1977) and Bray *et al.* (1994) considered hyperpolytic, *Amurotaenia perccotti* to be a valid taxon that differs from *N. mogurndae* by anterior proglottids being considerably broader than long and testes retained in gravid and ripe proglottids.

As far as the authors are aware, the present finding represents the first record of the nippotaeniid cestode in Europe. Until now, cestodes of the order Nippotaeniidea have been found in Japan (Yamaguti and Miyata, 1940; Shimazu, 1997), New Zealand (Hine, 1977) and Russia - Far East (the Amur River basin - Dubinina, 1971; shallow lakes near Vladivostok – Davydov and Korneva, 2000; Primorsk Territory - Demshin, 1985; basin of Lake Baikal – Pronin *et al.*, 1998).

The occurrence of a nippotaeniid tapeworm in Europe is apparently related to the recent introduction of its fish host – *P. glenii*, from the original territory of northeastern Korea and the Amur River basin in Russia to rivers in Ukraine, Hungary, Poland and Slovakia (Koščo *et al.*, 2003). Considering expansion of this fish due to its ability to survive in extreme conditions and inhabit the water bodies of different types, it is probable that this cestode will be reported from other European countries.

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