

Aquatic Invasions Records

First record of the Chinese sleeper *Percottus glenii* Dybowski, 1877 in the Ukrainian part of the Danube delta

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Abstract

The Far Eastern exotic fish species, *Percottus glenii* (Odontobutidae, Perciformes), occurred in the Ukrainian part of the Danube River delta for the first time. Two specimens, male and female were caught in a canal in the town of Vilkov. It is the first record of this fish species in southern Ukraine. The fishes from Vilkov are possibly related to the population which occurs in the Romanian part of the Danube delta (Furtuna Lake and Popina pond) where it has been previously found.

Key words: *Percottus glenii*, Odontobutidae, Danube, Southern Ukraine, non-indigenous species

Introduction

The Chinese sleeper (or Amur sleeper), *Percottus glenii* Dybowski, 1877, is a fish in the Odontobutidae family, Perciformes. The natural range of this fish in Eastern Asia is from the Sea of Okhotsk in the North, to the Yellow Sea in the South (Mori 1936; Berg 1949). Due to both intentional and non-intentional introductions, the fish has expanded its range throughout Asia and into Europe (Koščo et al. 2003; Reshetnikov 2004; Jurajda et al. 2006; Hegediš et al. 2007). It has been recorded from the western and northern part of the Ukraine, but is absent from the south (Reshetnikov 2009).

Materials

Fish were caught by trawling with a deep-net measuring 1.0×0.5 m with a mesh size of 5 mm, in June 2011. Fishing was located at 45°24'N 29°35'E in a canal (connected to the Danube River) in the town of Vilkov, south-western Ukraine (Figure 1). The depth of fishing was approximately 1.5 m. The canal is characterized by intensive growth of aquatic plants, namely *Pomatogeton* spp., and *Ceratophyllum demersum*.

Total (TL) and standard (SL) lengths of the fish were measured (cms). The sex of fish were also determined.

Results

Two specimens, male and female, of the Chinese sleeper were caught (Figure 2). The female measured 7.2 cm TL and 6.3 cm SL, the male had a TL = 4.9 cm, and a SL = 4.1 cm.

This is the first record of this fish species in the Ukrainian part of the Danube River and also in southern Ukraine.

Discussion

This fish was transported from the Russian Far-East to St. Petersburg as an ornamental fish in 1912 (Nabatov 1914). The first introduction of this species to European waters was in 1916, when it was released to ponds in St. Petersburg, where it quickly and easily acclimatized and ultimately destroyed all local fishes (Dmitriev 1971). By the 1920's this fish occurred in many water bodies around St. Petersburg, and by the 1950's it was found in the Gulf of Finland's shallow zone (Dmitriev 1971; Kuderski 1982).

Figure 1. Map of the locality in the Danube delta. Red spot denotes fish occurrence.

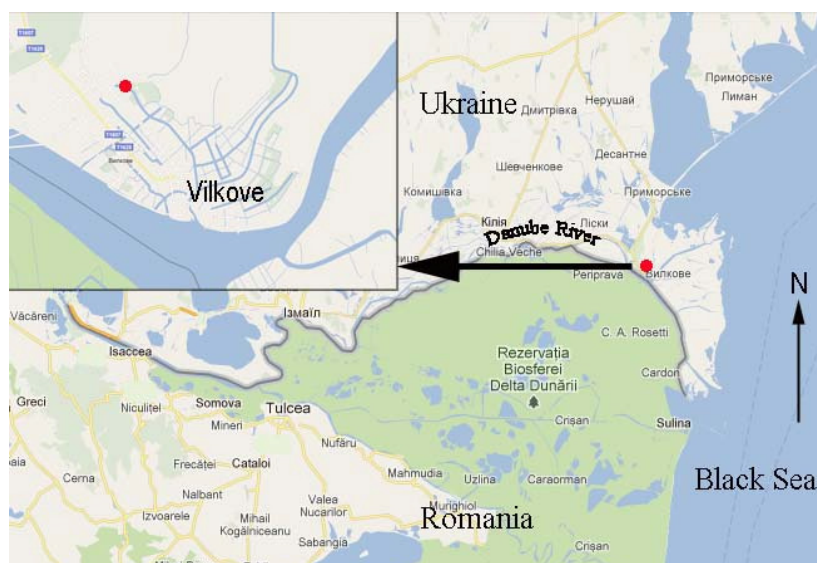


Table 1. The timeline of the Chinese sleeper *Perccottus glenii* invasion in the Danube basin.

Date	Locality	Record coordinates		Country	Reference
		Latitude, N	Longitude, E		
1995	Latorica River, Mukachevo	48°26′	22°40′	Ukraine	Sivokhop 1998
1995	Latorica River, Chop	48°26′	22°13′	Ukraine	Sivokhop 1998
1997	Tisza River, Tiszaújváros	47°58′	21°03′	Hungary	Harka 1998
July 21, 1998	Latorica River, Kamena Mol'va	48°29′	22°03′	Slovakia	Koščo et al. 1999
1999	Medzibodrožie, Boľany	48°26′	22°06′	Slovakia	Kautman 1999
1999	Medzibodrožie, Leles	48°27′	22°01′	Slovakia	Kautman 1999
1999	Bodrog, Somotor	48°24′	21°48′	Slovakia	Harka et al. 2000
1999	Klin nad Bodrogom, Somotor	48°22′	21°43′	Slovakia	Harka et al. 2000
2001	Pond, Voivodina	45°88′	20°21′	Serbia	Gergely and Tucakov 2004
2001	Suceava River, Suceava	47°39′	26°15′	Romania	Nalbant 2004
2003	Danube, Vinci	44°70′	21°60′	Serbia	Šipoš et al. 2004
October 20, 2003	Danube, Iron Gate II Reservoir	44°40′	22°30′	Serbia	Simonović et al. 2006
April 7-13, 2005	Danube, Vrav	44°11′	22°44′	Bulgaria	Jurajda et al. 2006
April 7-13, 2005	Danube, Lom	43°50′	23°14′	Bulgaria	Jurajda et al. 2006
2005	Danube, Drobeta Turnu Severin	44°37′	22°40′	Romania	Popa et al. 2006
2006	Dradište River (Prut tributary), Brînzeni	48°03′	27°08′	Moldova	Moshu et al. 2006
Autumn 2007	Furtuna Lake, Danube delta	45°12′	29°06′	Romania	Năstase 2007
Autumn 2007	Popina fish pond, Danube delta	45°17′	29°36′	Romania	Năstase 2007
July 3, 2008	Sava River, SlavonSKI Brod	45°09′	17°59′	Croatia	Čaleta et al. 2011
June 2011	Danube River, Vilkovce	45°24′	29°35′	Ukraine	Present data

In the 1970's the Chinese sleeper was probably introduced to the fish ponds in the upper stream of the Dniester River, western Ukraine, together with phytovorous commercial fish species. Several individuals of the Chinese sleeper were caught in one of the ponds in Lviv in 1980 (Reshetnikov 2009). Thereafter, areas of invasion were widespread in the western Ukraine. The Lviv population of the Chinese

sleeper invaded nearby water bodies in the upper stream of the Dniester River, near Ternopil and Ivano-Frankivsk. Then, in 2001 this fish species was registered in the Dniester River in the Czernowitz Region, close to the border between Ukraine and Moldavia (Moshu and Guzun 2002). With the exception of the Dniester River, in the Ukraine, the Chinese sleeper is mentioned in the Dnieper River near Kiev (Sabodash et al. 2002).

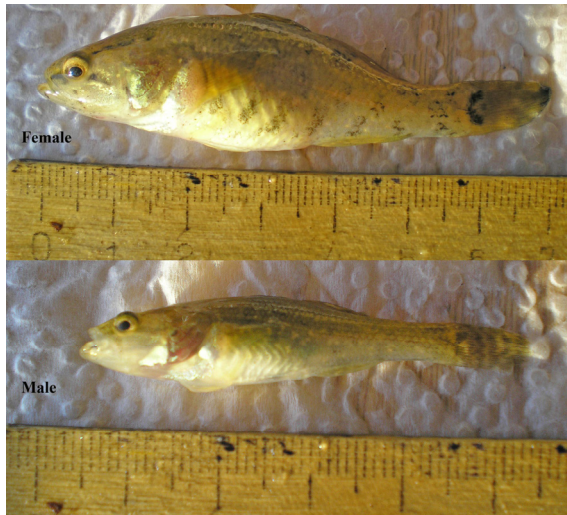


Figure 2. The Chinese sleeper from the Ukrainian part of the Danube delta. Male and female.

In the Danube River basin the Chinese sleeper was first mentioned in 1995–1996 in the Ukrainian Transcarpathian region in the Latorica River near Mukachevo and Chop (Sivokhop 1998) (Table 1). In 1997 this fish was mentioned in Hungarian waters (Harka 1998). Later, in 1998, it was recorded in Slovak waters (Kautman 1999; Koščo 1999). In Serbia it was first found in a fish pond in 2001, and then occurred in the Danube's main channel in the Vinci Marine in 2003 (Gergely and Tucakov 2004; Šipoš et al. 2004). In Bulgaria it was found near Vrav and Lom in the north-west in 2005 (Jurajda et al. 2006). In 2006 it occurred in the Prut River (left tributary of the Danube River) on the border between Moldova and Romania (Moshu et al. 2006). In 2008 the Chinese sleeper occurred in Croatia in the Sava River (right tributary of the Danube River) near the city of Slavonski Brod (Čaleta et al. 2011). This is most western recording of the Chinese sleeper in Europe.

The first record of the Chinese sleeper in Romanian waters was in the Suceava River in 2001 (Nalbant et al. 2004). In the main stream of the Romanian Danube River it was found in Drobeta Turnu Severin in 2006 (Popa et al. 2006). In 2007 this species was registered in the Romanian Danube delta, in two localities: Furtuna Lake and Popina Pond (Năstase 2007). There were no records for the presence of this fish in the Ukrainian part of the Danube River.

The Ukrainian part of the Danube delta is the fourth region in the Ukraine (after the Dniester

River upper stream, Transcarpathian rivers, and the Dnieper River near Kiev) where the Chinese sleeper occurs. Also, it is the first occurrence in southern Ukraine. Probably, the fishes from Vilkove are related to the same population which occurs in the Romanian part of the Danube delta (Furtuna Lake and Popina Pond). This population has two possible sources. The first possible source is from the population of the Transcarpathian region (River Latorica), which populated the majority of the Danube basin. Another possible source is from the western Ukrainian population of the Chinese sleeper, which populated rivers Prut, Suceava and Siret. The second version is more likely, since rivers Prut and Siret inflow into the main Danube River close to the Danube delta.

Taking into account the fact that the Chinese sleeper was introduced to Europe together with its parasites, cestode *Nippotaenia mogurndae* Yamaguti and Miyata, 1940 (this parasite species is already found in the Danube basin in Slovakia, also in Poland – see in Košuthová et al. 2004 and Mierzejewska et al. 2010), the further introduction of this parasite to the Ukrainian Danube section is possible.

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