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SHORT COMMUNICATION

Unsuccessfull introduction of the common pleco *Hypostomus plecostomus* Linnaeus, 1758 (Loricariidae) in artificial pond in Warsaw, Central Poland

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ABSTRACT

This paper describes the case of an unsuccessful introduction of the common pleco *Hypostomus plecostomus* (Linnaeus, 1758) (Loricariidae) in an artificial water reservoir near Warsaw Citadel, which is the second instance described for representatives of American loricariid fish species in Poland. A landed individual has been labelled and presented in the photographs. The finding is discussed with available polish inland waters data and authors observations.

Keywords: alien species, aquarium, ornamental fish, suckermouth catfish, pond, inland waters, Vistula river, *Hypostomus plecostomus*

1. INTRODUCTION

Aquarium animals are considered as one of the most invasive alien species in the world. Under favorable conditions, they could create populations competitive to local fauna contributing to the degradation of new habitats (Strecker et al., 2011; Maceda-Veiga et al., 2016). Due to the climate changings winters become warmer and warmer which increases the risk of emergence of exotic species in European waters. In many cases, these species are released by irresponsible aquarium owners or breeders due to boredom, high maintenances costs, problems with selling of excess animals or large size which some of them achieves. (Maciaszek and Sosnowski, 2019).

The common pleco or suckermouth catfish *Hypostomus plecostomus* (Linnaeus, 1758) is a representative of the Loricariidae family that occurs naturally in the north-eastern region of South America. It is an omnivorous species, mostly collecting food from the bottom, which mainly contains of algae and small crustaceans. It prefers waters with a pH range 6.2-8.2 and a water temperature of 20 to 28 °C. The common pleco belongs to the most recognizable exotic aquarium species. It is known from relatively large sizes ranging from 28 to even 50 cm (Baensch and Riehl, 1985).

Fish belonging to the Loricariidae family is known as one of the most frequently introduced aquarium species in inland waters. Stable populations of the *Hypostomus* genus have already been described in North America and Asia (Chavez et al., 2006; Pound et al., 2011). However, due to the huge availability of these fish and uncontrolled introductions what is taking place worldwide, there is a chance of increasing the frequency of their occurrence in european waters (Keszka et al., 2008; Maceda-Veiga et al., 2016).

In this contribution we present new data of confirmed presence of the common pleco in water ecosystem in Poland.

2. MATERIAL AND METHODS

This work was a part of the initial nature inventory for amphibians in Warsaw in 2014.

Locality

Park Fosa i Stoki Cytadeli in Warsaw is a city park which covers an area of 17.08 ha which is located between Wybrzeże Gdyńskie, Kaniowska and Krajewskiego streets in the Żoliborz district of the largest city and capital of Poland. There is an artificial pond with surface of approx. 1400 m² created in the place of the former Warsaw Citadels moat, and the gorge of the Drna River. In this 1m deep, concrete reservoir, the average water temperature in the spring-summer period is around 10 °C. In winter, the water from the pond is drained. The distance of the reservoir from the open waters of the largest Polish river Vistula is about 250m.

Fish detection and identification

On 24 April 2014 during the research on amphibians in a shallow concrete tank belonging to the park space called "Park Fosa i Stoki Cytadeli w Warszawie" at the Warsaw Citadel an unknown species of fish was observed. The individual was caught by using an amphibian landing net and then transported to the veterinary clinic, where further observations were made.

Based on photographs taken, length measurements and initial consultations with aquarists, the fish was identified by using available scientific literature (Boesman, 1968).

3. RESULTS AND DISCUSSION

The landed individual (approximately 40cm long) was identified as a common pleco *Hypostomus plecostomus* (Linnaeus, 1758) in the "Albino" variety. It had numerous mechanical injuries and symptoms of bacterial infection responsible for red body discolorations (Fig. 1), as a result of weakness caused probably by hypothermia. (Shafland and Pestrak, 1982). The fish died on the following day (25 April 2014) despite of medical treatment.

During the research carried out, other exotic fish species were not caught in the tank. It is assumed that this was a single case of uncontrolled introduction, which led to the death of the fish as a result of hypothermia, mechanical damage and infection.

Described case is not the first noticed nowadays in Poland. A representative of Loricariidae family, leopard pleco, *Pterygoplichthys gibbiceps* (Kner, 1854) was observed in 2006 in the open waters of the Brda river in the center of the Bydgoszcz city (Keszka et al., 2008). In this case, fish release by an irresponsible owner is highly probably. The collected representative of the genus *Hypostomus* is also the result of the second unsuccessful uncontrolled introduction of aquarium fish in Warsaw described in the scientific literature. In 2016, in the Powsinkowskie Lake located in the southern region of the capital, a silver arowana *Osteoglossum bicirrhosum* (Cuvier, 1928) with a similar body length (40 cm) (Maciaszek and Sosnowski, 2019) was caught. The probable causes of all these introductions include primarily the individual large body length and owners boredom.

Fish from Loricariidae family have low chance to survive in relatively cold polish climate, except for thermally contaminated watercourses (Shafland and Pestrak, 1982), also other aquarium animals could cope quite well and survive the winter period in the described kind of tanks (Chucholl 2011; Novitsky and Son, 2016). Some species could establish a stable population that would extend the range of its territory also to reservoirs and natural watercourses like Vistula river.

The location of water reservoirs in Warsaw parks deserves particular attention. Many of them are located on the area of streams and rivers, which currently are mostly built up creating underground watercourses with an estuary in the Vistula. There is a high probability that Park Fosa i Stoki Cytadeli in Warsaw has a connection with the Dzna River, to which water would be periodically drained from the tested water reservoir. An highly important role in the uncontrolled spread of the discussed animals may also play a small distance of the reservoir to the Vistula.

There is a chance of an accidental transfer of young fish through birds, but also by humans. In addition there were occurrences described by local media, in which after draining tanks for the winter period, ornamental fish which were found there, were introduced to nearby oxbow lakes by urban workers. Due to the insufficient knowledge about ichthyofauna of municipal water reservoirs, occurring uncontrolled introductions and unfavorable consequences for the environment, we propose to conduct educational activities, monitoring of reservoirs and watercourses in which aquarium animals were released to observe their fate and take appropriate action.

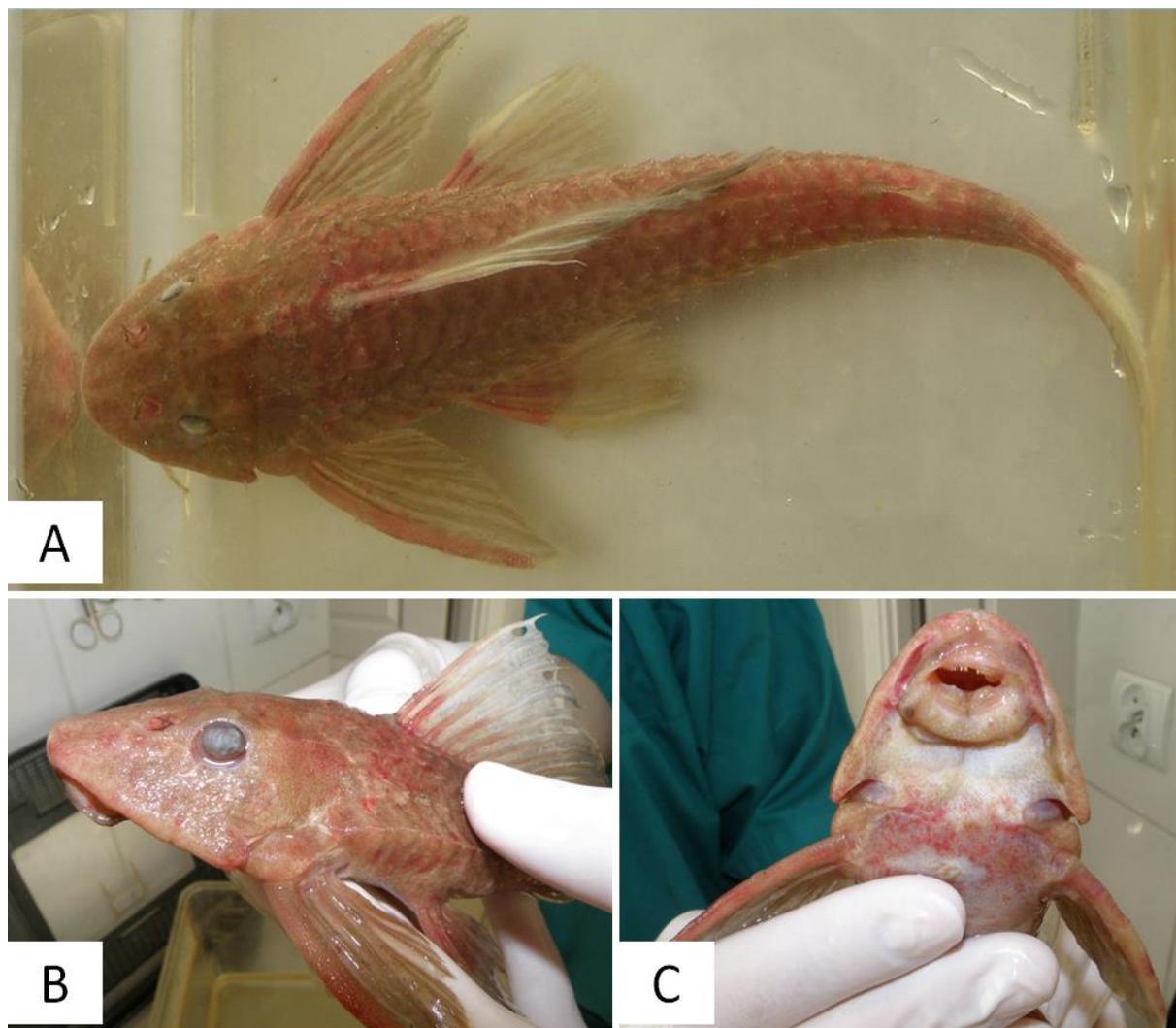


Figure 1. Common pleco *Hypostomus plecostomus* „Albino” found in pond at Warsaw Citadel: dorsal view (A), lateral view (B), ventral view (C). Mechanical damage and reddish discolorations are well visible.

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