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Aquatic Invasions Records

The occurrence of an aquarium escapee, *Pangasius hypophthalmus* (Sauvage, 1878), (Osteichthys, Siluriformes, Pangasiidae) in Lake Kinneret (Sea of Galilee), Israel

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Abstract

A specimen of *Pangasius hypophthalmus* was captured for the first time in Lake Kinneret (Sea of Galilee), Israel. Its occurrence in the lake is probably due to escape from the aquarium of hobbyists.

Key words: *Pangasius hypophthalmus*, Pangasiidae, fish, alien species, Lake Kinneret, Sea of Galilee

Introduction

Fish introduction is one of the main causes for alteration of the structure of fish communities. The risk of negative impact of alien species on native ichthyofauna is much greater in freshwater ecosystems than in marine or brackish water. Although most introduced species are doomed to failure, those that succeed in establishing viable populations in the new sites have the potential to cause substantial damage (Helfman 2007).

Lake Kinneret (Sea of Galilee or Lake Tiberias) is the largest body of freshwater in Israel, with a surface area of 170 km^2 and a maximum depth of 43 m (Goren and Ortal 1999). On 16 January 2012, a 276 mm SL (350 mm TL) specimen of *Pangasius hypophthalmus* (Sauvage, 1878) weighing 293.8 g, (Figure 1) was captured by trammel net in Lake Kinneret at a shallow depth of 2-4 m. The specimen was deposited in the Hebrew University Fish Collection (HUJ) and received the catalogue number HUJ 20124.

Methods and results

Description of the specimen

Body elongated with moderately flat head, becoming compressed after dorsal fin. Large, broad head (26.8%), deep body (23.6%), predorsal (40.1%), predispose fin (77.9%), preanal (54.6%), prepectoral (23.5%), preventral (42.1%) and least caudal peduncle (7.6%), all from SL. Snout blunt and round. Mouth terminal, its width 9.5% of head length. Narrow band of small villiform teeth on the maxilla connected on left and right sides. Very narrow and short palatine patches with a gap between them. Eye oval, its horizontal diameter 14.7% of HL while the vertical diameter is 19.4% of HL. Two pairs of barbels; the maxillary barbel 37.8% of HL and reaching clearly beyond vertical of eye. Mandibular barbel is much shorter, being 17.8% of HL. Two nostrils close to one another; the posterior one is distinctly larger. Six gill rakers on upper arm of first arch and 23 on lower arch, including the raker at the angle. Dorsal fin with 8

Figure 1. *Pangasius hypophthalmus* (HUJ 20124)**,** 276 mm SL. from Lake Kinneret, Israel (Photograph: D. Golani).

rays, the first ossified and slightly shorter than the second ray, which is the longest, the rest getting shorter. Small adipose fin located at two thirds the distance between the origin of dorsal fin and origin of caudal fin. Pectoral fin has a similar pattern to the dorsal fin, with the first ray being ossified and 10 segmented rays. Long based anal fin with 31 rays, gradually decreasing in size. Pelvic fin with 8 rays located ventrically below tip of pectoral fin. Caudal fin deeply forked.

Color: Dorsal surface dark grey to black, becoming silvery-grey on the flank and the belly. Dorsal, adipose, pectoral and caudal fins dark grey. Ventral and anal fins light grey to white with grey membrane between the first 8 rays on the anal fin.

Discussion

Nineteen indigenous fish species are known from Lake Kinneret (Goren and Ortal 1999). Stocking of mugilids and carps [such as *Ctenophryngodon idella* (Valenciennes in Cuvier and Valenciennes, 1844)*, Tinca tinca* (Linneaus, 1758)*, Cyprinius carpio* (Linneaus, 1758)*, Hypophthalmichthys nobilis* (Richardson, 1845) and *H. molitrix* (Valenciennes in Cuvier and Valenciennes, 1844)] has been performed in the past (Golani and Mires 2000). At present, stocking consists of mugilids [namely, *Mugil cephalus* (Linneaus, 1758) and *Liza ramada* (Risso, 1826)] and the cyprinids *Hypophthalmichthys* spp., none of which capable of reproducing in the lake (Sanovski et al. 2010).

In addition, in the last few decades there has been an intensive stocking campaign of the indigenous cichlid *Sarotherodon galilaeus* (Artedi, 1757) in order to enhance the local population which constitutes an important component in the local fishery (Zohary et al. (2008). According to Golani and Mires (2000), single specimens of an *Acipenser* hybrid, *Oncorhynchus mykiss* (Walbaum, 1792)*, O. kisutch* (Walbaum, 1792)*, Carassius auratus* (Linneaus, 1758) and *Piaractus brachypomus* (Cuvier, 1817) were found in the lake. However, at the present time, only two exotic species, namely, *Cyprinus carpio* and *Gambrasia affinis* (Baird and Girard, 1853) have succeeded establishing viable populations in Lake Kinneret.

Pengasius hypophthalmus feeds on fishes, crustaceans and vegetable debris and reaches 120 cm TL. Its natural distribution includes the Mekong River and the Chao Phrya basin. It has been introduced into aquaculture in many locations far from its native range (Roberts and Vidthayanon 1991; Rainboth 1996). This species has become a favorite in the aquarium trade (Rainboth 1996), including in Israel.

Pengasius hypophthalmus is distinguished from all congenerics except *P. gigas* Chevey, 1930 by having 8 rays in the pelvic fin (as opposed to 6 rays). The well-developed gill rakers and the length of the maxillary barbel reaching well beyond the orbit of *P. hypophthalmus* distinguishes this species from *P. gigas*, which has rudimentary or absent gill rakers and a maxillary barbel that barely reaches the orbit in adults (Roberts and Vidthayanon 1991; Rainboth 1996).

The source of the Lake Kinneret specimen is evidently from escapees from the aquariums of hobbyists. The senior author reports that he has heard from local fishermen of another three cases of collecting *P. hypophthalmus* in Lake Kunneret. This could be the result of multiple escape events or, alternatively, the establishment of a small population in the lake.

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