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THE FIRST EUROPEAN RECORD OF THE INDONESIAN SNAKEHEAD, *CHANNA MICROPELTES* (ACTINOPTERYGII: PERCIFORMES: CHANNIDAE)

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Abstract. A specimen of Indonesian snakehead, *Channa micropeltes* (Cuvier, 1831), 76.5 cm long (TL) and weighing 5.8 kg, was caught on 22 November 2012 in a small pool fed by a subthermal spring at Le Caldane (Colle di Val d'Elsa, Siena, Tuscany, Italy). This catch constitutes the first record of *C. micropeltes* in Europe.

Keywords: Tuscany, Italy, alien species

The Indonesian snakehead, *Channa micropeltes* (Cuvier, 1831) (Perciformes: Channidae) is a large predatory fish (up to 150 cm in length and 20 kg in weight), native to southeast Asia, where it occurs in Thailand, Vietnam, Malaysia, Laos, and Indonesia (Java, Sumatra, Borneo, Belitung, Bangka). It has also been reported from India, but the taxonomic identity of Indian specimens is still controversial (Courtenay and Williams 2004, Adamson et al. 2010, Benziger et al. 2011, Froese and Pauly 2013). It inhabits lakes, slow-flowing rivers and canals with deep, well vegetated water, and the temperatures between 25 and 28°C. The spawning occurs in November and December and females spawn 2000–3000 eggs, which are protected by the male. The juveniles feed on crustaceans. Adults are mainly piscivorous, but also feed on other vertebrates, hunting in packs during the day, mainly near the surface or in midwater (Courtenay and Williams 2004, Froese and Pauly 2013).

Channa micropeltes was introduced and became established in Singapore in the second half of the 20th century. It was also introduced into China, the Philippines and the United States (Maine, Maryland, Massachusetts, Rhode Island, and Wisconsin) but did not become established. In spite of this it is regarded a major threat to the native fish fauna (Courtenay and Williams 2004, Joshi 2006, Pegg et al. 2009) and trading this fish is prohibited in many US states (Courtenay and Williams 2004). Adults are raised in water cages as food in Vietnam, Malaysia, Thailand, and Cambodia, whereas juveniles, which are red with two dark stripes on each side, are sold for aquaria (Courtenay and Williams 2004, Froese and Pauly 2013).

An adult specimen of *Channa micropeltes* was captured on 22 November 2012 at Le Caldane (Colle di Val d'Elsa, Siena, Tuscany, Italy) (43°23′26.67″N, 11°08′04.23″E). Le Caldane is a small pool fed by a subthermal spring (temperature near the source 22.6°C; average annual pool temperature 21.4°C; average flow 80 $L \cdot s^{-1}$; Ca 303 $mg \cdot L^{-1}$; Mg 82 · 7 $mg \cdot L^{-1}$; and SO_4 690 $mg \cdot L^{-1}$) which gives rise to a small creek that flows into the Elsa river (the Arno River basin) (Barazzuoli and Salleolini 1993, Peruzzi and Mantelli 2003).

The specimen of *Channa micropeltes* (Fig. 1) was captured with a pulsed direct current (DC) (350–600 V, 12 kW, 0–100 impulses per second) and was identified according to Musikasinthorn and Taki (2001) and Courtenay and Williams (2004). The fish was 76.5 cm long (TL) and weighed 5.8 kg.

Short description. Dorsal part grey; flanks brown tending to grey; abdominal parts grey; head length 36.9% of SL; maxilla reaching beyond posterior border of the eye; lower jaw with several rows of canine-like teeth behind single row of villi-like teeth; large canine-like teeth on prevomer and palatines; scales in gular area; 22 predorsal scales; 23 cheek scales; 90 scales in longitudinal series; 44 dorsal fin rays; 28 anal fin rays; 15 pectoral fin rays; 6 pelvic fin rays.

The specimen is kept in the fish collection of the Museo di Storia Naturale dell'Accademia dei Fisiocritici di Siena (Siena, Italy).

This record of *Channa micropeltes*, the first in Europe, and it constitutes another case of introduction of an alien species. Globally, exotic fish are a major threat to

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Fig. 1. Indonesian snakehead, *Channa micropeltes*, captured on 22 November 2012 at Le Caldane (Tuscany, Italy)

native ichthyofauna due to their negative impact on local species (Crivelli 1995, Elvira 2001, Smith and Darwall 2006, Gozlan et al. 2010, Hermoso and Clavero 2011).

One way in which alien fish colonize new geographic areas is through the aquarium trade. Aquarium enthusiasts often release their pet fishes into nature when they grow too big to be kept at home (Rixon et al. 2005, Duggan et al. 2006, Gozlan 2008, Duggan 2010, Savini et al. 2010, Keller et al. 2011). *Channa micropeltes* almost certainly appeared at Le Caldane in this way, since channids are bred for aquaria even in Italy.

So far only one specimen of *Channa micropeltes* has been caught at Le Caldane, but others may be present. Although no data is available, the size of this specimen suggests that it was released some time ago. It is also possible that the disappearance of two cyprinid species of conservation concern, present at Le Caldane until recently (at least until 2010), *Rutilus rubilio* (Bonaparte, 1837) and *Tinca tinca* (Linnaeus, 1758), is related to the presence of *C. micropeltes*.

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