Zootaxa 3363: 45–51 (2012)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Phallostethus cuulong, a new species of priapiumfish (Actinopterygii: Atheriniformes: Phallostethidae) from the Vietnamese Mekong

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Abstract

A new species of priapiumfish, *Phallostethus cuulong*, is described based on nine specimens collected from the Vietnamese Mekong. This is the third species of the genus, following the type species *P. dunckeri* (from Malay peninsula) and *P. lehi* (from northwestern Borneo), and distinguished from them by having: seven serrae on the second ctenactinium in adult males (vs. five in *P. dunckeri* and eight in *P. lehi*); 25–26 caudal vertebrae (vs. 27 in *P. dunckeri* and 28 in *P. lehi*); approximately 5–19 teeth on paradentary (vs. 15–20 and 28 or more in *P. dunckeri* and *P. lehi*, respectively). All six examined males are dextral (vs. one and two known males are sinistral and dextral respectively in *P. dunckeri*, and all four know males are sinistral in *P. lehi*). Sexual dimorphism is also found in the number of precaudal vertebrae, i.e., 13–14 in males and 11–12 in females (vs. sexual dimorphism is not found in number of precaudal vertebrae of *P. dunckeri* and *P. lehi*).

Key words: Atheriniformes, Phallostethidae, *Phallostethus cuulong*, new species, Vietnamese Mekong

Introduction

Members of the atheriniform family Phallostethidae (*sensu* Parenti & Louie, 1998) are small and slender, nearly transparent surface-swimming fishes, known from Southeast Asian waters. Male phallostethids have a unique complex copulatory organ, termed the priapium, under the throat (thus the fishes of this family are commonly called "priapiumfish"). The priapium is a bilaterally asymmetric organ for holding or clasping onto females and fertilizing their eggs internally; following internal fertilization, phallostethid females do not give birth to live young, but instead lay fertilized eggs (Parenti, 1989; Grier & Parenti, 1994; Parenti, 2005). The family comprises 21 species, in addition to the new species described here, classified in four genera [Parenti, 1989, 1996; Parenti & Louie, 1998; Nelson, 2006 (as Phallostethinae)]: *Gulaphallus* Herre, 1925 (5 species); *Neostethus* Regan, 1916 (11 species); *Phallostethus* Regan, 1913 (2 species); *Phenacostethus* Myers, 1928 (3 species).

The phallostethid fauna in the Mekong basin has not been well studied. In his checklist of inland fishes of the Indochina and adjacent areas (including Malay Peninsula), Kottelat (1989) confirmed the records of following six phallostethids from the region: *Ceratostethus bicornis* (Regan, 1916) (= *Neostethus bicornis*); *Neostethus lankesteri* Regan, 1916; *Neostethus siamensis* Myers, 1937 (a junior synonym of *Neostethus lankesteri*); *Phallostethus dunckeri* Regan, 1913; *Phenacostethus posthon* Roberts, 1971; *Phenacostethus smithi* Myers, 1928. Kottelat (1989) recognized all of these euryhaline species, but he did not record any species directly from the Mekong. Rainboth (1996: 171) recorded *Phenacostethus smithi* from the Cambodian Mekong, with a comment "1 or 2 species found in the Cambodian Mekong" for the genus. He also noted that the other species of the family had been taken from the Mekong delta, although he did not list the names.

During our recent field surveys of the fish-fauna in the Vietnamese Mekong, at least four species of phallostethid fishes were collected. Three of them are identified as *Phenacostethus smithi*, *Neostethus bicornis* and *N. lankesteri*. The first was locally abundant in the slow-flowing tidal canals (but easily overlooked because of its small size, up to 15.6 mm SL), whereas the other two species were common in the intertidal areas of mangrove

Accepted by R. Pethiyagoda: 14 Mar. 2012; published: 3 Jul. 2012