

## Short Communication

### First record of the Mekong arrowhead puffer *Pao suvattii* (Sontirat & Soonthornsatit, 1985) (Tetraodontiformes: Tetraodontidae) from Cambodia

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Tetraodontid fishes (Tetraodontidae), commonly known as puffers, have a soft, inflatable body, numerous minute spines (or entirely naked in some), four fused teeth, no pelvic fins or fin spine, and a truncate to rounded caudal fin (Nelson, 2006; Nelson *et al.*, 2016; Taki *et al.*, 2021). Many pufferfishes are confined to marine waters, but some enter into or spend their entire life in brackish and/or freshwater areas throughout tropical and subtropical, Atlantic, Indian and Pacific waters (Nelson, 2006; Nelson *et al.*, 2016; Taki *et al.*, 2021). Many also contain a strong poison (tetrodotoxin) in their bodies (Zhu *et al.*, 2020; Taki *et al.*, 2021). The Tetraodontidae family is one of the most speciose families of fish, comprising 196 species in 26 genera (Nelson *et al.*, 2016). In Southeast Asia, the family includes an estimated 40 species in 12 genera (Kottelat, 2013), whereas 15 species in five genera (*Carinotetraodon*, *Langocephalus*, *Auriglobus*, *Arothron* and *Pao*) have been recorded in the Mekong River (Taki *et al.*, 2021). Within the *Pao* genus, at least six species have been reported from the Indochinese portion of the Mekong River (Taki *et al.*,

2021) and five species (*P. abei*, *P. baileyi*, *P. cambodgiensis*, *P. turgidus* and *P. fangi*) from the Cambodian portion of the system (Rainboth, 1996; So *et al.*, 2018).

Taxonomic confusion concerning freshwater pufferfishes in Asia has been reported since Dekkers's review of the *Tetraodon* genus in 1975 (Matsuura, 2015) and revisions of pufferfish genera have continued to the present (Kottelat, 2013; Matsuura, 2015; Froese & Pauly, 2023; Fricke *et al.*, 2024). Kottelat (2013) discussed taxonomic issues related to *Tetraodon*, *Tetrodon* and *Monotretre* and created a new genus, *Pao*, for the taxa found in the Southeast Asia. We follow Kottelat (2013) in adopting *Pao* in relation to the Mekong River and in considering *Tetraodon* and *Monotretre* as synonyms of *Pao* within the region (Froese & Pauly, 2023; Fricke *et al.*, 2024). Currently, the *Tetraodon* genus is used for only six freshwater pufferfishes in Africa (Matsuura, 2015).

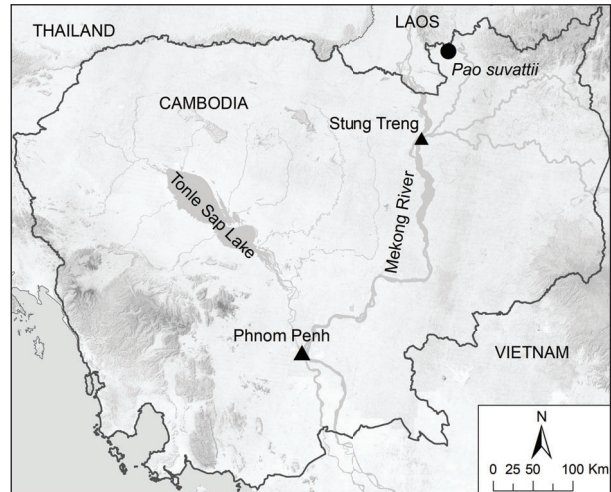
The Mekong arrowhead puffer *Pao suvattii* (Sontirat & Soonthornsatit, 1985) is endemic to the Lower Mekong

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Basin (Vidthayanon, 2012) and has hitherto been reported from Thailand and Laos PDR only (Roberts, 1998; Kottelat, 2001; Vidthayanon, 2012; Taki *et al.*, 2021; Froese & Pauly, 2023). The species was not included for Cambodia by Rainboth (1996), Rainboth *et al.* (2012), So *et al.* (2018) or Taki *et al.* (2021) and no photographs or voucher specimens have been reported from the country.

In February 2022, we caught one tetraodontid fish resembling *Pao* sp. in the Ou Nampha stream, which drains into the Sekong River of the Mekong system (Fig. 1). The capture site is situated within Siem Pang Wildlife Sanctuary in northeast Cambodia. Through a careful check of keys in field guides (Kottelat, 2001; Taki *et al.*, 2021), the individual was subsequently identified as *Pao suvattii* (Sontirat & Soonthornsattit, 1985). We document this record as the first for the species from the Cambodian Mekong drainage.



**Fig. 1** Location of first record of *Pao suvattii* (Sontirat & Soonthornsattit, 1985) (black circle) in Cambodia.



**Fig. 2** Field photographs of *Pao suvattii*, Stung Treng Province, February 2022.

*Pao suvattii* (Sontirat & Soonthornsatit, 1985)

**Diagnosis:** *Pao suvattii* is characterized by an upturned mouth, a long and tapering snout with curved lips, a depressed head and body, slightly elongated body covered with spinules, an arrowhead-shaped dusky marking behind the interorbital area and before the origin of dorsal fin, and a series of oblique stripes on the cheeks and lower anterior part of the body. Live specimens have a brown to dark body covered with small dark and white spots. The ventral surface of body is white (Fig. 2). Because the individual we encountered was not kept as a voucher specimen, our identification was based on careful examination and photographs taken in the field, both of which agreed with the identification keys and descriptions for *Pao* species (Sontirat & Soonthornsatit, 1985; Roberts, 1998; Kottelat, 2001; Taki *et al.*, 2021).

**Distribution:** Based on existing records, *P. suvattii* is restricted to the Lower Mekong Basin in Thailand and Laos, extending into northern Cambodia (Roberts, 1998; Vidthayanon, 2012; Taki *et al.*, 2021; this study).

**Habitat:** We captured *P. suvattii* in a stationary gillnet set in a small deep pool (20 m wide x 30 m length x 3 m deep) in the slightly-flowing, dark and clear water habitat surrounded by a flooded forest with a rocky substrate in the Ou Nampha stream (Fig. 3). The stream drains into the Sekong River of the Mekong system. The capture site is located within the area encompassed by Khamphok Village, Siem Pang District (and Siem Pang Wildlife Sanctuary), Stung Treng Province, northeast Cambodia (Fig. 1).

Although evidenced only by photographs (taken with an iPhone11 Promax camera), our record nonetheless provides new information on the distribution of *P. suvattii* which can be included for Cambodia in FishBase (<[www.fishbase.org](http://www.fishbase.org)>), Fishes of Mainland Southeast Asia (<<http://fish.asia>>; Kano *et al.*, 2013) and future field guides for the region. Notwithstanding this, further studies should consider collection of voucher specimens for biometric and molecular analyses to confirm identifications of future records of the species from the Mekong River basin.

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**Fig. 3** Stretch of the Ou Nampha stream where *Pao suvattii* was recorded, Stung Treng Province, February 2022.

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