



***Gymnothorax poikilospilus*, a new moray eel (Teleostei: Anguilliformes: Muraenidae) from Penghu Islands, western Taiwan**

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Abstract

Gymnothorax poikilospilus **sp. nov.** is described based on two specimens collected from Penghu Islands, western Taiwan. It is a medium-sized brown moray that body covered with several rows of inconspicuous large dark brown patches on the back of body and dorsal fin. It has slightly elongated and arched jaws similar to the common characteristic of the genus *Enchelycore* Kaup, but the dentition supports it belongs to typical morays of the genus *Gymnothorax* Bloch. The new species can be distinguished from other similar Indo-Pacific brown morays by the combination of dentition, vertebral formula, and morphometric measurements. Molecular analyses based on 612 bp of mitochondrial *COI* gene also support it as a distinct species.

Key words: Elopomorpha, Muraeninae, new species, taxonomy, Western Pacific

Introduction

The Muraenidae (moray eels) are the second-most diverse family of true eels (order Anguilliformes), comprising more than 200 species worldwide (Smith 2012; Fricke *et al.* 2022). Located at mid-latitude with various aquatic environments, Taiwan is one of the biodiversity hotspots of moray eels that around 80 species have been recorded, more than one-third muraenid fauna of the world (Chen *et al.* 1994; Chen & Loh 2007; Chen *et al.* 2008; Loh *et al.* 2011, 2015; Ho *et al.* 2015; Huang *et al.* 2021b, etc.).

In 1992, the corresponding author conducted a comprehensive taxonomic survey of the family Muraenidae around Taiwanese waters, with many moray eels collected from fields and fish markets and raised in the laboratory (Chen *et al.* 1994). Among them, a distinct moray eel collected from the Penghu Islands (also Pescadores Islands) was noticed. It is a medium-sized brown moray with curved jaws similar to species of the genus *Enchelycore* Kaup, 1856, however, its dentition is more like typical morays of the genus *Gymnothorax* Bloch, 1795. Unfortunately, the specimen was lost later and only several slides were left. Some pictures of this specimen have been published in a local aquarium magazine in Taiwan (Chen & Shao 1992).

In 2002, another two females were obtained from Penghu Islands and respectively kept in the lab for three and six years. In this study, we examined the two specimens and compared them carefully with similar Indo-Pacific congeners. Morphological and molecular evidence indicate it is distinct from any known moray species, and we herein describe it as a new species under the genus *Gymnothorax*.