

# New identification of the moray eel *Gymnothorax minor* (Temminck & Schlegel, 1846) in China (Anguilliformes, Muraenidae)

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## Abstract

A new identification of *Gymnothorax minor* (Temminck & Schlegel, 1846) is documented based on morphological characteristics and DNA barcoding. Sixty-one individuals of *G. minor* were collected from the East China Sea and the South China Sea. This species was previously reported as *Gymnothorax reticularis* Bloch, 1795 in China because of the similarity in external shape and color. *Gymnothorax minor* can be easily distinguished from *G. reticularis* by its color pattern of 18–20 irregular dark brown vertical bars and the body having scattered small brown spots. Additionally, the teeth are uniserial on both jaws, and the vertebrae number 137–139. By combining congener sequences of the cytochrome oxidase I (COI) gene from GenBank, two groups were detected among all the COI sequences of the currently named *G. minor*, which further indicated that two valid species were present based on genetic distance. A divergence also occurred on the number of vertebrae between the northern and southern populations. The phylogenetic and morphological analysis strongly supports that the northern and southern populations of *G. minor* are two different species. Furthermore, the distribution area of the northern *G. minor* has expanded southward to 5°15'N in the South China Sea. More specimens of *G. minor* and *G. reticularis* are crucial in order to define their geographical distribution boundaries and provide the correct DNA barcoding.

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