

Biodiversity Record: Confirmed occurrence of the moray eel, *Gymnothorax isingteena*, in Singapore

Zeehan Jaafar^{1*}, Jeffrey K. Y. Low² & Kelvin K. P. Lim³

¹Department of Biological Sciences, National University of Singapore, Singapore 117543

²National Parks Board, Singapore Botanic Gardens, Singapore 259569

³Lee Kong Chian Natural History Museum, National University of Singapore, Singapore 117377

Email: jaafarz@mus.edu.sg (*corresponding author)

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Subject: Spotted moray, *Gymnothorax isingteena* (Teleostei: Anguilliformes: Muraenidae).

Subject identified by: Zeehan Jaafar and Wen-Chien Huang.

Location, date and time: Singapore Strait, off Kusu Island; 25 March 2022; at about 1000 hrs.

Habitat: Marine. Coral reef at around 8 m depth.

Observers: Zeehan Jaafar and Jeffrey K. Y. Low.

Observation: An adult individual with head of approximately 5 cm wide, was encountered sheltering at the base of a coral bommie with its head and anterior part of its body exposed. The observers could approach the subject to a distance of about 100 cm without causing it to retreat into the crevice. A wrasse, apparently of the genus *Halichoeres*, was observed cleaning the mouth of the eel, but it swam away upon the observers' approach, and they were not able to photograph it to ascertain the species.



Fig. 1. Fronto-lateral view of the head of the *Gymnothorax isingteena*, in-situ. Fig. 2. Fronto-lateral view of the same subject with the anterior part of its body exposed (Photographs by: Jeffrey K. Y. Low).

Remarks: The first record of *Gymnothorax isingteena* from Singapore is based on a photograph labelled 'Singapore' in a picture book by Kuiter & Debelius (2006: 70). However, we are unable to confirm this record, for the image appears to show a captive animal in an aquarium, as suggested by the sediment-free water and sterile rock background. While the picture was obtained in Singapore, the eel was most likely sourced from the ornamental fish trade, and therefore, may not

have originated from Singapore. The pictures herein featured, taken of the eel in-situ off Kusu Island, thus confirm the occurrence of *Gymnothorax isingteena* in Singapore waters.

Gymnothorax isingteena is morphologically very similar to the honeycomb moray, *Gymnothorax favagineus*, which has been recorded in Singapore by Bleeker (1859–60) as its synonym *Muraena tessellata* (see Smith, 2012). Although there have been no confirmed recent local records, a photograph of *Gymnothorax favagineus*, labelled ‘Singapore’, and apparently in an aquarium, is also published in Kuiter & Debelius (2006: 70). The two species are distinguished by their colour patterns. On *Gymnothorax isingteena*, the dark brown spots are smaller and rounder, and sometimes joined to form partial or complete circles. On *Gymnothorax favagineus*, these markings are closely set polygonal dark blotches with narrow pale interspaces that form a honeycomb pattern (Böhlke et al., 1999; Allen & Erdmann, 2024).

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Literature cited:

Allen GR & Erdmann MV (2024) Reef Fishes of the East Indies, Vol. I. Second edition. Tropical Reef Research, Perth, Australia, xv+470 pp.

Bleeker P (1859–1860) Derde bijdrage tot de kennis der vischfauna van Singapoera. Natuurkundig Tijdschrift voor Nederlandsche-Indië, 20: 446–456.

Böhlke EB, McCosker JE & Smith DG (1999) Muraenidae. In: Carpenter KE & Niem VH (eds.) FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific. Volume 3. Batoid fishes, chimaeras and bony fishes part 1 (Elopidae to Linophrynidae). FAO, Rome, pp. 1643–1657.

Kuiter RH & Debelius H (2006) World Atlas of Marine Fishes. IKAN Unterwasserarchiv, Frankfurt, 720 pp.

Smith DG (2012) A checklist of the moray eels of the world (Teleostei: Anguilliformes: Muraenidae). Zootaxa, 3474: 1–64.