

Ten New Reports of Coral Reef Fishes from Andaman and Nicobar Islands

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Abstract

The following ten new records of fishes from Andaman and Nicobar Islands are reported from the coral reef ecosystem as: *Scorpaenopsis possi* Randall & Eschmeyer, 2001 Poss's Scorpionfish, *Scolopsis affinis* Peters, 1877, Peter's Monocle Bream, *Asterropteryx atripes* Shibukawa & Suzuki, 2002 Blackfoot Goby, *Stonogobiops nemtodes* Hoese & Randall, 1982 Threadfin Shrimpgoby, *Tomiyamichthys oni* (Tomiyama, 1936) Moster Shrimpfish, *Vanderhorstia dorsomacula* Randall, 2007 Dorsalspot Shrimpgoby, *Vanderhorstia phaeosticta* (Randall, Shao & Chen, 2007) Yellowfoot Shrimpgoby, *Gunnellichthys viridescens* Dawson, 1968 Orange Striped wormfish, *Acreichthys tomentosus* (Linnaeus, 1778) Seagrass Filefish and *Canthigaster petersii* (Bianconi, 1854) Peter's Toby during recent field surveys. The aim of this work is to add new information on the additions of fishes from these Islands.

Keywords: Coral Reef Ecosystem, Fishes, New Records, Andaman and Nicobar Islands

Introduction

Andaman Nicobar Islands situated in the Bay of Bengal between 6°45' -13 45' N and 92°10' – 94°15'E, consist of 352 islands 220 islets and rock and cover a distance of almost 470 km over North South, with a coastline of 1962 km, and bring in for India an Exclusive Economic Zone (EEZ) of 600 thousand sq km. The coast is under the influence of a diverse set of oceanographical and ecological conditions. The shelf topography of these islands show frequent rises supporting coral reefs, which are characterized as fringing reefs on the eastern side and barrier reefs off west coast; the depressions are known as passages and straits. Besides coral reefs, the shore is composed of rocky and sandy areas and vast stretches of mangrove swamps, also few freshwater rivers and streams. A comprehensive and authoritative account of fishes of the Indian region including Andaman and Nicobar Islands was published by Francis Day (1870). Herre (1941) listed 490 species of fishes. Talwar (1990) prepared a comprehensive list of fishes consisting of 724 species, followed by a supplementary list by Kamla Devi (1991) containing 71 species of fish and a checklist of 1434 species of fishes reported by Rajan et. al (2013).

Materials and Methods

The new records of fishes were made by field surveys, underwater observations and photography in the coral reef ecosystem using scuba gears in three locations of Havelock Island, Ritchie's archipelago, South Andaman by the authors.(1). Slope 12, 03,450N/92, 57,757E, (Havelock Island), southern part of Rosamund shoal, depth range 3 m to 15 m, gradually slopes to 30m on the North-East side, sandy bottom, with ridges of rock. The site mainly has *Porites* coral and strong currents running South-East to North- West direction, which brings sediment, from the channel between Peel and Havelock Islands. The North-West to South-East direction current brings in clear water from the west side of the ridge. Eastern side covered with se wipe coral and gorgonians, 5 m to 20 m. (2). Light House.12, 02,765N/92, 57,923E (Havelock Island), with fringing reef following the contour of the land and the depth from 0 m to 22m, predominately *Porites* sp. of coral forming massive boulder corals all the way to a depth of 15m, site is covered with broken dead *Acropora* damaged during the tsunami, which is covered with macro algae, subject to wave action during the South-West winds and mild current running along the reef,

usually around 5 to 15m. (3). Nemo Reef 12, 02,297N/92, 59,260E, (Havelock Island) with fringing reef depth range 0 m to 12m, bottom sandy and silt, predominately boulder *Porites* of corals, 2m to 10m, mild current running along the reef. Reef is subject to heavy siltation due to the tidal effect, covered mainly with macro algae. Taxonomic classification follows Nelson (2006).

Results and Discussion

The last few years represent a significant increase of knowledge about the fishes of Andaman and Nicobar Islands. During this study 10 new record of fishes were recorded under 3 orders, 6 families and 9 genera as *Scorpaenopsis possi* Randall & Eschmeyer, 2001, *Scolopsis affinis* Peters, *Asterropteryx atripes* Shibukawa & Suzuki, 2002, *Stonogobiops nemtodes* Hoese & Randall, 1982, *Tomiyamichthys oni* (Tomiyama, 1936), *Vanderhorstia dorsomacula* Randall, 2007, *Vanderhorstia phaeosticta* (Randall, Shao & Chen, 2007), *Gunnellichthys viridescens* Dawson, 1968, *Acreichthys tomentosus* (Linnaeus, 1778) and *Canthigaster petersii* (Bianconi, 1854) are associated with coral reef habitats. A detailed description of morphological features of the newly recorded fish species with their habitat and distribution are presented. All the Ten species are not only new additions to Andaman and Nicobar Islands but also to Indian waters.

SYSTEMATICS

Order SCORPAENIFORMES Scorpionfishes

Family: SCORPAENIDAE

Scorpaenopsis possi Randall & Eschmeyer, 2001 Poss's Scorpionfish

Scorpaenopsis possi Randall & Eschmeyer, 2001. *Indo-Pacific fishes* No. 34: 54. Pl. VII (figs. B-D), XII (A-C). (Type locality: Pitcairn Island).

Scorpaenopsis possi Allen and Erdmann, 2012. *Reef fishes of East Indies*: 235.

Diagnostic characters: D XII, 9; A III, 5; P 17-18; LSS 43-50; upper opercular spine single; occipital pit shallow to moderately deep; fringe of small tentacles on

chin and along lower jaw, but no large fimbriate flaps; tentacle above eye absent or very short in adult. Attains 19 cm. Colour variable depending on surroundings but generally mottled dark reddish to brownish grey.

Habitat: Solitary on rock or coral bottoms.

Distribution: Australia to Ryukyu Islands; ranges throughout East Indian region.



Order PERCIFORMES

Family NEMIPTERIDAE

Scolopsis affinis Peters, 1877, Peter's Monocle Bream

Scolopsis affinis Peters, 1877. *Mont. der Kon. Pre. Aka. der Wissn.*: 832. (Type locality: New Ireland, New Britain, Papua New Guinea).

Scolopsis affinis Allen and Erdmann, 2012. *Reef fishes of East Indies*: 484.

Diagnostic characters: D IX, 9; A III, 7; P 17; LLS 45. Pale grey to whitish body, 3-4 rows of black dots on upper back and yellow caudal fin. Capable of instantly assuming black midlateral stripe. Juvenile mainly white with prominent black stripe along middle of side and pair of narrower dark stripes on upper back.

Habitat: Solitary or small groups. Sand bottoms of lagoons and coastal reefs.

Distribution: Andaman Sea to Solomon Islands, and Australia to Ryukyu Islands; ranges throughout East Indian region.



Family: GOBIIDAE

Asterropteryx atripes Shibukawa & Suzuki, 2002
Blackfoot Goby

Asterropteryx atripes Shibukawa & Suzuki, 2002. *Ichthyol. Research* v. 49 (no 3): 276, Figs. 1-4. (Type locality: Funauki Bay, Iriomote-jima Island, Ryukyu Islands).

Asterropteryx atripes Allen and Erdmann, 2012. *Reef fishes of East Indies*: 909.

Diagnostic characters: D VI + I, 9-10; A I, 0; P 16-18; LSS 24-25; third dorsal spine prolonged forming long filament; scales mainly ctenoid except scales on anterior cheek, throat, nape, predorsal midline, pectoral fin base and prepelvic area cycloid; 4-7 short spines on rear edge of preopercle; caudal fin rounded. Attains 2.7 cm. Dark brown, grading to whitish on ventral parts, with brilliant blue spots on head and body forming 3-4 longitudinal rows; faint dark edged pale spots on median fins and dusky brown to blackish pelvic fins.

Habitat: Sheltered bays on sand, rubble and mud bottoms.

Distribution: Andaman Islands, Indonesia, Philippines and Ryukyu Islands.



Stonogobiops nematodes Hoese & Randall, 1982
Threadfin Shrimpgoby

Stonogobiops nematodes Hoese & Randall, 1982. *Indo-Pacific fishes* No. 1: 13, Pl. 3 (B-C) (Type locality: Dumaguete City, Negros, Philippines).

Stonogobiops nematodes Allen and Erdmann, 2012. *Reef fishes of East Indies*: 882.

Diagnostic characters: D VI + I, 12; A I, 11; P 16; LSS 80-85. First two dorsal spines extremely prolonged; pelvic fins united, well developed frenum present; head scaleless; body covered with cycloid scales; caudal fin rounded. White with three oblique dark brown to black bands on side, blackish or brown bar on caudal peduncle, yellow iris and snout, and elongate dorsal spine black. Attains 6 cm.

Habitat: Inhabits sand rubble bottoms.

Distribution: Seychelles, Thailand, Myanmar, Brunei, Indonesia, Philippines, Palau and Ryukyu Islands.



Tomiyamichthys oni
(Tomiyama, 1936) Moster Shrimpfish

Tomiyamichthys oni (Tomiyama, 1936). *Jap. Journ. Zool.* V. 7: 82, fig. 32. (Type locality: Tokyo fish market, Japan).

Tomiyamichthys oni Allen and Erdmann, 2012. *Reef fishes of East Indies*: 884.

Diagnostic characters: D VI+I, 11; AI, 10-11; P 17-19; LSS 74-91. First dorsal fin triangular without prolonged spines; pelvic fins united, well developed frenum present; head scaleless; body covered with cycloid scales; caudal fin rounded. Whitish with dark band below eye, body variable covered with clusters of irregular brown spots, row of 4-5 enlarged brown spots along ventral side, several diffuse brown bars on side, partially ocellated black spot on rear edge of dorsal fin and white colouration on basal portion of pectoral fin. Attains 11 cm.

Habitat: Sheltered sand and rubble bottoms.

Distribution: Indonesia to New Caledonia and Palu to Japan; ranges throughout East Indian region.



Vanderhorstia dorsomacula Randall, 2007 Dorsalspot Shrimpgoby

Vanderhorstia dorsomacula Randall, 2007. *Aqua, International Journal of Ichthyology* v.12: 98, fig. 5. (Type locality: Tab Island, Madang, Papua New Guinea).

Vanderhorstia dorsomacula Allen and Erdmann, 2012. *Reef fishes of East Indies*: 889.

Diagnostic characters: D VI + I, 17; A I, 18; P 18; LSS 75-80; pelvic fins united, well developed frenum present; head scaleless, body covered with cycloid scales anteriorly, ctenoid posteriorly; caudal fin lanceolate.

Bluish white on abdomen, yellow spots covering head and body, blue stripe on head and opercle, first dorsal fin with irregular dark spot and yellow streaks.

Habitat: Estuaries, lagoons and sheltered reefs.

Distribution: Indonesia, Philippines and Ryukyu Islands.



Vanderhorstia phaeosticta (Randall, Shao & Chen, 2007) Yellowfoot Shrimpgoby

Vanderhorstia phaeosticta Randall, Shao & Chen, 2007. *Zool. Stud.* 46 (1): 26-34. (Type locality: Tab Island, Madang, Papua New Guinea).

Vanderhorstia phaeosticta Allen and Erdmann, 2012. *Reef fishes of East Indies*: 890.

Diagnostic characters: D VI + I, 12-13; A I, 13; P 18-19; LSS 46-52. Third dorsal spine forming prolonged filament; pelvic fins united, well developed frenum present; head scaleless except side of nape; body ctenoid scales; caudal fin ovate. Pale grey to yellowish with row of 6-7 diffuse blackish saddles on back, blue edged yellow spots on lower side, blue and yellow oblique bands on head; short brown lines on dorsal fin rays. Attains 5 cm.

Habitat: Sandy shores.

Distribution: Indonesia, New Caledonia to Ryukyu Islands



Family: MICRODESMIDAE

Gunnellichthys viridescens Dawson, 1968 Orange
Striped wormfish

Gunnellichthys viridescens Dawson, 1968. Proc. Biol. Soc. Washington v. 81: 61, figs. 2-5 (Type locality: between Anonyme and Mahe Islands, Seychelles).

Gunnellichthys viridescens Allen and Erdmann, 2012. *Reef fishes of East Indies*: 991.

Diagnostic characters: D XX-XXI, 38-41; A 36-40; P 12-13; V I,4; cheek and opercle scaled; dorsal fin origin slightly posterior to level of pectoral fin base; caudal fin rounded. Whitish, pale yellowish with orange to yellow stripe from front of lower jaw, across snout, through eye, and continued along upper side to rear margin of caudal fin and iridescent blue stripe on dorsal midline of head. Attains 7.2 cm.

Habitat: Open sand, algal flats and seagrass beds.

Distribution: Persian Gulf and Seychelles to Micronesia and Samoa and Australia to Japan; ranges throughout East Indian region.



Order TETRAODONTIFORMES

Family MONACANTHIDAE FILEFISH

Acreichthys tomentosus (Linnaeus, 1778)
Seagrass Filefish

Balistes tomentosus Linnaeus, 1778. Systema Naturae, Ed. X v.1:328. No type Known.

Acreichthys tomentosus Allen and Erdmann, 2012. *Reef fishes of East Indies*: 1069.

Diagnostic characters: D II + 26-30; A 25-29; P 10-13. Dorsal profile of head concave; pelvic fin rudiment and first dorsal fin spine robust, with prominent barbs; short skin flaps on first dorsal fin and scattered skin flaps on body; caudal fin rounded. Attains 11.5 cm. Head and body covered with irregular green to brown blotching, usually with diffuse whitish bands through eye, on middle of body and back.

Habitat: Solitary in sheltered reefs, secretive, often hiding among seagrass, gorgonians and soft corals.

Distribution: Sri Lanka to New Caledonia and eastern Australia to Ryukyu Islands; ranges throughout East Indian region.



Family **TETRAODONTIDAE** Puffers

Canthigaster petersii (Bianconi, 1854) Peter's Toby

Tetrodon petersii Bianconi, 1854. *Rendiconto delle Accademia delle Scienze dell' Instituto dei Bologna*: 68. (Type locality: Mozambique).

Canthigaster petersii Allen and Erdmann, 2012. *Reef fishes of East Indies*: 1095.

Diagnostic characters: D. 8-10 A. 8-10; P. 16-18 Brown with numerous white spots on snout, side of body and caudal, bluish – white lines mainly around eye region and on upper back, prominent white edged black spot below dorsal fin base and abruptly white belly.

Habitat: Coral reefs.

Distribution: Indian Ocean from Oman and East Africa to Andaman Sea. Closely related to *C. solandri* from the western and central Pacific and *C. papua* from the East Indian region (sympatric with this species in the Andaman Sea).



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