Platax 10: 73-80, 2013

New records of five fish species from the Green Island, Orchid Island and Kenting, Taiwan

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Abstract

This study reports five fish species newly recognized from different localities in Taiwan, based on underwater photographs (four species) and specimen (one species). *Xyrichtys halsteadi* (Labridae), *Epinephelus howlandi* (Serranidae) and *Gunnellichthys viridescens* (Microdesmidae) are recorded for the first time based on underwater photographs taken from Orchid Island, Green Island and Kenting, respectively. *Xryichthys woodi* (Labridae) is first record for Orchid Island and *Ariomma brevimanum* (Ariommatidae) is first record for Kenting. Brief descriptions and ecological notes are provided.

Key words: Pisces, Orchid Island, Green Island, Kenting, new record, Taiwan

Introduction

The Taiwanese fish fauna comprises roughly 3100 species and new records or species havecontinuously being discovered. For example, Shao et al. (2008) provided a checklist of fishes found in southern Taiwan and listed 230 families with 2133 species, including 128 species newly recorded from Taiwanese water. In the recent comprehensive publication "Marine fishes in Kenting National Park", Chen et al. (2010) recognized 116 families with 1154 species, mostly coral reef fishes, including 36 species newly recorded from Taiwan. Chen et al. (2013) added 15 species new to the Kenting National Park.

In this work, a large amountof underwater photographs wereexamined and three species wererecognized as the first record withinTaiwanese waters,one

species is anew record from Orchid Island, and one from Kenting.The purpose of present studywasto provide evidence for the records and to document these species into the fish fauna of Taiwan.

Materials and Methods

SCUBA Diving was operated by our team in Green Island, Orchid Island and Kenting National Park, with detailed recordings of environmentaland ecological information. The localities are provided in Fig. 1. The fish from underwater photographs wereidentifiedusing variousreference resources. Specimenswerecollected when possibleand weredeposited in National Museum of Marine Biology & Aquarium, Pingtung (NMMB-P).

Results

Family Microdesmidae

Gunnellichthys viridescens Dawson, 1968

黃帶鰯鰕虎

Fig. 2

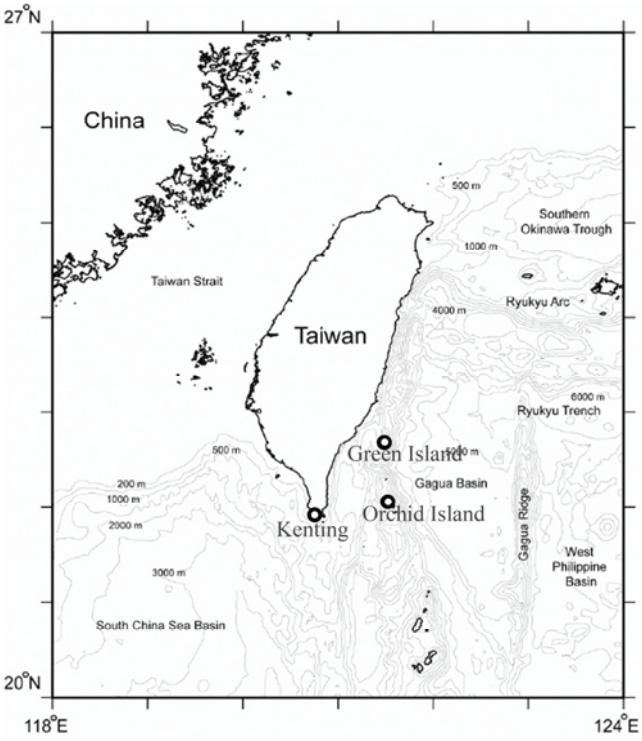

Fig. 1 Map of the localities (open circles) of the fishes being photographed or collected in present study.

Fig. 2 *Gunnellichthys viridescens* Dawson, 1968, sex indeterminate, ca. 10 mm, He-jie, Kenting National Park, 27 m, photo by C.-J. Lin.

Image examined. Sex indeterminate, ca. 10 mm, He-jie, Kenting National Park, 27 m, 17 Feb. 2013.

Description. Body eel-like, elongated; body depth about 13 in total length; head length about 1.5 times of body depth; mouth slightly superior; lower jaw overhanging the upper jaw; eye large, about equal to snout length; origin of dorsal fin slightly behind the head; origin of anal fin at middle portion of body; both dorsal and anal fin extend to near base of caudal fin; caudal peduncle short. Body semi-transparent, with a pale blue and an orange strip through anterior tip to caudal fin, belly sliver white, extend from lower jaw to anus, then gradually narrower to middle portion of anal fin base. All fins transparent.

Distribution. Widespread in Indo-west Pacific Ocean.Our image represents the first record withinTaiwan.

Ecological note. This species was observed swimming above the bottom with very fine sand not far from the coral reef; it swims very fast to escape when encountering the diver.

Family Labridae

***Novaculops halsteadi* (Randall & Lobel, 2003)**

哈氏離鰭鯛

Fig. 3

Image examined. A female specimen, ca. 20 cm TL, Orchid Island, Taitung, 45 m, Feb. 2012.

Fig.3. *Novaculops halsteadi* (Randall & Lobel, 2003), female individual, ca. 20 cm TL, Orchid Island, Taitung, 45 m, photo by C.-J. Yang.

Description. Bodyvery compressed; body depth about 4 times in TL; head small, about 5 times in TL; dorsal profile of head smoothly convex; eye relatively large, snout short; mouth terminal, slightly oblique; one continuousdorsal fin with long base, origin of the fin behind the eye; origin of anal fin at middle portion of body; caudal peduncle short; caudal fin truncated to rounded. Uniformly pinkish red, with a broad red stripe on dorsal margin of body; a pale blue margin below the red stripe. All fine transparent.

Distribution. Western and southern Pacific Ocean. Our image represents the first record withinTaiwan.

Ecological note. The individual was observedhiding among coral sand bottom and other shelter creatures, such as feather-like hydroid (family Plumulariidae).

Remark. *Novaculops halsteadi* was documentedfrom Japan totropical Pacific Ocean (Allen and Erdmann, 2012; Kuiter, pers. comm., 2013). Thus, Taiwan is within the expected range. Randall and Lobel (2003) mentioned that the specimens were collected outside of the coral reef area at depths more than 30 m. Our data agrees with their observation.

***Novaculops schistius* (Jordan & Thompson 1914)**

東方離鰭鯛

Fig. 4

Synonymy. *Xyrichthys woodi* (Jenkins, 1901): Shen & Yeh, 1987:64.

Fig. 4. *Novaculops schistius* (Jordan & Thompson 1914), immature female, ca. 13 cm TL, Kai-yuan port, Orchid Island, 42 m, photo by C.-J. Yang.

Description. Body very compressed; body deep, about 4.5 times in TL; head small, about equal to body depth; dorsal profile of head smoothly convex; eye relatively large, snout short; mouth small, terminal; one continuous dorsal fin with long base, origin of the fin slightly behind the eye; origin of anal fin at middle portion of body; caudal peduncle short; caudal fin truncated to rounded. Body uniformly yellowish pink, all fins transparent, more yellow than the body; eye yellow.

Distribution. Northwestern Pacific Ocean. The image represents the first record of Orchid Island (Lan-yu Island).

Ecological note. The fish was observed swimming above the sandy bottom and was not associated withany cover.

Remark. Shen & Yeh (1987) recognized *Xyrichtys woodi* from Taiwan. Randall (2013) confirmed that this species, in *Novaculops*, is endemic to Hawaii and others records from outside Hawaii should be referred to *Novaculops schistius*.

Family Serraenidae

***Epinephelus howlandi* (Günther, 1873)**

荷氏石斑魚

Fig. 5

Image examined. A juvenile specimen, ca. 20 cm TL, Shih-lung, Green Island, 16 m, 4 Oct. 2011.

Description. Body slender andless compressed; head moderate in size, head length ca. 3.2 in TL, front slightly pointed; one dorsal fin, slightly concaved at midpoint; pectoral fin large, rounded; pelvic fin smaller than pectoral fin, not reaching anus; anal fin with a rounded

Fig. 5. *Epinephelus howlandi* (Günther, 1873), juvenile, ca. 20 cm TL, Shih-lung, Green Island, 16 m, photo by M.-H. Yu.

posterior margin; caudal fin rounded.Body reddish blue in background, slightly yellowish dorsally; body evenly covered by large rounded brown spots, each spot with a black center, except for those on posterior portion of dorsal fin, anal fin and caudal fin are uniformly black. Eye yellowish, pupil black.Inner surface of pectoral fin uniformly bluish black with a pale posterior margin. Posterior portion of anal and caudal fins bluish-black, each with a pale posterior margin.

Distribution. Mostly islands in the western and southern Pacific Ocean (Carig et al., 2011). In Taiwan, this species was observed from the Green Island, southeastern Taiwan.

Ecological note. The fish was observed to be occupying a small cave in an independent rock; the water velocityoutside the cavewas about 15 cm per second.

Family Ariommatidae

Ariomma brevimanum (Klunzinger 1884)

Fig. 6

Ariomma brevimanum (Klunzinger, 1884): Ho et al., 2010:258.

Specimen examined. NMMB-P uncat., 550 mm SL, Hou-bi-hu, Kenting Nation Park, Pingtung, ca. 150 m, 3 May 2011, coll. H.-C. Ho.

Remark. Ho et al. (2010) first recorded this species from the eastern Taiwan off Hualian. A very large specimen collected by hook and line from off Kenting National Park was landed in the Hou-bi-hu market. The specimen was purchased by the first author and deposited at the NMMB-P collection. Although being widely recorded through

Fig. 6. *Ariomma brevimanum* (Klunzinger, 1884), NMMB-P17198, 550 mm SL, Hou-bi-hu port, Kenting National Park.

the Indo-west Pacific Ocean, our specimen wasconfirmed to represent the first record from the South China Sea.

Acknowledgements

We thank Mr. Ming-Hong Yu, the diving coach who provided the photographs of *Epinephelus howlandi* and useful information of ecological note. This work is supported by National Museum of Marine Biology & Aquarium.

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Platax 10: 73-80, 2013

記五種台灣產自台灣蘭嶼、綠島及墾丁之新紀錄魚種

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摘　要

本文報導從水下照片及標本共計確認出五種台灣不同地區之新紀錄魚類種。其中龍頭魚科之哈氏離鰭鯛、蚓鰕虎科之黃帶鰕虎及鮨科之荷氏石斑魚爲台灣首次記錄，分別記錄魚蘭嶼、綠島及墾丁。隆頭魚科之伍氏離鰭鯛爲蘭嶼首次記錄。無齒鯧科短鰭無齒鯧爲墾丁地區之新紀錄。本文提供各種之簡短描述及生態觀察。

關鍵詞：魚類、蘭嶼、綠島、墾丁、新紀錄、台灣