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# Short Note

# A New Species of Freshwater Goby *Schismatogobius ampluvinculus* (Pisces: Gobiidae) from Southeastern Taiwan

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**I-Shiung Chen, Kwang-Tsao Shao and Lee-Shing Fang (1995)** A new species of freshwater goby *Schismatogobius ampluvinculus* (Pisces: Gobiidae) from southeastern Taiwan. *Zoological Studies* **34**(3): 202-205. *Schismatogobius ampluvinculus*, a new species of freshwater goby, was discovered in both Taitung County and Pingtung County, southeastern Taiwan. It is distinguished by a large black blotch on the upper part of the pectoral fin, and four black and three white wide, vertical bands alternately arranged from the head to the base of the caudal fin. It has a more slender body than five of the six congeneric species. This is the first record of a species of the genus *Schismatogobius* from Taiwan.

**Key words:** Freshwater fish, Fish taxonomy, Fish fauna.

Freshwater gobies are usually the dominant benthic fishes in the streams, rivers, lakes, or estuaries of Taiwan. So far, at least 66 species in 34 genera of gobies have been recorded from both freshwater and brackish water habitats (Tzeng 1986, Shao et al. 1992, Chen and Shao 1993). In addition to these, new records of a few species or undescribed species have yet to be published (Chen, in preparation). The present paper describes a new species of small freshwater goby which was collected over the past two years during surveys of the freshwater and marine fish fauna in southeastern Taiwan.

The genus of small goby, *Schismatogobius*, described by de Beaufort (1912), has a naked and elongate body and adults live among pebbles in freshwater. Until now, six nominal species of this genus have been described: *S. marmoratus* (Peter 1868) from Samar Is., Philippines; *S. bruynisi* (de Beaufort 1912) from Ceram Is., Indonesia; *S. insignus* (Herre 1927) from Negros Is., Philippines; *S. pallida* (Herre 1934) from Sitankai, Philippines; *S. roxasi* (Herre 1936) from Panay Is., Philippines; and *S. deraniyagalai* (Kottelate and Pethiyagoda 1989) from Sabaragamuwa, Sri Lanka. Some members of this genus have also been found in other islands of Indonesia (Sulawesi, Sumatra), northern Australia and the Ryukyus of Japan (Masuda et al. 1984, Allen 1989, Kottelate and Pethiyagoda 1989). Although a revision of the genus *Schismatogobius* still needs to be done, we will describe one new species from the southeastern part of Taiwan based on some characters that are significantly different from those of previously described species.

**Materials and Methods**—The specimens of this new species were discovered by the senior author using snorkeling equipment on the Jinglun River in Taitung County, southeastern Taiwan. The specimens were collected with a handnet (15 cm × 10 cm) from several field trips during 1992 and 1995. All counts and measurements were made from specimens preserved in 10% formalin. Names of the pores of the cephalic sensory system and meristic characters follow the methods of Akihito, described in Masuda et al. (1984). Morphometric characters follow Hubbs and Lagler (1958). The numbers of vertebrae were counted using X-ray films. Abbreviations used for meristic characters include: D, dorsal fin; A, anal fin; P1, pectoral fin; P2, pelvic fin; Vert, number of vertebrae. The specimens are now desposited at the Institute of Zoology, Academia Sinica (ASIZP).

### *Schismatogobius ampluvinculus* n. sp.
(Figs. 1-3)

*Schismatogobius* sp. Akihito in Masuda et al.,1984: 263. pl.245.; Nakabo, 1993: 1047.

*Holotype*: ASIZP-056923, 22.2 mm SL, male, Jinglun River, Taitung County, Taiwan, IS Chen, Dec. 14, 1992.

*Paratype*: 1 specimen, ASIZP-056988, 22.3 mm SL, female, Jinglun River, Taitung County, Taiwan, IS Chen, Dec. 29, 1993: 5 specimens, ASIZP-057277, 19.0-24.5 mm SL, Jupung Brook, Pingtung County, Taiwan, IS Chen, Feb. 9, 1995; 3 specimens, ASIZP-057278, 25.2-26.9 mm SL,

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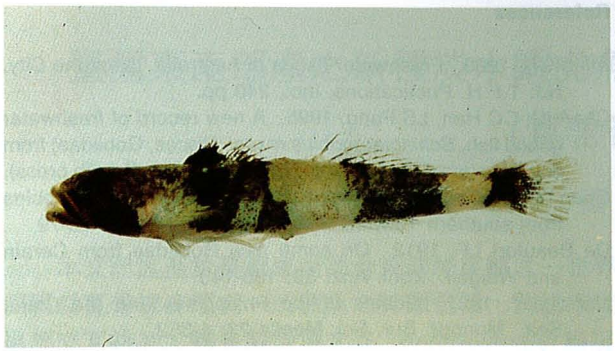

**Fig. 1.** *Schismatogobius ampluvinculus* n. sp. ASIZP-056988, paratype, female, 22.3 mm SL.

**Fig. 2.** In tank, *Schismatogobius amplusvinculus* n. sp., paratype.

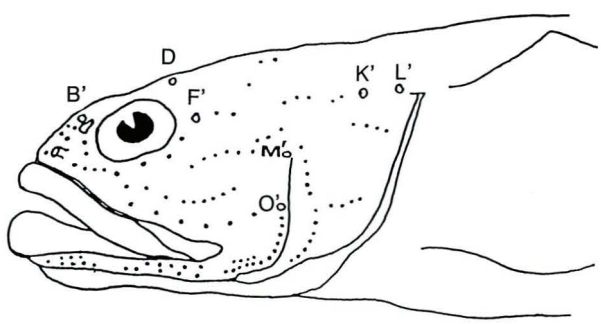


**Fig. 3.** Cephalic sensory canal pores and sensory papilla of *Schismatogobius amplusvinculus* n. sp., ASIZP-056923, holotype, male, 22.2 mm SL.

Luliao Brook, Pingtung County, Taiwan, IS Chen, Mar. 2, 1995.

*Diagnosis*: This new species is distinguished from the other six described species of *Schismatogobius* by the following characters: (1) its body is more slender than five of the nominal species, body depth 6.6-7.0 in SL, versus 4.0-4.25 in *S. insignus*; 5.0 in *S. marmoratus* and *S. roxasi*; 5.4 in *S. pallida*; and 4.0-6.0 in *S. bruynisi*; (Peter 1868, de Beaufort 1912, Herre 1927 1934 1936, Koumans 1953); *S. denaniyagalai* has the most elongate body but its body depth, 7.9-8.3, does not overlap with this new species; (2) its body has four broad dark bands from head to caudal fin; and (3) its pectoral fin has a large black blotch.

*Description*: D VI-I, 9; A I, 9; P1 16; P2 I, 5; Vert 26 (same number in both sexes). Morphometric data from the male holotype, 22.2 mm SL, and female paratype from Jinglun River, 22.3 mm SL, are as follows: total length 26.4 mm and 26.3 mm; head length 3.3, 3.7; body depth 7.0, 6.6; predorsal length 2.5, 2.6; snout to second dorsal origin 1.8, 1.8; snout to anal origin 1.6, 1.7; pelvic length 3.9, 4.2; caudal peduncle length 5.9, 6.3 and caudal peduncle depth 11.0, 11.2 all in SL; head width 2.1, 1.9; eye diameter 5.1, 6.2; interorbital width 5.2, 5.4 and snout length 4.4, 4.1 all in HL.

Body naked, slender, with circular anterior and oblong posterior cross-sections. Head depressed, snout obtuse, lower jaw extending almost to the corner of the preoperculum in males and reaching the vertical of the posterior margin of eye in females. Eyes high and close, interorbital width about equal to eye diameter. End of tongue bilobed. Teeth minute, in two to three rows on anterior part of both jaws. Spines of first dorsal about equal. The dorsals and anal less than depth of body. Pelvic large, forming a sucking disc, its length slightly shorter than head.

*Head pores* (Fig. 3): a posterior nasal pore above each posterior nostril (B'); a median posterior interorbital pore (D); a postorbital pore behind each eye (F'); a short tube with pores at both ends above operculum (K' and L'); and two preopercular pores (M' and O'). Cheek papillae: three mainly horizontal papilla lines; upper one below eyes from the vertical of posterior margin of eye to the upper end of preoperculum; middle one from snout to mid-part of preoperculum; lower one above jaws from the midline of upper jaw to preoperculum; other papillae shown in Fig. 3.

*Coloration*: Body creamy yellow, with four wide transverse dark bands. The first dark band covers the head, the dorsal part lighter than cheek. The second one runs from just below the pectoral fin down and back to the belly. The third one ranges from the third ray of soft dorsal to middle part of caudal peduncle. The last one is narrower and located on base of caudal fin. Dorsal area of head and nape with reticulated pattern. Dorsal part of body with indistinct brown reticulated pattern or spots on the white bands which are somewhat orange in adults. Dorsals with some scattered rows of black spots. Anal with some dark spots on basal part. Pectoral fin with a large black blotch on its upper part, the distal part behind and below the blotch with some rows of black lines. Pelvic membrane and frenum dusky. Caudal with two large, whitish oblong spots.

*Etymology*: The name is derived from Latin, *amplus* (wide) + *vinculum* (band), the body with alternate blackish and whitish (somewhat yellowish) wide bands from head to base of caudal fin.

*Distribution*: Previously found on Yaeyama Is. (also Ishigaki Is. and Iriomote Is.) in Japan (M. Hayashi, pers. comm.; Masuda et al. 1984; Kawanabe and Mizuno 1989; Nakabo 1993), might be in Sulawesi (Kottelat et al. 1993) and Taiwan.

*Remarks*: Before 1994, this species had only been found in its type locality, Jinglun River. However, since it would appear to be able to inhabit other nearby rivers, more surveys for this species and its life history were done recently. Until now, we have found that it also exists in some small eastern drainages of Pingtung County, together with another congeneric sympatric species of new record of *Schismatogobius roxasi* (Chen et al. 1995). Recently, Tzeng (per. comm) also collected

this new species from Show-ku-Lawn River, Hwalian County. As to other countries, this species has been recorded in the brooks of Yaeyama Islands of Japan (Masuda et al. 1984, Kawanabe and Mizuno 1989, Nakabo 1993); probably in Sulawesi, based on the specimen photos of *S. mamoratus* in Kottelat et al. (1993) (not Peter, 1868) since its coloration is very similar to this new Taiwanese species and to Ryukyuan specimens. The differences between this species and *S. mamoratus* (Peter, 1868) include the following: (1) D VI, I-9 in *S. ampluvinculus* but D VI, I-10 in *S. mamoratus*; (2) *S. ampluvinculus* with more slender body form (6.6-7.0) than *S. mamoratus* (5.0); (3) Peter's original descriptions of *S. mamoratus* did not mention the stable characters of this new species: large dark blotch on pectoral and three wide, dark bands on lateral body. Furthermore, this species, like other freshwater gobies, has a benthic life as adult. This species is very difficult to be observed in the field or tank because of its cryptic coloration which blends in with their background. While undisturbed, these fish will move from rock to rock, and are very seldom free-swimming, very similar to *S. deraniyagalai* Kottelat and Pethiyagoda (1989). When disturbed, they will burrow into the pebbles immediately with only the head visible. Also, their transverse black bands become darker. So far, this species has only been found in shallow runs with a substratum of small pebbles. Other fish species found at the type locality are *Angullia marmorata* (Quoy and Gaimard); *Varicorhinus barbatulus* (Pellegrin), *Kuhlia marginata* (Cuvier and Valenciennes), *Stiphodon elegans* (Steindachner), *Sicyopterus japonicus* (Tanaka), and one possible undescribed but dominant species of *Rhinogobius* sp. Kottelat and Pethiyagoda (1989) suggested that the *Schismatogobius* species in Sri Lanka might spend its whole life cycle in freshwater. But so far, there seem to be no data characterizing the larvae of this fish. However, because some localities of its distribution are near the brackish waters, this species might be diadromous. Finally, because this new species is rare, and only distributed in eastern Taiwan, its conservation and further research work need to be done as early as possible.

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# 臺灣東南部產之新種淡水鰕虎魚 *Schismatogobius ampluvinculus* (寬帶裸身鰕虎)

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本文記述產於臺灣東南部台東縣屏東縣之一世界新種淡水鰕虎 *Schismatogobius ampluvinculus*，中文名擬稱爲寬帶裸身鰕虎。此種魚之特徵包括：胸鰭末端有一大型黑斑，體側有四條黑及三條白色寬橫帶由頭部至尾部交互排列，體長較同屬之 *S. deraniyagalai* 爲短，但較其他五種同屬之鰕虎爲細長。裸身鰕虎亦爲本省之新記錄屬之魚類。

**關鍵詞**：淡水魚，魚類分類，魚類相。

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