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A new freshwater goby of *Rhinogobius* Gill, 1859 (Teleostei, Gobiidae) from the Jangshi basin, Fujian Province, southeastern China

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Abstract

A new species of freshwater gobiid fish of genus *Rhnogobius* Gill, 1859, were collected from the Jangshi river basin, southern region of Fujian Province, China. *Rhinogobius jangshiensis* new species can be well distinguished from other congeners by their specific patterns of coloration and meristic features: (1) fins rays: second dorsal fin rays I/8; anal fin rays I/7; pectoral fin rays modally 17; (2) squamation: longitudinal scale series 28–30 (modally 29); perdorsal scales 9–10 (modally 9); vertebral count 27; and (3) specific colouration pattern: cheek with 4 main oblique black stripes in male; branchiostegal membrane grayish blue with about 26–32 rounded, brilliant orange red spots in male; caudal fin gray with some light rounded spots and basal black spotted patch and large central yellow mark in adult male. A diagnostic key to all valid species from Fujian Province, China would be provided in this paper.

Key words: *Rhinogobius*, new species, Jansghi basin, Fujian province, fish taxonomy

Introduction

Gobioid fishes are the very important components of benthic freshwater fish fauna in East Asia. The freshwater goby, *Rhinogobius* Gill, 1859, is widely distributed on several islands of the Western Pacific including Japan (Akihito *et al.* 1984, 1993, 2002; Masuda *et al.* 1989; Suzuki *et al.*, 2011), Taiwan (Aonuma & Chen 1996; Chen & Shao 1996; Lee & Chang 1996; Chen *et al.* 1998; Chen & Fang 1999; Chen 2009), Hainan (Wu & Ni 1985; Chen *et al.* 2002; Chen & Miller 2013), and Philippines (Herre 1927), and also continental Asia, in Russia, Korea, China, Vietnam, Laos, Cambodia, and Thailand (Chu & Wu 1965; Zheng & Wu, 1985; Chen & Miller 1998; Chen *et al.*, 1999a–c, Chen & Kottelat 2000, 2003, 2005; Chen & Fang 2006; Huang & Chen 2007; Li & Zhong 2007; Li *et al.* 2007; Chen *et al.* 2008; Wu *et al.* 2009; Chen & Miller 2008, 2013; Chen *et al.* 2022).

The life history of *Rhinogobius* species include non-diadromous, landlocked, fluvial species (Mizuno 1960; Mizuno & Goto 1987; Iguchi & Mizuno 1991; Akihito *et al.* 1993, 2002) as well as lake-river migratory species and lentic species (Takahashi & Okazaki 2002).

At present, the author estimates that there are at least over 90 species are known in East and Southeast Asia and some of them still need formal description (Chen & Kottelat 2003, 2005; Chen & Fang 2006; Chen *et al.* 2008; Yang *et al.* 2008; Chen & Miller 2013).

In the Fujian province, one fluvial species, *R. xianshuiensis* Chen *et al.* 1999b, was firstly described from the upper tributary of the Mulan River basin by Chen *et al.* 1999b. Two more species were described from the upper tributaries of Hanjiang basin including both *R. changtinensis* and *R. ponkouensis* by Huang and Chen (2007). The fourth species was described from the hillstream of Minjiang basin, as *R. reticulatus* Li *et al.*, 2007. Later on, another endemic species, *R. longyanensis* Chen *et al.*, 2008 was described from the Julongjiang basin, middle region

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of the province. Two species including both *R. rubrolineatus* Chen & Miller, 2008 and *R. sagittus* Chen & Miller, 2008 were described from two different tributaries of the Minjiang basin. More recently, new discovered fluvial species, *R. lingtongyenensis* Chen *et al.*, 2022 from Dongshi basin; new fluvial species, *R. lianchengensis* Wang & Chen, 2022 from Minjiang basin.

Recent survey of the field trip was conducted in 2015 from several remote hill-streams of large river basins from southern region of Fujian Province and the survey of freshwater fish fauna has yielded several undescribed fishes including gobiid fishes. One undescribed species has been found from this southern region in the Jangshi basin which is first reported for occurrence of the fluvial species. The detailed formal description would be provided herein. A diagnostic key to all valid, fluvial species of *Rhinogobius* from Fujian Province, China is also provided.

Materials and Methods

Type specimens of these new gobies were collected by hand-net and cast-net. All counts and measurements were made from specimens finally preserved in 70% ethanol. Morphometric methods follow Miller (1988) and meristic methods follow Akihito *et al.* (1984) and Chen & Shao (1996) and Chen *et al.* (1999b). Terminology of cephalic sensory canals and free neuromast organs (sensory papillae) is from Wongrat & Miller (1979), based on Sanzo (1911).

Meristic abbreviations are as follows: A = anal fin; C = caudal fin; D1 = first dorsal fin; D2 = second dorsal fin; LR = longitudinal scale rows; P = pectoral fin; PreD = predorsal scales; SDP = scale series from origin of first dorsal fin to upper pectoral fin origin; TR = transverse scale series from second dorsal to anal fins; V = pelvic fin; VC = vertebral count. All fish lengths are expressed by standard length (SL).

The type specimens and comparative materials are deposited in the Biodiversity Research Center, Academia Sinica, Taipei (ASIZP); the Biological Laboratory, Imperial Household, Tokyo (BLIH); Pisces collection of National Taiwan Ocean University, Keelung (NTOUP); and the Zoological Reference Collection of the Raffles Museum of Biodiversity Research, Singapore (ZRC). The comparative materials of congeneric species are listed in Appendix I.

Systematics

***Rhinogobius jangshiensis* new species**
(漳溪吻鰕虎)
(Figs. 1–3)

Materials examined

Holotype. NTOUP-2015-04-301, 33.6 mm SL, Field station no. 2015-03-1B, Shianya village, Shihliu township, Jangpushi in the Jangshi basin, Jangpu County, Janchou City, Fujian Province, PR China, Coll. I-S. Chen, 10 Mar. 2015.

Paratypes: NTOUP-2015-04-302, 6 specimens, 28.6–30.0 mm SL, other data same as holotype.

Diagnosis

Rhinogobius jangshiensis can be well distinguished from all other congeners by the unique combination of the following features: (1) fins rays: second dorsal fin rays I/8; anal fin rays I/7; pectoral fin rays modally 17; (2) squamation: longitudinal scale series 28–30 (modally 29); perdorsal scales 9–10 (modally 9); (3) vertebral count 27; and (4) specific colouration: cheek with 4 main oblique black stripes in male; branchiostegal membrane grayish blue with about 26–32 rounded, brilliant orange red spots in male; caudal fin gray with some light rounded spots and basal black spotted patch and large central yellow mark in adult male.

FIGURE 1. *Rhinogobius jangshiensis*, new species, upper one: male, holotype, 33.6 mm SL; lower one: female, paratype, 30.0 mm SL, the Jangshi basin, Fujian Province, PR China.

Description

Body proportions in Table 1. Body cylindrical anteriorly, compressed posteriorly. Head rather large, somewhat depressed in male. Eye large, dorsolateral. Snout pointed. Cheek fleshy in male. Lips thicks. Mouth oblique, rear edge extending to vertical of anterior margin of eye in male, but not reaching the vertical in female. Both jaws with 3–4 rows of conical teeth, outer jaws enlarged. Tongue margin rounded. Anterior nostril in short tube and posterior nostril round. Gill opening restricted, extending ventrally near vertical midline of opercle. Vertebral count 11 + 16 = 27 (in all 7 specimens).

Fins.—D1 VI, D2 I/8; A I/7; P 16–17 (modally 17); V I/5+I/5 (distribution frequency in Table 1). D1 rounded, 3rd and 4th rays longest, with rear tip while depressed extending just to D2 origin in male, but not reaching the point in female. Origin of A inserted below second branched rays of D2. The rear tips of D2 and A rays when depressed fall well short of procurrent rays of C. P moderate large and oblong, its rear tip near reaching vertical line through anus. V rounded, spinous rays with somewhat pointed membrane lobe. C elliptical, rear edge rounded.

Scales.—Body with moderately large ctenoid scales, anterior region of predorsal area naked; posterior dorsal area and belly cycloid. LR 28–30 (modally 29); TR 9–10 (modally 9); PreD 9–10 (modally 9); and SDP 8. Head and prepelvic region naked. Anterior edge of midpredorsal squamation reaching or near the midline of upper end of gellopening.

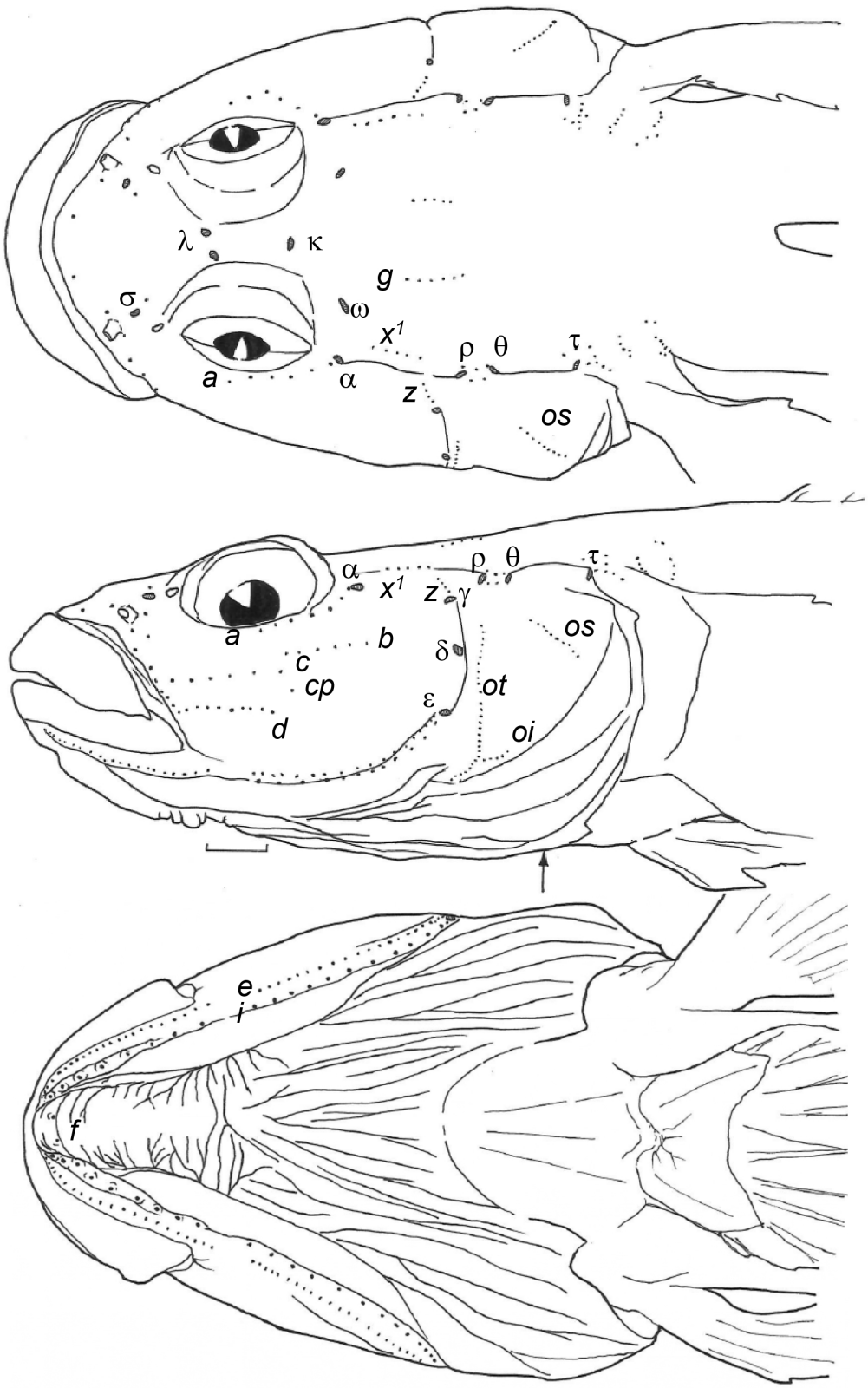

FIGURE 2. Head lateral-line system of *Rhinogobius jangshiensis*, new species, male, holotype, 33.6 mm SL, the Jangshi basin, Fujian Province, PR China.

TABLE 1. Morphometry of *Rhinogobius jangshiensis* from Fujian, China.

	R. jangshiensis		
Type	holotype	holotype + paratype	paratypes
No. of samples	1	2	5
Sex	M	M	F
standard length (mm)	33.6	29.0–33.6	28.6–30.0
% in SL			
Head length	30.7	30.6–30.7 (30.6)	25.3–28.8 (26.8)
Predorsal length	38.9	37.4–38.9 (38.2)	34.4–37.6 (36.2)
Snout to 2nd dorsal fin origin	59.5	56.4–59.5 (57.9)	54.6–57.0 (56.1)
Snout to anal fin origin	62.1	62.1–63.1 (62.6)	59.9–62.5 (60.7)
Snout to anus	58.2	58.2–59.0 (58.6)	53.9–56.5 (55.3)
Prepelvic length	38.5	38.5–36.8 (37.6)	28.6–33.9 (30.3)
Caudel peduncle length	23.2	23.2–24.7 (23.9)	22.0–27.7 (25.0)
Caudal peduncle depth	12.2	12.2–12.4 (12.3)	11.5–13.0 (11.9)
First dorsal fin base	19.1	17.3–19.1 (18.2)	16.6–19.1 (17.5)
Second dorsal fin base	18.8	18.8–20.1 (19.4)	18.8–22.1 (20.3)
Anal fin base	15.5	15.5–18.6 (17.1)	16.0–17.4 (16.7)
Caudal fin length	28.8	28.5–28.8 (28.7)	25.7–29.8 (27.2)
Pectoral fin length	26.2	25.9–26.2 (26.0)	24.6–27.7 (26.5)
Pelvic fin length	17.1	17.1–20.2 (18.6)	17.0–19.9 (18.2)
Body depth of pelvic fin origin	16.2	15.7–16.2 (15.9)	16.7–17.8 (17.0)
Body depth of anal fin origin	15.5	15.5–16.7 (16.1)	15.6–17.8 (16.2)
Body width of anal fin origin	12.4	12.4–12.6 (12.5)	11.9–14.3 (12.7)
Pelvic fin origin to anus	28.8	28.7–28.8 (28.7)	27.9–30.4 (29.0)
% in HL			
Snout length	37.2	32.3–37.2 (34.7)	29.9–36.6 (33.9)
Eye diameter	23.4	23.4–23.8 (23.6)	21.2–26.2 (24.3)
Postorbital length	50.6	50.6–50.8 (50.7)	48.6–56.4 (52.6)
Cheek depth	26.7	26.7–28.2 (27.5)	27.2–32.4 (29.4)
Head width in upper gill–opening	52.2	52.2–56.1 (54.2)	52.3–58.1 (54.0)
Head width in maximum	58.7	58.7–68.2 (63.4)	67.0–73.9 (70.2)
Fleshy interorbital width	26.2	26.4–27.1 (26.7)	24.9–32.4 (28.2)
Bony interorbital width	10.0	10.0–10.2 (10.1)	10.7–12.4 (11.7)
Lower jaw length	44.9	38.4–44.9 (41.6)	35.1–37.8 (36.4)
% in Caudel peduncle length			
Caudal peduncle depth	52.6	50.3–52.6 (51.5)	44.8–52.4 (47.6)
Values in parenthese are the average.			

Values in parenthese are the average.

Head lateral-line system

Canals: Nasal extension of anterior oculoscapular canal with terminal pore σ located in between anterior and posterior nostrils. The gap between two oculoscapular canals is less than the length of posterior oculoscapular canal. Anterior interorbital sections of oculoscapular canal with paired poreλ. A single pore κin near rear of interorbital region. Pore ω present near posterior, dorsal margin of eye. Lateral section of anterior oculoscapular canal with pore α and terminal pore ρ. Posterior oculoscapular canal with two terminal pores θ and τ. Preopercular canal with three pores γ, δ and ε.

Sensory papillae: Row *a* extending to vertical midline of orbit. Row *b* length about equal to eye diameter. Rows *c*, *d* longer. A single *cp* papilla. Row *f* paired. Anterior edge of row *oi* connected to lower region of row *ot*.

Colouration of fresh preserved material.—(Fig. 1 and Fig. 3)

Body light brown to yellowish brown. Side of body with 6 major grayish brown blotches and 4–5 longitudinal rows of grayish brown lines. Dorsal region of body with 5–6 major grayish blotches. Caudal fin base with a rather short blackish brown bar. Head grayish brown to yellowish brown. Dorsal side of snout with a pair of deep red stripes united to snout tip, another gray stripe below eye in male, but two grayish black bar below eye in female. Lips and dorsal snout orange brown. Cheek grayish brown with four oblique grayish black stripes in male but yellowish brown spotless in female. Branchiostegal membrane grayish blue with about 26–32 rounded, brilliant orange red spots in male, but pale brown and spotless in female.

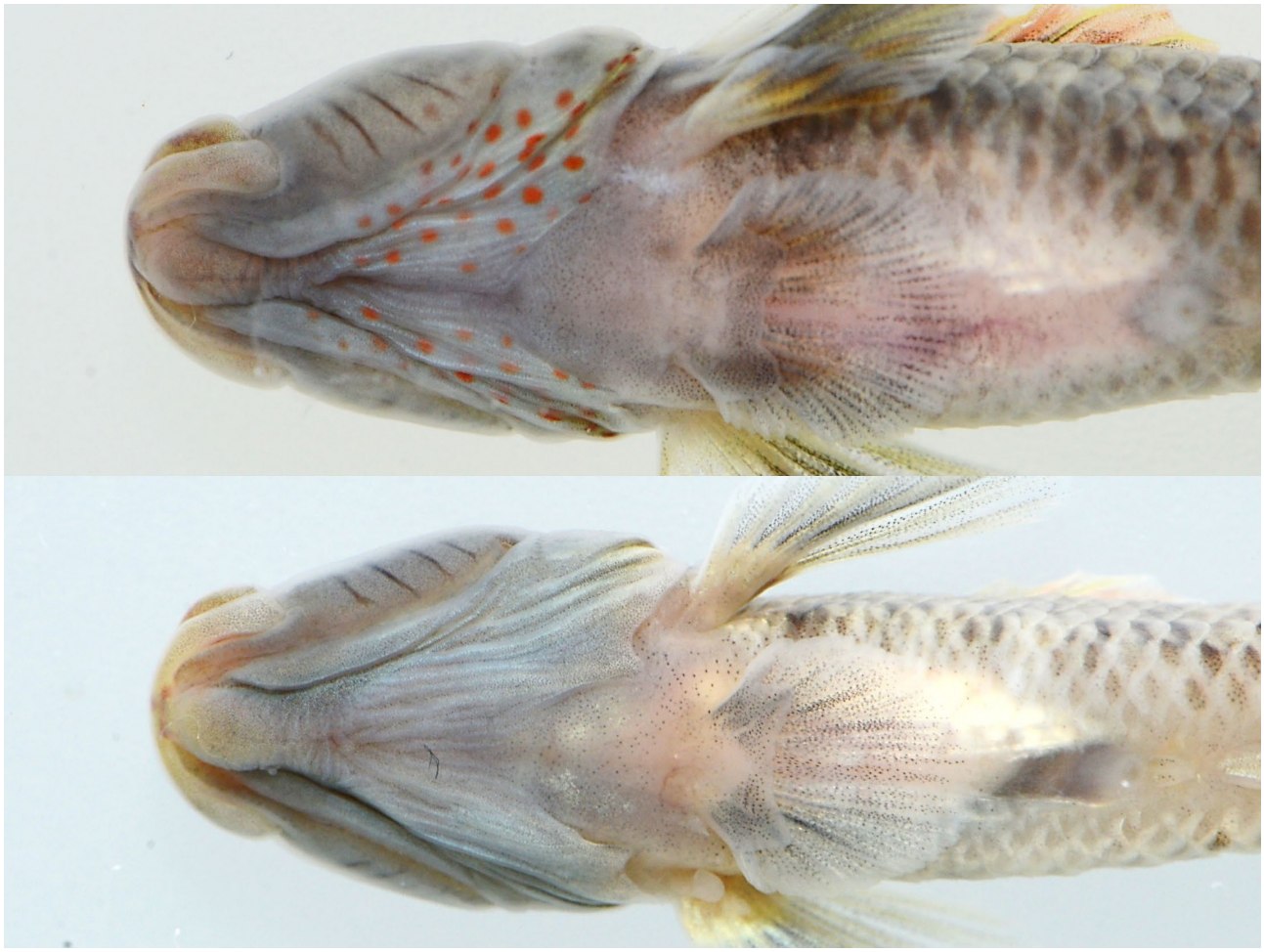

FIGURE 3. Upper one: ventral view of *Rhinogobius janshiensis* **n. sp.**, holotype, male, 33.6 mm SL, the Jangshi basin, Fujian Province, PR China; and lower one: **v**entral view of *Rhinogobius lingtongyanensis* Chen *et al.*, 2022, holotype, male, 30.8 mm SL, the Dongshi basin, Fujian Province, PR China.

First dorsal fin broad grayish brown band darkening anteriorly, outer margin orange in male, but translucent with distal orange yellow mark in female. Second dorsal fin with oange background and three basal longitudinal rows of deep brown spots in male; but translucent with three basal longitudinal grayish brown spots and pale margin in female. Anal fin orange with distal gray to black margin. Pectoral fin gray with basal creamy yellow band and its base with longitudinal deep brown bar in upper part and basal brown rim in male; but translucent and its base with longitudinal brown bar in female. Caudal fin gray with some light rounded spots and basal black spotted patch and large central yellow mark in adult male, but translucent with 4–5 vertical rows of blackish brown spots in female. Pelvic fin gray to grayish black in male; but whitish in female.

TABLE 2. Comparison of frequency distribution of fin-ray counts of *Rhinogobius* species with longitudinal infraorbital papillae from Fujian Province, China.

	D1				D2 rays					A rays					P rays						
	V	VI	VII	M	6	7	8	9	M	6	7	8	9	M	15	16	17	18	19	20	M
Rhinogobius jangshiensis new species	-	**7**	-	**6.0**	-	-	**7**	-	**8.0**	-	**7**	-	-	**7.0**	-	**4**	**10**	-	-	-	16.7
Rhinogobius changtinensis	-	9	-	6.0	-	2	7	-	7.8	-	2	7	-	7.7	2	11	-	-	-	-	15.8
Rhinogobius leavelli	-	5	-	6.0	-	-	4	1	8.2	-	-	4	1	8.2	-	-	-	1	4	2	19.1
Rhinogobius lianchengensis	-	4	-	6.0	-	-	4	-	8.0	2	2	-	-	6.5	-	5	3	-	-	-	16.4
Rhinogobius lingtongyanensis	-	5	-	6.0	-	-	5	-	8.0	-	5	-	-	7.0	3	7	-	-	-	-	15.7
Rhinogobius longyanensis	-	10	-	6.0	-	-	10	-	8.0	1	4	5	-	7.4	-	-	14	4	-	-	17.2
Rhinogobius ponkouensis	-	5	1	6.2	-	-	6	-	8.0	-	5	1	-	7.2	-	6	4	-	-	-	16.4
Rhinogobius reticulatus	-	13	-	6.0	-	-	7	6	8.5	-	9	4	-	7.3	-	5	7	-	-	-	16.5
Rhinogobius rubrolineatus	-	6	-	6.0	-	-	6	-	8.0	-	6	-	-	7.0	-	1	6	1	-	-	17.0
Rhinogobius sagittus	-	4	-	6.0	-	-	4	-	8.0	-	4	-	-	7.0	-	3	2	-	-	-	16.4
Rhinogobius xianshuiensis	4	16	-	5.8	-	-	18	2	8.1	5	14	1	-	6.8	10	10	-	-	-	-	15.5

TABLE 3. Comparison of frequency distribution of scale and vertebral counts of *Rhinogobius* species with longitudinal infraorbital papillae from Fujian Province, China.

	LR											TR					PreD															
	25	26	27	28	29	30	31	32	33	34	M	7	8	9	10	M	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	M
Rhinogobius jangshiensis new species	-	-	-	**1**	**12**	**1**	-	-	-	-	**29**	-	-	**5**	**2**	**9.3**	-	-	-	-	-	-	-	-	-	**7**	**2**	-	-	-	-	-	-	**9.2**
Rhinogobius changtinensis	-	-	-	2	11	5	-	-	-	-	29.2	2	9	-	-	7.8	1	6	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2
Rhinogobius leavelli	-	-	-	-	-	-	-	2	5	3	33.1	-	-	-	5	10.0	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-	1	12.8
Rhinogobius lianchengensis	-	-	-	-	-	-	-	-	6	2	33.3	-	1	3	-	8.8	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8
Rhinogobius lingtongyanensis	2	5	3	-	-	-	-	-	-	-	26.1	-	4	1	-	8.2	-	-	-	1	-	2	2	-	-	-	-	-	-	-	-	-	-	5.0
Rhinogobius longyanensis	-	-	-	-	-	10	8	2	-	-	30.6	1	8	1	-	8.0	-	-	-	-	-	-	1	8	1	-	-	-	-	-	-	-	-	7.0
Rhinogobius ponkouensis	-	-	-	-	-	-	-	4	5	1	32.9	1	5	-	-	7.8	-	-	-	-	5	1	-	-	-	-	-	-	-	-	-	-	-	4.2
Rhinogobius reticulatus	-	-	6	5	2	-	-	-	-	-	27.7	-	-	13	-	9.0	-	-	-	2	4	3	4	-	-	-	-	-	-	-	-	-	-	4.7
Rhinogobius rubrolineatus	-	-	-	2	7	3	-	-	-	-	29.1	-	-	4	2	9.3	-	-	-	1	4	1	-	-	-	-	-	-	-	-	-	-	-	4.0
Rhinogobius sagittus	-	-	-	-	1	5	2	-	-	-	30.1	-	-	2	2	9.5	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	3.5
Rhinogobius xianshuiensis	-	-	-	-	3	9	7	1	-	-	30.3	-	-	18	2	9.1	-	-	-	1	-	8	9	2	-	-	-	-	-	-	-	-	-	5.6

	SDP					VC			
	6	7	8	9	M	26	27	28	M
Rhinogobius jangshiensis new species	-	-	**7**	-	**8.0**	-	**7**	-	27.0
Rhinogobius changtinensis	-	-	7	2	8.2	-	8	-	27.0
Rhinogobius leavelli	-	-	2	3	8.6	5	-	-	26.0
Rhinogobius lianchengensis	-	-	2	2	8.5	-	4	-	27.0
Rhinogobius lingtongyanensis	-	4	1	-	7.2	5	-	-	26.0
Rhinogobius longyanensis	-	9	1	-	7.1	-	10	-	27.0
Rhinogobius ponkouensis	-	-	5	1	8.2	-	-	6	28.0
Rhinogobius reticulatus	-	8	5	-	7.4	7	6	-	26.5
Rhinogobius rubrolineatus	6	-	-	-	6.0	6	-	-	26.0
Rhinogobius sagittus	1	3	-	-	6.8	4	-	-	26.0
Rhinogobius xianshuiensis	-	1	17	1	8.0	-	20	-	27.0

Etymology.—The specific name, *janshiensis*, refers to the collecting type locality: the small tributary in "Janshi" basin, Janpu County, Janchou City, Fujian Province, PR China.

Distribution.—This new species is, thus far, only found in the small tributary of Janpushi, Janshi basin near Shianya village, Janpu County, Janchou City, Fujian Province, PR China. It occurs in shallow-water riffles and front region of pools (depth 20–60 cm depth) with substratum of large pebbles with slow to moderate flowing water.

Remarks.—The new species, *Rhinogobius janshiensis*, is rather similar to *R. longyanensis* Chen *et al.*, 2008 than any other congeneric fluvial species in Fujian Province by overall colouration pattern in male. However, *Rhinogobius janshiensis* can be well separate from *R. longyanensis* by the following features (Tables 2, 3): (1) longitudinal scale rows: 28–30 (modally 29) vs. usually 30–31; (2) predorsal scales: modally 9 vs. 7; (3) cheek pattern: four main oblique black lines vs. three oblique black line in male; and (4) caudal fin with central yellow mark vs. without such mark in male.

This new species also somewhat similar to *R. lingtongyanensis* Chen *et al.*, 2022. The new species can be well separate from *R. lingtongyanensis* by the following features: (1) vertebral count 27 vs. 26; (2) predorsal scales: modally 9–10 vs. 5–6; (3) cheek pattern: four main oblique black lines vs. five oblique black line in male; (4) branchiotegal membrane with several red spots vs. entirely spotless in male; (5) caudal fin with central yellow mark vs. without such mark in male.

Diagnostic key to all nominal species of *Rhinogobius* with longitudinal infraorbital papillae pattern from Fujian Province, PR China

1a	Pectoral fin rays modally 19–20, predorsal scales 10–16	*R. leavelli* (All main basins)
1b	Pectoral fin rays no more than 18; predorsal scales no more than 10	2
2a	Vertebrae 28	*R. ponkouensis* (Hanjiang basin)
2b	Vertebrate 26–27	3
3a	Longitudinal scale rows 33–34; cheek entirely blackish brown striped in male	*R. lianchengensis* (Minjiang basin)
3b	Longitudinal no more than 32; cheek no such mark in male	4
4a	Cheek with many rounded spots, branchiostegal membrane with several parallel red stripes in male	*R. reticulatus* (Minjiang basin)
4b	Cheek and branchiostegal membrane without such marks	5
5a	Pore ω1 present, pectoral fin base with reticulated orange pattern in male	*R. xianshueiensis* (Mulan River basin)
5b	Pore ω1 absent, pectoral fin base without such pattern in male	6
6a	Infraorbital stripe long and well extending downward to rear edge of both jaws or ventral edge of cheek in male	7
6b	Infraorbital stripe/mark absent or short and not extending ventrally to rear edge of both jaws in male	8
7a	Cheek with a conspicuous arrow-shape, red to reddish brown infraorbital mark always following by 4 oblique dark stripes in male	*R. sagittus* (Minjian basin)
7b	Cheek with 2–4 oblique dark stripes in male	9
8a	Pectoral fin rays modally 17; 27 vertebrae; cheek with 3 thin black lines and blackish brown infraorbital stripe in male	*R. changtinensis* (Hanjiang basin)
8b	Pectoral fin rays modally 16; 26 vertebare; cheek with 2 thin brown lines and bright red infraorbital stripe in male	*R. rubrolineatus* (Minjiang basin)
9a	Longitudinal scale rows 25–27; 26 vertebrae; branchiostegal membrane spotless in male	*R. longtongyanensis* (Dongshi basin)
9b	Longitudinal scale rows 28–32; 27 vertebrae; branchiostegal membrane with orange to red rounded spots in male	10
10a	Predorsal scales modally 9; cheek with 4 oblique thin black stripes; caudal fin with central yellowish mark	***R. jangshiensis* new species (Jangshi basin)**
10b	Predorsal scales modally 7; cheek with 3 oblique thin black stripes; caudal fin without such mark	*R. lognyanensis* (Julongjiang basin)

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Appendix I

***Rhinogobius leavelli* (Herre, 1935)**
NTOUP 2006-4-470, 2 specimens, 28.6–30.9 mm SL, Mei-Chou City, Hanjiang basin, Guangdong Province, PR China, Coll. J.H. Wu & J. W. Wang, April, 2004. NTOUP 2006-4-271, 2 specimens, 50.8–51.1 mm SL, Mu-Loon, Lieojiang, Xijiang, Pearl River basin, Guangxi Province, PR China, Coll. B. Chen *et al.*, Oct. 2002.

***Rhinogobius xianshuiensis* Chen et al., 1999**
Holotype: ASIZP057440, 29.6 mm SL, 29.6 mm SL, small unnamed tributary of Xianshui Brook, about 25 km north of Xianyou County, Fujian Province, PR China, Coll. I-S. Chen, 19 Aug. 1994.
Paratypes: ASIZP057441, 17 specimens, 20.7–35.0 mm SL, data same as holotype above. ASIZP057442, 2 specimens, 26.6–30.5 mm SL, 20 Aug. 1994, other data same as holotype.

***Rhinogobius ponkouensis* Huang & Chen, 2007**
Holotype: ZRC-50526, 30.2 mm SL, Pon-Kou County, Hanjiang basin, Fujian Province, PR China; Coll. I-S. Chen, 10 Spt. 2002.
Paratypes: NTOUP 2005-7-010, 4 specimens, 28.7–30.3 mm SL, all remaining data same as holotype above. ASIZP 0066341, 26.2 mm SL, all remaining data same as holotype above.

***Rhinogobius changtingensis* Huang & Chen, 2007**
Holotype: ZRC-50527, 34.1 mm SL, small hiil-stream near the free way terminal, tributary near Chang-Ting County, Hanjiang basin, Fujian Province, PRChina, Coll. I-S. Chen, 10 Spt. 2002.
Paratypes: NTOUP 2005-7-011, 7 specimens, 22.4–26.3 mm SL, all other data same as holotype above. ASIZP0066340, 24.8 mm SL, all other data same as holotype above.

***Rhinogobius lianchengensis* Wang & Chen, 2022**
Holotype.- NTOUP-2019-12-316, 1 specimen, 35.4 mm SL, male, Shen-Shiu-Tang, a tributary of Minjiang river basin, Liancheng County, Fujian Province, PR China, Coll. S.C. Wang & K.Y. Chen. Dec. 23, 2019.
Paratypes.- NTOUP-2019-12-317, 3 specimens, 28.5–42.4 mm SL, 2 males and 1 female, all others same as above.

***Rhinogobius lingtongyangensis* Chen, Wang, Chen & Shao, 2022**
Holotype: NTOUP 2015-04-303, 30.8 mm SL, Field station no. 2015-03-6B, Shar village, Darshi township near Lingtongyan mountain, Dongshi basin, Shaoan County, Janchou City, Fujian province, PR China, Coll. I-S. Chen, 10 Mar. 2015.
Paratypes: NTOUP 2015-04-304, 4 specimens, 30.2–38.5 mm SL, other data same as holotype.

***Rhinogobius longyanensis* Chen, Cheng & Shao, 2008**
Holotype: NTOUP 2006-3-465, 40.7 mm SL, a small tributary of Long-Chuang River in the Julongjiang basin, Dong-Hsiao, Long-yan City, Fujian Province, PR China, Coll. I-S. Chen, 10 Spt. 2002.
Paratypes: ASIZP20067105, 2 specimens, 29.3–35.1 mm SL, collected with holotype. BLIH 20020548, 42.5 mm SL, collected with holotype. NTOUP 2006-3-467, 5 specimens, 28.7-35.5 mm SL, a small tributary of Shi-Nan River in the Julongjiang basin, Shi-Nan, Jarn-Ping, Longyan City, Fujian Province, PR China, Coll. I-S. Chen, 15 Spt. 2002.

***Rhinogobius rubrolineatus* Chen & Miller, 2008**
Holotype: NTOUP 2008-06-390, 33.7 mm SL, Wen-choan-shi in Minjiang basin, Ju-shi, Lian-chen County, Longyan City, Fujian Province, PR China, Coll. I-S. Chen, 24 June 2006.
Paratypes: NTOUP 2008-06-391, 5 specimens, 29.5–42.3 mm SL, all other data same as holotype.

***Rhinogobius sagittus* Chen & Miller, 2008**
Holotype: NTOUP 2008-06-392, 35.1 mm SL, Nan-Shi, Minjiang basin, Shi-yang-jen, Yun-an City, Fujian Province, PR China, Coll. I-S. Chen, 25 June 2006.
Paratypes: NTOUP 2008-06-393, 3 specimens, 30.5–35.4 mm SL, other data same as holotype.