

Original Article

Two New Jawfishes, *Stalix albonotata* sp. nov. and *S. yanoi* sp. nov., from the Ryukyu Islands, Japan (Perciformes: Opistognathidae)Hidetoshi WADA^{1,2)}, Toshiyuki SUZUKI³⁾, Hirozumi KOBAYASHI⁴⁾ & Hiroshi SENOU¹⁾

Abstract. Two new species of the genus *Stalix* (Perciformes: Opistognathidae), *Stalix albonotata* sp. nov. and *Stalix yanoi* sp. nov., are described, based on two specimens of each, from the Ryukyu Islands, Japan. *Stalix albonotata* differs from all congeners by the following combination of characters: longitudinal scale rows 45 or 46; 40–42 total gill rakers on first gill arch (in adults); first 2 mandibular pores well-spaced; lateral line terminating below second or third dorsal-fin soft ray base (dorsal-fin element 13 or 14); anteroventral margin of upper lip crenulate; body grayish-yellow, with fine brown and white vermiculations; dorsal-fin membrane grayish-yellow, with several irregular white blotches when fresh; anterior gular region unpigmented. *Stalix yanoi* differs from all congeners by the following combination of characters: longitudinal scale rows 45–48; 36–37 total gill rakers on first gill arch; two sensory pores present on posterior half of interorbital space; first 2 mandibular pores well-spaced; anteroventral surface of upper lip smooth; body uniformly whitish-green, covered with slight brown pigmentation; and dorsal-fin membrane whitish-green (without notable pattern or markings when fresh). A key to the Japanese species of *Stalix* is given.

Key words: ichthyology, morphology, new species, taxonomy

Introduction

The opistognathid genus *Stalix* Jordan & Snyder, 1902, currently represented by 12 valid species in tropical to temperate Indo-West Pacific waters (Smith-Vaniz, 1989, 2022; Shinohara, 1999, 2006; Prokofiev, 2015), is characterized by the following combination of characters: first 5–9 dorsal-fin spines transversely forked distally, posterior forks successively shallower and more narrow (considered as synapomorphy of this genus); dorsal fin with 10 or 11 spines and 11–14 soft rays; distal margin of anterior dorsal-fin membrane somewhat thickened and expanded dorsally to accommodate spine configuration, forming pronounced lateral fold on sides of fin in some

species; anal fin with 2 spines and 10–14 soft rays; pectoral fin usually with 20–24 rays (rarely 19 or 25); pelvic fin with single spine and 5 soft rays, second soft ray longest, first and second soft rays unbranched and thickened; caudal fin with 3 + 3 procurent rays and 8 + 7–8 segmented rays (including 6–7 + 6–7 = 12–14 branched rays), 11 or 12 + 11 = 22 or 23 rays in total; vertebrae 9 or 10 + 15–18; single supraneural present, positioned just before neural spine of second precaudal vertebrae (no supraneurals in *Stalix toyoshio* Shinohara, 1999, exceptionally); gill rakers on first gill arch 8–13 + 14–23 = 22–34; posterior end of maxilla truncate with small, terminally positioned supramaxilla; anterior nostril tubular, posterior nostril vertically ovate, simple; head, nape, pectoral-fin base,

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thorax, and area immediately behind pelvic fins naked; body with ca. 39–66 oblique scale rows in longitudinal series; lateral-line terminus between verticals from 8th dorsal-fin spine and 4th soft ray; premaxillary and dentary teeth in narrow bands anteriorly, becoming uniserial posteriorly; teeth conical, not noticeably enlarged or strongly hooked (except posteriormost dentary teeth of *Stalix sheni* Smith-Vaniz, 1989); and vomer and palatines toothless (Smith-Vaniz, 1989, 2022; Shinohara, 1999, 2006; Prokofiev, 2015).

During a re-assessment of the family Opistognathidae from Japanese waters, four specimens of the genus *Stalix*, representing two new species (two specimens of each), were identified from the Ryukyu Islands, Japan. Both new species, described herein, share major diagnostic characters with previously known species of *Stalix*, but differ from the latter in having many gill rakers on the first gill arch. A key to Japanese species of *Stalix*, including the two new species, is provided, having been based on comparative material examined and literature descriptions.

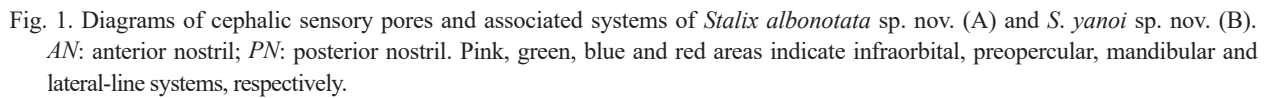
Materials and methods

Counts and measurements followed Smith-Vaniz (1989, 2023), the latter being made to the nearest 0.01 mm, with needle-point calipers under a stereo-microscope. Standard length is abbreviated as SL, and Lateral line as LL (Table 1). A diagram of the cephalic sensory pores in each new species is provided in Fig. 1: the openings of each system were numbered from anteriormost to posteriormost pores based on the holotype of *S. yanoi* (KPM-NI 5503); sensory systems on interorbital, supratemporal, and infraorbital regions were unified as infraorbital system. Squamation, gill rakers, and cephalic sensory pore systems were examined on preserved specimens stained with cyanine blue (Akihito *et al.*, 1993; Saruwatari *et al.*, 1997). Abraded scale numbers were estimated from scale pockets. Fresh color descriptions (before preservation) for both species were based on color photographs of them (Figs. 2A, 3, 4A, 5A–B). Osteological characters were observed on radiographs (Figs. 2C, 5D). Intermuscular bone terminology follows Patterson & Johnson (1995) and

Table 1. Counts and measurements of *Stalix albonotata* sp. nov. and *S. yanoi* sp. nov. from Ryukyu Islands, Japan

	<i>S. albonotata</i>		<i>S. yanoi</i>	
	Holotype KPM-NI 83369	Paratype NSMT-P 145413	Holotype KPM-NI 5503	Paratype OMNH-P 52945
SL (mm)	38.8	20.9	37.4	34.0
Counts				
Dorsal-fin rays	XI, 11	XI, 11	XI, 11	XI, 11
Anal-fin rays	II, 11	II, 11	II, 11	II, 11
Pectoral-fin rays	22(left)/23(right)	22/broken	21/21	22/22
Upper gill rakers	15/16	12*/broken	13/14	13/13
Lower gill rakers	25/26	21*/broken	24/23	23/23
Total gill rakers	40/42	33*/broken	37/37	36/36
Lateral line terminus total elements	14/13	14/14	13.5/13.5	14/14.5
Longitudinal scale rows	45/46	46/46	47/48	47/45
Measurements (% of SL)				
Body depth	20.7	19.1	21.4	20.8
Head length	30.5	35.1	31.6	31.2
Orbit diameter	10.4	10.0	11.5	10.7
Upper jaw length	18.8	19.6	19.6	18.6
Upper jaw width	5.2	6.5	6.7	6.1
Caudal peduncle length	12.1	13.8	13.8	12.3
Caudal peduncle depth	11.6	10.1	11.9	12.6
Postorbital head length	19.1	21.3	19.3	18.4
Postorbital jaw length	7.3	4.9	7.4	6.6
Predorsal length	31.0	35.9	32.5	32.6
Preanal length	57.3	60.6	60.1	61.4
Dorsal fin length	64.4	61.6	63.8	64.9
Anal fin length	30.1	28.7	28.5	28.6
Fifth dorsal-fin spine length	7.8	93.2	9.0	8.6
Seventh dorsal-fin spine length	9.5	10.4	11.5	10.0
Caudal-fin length	25.1	29.8	25.1	26.8
Pelvic-fin length	21.5	19.9	19.3	20.4

*Rudimentary



Holotype. KPM-NI 83369, 38.8 mm SL, adult, Uehara, Iriomote-jima Island, Yaeyama Islands, Ryukyu Islands, Japan, 18 m depth, 18 August 1999, hand net, collected by K. Yano.

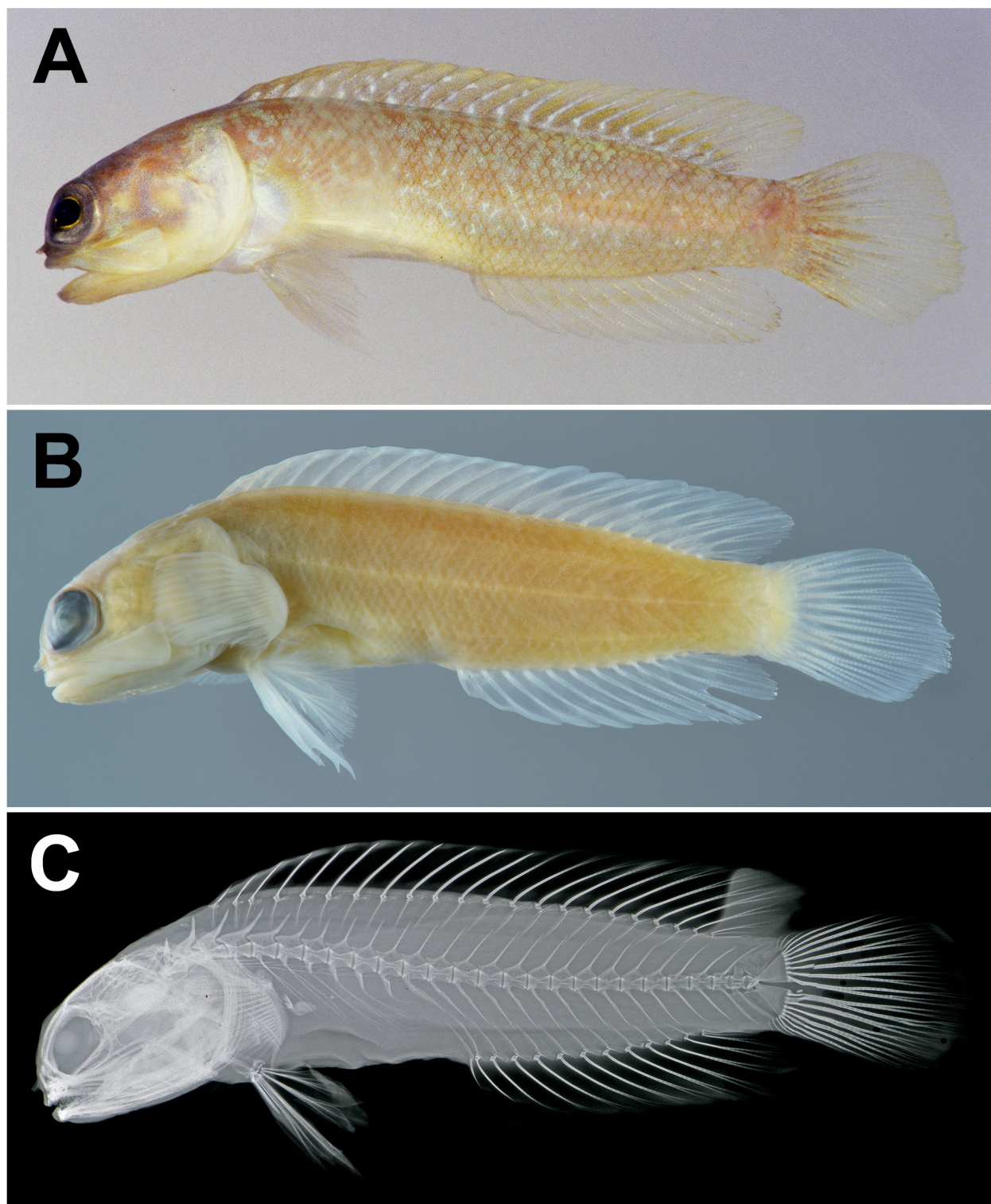


Fig. 2. Holotype of *Stalix albonotata* sp. nov. (KPM-NI 83369, 38.8 mm SL, adult, Iriomote-jima Island, Ryukyu Islands, Japan). A: fresh condition, photo by T. Suzuki; B: preserved condition, photo by H. Wada; C: radiograph, taken by H. Wada.

Paratype. NSMT-P 145413, 20.9 mm SL, juvenile, Kin Bay, Okinawa-jima Island, Okinawa Islands, Ryukyu Islands, Japan, 10 m depth, 16 April 2022, yabby pump, collected by H. Nakajima.

Photographic record (non-type specimen). KPM-NR 70420, Kin Bay, Okinawa-jima Island, Okinawa Islands, Ryukyu Islands, Japan, 7 m depth, 9 September 2009, photo by T. Seko.

Diagnosis. A species of *Stalix* with the following combination of characters: dorsal fin with 11 soft rays; pectoral fin with 22 or 23 soft rays; longitudinal scale rows 45 or 46; gill rakers on first gill arch 15 or 16 + 25 or 26 = 40–42 (in adults); orbit diameter 10.0–10.4 % of SL; two sensory pores (*I4* and *I5*) present on posterior half of interorbital space; first 2 mandibular pores (*M1* and *M2*) well-spaced, fifth pore (*M5*) with single opening (Fig. 1A);

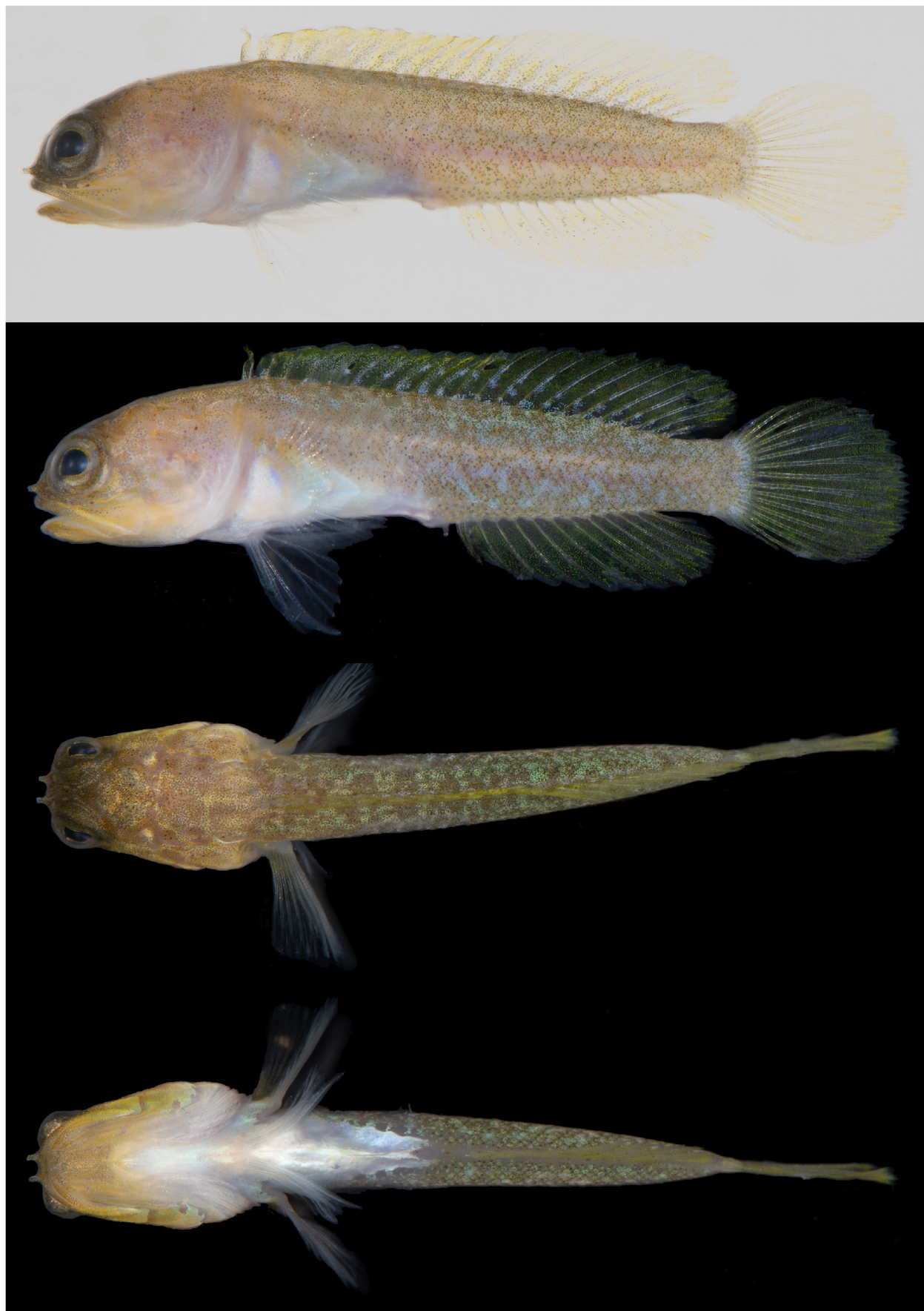


Fig. 3. Fresh specimen of *Stalix albonotata* sp. nov. (NSMT-P 145113, 20.9 mm SL, paratype, juvenile, Okinawa-jima Island, Ryukyu Islands, Japan). Photos by H. Kobayashi.

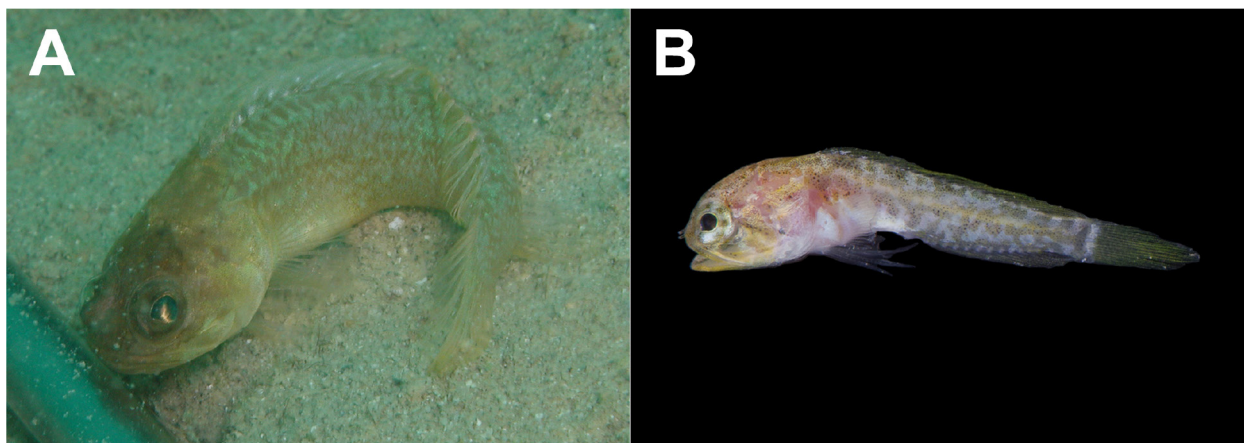


Fig. 4. Photographs of *Stalix albonotata* sp. nov. (A: KPM-NR 70420, not preserved, photo by T. Seko) and *S. cf. albonotata* (B: NSMT-P 145414, ca. 10 mm SL, fresh specimen, photo by H. Kobayashi), Okinawa-jima Island, Ryukyu Islands, Japan.

lateral line terminating below second or third dorsal-fin soft ray base (dorsal fin element 13 or 14); distal incision of 3rd to 5th dorsal-fin spines moderate (Fig. 6A; see Smith-Vaniz, 1989: fig. 1); anteroventral margin of upper lip crenulate (Fig. 7A); body grayish-yellow, with fine brown and white vermiculations; lateral surface of head grayish-green, with rough gray vermiculation; dorsal-fin membrane grayish-yellow, with several irregular white blotches when fresh (Figs. 2, 3); anterior gular region unpigmented (chin and area adjacent to anterior two mandibular pores with a few scattered melanophores) (Fig. 8A).

Description. Data for holotype presented first, followed by paratype data (juvenile; 20.9 mm SL) in parentheses if different. Counts and measurements given in Table 1. Characters given in diagnosis not repeated.

Body elongate, laterally compressed. Upper profile of head rounded. Dorsal profile rising from snout tip to fifth dorsal-fin spine base, thereafter gradually lowering to end of dorsal-fin base. Ventral profile lowering from lower-jaw tip to pelvic-fin origin, subsequently parallel to body axis until middle of anal-fin base. Ventral contour of posterior half of anal-fin base slightly rising. Dorsal and ventral profiles of caudal peduncle parallel. Mouth large, slightly oblique, posterior margin of maxilla reaching vertical through first preopercular pore (*PI* in Fig. 1A); posterior end of maxilla truncate with small, terminally positioned supramaxilla. Anterior nostril tubular, posterior nostril vertically ovate, simple. Single row of about 30 papillae on anteroventral margin of upper lip (8 papillae on anteriormost portion) (Fig. 7A). Gill rakers well-developed (rudimentary). Both jaws with conical teeth, ca. 5 (4) rows anteriorly, becoming uniserial posteriorly; premaxilla with outer row of stout, slightly hooked (straight) teeth anteriorly, becoming smaller posteriorly; 2 irregular rows of smaller teeth and a few slightly enlarged symphyseal teeth behind anterior outer row; dentary with an outer

row of stout straight teeth anteriorly, becoming smaller posteriorly; 3 irregular rows of smaller teeth anteriorly behind outer row. Vomer and palatines toothless.

Dorsal fin origin above posterior tip of gill membrane; dorsal profile of dorsal fin rising from origin to tip of ninth soft ray; posteriormost part of soft-rayed portion rounded; all soft rays branched, ninth longest, last two joined basally; first to seventh (fifth) dorsal-fin spines transversely forked distally, posterior forks successively shallower and more narrow; distal margin of anterior dorsal-fin membrane somewhat thickened and expanded dorsally to accommodate spine configuration, forming a pronounced lateral fold on each side of fin. Anal fin origin below first dorsal-fin soft ray; ventral profile of anal fin lowering from origin to tip of eighth soft ray; posteriormost part of soft-rayed portion rounded; all soft rays branched, except first soft ray simple, eighth longest, last two joined basally. Caudal fin rounded; 3 + 3 procurent rays and 8 + 8 segmented rays (including 6 + 6 = 12 branched rays), 11 + 11 = 22 rays in total. Pectoral fin rounded, rays of upper portion slightly longer than those of lower portion. Pelvic fin semi-falcate; single spine and 5 soft rays, second soft ray longest, first and second segmented rays unbranched, thickened.

Body covered with cycloid scales, except head, nape, pectoral-fin base, thorax, and areas between dorsal-fin base and lateral line, and immediately behind pelvic fins naked; each fin scaleless.

Cephalic sensory pores well-developed (Fig. 1A). Infraorbital system with relatively large pores, opening usually single; anteriormost pore (*II*) located just below anterior nostril; two sensory pores (*I8* and *II0*) on junction of infraorbital system located behind posterodorsal edge of orbit (Fig. 1A); posteriormost pore (*II5*) oval, located just in front of lateral line origin.

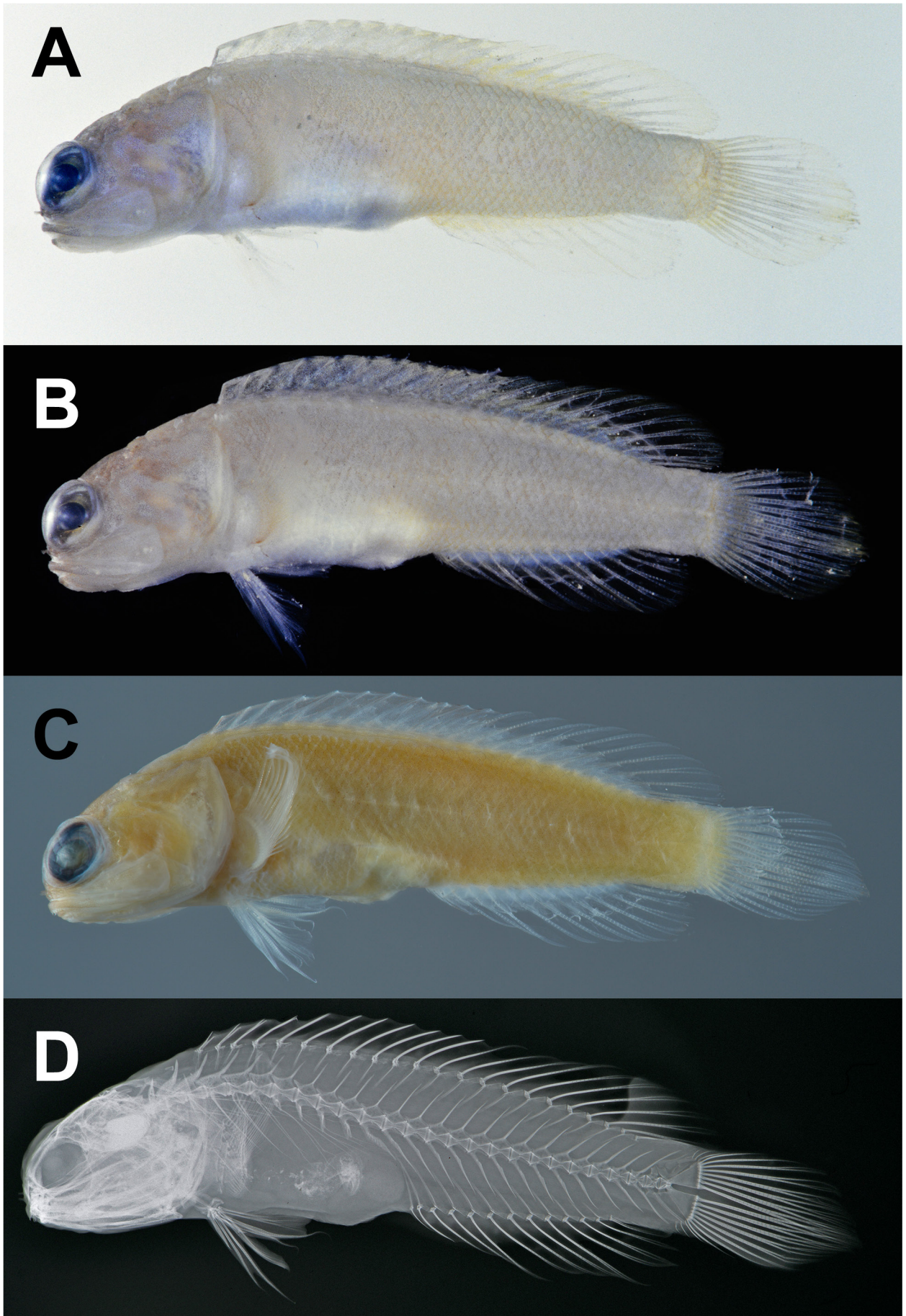


Fig. 5. Holotype of *Stalix yanoi* sp. nov. (KPM-NI 5503, 37.4 mm SL, adult, Iriomote-jima Island, Ryukyu Islands, Japan). A, B: fresh condition, photos by H. Senou; C: preserved condition, photo by H. Wada; D: radiograph, taken by H. Wada.

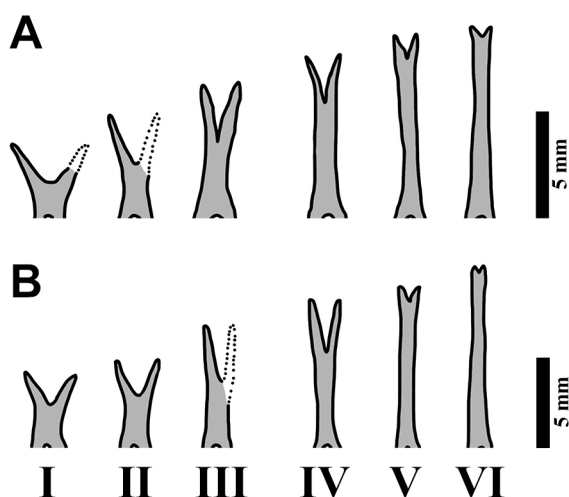


Fig. 6. Shape of first six (I–IV) dorsal-fin spines of two species of *Stalix* (frontal views). A: *Stalix albonotata* sp. nov., KPM-NI 83369, holotype, 38.8 mm SL; B: *Stalix yanoi* sp. nov., KPM-NI 5503, holotype, 37.4 mm SL.

Vertebrae 10 + 16; single supraneural present, positioned just before neural spine of second precaudal vertebrae.

Coloration when fresh (Figs. 2A, 3). Body mostly grayish-yellow, with fine brown and white vermiculations; thorax and pectoral-fin base white; abdomen yellowish-green. Dorsal surface head yellowish-brown; lateral surface of head grayish-yellow with rough gray vermiculation; maxilla, ventral surface of lower jaw and gill membrane yellowish-green; tips of both lips grayish-green. Dorsal fin entirely grayish-yellow; several irregular white blotches on spinous portion; white blotches on soft rayed portion along each soft ray. Anal fin entirely yellowish-green; a single yellow band running longitudinally at one-third height of soft-rayed portion (band rudimentary in juvenile). Caudal fin yellow green, except anterior one-third brown. Pectoral and pelvic fins yellowish-green.

Coloration in alcohol (Fig. 2B). Head and body generally pale brown; whitish and greenish coloration (of fresh condition) faded; slight brownish coloration retained.

Etymology. The specific name, English common name, and standard Japanese name refer to the fine white vermiculation on the body and the irregular white blotches on the dorsal fin of this species.

Distribution and habitat. Currently collected only from Iriomote-jima and Okinawa-jima islands, Ryukyu Islands, Japan. In addition, an individual was observed at 7 m depth in Kin Bay, Okinawa-jima Island (Fig. 4A: KPM-NR 70420). All of these individuals were found in an inner bay (silty sand bottom). The paratype was observed with following five gobioids, usually inhabit silty sand bottom: *Myersina nigrivirgata* Akihito & Meguro, 1983, *Oplopomus oplopomus* (Valenciennes, 1837),

Oxyurichthys papuensis (Valenciennes, 1837), *Taenioides kentalleni* Murdy & Randall, 2002, and *Tomiyamichthys* sp. 7 sensu Senou *et al.* (2021).

Comparisons. *Stalix albonotata* differs from all other congeners in having many gill rakers on the first gill arch (15 or 16 + 25 or 26 = 40–42 vs. 14 or fewer on upper limb, 24 or fewer on lower limb, total 37 or fewer in all other congeners) (Table 1; Smith-Vaniz, 1989, 2022; Shinohara, 1999, 2006; Prokofiev, 2015; Allen & Erdmann, 2012, 2024). *Stalix albonotata* is most similar to *Stalix flavida* Smith-Vaniz, 1989, distributed in Brunei, Indonesia, East Timor, and northwestern Australia (Smith-Vaniz, 1989; Allen & Erdmann, 2024), both sharing several morphological characters as follows: dorsal fin with 11 spines and 11 soft rays, first 5–7 dorsal-fin spines transversely forked distally; anal fin with 2 spines and 10 or 11 soft rays; pectoral fin with 20–23 rays; longitudinal scale rows 42–46; body moderately deep, 17.8–23.8 % of SL; relatively small eye, its diameter 9.3–10.9 % of SL; anteroventral margin of upper lip crenulate; first 2 mandibular pores well-spaced, fifth pore with single opening; body pale yellow to greenish-tan or brown, with fine vermiculation; head with several blotches (when fresh or in life) or weakly pigmented (Figs. 1A, 2–3, 7A; Table 1; Smith-Vaniz, 1989; Allen & Erdmann, 2024). However, *S. albonotata* differs from *S. flavida* in having 40–42 gill rakers on the first gill arch (vs. 31–33 in *S. flavida*), a long lateral line, terminating below the second or third dorsal fin soft ray base (vs. last dorsal-fin spine or first soft ray base), several irregular white blotches on the dorsal-fin membrane when fresh (vs. no white blotches), and an unpigmented anterior gular region (vs. uniformly pigmented adjacent to fourth mandibular pore) (Figs. 2, 3, 8A; Table 1; Smith-Vaniz, 1989; Allen & Erdmann, 2024).

Remarks. See the remarks on *S. yanoi* for the discussion of including *S. albonotata* as a member of the genus *Stalix*.

A single juvenile specimen of opistognathid (Fig. 4B; NSMT-P 145414, ca. 10 mm SL), (probably just after settlement), of similar coloration to *S. albonotata* (Figs. 2, 3, 4A), was collected from the same locality as the paratype (NSMT-P 145413), but could not be unequivocally identified due to its undeveloped diagnostic features. Future identification may be possible after collecting more specimens at other growth stages or by DNA barcoding.

Stalix yanoi sp. nov.

(New English name: Yano's Jawfish; new standard Japanese name: Sarashi-kaeruamadai)
(Figs. 1B, 5, 6B, 7B, 8B; Table 1)

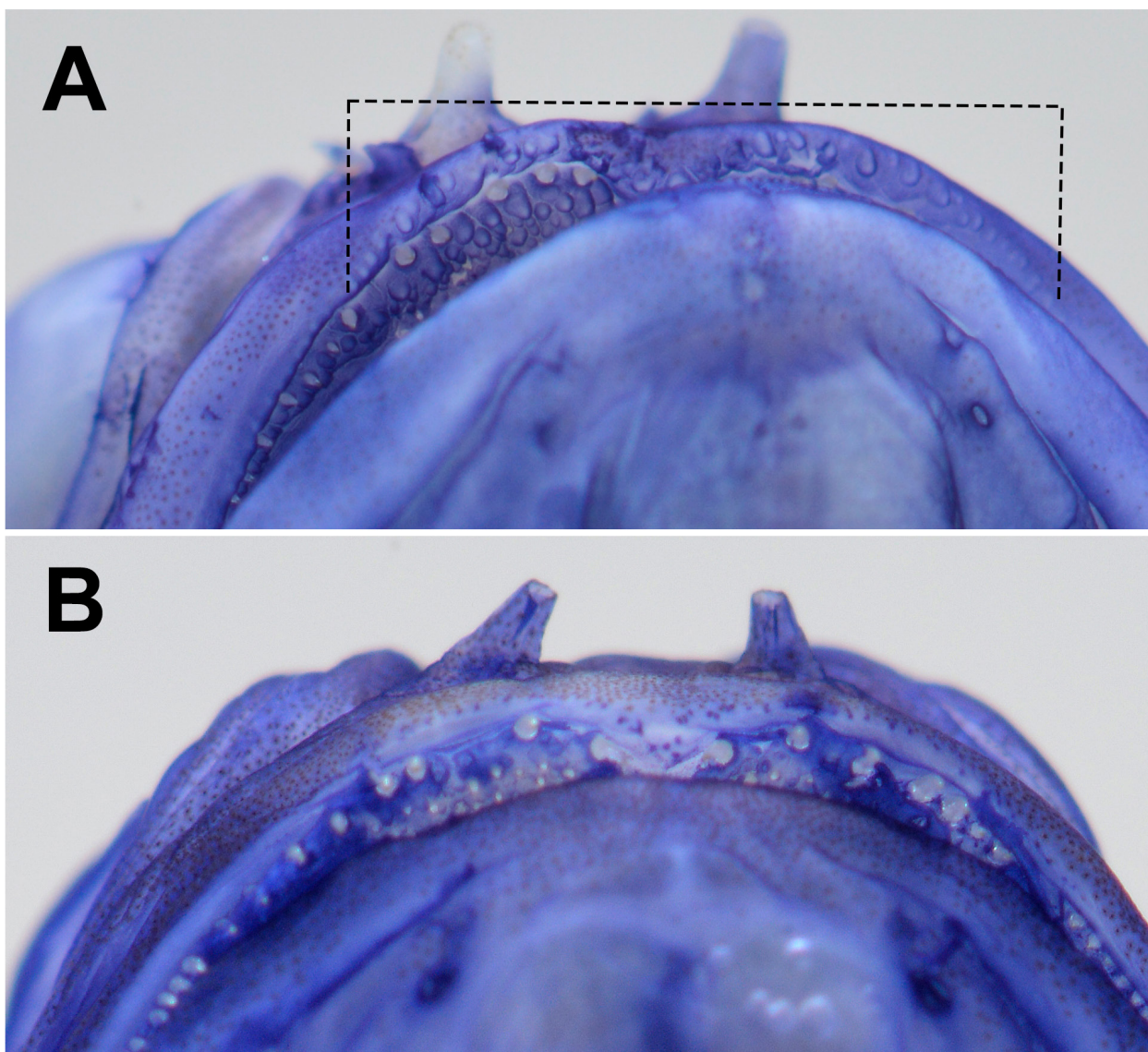


Fig. 7. Ventral surfaces of upper lip of two species of *Stalix*. A: *Stalix albonotata*, KPM-NI 83369, holotype, 38.8 mm SL; B: *Stalix yanoi*, KPM-NI 5503, holotype, 37.4 mm SL. Broken line indicates area with papillae.

Holotype. KPM-NI 5503, 37.4 mm SL, adult, Uehara, Iriomote-jima Island, Yaeyama Islands, Ryukyu Islands, Japan, 16 m depth, 16 November 1998, hand net, collected by K. Yano.

Paratype. OMNH-P 52945, 34.0 mm SL, adult, Uehara, Iriomote-jima Island, Yaeyama Islands, Ryukyu Islands, Japan, 18 m depth, 18 August 1999, hand net, collected by K. Yano.

Diagnosis. A species of *Stalix* with the following combination of characters: dorsal fin with 11 soft rays; pectoral fin with 21 or 22 soft rays; longitudinal scale rows 45–48; gill rakers on first gill arch 13 or 14 + 23 or 24 = 36 or 37; orbit diameter 10.7–11.5 % of SL; two sensory pores (*I4* and *I5*) present on posterior half of interorbital space; first 2 mandibular pores (*M1* and *M2*) well-spaced, fifth pore (*M5*) with single opening (Fig. 1B); lateral line terminating below second to fourth dorsal fin soft ray base (dorsal fin element 13.5–14.5);

distal incision of 3rd to 5th dorsal-fin spines moderate (Fig. 6B; see Smith-Vaniz, 1989: fig. 1); anteroventral surface of upper lip smooth (Fig. 7B); body uniformly whitish-green covered with slight brown pigmentation; lateral surface of head with several gray roughly irregular blotches; dorsal-fin membrane whitish-green, lacking any notable patterns or markings when fresh (Fig. 4A, B); anterior gular region unpigmented (chin and area adjacent to anterior two mandibular pores with a few scattered melanophores) (Fig. 8B).

Description. Data for holotype presented first, followed by paratype data in parentheses if different. Counts and measurements given in Table 1. Characters given in diagnosis not repeated.

Body elongate, laterally compressed. Upper profile of head rounded. Dorsal profile rising from snout tip to fifth dorsal-fin spine base, thereafter gradually lowering to end of dorsal-fin base. Ventral profile lowering from

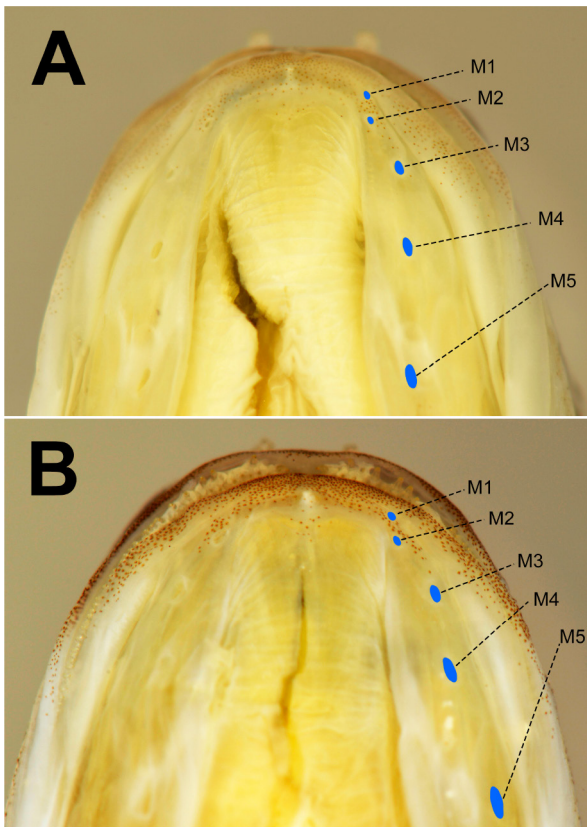


Fig. 8. Gular regions of two species of *Stalix*. A: *Stalix albonotata* sp. nov., KPM-NI 83369, holotype, 38.8 mm SL; B: *Stalix yanoi* sp. nov., KPM-NI 5503, holotype, 37.4 mm SL. M1–5 indicate position of first to fifth mandibular pores, respectively.

lower-jaw tip to pelvic-fin origin, subsequently parallel to body axis until middle of anal-fin base. Ventral contour of posterior half of anal-fin base slightly rising. Dorsal and ventral profiles of caudal peduncle parallel. Mouth large, slightly oblique, posterior margin of maxilla reaching vertical through first (second) preopercular pore (*P1* or *P2* in Fig. 1B); posterior end of maxilla truncate with small, terminally positioned supramaxilla. Anterior nostril tubular, posterior nostril vertically ovate, simple. Both jaws with conical teeth, ca. 6 rows anteriorly, becoming uniserial posteriorly; premaxilla with outer row of stout, slightly hooked teeth anteriorly, becoming smaller posteriorly; 3 irregular rows of smaller teeth and a few slightly enlarged symphyseal teeth behind anterior outer row; dentary with an outer row of stout straight teeth anteriorly, becoming smaller posteriorly; 3 (2) irregular rows of smaller teeth anteriorly behind outer row. Vomer and palatines toothless.

Dorsal fin origin above posterior tip of gill membrane; dorsal profile of dorsal fin rising from origin to tip of ninth (eighth) soft ray; posteriormost part of soft-rayed portion rounded; all soft rays branched, except first soft ray simple, eighth longest, last two joined basally; first to sixth (fifth) dorsal-fin spines transversely forked distally,

posterior forks successively shallower and more narrow; distal margin of anterior dorsal-fin membrane somewhat thickened and expanded dorsally to accommodate spine configuration, forming a pronounced lateral fold on each side of fin. Anal fin origin below last dorsal-fin spine base; ventral profile of anal fin lowering from origin to tip of seventh soft ray (eighth); posteriormost part of soft-rayed portion rounded; all soft rays branched, except first soft ray simple, eighth (ninth) longest, last two joined basally. Caudal fin rounded; 3 + 3 procurent rays and 8 + 8 segmented rays (including 6 + 6 = 12 branched rays), 11 + 11 = 22 rays in total. Pectoral fin rounded, rays of upper portion slightly longer than those of lower portion. Pelvic fin semi-falcate; single spine and 5 soft rays, second soft ray longest, first and second segmented rays unbranched, thickened.

Body covered with cycloid scales except head, nape, pectoral-fin base, thorax, and areas between dorsal-fin base and lateral line, and immediately behind pelvic fins naked; each fin scaleless.

Cephalic sensory pores well-developed (Fig. 1B). Infraorbital system with relatively large pores, opening usually single; anteriormost pore (*I1*) located just below anterior nostril; three sensory pores (*I8*, *I9* and *I10*) on junction of infraorbital system located behind posterodorsal edge of orbit; posteriormost pore (*I15*) oval, located on just front of lateral line origin.

Vertebrae 10 + 16; single supraneural present, positioned just before neural spine of second precaudal vertebrae.

Coloration when fresh (Fig. 4A, B). Most parts of head and body whitish-green with slight brown pigmentation; thorax, abdomen and pectoral-fin base white; fine brown pigmentation on dorsal surface of head, and tips of both jaws; lateral surface of head with several gray, roughly irregular blotches. Anal, pectoral and pelvic fins whitish-green. Caudal fin pale yellowish-green, except anterior half grayish-green.

Coloration in alcohol (Fig. 4C). Head and body generally pale brown; whitish, grayish and greenish coloration of fresh specimens generally faded, although brownish coloration remains, especially anteriorly on head.

Comparisons. *Stalix yanoi* can be distinguished from all other congeners by the total number of gill rakers on the first gill arch (36 or 37 in *S. yanoi* vs. 40–42 in *S. albonotata*, 34 or fewer in other species) (Table 1; Smith-Vaniz, 1989, 2022; Shinohara, 1999, 2006; Prokofiev, 2015; Allen & Erdmann, 2012, 2024). The former is most similar to *Stalix eremia* Smith-Vaniz, 1989, currently known from a single specimen collected from Papua New Guinea (Smith-Vaniz, 1989; Allen & Erdmann, 2024), the

two species sharing several morphological characters as follows: dorsal fin with 11 spines and 11 soft rays, first 5–7 dorsal-fin spines transversely forked distally; anal fin with 2 spines and 11 soft rays; pectoral fin with 21 or 22 rays; lateral line terminating below second to fourth dorsal fin soft ray base (dorsal fin element 13–14.5); longitudinal scale rows 44–49; body moderately deep, 19.1–21.4 % of SL; anteroventral margin of upper lip smooth; first 2 mandibular pores well-spaced, fifth pore with single opening; body uniformly golden-brown or whitish-green with slight brown pigmentation; and anterior gular region unpigmented (Figs. 1B, 4–5, 6–8B; Table 1; Smith-Vaniz, 1989; Allen & Erdmann, 2024). However, *S. yanoi* differs from *S. eremia* in having 35–37 gill rakers on the first gill arch (vs. 33 or 34 in *S. eremia*), well-developed cephalic sensory pores, two sensory pores (*I4* and *I5*) on posterior half of interorbital space (vs. relatively poor, single pore), and no notable pattern or markings on the dorsal fin when fresh (vs. a narrow, bright blue basal stripe) (Figs. 1B, 4–5; Table 1; Smith-Vaniz, 1989; Allen & Erdmann, 2024).

Etymology. The specific name and English common name are named in honor of Mr. Korechika Yano (Dive Service YANO), who has kindly supported our ichthyofaunal research in the Ryukyu Islands. The standard Japanese name is a combination of “Sarashi”, which means white cloth in Japanese and refers to the whitish body of the species, and “Kaeruamadai”, the common Japanese name for members of the genus *Stalix*.

Distribution and habitat. Currently collected only from the Iriomote-jima Island, Ryukyu Islands, Japan, the present specimens having been found in an inner bay (silty sand bottom).

Remarks. Both of the new species conform to the generic characteristics of *Stalix* sensu Smith-Vaniz (1989) (see Introduction), except with regard to gill raker numbers on the first gill arch. Whereas the currently recognized valid species of *Stalix* have 22–34 total gill rakers on the first gill arch, *S. albonotata* and *S. yanoi* have 40–42 and 36–37 gill rakers, respectively (Table 1; Smith-Vaniz, 1989, 2022; Shinohara, 1999, 2006; Prokofiev, 2015; Allen & Erdmann, 2012, 2024). In fact, within the family Opistognathidae, total gill raker numbers range widely, from 19–47 in *Opistognathus* and from 38–65 in *Lonchopisthus* (Smith-Vaniz and Walsh, 2017; Smith-Vaniz, 2023), indicating that the number of gill rakers in *S. albonotata* and *S. yanoi* represents expansion of intra-generic variation within the genus.

Key to the Japanese species of *Stalix*

Diagnostic characters of *Stalix histrio* Jordan & Snyder, 1902, *Stalix immaculata* Xu & Zhan, 1980, and *S. toyoshio* are based on comparative material examined and the following literature descriptions: Smith-Vaniz (1989), Shinohara (1999, 2006), Aizawa and Doiuchi (2013), and Allen and Erdmann (2024). Oh *et al.* (2008) reported a single specimen of *Stalix* from Korea as *S. toyoshio* with detailed description, but this specimen differs from *S. toyoshio* described by Shinohara (1999) in the characteristics of the mandibular pores, the position of the lateral line termination, and the fresh coloration of the body surface. In addition, since there are no nominal species that clearly match the specimen reported by Oh *et al.* (2008), it is considered an undescribed species and Oh *et al.* (2008) is not referenced in present key.

- 1a. Total gill rakers 22–25; wide dark margin on posterior edge of opercle; single dark stripes on upper half of body, and dorsal and anal fins *S. histrio* “Kaeruamadai”
- 1b. Total gill rakers 27–42; no dark margin on posterior edge of opercle; no dark stripes on body or fins 2
- 2a. Lower limb gill rakers 18–20; anterior gular region pigmented; two dark blotches on dorsal-fin spinous portion (rarely absent) *S. immaculata* “Hime-agoamadai”
- 2b. Lower limb gill rakers 21–26; anterior gular region unpigmented; no dark blotches on dorsal-fin spinous portion 3
- 3a. Longitudinal scale rows 55–58; total gill rakers 32 or 33; first and second mandibular pores confluent *S. toyoshio* “Kibire-kaeruamadai”
- 3b. Longitudinal scale rows 45–48; total gill rakers 36–42; first and second mandibular pores well separated 4
- 4a. Total gill rakers 40–42; anteroventral margin of upper lip crenulate (Fig. 7A); body grayish-green, with fine brown and white vermiculations (Figs. 2, 3, 4A) *S. albonotata* sp. nov. “Shimofuri-kaeruamadai”
- 4b. Total gill rakers 36 or 37; anteroventral margin of upper lip smooth (Fig. 7B); body uniformly whitish-green, covered with slight brown pigmentation (Fig. 5) *S. yanoi* sp. nov. “Sarashi-kaeruamadai”

Comparative materials. *Stalix histrio*: OMNH-P 35289, Nago Bay, Okinawa-jima Island, Ryukyu Islands, Japan, collected by T. Suzuki; *Stalix eremia*: KPM-NR 39624 (photograph), Jetty, Derawan Island, Indonesia,

photo by Y. Sasaki; *S. cf. albonotata*: NSMT-P 145414, ca. 10 mm SL, Kin Bay, Okinawa-jima Island, Ryukyu Islands, Japan, collected by T. Sato.

Acknowledgments

We are especially grateful to K. Yano (see above), H. Nakajima and T. Sato (University of the Ryukyus, Japan) for collecting and providing specimens of the genus *Stalix*, T. Seko (Spitz River Trekking), and Y. Sasaki for providing photographs of the genus *Stalix*, S. Matsui (OMNH), M. Nakae and G. Shinohara (NSMT) for curatorial assistance, and G. Hardy (Ngunguru, New Zealand) for reading the manuscript and providing help with English. This work was supported by JSPS KAKENHI Grant Number 24K16204 to the first author.

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摘 要

和田英敏・鈴木寿之・小林大純・瀬能 宏, 2025. 琉球列島から得られたアゴアマダイ科カエルアマダイ属の2新種シモフリカエルアマダイ (新称) *Stalix albonotata* およびサラシカエルアマダイ (新称) *S. yanoi*. 神奈川県立博物館研究報告 (自然科学), (54): 205–217. [Wada, H., T. Suzuki, H. Kobayashi & H. Senou, 2025. Two new jawfishes, *Stalix albonotata* sp. nov. and *S. yanoi* sp. nov., from the Ryukyu Islands, Japan (Perciformes: Opistognathidae). Bull. Kanagawa Pref. Mus. (Nat. Sci.), (54): 205–217.]

琉球列島から得られたスズキ目アゴアマダイ科カエルアマダイ属の2新種、シモフリカエルアマダイ *Stalix albonotata* およびサラシカエルアマダイ *Stalix yanoi* をそれぞれ2標本に基づき記載した。シモフリカエルアマダイは縦列鱗数が45–46および第1鰓弓の総鰓耙数が40–42 (成魚の場合)、下顎の第1・2番目の感覚管孔がよく離れる、側線の最後の開孔が背鰭第2–3軟条基底下にある、上唇前部腹面に凹凸をもつ、生鮮時に体が灰みの黄でブラウンと白の緻密な虫食い状斑をもち、背鰭鰭膜が灰みの黄で複数の白の不定形斑をもつ、頤の前半に黒色素胞がないなどの形態学的特徴により同属他種から識別される。サラシカエルアマダイは縦列鱗数が45–48および第1鰓弓の総鰓耙数が36–37、両眼間隔域の後半部に2個の開孔をもつ、下顎の第1・2番目の感覚管孔はよく離れる、上唇前部腹面が円滑、生鮮時に体が一様に白みの緑で僅かにブラウンの色素胞で覆われる、背鰭鰭膜が白みの緑で明瞭な斑紋をもたないなどの形態学的特徴により同属他種から識別される。また、これら2新種を含む日本産カエルアマダイ属の検索表を作成した。