



Eviota atriventris, a New Goby Previously Misidentified as *Eviota pellucida* Larson (Teleostei: Gobiidae)

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Abstract

A species commonly identified as *Eviota pellucida* in the literature has been misidentified and is in fact an undescribed species, described here as *E. atriventris*. *Eviota pellucida* is known only from the Gilbert and Marshall Islands, Ponape, Mariana Islands, and the Ryukyu Islands, Japan. *Eviota atriventris* is known from the Ryukyu Islands, Philippine Islands, Palau Islands, Indonesia, Papua New Guinea, Solomon Islands, New Caledonia, and the Great Barrier Reef, Australia. *Eviota atriventris* differs from *E. pellucida* in both preserved and live coloration and in pectoral-fin ray counts.

Key words: Teleostei, Gobiidae, *Eviota*, new species, S.W. Pacific

Introduction

Eviota pellucida was described by Helen Larson in 1976 from the Mariana and Gilbert Islands. The description was accompanied by a drawing, but no color photograph; however, a description of life color was included. In 1997 Randall published what he thought to be the first life color photograph of *E. pellucida*, a 20 mm TL fish from Flores, Indonesia (Fig. 1). This fish had a distinctive black abdomen with a curved white stripe running through the black area from the pectoral fin to the anal-fin base. Since that time others have published similar photographs identified as *E. pellucida* (Myers 1999; Laboute and Grandperrin, 2000; Ikeda et al., 2003; Senou, et al. 2004; Randall 2005).

The second author photographed and captured a species of *Eviota* in Japan (= *Eviota* sp. 4 sensu Senou et al., 2004) that he did not recognize and thought it might be undescribed (Figs. 2–4). In examining the specimen we found that it had the distinctive dark coloration on the snout and top of the head similar to specimens of *E. pellucida*. In reexamining the original description of *E. pellucida* (Larson, 1976), we realized that her drawing and description of the live color matched the specimen from Japan, but not the photographs in the literature purported to be *E. pellucida* (Fig. 5). This widespread species with the dark abdomen and a light colored stripe is described as new in this paper.

Materials and Methods

Counts and measurements, descriptions of fin morphology and the cephalic sensory-canal pore patterns follow Lachner and Karnella (1980). Measurements were made to the nearest 0.1 mm using dial calipers and an ocular micrometer, and are presented as percentage of Standard Length (SL). All specimen lengths are SL. Cyanine Blue 5R (acid blue 113) stain was used to make pores more obvious (Akihito et al. 1993; Saruwatari et al. 1997; Nakabo 2002). Values for the holotype are given first, followed by the range for all types, and by the mean, where appropriate, in parentheses.

Eviota atriventris n. sp.

Blackbelly Dwarfgoby (English name), Shiroobi isohase (Japanese name) (Figs. 1, 6–8)

Eviota pellucida (non Larson). Randall, 1997:6, fig. 7; Myers 1999: 254, Pl. 160B; Laboute & Grandperrin, 2000: 409, fig.; Ikeda et al., 2003: 57, figs. 105–106; Senou, et al., 2004: 137, fig.; Randall, 2005: 533, fig.

Holotype: ROM 76339, 17.1 mm male, Palau, due west of Koror where lagoon rises to outer barrier reef, 07°20'44.3" N, 134°16'47.2" E, 0–7.9 m, patch reef of numerous *Porites* bommies, rotenone, field number RW04-12, R. Winterbottom, W. Holleman, B. Hubley, and D. Winterbottom, 24 May 2004.



FIGURE 1. Underwater photograph of *Eviota atriventris*, Flores. Photograph by J.E. Randall.



FIGURE 2. *Eviota pellucida*, OMNH 35616, Ishigaki-jima Island, Ryukyu Islands, Japan. Photograph by T. Suzuki.

Paratypes: ROM 88226, 7 males 9.2–13.9 mm, 7 females 11.4–16.7 mm, taken with holotype; ROM 84482, 17.8 mm male, Palau, Sonsoral Island, southwest islands, east coast Sonsoral 2/3rds way south from north tip, 05°19'18" N, 132° E, 20–36 m, corals and various algae, rotenone, field number RW08-02, R. Winterbottom, M. Westneat, J. Williams, W. Holleman, B. Hubley, M. Winterbottom, and C. McCord, 11 September 2008. ROM 84498, 17.3 mm female, Palau, off southeast tip of Pulo Anna, about 10 m from surf line, 04°39'09" N, 131°57'16" E, 7–15 m, channel, various corals, rotenone, field number RW08-09, R. Winterbottom, M. Westneat, J. Williams, W. Holleman, B. Hubley, M. Winterbottom, and C. McCord, 13 September 2008. ROM 74922, 20 males 10.7–18.2 mm, 19 females 10.4–17.4 mm, 23 immature 6.6–10.2 mm, Palau, west coast of Babeldaob Island, off Aimeliik coast, 07°28' 53.9"N, 134°27'28.8"E, *Padina* on mixed sand substrate, 13.7–19.8 m, rotenone, R. Winterbottom, B. Hubley, A. Bauman, D. Winterbottom, A. Hilman-Kitalong, and L. Pendleton, 19 May 2004. BPBM 41084, 2 males 12.7–13.3 mm, 2 females 13.4–13.5 mm, taken with ROM 74922. CAS 233514, 3 males 15.4–16.2 mm, 3 females 12.6–14.6 mm, taken with ROM 74922. OMNH- P38332 13.5 mm male, P38333 14.2 mm male, P38334 13.3 mm female, P38335 13.4 mm female, all taken with ROM 74922. USNM 402735, 2 males 13.3–14.0 mm, 2 females 12.6–13.7 mm. WAM P.33535-001, 2 males 13.8–15.1 mm, 2 females 12.7–14.3 mm, taken with ROM 74922.

Other material examined. *Eviota pellucida*, BPBM 18585, paratypes; BPBM 28893; BPBM 28993; OMNH 35616; *Eviota prasites*, CAS 233666; *Eviota spilota*, ROM 74562, ROM 84525.

Diagnosis. The following combination of characters distinguishes *E. atriventris* from congeners: Abdomen with black peritoneum that is clearly visible externally; dorsal/anal formula 8/7; pectoral-fin rays simple; length of 5th pelvic-fin ray 40% or greater of 4th ray; genital papilla in male not fimbriate; cephalic sensory-pore system pattern group 2 (only IT missing).



FIGURE 3. Underwater photograph of *Eviota pellucida*, male, Amami-oshima Island, the Ryukyu Islands, Japan. Photograph by H. Kanehara.

Description. Dorsal-fin rays VI+I,8 (7[1], 8[29],9[1]); anal-fin rays I,7 (7[30],8[1]); unbranched pectoral-fin rays 14 (13[5], 14[30], 15[7]); fifth pelvic-fin ray 46.3% of 4th ray (40.0–63.6, 40.3); 3 branches on 4th ray (3–5); 4–9 segments between consecutive branches of 4th pelvic-fin ray; 11 branched caudal-fin rays; 17 segmented caudal-fin rays; 23 lateral scale rows (23–24); transverse scale rows 7, embedded cycloid scales on breast; first four spines of dorsal fin filamentous in males, the 4th the longest, extending to caudal-fin base when depressed; genital papilla in male not fimbriate, bilobed at tip and usually extending to or past first anal-fin ray; cephalic sensory-pore system pattern group 2 (only IT missing).

Measurements (based on holotype and nine paratypes, 13.9–18.2 mm). Head length 31.0 (29.8–33.9, 32.0); origin of first dorsal fin 35.1 (33.9–36.9, 35.7); origin of second dorsal fin 55.5 (54.9–60.1, 56.8); origin of anal fin 55.5 (55.5–66.5, 61.0); caudal-peduncle length 24.4 (24.3–28.4, 25.9); caudal-peduncle depth 15.8 (12.0–15.8, 14.1); body depth 25.4 (22.0–27.2, 24.3); eye diameter 11.1 (10.4–12.9, 11.2); snout length 5.3 (4.3–6.3, 5.3); pectoral-fin length 35.1 (30.7–36.1, 33.6); pelvic-fin length 30.4 (27.4–36.0, 32.0).



FIGURE 4. Underwater photograph of *Eviota pellucida*, female, Amamki-oshima Island, the Ryukyu Islands, Japan. Photograph by H. Kanehara.

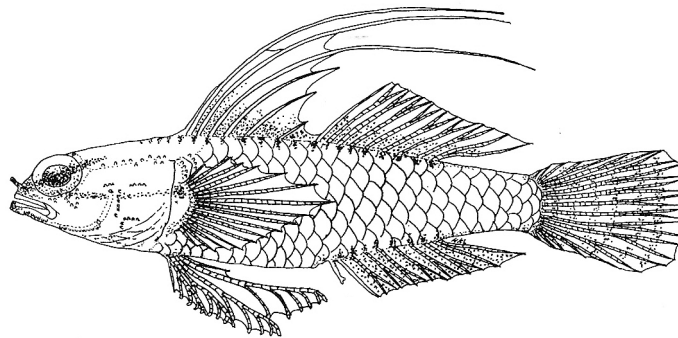


FIGURE 5. *Eviota pellucida*, drawing of holotype by H. K. Larson. Figure 1 from Copeia 1976 (3):499.

Color in preservative of holotype (Fig. 7). Background color of head and body pale yellowish. Abdomen with black peritoneum that is clearly visible externally. A light peppering of small dark chromatophores on ventral half of body, no markings on dorsal half of body. Pectoral-fin base with a band of scattered small dark chromatophores on upper two-thirds. A short line of dark chromatophores extending posteriorly from middle of eye onto opercle. A light peppering of dark chromatophores between eye and upper jaw. Three sharply defined dark lines on snout (Fig. 8). One extending from front of interorbital area down snout to a point in line with front of eyes; one extending from each posterior nostril in front of eye to almost end of snout. A small round dark spot on top of center of

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upper jaw. Nape just behind eyes with a slight dusky area (most paratypes have distinct lines on the nape extending back from the eyes; one behind the PITO pore and one on each side towards the SOT pores –Fig. 8). Pectoral and pelvic fins clear.



FIGURE 6. *Eviota atriventris*, fresh holotype, ROM 76339, 17.1mm SL. Photograph by R. Winterbottom.



FIGURE 7. *Eviota atriventris*, preserved holotype, ROM 76399, 17.1 mm SL. Photograph by D.W. Greenfield.

Color of fresh holotype (Fig. 6). Background color of head and body red-orange. Abdomen black with a horizontal white line crossing the center of the area. Remainder of lower half of body from anal-fin origin to caudal-fin base dusky. A faint yellowish line just above the vertebral column extending back from the head to the caudal-fin base. A similar shorter line running along the top of the dark abdomen. Eye with a black pupil surrounded by an iris that is golden dorsally and red ventrally; a red-orange line passing through center of eye and a white line below that. Dorsal, anal and caudal fins covered with fine dark chromatophores, red-orange entering onto their bases from the body.

Color in life (Fig. 1). Background color of body a translucent red-orange. Abdomen black with a bright white horizontal line crossing the center of the black area. A narrow golden line running from the top of the head just above the vertebral column back to the caudal-fin base. Anterior end of this line splitting into two lines extending forward to the eyes. A narrow golden line running from the tip of the snout back across the eye just above the pupil and onto the body above the black area of the abdomen, ending at back of black area. Another short, narrow golden line on eye just below pupil. Ventral surface of body from anal-fin origin to caudal-fin base with a narrow golden line. Ventral surface of head and belly a pale translucent cream. Rays of all fins red-orange, membranes with fine dark chromatophores.



FIGURE 8. *Eviota atriventris*, head of CAS 233514, paratype, 13.5 mm female. Photograph by D.W. Greenfield.

Distribution. Known from the Ryukyu Islands-Japan, Palau Islands, Philippine Islands, Indonesia, Papua New Guinea, Solomon Islands, New Caledonia, and the Great Barrier Reef, Australia (Fig. 9).

Etymology. The specific epithet is an adjective combining the Latin *atrus* (black) and *venter* (belly), referring to the black pigment in the area of the abdomen.

Comparisons. *Eviota atriventris* differs from all other species in the genus by its distinctive color pattern of a black abdomen when preserved and in life or fresh with a white line crossing the center of the black area. *Eviota atriventris* belongs to cephalic sensory-pore group 2, lacking only the IT pore, has simple pectoral-fin rays, a dorsal/anal fin-ray formula almost always 8/7, and the 5th pelvic-fin ray longer than 30% of the length of the 4th ray. There are only two other *Eviota* species that share these characters: *E. prasites* Jordan and Seale, and *E. pellucida* Larson and neither have a black abdomen. *Eviota pellucida* has a modal number of pectoral-fin rays of 16, whereas *E. atriventris* has a mode of 14 (Table 1). In addition, *E. prasites* has a distinctive dark spot at the top of the pectoral-fin base, and *E. pellucida* may have a less distinctive dusky spot that is lacking in *E. atriventris*. *Eviota prasites* often also has a dark spot at the caudal-fin base that is lacking in *E. atriventris*. In life both *E. prasites* and *E. pel-*

lucida may have small red spots on the dorsal and caudal fins, whereas *E. atriventris* lacks spots. Other described *Eviota* species in cephalic sensory-pore group 2 that share the above characters except that the 5th pelvic-fin ray is 10% or less of the 4th ray instead of being 30% or longer, are *E. nigripinna* Greenfield & Suzuki and *E. rubriceps* Greenfield & Jewett which both have the ventral half of the entire body dark, *E. storthynx* Rofen which has a dark postocular spot and the caudal fin crossed by distinct lines of pigment, and *E. ancora* Greenfield & Suzuki that has five irregular bands of circles of chromatophores crossing the caudal fin and a J-shaped orange mark on the side of the head when alive or fresh.

TABLE 1. Pectoral-fin ray counts for *Eviota atriventris* and *E. pellucida*.

	13	14	15	16
<i>Eviota atriventris</i>	5	30	7	
<i>Eviota pellucida</i>			2	16

Prior to the capture of *E. pellucida* at Ishigaki-jima Island, the Ryukyu Islands, Japan (OMNH-P.35616: Fig. 2), this species was only known from the type localities of Guam in the Mariana Islands and Abaiang Atoll in the Gilbert Islands (Larson, 1976 & Lachner & Karnella, 1980). Therefore *E. pellucida* at Ishigaki-jima Island is the first Japanese record of the species (New Japanese name: Kojika isohaze). Here it also is recorded from Ponape (USNM 22302 & 223023, pers. comm. Susan Jewett) and Enewetak Atoll, Marshall Islands (BPBM 28893 & 28993) (Fig. 9). All other literature records appear to be *E. atriventris*. *Eviota pellucida* is most easily confused with *E. prasites* and *E. spilota*. *Eviota spilota* almost always has a second dorsal-fin count of I,9, whereas it is almost always I,8 in *E. pellucida*. *Eviota prasites* has a distinctive dark spot at the top of the pectoral-fin base whereas there only may be a dusky area there in *E. pellucida*. *Eviota prasites* also has a dusky spot at the bottom of the caudal-fin base that is lacking in *E. pellucida*. Finally, in life *E. prasites* has seven white blotches extending along the side just above the red area over the vertebral column, the first starting above the two white blotches on the pectoral-fin base (Fig. 10), whereas there are eight in *E. pellucida* (Figs. 3 & 4).

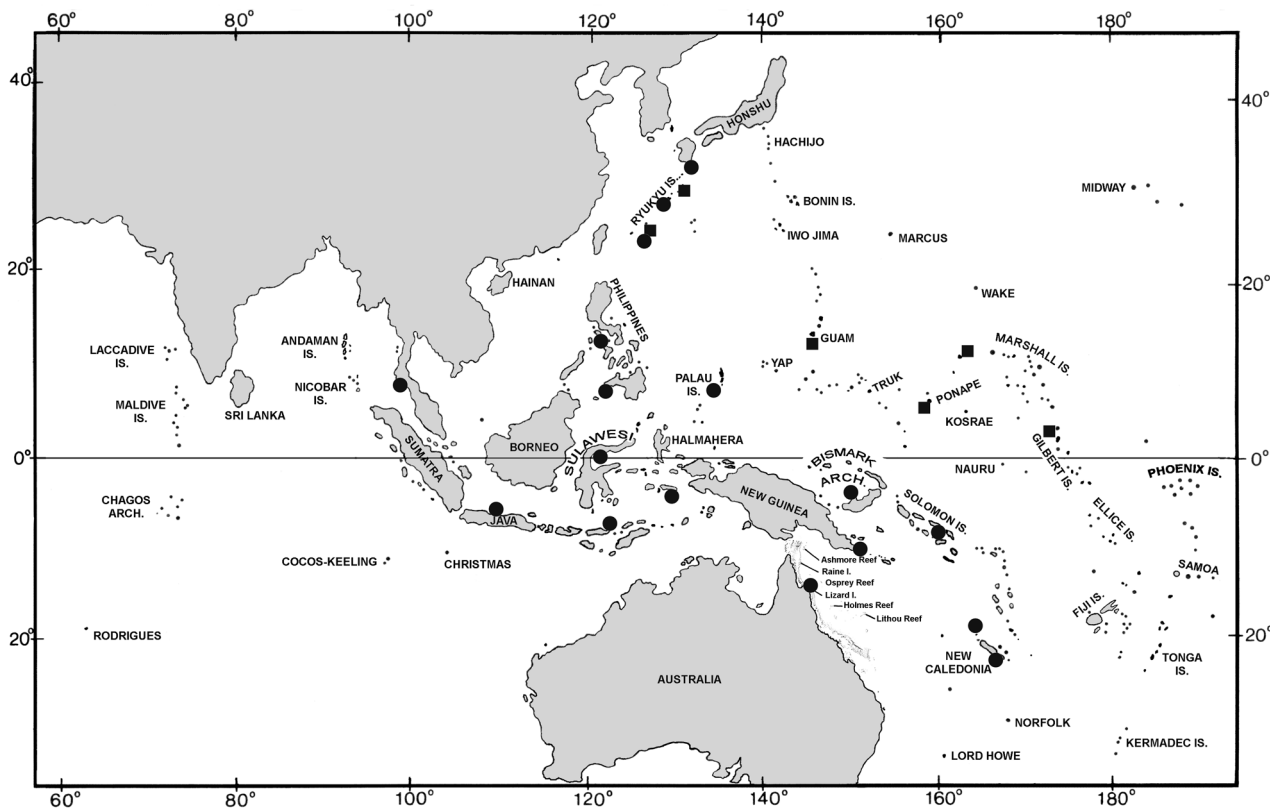


FIGURE 9. Distribution of *Eviota atriventris* (circles) and *E. pellucida* (squares).



FIGURE 10. Underwater photograph of *Eviota prasites*, male, Amami-oshima Island, the Ryukyu Islands, Japan. Photograph by H. Kanehara.

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