Distributional Range Extension of the Pale Ornate Jobfish
_Pristipomoides amoenus_ (Teleostei: Perciformes: Lutjanidae)
in the Western Pacific Ocean, with Notes on
Newly Recognized Diagnostic Coloration

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Seven specimens (149.0–221.2 mm standard length) of _Pristipomoides amoenus_ (Snyder, 1911), previously known only from Okinawa-jima and Ishigaki-jima islands, southern Ryukyu Islands, Okinawa Prefecture, Japan, were collected from other regions of Japan (Amami-oshima island, Amami Islands, Kagoshima Prefecture), Taiwan (Dong-gang, Pingtung), the Philippines (Iloilo, Panay Island), and Fiji (Viti Levu Island), thereby representing the first records of the species from outside Okinawa Prefecture. The Amami-oshima and Fijian specimens also represent the northernmost and first Southern Hemisphere records, respectively, for the species. Comparison of these plus newly collected specimens from the southern Ryukyu Islands (herein described in detail) with the closely related species _Pristipomoides argyrogrammicus_ (Valenciennes in Cuvier and Valenciennes, 1832) revealed the following hitherto unrecognized diagnostic color features of _P. amoenus_: a few small silvery-blue blotches present inside yellow saddles on dorsum; small silvery-blue blotches below trunk lateral line absent or indistinct; a distinct line (formed by small silvery-blue blotches) absent on lower caudal peduncle; a large silvery-blue blotch present on upper opercle, extending anteriorly beyond preopercular margin; a line formed by small silvery-blue blotches on upper caudal peduncle ending at upper caudal-fin base; a pair of lines formed by small silvery-blue blotches along dorsal-fin base (dorsal view); a larger pair of elliptical silvery-blue blotches on occipital region (all silvery-blue blotches retained as dark-brown blotches after preservation). _Pristipomoides argyrogrammicus_ is newly recorded from the Tokara Islands, northern Ryukyu Islands, Japan.

Key Words: taxonomy, morphology, description, _Pristipomoides argyrogrammicus_.

Introduction

The genus _Pristipomoides_ Bleeker, 1852, widely distributed in the Indo-Pacific and western Atlantic oceans, occurs in relatively shallow to moderately deep water, in ca. 20 to 550 m depth (Allen 1985). Although _Pristipomoides amoenus_ (Snyder, 1911), previously considered a junior synonym of _P. argyrogrammicus_ (Valenciennes in Cuvier and Valenciennes, 1832), but recently resurrected as valid by Shimose et al. (2020), is quite similar to _P. argyrogrammicus_ in overall body appearance and some color features, the former can nevertheless be differentiated from the latter on the basis of fresh color pattern, as well as by the number of lower gill rakers (Shimose et al. 2020).

During an examination of specimens of _Pristipomoides_ from the Pacific Ocean, seven individuals (149.0–221.2 mm standard length) collected from Japan (Amami Islands), Taiwan, the Philippines, and Fiji were identified as _P. amoenus_, a species previously recorded only from Okinawa-jima and Ishigaki-jima islands (Snyder 1911; Shimose et al. 2020; Shimose 2021). These specimens, representing the first records outside Okinawa Prefecture, together with seven specimens from the southern Ryukyu Islands, are described herein in detail, including newly recognized diagnostic features. In addition, distributional records of _P. argyrogrammicus_ were reviewed in this study and found that 12 specimens were recorded from the Tokara Islands for the first time.

Materials and Methods

Counts and measurements followed Shimose et al. (2020). Measurements were made to the nearest 0.1 mm with calipers. Standard and total lengths are expressed as SL and TL, respectively. Curatorial procedures followed Motomura and Ishikawa (2013). Institutional codes used in this study include: KAUM (Kagoshima University Museum, Kagoshima, Japan), NMMB (National Museum of Marine Biology and Aquarium, Pingtung, Taiwan), and UPVMI (Museum of Natural Sciences, University of the Philippines Visayas, Miagao, Iloilo, Philippines).
**Pristipomoides amoenus** (Snyder, 1911)

[English name: Pale Ornate Jobfish; standard Japanese name: Usuhanafuedai]

(Figs 1A–C, 2A–D, 3, 4; Table 1)

*Platynius amoenus* Snyder, 1911: 530 (type locality: Naha, Okinawa-jima island, Japan).

*Pristipomoides argyrogrammicus* (not of Valenciennes in Cuvier and Valenciennes 1832): Nakae et al. 2018: 285 [in part, Amami-oshima island, Kagoshima, Japan; 1 (KAUM–I. 108165) of 7 listed specimens]; Hata 2019: 169, unnumbered fig. [Amami-oshima island, Kagoshima, Japan; KAUM–I. 108165 (erroneously given as 10865)]; Tanaka 2019: unnumbered figs (Dong-gang, Pingtung, Taiwan; NMMB-P11951, KAUM–I. 113361).

*Pristipomoides amoenus*: Shimose et al. 2020: 472, figs 1B, 2B, 3, (Okinawa-jima and Ishigaki-jima islands, Okinawa, Japan); Shimose 2021: 99, fig. K (Yaeyama Islands).

**Material examined.** 14 specimens (149.0–221.2 mm SL) from the western Pacific Ocean. **JAPAN**: KAUM–I. 108165, 212.2 mm SL, off Amami-oshima island, Amami Islands, Kagoshima, 28°28’N, 129°28’E, purchased at Naze Fish Landing Port, 29 May 2017, T. Maekawa; KAUM–I. 156090, 201.2 mm SL, KAUM–I. 156091, 177.3 mm SL, KAUM–I. 156093, 221.2 mm SL, off Amami-oshima island, Amami Islands, Kagoshima, 28°28’N, 129°28’E, purchased at Naze Fish Landing Port, 22 February 2021, T. Maekawa; KAUM–I. 68343 186.0 mm SL, southern Ryukyu Islands, purchased at Iyumachi fish market, Tomari, Naha, Okinawa-jima island, 31 July 2014, Y. Sakurai; KAUM–I. 141847 186.7 mm SL, KAUM–I. 141848 161.7 mm SL, KAUM–I. 141849, 182.2 mm SL, southern Ryukyu Islands, purchased at Iyumachi fish market, Tomari, Naha, Okinawa-jima island, 4 February 2020, Y. Sakurai; KAUM–I. 144671, 196.7 mm SL, KAUM–I. 144672, 189.8 mm SL, KAUM–I. 144673, 194.6 mm SL, southern Ryukyu Islands, purchased at Iyumachi fish market, Tomari, Naha, Okinawa-jima island, 25 June 2020, Y. Sakurai. **TAIWAN**: KAUM–I. 113361, 184.7 mm SL, off Dong-gang, Pingtung, 22°39’N, 120°24’E, 10 March 2018, line-fishing, K. Koeda and H. Hata. **PHILIPPINES**: UPVM. 2410, 149.0 mm SL, purchased at Miagao Fish Market, Miagao, Iloilo, Visayas, 4 July 2018, J. Okamoto. **FIJI**: KAUM–I. 14938, 182.7 mm SL, off Suva.
Range extension and revised diagnosis of Pristipomoides amoenus

Viti Levu Island, 18°17′S, 178°21′E, 2–4 January 1982.

Revised diagnosis. A species of Pristipomoides, characterized by the following characters: pored lateral-line scales 59–63; body moderately deep 32.1–36.5% of SL; lower gill rakers 9–11 (mode 10), including 8–10 (9) rod-shaped rakers; body color pale pink dorsally, silvery-white ventrally, with five yellow saddles, usually not extending below lateral line; a few small silvery-blue blotches inside yellow saddles; small silvery-blue blotches below lateral line on trunk absent or indistinct; distinct line formed by small silvery-blue blotches anterior to caudal peduncle; a large silvery-blue blotch on upper opercle extending anteriorly beyond preopercular margin; a line formed by small silvery-blue blotches on upper caudal peduncle ending at upper caudal-fin base; a pair of lines formed by small silvery-blue blotches along dorsal-fin base (dorsal view); a larger pair of elliptical silvery-blue blotches on occipital region (all silvery-blue blotches retained as dark-brown blotches after preservation); no distinct white margins on dorsal and anal fins.

Description. Counts and measurements, expressed as percentages of SL, are given in Table 1. Morphological and color characters given in Diagnosis not repeated here. Body laterally compressed. Upper profile of head slightly convex; dorsal outline rather more strongly curved than ventral; ventral outline evenly curved. Nostrils close together; anterior nostril opening elliptical, with flap; posterior nostril opening elliptical, located on anterior of orbit. Interorbital space moderately wide, flattened. Occipital region convex. Mouth terminal, oblique; posterior tip of maxilla extending beyond level of anterior margin of pupil, but not below middle of eye; maxilla mostly covered by cheek. Enlarged conical teeth anteriorly on upper jaw; small conical teeth in outer row on mid-lateral part of upper jaw; 3 or 4 pairs of conical teeth on lower jaw; villiform teeth on inner row of upper and lower jaws, vomer and palatines. Tongue naked. Opercle and subopercle scaled, flattened without spines. Interopercle naked; posterior margin of lower interopercle serrated. Eight enlarged scales from occipital region to above opercle. Body scales ctenoid; scales absent on snout, interorbital space and maxilla; dorsal, anal, pelvic and pectoral fins naked; small dense scales on caudal-fin rays. Lateral line complete.

Origin of dorsal fin above posterior tip of opercle; dorsal fin continuous, not deeply incised near junction of spinous and rayed portions; fourth dorsal-fin spine longest, last dorsal-fin soft ray elongate; end of dorsal-fin base slightly

Fig. 2. Preserved specimens of (A–D) Pristipomoides amoenus and (E–H) P. argyrogrammicus. A, KAUM–I. 156091, 177.3 mm SL, Amami-oishima island, Kagoshima, Japan; B, D, KAUM–I. 113361, 184.7 mm SL, Dong-gang, Pingtung, Taiwan; C, KAUM–I. 156091, 221.2 mm SL, Amami-oishima island, Kagoshima, Japan; E, KAUM–I. 139296, 141.7 mm SL, Amami-oishima island, Kagoshima, Japan; F, H, KAUM–I. 108166, 210.9 mm SL, Amami-oishima island, Kagoshima, Japan; G, KAUM–I. 51137, 277.6 mm SL, Tokara Islands, Kagoshima, Japan; D, H: dorsal view.
posterior to end of anal-fin base. Origin of anal fin below second or third dorsal-fin soft ray; first anal-fin spine half height of second spine; third anal-fin spine longer than second; anal-fin soft rays longer than anal-fin spines; last anal-fin soft ray elongate. Caudal fin homocercal, deeply forked. Pectoral fin pointed, fifth ray longest, reaching to vertical through anus. Origin of pelvic fin slightly posterior to dorsal fin origin; depressed pelvic fin not reaching anus.

**Coloration when fresh** (Fig. 1A–C). Body pinkish, with yellow saddles and small silvery-blue blotches dorsally. Snout pink; interorbital space slightly yellowish. Small elliptical silvery-blue blotch behind dorsoposterior margin of orbit. Pectoral, pelvic, and anal fins semi-transparent pink to yellowish-white. Spinous portion of dorsal fin yellow dorsally, remaining portions of dorsal fin semi-transparent yellowish-white. Caudal fin yellow, with pinkish margin on lower lobe.

**Coloration of preserved specimens** (Fig. 2A–D). Body yellowish pale-brown, with numerous small dark brown blotches dorsally. Fins semi-transparent white.

**Distribution.** Widely distributed in the western Pacific Ocean; recorded from Japan (Amami-oshima, Okinawa-jima, and Ishigaki-jima islands), Taiwan (Dong-Gang, Pingtung), the Philippines (Iloilo, Panay Island), and Fiji (Viti Levu Island) (Snyder 1911; Shimose et al. 2020; Shimose 2021; this study; Fig. 4).

**Remarks.** The present specimens were identified as *Pristipomoides amoenus* due to the moderately deep body (33.9–36.5% of SL), X, 11 dorsal-fin rays, III, 8 anal-fin rays, 15 or 16 pectoral-fin rays, 60–63 pored lateral line scales, and 9–11 lower gill rakers (including 7–9 rod-shaped rakers), thereby agreeing with characters given for the species by Shimose et al. (2020). Morphometrics of the present specimens were also generally consistent with those given by Shimose et al. (2020) (Table 1).

Among its congeners, *P. amoenus* is most similar to *P. argyrogrammicus* (Figs 1D–F, 2E–H, 5), from which it can be distinguished by having 9–11 lower gill rakers, including 8–10 rod-shaped rakers (vs. 11–14 lower gill rakers, including 9–11 rod-shaped rakers in the latter). In addition, a pairwise nucleotide difference of 2.6–3.5% between the two species has been established, based on a dataset of 575 bp sequences from the mitochondrial COI region (Shimose et al. 2020). Shimose et al. (2020) also suggested that *P. amoenus* was distinguishable from *P. argyrogrammicus* in lacking a white margin on the dorsal, anal, and caudal fins (vs. white margin present in the latter), and having small blue blotches (usually retained as brown blotches in preserved specimens) within the yellow body saddles (vs. blue blotches absent). However, the tip and/or margin of the caudal fin’s lower lobe
and anal fin of *P. amoenus* are sometimes white (Fig. 1A–C), whereas the posterior margin of the caudal fin yellowish in individuals of *P. argyrogrammicus* is not (Fig. 1F), suggesting that the fin color feature may be unreliable for separating the two species. The presence of small blue blotches within the yellow body saddles in Shimose et al. (2020) is confirmed here as a valid character for separating *P. amoenus* from *P. argyrogrammicus* (Figs 1–3, 5).

Our examinations of specimens and photographs of the two species revealed that they could be distinguished from one another by the following newly recognized color features: small silvery-blue blotches below the lateral line on the trunk absent or indistinct in *P. amoenus* (Figs 1A–C, 2A–C, 3A) vs. distinctly present in *P. argyrogrammicus* (Figs 1D–F, 2E–G, 5A, C); a distinct line formed by small silvery-blue blotches absent on the lower caudal peduncle (Figs 1A–C, 2A–C, 3A) vs. distinct line present (Figs 1D–F, 2E–G, 5A, C); a large silvery-blue blotch on the upper opercle extending anteriorly beyond the preopercular margin (Figs 1A–C, 2A–C, 3A) vs. a small blotch not reaching to the preopercular margin (Figs 1D–F, 2E–G, 5A, C); a line formed by small silvery-blue blotches on the upper caudal peduncle ending at the upper caudal-fin base (Figs 1A–C, 2A–C, 3A) vs. extending onto the upper margin of the caudal-fin upper lobe (Figs 1D–F, 2E–G, 5A, C); a pair of lines formed by small silvery-blue blotches along the dorsal-fin base (dorsal view) (Figs 2D, 3B) vs. usually 3 clusters of silvery-blue blotches (Figs 2H, 5B), distinctly retained as dark-brown blotches in preserved specimens (Fig. 2). In addition, a pair of small elliptical silvery-blue blotches on the occipital region of *P. amoenus* (Figs 2D, 3B) were larger than those of *P. argyrogrammicus* (Figs 2H, 5B).

Although Shimose et al. (2020) noted that a greater eye diameter, deeper caudal peduncule, and shorter pelvic and anal fins may also distinguish between *P. amoenus* and *P. argyrogrammicus*, an analysis of those morphometrics in this study showed no significant differences between the two species (Table 1).

An Amami-oshima specimen (KAUM–I. 108165, 212.2 mm SL), previously identified as *P. argyrogrammicus* by Nakae et al. (2018) and Hata (2019; erroneously referred to as KAUM–I. 10865), and two Taiwanese specimens (KAUM–I. 113361, 184.7 mm SL; NMMB-P 11951, 91 mm SL), previously identified as *P. argyrogrammicus* by Tanaka (2019), were all identified here as *P. amoenus*, which has previously been recorded only from Okinawa-jima and Ishigaki-jima islands (both Okinawa Prefecture), southern Ryukyu Islands, Japan (Snyder 1911; Shimose et al. 2020; Shimose 2021). The present specimens from Amami-oshima island (Kagoshima Prefecture, Japan), Dong-gang (Taiwan), Iloilo (Philippines) and Viti Levu Island (Fiji) represent the first records of *P. amoenus* from outside Okinawa Prefecture, the Amami-oshima specimens being the northernmost record for the species and the Fijian specimen, the first record from the Southern Hemisphere.

Fig. 4. Distributional records of *Pristipomoides amoenus*. Stars and circles represent localities of specimens examined in the present and previous studies, respectively. Open symbol indicates type locality.
First Records of *P. argyrogrammicus* from the Tokara Islands

Twelve specimens from the Tokara Islands (KAUM–I. 51134, 51137, 63226, 78923, 89362, 89907, 104660, 110598–110601, 125250, 146.6–277.6 mm SL; Figs 1F, 2G) were identified as *P. argyrogrammicus* due to their moderately deep body (33.6–38.4% of SL), X, 11 dorsal-fin rays, III, 8 anal-fin rays, 15–16 pectoral-fin rays, 57–62 pored lateral-line scales, 11–14 lower gill rakers (including 10 rod-shaped rakers) (Table 2), and the following coloration: body pale yellow to pink dorsally, silvery-white ventrally; small distinct silvery-blue blotches below the trunk lateral line; a distinct line formed by small silvery-blue blotches on the lower caudal peduncle; a small silvery-blue blotch on the upper opercle not reaching to the preopercular margin; a line of small silvery-blue blotches on the upper caudal peduncle extending onto the upper margin of the caudal-fin upper lobe; 3 clusters of silvery-blue blotches along the dorsal-fin base (dorsal view); and white margins on the dorsal and anal fins (Figs 1F, 2G).

*Pristipomoides argyrogrammicus* has been recorded from Njazidja Island (Grande Comore), Comoros Islands east to the Society Islands, and from southern Japan south to New South Wales, Australia (Allen 1985; Randall et al. 2002; Allen et al. 2006; Heemstra et al. 2006). However, such records of *P. argyrogrammicus* may have included *P. amoenus* and need to be clarified. Although Yoshino in Masuda et al. (1984) described the distributional range of *P. argyrogrammicus* as “northward to southern Japan, and the Pacific, east to the Hawaiian Islands”, no confirmed records of *P. argyrogrammicus* have been reported from the Hawaiian Archipelago (Mundy 2005). In Japanese waters, *P. argyrogrammicus* has been recorded from the Izu and Ogasawara islands.

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### Table 1. Counts and proportional measurements (expressed as percentages of standard length) of specimens of *Pristipomoides amoenus*.

|                | This study | Shimose et al. (2020) |
|----------------|------------|-----------------------|
| **Japan**      | **Taiwan** | **Philippines**       |
| (Ryukyu Islands)| n=11   | n=1 | n=1 |
| (Okinawa-jima) | n=16   | n=1 |
| Standard length (SL; mm) | 160.5–221.2 | 184.7 | 149.0 | 182.7 |
| **Counts**     | **Modes**  | **Means**             |
| Dorsal-fin rays | X, 11 | X, 11 | X, 11 | X, 11 | X, 11 |
| Anal-fin rays  | III, 8 | III, 8 | III, 8 | III, 8 | III, 8 |
| Pectoral-fin rays | 15–16 | 15 | 16 | 15 | 16 |
| Pelvic-fin rays | 1, 5 | 1, 5 | 1, 5 | 1, 5 | 1, 5 |
| Upper gill rakers | 4–7 | 4 | 8 | 4 | 6 |
| Rod-shaped upper gill rakers | 1–2 | 2 | 3 | 2 | 2 |
| Lower gill rakers | 10–11 | 9 | 11 | 9 | 10 |
| Rod-shaped lower gill rakers | 7–9 | 8 | 8 | 8 | 8 |
| Pored lateral-line scales | 60–62 | 60 | 63 | 62 | 62 |
| Scale rows above lateral line | 7–8 | 7 | 7 | 7 | 7 |
| Scale rows below lateral line | 15–16 | 15 | 15 | 15 | 15 |
| **Measurements (% of SL)** | **Means** | | **Means** |
| Total length | 127.5–130.6 | 129.7 | 126.0 | 128.0 | 128.9 | 126.3 | 125.3–129.8 | 127.7 |
| Fork length | 109.7–113.1 | 111.7 | 110.7 | 111.2 | 111.4 | 111.7 | 108.3–110.9 | 109.6 |
| Pre-dorsal-fin length | 40.1–42.9 | 40.6 | 41.4 | 41.4 | 41.5 | 42.2 | 37.7–41.9 | 40.8 |
| Pre-anal-fin length | 62.6–66.8 | 62.2 | 65.0 | 65.4 | 64.5 | 64.8 | 61.6–65.3 | 63.1 |
| Body depth | 34.2–36.5 | 34.5 | 33.9 | 34.7 | 35.0 | 33.5 | 32.1–35.7 | 34.0 |
| Caudal-peduncle depth | 10.5–11.3 | 11.1 | 11.1 | 10.6 | 10.9 | 10.9 | 10.0–10.7 | 10.3 |
| Head length | 36.1–39.7 | 36.2 | 35.6 | 36.3 | 37.4 | 36.9 | 35.2–38.3 | 36.4 |
| Eye diameter | 10.2–12.5 | 9.3 | 11.5 | 11.7 | 11.2 | 10.8 | 10.8–11.8 | 11.4 |
| Snout length | 11.1–13.0 | 11.5 | 16.4 | 12.1 | 12.3 | 11.4 | 11.1–13.3 | 12.2 |
| Upper-jaw length | 12.1–17.1 | 15.5 | 14.9 | 16.3 | 16.3 | 15.9 | 15.1–16.6 | 15.8 |
| Suborbital depth | 4.2–5.1 | 4.9 | 4.0 | 5.1 | 4.7 | 5.1 | 3.7–5.1 | 4.5 |
| Body width | 15.5–16.5 | 15.1 | 14.2 | 16.1 | 15.8 | 14.6 | 14.9–18.1 | 16.1 |
| Interorbital width | 9.0–10.4 | 9.5 | 9.1 | 10.9 | 9.8 | 8.5 | 8.8–10.4 | 9.5 |
| 4th dorsal-fin spine length | 11.7–13.3 | 11.9 | 11.6 | 12.2 | 12.4 | 11.9 | 11.2–13.0 | 12.3 |
| 11th dorsal-fin ray length | 11.8–14.8 | 14.3 | 13.8 | 14.1 | 13.8 | 12.7 | 11.4–15.1 | 13.8 |
| 3rd anal-fin spine length | 8.8–10.2 | 10.5 | 9.7 | 9.4 | 9.6 | 10.3 | 8.6–10.8 | 9.9 |
| 8th anal-fin ray length | 12.5–14.4 | 13.7 | 13.9 | 13.3 | 13.4 | 12.2 | 12.3–14.8 | 13.5 |
| Pectoral-fin length | 32.3–35.4 | 32.8 | 33.1 | 32.3 | 33.5 | 30.8 | 28.1–34.2 | 31.9 |
| Pelvic-fin spine length | 13.8–16.2 | 15.4 | 14.9 | 14.7 | 14.9 | 14.7 | 12.2–14.8 | 13.5 |
| Pelvic-fin ray length | 20.7–24.2 | 23.8 | 22.6 | 21.9 | 22.8 | 22.5 | 19.8–23.2 | 21.3 |
Range extension and revised diagnosis of *Pristipomoides amoenus*

Kanagawa (Misaki), Shizuoka (Omaezaki), Wakayama, Kochi (Tosa Bay), Kagoshima (Yaku-shima, Amami-oshima, Kikai-jima, Okinoerabu-jima, and Yoron-jima islands), and Okinawa (Okinawa-jima, Ishigaki-jima, Yonaguni-jima, Minamidaito-jima islands and Senkaku Islands) prefectures (Shimada 2013; Sakurai 2014; Koeda et al. 2016; Motomura and Harazaki 2017; Hata 2019; Shimose et al. 2020; Motomura and Uehara 2020; Fujiwara and Motomura 2020; Shimose 2021). Thus, the present specimens represent the first record of the species from the Tokara Islands.

**Comparative material examined.** *Pristipomoides argyrogrammicus*—36 specimens (141.7–277.6 mm SL) from Ryukyu Islands, Kagoshima, Japan: KAUM–I. 38089, 259.0 mm SL, Yakushima island; KAUM–I. 51134, 229.9 mm SL, KAUM–I. 51137, 277.6 mm SL, KAUM–I. 63226, 206.3 mm SL, KAUM–I. 69735, 268.8 mm SL, KAUM–I. 76054, 266.5 mm SL, KAUM–I. 78923, 224.0 mm SL, KAUM–I. 89362, 235.5 mm SL, KAUM–I. 89907, 236.2 mm SL, KAUM–I. 104658, 209.6 mm SL, KAUM–I. 104660, 261.2 mm SL, KAUM–I. 110598, 146.6 mm SL, KAUM–I. 110599, 162.8 mm SL, KAUM–I. 110600, 210.7 mm SL, KAUM–I. 110601, 160.7 mm SL, KAUM–I. 125250, 187.2 mm SL, Tokara Islands; KAUM–I. 55854, 234.7 mm SL, KAUM–I. 66880, 230.0 mm SL, KAUM–I. 89991, 245.3 mm SL, KAUM–I. 108166, 210.9 mm SL, KAUM–I. 132054, 179.4 mm SL, KAUM–I. 66880, 230.0 mm SL, KAUM–I. 89991, 245.3 mm SL, KAUM–I. 108166, 210.9 mm SL, KAUM–I. 132054, 179.4 mm SL, KAUM–I. 132055, 220.9 mm SL, KAUM–I. 132086, 173.6 mm SL, KAUM–I. 132083, 180.5 mm SL, KAUM–I. 132084, 210.4 mm SL, KAUM–I. 139296, 141.7 mm SL, Amami-oshima island, Amami Islands; KAUM–I. 72302, 177.8 mm SL, Kikai-jima island, Amami Islands; KAUM–I. 53948, 229.7 mm SL, KAUM–I. 121744, 277.0 mm SL, KAUM–I. 121745, 222.6 mm SL.

Fig. 5. Live individuals of *Pristipomoides argyrogrammicus* collected from Motobu, Okinawa-jima island, Japan, and reared at Okinawa Churaumi Aquarium (photos by A. Kaneko). A, B, 200 m depth, 26 September 2019; C, 105 mm TL, juvenile, 150 m depth, 1 March 2020.
Okinoerabu-jima island, Amami Islands; KAUM–I. 41219, 208.3 mm SL, KAUM–I. 47891, 225.1 mm SL, KAUM–I. 70800, 242.4 mm SL, KAUM–I. 70904, 275.2 mm SL, KAUM–I. 70905, 238.1 mm SL, Yoron-jima island, Amami Islands.

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| Table 2. Counts and proportional measurements (expressed as percentages of standard length) of specimens of *Pristipomoides argyrogrammicus*. |
|---------------------------------------------------------------|
| **This study** | **Shimose et al. (2020)** |
| **Japan (Tokara Islands)** | **Mauritius** | **Japan (Ishigaki-jima)** |
| **Holotype** | **n = 12** | **n = 16** |
| **Counts** | **Means** | **Means** |
| **Standard length (SL; mm)** | 146.6–277.6 | 189 |
| | **165–214** | |
| **Dorsal-fin rays** | X, 11 | X, 11 |
| | Modes | Modes |
| | X, 11 | X, 11 |
| **Anal-fin rays** | III, 8 | III, 8 |
| | Modes | Modes |
| | III, 8 | III, 8 |
| **Pectoral-fin rays** | 15–16 | 16 |
| | Modes | Modes |
| | 16 | 16 |
| **Pelvic-fin rays** | 1, 5 | 1, 5 |
| | Modes | Modes |
| | 1, 5 | 1, 5 |
| **Upper gill rakers** | 5–7 | 6 |
| | Modes | Modes |
| | 6 | 6 |
| **Rod-shaped upper gill rakers** | 1–2 | 2 |
| | Modes | Modes |
| | 2 | 2 |
| **Lower gill rakers** | 11–14 | 11 |
| | Modes | Modes |
| | 11 | 11 |
| **Rod-shaped lower gill rakers** | 10–11 | 10 |
| | Modes | Modes |
| | 10 | 10 |
| **Pored lateral-line scales** | 57–62 | 59 |
| | Modes | Modes |
| | 61 | 61 |
| **Scale rows above lateral line** | 7–8 | 7 |
| | Modes | Modes |
| | 7 | 7 |
| **Scale rows below lateral line** | 15–16 | 15 |
| | Modes | Modes |
| | 16 | 16 |
| **Total length** | 125.2–129.9 | 127.9 |
| | Modes | Modes |
| | — | — |
| **Fork length** | 109.1–111.6 | 110.5 |
| | Modes | Modes |
| | 109.8 | 109.8 |
| **Pre-dorsal-fin length** | 39.1–41.8 | 40.5 |
| | Modes | Modes |
| | 43.6 | 43.6 |
| **Pre-anal-fin length** | 63.3–65.9 | 64.6 |
| | Modes | Modes |
| | 64.8 | 64.8 |
| **Body depth** | 33.6–38.4 | 36.1 |
| | Modes | Modes |
| | 34.8 | 34.8 |
| **Caudal-peduncle depth** | 9.9–11.0 | 10.5 |
| | Modes | Modes |
| | 11.0 | 11.0 |
| **Head length** | 35.5–36.8 | 36.2 |
| | Modes | Modes |
| | 36.6 | 36.6 |
| **Eye diameter** | 9.3–10.8 | 10.1 |
| | Modes | Modes |
| | 11.2 | 11.2 |
| **Snout length** | 11.4–12.7 | 11.9 |
| | Modes | Modes |
| | 11.7 | 11.7 |
| **Upper-jaw length** | 14.9–15.7 | 15.3 |
| | Modes | Modes |
| | 15.9 | 15.9 |
| **Suborbital depth** | 3.9–5.0 | 4.6 |
| | Modes | Modes |
| | 4.4 | 4.4 |
| **Body width** | 15.1–16.7 | 15.9 |
| | Modes | Modes |
| | 14.7 | 14.7 |
| **Interorbital width** | 8.5–10.7 | 9.8 |
| | Modes | Modes |
| | 9.1 | 9.1 |
| **4th dorsal-fin spine length** | 11.7–13.1 | 12.4 |
| | Modes | Modes |
| | 12.6 | 12.6 |
| **11th dorsal-fin ray length** | 12.3–15.0 | 13.7 |
| | Modes | Modes |
| | 13.0 | 13.0 |
| **3rd anal-fin spine length** | 9.0–10.4 | 9.8 |
| | Modes | Modes |
| | 11.2 | 11.2 |
| **8th anal-fin ray length** | 12.4–14.2 | 13.5 |
| | Modes | Modes |
| | 15.2 | 15.2 |
| **Pectoral-fin length** | 32.6–34.3 | 33.6 |
| | Modes | Modes |
| | 30.1 | 30.1 |
| **Pelvic-fin spine length** | 13.2–16.9 | 15.0 |
| | Modes | Modes |
| | 15.1 | 15.1 |
| **Pelvic-fin ray length** | 21.1–25.3 | 22.6 |
| | Modes | Modes |
| | 23.5 | 23.5 |
cordance with the national and local legislation. This study was supported in part by JSPS KAKENHI Grant Numbers 20H03311 and 21H03651; the JSPS Core-to-core CREPSUM JPJSCCB2020009; and the “Establishment of Glocal Research and Education Network in the Amami Islands’ project of Kagoshima University adopted by the Ministry of Education, Culture, Sports, Science and Technology, Japan.

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