First Records of an Estuarine Goby Acentrogobius ocyurus (Gobiiformes: Gobiidae) from Japan and the Sulu Sea in the Philippines

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Twenty specimens of Acentrogobius ocyurus (Jordan and Seale, 1907) were collected in Manko, Okinawa-jima Island, Japan and Sulu Sea side of Puerto Princesa City, Palawan Island, Philippines. As the species had previously been reported from the South China Sea, Andaman Sea, and northern Australian waters, these specimens from Okinawa and Palawan represent the first records of the species from Japan and the Sulu Sea. Acentrogobius ocyurus was found on muddy substrata at the lowest tidal zone of the mudflat and was often found in burrows of mangrove pistol shrimp, Alpheus richardsoni Yaldwyn, 1971. Morphological traits suggested that A. ocyurus is closely related to A. globiceps (Hora, 1923), A. kranjiensis (Herre, 1940), and Acentrogobius sp. (“Suzume-haze” in Japanese name), with several homologous features including, the transverse pattern of the sensory papillae on the cheek, caudal fin pointed in middle, a black stripe behind the eye along the anterior oculoscapular canal, bright blue spots laterally on the body, and an oblique yellow stripe across the upper part of the caudal fin.

Key Words: Acentrogobius ocyurus, goby, estuary, Manko, Okinawa, Palawan, pistol shrimp, mudflat.

Introduction

The order Gobiiformes is one of the most diverse fish taxa that includes at least 2310 species belonging to 324 genera found globally in various habitats ranging from freshwater to deep sea (Patzner et al. 2011; Nelson et al. 2016; Parenti 2021). In the western Pacific Ocean, tidal mudflats are dominated by gobies throughout the climate divisions including northern Australia (Chargulaf et al. 2011), temperate Japan (Okazaki et al. 2012), and subtropical Japan (Kunishima and Tachihara 2020). The genus Acentrogobius Bleeker, 1874 is one of the typical taxa found on tidal mudflats within or close to mangroves of the western Pacific Ocean (Allen 2015), however, its diversity, distribution, microhabitat, life history, and phylogeny are yet to be well understood. In the present study, 19 goby specimens were collected in Manko, Okinawa-jima Island, Japan between 2016 and 2021. In addition, a single specimen was collected at the Sulu Sea side of Puerto Princesa City, Palawan Island, Philippines in 2016. The specimens were identified as Acentrogobius ocyurus (Jordan and Seale, 1907) based on its previously reported morphological descriptions (Jordan and Seale 1907; Larson and Lim 2005; Zhong 2008) and observation of the holotype. Acentrogobius ocyurus has previously been reported from the South China Sea, the Andaman Sea, and the northern Australian waters in literature (Jordan and Seale 1907; Herre 1936; Herre and Myers 1937; Larson and Murdy 2001; Hoe and Larson 2006; Larson et al. 2008; Zhong 2008; Satapoomin 2011). In the present study, the specimens from Okinawa-jima and Palawan are reported here as the first records of A. ocyurus from Japan and the Sulu Sea, with their morphological description and habitats.

Materials and Methods

Specimens of A. ocyurus were collected from Manko, Okinawa-jima Island, Japan and Puerto Princesa City, Palawan Island, Philippines. Goby samples were euthanazed with 2-phenoxyethanol solution, then fixed in 10% formalin and preserved in 70% ethanol. Pistol-shrimps collected together with A. ocyurus from the same burrows at Manko were fixed in 70% ethanol and morphologically identified by Yoshigou (2009). Relevant laws and regulations were observed during sampling in Japan and the Philippines. Collections in Palawan were performed with Wildlife Gratuitious Permit No. 2016-09, provided by the Palawan Council for Sustainable Development and with Prior Informed Consent Certificate from Puerto Princesa City.

Counts and all measurements were taken from the left side of each specimen as described by Masuda et al. (1984)
with the following exceptions: head width measured at the posterior-most part of the opercular margin; body depth measured at origin of the pelvic fin; pectoral-fin length measured as length of the longest ray; scales in longitudinal series counted from the dorsal-most extent of the opercular opening to the mid-posterior edge of the hypural plate; and scales in transverse series counted from the origin of the second dorsal fin posteroventrally to the base of the anal fin. Measurements were made to the nearest 0.1 mm with a caliper. Standard length is abbreviated as SL. Cephalic sensory canal pores and papillae were observed on both sides of the head after staining with cyanine blue solution. Abbreviations pertaining to the cephalic sensory pore system followed Masuda et al. (1984). Vertebrae were counted using radiography (SOKEN Co., LTD, SOFRON SRO–405A and SOFTEX, TYPE EMB). Symbolic codes used to represent collections and institutions followed Fricke and Eschmeyer (2021).

**Taxonomic Accounts**

_Acentrogobius ocyurus_ (Jordan and Seale, 1907)
[New standard Japanese name: Mejiri-haze]
(Figs 1–3; Table 1)

Rhinogobius ocyurus Jordan and Seale, 1907: 42, fig. 14 (type locality: Cavite, Luzon, Philippines).

Quisquilius malayanus Herre, 1936: 11, pl. 8 (type locality: Pulau Ubin, Singapore); Herre and Myers 1937: 45; Fowler 1938: 267; Koumans 1953: 132.

Drombus ocyurus: Lim and Larson 1994: 259; Larson and Murdy 2001: 3596; Anonymous 2003: 94; Larson and Lim 2005: 90; Larson et al. 2008: 148; Tan et al. 2010: 140; Sapatoomin 2011: 66; Kottelat 2013: 406; Ng et al. 2015: 312.

_Acentrogobius ocyurus_: Zhong 2008: 217; Wu et al. 2009: 66; Shibukawa 2018: 255; Nagao Natural Environment Foundation 2021: 434.

**Material examined.** Nineteen specimens (12 males and 7 females, 17.4–30.6 mm SL) collected in the mudflat of Manko, Naha City, Okinawa-jima Island, Japan, and 1 specimen (male, 30.4 mm SL) collected in the idle fish pond of

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*[Fig. 1. Fresh specimens of *Acentrogobius ocyurus* from Manko in Okinawa-jima Island, Japan (A: OCF-P 3494, male, 27.6 mm SL; B: OCF-P 3813, 28.2 mm SL, female) and from Puerto Princesa in Palawan Island, Philippines (C: URM-P 49640, 30.4 mm SL, male).*]
Western Philippines University Puerto Princesa Campus, Puerto Princesa City, Palawan Island, Philippines.
Japan: OCF-P 3494–3496, 3 males, 23.6–27.6 mm SL, 27 March 2016; OCF-P 3497–3501, 3 males and 2 females, 17.4–30.5 mm SL, 22 June 2016; OCF-P 3809–3817, 5 males and 5 females, 24.6–29.8 mm SL, 9 June 2017; KPM-NI 63726, male, 29.7 mm SL, 17 March 2021.
Philippines: URM-P 49640, male, 30.4 mm SL, 21 May 2016.

Comparative material. *Acentrogobius ocyurus*: CAS-SU 9249, holotype of *Rhinogobius ocyurus* Jordan and Seale, 1907, male, 30.7 mm SL, Cavite, Luzon, Philippines, collected in 1900 by G. A. Lung; CAS-SU 30963, 2 specimens, holotype or paratype of *Quisquilius malayanus* Herre, 1936, 1 female and 1 sex unknown, 29.4 and 27.2 mm SL, Pulau Ubin, Singapore, collected in 1935 by W. Birtwistle (only two of the four specimens in the type series were available). *Acentrogobius kranjiensis* (Herre, 1940): CAS-SU 32999, holotype of *Ctenogobius kranjiensis* Herre, 1940, female, 29.4 mm SL, Kranji River, Singapore, 10 March 1937, collected by A. W. C. T. Herre. *Acentrogobius* sp. “Suzume-haze” (see Discussion): URM-P 49641, male, 38.6 mm SL, Table 1. Counts and proportional measurements of *Acentrogobius ocyurus*.

| Species          | Acentrogobius ocyurus | Acentrogobius ocyurus (holotype of *Rhinogobius ocyurus*) | Acentrogobius ocyurus (holotype or paratype of *Quisquilius malayanus*) |
|------------------|-----------------------|----------------------------------------------------------|-----------------------------------------------------------------------|
| Voucher          | Present specimens     | CAS-SU 9249                                              | CAS-SU 30963                                                          |
| Locality         | Manko, Japan          | Palawan, Philippines                                     | Cavite, Philippines                                                  |
|                  |                       | Pulau Ubin, Singapore                                     |                                                                        |
| Number of individuals | 12 males | 7 females | 1 male | 1 male | 1 female | 1 sex unknown |

### Fin ray and vertebral counts

- **D rays**
  - VI-I, 9-10
  - VI-I, 10
  - VI-I, 10
  - VI-I, 10
  - VI-I, 10
  - VI-I, 10

- **A rays**
  - 1, 9
  - 1, 9
  - 1, 9
  - 1, 9
  - 1, 9
  - 1, 9

- **P1 rays**
  - 15, 17
  - 16–18
  - 16–18
  - 16–18
  - 16–18
  - 16–18

- **Scales in longitudinal series**
  - 25–27
  - 24–26
  - 26
  - 26
  - 26
  - 26

- **Scales in transverse series**
  - 6–8
  - 6–8
  - 7
  - 8
  - 5
  - 5

- **Predorsal scales**
  - 6–8
  - 6–9
  - 7
  - 5
  - 5
  - 5

- **Precaudal vertebrae**
  - 10
  - 10
  - 10
  - —
  - —
  - —

- **Caudal vertebrae**
  - 16
  - 16
  - 16
  - —
  - —
  - —

- **Total vertebrae**
  - 26
  - 26
  - 26
  - —
  - —
  - —

### Total length (mm)

| Manko, Japan | Palawan, Philippines | Cavite, Philippines | Pulau Ubin, Singapore |
|--------------|----------------------|---------------------|----------------------|
| 32.2–42.6   | 22.1–40.5            | 43.9                | 34.8–31.7            |
| 23.3–30.6   | 17.4–29.8            | 30.4                | 29.4–27.2            |

### In % of standard length

- **Head length**
  - 28.3–34.6
  - 28.5–34.5
  - 28.8
  - 28.7
  - 28.9
  - 29.8

- **Head width**
  - 15.4–16.9
  - 14.7–17.6
  - 16.4
  - —
  - —
  - —

- **Snout length**
  - 5.8–8.3
  - 5.0–8.3
  - 6.6
  - 6.8
  - 7.5
  - 7.7

- **Postorbital length of head**
  - 11.3–15.7
  - 8.5–14.9
  - 14.2
  - 15.0
  - 15.0
  - 15.8

- **Eye diameter**
  - 7.6–9.0
  - 8.3–9.2
  - 8.6
  - 8.1
  - 8.5
  - 8.8

- **Interorbital length**
  - 2.4–3.4
  - 2.1–3.8
  - 3.3
  - —
  - —
  - —

- **Upper jaw length**
  - 8.7–11.6
  - 7.5–10.4
  - 10.4
  - 11.4
  - 9.9
  - 10.7

- **Body depth**
  - 21.0–25.9
  - 23.2–25.3
  - 25.5
  - 22.8
  - 22.1
  - 24.3

- **Body width**
  - 11.9–15.7
  - 13.0–18.5
  - 14.6
  - —
  - —
  - —

- **Caudal peduncle length**
  - 22.3–26.8
  - 22.4–25.7
  - 25.1
  - 25.4
  - 26.2
  - 25.4

- **Caudal peduncle depth**
  - 10.7–14.0
  - 11.5–13.7
  - 13.9
  - 12.4
  - 13.6
  - 10.3

- **Predorsal length**
  - 34.3–39.3
  - 34.3–38.2
  - 35.6
  - 35.2
  - 36.1
  - 36.8

- **Preanal length**
  - 53.4–59.1
  - 54.5–61.1
  - 59.0
  - 54.4
  - 59.5
  - 58.1

- **D1 length**
  - 18.9–33.3
  - 17.9–21.9
  - 37.3
  - 39.4
  - damaged
  - 23.5

- **D2 length**
  - 42.7–52.6
  - 32.5–41.7
  - 46.9
  - 50.2
  - 36.7
  - 40.1

- **A length**
  - 39.5–50.7
  - 32.6–37.9
  - 59.4
  - 43.3
  - 34.0
  - 33.5

- **P1 length**
  - 26.5–33.5
  - 22.3–31.5
  - 30.0
  - 29.0
  - damaged
  - damaged

- **P2 length**
  - 20.0–27.9
  - 21.6–24.4
  - 25.2
  - 26.1
  - damaged
  - 23.2

- **C length**
  - 34.2–43.7
  - 30.9–35.6
  - 45.2
  - damaged
  - damaged
  - damaged

- **Interval between D1 and D2 base**
  - 1.1–3.4
  - 1.7–4.8
  - 2.7
  - damaged
  - damaged
  - damaged

- **Length of D1 base**
  - 14.9–19.4
  - 14.8–18.4
  - 19.4
  - damaged
  - damaged
  - damaged

- **Length of D2 base**
  - 23.9–27.8
  - 22.0–24.4
  - 26.5
  - 26.7
  - 25.9
  - 25.4

- **Length of A base**
  - 19.0–22.5
  - 16.2–20.4
  - 18.5
  - 19.5
  - 18.4
  - 19.1

**D1**, First dorsal fin; **D2**, second dorsal fin; **A**, anal fin; **C**, caudal fin; **P1**, pectoral fin; **P2**, pelvic fin.
Western Philippines University Puerto Princesa Campus, Palawan Island, Philippines, 21 May 2016; WPU-PPC-P 70, male, 31.2 mm SL, Western Philippines University Puerto Princesa Campus, 21 May 2016; WMNH-PIS11250 and 11253, 1 male and 1 female, 26.2 and 27.3 mm SL, Nadara River, Iriomote-jima Island, Japan, 21 October 2021.

**Description.** Body robust and compressed; body depth, 3.86–4.76 in SL. Head large and slightly compressed, 3.31–3.71 in SL. Eye diameter, 2.97–3.86 in head length; interorbital region very narrow and flattened. Snout short and rounded, 3.54–5.78 in head length (Fig. 1). Mouth moderate in size, its edge under middle of eye. Chin relatively smooth, without mental frenum. Tongue rounded. Jaws with 3 or 4 rows of small sharp-pointed teeth in jaws. Anterior nostril tubular and short, posterior nostril not tubular; anterior nostril located anterolaterally below posterior nostril. Gill opening narrow, anterolaterally ending at middle of opercle; left and right gill membranes joined at isthmus. Preopercular and opercular margins rounded. First dorsal fin triangular and elongated with six spines, third spine filamentous and longest in both male and female. Second dorsal fin with one spine and usually 10 soft rays \((n=19)\), but rarely nine \((n=1)\). Anal fin with one spine and nine soft rays. Anal-fin base slightly less than head length, its origin nearer to caudal-fin base than to tip of snout, its longest ray 0.97–1.82 in head length. Anus situated just before anal-fin origin. Pectoral fin with 15 \((n=1)\), 16(2), 17(16), or 18(1) rays. Left and right pelvic fins connected by a membrane between the last rays and by a frenum; pelvic fin long with its posterior tip reaching anus. Caudal fin long, sharp-pointed in the middle (Fig. 1). Large ctenoid scales covering the body as far as origin of first dorsal fin. Cycloid scales with dark edge covered pre-dorsal region, breast, and pectoral-fin base. Pre-dorsal scales 6 \((n=3)\), 7(12), 8(3), or 9(2) (Table 1). Urogenital papilla elongated and triangular in male, but rounded and plumper in female.

Cephalic sensory pore system (Fig. 2) usually with pores B’, C (single), D (single), E, F, G, and H’ in anterior oculoscapular canal, pores K’ and L’ in posterior oculoscapular canal, and M’, N, and O’ in pre-opercular canal (in 13 specimens including Palawan specimen), but sometimes without pores G, K’, L’, M’, or N in 7 specimens). Cutaneous sensory papillae well developed over dorsal, lateral, and ventral surfaces of head (Fig. 2). Head sensory papillae in transverse pattern, six transverse rows between two longitudinal papillae rows across the middle and lower parts of cheek (Fig. 2A). Two rows of longitudinal papillae on the chin (Fig. 2C); papillae row uninterrupted from pore O’ to chin.

**Color in life.** The color of the living goby is shown in Fig. 3. Body semi-translucent with eight dusky bands on the sides. The posterior-most band more distinct than others and connecting with a dusky, triangular blotch at the proximal part of caudal fin. Many dusky blotches distributed dor-

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Fig. 2. Cephalic sensory organs of *Acentrogobius ocyurus* (27.6 mm SL, OCF-P 3494). A, Lateral view; B, dorsal view; C, ventral view. Arrows indicate the anteroventral end of the gill opening.
Acentrogobius ocyurus from Japan and Sulu Sea

Dorsal fin somewhat smaller than those on first dorsal fin, but absent in one female specimen (OCF-P 3813) (Fig. 1B). Second dorsal fin with narrow dusky margin and indistinct brown stripe running along translucent base. Anal fin gray. Pectoral fin translucent. Pelvic fin gray or white. Caudal fin translucent with reddish blotches on the upper part and with yellow tint on the lower part. A diagonal yellow stripe bordered by indistinct reddish-brown lines across the upper part of caudal fin. Sexual dichromatism not developed but anal and pelvic fins darker in males than females.

Color in ethanol. Body yellowish with eight vertical brown bands on sides and with a longitudinal black stripe behind the eye. Most of the blue spots observed in life lost, but a larger spot above upper end of gill opening persisting as a black spot. Colors and markings of fins similar to those in life, but reddish, yellow, blue, and white color lost. Caudal fin with two oblique, dusky stripes across its upper part.

Distribution. Acentrogobius ocyurus had been known from the Andaman Sea and Gulf of Thailand in Thailand (Satapoomin 2011), Singapore (Herre 1936; Herre and Myers 1937; Fowler 1938; Koumans 1953; Lim and Larson 1994; Anonymous 2003; Larson and Lim 2005; Larson et al. 2008; Tan et al. 2010; Ng et al. 2015), Ha Long Bay in Vietnam (Shibukawa 2018), Cavite on Luzon in the Philippines (Jordan and Seale 1907), Guangdong in China (Zhong 2008), and Embley Estuary in the northeastern Australia (Blaber et al. 1990) (Fig. 4). In addition, the online databases, Global Biodiversity Information Facility and Taiwan Fish Database, reported the occurrence of this species from Trang, Songkhla, Chanthaburi, and Mueang Rayong in Thailand (European Bioinformatics Institute 2021; Nakae and Shinohara 2021; Catania and Fong 2022; UMMZ Fish Division Data Group 2022), Sorsogon, Bolinao, and Bulacan on Luzon, and Malampaya Sound on Palawan in the Philippines (Millen 2019; Australian Museum 2021; Orrell 2021), Brunei Darussalam (Orrell 2021), southwestern Taiwan (Shao 2021), many sites in Northern Territory and Queensland, Australia (Millen 2019; Museum and Art Gal-

Fig. 3. Living Acentrogobius ocyurus showing various color markings in aquaria. A, Different individual; B, C, same individual under different light conditions. All specimens were collected from Manko in Okinawa-jima Island, Japan (no voucher).
Acentrogobius ocyurus has been recorded. Solid circles represent new records described in the present study; open square represents type locality; open circles are other records in literatures (Jordan and Seale 1907; Herre 1936; Herre and Myers 1937; Fowler 1938; Koumans 1953; Blaber et al. 1990; Lim and Larson 1994; Anonymous 2003; Larson and Lim 2005; Larson et al. 2008; Zhong 2008; Tan et al. 2010; Satapoomin 2011; Ng et al. 2015; Shibukawa 2018); triangles are records in the online databases (Millen 2019; Museum and Art Gallery of the Northern Territory 2019; Western Australian Museum 2019; Australian Museum 2021; European Bioinformatics Institute 2021; Nakae and Shinhoara 2021; Orrell 2021; Queensland Museum 2021; Shao 2021; Catania and Fong 2022; UMMZ Fish Division Data Group 2022).

The records above suggest that A. ocyurus is probably distributed widely in the western Pacific Ocean from the South China Sea as well as from Japan. The habitats in Okinawa are restricted to a small area of Manko, an urban estuary along river Kokuba-gawa in the southern part of the island. In Manko, A. ocyurus was often found in burrows used by mangrove pistol shrimp Alpheus richardsoni Yaldwyn, 1971 (WMNH-2019-INV-401, 402; Fig. 5). In Palawan, A. ocyurus was found in a mudflat around idle fishponds in Western Philippines University Puerto Princesa Campus. The mudflat is located at the northern end of Puerto Princesa Bay along the estuary of Caramuran River, west of the city and inhabited by vast mangroves. The specimen was collected from a burrow of unknown builder on muddy substrate.

**Discussion**

The morphological characteristics of goby specimens from Okinawa and Palawan examined in the present study corresponded well with that of Rhinogobius ocyurus holotype (CAS-SU 9249, male, 30.7 mm SL) (Fig. 6A; Table 1). However, comparatively fewer longitudinal and pre-dorsal scale counts were observed in the holotype than in our fresh material, which could be due to the damaged condition of the holotype. In fact, the counts in our fresh material were similar to that of the holotype illustrated in Jordan and Seale (1907: fig. 14).

Results of our CAS-SU 30963 type series analysis supported the synonymy between Quisquilius malayanus and A. ocyurus (see Larson et al. 2008; Kottelat 2013) (Fig. 6B, C; Table 1). Although we could examine only two of the four specimens in the type series and we could not determine which the holotype is, Denise Rennis and Helen K. Larson identified all four type specimens of Q. malayanus including the holotype as A. ocyurus when they examined the specimens in 1983 (H. K. Larson, personal communication).

Acentrogobius ocyurus was originally described as R. ocyurus by Jordan and Seale (1907). However, the genus Rhinogobius Gill, 1859 had been misconstrued in early 20th century (Herre 1933), and R. ocyurus does not belong to Rhinogobius. Rhinogobius ocyurus has been regarded later as a member of Drombus Jordan and Seale, 1905 (Lim and Larson 1994; Larson and Murdy 2001; Larson and Lim 2005; Larson et al. 2008; Tan et al. 2010; Satapoomin 2011; Kottelat 2013; Ng et al. 2015) or Acentrogobius (see Zhong 2008; Wu et al. 2009; Shibukawa 2018; Nagao Natural Environment Foundation 2021). However, both Drombus and Acentrogobius are poorly defined and the systematics of these genera are not yet established (Shibukawa et al. 2010; Allen 2015). Although R. ocyurus is an unlikely member of the genera Drombus or Acentrogobius, we tentatively treated the species as a member of Acentrogobius in the present study. Future comprehensive morphological and molecular phylogenetic studies of Acentrogobius, Drombus, and related genera are needed to determine...
The generic position of this species.

*Acenetrogobius ocyurus* shares homologous features with *A. globiceps* (Hora, 1923) and *A. kranjiensis*, including, the transverse pattern of the sensory papillae on the cheek, the middle pointed caudal fin, a black stripe behind the eye along the anterior oculoscapular canal, bright blue spots laterally on the body, and an oblique yellow stripe across the upper part of the caudal fin, which suggest the close affinity of these species (Figs 1–3; Table 2). A goby species called "Suzume-haze" in Japan (sensu Akihito in Masuda et al. 1984: 240, pl. 239) also represents these characters (Fig. 6E; Table 2) and it is suggested to have close affinity with *A. ocyurus*. Although this species is usually regarded as *Acentrogobius viganensis* in Stein-dachner (1893a: 150–151; 1893b: 230–232). In addition, syntypes of *G. viganensis* have a longitudinal pattern of head sensory papillae (vs. transverse pattern in *A. ocyurus* and "Suzume-haze") (H. K. Larson, personal communication). Thus, "Suzume-haze" is not *A. ocyurus*, and identification of this species requires more study. We tentatively regard this species here as *Acentrogobius* sp. "Suzume-haze".

*Acentrogobius kranjiensis* is often regarded as a junior synonym of *A. globiceps* (see Larson et al. 2008; Kottelat 2013). However, we presumed *A. kranjiensis* to be a valid species because it lacks short vertical bars on lateral sides of the body (Fig. 6D) (vs. having short vertical bars on lateral sides of the body in *A. globiceps*; Hora 1923: fig. 24). Further type-series investigation of the *Ctenogobius globiceps* Hora, 1923 and fresh specimens from the type locality (Chilka...
Lake, India) are required to determine its status. Although no type specimens of *Ctenogobius globiceps* were observed, the body markings on its sides and dorsal fins described by Hora (1923) differed from those of *A. ocyurus*. For instance, *A. ocyurus* lacks the short vertical bars on the body and it has two large black spots on the first dorsal fin. Additional contrasting features between *A. ocyurus* and *A. kranjiensis* include the former having larger head (28.3–34.6% of SL vs. 26.2%) and deeper body (21.0–25.9% of SL vs. 20.7%) (Fig. 6; Table 2).

*Acentrogobius ocyurus* can be distinguished from *Acentrogobius* sp. “Suzume-haze” by the presence of pre-dorsal scales (vs. absent), larger head (28.3–34.6% of SL vs. 25.7–27.9%; Table 2), and blue spots on the lateral side of the body without the small reddish spots around (vs. all blue spots with one or two small reddish spots around; Fig. 6E; the spots are black or brown after preservation).

Based on a specimen from Okinawa-jima Island (OCF-P 3494), a new standard Japanese name, “Mejiri-haze” is proposed here for *A. ocyurus*. “Mejiri” and “haze” are Japanese for corner of the eye and goby, respectively. The newly proposed name is derived from the black stripe behind the eye.

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**Table 2.** Counts and proportional measurements of *Acentrogobius kranjiensis* and *Acentrogobius* sp. “Suzume-haze”.

| Voucher                  | *Acentrogobius kranjiensis* | *Acentrogobius* sp. “Suzume-haze” |
|--------------------------|-----------------------------|-----------------------------------|
| SU 32999 (holotype of *Ctenogobius kranjiensis*) | WPU-PPC-P 70, URM-P 49641 | WMNH-PIS11250, 11253              |
| Locality                 | Pulau Ubin, Singapore       | Palawan, Philippines              |
|                          | Iriomote-jima, Japan        |                                    |
| Number of individuals    | 1 female                    | 2 male                            |
|                          | 1 male                      | 1 female                          |

| Fin ray and vertebral counts |  |  |  |  |
|------------------------------|--|--|--|--|
| D rays                       | VI-I, 10 | VI-I, 10 | VI-I, 10 | VI-I, 10 |
| A rays                       | 1, 9     | 1, 9     | 1, 9     | 1, 9     |
| P1 rays                      | 17 (right) | 16       | 16       | 16       |
| Scales in longitudinal series | 24      | 27       | 27       | 27       |
| Scales in transverse series  | 8        | 7        | 7        | 7        |
| Predorsal scales             | 7        | 0        | 0        | 0        |
| Precordal vertebrae          | —        | 10       | 10       | 10       |
| Caudal vertebrae             | —        | 16       | 16       | 16       |
| Total vertebrae              | —        | 26       | 26       | 26       |
| Total length (mm)            | 32.6     | 42.5–51.7| 35.9     | 33.5     |
| Standard length (mm)         | 29.4     | 31.1–37.8| 27.3     | 26.2     |
| In % of standard length      |  |  |  |  |
| Head length                  | 26.2     | 25.7–27.9| 26.5     | 27.5     |
| Head width                   | —        | 14.4–14.8| 12.8     | 13.8     |
| Snout length                 | 7.5      | 7.0–8.0  | 7.8      | 6.5      |
| Postorbital length of head   | 13.6     | 8.8–9.1  | 10.3     | 10.1     |
| Eye diameter                 | 7.8      | 6.6–7.8  | 7.8      | 8.0      |
| Interorbital length          | —        | 2.1–2.4  | 1.8      | 1.6      |
| Upper jaw length             | 9.2      | 6.9–7.6  | 7.8      | 7.0      |
| Body depth                   | 20.7     | 20.7–21.4| 17.8     | 19.0     |
| Body width                   | —        | 13.3–14.2| 11.4     | 13.7     |
| Caudal peduncle length       | 24.1     | 25.4–27.8| 24.7     | 24.2     |
| Caudal peduncle depth        | 11.9     | 13.0–13.1| 10.4     | 11.2     |
| Predorsal fin length         | 34.4     | 32.1–32.4| 33.7     | 35.6     |
| Preanal length               | 54.1     | 56.4–56.9| 51.0     | 57.8     |
| D1 length                    | 18.7     | 18.5–19.0| 18.4     | 19.6     |
| D2 length                    | damaged  | 45.9–47.6| 45.4     | 38.7     |
| A length                     | damaged  | 39.2–41.2| 42.0     | 32.9     |
| P1 length                    | damaged  | 27.9–28.2| 24.6     | 27.9     |
| P2 length                    | 18.4     | 21.2–22.6| 20.8     | 20.3     |
| C length                     | damaged  | 29.3–34.8| 29.3     | 24.8     |
| Interval between D1 and D2 base | damaged | 1.5–2.2  | 2.1      | 2.5      |
| Length of D1 base            | damaged  | 18.7–19.0| 17.4     | 19.1     |
| Length of D2 base            | 25.2     | 27.6–27.8| 26.2     | 27.4     |
| Length of A base             | 20.1     | 20.4–22.1| 20.6     | 20.4     |

D1, First dorsal fin; D2, second dorsal fin; A, anal fin; C, caudal fin; P1, pectoral fin; P2, pelvic fin.
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