Records of Four Labrid Fishes (Osteichthyes, Labridae) from Japan

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Abstract

Four labrid fishes, *Halichoeres melasmapomus* Randall, 1980, *Pseudojuloides mesostigma* Randall & Randall, 1981, *Paracheilinus carpenteri* Randall & Lubbock, 1981 and *Cheilinus oxycephalus* Bleeker, 1853, were collected from Okinawa and adjacent islands, the Ryukyu Islands. These species are recorded here for the first time from Japan based on actual specimens. Detailed descriptions with figures of these species are provided.

Introduction

Our recent collections of labrid fishes from the Ryukyu Islands contain the following four labrid fishes: *Halichoeres melasmapomus* Randall, 1980, *Pseudojuloides mesostigma* Randall & Randall, 1981, *Paracheilinus carpenteri* Randall & Lubbock, 1981 and *Cheilinus oxycephalus* Bleeker, 1853. Although the occurrences of these species in Japan have been known based only on underwater photographs or field observations, there have been no report with descriptions based on actual specimens. Therefore, we here describe these four species based on specimens from the Ryukyu Islands.

Counting and measuring methods follow Hubbs and Lagler (1958) except for caudal peduncle length, being measured the horizontal distance between verticals at the rear base of the anal fin and base of caudal fin. Head length includes opercular flap. All the specimens examined here are deposited at the Department of Marine Sciences, University of the Ryukyus (URM).

Halichoeres melasmapomus Randall, 1980

(New Japanese name: Hokuro-kyusen)

(Fig. 1)

Material examined. URM-P 23290, 1 female specimen, 52.9 mm SL, Chatan, Okinawa Island, Dec. 1989.

Description. Dorsal fin rays IX, 12; anal fin rays III, 12; pectoral fin rays13; lateral line scales 8+3+6=27; longitudinal scale rows 25; scales above lateral line to origin of dorsal fin 4; scales below lateral line to origin of anal fin 10; predorsal scales 0; circumpeduncular scales 20; gill rakers 5+10=15.

Received: July 17, 1997

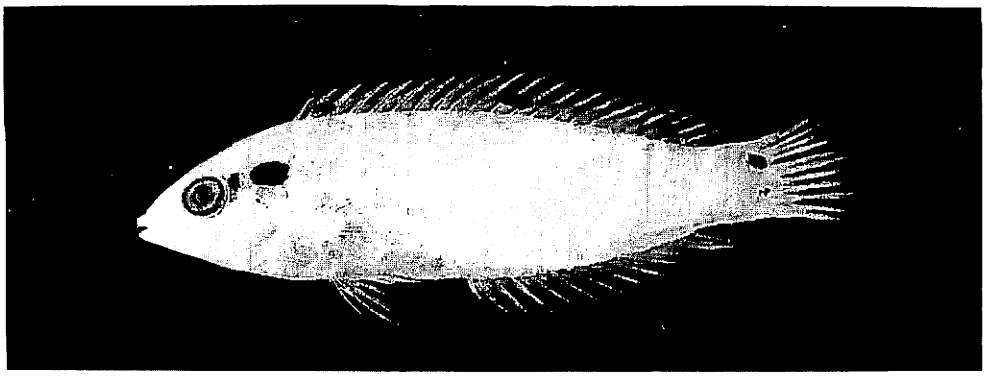

Fig. 1. *Halichoeres melasmapomus*, female, 52.9 mm SL, URM-P 23290, Okinawa Island.

Body elongate oval, the depth 3.78 in SL, and laterally compressed, the width 2.0 in depth. Head large, its length 3.06 in SL; snout length 3.5 in HL; mouth horizontal, upper jaw not reaching a vertical at front edge of eye, the length 4.4 in HL; eye diameter 4.6 in HL; interorbital space convex, the width 4.7 (fleshy width) and 5.4 (bony width) in HL. Predorsal length 3.19; preanal length 1.82; prepelvic length 3.02, all in SL. Caudal peduncle about 1.3 times as deep as long, the least depth 2.5 in HL, the length 3.2 in HL.

Jaws with pairs of straight canine teeth; anterior pairs largest and progressively smaller posteriorly; a large canine tooth at the corner of upper jaw. Nostrils small; the anterior in a small membranous tube, the posterior obliquely dorsal and behind the anterior. Gill membranes broadly attached to isthmus. Head naked except for small scales on nape.

Body covered with scales; scales on thorax smaller than those of sides. Lateral line complete, bending abruptly downward beneath the 9th dorsal fin ray to straight peduncular part. Fins naked except for a few small scales basally on dorsal and anal fins, and basal scales on caudal fin.

Origin of dorsal fin above upper end of gill opening; dorsal spines progressively longer posteriorly, the first 5.4 and the ninth 2.8 in HL, the longest dorsal ray (penultimate one) 2.4 in HL. Origin of anal fin below base of first dorsal ray; the first anal spine small, 8.7 in HL, the third anal spine 4.2 in HL, the longest anal ray (penultimate one) 2.8 in HL. Pectoral fin 1.56 in HL. Pelvic fin 2.0 and the spine 2.9 in HL. Caudal fin rounded, its length 1.42 in HL.

Coloration when fresh. Body yellowish orange, pale ventrally; the centers of the scales broadly reddish orange; head brown dorsally with a pale blue band from from snout, passing beneath eye to end of opercle, and a additional one below; a small black spot behind eye and a large black spot narrowly edged with reddish and more broadly with blue on upper opercle; dorsal fin yellow with several irregular reddish spots on lower part of each membrane; three black spots narrowly edged with reddish and more broadly with blue on

dorsal fin, the first between 2nd and 3rd spine, the second between 2nd and 3rd soft ray, and the third between 10th and 11th soft ray; anal fin yellow with two reddish spots on lower part of each membrane; caudal fin with a broad crescentic red band on its middle part; a large black spot narrowly edged with blue on upper caudal fin base and a small irregular spot on lower caudal fin base; pectoral and pelvic fins transparent.

Remarks. Our specimen agrees well with the original description of *H. melasmapomus* by Randall (1980). This species is easily distinguished from the other species of this genus in having a large blue-edged black spot on the opercle. Recently, Masuda and Kobayashi (1994) showed an underwater photograph of this species from Miyako Island, and Randall *et al.* (1997) noted the occurence of this species from the Ogasawara Islands with an underwater photograph and a catalogue number of a reference specimen deposited at the National Science Museum, Tokyo, but both without any taxonomic description. Our report is the first record of this species from Japan based on actual specimens.

This species is hitherto known widely distributed in the eastern Indian Ocean (Christmas and Cocos-Keeling Islands), Oceania and the western Pacific north to the Philippines (Randall, 1980; Myers, 1989).

Pseudojuloides mesostigma Randall & Randall, 1981
(New Japanese name: Sumitsuki-ogurobera)
(Fig. 2)

Materials examined. 5 specimens: URM-P 19513, 1 male specimen, 69.8 mm SL, Onna, Okinawa Island, Dec. 1987; URM-P 22577, 2 male and 2 female specimens, 52.1-70.7 mm SL, Onna, Okinawa Island, May 1989.

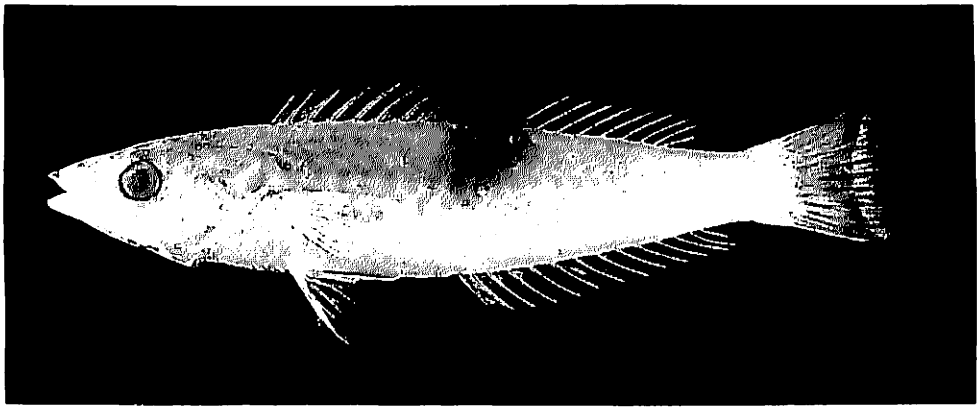

Fig. 2. *Pseudojuloides mesostigma*, male, 69.8 mm SL, URM-P 19513, Okinawa Island.

Description. Dorsal fin rays IX, 11; anal fin rays III, 12; pectoral fin rays13; lateral line scales 7-8+2-3+6-7=26-28 (mostly 8+3+7=28); scales above lateral line to origin of dorsal fin 3 or 4; scales above the first pored scale diagonally upward and posterior to the base of the first drsal spine 4 or 5; scales below lateral line to origin of anal fin 8; predosal scales 8-13 (mostly 11); gill rakers 4-6+9-11=15-17 (mostly 6+10 or 11=16-17).

Body very elongate, the depth 4.57-5.38 in SL, and laterally compressed, the width 1.4-1.8 in depth. Head large, its length 2.90-3.13 in SL; snout length 3.2-3.4 in HL; mouth slightly oblique, upper jaw not reaching a vertical at front edge of eye, the length 4.8-5.2 in HL; eye diameter 4.2-5.4 in HL; interorbital space convex, the width 4.8-5.6 (bony width) in HL. Predorsal length 3.05-3.48; preanal length 1.74-1.86; prepelvic length 2.70-2.97, all in SL. Caudal peduncle depth about equal to the length, the least depth 3.2-3.8 in HL, the length 3.0-3.8 in HL.

Jaws with a pair of projecting canine teeth anteriorly; the upper pair outcurved, the lowers fitting inside uppers when mouth closed; no canine at the corner of upper jaw. Nostrils very small, in front of upper edge of eye; the anterior in a small membranous tube elevated posteriorly, the posterior slightly closer to a vertical through anterior edge of eye than the anterior. Eye located near the center of head. Gill membranes broadly attached to isthmus with a free fold across it. Head naked except for small scales on nape; median predorsal scales extending slightly anterior to a vertical at upper end of preopercle.

Body covered with scales; scales on thorax smaller than those of sides. Lateral line complete, bending abruptly downward beneath the 8th dorsal fin ray to straight peduncular part. Fins naked except for basal scales on caudal fin.

Origin of dorsal fin above anterior end of pectoral fin base; dorsal spines progressively longer posteriorly, the first 4.91-5.48 and the ninth 2.68-3.36 in HL, the longest dorsal ray (9th one) 2.7 in HL. Origin of anal fin below base of ninth dorsal spine to first dorsal ray; the first anal spine small, 6.1-8.3 in HL, the third anal spine 4.6-5.2 in HL, the longest anal ray (4th or 5th one) 3.1 in HL. Pectoral fin 1.8-2.0 in HL. Pelvic fin 2.1-2.5 and the spine 3.0-3.9 in HL. Caudal fin rounded, its length 1.51-1.82 in HL.

Coloration when fresh. In male specimens, body dusky brown, paler below; scales on dorsal side of body edged with pale blue, these forminig reticulated marking; a large black spot on dorsal side of middle body, extending to dorsal fin; head dusky brown with narrow irregular blue lines behind eye; dorsal fin pale yellowish with a black spot between last spine and 4th soft ray, extending from body; anal fin pale yellowish and margined pale blue; caudal fin dusky brown with a broad transparent marginal band; pectoral fin semi-transparent; pelvic fin yellow. In female specimens, head and body salmon pink dorsally, paler below without any distinct markings.

Remarks. Our specimens agree well with the original description of *Pseudojuloides mesostigma* by Randall and Randall (1981). This species is characterized in having the follow-

ing combination of characters: wide body (less than 1.8 in body depth), narrow caudal peduncle (the depth nearly equal to its length), eye near the center of head, a large black spot in the middle of the body and dorsal fin in male. Masuda and Kobayashi (1994) showed an underwater photograph of this species (as *Pseudojuloides* sp.2) from Yaeyama Islands without any taxonomic description. Our report is the first record of this species from Japan based on actual specimens. This species is hitherto known only from the Philippines (Randall and Randall, 1981).

This is the fourth species in this genus recorded from Japan since the recent record of *P. atavai* Randall & Randall, 1981 from the Ogasawara Islands by Senou *et al.* (1997).

Paracheilinus carpenteri Randall & Lubbock, 1981
(New Japanese name: Kujyaku-bera)
(Fig. 3)

Materials examined. 14 specimens: URM-P 17450-17451, 1 male and 1 female specimens, 40.8 and 55.2 mm SL, Zanpa Cape, Okinawa Islans, May 1986; URM-P 18321, 1 male specimen, 68.1 mm SL, Onna, Okinawa Island, 20 Oct. 1986; URM-P 22573, 4 male and 7 female specimens, 40.0-76.8 mm SL, Onna, Okinawa Island, May 1989.

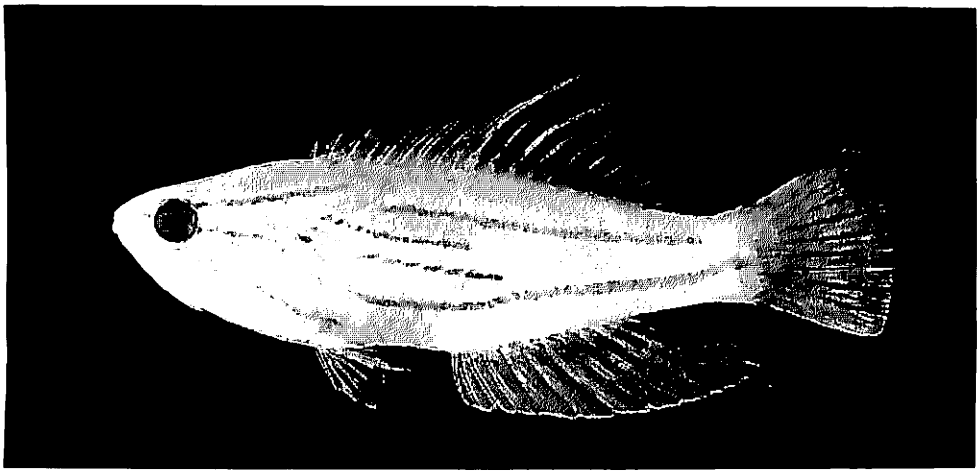

Fig. 3. *Paracheilinus carpenteri*, male, 55.2 mm SL, URM-P 17450, Okinawa Island.

Description. Dorsal fin rays IX, 11; anal fin rays III, 9 (10 in one specimen); pectoral fin rays14; lateral line scales 14-16+4-6=19-22 (mostly 15 or 16+5=20-21); scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 6 or 7; predorsal scales 5; gill rakers on lower arch 14-16.

Body elongate oval, the depth 3.18-3.46 in SL, and laterally compressed, the width 1.8-2.1 in depth. Head large, its length 3.07-3.28 in SL; snout length 3.8-4.0 in HL;

mouth horizontal, upper jaw not reaching a vertical at front edge of eye, the length 3.9-4.3 in HL; eye diameter 3.1-4.2 in HL; interorbital space convex, the width 2.9-3.7 (fleshy width) and 3.9-4.5 (bony width) in HL. Predorsal length 2.80-3.15; preanal length 1.59-1.80; prepelvic length 2.45-2.79, all in SL. Caudal peduncle about 1.2-1.4 times as deep as long, the least depth 2.2-2.4 in HL, the length 1.6-2.0 in HL.

Jaws with three pairs of upper and one pair of lower curved canine teeth anteriorly; a row of small conical teeth on jaws. Nostrils very small; the anterior in a small membranous tube, the posterior located nearly vertical to anterior edge of eye and horizontal to upper edge of eye. Scleral cornea of pupil divided nearly vertically into two roundish juxtaposed portions. Gill membranes broadly attached to isthmus. Branchiostegal membranes covered by one row of scales. Head covered with large scales except for snout, chin and interorbital space; two rows of scales on cheek.

Body covered with large scales; scales on thorax also large. Lateral line interrupted. Fins naked except for a single row of large elongate scales along base of dorsal and anal fins, and large scales on base of caudal fin.

Origin of dorsal fin slightly anterior to a vertical line passing upper pectoral base; dorsal spines progressively longer posteriorly, the first 5.9-8.8 and the ninth 2.0-2.5 in HL, two to four prolonged dorsal rays (the first, third, fifth, and seventh) in male, the longest dorsal ray 0.6-1.6 in HL. Origin of anal fin below base of first dorsal ray; the first anal spine 3.3-4.9 in HL, the third anal spine 2.4-3.5 in HL, the longest anal ray (sixth to eighth) 1.3-2.0 in HL. Pectoral fin 1.30-1.6 in HL. Pelvic fin 1.93-2.2 and the spine 3.1-3.5 in HL. Caudal fin rounded, its length 1.20-1.4 in HL.

Coloration when fresh. In male specimens, head and body orange or yellow-orange, becoming pale yellow below; three blue stripes on head, of which lowest one extending from eye to thorax; four blue stripes on body, of which middle two short; dorsal fin dusky and margined yellow, with a pearl spot on each middle membrane between 1st and last soft rays; distal half membranes reddish orange between 1st and 8th dorsal soft rays; anal fin reddish orange with yellow basal half, a row of pearl spots horizontally arranged in middle of the fin; caudal fin dusky and margined red with a vertical violet band in middle of the fin; pectoral fin pale; pelvic fin red. In female specimens, head and body yellow-orange, becoming paler below; two or three obscure reddish stripes on body; all fins pale or pale reddish, without any markings.

Remarks. Our specimens agree well with the original description of *Paracheilinus carpenteri* by Randall and Lubbock (1981). This genus is closely related to *Cirrhilabrus*, but different from the latter in having dorsal fin rays of IX, 11 (vs. XI, 9) and scleral cornea of pupil divided nearly into two portions. This species is characterized in having the following combination of characters: rounded caudal fin, two to four prolonged dorsal soft rays in adult, and two short dark stripes under pectoral fin. Masuda and Kobayashi (1994) showed an underwater photograph of this species from Iriomote Island without any

taxonomic description. Our report is the first record of this genus and species from Japan based on actual specimens. This species is hitherto known from the Philippines and Taiwan (Randall and Lubbock,1981; Shen, 1993).

Cheilinus oxycephalus Bleeker, 1853
(New Japanese name: Mitsuboshi-mochino-uo)
(Fig. 4)

Materials examined. 5 specimens: URM-P 8346, 1 male specimen, 105.9 mm SL, Kerama Islands, 31 Oct. 1983; URM-P 18187, 1 male specimen, 97.7 mm SL, Inanbishi, Okinawa Island, Oct 1986; URM-P 29929, 1 male specimen, 114.4 mm SL, Naha Wholesale Fish Market, Okinawa Island, 11 Jun. 1993; URM-P 35648, 1 female specimen, 90.5 mm SL, Naha Wholesale Fish Market, Okinawa Island, 27 Jun. 1996; URM-P 36320, 1 female specimen, 102.7 mm SL, Ohmijya, Iriomote Island, 14 Aug. 1996.

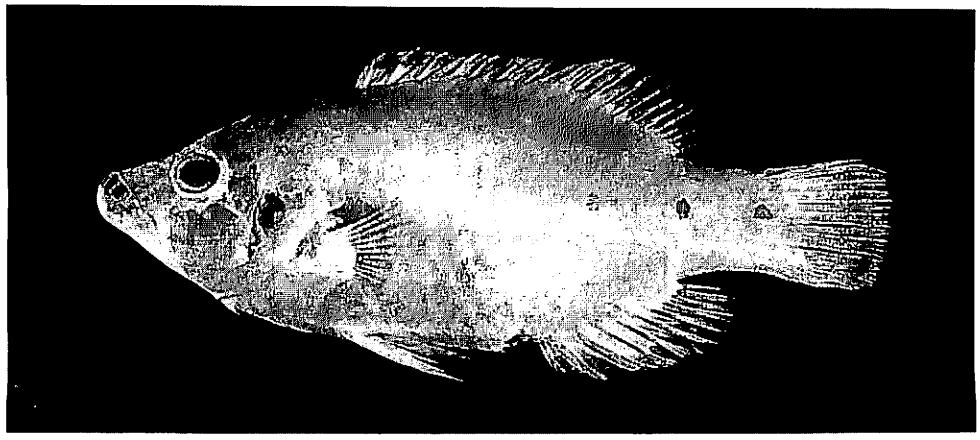

Fig. 4. *Cheilinus oxycephalus*, male, 105.9 mm SL, URM-P 8346, Kerama Islands.

Description. Dorsal fin rays IX, 10; anal fin rays III, 8; pectoral fin rays12; lateral line scales 15−16+6-8=22-24; scales above lateral line to origin of dorsal fin 3; scales below lateral line to origin of anal fin 6 or 7 (mostly 6); predorsal scales 6; gill rakers 5-7+6−8=11−14 (mostly 6 or 7+7 or 8=14).

Body oval, the depth 2.61-2.71 in SL, and laterally compressed, the width 2.13-2.31 in depth. Head large, its length 2.49-2.63 in SL; snout length 2.94-3.33 in HL, the profile concave; mouth oblique, upper jaw not reaching a vertical at front edge of eye, the length 3.13-3.26 in HL; eye diameter 5.1-5.5 in HL; interorbital space convex, the width 4.1-5.0 (fleshy width) and 5.0-5.3 (bony width) in HL. Predorsal length 2.38-2.51; preanal length 1.38-1.46; prepelvic length 2.14-2.45, all in SL. Caudal peduncle about 0.7-0.8 times as deep as long, the least depth 2.40-2.66 in HL, the length 3.25-3.51 in HL.

Jaws with a pair of canine teeth anteriorly and a single row of conical teeth. Nostrils small, in front of upper third of eye; the anterior in a small membranous tube. Gill membranes broadly attached to isthmus. Head scaled except for snout, chin and interorbital space; two rows of scales on cheek; lower limb of preopercle scaled.

Body covered with large scales; scales on thorax also large. Lateral line interrupted. Dorsal and anal fins with a well developed scaly sheath at base. Caudal fin covered with large scales basally.

Origin of dorsal fin above posterior end of opercular flap; dorsal spines progressively longer posteriorly, the first 4.6-5.3 and the ninth 2.16-2.41 in HL, the longest dorsal ray 2.06-2.28 in HL. Origin of anal fin below base of eighth or ninth dorsal ray; the first anal spine small, 4.7-5.0 in HL, the third anal spine 2.21-2.44 in HL, the longest anal ray 2.06-2.19 in HL. Pectoral fin 2.00-2.11 in HL. Pelvic fin 1.63-1.88 and the spine 3.05-3.37 in HL. Caudal fin rounded, its length 1.54-1.62 in HL.

Coloration when fresh. Head and body reddish brown or brownish red with scattered many small whitish spots; three to four brown spots, as large as pupil, arranged in a row on posterior midlateral body; dorsal fin with a red spot on first two menbranes; upper lip with two or three brown spots anteriorly; all fins brownish red exept for posterior pale membranes of dorsal fin.

Remarks. Our specimens agree well with the original description of *Cheilinus oxycephalus* by Bleeker (1853) and the figure given by Bleeker (1862). Recently, Masuda and Kobayashi (1994) showed an underwater photograph of this species from Kerama Islands without any taxonomic description, and Randall *et al.* (1997) noted the occurence of this species from the Ogasawara Islands based on only field observation. Our report is the first record of this species from Japan based on actual specimens. This species is hitherto known widely distributed in Indo-West Pacific north to Taiwan (de Beaufort, 1940; Fowler and Bean, 1928; Myers, 1989; Shen and Choi, 1978). This species is easily distinguished from the other congeneric members in having the following combination of characters: nine dorsal spines, scaled lower limb of preopercle, brown to red coloration with scattered pale spots, and three to four dark spots arranged in a row on posterior midlateral body.

Acknowledgments

We thank Dr. Katsunori Tachihara, Department of Marine Sciences, University of the Ryukyus, for critical review of the manuscript. Thanks are given to Mr. Masatomo Masui, Umikawa Coral Fish in Ginowan City, for providing the valuable materials.

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