

## Two Specimens of Left-eye Flounders (*Pseudorhombus oculocirris* and *Bothus mancus*) from Kyushu, Japan

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**Key words:** *Pseudorhombus oculocirris*, *Bothus mancus*, maximum size, coloration

Recently, two species of left-eye flounders, represented by one specimen of *Pseudorhombus oculocirris* (Paralichthyidae) and one specimen of *Bothus mancus* (Bothidae) were collected from Kumamoto Prefecture and Miyazaki Prefecture in Kyushu Island, respectively. The former specimen displays brilliant coloration, which we have not previously seen in this species, and the latter specimen is nearly the largest known for this species (Amaoka, 1997; Hensley & Amaoka, 2001). Both species are briefly redescribed here for showing individual variation, and color in very fresh condition (color photographs available from PDF version of this paper: <http://nh.kanagawa-museum.jp/kenkyu/bulletin/bul36-7.pdf>). Specimens are deposited in the collections of the Kanagawa Prefectural Museum of Natural History (KPM-NI) and Division of Fisheries Sciences, Faculty of Agriculture, University of Miyazaki (MUFS), respectively. Counts and proportional measurements follow Hubbs & Lagler (1958) and Amaoka *et al.* (1993). Standard length and total length are used as SL and TL, respectively. Vertebral counts were taken from radiographs.

### *Pseudorhombus oculocirris* Amaoka, 1969

Fig. 1

Japanese name: Heraganzo-birame

Specimen examined: KPM-NI 16661, 180.1 mm SL, 20 m depth, Yushima, Oyano-cho, Kamiamakusa-shi, Kumamoto Prefecture, December 6, 2005, collected by Mr. N. Deguchi.

Description: Dorsal fin rays 75; anal fin rays 57; pectoral

fin rays 11 on each side; pelvic fin rays 6 on each side; caudal fin 2+13+2; lateral line scales 81; gill rakers 6+20; vertebrae 10+26.

In SL: head 3.86; body depth 2.13. In head length: snout 3.92; upper eye diameter 4.85; lower eye diameter 5.30; upper jaw 2.14 on ocular side, 2.12 on blind side; lower jaw 1.73 on ocular side, 1.66 on blind side; caudal peduncle depth 2.18; pectoral fin 1.69 on ocular side, 2.13 on blind side; pelvic fin 2.60 on ocular side, 2.40 on blind side; base of pelvic fin 5.83 on ocular side, 8.32 on blind side; length of first dorsal fin ray 3.88; length of longest dorsal fin ray 2.57; length of longest anal fin ray 2.44; curve width of lateral line 1.61.

Body elliptical, greatest depth at middle of body; body depth slightly less than half of body length. Caudal peduncle about 1/4 of body depth. Head slightly longer than half of body depth; upper profile with a small notch anterior to upper eye. Snout rather large, slightly longer than eye diameter. Eyes small, separated by narrow high ridge; shortest distance between upper eye and dorsal margin longer than half diameter of eye.

Mouth large, maxilla extending nearly to posterior margin of lower eye; lower jaw with a prominent knob at symphysis. Teeth small, in single row on both jaws; several pairs of somewhat enlarged teeth anteriorly; lateral teeth on upper jaw smallest and close-set; teeth on lower jaw larger and wider apart than lateral teeth on upper jaw. Gill rakers long and slender, with serrations on posterior margins. Scales small, ctenoid on ocular side, cycloid on blind side; snout, both jaw tips and anterior interorbital region naked; all fins with scales at their bases. Lateral line strongly curved above pectoral fin; accessory branch line running to near 11th dorsal ray.

Dorsal fin starting on blind side, anterior to middle horizontal line through upper eye; anteriormost several rays flattish, somewhat elongated, and free from fin membrane. Anal fin starting below basal part of pectoral fin. Fourth to 10th rays of ocular-side pectoral fin branched; all rays of blind-side pectoral fin simple. Posterior three rays of pelvic fins on each side branched. Caudal fin rounded posteriorly, upper and lower two rays simple and middle rays branched. Vent opens on blind side,

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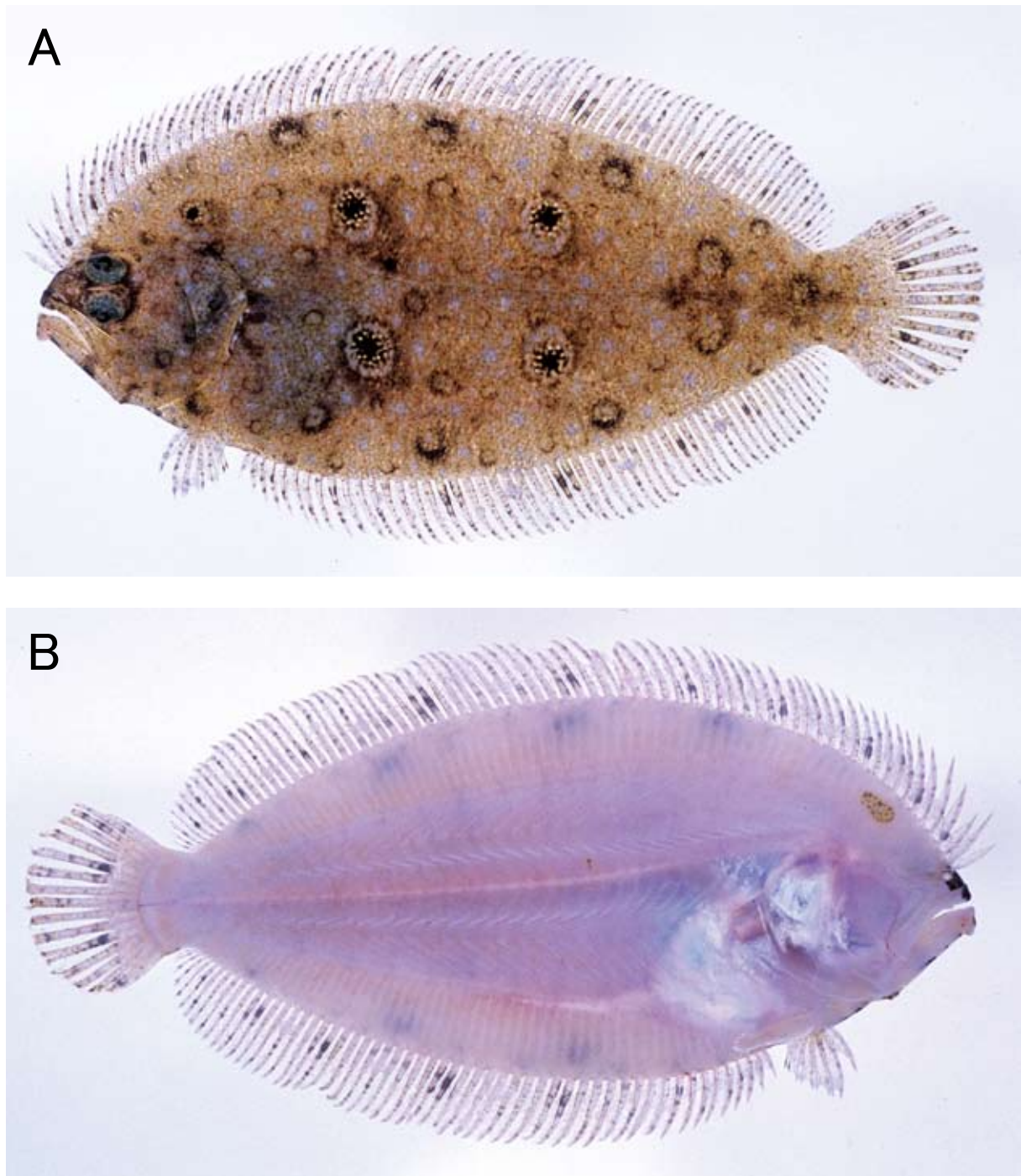


Fig.1. Photographs of ocular (A) and blind (B) sides of a 180.1 mm SL specimen (KPM-NI 16661) of *Pseudorhombus oculocirris* from Kamiamakusa, Kumamoto Prefecture, Japan.

just anterior to anal fin origin; genital papilla on ocular side.

Coloration in life: Ground color of body brownish, with 5 dark ocelli and rings above lateral line and 3 ocelli and rings below lateral line; of these, the middle 4 ocelli larger and prominent; smaller rings along dorsal and ventral margins of body; many smaller indistinct dark rings and smaller bluish white spots scattered on body; snout dark. Dorsal and anal fins with a series of dark spots; caudal fin with a pair of dark spots on middle region.

Remarks: Color photographs of this species are shown in Amaoka (1988: pl. 368-D) and Amaoka (1997: 671), but the speckling patterns were obscure. Based on our specimen, it becomes clear that this species has somewhat similar ocelli and

rings on body including their position, number and size to those of *Pseudorhombus pentophthalmus*.

This specimen was identified as *P. oculocirris* in having a large number of scales in the lateral line, anterior dorsal rays long and flattish, with length of the first dorsal ray 3.88 in head length, the shortest distance between dorsal margin and upper eye longer than one-half diameter of the eye (Amaoka, 1969). This specimen differs from other *P. oculocirris* in lacking a tentacle on the lower eye that is character of this species. This variation may be specific to this individual.

This species that lives in shallow coastal seas is known from Kochi Prefecture, Miyazaki Prefecture and Niigata Prefecture

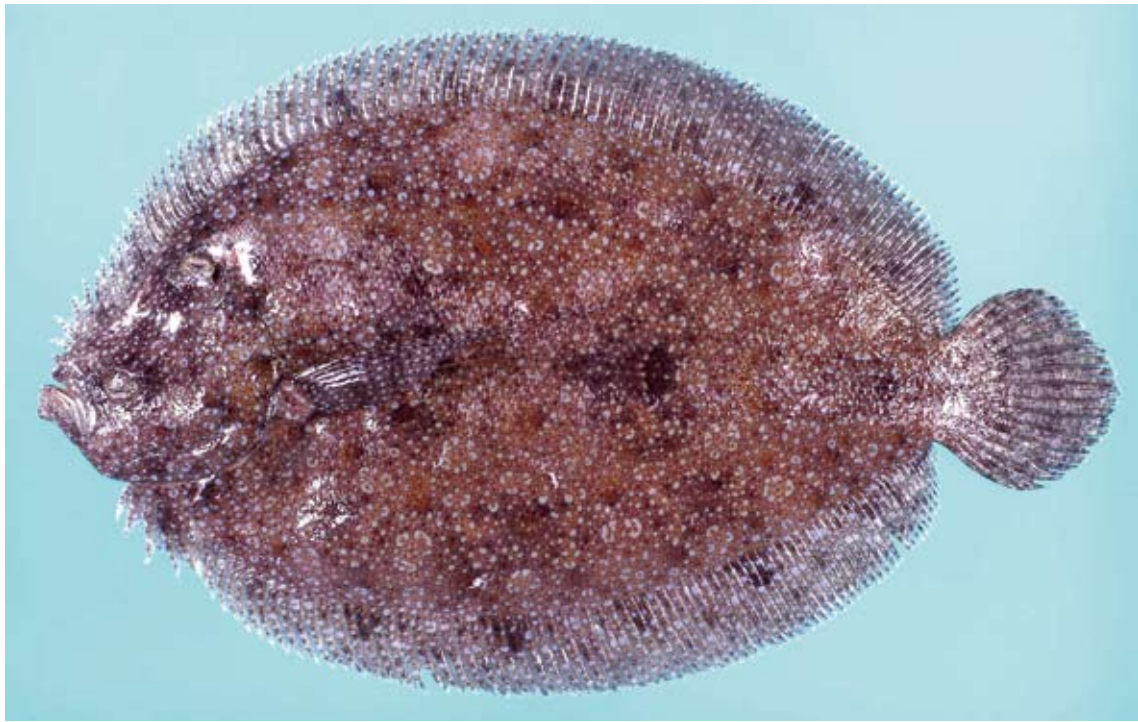


Fig.2. Photographs of the ocular side of 373 mm SL specimen (MUFS 22919) of *Bothus mancus* from Nango-cho, Miyazaki Prefecture, Japan.

(Amaoka, 1969, 1988, 1997). The specimen collected from Kumamoto Prefecture is the first record from western side of Kyushu Island, Japan.

***Bothus mancus* (Broussonet, 1782)**

Fig. 2

Japanese name: Mondaruma-garei

Specimen examined: MUFS 22919, 445 mm TL, 373 mm SL, ca. 10 m depth, off Meitsu, Nango-cho, Miyazaki Prefecture, speared in sandy bottom around rock and sandy bottom, August 31, 2005, collected by H. Kadokawa.

Description: Dorsal fin rays 100; anal fin rays 79; pectoral fin rays 11 on each side; pelvic fin rays 6 on each side; caudal fin 2+13+2; lateral line scales 81; gill rakers –; vertebrae 10+30.

In SL: head 3.66; body depth 1.71. In head length: snout 3.88; upper eye diameter 6.22; lower eye diameter 6.54; interorbital width 2.24; upper jaw 3.14 on ocular side, 3.08 on blind side; lower jaw 2.23 on ocular side, 2.14 on blind side; caudal peduncle depth 2.43; pectoral fin 0.44 on ocular side, 1.71 on blind side; pelvic fin 3.00 on ocular side, 2.92 on blind side; base of pelvic fin 3.59 on ocular side, 6.85 on blind side; length of longest dorsal fin ray 2.36; length of longest anal fin ray 2.33; curve width of lateral line 2.14.

Body ovoid, greatest depth at middle of body; body depth remarkably more than half of body length. Caudal peduncle narrower than 1/5 of body depth. Head slightly shorter than half of body depth; upper profile with a small notch anterior to dorsal margin of lower eye. Snout large, distinctly longer than either eye diameter. A large and strong spine on snout, blunt at tip. Eyes small, separated by wide concave space; posterior margin of lower eye ventral to and more anterior to margin of upper eye; posterior part of eyes with short dermal appendages, 3 on

upper and 6 on lower. Some small and short spines on orbital margins of upper and lower eyes, anteriormost spine of lower eye strongest, tricuspid at tip.

Mouth large, maxilla extending to below anterior margin of lower eye; lower jaw slightly projecting beyond tip of upper jaw, with a prominent knob at symphysis. Teeth small, in two rows on both jaws except posterior half of lower jaw with only a single row of teeth; outer row of teeth rather shorter, stronger and more widely spaced than inner row of teeth; inner row of teeth directed inwards; upper jaw teeth more or less enlarged anteriorly. Gill arch damaged. Scales small, feebly ctenoid or almost cycloid on ocular side, cycloid on blind side; snout, both jaws and pectoral fin base naked; all fins with scales at their bases. Lateral line strongly curved above pectoral fin.

Dorsal fin origin on blind side, before horizontal line through upper margin of upper eye; first ray shortest with membranous flaps at anterior edge. Anal fin starting below posterior margin of upper eye. Upper rays of ocular-side pectoral fin strikingly elongated into filament except for shortest first ray; longest one more than 2 times of head length; that on blind side short, about 1/4 of that on ocular side; all rays on each side simple. Pelvic fins on ocular side below middle of lower eye; first ray of blind-side fin opposite to fourth ray of ocular-side fin; all rays on both sides simple. Caudal fin rounded posteriorly, upper and lowermost two rays simple, middle rays branched. Vent on blind side above anal fin origin; genital papilla on ocular side of body.

Coloration in life: ground color of body brownish, mottled with numerous bluish white spots, many rings surrounded by several white spots, and many dark brown blotches as long as and less than eye diameter; 3 dark brown blotches, first one at junction of straight and curved parts of lateral line, second one at middle of straight part of lateral line and third one near basal part of caudal

fin. Dorsal and anal fins with a series of dark brown spots along basal half of fin and numerous small bluish white spots. Pectoral fin on ocular side with some dark cross bars.

Remarks: This specimen is easily identified as *Bothus mancus* in having 100 dorsal fin rays, 79 anal fin rays, small eye 6.2-6.5 in head length and posterior margin of lower eye situated below or just anterior to anterior margin of upper eye (Norman, 1934; Amaoka, 1969). Other specimens of this species are characterized by having single row of teeth on both jaws with only traces of a second row anteriorly (Norman 1934; Amaoka 1969), however, our specimen has two rows of teeth on both jaws.

This species attains at least 42 cm TL (Amaoka, 1997; Hensley & Amaoka, 2001). Masuda & Allen (1987) reported it to 42 cm, though it is unclear whether this is SL or TL. Our specimen measures 44.5 cm TL which is near, if not, the largest size reported for the species.

This species that usually lives in tide-pool and shallow waters of coral region is widely distributed in tropical and subtropical of the Indo-western Pacific including offshore islands in the eastern Pacific (Hensley & Amaoka, 2001), and in Japanese waters from Wakayama Prefecture southward (Amaoka, 1988; 1997). This species in specimens of ca. 5-20 cm TL has been often observed in tide-pool of the Nichinan Coast, Miyazaki Prefecture, but is the first record like such a largest specimen of the species from observation of the third author.

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#### 摘要

Amaoka, K., H. Senou & Y. Iwatsuki, 2007. Two Specimens of Left-eye Flounders (*Pseudorhombus oculocirris* and *Bothus mancus*) from Kyushu, Japan. *Bull. Kanagawa prefect. Mus. (Nat. Sci.)*, (36): 43-46. (尼岡邦夫・瀬能 宏・岩槻幸雄, 2007. 九州から得られたヘラガンゾウビラメおよびモンダルマガレイの2標本について. 神奈川県立博物館研究報告(自然科学), (36): 43-46.)

九州から得られたヘラガンゾウビラメ(ヒラメ科)とモンダルマガレイ(ダルマガレイ科)の標本各1個体を再記載した。前者の鮮時の色彩はこれまで状態のよくない標本に基づくものしか知られていなかったが、本報告では鮮度の高い標本のカラー写真に基づき記載を行った(カラー写真は本報告のPDF版 <http://nh.kanagawa-museum.jp/kenkyu/bulletin/bul36-7.pdf> を参照)。また、この個体は眼上皮弁を欠いていたが、個体変異と判断された。一方、モンダルマガレイはこれまでに知られている正確に計測された個体中、最大のものであった。

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