



Notes on the congrid eel genus *Parabathymyrus* from the western Pacific Ocean, with the description of a new species (Pisces: Anguilliformes: Congridae)

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Abstract

The congrid eel genus *Parabathymyrus* from the western Pacific Ocean is reviewed and three species are recognized: *Parabathymyrus macrophthalmus* from Japan, Taiwan, Vietnam and Australia, *P. brachyrhynchus* from Taiwan, Vietnam, the Philippines, Vanuatu and Solomon Islands, and a new species, *P. philippinensis* sp. nov., is described based on two specimens collected from the Philippines. These three species can be distinguished from each other by the number of total vertebrae (128–137 in *P. macrophthalmus*, 162–173 in *P. brachyrhynchus* and 140–141 in *P. philippinensis* sp. nov.), pre-anal vertebrae (39–46, 49–58, and 42), preanal lateral-line pores (36–44, 46–54, and 40–42), total lateral-line pores (121–131, 159–169, and 140–141) and supraorbital pores (4, 4 and 3).

Key words: Pisces, Teleostei, taxonomy, *Parabathymyrus philippinensis* sp. nov.

Introduction

The congrid eel genus *Parabathymyrus* is a group of stout eels inhabiting the continental shelf and slope at depths around 100–500 m. It is characterized by a relatively short snout, usually smaller than eye diameter; eye wide and over the mouth rictus; teeth relatively small and villiform; gill opening relatively small; posterior nostril low on head near lip, covered by a flap dorsally.

Kamohara (1938) established the genus *Parabathymyrus* and its type species *Parabathymyrus macrophthalmus*. Smith & Kanazawa (1977) placed *Ariosoma brachyrhynchus* Fowler, 1934 in *Parabathymyrus* and described a new species, *P. oregoni*, from the western Atlantic. Since then, two species have been added to the genus, *P. karrerae* Karmovskaya, 1991 from the Western Indian Ocean and *P. fijiensis* Karmovskaya, 2004 from Fiji.

In the western Pacific region, only *P. macrophthalmus* was commonly recorded from Japan, Taiwan and South China Sea (Chen & Weng, 1967; Masuda *et al.*, 1984; Shen, 1984; Mok in Shen *et al.*, 1993; Smith, 2000; Nakabo, 2013). The other species, *P. brachyrhynchus*, was rarely mentioned (Smith, 1999; Iwamoto & McCosker, 2014).

Chen & Weng (1967) recorded three specimens of *P. macrophthalmus* collected from southern Taiwan. However, their specimens all have more vertebrae and lateral-line pores and are not identical to *P. macrophthalmus*, but rather to *P. brachyrhynchus*. Examination of specimens collected from the western Pacific Ocean have revealed that three nominal species are present: *Parabathymyrus macrophthalmus* from Taiwan, Vietnam, the Philippines, Australia and India; *P. brachyrhynchus* from Taiwan, Vietnam, Vanuatu and Solomon Islands; and *P. fijiensis* from Fiji.

A new species was found in the ASIZ collection represented by two specimens collected from the Philippines. It differs from the congeners in having different meristic features and is formally described and named herein.

Methods and materials

Total length (TL) and head length (HL) are used throughout. Methods for taking measurements and counts and terminology followed Smith & Kanazawa (1977). Abbreviations of institutions are those provided in Fricke and Eschmeyer (2015).

Results

Parabathymyrus philippinensis sp. nov.

Figs. 1A–C ; Tables 1–2

Holotype. ASIZP 68112 (398), 14.54°N, 121.7°E, off Aurora, Luzon, Philippines, 233–249 m, 29 May 2007.

Paratype. ASIZP 68117 (1, 341), 16.51°N, 122.01°E, off Aurora, Luzon, Philippines, 335–356 m, 28 May 2007.



FIGURE 1. *Parabathymyrus philippinensis* sp. nov. A, B. Holotype, ASIZP 68112, 398 mm TL. C. Paratype, ASIZP 68117, 341 mm TL. Both from Aurora, Luzon, Philippines. A, C photo by Y.-C. Liao.

Diagnosis. A species of *Parabathymyrus* with head 5.6–5.7 in TL; 3 supraorbital pores; 42 preanal vertebrae; 141–142 total vertebrae; 40–42 preanal lateral-line (LL) pores; 140–141 total LL pores.

Description. Head length 5.7 (5.6 in paratype) times in TL; body depth at head 16.2 (12.7); predorsal 5.7 (5.2); preanal 2.4 (2.5); trunk length 4.2 (4.8); tail length 1.7. Snout 6.6 (5.8) times in HL; eye 5.8 (4.7); interorbital 9.8 (8.2); snout-rictus 3.2 (3.1); gill opening 9.6 (5.8); interbranchial 3.8 (3.4); pectoral fin 2.5 (2.8). Pectoral-fin rays 14.

TABLE 1. Morphometric data of three *Parabathymyrus* species examined in this study.

	<i>P. philippinensis</i> sp. nov.			<i>P. brachyrhynchus</i>				<i>P. macrophthalmus</i>		
	Holotype	Paratype	Holotype	Taiwan	Philippines	Vanuatu	Japan (n=5)	Taiwan (n=22)	Vietnam (n=13)	
TL (mm)	398	341	327	317–505 (n=29)	268–480 (n=9)	379–448 (n=3)	275–405	260–417	226–386	
%TL										
Head length	17.5	17.9	17.1	16.3 (15.0–18.1)	17.1 (16.6–18.0)	16.1 (15.4–16.5)	15.0 (14.7–15.2)	16.1 (14.7–17.1)	16.4 (15.4–17.3)	
Trunk length	23.7	20.9	26.0	24.7 (23.0–26.3)	24.9 (22.6–27.5)	24.6 (23.9–25.3)	23.9 (23.0–24.8)	23.9 (21.5–25.6)	24.2 (21.8–26.2)	
Tail length	58.8	59.8	56.9	58.9 (57.2–61.8)	58.0 (55.9–59.7)	59.3 (58.9–59.6)	60.5 (59.3–62.2)	60.0 (58.4–63.4)	60.1 (57.7–70.8)	
Predorsal	17.5	19.3	20.4	17.1 (15.7–18.9)	17.7 (16.6–20.4)	16.6 (16.3–17.1)	17.1 (15.9–17.6)	17.1 (16.1–18.6) [21.1]*	17.9 (16.5–20.0)	
Prenal	41.2	40.2	43.1	41.1 (38.2–42.8)	42.0 (40.3–44.1)	40.7 (40.4–41.1)	39.1 (38.3–40.0)	40.0 (36.6–41.6)	40.5 (37.4–42.3)	
Depth at anus	6.2	6.3	6.7	6.0 (4.4–7.6)	6.1 (4.9–7.2)	5.2 (5.0–5.5)	--	6.1 (4.9–7.6)	5.8 (4.7–6.8)	
%HL										
Eye diameter	17.2	21.3	16.1	17.5 (15.3–20.7)	17.0 (16.1–18.3)	20.4 (18.8–22.4)	18.2 (17.1–20.1)	16.2 (12.8–18.1)	16.0 (14.0–17.6)	
Interorbital	10.2	12.1	8.6	16.8 (13.6–21.2)	11.1 (8.0–16.2)	17.7 (16.0–17.9)	18.8 (16.6–19.8)	17.7 (12.4–22.2)	16.9 (13.4–20.2)	
Snout length	15.0	17.2	15.7	16.5 (13.2–18.6)	15.8 (14.6–17.2)	17.9 (17.1–19.2)	17.5 (16.2–18.1)	15.6 (12.9–18.2)	16.8 (13.7–19.3)	
Interbranchial	26.6	29.2	20.9	23.0 (19.7–27.2)	18.7 (15.6–21.0)	19.1 (18.4–19.9)	--	21.4 (16.2–28.2)	20.4 (13.8–24.2)	
Upper jaw	31.7	32.5	30.9	29.7 (25.4–34.9)	27.1 (23.7–30.9)	30.8 (30.0–32.0)	32.0 (29.7–34.8)	29.7 (26.1–33.4)	30.3 (26.4–34.2)	
Postorbital	67.8	61.5	68.2	67.7 (63.3–72.9)	67.2 (64.5–69.1)	66.4 (65.4–68.2)	71.2 (69.4–73.2)	68.2 (65.9–70.2)	69.4 (65.8–73.4)	
Gill opening	10.5	17.2	13.4	15.4 (12.3–18.3)	13.9 (12.5–15.8)	17.5 (15.7–19.6)	17.1 (15.6–19.3)	14.6 (10.6–21.3)	14.3 (11.5–19.8)	
Pectoral fin	40.4	35.2	37.7	36.3 (29.6–39.8)	36.8 (30.3–48.0)	35.9 (34.9–37.2)	38.5 (30.4–41.5)	34.9 (25.0–41.2)	38.6 (33.3–43.3)	

*Value of NMMIB-P 11170.

Body relatively stout, depth of head slightly larger than that of tail; head and trunk cylindrical, gradually compressed to posterior half of body; trunk long; tail moderately long. Origin of dorsal fin above pectoral fin; original of anal fin slightly anterior to middle of total length; snout short and obtuse.

Eye relatively large, above posterior half of upper jaw, its posterior margin extending beyond a vertical through rictus; interorbital space narrow. Gill opening moderately high, in front of pectoral fin and extending dorsally to middle of pectoral-fin base. Anterior nostril tube-like, at front of snout; posterior nostril large, just above upper jaw, covered by a large flap dorsally.

Mouth moderately large, its opening slightly oblique, rictus extending to posterior one-third of orbit; upper jaw protrudes anterior to lower jaw; upper labial flange well developed, extending from anterior nostril to two-thirds of upper-jaw length; lower jaw with a deep fold from tip to rictus; pectoral fin narrow and pointed.

Vertebrae: Predorsal 8 (8), preanal 42 (42), and total 142 (141). Lateral line complete, pores moderate in size, prepectoral 8 (8), predorsal 10 (8), Preanal 40 (42), and total 140 (141). Head pores: supraorbital 3 (3), only anterior pores present, 4th pore at dorsal-anterior corner of eye absent; infraorbital 5 (5), 1 between nostrils, 3 below eye and 1 behind rictus, none behind eye; preoperculummandibular (POM) 11 (11), 7 anterior to rictus, 4 behind rictus; supratemporal commissure (ST) 0, frontal (F) 0, adnasal (AD) 0.

Teeth small, villiform, 4–5 rows of teeth on intermaxilla forming a rounded patch, exposed when mouth closed; vomerine teeth connected to those of intermaxilla, forming a small triangular patch; 4–5 rows of teeth on both jaws anteriorly, gradually narrowing to biserial posteriorly.

Coloration. When fresh (Fig. 1A, C), light brownish dorsally and paler ventrally, anterior portion of head and lower jaw blackish, fins reddish, thin black margins on dorsal and anal fins. When preserved (Fig. 1B), body brownish, abdomen yellowish, fins pale, thin black margins on dorsal and anal fins.

Distribution. Known only from the type series, collected off Aurora Province, east coast of Luzon, Philippines, at a depth of 233–356 m.

Etymology. The specific name is derived from the type locality, the Philippines.

Remarks. *Parabathymyrus philippinensis* sp. nov. differs from the other four congeners in having 3 supraorbital pores (vs. 4) and 141–142 total vertebrae (vs. 128–137 in *P. macrophthalmus*, 149–152 in *P. oregoni*, 162–173 in *P. brachyrhynchus*, and 173 in *P. fijiensis*). Table 3 summarizes the selected characters of all known *Parabathymyrus*.

***Parabathymyrus brachyrhynchus* (Fowler, 1934)**

Figs. 2A–B; Tables 1–2

Arisoma [sic] *brachyrhynchus* Fowler, 1934:269 (Utara Pt., Bongo Island, Illana Bay, southern Mindanao Island, Philippines, 7°21'45"N, 124°07'15"E, depth 158 fathoms [289 m]).

Parabathymyrus brachyrhynchus (Fowler, 1934): Smith & Kanazawa, 1977:532. Smith, 1989:504. Smith, 1999:1686. Iwamoto & McCosker, 2014:272.

Parabathymyrus macrophthalmus (not of Kamohara, 1938): Chen & Weng, 1967:175. Shen, 1984:111. Chen & Yu, 1986:252. Shen *et al.* 1993:117. Shen & Wu, 2011:139.

Material examined (47, 186–502 mm TL). **Holotype:** USNM 92357 (1, 327), Southern Mindanao, Eastern Illana Bay, Utara Point, Bongo Island, Philippines, 7°21'45"N, 124°07'15"E, 289 m, 22 May 1908. **Paratype:** USNM 135121 (1, 268), Gulf of Davao, Dumalag Island, 7°02'N, 125°38'4"E, 247 m, 18 May 1908, Albatross D.5247. **Non-types:** **Taiwan:** off Dong-gang, SW Taiwan, ca. 150–350 m: ASIZP 65130 (1, 383), 10 Mar. 2005. CSIRO H7398-12 (1, 457), 18 Mar. 2012. CSIRO H7419-07 (1, 376), 27 Dec. 2012. NMMB-P 1403 (1, 470), 4 Mar. 1965. NMMB-P 1412 (1, 405), 6 Feb. 1966. NMMB-P 2458 (1, 328), no date. NMMB-P 9079 (1, 430), 13 Jun. 2008. NMMB-P 9092 (1, 470), 13 Jun. 2008. NMMB-P 11167 (1, 345), 15 Dec. 2009. NMMB-P 11168 (1, 466), 15 Dec. 2009. NMMB-P 11169 (1, 424), 15 Dec. 2009. NMMB-P 11914 (3, 402–472), 26 Feb. 2011. NMMB-P 12175 (1, 428), 31 Dec. 2010. NMMB-P 13161 (1, 502), 12 Sep. 2009. NMMB-P 13674 (1, 351), 2 Jul. 2011. NMMB-P 14034 (1, 355), 3 Nov. 2011. NMMB-P 15391 (1, 420), no date. NMMB-P 15566 (1, 383), no date. NMMB-P 16437 (1, 407), 15 Jun. 2009. NMMB-P 17791 (1, 464), 9 Aug. 2012. NMMB-P 17868 (1, 392), 25 Jan. 2012. NMMB-P 17869 (1, 342), 25 Jan. 2012. USNM 398510 (1, 395), 12 Nov. 2009. USNM 400284 (1, 410), 25 May. 2010. USNM 395265 (1, 483), 16 May. 2008. Off Daxi, NE Taiwan: NMMB-P 15565 (2 of 3, 385–387), 23 Oct. 2011. Off Nan-fang-ao, Yilan, NE Taiwan: NMMB-P16195 (1, 317), 20 Jul. 2010. **The Philippines:** USNM

344105 (6, 320–364), Albay Gulf, Luzon, Philippines, 363–385 m, 23 Sep. 1995. **Vietnam:** NMMB-P 12330 (1, 361), Da Nang, 9 Apr. 2011. **Vanuatu:** MNHN 1997-0827 (3, 379–448), 15°7'1.2"S, 166°55'1.2"E, 262–352 m, 9 Sep. 1994. **Solomon Islands:** MNHN 2002-3850 (6, 186–340), 9° 21'3.6"S, 160°23'13.2"E, 357–359 m, 1 Oct. 2001. MNHN 2006-0079 (1, 343), 7°28'15.6"S, 156°18'25.2" E, 105 m, 2 Nov. 2004.



A



B

FIGURE 2. *Parabathymyrus brachyrhynchus* (Fowler, 1934). A. NMMB-P 12175, 428 mm TL. NMMB-P 11914, 1 of 3, 402 mm TL. Both collected from Dong-gang, SW Taiwan.

TABLE 2. Meristic data of three *Parabathymyrus* species examined in this study. Abbreviations: PreD=predorsal; PreA =preanal; PreP=prepectoral; V=vertebrae.

	<i>P. philippinensis</i> sp. nov.		<i>P. brachyrhynchus</i>			<i>P. macrophthalmus</i>		
	Holotype	Paratype	Holotype	Taiwan (n=28)	Others (n=19)	Japan (n=5)	Taiwan (n=32)	Vietnam (n=14)
PreD-V	8	8	19	8–13	10–11	--	9–13 [15]*	10–11
PreA-V	42	42	55	49–52	49–58	--	39–46	42–45
Total-V	141	142	166	162–173	162–169	--	128–137	129–135
MVF	8-42-142		11-52-164			10-43-133		
P fin rays	14	14	--	14–17	--	14–15	12–17	13–16
PreP pores	8	8	--	7–9	8–10	7	5–9	6–8
PreD pores	10	8	--	8–10	8–11	8–10	6–11 [12]*	8–10
PreA pores	40	42	49	48–52	46–54	39–41	36–44	37–43
Total pores	140	141	--	159–163	158–169	127–130	121–132	123–130
SO pores	3	3	4	4	4	4	4	4
IO pores	5	5	5	5	5	5	5	5
POM pores	11	11	11	10–12	10–11	9–11	10–12	9–11
ST pore	0	0	0	0	0	0	0	0
F pore	0	0	0	0	0	0	0	0
AD pore	0	0	0	0	0	0	0	0

*Value of NMMB-P 11170.

Diagnosis. A species of *Parabathymyrus* with 4 supraorbital pores; head 5.5–6.7 in TL; 49–58 preanal vertebrae; 162–173 total vertebrae; 48–54 preanal LL pores; 159–169 total LL pores. Two rows of teeth on most of both jaws.

Description. Head length 5.5–6.7 times in TL; body depth at head 13.4–16.9; predorsal 4.9–6.4; preanal 2.3–2.6; trunk length 3.6–4.4; tail length 1.6–1.8. Snout 5.4–7.6 times in HL; eye 4.8–6.5; interorbital 4.7–12.5; snout-rictus 2.9–4.2; gill opening 5.5–8.1; interbranchial 3.7–6.4; pectoral fin 2.1–3.4. Pectoral-fin rays 14–17.

Body relatively stout, depth of head not much larger than that of tail; head and trunk cylindrical, gradually compressed to caudal fin; trunk long; tail moderately long. Origin of dorsal fin above pectoral fin; original of anal fin slightly anterior to middle of total length; snout short and obtuse.

Eye relatively large, above posterior half of upper jaw and its posterior margin slightly behind level of rictus; interorbital space broad; gill opening moderately high, in front of pectoral fin and extended to middle of pectoral-fin base. Anterior nostril tube-like, at front of snout; posterior nostril large, just above the upper jaw, covered by a large flap dorsally.

Mouth moderately large, its opening slightly oblique, rictus extends to posterior one-third of orbit; upper jaw protrudes anterior to lower jaw; upper labial flange well developed, extending from anterior nostril to two-thirds of upper-jaw length; lower jaw with a deep fold from tip to rictus; pectoral fin narrow and pointed.

Teeth small and villiform; intermaxilla with 4 rows of teeth forming a rounded patch, exposed when mouth closed; vomerine teeth a small triangular patch closely attached to that of intermaxilla; both jaws with 4–6 rows of teeth on anterior part and 1–2 rows on most of the remainder.

Vertebrae: predorsal 8–13, preanal 49–58, total 158–173 and mean vertebral formula (MVF) 11-52-164. Lateral-line pores moderate in size and complete, prepectoral 7–10, predorsal 8–11, preanal 46–54 and total 158–169. Head pores: SO 4, IO 5, POM 10–12, ST 0, F 0, AD 0.

Coloration. When fresh, pinkish brown or yellowish brown dorsally, paler ventrally, pectoral fins reddish to grayish, anterior part of median fins yellowish or pinkish, with black margin in posterior portion. When preserved,

brownish gray dorsally and paler ventrally, pectoral fin white, anterior part of median fins pale, with black margins in posterior portion, mouth cavity, gill chamber and peritoneum white.

Distribution. Known only from the western Pacific off Taiwan, Vietnam, the Philippines, Vanuatu and Solomon Islands. Bathymetric range 105–385 m.

Remarks. Smith (1994) reported 19 predorsal vertebrae for the holotype of *P. brachyrhynchus*, whereas all specimens we examined have 8–13 (n=38) predorsal vertebrae. We also found a specimen of *P. macrophthalmus* that has relatively more predorsal vertebrae (15, vs. 9–13 in other specimens, n=46). The relatively more predorsal vertebrae in these specimens of *P. brachyrhynchus* and *P. macrophthalmus* is apparently anomalous.

Karmovskaya (2004) separated *P. fijiensis* from *P. brachyrhynchus* by having relatively more total vertebrae (173 vs. 166–168), fewer preanal pores (47 vs. 50–52), and its dorsal-fin origin above the pectoral-fin base (vs. dorsal-fin origin slightly behind middle of pectoral fin). The holotype of *P. fijiensis* has 50 preanal pores and 167 total pores (HH's examination). We also examined a large number of *P. brachyrhynchus* and found that the data for the holotype of *P. fijiensis* mostly fall within the range of *P. brachyrhynchus* (Tables 1–2). More specimens of *P. fijiensis* are needed to understand the variation of this species and whether it and *P. brachyrhynchus* are conspecific.

HH examined three specimens from Vanuatu and seven specimens from the Solomon Islands. All these specimens are identical to those of *P. brachyrhynchus* that we examined. Thus they are identified as *P. brachyrhynchus* rather than *P. fijiensis*.

It is also notable that the holotype of *P. fijiensis* does not have a black anal-fin margin, whereas all specimens of *P. brachyrhynchus* have a black margin on their anal fin and those from Vanuatu and the Solomons have a slightly broader black margin than those from the NW Pacific Ocean.

***Parabathymyrus macrophthalmus* Kamohara, 1938**

Figs. 3

Parabathymyrus macrophthalmus Kamohara 1938:14 (Mimase, Kochi Prefecture, Japan). Kamohara 1961:2. Masuda et al., 1984:27. Gloerfelt-Tarp & Kailola, 1984:59. Smith, 2000:586.

Material examined (57 specimens, 150–417 mm TL). **Taiwan:** Off Dong-gang, SW Taiwan: ASIZP 60859 (1, 417), 27 Oct. 2000. ASIZP 65131 (1, 375), 10 Mar. 2005. NMMP-P 1412ex. (1, 280 mm), 6 Feb. 1966. NMMP-P 11170 (1, 351), 15 Dec. 2009. NMMP-P 11175 (1, 367), 16 Jun 2009. NMMP-P 13952 (1, 260), 5 Oct. 2010. NMMP-P 13964 (1, 285), no date. NMMP-P 14122 (1, 280), 14 Jul. 2001. NMMP-P 14212 (1, 260), 20 Oct. 2011. NMMP-P 16366 (1, 387), 23 Feb. 2012. NMMP-P 17866 (1, 380), 25 Jan. 2012. USNM 398561 (1, 339), 14 Nov. 2009. USNM 398562 (1, 330), 14 Nov. 2009. USNM 398563 (1, 385), 14 Nov. 2009. USNM 401021 (1, 398), 26 Feb. 2011. USNM 401069 (3, 337–415), 14 Nov. 2009. USNM 401079 (1, 373), 25 May. 2010. Off Da-xi, Yilan, NE Taiwan: NMMP-P 12230 (1, 364), 22 Jan. 2010. NMMP-P 15565 (1, 400), 23 Oct. 2011. **Japan:** BSKU 45 (1, 311). BSKU 9983 (1, 339), "Neotype" designated by Kamohara (1961). BSKU 9984 (1, 312). BSKU 79197 (1, 275). BSKU 95489 (1, 405). **Vietnam:** ASIZP 71614 (2, 252–287), Nha Trang, 16 Apr. 2009. ASIZP 71593 (1, 323), Nha Trang, 15 Apr. 2009. ASIZP 71594 (1, 353), Nha Trang, 16 Apr. 2009. NMMP-P 12324 (1, 297), Da Nang, 9 Apr. 2011. NMMP-P 12328 (1, 226), Da Nang, 9 Apr. 2011. NMMP-P 12332 (1,301), Da Nang, 9 Apr. 2011. NMMP-P 13953 (1, 293), Nha Trang, 18 Apr. 2009. NMMP-P 13954 (1, 294), Da Nang, 9 Apr. 2011. NMMP-P 17924 (1, 267), Phan Thiet, 29 May. 2012. NMMP-P 17926 (8, 231–283), Da Nang, 26 May 2012. USNM 396162 (1, 293), Nha Trang, Apr. 2009. IORAS 3243 (4, 263–386). **E. Australia:** CSIRO H7419-04 (1, 377), CSIRO H7419-05 (1, 410), CSIRO H7419-06 (1, 380). **W. Australia:** CSIRO B.3590 (1, 150), CSIRO CA 4011 (1, 308), CSIRO CA 4013 (1, 265). **Hainan:** IORAS 3244 (1, 280). **India:** ZSI uncatalogued (1, 246).

Diagnosis. A species of *Parabathymyrus* with 4 supraorbital pores; head length 5.8–6.8 times in TL; 39–46 preanal vertebrae; 128–137 total vertebrae; 36–44 preanal LL pores; 121–132 total LL pores.

Description. Head length 5.8–6.8 times in TL; body depth at head 12.2–17.5; predorsal 5.0–6.3; preanal 2.4–2.7; trunk length 3.8–4.7; tail length 1.4–1.7. Snout 5.2–7.8 times in HL; eye 5.0–7.8; interorbital 4.5–8.1; snout-rictus 2.9–3.8; gill opening 4.7–9.5; interbranchial 3.5–7.2; pectoral fin 2.3–4.0. Pectoral-fin rays 12–17.

Body relatively stout, depth of head slightly greater than that of tail; head and trunk cylindrical, gradually compressed to posterior half of body; trunk long; tail moderately long. Origin of dorsal fin above pectoral fin; origin of anal fin slightly anterior to middle of total length (one specimen with the origin far behind the tip of pectoral fin); snout short and obtuse.

TABLE 3. Selected data for species of *Parabathymyrus*. Data sources: A, present study; B, Smith & Kanazawa (1977); C, Karrer (1983).

	<i>P. brachyrhynchus</i>	<i>P. fijiensis</i>	<i>P. karrerae</i>	<i>P. macrophthalmus</i>	<i>P. oregoni</i>	<i>P. philippinensis</i>
Distribution	NW Pacific	Fiji	W. Indian	Indo-w. Pacific	W. Atlantic	Philippine Island
PreA-V	49–58	52	--	39–46	--	42
Total-V	162–173	173	157–161	128–137	149–152	141–142
PreA pores	46–54	50	45–49	36–44	45–48	40–42
Total pores	158–169	167	151–154	121–130	--	140–141
SO pores	4	4	4	4	4	3
Data source	A	A	A, B, C	A	B	A

Eye relatively large, above posterior half of upper jaw and its posterior margin slightly behind level of rictus; interorbital space broad. Gill opening moderately high, in front of pectoral fin and extended to middle of pectoral-fin base. Anterior nostril tube-like, at front of snout; posterior nostril large, just above the upper jaw, and covered by a flap dorsally.

Mouth moderately large, its opening slightly oblique, rictus extending to posterior one-third of orbit; upper jaw protrudes anterior to lower jaw; upper labial flange well developed, extending from anterior nostril to two-thirds of upper-jaw length; lower jaw with a deep fold from tip to rictus; pectoral fin narrow.

Teeth small and villiform, anterior portion of intermaxilla with 4–5 rows of teeth, forming a rounded patch, followed a small triangular patch of teeth on vomer; 4–5 rows anteriorly and gradually narrowing to biserial posteriorly on both jaws. Tongue long, broad and thick, free from the mouth floor.



FIGURE 3. *Parabathymyrus macrophthalmus* Kamohara, 1938. One of USNM specimens examined in present study. Collected from Dong-gang, SW Taiwan.

Vertebrae: predorsal 9–13 (one with 15), preanal 39–46, total 128–137, and MVF 10-43-133. Lateral-line pores moderate in size and complete, prepectoral 5–9, predorsal 6–11 (one with 12), preanal 36–44, and total 121–132. Head pores: SO 4, IO 5, POM 9–12 (mainly 10–11), ST 0, F 0, AD 0.

Coloration. When fresh, light brown dorsally, lower body paler, lateral-line ossicles white, posterior portion of dorsal and anal fins white and become black at the end; mouth cavity, gill chamber and peritoneum white.

Distribution. Known from the western Pacific off Japan, Taiwan, Hainan, Vietnam, Australia and India. Bathymetric range of specimens collected from Taiwan ca. 100–300 m.

Remarks. Although this species was previously recorded from Taiwan, we have reidentified these vouchers and all are *P. brachyrhynchus*. Additional specimens of *P. macrophthalmus* were found in Taiwanese collections. The holotype of *Parabathymyrus macrophthalmus* was destroyed in World War II. Kamohara (1961) designated a neotype (BSKU 9983), but this was not done in a revisionary work and is not valid.

One specimen from Taiwan (NMMB-P11170) has a relatively posteriorly situated dorsal-fin origin and 15 predorsal vertebrae (vs. 9–13 in other specimens). We consider it to be anomalous.

Acknowledgements

We thank R.-R. Chen (NMMB-P) for curatorial assistance; J. E. McCosker for improving the manuscript; and Y.-C. Liao for providing the fresh color photos of the new species. Data for the Australian specimens were provided by J. Pogonoski (CSIRO), for the Indian specimen by D. Ray (ZSI), and for the Hainan specimen by E. Karmovskaya (IORAS). This project is supported by the National Museum of Marine Biology & Aquarium, Taiwan and Ministry of Science and Technology, Taiwan.

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