

**New Record of *Diplogrammus goramensis*
(Callionymidae) from Japan**

Tetsuji Nakabo¹, Akihisa Iwata² and Yuji Ikeda²

¹Department of Fisheries, Faculty of Agriculture,
Kyoto University, Kyoto 606-01 Japan

²Laboratory of Ichthyology, Akasaka Imperial Palace,
Minato-ku, Motoakasaka 2-1-4, Tokyo 107 Japan

A West Pacific callionymid species, *Diplogrammus goramensis* (Bleeker) was collected from the Yaeyama Islands and Okinawa-jima, Japan. Because this species is recorded for the first time from Japan, we here describe it.

Counting and measuring methods follow Nakabo (1982). Vertebrae were counted from soft-X-ray negatives.

Diplogrammus goramensis (Bleeker)
(New Japanese name: Minami-kobunumeri)
(Fig. 1)

Callionymus goramensis Bleeker, 1858: 214 (Goram Archipelago). Günther, 1861: 149 (after Bleeker, 1858).

Dicallionymus goramensis: Fowler, 1941: 30 (Pandanan Isl.). Herre, 1953: 780 (after Fowler).

Diplogrammus goramensis: Gill, 1865: 143, footnote (new genus). de Beaufort, 1951: 67-70, fig. 13 (description from the type, Goram Archipelago). Schultz, 1960: 400-402, fig. 130 (Bikini Atoll, Rongelap Atoll, Eniwetok Atoll, Rongerik Atoll). Fricke, 1982: 71 (listed). Nakabo, 1982: 80 (listed). Zheng, 1987: 403, fig. 2106 (South China Sea). Myers, 1989: 218, fig. 2e (after Fricke, 1983). Randall, Allen and Steene, 1990: 388, color photo (western Pacific from China to Fiji).

Diplogrammus (Diplogrammus) goramensis: Fricke, 1983: 493-504, fig. 148 (western Pacific).

Synchiropus goramensis: Bleeker, 1879: 101-102 (reviewed). Bleeker, 1983: pl. 421-fig. 5 (figure of the type).

Callionymus cookii Günther, 1871: 665 (Rarotonga, Cook's Islands). Günther, 1876: 192, pl. 63-B (Rorotonga). Weber, 1913: 524 (Tual, Kei-Inseln). Fowler, 1928: 423 (Fakarava). Fowler, 1949: 143 (Ovalau, Tuamotus).

Callionymus cooki: Jordan and Seale, 1906: 415 (after Günther). Herre, 1936: 391, fig. 35 (Ovalau, Fiji).

Diplogrammus cooki: Nakabo, 1982: 80 (listed).

Dermosteira drotheae Schultz, 1943: 267-268, fig. 26 (Rose Island, American Samoa). Fowler, 1949: 144 (after Schultz, 1943).

Material examined. FAKU (Department of Fisheries, Faculty of Agriculture, Kyoto University) 58645, a female, 24.6 mm SL, Kabira Bay, Ishigaki-jima, Okinawa Pref., 3rd

Oct., 1990. FAKU 58719, a male and a female, 24.9-31.3 mm, Yonehara, Ishigaki-jima, Okinawa Pref., 2nd Jul., 1991. URM-P (Department of Marine Sciences, University of the Ryukyus) 5194, a female, 35.6 mm, the coast between Akasaki and Minamionna, Okinawa-jima, Okinawa Pref., 13th Aug., 1982. URM-P 5198, a female, 30.9 mm, in a seagrass band, Takana, Iriomote-jima, Okinawa Pref., 26th July, 1974. URM-P 5601, 3 males and 2 females, 18.4-34.9 mm, Ishigaki-jima, Okinawa Pref., 26th July, 1980. URM-P 5602, a male and a female, 37.1-47.2 mm, Yonehara, Ishigaki-jima, Okinawa Pref., 29th July, 1980. IOP (Izu Oceanic Park) 2916, 2939, 2 females, 18.4-18.5 mm, Kabira Bay, Ishigaki-jima, Okinawa Pref., sandy bottom 10-15 m depth, coll. by H. Senou et al., 3rd Sep., 1991.

Diagnosis. This species clearly differs from other species of *Diplogrammus* as follows: unbranched infraorbital canal, 17-18 pectoral rays, very short upward and downward branches of lateral line; in male, cheek with 2 or 3 transverse dark bands accompanied by 2 narrower dark lines on both sides and anal fin dark with many darker spots.

Description. D IV-8 (in one specimen, V-8, probably anomaly); A 7; P₁ ii-iii + 15-16 (totally 17-18); P₂ I, 5; C i + 7 + ii; VN 7 + 13.

Proportional measurements (% SL, range and mean, male and female). Body width, 16.4-18.7 (17.6); 14.9-20.1 (18.7). Body depth, 11.2-12.9 (12.2); 10.4-14.1 (12.7). Caudal peduncle depth, 5.7-6.9 (6.3); 5.2-7.0 (6.1). Predorsal length, 28.6-32.5 (29.9); 30.6-34.8 (32.0). Caudal fin length, 27.7-32.4 (30.2); 22.0-30.1 (26.0). Head length, 25.8-29.8 (27.6); 24.8-28.8 (27.2). Eye diameter, 7.0-10.9 (8.7); 8.4-10.3 (9.4). Snout length, 8.0-9.8 (9.0); 6.5-10.0 (8.2). Upper jaw length, 8.5-9.3 (8.8); 8.0-9.1 (8.4). Interorbital width, 0.2-1.5 (0.8); 0.2-2.4 (0.9). 1st dorsal spine length, 22.0-44.5 (31.1); 10.3-15.6 (12.4). 2nd dorsal spine length, 12.0-14.0 (12.8); 8.1-12.6 (10.4). 3rd dorsal spine length, 9.2-12.9 (11.2); 5.9-11.0 (8.4). 4th dorsal spine length, 4.6-8.3 (6.9); 2.7-6.5 (4.6). 1st dorsal ray length, 17.6-19.9 (18.7); 16.3-19.7 (18.1). Last dorsal ray length, 18.7-22.9 (20.3); 13.6-17.8 (15.4). 1st anal ray length, 9.7-11.8 (10.8); 8.5-12.0 (10.0). Last anal ray length, 14.6-19.3 (16.7); 11.4-14.9 (12.9). Pectoral fin length, 8.3-10.1 (8.8); 19.9-23.9 (22.2). Pelvic fin length, 30.5-32.5 (31.2); 27.7-33.7 (30.6). Preopercular spine length, 8.3-10.1 (8.8); 8.0-10.9 (9.3). Anal papilla length, 2.4-3.4 (2.9); 0.1-0.3 (0.2).

Body elongate and depressed. Head depressed. Snout somewhat long. Eye large. Interorbital space

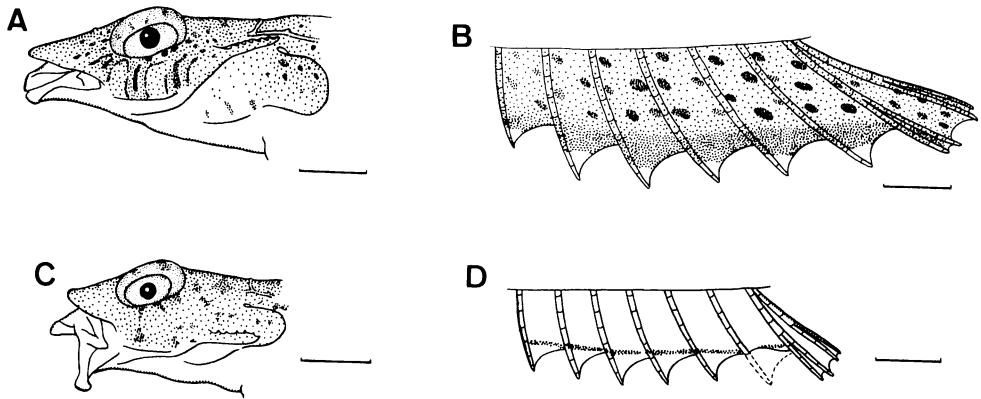


Fig. 1. *Diplogrammus goramensis* (Bleeker) from Ishigaki-jima, Japan. A and B, lateral view of head and anal fin of male, URM-P 5602 a, 47.2 mm SL. C and D, lateral view of head and anal fin of female, URM-P 5602 b.

narrow and concave. Gill-opening a little behind midway between dorsoposterior edge of eye and upper origin of pectoral fin, opercular flap below it. Longitudinal dermal fold on lower part of lateral side of body. Preopercular spine long with an antrorse process at base; innerside with 3-7 upward processes; posterior tip upcurved. Upper jaw protractile, its posterior end almost reaching anterior margin of eye. Teeth on jaws villiform in broad bands. Palatine and prevomer toothless. Anal papilla conical, more elongate in male than in female.

Cephalic lateral line developed (Nakabo, 1982, fig. 24E); infraorbital canal simple, reaching only posteroventral margin of eye; postocular commissure not connected with preoperculo-mandibular canal. Lateral line single, running along upper side of body, strongly curved below 1st dorsal fin and anterior half of 2nd dorsal fin, and with no transverse lateral line commissure on dorsal surface of caudal peduncle.

First dorsal fin beginning a little behind midway between gill-opening and upper origin of pectoral fin; 1st spine elongate and filamentous in males, but not in females. Second dorsal fin emarginated; elevated posteriorly in males, not elevated posteriorly in females; dorsal rays unbranched except for last; last ray divided at base; both branches of last ray divided distally. Anal rays increasing in length posteriorly and unbranched except for last; last ray divided at base; both branches of last ray divided distally. Pectoral fin with upper half slightly concave, lower half slightly convex, reaching 3rd or 4th dorsal ray. Pelvic fin rounded, reaching 2nd anal ray. Caudal fin

round.

Color in 70% ethyl alcohol. Body marbled light brown with 5 darker bands dorsally; lateral side and ventral surface with many dark spots in males, white in females. Longitudinal dermal fold with many small dark spots in male, with 7 or 8 dark spots in female. Cheek with 2 or 3 transverse dark bands accompanied by 2 narrower dark lines on both sides in males, with some irregular marks in females. First dorsal fin faint dark with irregular white marks in males, dark with some white circles in females. Second dorsal fin with 3 or 4 dark marks on each membrane, 2 dark brown lines along distal margin in males; transparent and with 3 or 4 dark spots on each ray in females. Anal fin dark with many darker circles, distal margin darker in males; transparent with a longitudinal dark line near distal margin in adult females, without a dark line in young females. Pectoral fin with some dark spots in male, almost transparent in female. Pelvic fin faint dark with some darker spots in male, transparent with some dark spots in female. Caudal fin with dark marks, and with 2 dark brown lines along distal margin of upper half, lower margin dark brown in males; with some dark marks on middle part, a longitudinal dark line near lower margin in females.

Distribution (Fig. 2). In Japanese waters, *D. goramensis* is distributed mainly in the Yaeyama Islands, and is very rare in Okinawa-jima. Up to now, *D. goramensis* has not been found from Amami Islands northward. On the other hand, the closely related species *Diplogrammus xenicus* (Jordan et

Thompson, 1914) is distributed in Okinawa-jima northward to the Izu Peninsula and Miyake-jima, and off the middle part of Honshu. It is very rare in Yaeyama Islands.

Remarks. *D. goramensis* is closely related to *D. xenicus* in having short upward and downward branches of the lateral line, similar coloration of the second dorsal and caudal fins in males, and similar coloration of the first and second dorsal and anal fins in females. *D. goramensis* differs from *D. xenicus* in having an unbranched tip of the infraorbital canal (tip branched in the latter) and in the coloration of the anal fin in adult males.

Callionymus cookii Günther is a junior synonym of *D. goramensis* as stated by Fricke (1983). In addition to the characters examined by Fricke (1983), We examined the infraorbital canal of the holotype of *C. cookii* (BM (NH) 1871.9.13.230), and We found the same pattern as in *D. goramensis*.

Ochiai's (1963) specimens of *D. goramensis* from the Amami Islands have already been identified as *D. xenicus* by Nakabo (1983).

Dermosteira drotheae Schultz (1943) is apparently *D. goramensis* according to the characters shown by him.

Comparative material examined. *D. goramensis*: BM (NH) (Natural History Museum, London) 1871.9.13.230., holotype of *Callionymus cookii*, a male, 61.0 mm SL, Rorotonga, Godeffroy. USNM (National Museum of Natural History, Washington, D.C) 23687, 23688, 2 males and a female, 18.8–33.3 mm, 1°9'30''S, 144°22'30''E along south edge of channel between Pelleluhu Group and Ningo Group, Papua New Guinea, 6–25 ft depth, coll. by V. G. Springer et al., 26 Oct., 1978. *D. xenicus*: specimens examined by Nakabo (1983). URM-P 5200, a male, 73.7 mm, Sesoko-jima, Okinawa-jima, Okinawa Pref., coll. by Takahira, 3 July, 1977. URM-P 5599, male, 32.4 mm, reef edge, Sesoko-jima, Okinawa-jima, Okinawa Pref., coll. by T. Yoshino, 12 July, 1977. URM-P 5600, a male and a female, 48.5–54.4 mm, northeastern part of Sesoko-jima, Okinawa-jima, Okinawa Pref., coll. by T. Yoshino, 26 May, 1988. NSMT-P (National Science Museum, Tokyo) 21713, paratype of *Synchiropus kiyoeae* Fricke et Zaiser, a female, 19.6 mm, 5–13.5 m depth, Toga-Bay, Miyake-jima, coll. by M. J. Zaiser, 26 July, 1982. Uncatalogued, a female, 23.4 mm, Kashiwa-jima, Kochi Pref., coll. by W. Hiramatsu and A. Iwata, 14 Aug., 1991.

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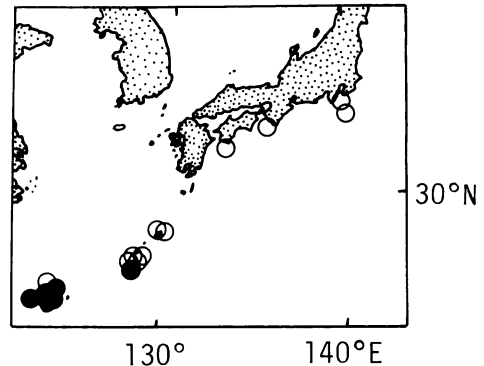


Fig. 2. Distribution of *D. goramensis* (solid circles) and *D. xenicus* (open circles) in the Japanese Archipelago.

History Museum, London, Dr. Victor G. Springer and Ms. Susan L. Jewett of National Museum of Natural History, Washington, D.C. and Dr. Keiichi Matsuura of National Science Museum, Tokyo for the loan of specimens.

Literature cited

- Bleeker, P. 1858. Bijdrage tot de kennis der vischfauna van den Goram-Archipel. Nat. Tijdschr. Needer.-Indie, 15: 197–218.
- Bleeker, P. 1879. Révision des espèces insulindiennes de la famille des Callionymoides. Versl. Meded. Akad. Afd. Nat., 2nd Ser., 14: 79–107.
- Bleeker, P. 1983. Atlas ichthyologique des Indes Orientales Néerlandaises, plates for volumes XI–XIV. Smithsonian Institution Press, Washington, D.C., 12 pp., pls. 421, 422–424, 431–447, 449–474, 476–479, 481–482, 484–537, 539–575.
- de Beaufort, L. F. 1951. Family Callionymidae. Pages 50–81 in L. F. de Beaufort and W. M. Chapman: Fishes of the Indo-Australian Archipelago, vol. 9, Percomorphi (concluded), Blennoidea, E.J. Brill, Leiden.
- Fowler, H. W. 1928. The fishes of Oceania. Mem. Bernice P. Bishop Mus., 10: i–iii, 1–540.
- Fowler, H. W. 1941. New fishes of the family Callionymidae, mostly Philippine, obtained by the United States Bureau of Fisheries steamer "Albatross". Proc. U. S. Natn. Mus., 90(3106): 1–31.
- Fowler, H. W. 1949. The fishes of Oceania-suppl. 3. Mem. Bernice P. Bishop Mus., 12: 37–186.
- Fricke, R. 1982. Nominal genera and species of dragonets (Teleostei: Callionymidae, Draconettidae). Ann. Mus. Civico Stor. Natr. Genova, 84, 1982: 53–92.
- Fricke, R. 1983. Revision of the Indo-Pacific genera and species of the dragonet family Callionymidae. Theses

- Zoologicae, vol. 3, J. Cramer, Braunschweig, x+774 pp.
- Gill, T. N. 1865. On a new family type of fishes related to the Blennioids. *Ann. Lyceum Natr. Hist.*, New York, 8, 1865: 141-144.
- Günther, A. 1861. Catalogue of the fishes in the British Museum, 3, London, xxv+586 pp.
- Günther, A. 1871. Report on several collections of fishes recently obtained for the British Museum. *Proc. Zool. Soc. London*, 1871(1872): 652-675, pls. 53-70.
- Günther, A. 1876. Andrew Garrett's Fische der Sudsee; 6. *J. Mus. Godeffroy*, (13), 1877: 169-216, pls. 101-120.
- Herre, A. W. C. T. 1936. Fishes of the Crane Pacific Expedition. *Publ. Field. Mus. Natr. Hist.*, 353, *Zool. Ser.*, 21, 1936: 1-472.
- Herre, A. W. C. T. 1953. A check list of the fishes of the Philippines. *Fish and Wildlife Service, U.S. Dept. Int., Res. Rep.*, 20, 1953: 1-977.
- Jordan, D. S. and A. Seale. 1906. The fishes of Samoa. Descriptions of the species found in the archipelago, with a provisional checklist of the fishes of Oceania. *Bull. U. S. Bur. Fishr.*, 25, (1905): 175-455, pls. 33-53.
- Jordan, D. S. and W. F. Thompson. 1914. Record of the fishes obtained in Japan in 1911. *Mem. Carnegie Mus.*, 6 (4): 205-314, pls. 1-19.
- Myers, R. F. 1989. Micronesian reef fishes. *Coral Graphics, Territory of Guam*, vi+299 pp., 144 pls.
- Nakabo, T. 1982. Revision of genera of the dragonets (Pisces: Callionymidae). *Publ. Seto Mar. Biol. Lab.*, 27 (1/3): 77-131.
- Nakabo, T. 1983. Revision of the dragonets (Pisces: Callionymidae) found in the waters of Japan. *Publ. Seto Mar. Biol. Lab.*, 27(4/6): 193-259.
- Ochiai, A. 1963. Two dragonet fishes obtained from the tidal zone of the Amami Islands. *Bull. Misaki Mar. Biol. Inst., Kyoto Univ.*, (4): 63-74.
- Randall, J. E., G. R. Allen and R. C. Steene. 1990. The complete diver's and fisherman's guide to fishes of the Great Barrier Reef and Coral Sea. Crawford Howse Press, Bathurst, xx+507 pp.
- Schultz, L. P. 1943. Fishes of the Phoenix and Samoan Islands collected in 1939 during the expedition of the United States Steamer "Bushnell". *Bull. U.S. Natn. Mus.*, 180: i-x+1-316.
- Schultz, L. P. 1960. Family Callionymidae. Pages 397-410 in Schultz, L. P. et al., *Fishes of the Marshall and Marianas Islands 2*. *Bull. U.S. Natn. Mus.*, 202(2).
- Weber, M. 1913. Die fische der Siboga-Expedition. *Siboga-Expeditie 57*. E.J. Brill, Leiden, xii+710 pp.
- Zheng, W. 1987. Callionymoidei. Pages 402-408, 1276-1283 in Q. Cheng and B. Zheng eds. *Systematic synopsis of Chinese fishes*, Science Press, Beijing, China.

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日本初記録のネズボ科ミナミコブヌメリ (新称)

中坊徹次・岩田明久・池田祐二

沖縄県西表島, 石垣島, 沖縄本島から, ネズボ科コブヌメリ属の *Diplogrammus goramensis* (Bleeker) (ミナミコブヌメリ: 新称) を得た。本種は日本初記録なので記載した。

本種はコブヌメリ *D. xenicus* に極めてよく似ているが, 頭部側線系の眼下管の先端が分枝していないことで区別される。その他, コブヌメリとは, 成熟した雄の頬部と臀鰭の斑紋が異なっている。本種は西部太平洋の島々にごく普通にみられる。

(中坊: 606-01 京都市左京区北白川追分町 京都大学農学部水産学教室; 岩田・池田: 107 東京都港区元赤坂 2-1-8 赤坂御所魚類研究室)