

First Record of the Gobiid Fish, *Kelloggella centralis*, from Japan

By

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The genus *Kelloggella* is characterized by having a naked body, an elongate head and body, and tricuspid teeth (HOESE, 1975). Fishes of this genus have been known from islands of the tropical and subtropical Pacific Ocean (JENKINS, 1903; JORDAN and SEALE, 1906; HERRE, 1927, 1936; FOWLER, 1946; HOESE, 1975).

In a tide pool at Amami-Ōshima of the Ryukyu Islands, two specimens of *Kelloggella centralis* were caught in 1970. As this species is new to Japan, several characters of the fish will be described in the present paper.

Methods

All measurements were made using the Olympus tool-maker's microscope (STU). Vertebral and unpaired fin ray counts were taken from radiographs. Pectoral fin ray counts were given for both sides. All specimens are deposited at the Department of Zoology, National Science Museum, Tokyo.

Kelloggella centralis HOESE

(Figs. 1-3)

Kelloggella centralis HOESE, 1975, p. 482, figs. 2-3.

Material. Two specimens, a male, NSMT-P 18254, 19.1 mm in standard length, 23.3 mm in total length, and a female, NSMT-P 18255, 18.1 mm in standard length, 22.2 mm in total length, collected at Uken (28°18' N, 129°13' E), Amami-Ōshima Island, Kagoshima Prefecture, on August 7, 1970.

Description. First dorsal VI; second dorsal I, 9 (male) or I, 10 (female); anal I, 7; pectoral 12; pelvic I, 5; segmented caudal rays 9+7=16, principal caudal rays 7+6=13; vertebrae including urostyle 11+15=26.

Measurements are shown in Table 1.

Body elongate, compressed. Head elongate, blunt, depth 1.6 in its length, width 1.7. A pair of deep grooves on the underside of head (Fig. 2). Snout compressed, short, and its profile very bluntly rounded. Mouth slightly oblique, subterminal, ending approximately under the middle of eye. Upper and lower jaws rather large, subequal.

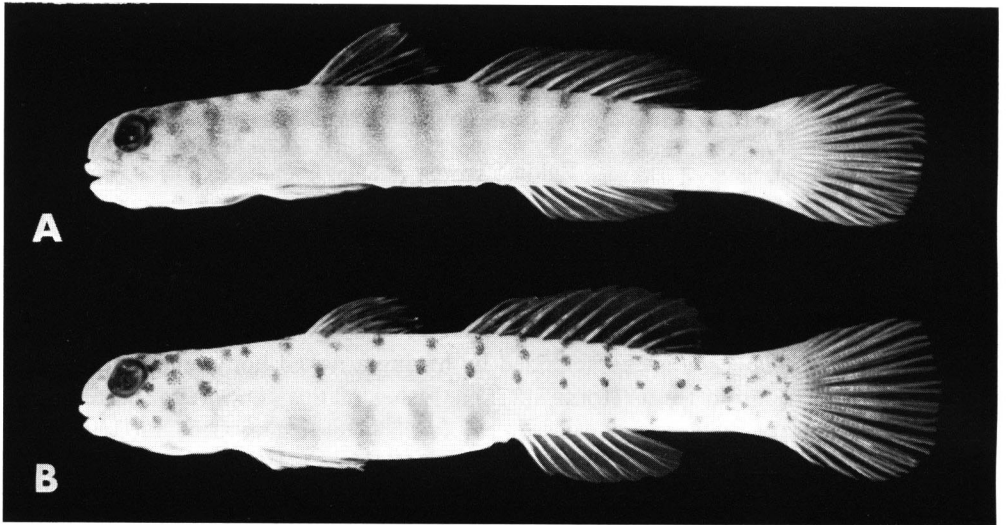


Fig. 1. *Kelloggella centralis*, from Amami-Ōshima Island. — A, Male, NSMT-P 18254, 19.1 mm SL; B, female, NSMT-P 18255, 18.1 mm SL.

Teeth of jaws tricuspid, outer row of teeth enlarged. Vomer and palatine without teeth. Eyes located at the anterior part of head, and pupil wider than interorbital space. Gill-opening narrow and slightly oblique. Head and body naked.

Sensory canal absent, head pores absent. Microscopic pit lines present: on lower margin of operculum, below lower lip, above upper lip, between nostrils, between eyes, behind eye, and upper margin of operculum (Fig. 2).

First dorsal fin pointed, its foremost spine highest.

Urogenital papilla large and depressed, cylindrical in shape, with median groove in female (Fig. 3A). Female with large eggs.

Color in formalin. Male: Body light brown with 12 dark brown vertical bands; posterior bands very indistinct. Nape with 2 transverse brown bands similar to those on body. Several spots radiating from lower margin of eye. A prominent black spot on membrane between fifth and sixth dorsal spines (Fig. 3D). Anal, pectoral, pelvic and caudal fins without any spot or band.

Female: Body light brown with about 12 vertical series of dark brown spots. Top of head with brown spots similar to vertical series of spots on body. Several spots radiating from lower margin of eye. Margins of first and second dorsal fins dusky. No prominent black spot on membrane of first dorsal fin (Fig. 3C). Anal, pectoral, pelvic and caudal fins without any spot or band.

Distribution. Cook Islands, Eniwetok Atoll in the Marshall Islands, and Amami-Ōshima in the Ryukyu Islands.

Remarks. *Kelloggella oligolepis*, *K. quindecimfasciata* and the male of *K. centralis* closely resemble one another in the first dorsal, anal, and pelvic ray counts, coloration

Table 1. Comparison of characters of *Kelloggella centralis*, *K. oligolepis* and *K. quindecimfasciata*.

| | <i>K. centralis</i> | | | <i>K. quindecim-</i> <i>fasciata</i> | <i>K. oligolepis</i> | |
|--|-------------------------|-----------------|-----------------------------|---|----------------------|------------------------------|
| | NSMT-P 18254 male | 18255 female | HOESE (1975) | Holotype | JENKINS (1903) | HOESE (1975) |
| Locality | Amami-Ōshima | Marshall Is. | | Ryukyu Is. | Hawaii | Hawaii & Easter |
| Number of specimens | 1 | 1 | 30 | 1 | ? | 77 |
| First dorsal fin | VI | VI | VI | VI* | VI | VI |
| Second dorsal fin | I, 9 | I, 10 | I, 10 (rarely I,9; I,11) | I, 10* | 12 | I, 11 (rarely I,10; I,12) |
| Anal fin | I, 7 | I, 7 | I, 7 (rarely I,8) | I, 7* | 7 | I,7 (rarely I,6; I,8) |
| Pelvic fin | I, 5 | I, 5 | I, 5 | I, 5* | I, 5 | I, 5 |
| Pectoral fin | 12 | 12 | 12 (rarely 13) | 12* | 15 | 13-14 (rarely 12) |
| Segmented caudal rays | 16 | 16 | 16 (rarely 15) | 15* | | 15 (rarely 13, 14) |
| Standard length | | | | | | |
| Head length | 4.4 | 4.5 | 4.5 | 4.5** | 4.5 | |
| Standard length | | | | | | |
| Body depth | 7.5 | 5.9 | 6.8 | 7.8** | 5.75 | |
| Head length | | | | | | |
| Eye diameter | 4.6 | 4.0 | 4.5 | | 4.0 | |
| Head length | | | | | | |
| Snout length | 5.9 | 5.8 | 3.8 | 6.3** | 4.5 | |
| Head length | | | | | | |
| Least caudal peduncle | 1.9 | 2.0 | 2.0 | 3.45** | | |
| Number of vertical bands of male body | 12 | | 11-13 | 11*** | 12 | 8-11 |
| A black spot on 1st dorsal fin | present | absent | present (♂), absent (♀) | | | present (♂ & ♀) |
| Sexual dichromatism | distinct | | distinct | | | indistinct |

* After HOESE (1975).

** After SAUL (personal communication).

*** After FOWLER (1946).

and proportional measurements (Table 1). *Kelloggella centralis* differs from *K. oligolepis* in the second dorsal, pectoral and segmented caudal ray counts, and the marked sexual dichromatism (HOESE, 1975). As shown in Table 1, *K. quindecimfasciata* agrees with *K. centralis* in the second dorsal and pectoral ray counts, and with *K. oligolepis* in the segmented caudal ray counts. HOESE (1975) synonymized *K. quindecimfasciata* with *K. oligolepis* on the basis of its dentition and color pattern. In these features, however, it closely resembles the male of *K. centralis* as well as *K. oligolepis*, so that these features do not support the view that *K. quindecimfasciata* is a synonym of *K. oligolepis*. As *K. quindecimfasciata* was described on the basis of

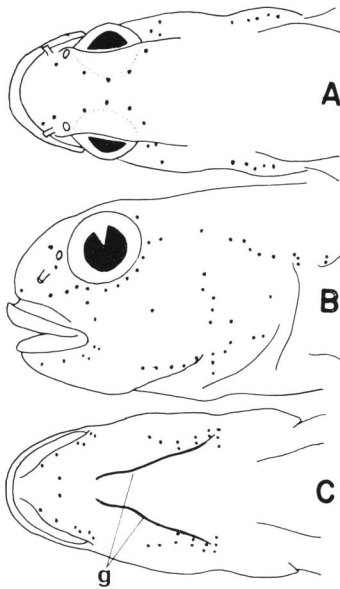


Fig. 2. Pit lines on head of *K. centralis*.
— A, Dorsal view; B, lateral view;
C, ventral view. g, Groove.

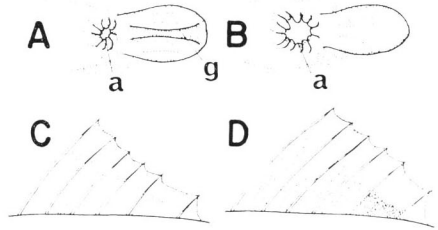


Fig. 3. Urogenital papilla and first dorsal fin in *K. centralis*. — A and C, Female; B and D, male. a, Anus; g, groove.

only one specimen, variations in its fin ray counts and coloration remain unknown. Under this situation, it is impossible to determine the relationship between *K. quindecimfasciata* and *K. centralis*, or between *K. oligolepis* and *K. quindecimfasciata*. When further material is examined, *K. centralis* may become a synonym of *K. quindecimfasciata*. The author has provisionally identified the present specimens with *K. centralis*, as they agree with the original description and figures given by HOESE (1975).

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