

Record of the Parabrotulid Fish *Parabrotula plagiophthalma* from Japan

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The meso- and bathypelagic fish family Parabrotulidae consists of only three species: *Parabrotula plagiophthalma* Zugmayer, *Leucobrotula adipata* Koefoed, and *Parabrotula* sp. reported by Miya and Nielsen (1990). The family is characterized by an eel-like body, loose skin, confluent vertical fins, lack of pelvic fin, two nostrils on each side of head, and no sensory pores on head (Nielsen, 1968, 1986; Anderson, 1986). Detailed redescrptions of *P. plagiophthalma* and *L. adipata* were made by Nielsen (1968). Although *L. adipata* is known only from limited sites in the eastern North Atlantic, *P. plagiophthalma* is rather widely distributed in the North Atlantic, the southwestern Indian, the eastern South Pacific, and the western North Pacific Oceans (Nielsen, 1968, 1986, pers. com.; Anderson, 1986; Parin et al., 1977). Parin et al. (1977) reported a single specimen of *P. plagiophthalma* from the Ryukyu Trench, but did not give complete collection data.

In the present paper, we report specimens of *P. plagiophthalma* from the western North Pacific off northern to central Japan. Methods for counts and measurements follow those of Nielsen (1968) and Hubbs and Lagler (1964). Vertebral and vertical fin ray counts were partly taken from radiographs. The present specimens are deposited at the Fisheries Research Laboratory, Mie University (FRLM).

Parabrotula plagiophthalma Zugmayer, 1911
(New Japanese name: Nise-itachiuo)
(Fig. 1)

Parabrotula plagiophthalmus Zugmayer, 1911: 10-11 (type locality: eastern North Atlantic); Fowler, 1936: 1071-1072 (eastern North Atlantic off Azores); Nielsen, 1968: 227-238 (North Atlantic); Parin et al., 1977: 151 (western North Pacific at Ryukyu Trench); Nielsen, 1986: 1152 (North Atlantic, Gulf of Guinea, and South

Pacific).

Parabrotula plagiophthalma: Anderson, 1986: 343 (Indian Ocean off South Africa).

Parabrotula dentiens Beebe, 1932: 81-83 (type locality: western North Atlantic off Bermuda).

Material examined. Nine specimens, 14.0-48.7 mm in standard length (SL). FRLM 7720, 1 specimen, 18.3 mm SL, male, 33°56.8'N, 136°43.5'E-33°56.5'N, 136°47.8'E, off Mie Pref., central Japan, 800-0 m, IKMT operated by the T. V. Seisui Maru, 25 April 1988; FRLM 7721, 1 specimen, 16.5 mm SL, female, 33°56.4'N, 136°48.4'E-33°55.8'N, 136°52.5'E, 800-0 m, off Mie Pref., IKMT by the T. V. Seisui Maru, 26 April, 1988; FRLM 7722, 1 specimen, ca. 17 mm (tail damaged), male, 33°58.5'N, 136°57.3'E-33°55.5'N, 136°55.4'E, off Mie Pref., 760-0 m, IKMT by the T. V. Seisui Maru, 25 April, 1988 (cleared and stained); FRLM 10077, 1 specimen, 14.0 mm SL, 33°59.5'N, 136°38.0'E-33°58.0'N, 136°37.2'E, off Mie Pref., IKMT by the T. V. Seisui Maru, 600-0 m, 5 September 1989; FRLM 10562, 1 specimen, 48.7 mm SL, female, 38°35.4'N, 142°38.6'E-39°05.3'N, 142°48.5'E, off Iwate Pref., northern Japan, 1024-0 m, KOC net by the R. V. Kaiyo Maru, 24 October 1979; FRLM 10563-10565, 3 specimens, 29.8-34.9 mm SL, females, 35°30.3'N, 142°00.2'E-35°39.7'N, 142°07.1'E, off Chiba Pref., central Japan, IKMT by the R. V. Hakuho Maru, 780-0 m, 23 September 1988; FRLM 10566, 1 specimen, 26.5 mm SL, male, 32°16.3'N, 135°04.7'E-32°25.0'N, 135°11.6'E, off Wakayama Pref., central Japan, IKMT by the R. V. Hakuho Maru, 840-0 m, 28 October 1988.

Comparative material examined. ZMUC (Zoological Museum, University of Copenhagen, Denmark) uncatalogued 1 specimen, 46.7 mm SL, female, 41°13'N, 26°38'W, eastern North Atlantic off Portugal, 1900-0 m, 2 July 1982.

Description. Counts and proportional measurements are shown in Table 1.

Body long, naked, and somewhat compressed. Skin loose, thin but not gelatinous. Dorsal and anal fins united with caudal fin. No pelvic fins. Dorsal fin origin at about mid-length, a little anterior to anal fin origin. Snout pointed. Two nostrils on each side of snout. Mouth small; end of upper jaw below anterior part of eye. Lower jaw projecting anteriorly beyond upper. Dentary teeth small, pointed and recurved, when present. Premaxillaries and palatines edentate. Vomerine teeth present or absent. Eyes elliptical, covered with transparent skin. Gill opening large, extending ventrally to throat. Gill rakers small and few. Branchiostegal membranes free from isthmus. Males with a well-developed copulatory apparatus. Lateral line organs running along the middle of body onto tail.

Color in alcohol: Head and body almost uni-

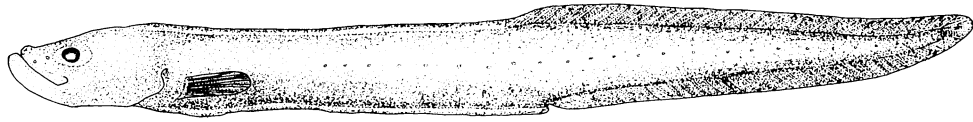


Fig. 1. *Parabrotula plagiophthalma* from Japan, FRLM 10562, 48.7 mm SL, female.

formly dark brown. Ventrolateral portion of the trunk and unpaired fins more strongly pigmented.

Remarks. Most characters of the present specimens agree well with those of the Atlantic specimens described by Nielsen (1968) (see Table 1). *P. plagiophthalma* is closely related to the other confamilial species *L. adipata*, but the former is distinguished from the latter in having a pointed snout and a deeply pigmented skin.

Quite recently, Miya and Nielsen (1990) reported orally that an undescribed species of the genus *Parabrotula* was collected in Sagami Bay, central Japan, and that the species could be distinguished from *P. plagiophthalma* by the vertebral count. Our specimens did not include this undescribed species (Miya, pers. comm.).

All of the Japanese specimens were collected from several stations off the Pacific coast of northern to

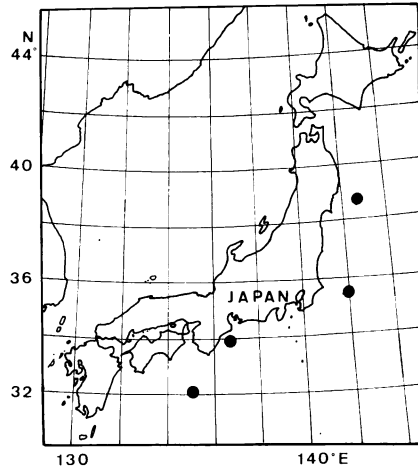


Fig. 2. Distribution of *Parabrotula plagiophthalma* around Japan. Solid circles indicate the stations where the present specimens were collected.

Table 1. Counts and proportional measurements of *Parabrotula plagiophthalma*.

| | North Atlantic | | North Pacific Present study |
|--|-----------------------|---------------|--------------------------------|
| | Nielsen (1968) | Present study | |
| Standard length (SL, mm) | 16-48 | 46.7 | 14.0-48.7 |
| Counts | | | |
| Dorsal fin rays | 37-41 | 38 | 38-41 |
| Anal fin rays | 34-37 | 35 | 34-37 |
| Caudal fin rays | 5-6 | 5 | 5-6 |
| Pectoral fin rays | 6-8 | 6 | 6-7 |
| Branchiostegal rays | 6-7 | 6 | 6 |
| Vertebrae | 21-23 + 33-36 = 56-59 | 21 + 37 = 58 | 21-22 + 33-37 = 55-58 |
| No. of dorsal fin rays prior to anal fin origin | 4-6 | 4 | 4 |
| No. of vertebrae prior to anal fin origin | 22-24 | 22 | 22-23 |
| No. of vertebrae prior to dorsal fin origin | 19-22 | 20 | 19-20 |
| Dentary teeth | 0-10 | — | 0-5 |
| Proportional measurements (% SL) | | | |
| Head length | 14.0-21.0 | 14.1 | 14.4-21.4 |
| Snout length | 4.2-7.5 | 4.5 | 4.1-7.9 |
| Upper jaw length | 4.8-8.7 | 4.9 | 5.1-8.6 |
| Diameter of lens | 1.3-1.7 | 1.7 | 1.4-1.8 |
| Preanal length | 50-55 | 51.8 | 51.4-56.6 |
| Predorsal length | 46-51 | 47.1 | 46.1-50.9 |
| Body depth | — | 8.6 | 7.5-10.3 |

central Japan as shown in Fig. 2. This suggests that *P. plagiophthalma* may be widely distributed in the meso- and bathypelagic zones off the Pacific coast of Japan in spite of its rare collection.

The genera *Parabrotula* and *Leucobrotula* had formerly been referred to the ophidiiform family Brotulidae. Nielsen (1968) moved these genera to the family Zoarcidae and established the subfamily Parabrotulinae for them. Subsequently Nielsen (1973) raised the subfamily to the family Parabrotulidae. Although Anderson (1984) considered that parabrotulids were not close to the Zoarcidae but may have been an offshoot of some ophidiiform ancestor, he later (Anderson, 1986) placed the parabrotulids among the Zoarciformes.

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日本周辺海域から採集されたニセイタチウオ (新称)

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岩手県沖, 千葉県沖, 三重県沖および和歌山県沖の太平洋から中深層性魚類ニセイタチウオ科 (新称) Parabrotulidae の 1 種ニセイタチウオ (新称) *Parabrotula plagiophthalma* Zugmayer 9 個体を採集した。本科は本種と *Leucobrotula adipata* Koefoed, および Miya and Nielsen (1990) によって報告されたニセイタチウオ属 (新称) *Parabrotula* の 1 未記載種の 3 種のみで構成されている。本科魚類は体がやや側扁したウナギ型であること, 不對鰭が連続していること, 腹鰭がないこと, 鼻孔が 2 対であることなどの特徴を有している。本種は北大西洋や南西インド洋, 南北太平洋に分布し, 北大西洋のみに分布する *L. adipata* とは吻が尖っていること, 体が黒色であることなどによって区別される。また, 同属の未記載種とは脊椎骨数などで区別される (宮・Nielsen, 1990; 宮, 私信)。従来の北太平洋での採集記録は Parin et al. (1977) が琉球海溝で採集した 1 個体のみであるが, 著者らの採集結果から, 本種は比較的稀種ではあるが, 日本の太平洋岸に沿った沖合中深層に広く分布しているのではないかと考えられた。

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