First Record of a Liparid Fish, Careproctus melanurus (Teleostei, Scorpaeniformes), from Japan

Kaoru Kido1 and Gento Shinohara2

¹Ohma Town Office, Ohma-cho, Aomori, 039–46 Japan ²Department of Zoology, National Science Museum (Natural History), 3–23–1 Hyakunin-cho, Shinjuku-ku, Tokyo, 169 Japan

Abstract One specimen of a liparid fish, Careproctus melanurus, was captured from off Miyako of Iwate Prefecture, Pacific coast of northern Honshu, Japan, during a ground fish survey conducted by the Fisheries Agency of Japan in 1995. This specimen represents the first record of this species from Japan. C. melanurus is distinguished from the other species of Careproctus by having the following characters: slightly notched pectoral fin; rays of lower lobe of pectoral fin almost free from fin membrane; snout not projecting; dorsal fin rays 53-61; anal fin rays 47-55; pectoral fin rays 27-33; disk oval, shorter than eye diameter, longer than wide; peritoneum black. Intraspecific variation found in meristic characters is discussed.

Key words: Teleostei, Liparidae, Careproctus melanurus, new distribution record, Japan.

A liparid fish, Careproctus melanurus, was captured from off Miyako, Iwate Prefecture, the Pacific coast of Honshu, Japan during a ground fish survey conducted by the Fisheries Agency of Japan in 1995. This species was known from off Pacific coast of Canada and U.S.A. (Stein, 1978), and the Bering Sea (Quast & Hall, 1972; Fedorov, 1973; Eschmeyer et al., 1983). The new specimen provides the first record of the species from Japan.

The specimen examined here is deposited in the Department of Zoology, National Science Museum, Tokyo (NSMT-P), and comparative specimens in the Laboratory of Marine Zoology, Hokkaido University (HUMZ). Counts and measurements follow Stein (1978). Standard length (SL) and head length (HL) are used throughout.

Careproctus melanurus Gilbert, 1892 [New Japanese name: Higashi-konnyaku-uo] (Fig. 1)

Careproctus melanurus Gilbert, 1892: 560; Gilbert, 1896: 469; Gilbert, 1915: 354; Townsend & Nichols, 1925: 15, pl. 3, fig. 1; Burke, 1930: 125, fig. 45; Barnhart, 1936: 72, fig. 226; Clemens & Wilby, 1949: 304, fig. 226; Forrester & Wilson, 1963: 1095, fig. 1; Fitch & Lavenberg, 1968:

121, fig. 66.; Quast & Hall, 1972: 28; Miller & Lea, 1972: 138, fig.; Hart, 1973: 574, fig.; Vogt, 1973: 23; Fedorov, 1973: 25; Stein, 1978: 15; Eschmeyer *et al.*, 1983: 191, pl. 20; Allen & Smith, 1988: 66, fig.

Material examined. NSMT-P 48987, female, 149 mm SL, from 39°24.79′N, 142°18.96′E to 39°29.34′N, 142°20.49′E (off Miyako, Iwate Prefecture, Pacific coast of Honshu, Japan), 633–643 m, 27 Oct. 1995.

Diagnosis. A *Careproctus* with slightly notched pectoral fin; rays of lower lobe of pectoral fin almost free from fin membrane; snout not projecting; dorsal fin rays 53–61; anal fin rays 47–55; pectoral fin rays 27–33; disk oval, shorter than eye diameter, longer than wide; peritoneum black.

Description. Counts: Dorsal fin rays 61, anal fin rays 55, pectoral fin rays 29; caudal fin rays 10; vertebrae 10+57=67; pyloric caeca 36.

Morphometry (% SL): Head length 24.6; body depth 15.2; snout length 8.3; eye diameter 5.6; upper jaw length 12.1; lower jaw length 11.0; length of upper lobe of pectoral fin 19.8; gill opening length 9.3; snout to disk length 15.7; snout to anus length 15.7; disk to anus length 3.4; disk length 4.0; disk width 2.3.

Body gently tapering and attenuating, but caudal region stout. Almost all skin torn off.

Head stout, broad. Interorbital space broad and flattened. Snout blunt, not projecting at all. Eye moderately large, its diameter 4.4 in HL, larger than disk length. Nostril short, but conspicuously tubular above middle of eye. Mouth broad, horizontal. Maxillary extending below middle of eye. Teeth minute, forming moderately wide bands in both jaws. Inner teeth trilobed, outer teeth simple. Gill opening broad, entirely above base of pectoral fin and extending below level of posterior corner of maxillary, its length 2.6 in HL. Opercular flap supported by two spines angled ventrally. Tip of upper spine even with posterior corner of maxillary.

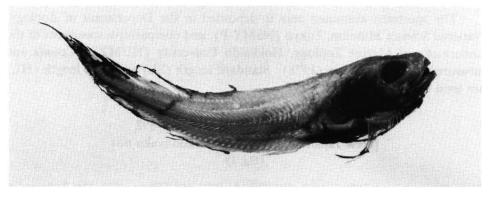


Fig. 1. Careproctus melanurus, NSMT-P 48987, 149 mm SL, from off Miyako, Iwate Prefecture, Japan. Lateral view of right side because of poor condition on left side.

Base of pectoral fin sharply angled anteroventrally. Level of uppermost pectoral fin ray below posterior corner of maxillary. Upper lobe of pectoral fin extending behind origin of anal fin. Lower lobe of pectoral fin extending below tip of opercular flap when depressed. Rays of lower lobe of pectoral fin not counted because of its poor condition, but at least anterior 4 rays completely free from fin membrane. Symphysis of pectoral fin located under chin and below anterior margin of orbit. Origin of dorsal fin above uppermost point of gill opening. Origin of anal fin below 7th dorsal fin ray.

Disk oval and cupped, its width less than the length, its margin thick and fleshy. Anus immediately behind disk, located below posterior margin of orbit.

Stomach and pyloric caeca located on left side of body cavity. Stomach moderately large. Pyloric caeca very long, slender.

Caudal, posterior portions of dorsal and anal fins black. Extant skin on head and body pink. Oral and branchial cavities and peritoneum black. Stomach and pyloric caeca pale.

Distribution. Known from off Pacific coast of Canada and U.S.A., Bering Sea and off Pacific coast of Honshu from depths of 89–2,286 m.

Remarks. The present specimen agrees well with previous descriptions of C. melanurus (Gilbert, 1892; Burke, 1930; Stein, 1978). The prominent differences are its higher counts of dorsal and anal fin rays and vertebrae (61, 55 and 67). According to Stein (1978), the specimens captured from California to British Columbia have 53–57 dorsal fin rays, 47–51 anal fin rays and 57–63 vertebrae. But HUMZ specimens used as comparative material here have 57–60 dorsal fin rays, 49–55 anal fin rays and 60–66 vertebrae, and they were captured from Oregon to the Aleutian Islands. Therefore, all difference between the present specimen and Stein's specimens are due to intraspecific variation in C. melanurus, and their known meristic ranges are extended to 53–61 dorsal fin rays, 47–55 anal fin rays and 57–67 vertebrae.

Comparative material. HUMZ 34423, male, 267 mm SL, 55°55′N, 135°25′ W (southeastern Alaska), 470–510 m, 6 June 1969; HUMZ 67238, male, 147 mm SL, 55°11′N, 156°14′W (Gulf of Alaska), 545–560 m, 14 June 1977; HUMZ 68500, female, 346 mm SL, 50°58′N, 171°00′E (Aleutian Islands), 560–580 m, 25 June 1977; HUMZ 82669, male, 342 mm SL, 55°59.85′N, 170°19.35′W (Bering Sea), 708–780 m, 7 July 1979; HUMZ 88552, female, 350 mm SL, 51°44.23′N, 175°5.68′W (Aleutian Islands), 535–543 m, 1 Aug. 1980; HUMZ 94278, male, 222 mm SL, (Coos Bay, Oregon), depth & date unknown.

Acknowledgments

We thank D. Kitagawa, K. Saito and T. Hattori (Hachinohe Branch, Tohoku National Fisheries Research Institute) for giving us an opportunity to

examine ground fishes. Our thanks also go to the former Captain M. Hasegawa and all officers and crew of the R/V Wakataka-maru of the same institute and to H. Endo (Kochi University) for capturing the study material. Special thanks go to W. N. Eschmeyer (California Academy of Sciences) for reviewing the manuscript.

References

- Allen, M. J. & G. B. Smith, 1988. Atlas and zoogeography of common fishes in the Bering Sea and northeastern Pacific. NOAA Tech. Rep. NMSF Circ., 66: i-iii+1-151.
- Barnhart, P. S., 1936. Marine Fishes of Southern California. 209 pp. Berkeley, Univ. Calif. Press. Burke, C. V., 1930. Revision of the fishes of the family Liparidae. *Bull. U.S. natn. Mus.*, **150**: i-xii +1-204.
- Clemens, W. A. & G. V. Wilby, 1949. Fishes of the Pacific coast of Canada (Revised ed.). *Bull. Fish. Res. Bd. Can.*, 68: 1-368.
- Eschmeyer, W. N., E. S. Herald & H. Hammann, 1983. A Field Guide to Pacific Coast Fishes of North America from the Gulf of Alaska to Baja California. xii+336 pp., 48 pls. Boston, Houghton Mifflin Company.
- Fedorov, V. V., 1973. Ichthyofauna of the continental slope of the Bering Sea and some aspects of its origin and formation. *Izv. tikhookean. nauchno issled. Inst. rybn. Khoz. Okeanogr.*, 87: 3-41. (In Russian.)
- Fitch, J. E. & R. J. Lavenberg, 1968. Deep-water Teleostean Fishes of California. 155 pp. Berkeley, Univ. Calif. Press.
- Forrester, C. R. & R. M. Wilson, 1963. A further record of the blacktail snailfish, *Careproctus melanurus* Gilbert, from British Columbia waters. *J. Fish. Res. Bd. Can.*, 20: 1095-1096.
- Gilbert, C. H., 1892. Description of thirty-four new species of fishes collected in 1888 and 1889, principally among the Santa Barbara Islands and in the Gulf of California. *Proc. U.S. natn. Mus.*, 14: 539-566.
- Gilbert, C. H., 1896. The ichthyological collections of the United States Fish Commission steamer Albatross during the years 1890 and 1891. Rep. U.S. Commnr. Fish., 19: 393-476, pls. 20-25.
- Gilbert, C. H., 1915. Fishes collected by the United States fisheries steamer "Albatross" in southern California in 1904. *Proc. U.S. natn. Mus.*, 48: 305-380, pls. 14-22.
- Hart, J. L., 1972. Pacific fishes of Canada. Bull. Fish. Res. Bd. Can., 180: iv-ix+1-740, pls. 1-8.
 Miller, D. J. & R. N. Lea, 1973. Guide to the coastal marine fishes of California. Calif. Dep. Fish & Game, Fish. Bull., 157: 1-235.
- Quast, J. C. & E. L. Hall, 1972. List of fishes of Alaska and adjacent waters with a guide to some of their literature. NOAA Tech. Rep. NMSF SSRF, 658: i-iv+1-47.
- Stein, D. L., 1978. A review of the deepwater Liparidae (Pisces) from the coast of Oregon and adjacent waters. Occ. Pap. Calif. Acad. Sci., (127): 1-55.
- Townsend, C. H. & J. T. Nichols, 1925. Deep sea fishes of the 'Albatross' Lower California expedition. Bull. Am. Mus. nat. Hist., 52: 1-20, pls. 1-4.
- Vogt, K. D., 1973. New distributional records and description of a new species of liparid from Alaska. Biol. Pap. Univ. Alaska, 13: 22-27.