Additional Information on a Rare Macrourid Fish, *Mesobius antipodum*, from New Zealand

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Hubbs and Iwamoto (1977) recently described two peculiar bathypelagic macrourid fishes as representatives of the genus *Mesobius* with two species, *M. berryi* and *M. antipodum*. The former is known from the North Pacific and the latter only from the holotype from New Zealand.

The holotype of *M. antipodum* is an adult specimen collected by the R/V Kaiyo Maru in 1968, but it is in poor conditions and the original description did not cover some important features.

Twelve specimens of the species were collected again by the R/V Kaiyo Maru, during a deepwater survey of the Chatham Rise and Pukaki Rise off New Zealand in 1977～1978.

It is the purpose of the present note to provide some additional information on this species.

Methods and Material

Methods for taking measurements and counts follow Hubbs and Lagler (1974) and Iwamoto (1970, 1978).

Table 1. Range, mean ($\bar{x}$) and standard deviation (SD) of measurements from 12 specimens of *Mesobius antipodum*. Total length and head length in millimeters; other measurements in percent of head length.

Character	Range	$\bar{x}$	SD	N
Total length	286+～642+			12
Head length	69.4～128.0			12
Body depth	73.9～ 88.5	80.86	3.375	12
Postrostral length	73.2～ 80.4	75.92	1.753	12
Snout length	27.1～ 31.0	29.14	1.111	12
Orbit diameter	24.6～ 30.9	28.20	2.465	12
Interorbital width	33.0～ 37.9	35.39	1.470	8
Postorbital length	46.1～ 52.0	48.57	1.919	12
Orbit to angle preop.	41.9～ 47.0	45.89	1.621	12
Suborbital width	13.9～ 15.7	14.77	0.545	12
Upper jaw length	40.4～ 46.2	42.98	1.616	11
Preanal length	104.1～126.4	115.39	5.630	12
Outer pelvic to anal	10.2～ 21.7	17.19	3.260	11
Isthmus to anal	32.2～ 43.1	38.08	3.935	12
Isthmus to anus	22.7～ 31.5	28.25	2.674	12
1D.-2D. interspace	45.8～ 63.6	56.65	5.389	12
Height 1D.	33.1～ 50.2	42.93	5.833	5
Length P_1.	50.8～ 63.1	56.57	3.977	7
Length P_2.	23.1～ 31.7	26.34	2.755	6
Length outer gill-slit	13.4～ 16.7	15.27	1.057	12

Table 2. Frequency distributions of selected counts from 12 specimens of *Mesobius antipodum*.

	6	7	8	9	10	11	12	13	14	15	16	$\bar{x}$
1st D.					1	5	6					11.42
P_1								1	8	14	1	14.63
P_2	4	19										6.83
Gill rakers I							3	2	16	2		13.74
Gill rakers II							3		20			13.74

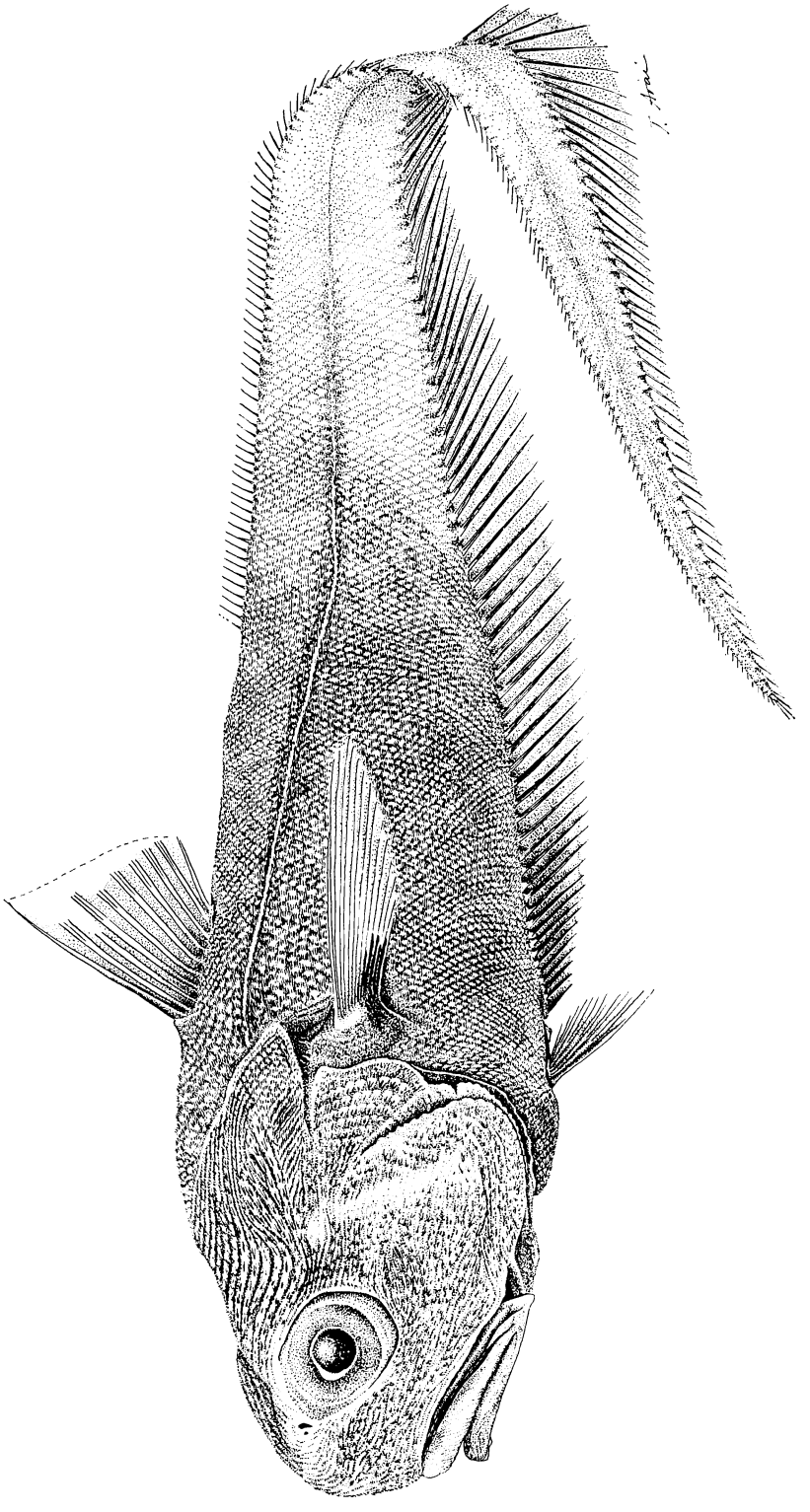

Fig. 1. *Mesobius antipodum* Hubbs et Iwamoto. NSMT-P 18395, 99.6 mm HL, 520 mm TL, from East of South Island, New Zealand, in 1006~1050 m. Fins partially reconstructed.

Material examined: Specimens are deposited at the Far Seas Fisheries Research Laboratory (FSFL), Department of Zoology, National Science Museum, Tokyo (NSMT), Department of Zoology, University Museum, University of Tokyo (ZUMT) and California Academy of Sciences (CAS). In the list below, plus marks (+) with TL indicate that the given specimens have incomplete tails.

ZUMT 54162～54164, 3 specimens (105～123 mm HL, 450+～475+mm TL); CAS 40706, 2 (105 & 108 mm HL, 555+ & 463+mm TL); NSMT-P 18395～18396, 2 (99.6 & 109 mm HL, 520 & 484+mm TL); Chatham Rise slope, off New Zealand, 44°34.2′S, 177°57.9′W, 1006～1050 m, bottom temperature 4.6°C, otter trawl, Kaiyo Maru Sta. T-22, 20 December 1977. FSFL EH-372 (81.8 mm HL, 417+mm TL); FSFL EH-377 (69.4 mm HL, 284+mm TL); NSMT-P 18397 (128 mm HL, 642 mm TL); Pukaki Rise slope, off New Zealand, 48°30.1′S, 171°58.3′E, 870～919 m, bottom temperature 5.0°C, otter trawl, Kaiyo Maru Sta. T-47, 7 January 1978. FSFL EH-618 (124 mm HL, 558+mm TL); Pukaki Rise slope, off New Zealand, 48°29.3′S, 173°00.8′E 874～894 m, bottom temperature 5.0°C, Kaiyo Maru Sta. T-48, 8 January 1978. NSMT-P 18398 (76.6 mm HL, 381+mm TL); Pukaki Rise slope, off New Zealand, 50°00.5′S, 174°59.8′E, 860～861 m, bottom temperature 5.0°C, otter trawl, Kaiyo Maru Sta. T-55, 10 January 1978.

Mesobius antipodum Hubbs et Iwamoto, 1977

Diagnosis. 30～43 small, branched pyloric caeca; inner gill-rakers on first arch 12～15, on second 12～16; snout length 27～32% of head length, interorbital length 33～38% of head length.

Description. Selected counts and measurements are shown in Tables 1 and 2. General features are shown in Fig. 1.

The head and body are compressed, the greatest width of head 52～62% of the greatest body depth. The fin rays are fragile and slender. Most of the head bones are poorly ossified. The supraoccipital crest forms a slight arch in the dorsal profile in natural conditions. Ventral aspects of the abdomen are short; distance from isthmus to anal fin about 1.2～1.5 in orbit diameter. The posterior margin of the preopercular and interopercular bones are finely scalloped or crenulated, that of the opercular bones is distinct in small specimens but is indistinct in large specimens. A small tubercle below the symphysis may be the vestige of a mental barbel. The gill rakers are tubercular, and the gill-filaments are short, the length of the latter is about three-fifths of pupil diameter. The pyloric caeca are short and thick, 7 specimens yield 30, 32, 35, 38, 39, 40 and 43 tips.

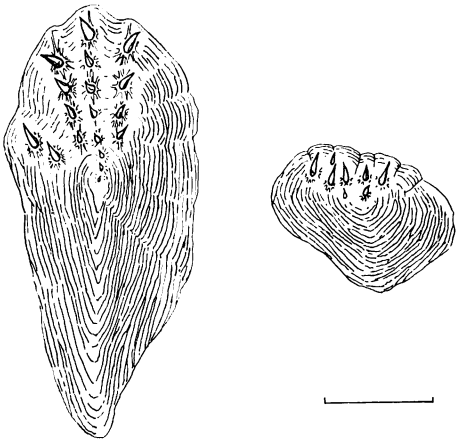

Fig. 2. Scales from *Mesobius antipodum*. Left: Scale from temporal region of head. Right: Scale from between 1st dorsal base and lateral line. Scale line represents 2 mm.

The first dorsal is small, with the greatest height slightly less than the postorbital length. The first ray is small and thornlike, sometimes it is almost hidden under the integument. The second ray is much longer, slender, and near the base it is triangular in cross-section, the leading edge being smooth. The second dorsal is low and poorly developed, without membranes between the rays. The pectorals are slender and pointed. The pelvics are small and slender. The anal is moderately well developed. The first ray is smallest and the others gradually increase in size posteriorly to the 30th ray or so. The pelvics originate below the posterior part of interopercle; the anal origin lies below the pectoral base or slightly behind it.

The head is almost completely scaled except on the gill-membranes, lips, interopercles (sometimes one or two small spinulated scales present) and around the nostrils. All

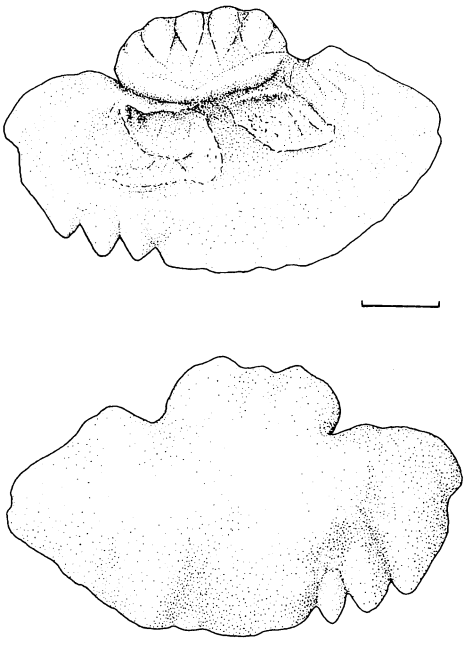

Fig. 3. Otolith (probably left sagitta) from a specimen, 109 mm HL, of *Mesobius antipodum*. Top: Inner view. Bottom: Outer view. Scale line indicates 2 mm.

body scales examined are spinulated (Fig. 2). The scales on the anterior base of the pectoral are very thin, slightly spinulated and highly decidous. The head scales, except those on the opercle, are elongate and spinulated; the striated rows of spinules run in parallel courses and are arranged relatively widely apart over the interorbital posteriad through the temporal regions; they are relatively close together over the snout, infraorbital and postorbital. Over the temporal region, the rows of sigmoidally curved groups are like those of *M. berryi*.

The stomach of a specimen 76.6 mm in head length was full of deep-sea decapod remains.

Coloration in fresh: Dark blue with metallic reflections over most of the head and abdomen except branchiostegal membranes black and lips grayish blue; tail grayish brown.

Remarks. The otoliths of a specimen 109 mm in head length (Fig. 3) are different in shape from those of *M. berryi*. Examined otoliths of other specimens of the species (76.6 mm head length and 105 mm head length) are closely similar in shape to the otolith in Fig. 3.

Hubbs and Iwamoto (1977) illustrated for comparison the shapes of the posterior margin of the subopercle and the posterior margin of the posttemporal region in the two species of *Mesobius*. The results of my examination of 9 specimens of *M. antipodum* suggest that these two characters may be useful in distinguishing *M. antipodum* from *M. berryi*.

Young and adult specimens of *M. antipodum* are now known only from off New Zealand and adjacent waters, but there remains a lack of information on the juveniles.

Acknowledgments

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(6-18-21 Nishi-ōi, Shinagawa, Tokyo 140, Japan)

ニュージーランド沖から採集された *Mesobius antipodum*

荒井 孝男

ソコダラ科の一稀種 *Mesobius antipodum* がニュージーランド沖より採集された．本種は模式標本1個体が報告されただけであった (Hubbs and Iwamoto, 1977)．今回採集された12個体の標本によって，原記載の不十分な点および新たに得られた知見について補足した。本種は今のところ若魚と成魚がニュージーランドから知られているだけである．

(140 東京都品川区西大井 6-18-21)