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Second Specimen of the Snake-eel, *Apterichtus moseri* (Ophichthinae, Ophichthidae)

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In 1988 the R/V *Tansei-Maru* of the Ocean Research Institute, University of Tokyo (ORIUT), dredged a curious snake-eel specimen from the Kumano-nada Sea during KT-88-15 cruise. The finless fish was very large, measured to be 498 mm in total length (TL). Subsequent study of the specimen by us revealed that it represented the second specimen of *Apterichtus moseri,* originally described as *Sphagebranchus moseri* by Jordan and Snyder (1901) based on a single specimen from Suruga Bay, central Japan. The holotype of *S. moseri* is small, being 149 mm TL, and broken into three pieces. The present example is far larger and in a good condition. In this paper we compare this little known species with its Indo-West Pacific allies, and provide diagnostic characteristics of the species which were not included in the original description.

All measurements are straight-line measurement. Head length was measured from the tip of the snout to the posterior margin of the gill opening. Trunk length was taken from the posterior end of the gill opening to the middle of the anus. Number of vertebrae was counted on radiographs. The present specimen has been deposited in ORIUT.

Apterichtus moseri (Jordan et Snyder, 1901)
(Japanese name: Goma-umihebi)
(Figs. 1, 2)

Sphagebranchus moseri Jordan and Snyder, 1901: 864, fig. 14 (original description; type locality: Suruga Bay, Pacific off central Japan); Jordan et al., 1913: 84, fig. 60 (name, reference and locality); Okada and Matsubara, 1938: 91 (in key); Matsubara, 1955: 345 (in key).

Material. *Apterichtus moseri,* ORIUT·KT·8815·13·0001, 498 mm TL, female with unripened eggs, 34°15.96′N, 136°59.01′E—34°16.06′N, 136°59.30′E, Kumano-nada Sea, Pacific off western Japan, depths 111–114 m, 1 m-span dredge, coll. by E. Tsuchida of ORIUT, Aug. 20, 1988.

Comparative material. United States National Museum 49729 (radiographs only), holotype of *Sphagebranchus moseri,* 149 mm TL, Albatross sta. 3700, Suruga Bay off Namadu (corrected as Numadsu by Jordan et al. [1913]), depth ca. 113 m.

Description. *Measurements in mm* (in thousands of TL [498 mm] in parentheses).—Head length 27.5 (55), head and trunk length 237 (476), tail length 262 (526), maximum body depth 8.1 (16), snout length 5.0 (10), eye diameter 2.0 (4), upper jaw length 8.0 (16), length of gill opening 2.9 (6).

Counts.—Total vertebrae 145, preanus vertebrae 63, lateral line pores on head 6, lateral line pores before anus 68. Sensory pores on head are as follows: 1 on frontal commissure, 5 on supraorbital, 5 on infraorbital, 2 on postorbital, 6 on mandible, 3 on preopercle, and 5 on supratemporal commissure.

Body sturdy, greatly elongate (Fig. 1), cylindrical. All fins absent. Tail slightly longer than 1/2 TL. Tips of snout and tail pointed. Head without papillae, rather sharp, much projecting, with well-developed lateral ridges, triangular in cross section, grooved and flattened on underside (Fig. 2). Lips without barbels. Anterior nostril tubular, on underside of snout, placed in a shallow hollow. Posterior nostril along lower margin of upper lip, outside of mouth, located before middle of eye. Eye elliptical, large, 2.5 in snout length and 13.8 in head length. Gill opening ventral. Lateral line represented by a row of conspicuous pores, becoming lower posteriorly. Mouth slightly oblique.

All teeth small, pointed, uniserial in jaws and on prevomer. Five teeth on intermaxillary visible when mouth is closed.

Coloration in alcohol.—Head mottled with brown, lateral line pores on head and sensory pores on side of head in a conspicuous paler spot. Body uniformly dusky silver, with small dark dots.

Remarks. *Apterichtus* is unique among the genera of Sphagebranchini in having no fins, a tubular anterior nostril, the posterior nostril outside of mouth and with a flap, and the eyes moderately developed (McCosker et al., 1989). According to McCosker (1977), two *Apterichtus* species, *A. klazingai* (Weber) and *A. flavicaudus* (Snyder), are known from the Indo-Pacific. However, *Sphagebranchus moseri* from Japan should be included in the

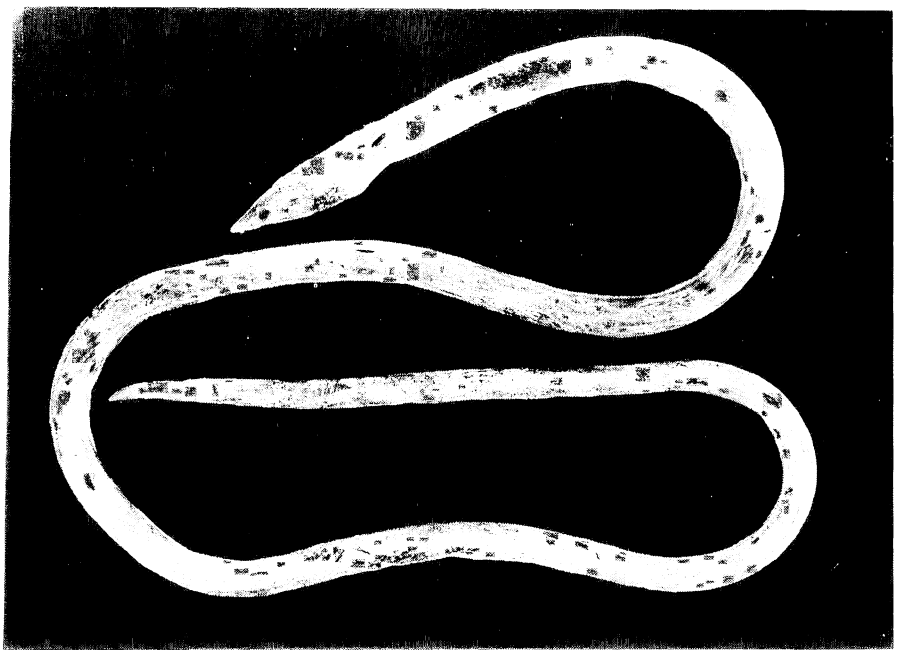

Fig. 1. *Apterichtus moseri*, ORIUT·KT·8815·13·0001, 498 mm TL, from western Japan.

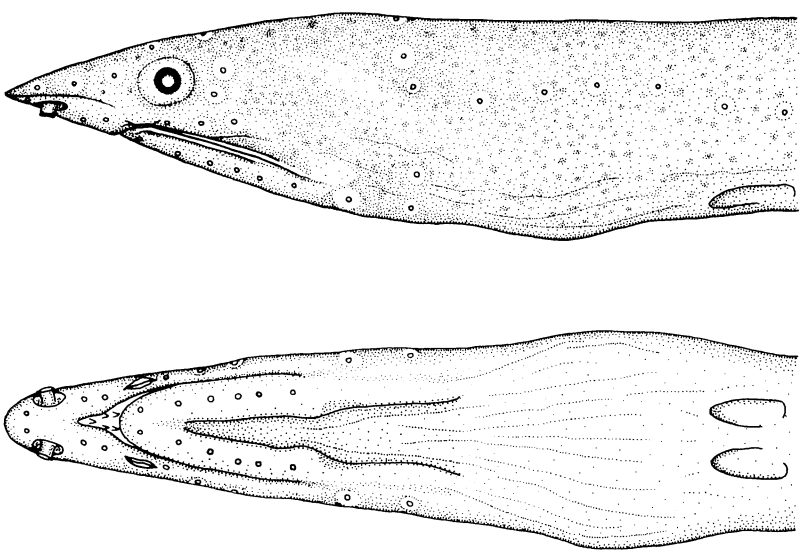

Fig. 2. Head of *Apterichtus moseri*, ORIUT·KT·8815·13·0001. Scale bar indicates 10 mm.

genus *Apterichtus* judging from a diagnosis of the genus *Apterichtus* by McCosker et al. (1989) and the original description of *Sphagebranchus moseri* by Jordan and Snyder (1901). Recently Hatooka et al. (1993) treated *S. moseri* as *A. moseri.* We follow them.

Although the present material differs from the holotype of *S. moseri* in TL (498 mm vs. 149 mm), its proportional measurements generally agree with those of the original description of the holotype: head length in TL (18.1 vs. 15.1), head length in tail length (9.5 vs. 8.2), snout length in head length (5 in both), and eye diameter in snout length (2.5 vs. 2). In addition, our material has 145 vertebrae, and that of the *S. moseri* holotype is 142 (this study). Jordan and Snyder (1901) did not refer to coloration around the sensory pores on the side of the head in the original description. However, figures of the holotype of *S. moseri* (Jordan and Snyder, 1901: fig. 14; Jordan et al., 1913: fig. 60) show the presence of vague, colorless regions around the supraorbital, postorbital and preopercular pores. Thus, we identified our material as *Apterichtus moseri.* Although the holotype of *S. moseri* is completely faded (D.G. Smith, pers. comm.), the present example differs from it in body coloration: "light olive, finely dotted" (Jordan and Snyder, 1901). It is likely that their specimen had faded in preservative before they describe it.

Apterichtus klazingai (Weber) was described as *Sphagebranchus klazingai* based on two examples from the Banda Sea (Weber, 1913), and is presently known from South Africa, Indonesia and the western Pacific (McCosker and Castle, 1986). According to McCosker and Castle (1986), this species is known to have: head contained 13–14 times in TL, 136–140 vertebrae, and minute papillae covering the head and snout. *Apterichtus moseri* differs slightly from *A. klazingai* in its head length contained 15–18 in TL, and in having 142–145 vertebrae. There are no papillae on the head and snout of our material. Body color of the *S. klazingai* holotype is yellow, with dark dots (Weber, 1913). Judging from the figure of *A. klazingai* by McCosker and Castle (1986: fig. 41.2), it has no distinct paler regions around the sensory pores on the side of the head. The present material differs markedly from *A. klazingai* in the coloration of its head and body.

Apterichtus flavicaudus (Snyder) was described from a single specimen of 367 mm TL from Hawaii (Snyder, 1904). The head length is contained 18 times in TL in the holotype, and 15–17 in the two cotypes (Snyder, 1904; Jordan and Evermann, 1905). Gosline (1951) noted that head length of this species ranged from 15–20 times in TL. Vertebral count of *A. flavicaudus* varies from 145 to 157 (McCosker, 1977). Thus it is difficult to distinguish between *A. moseri* and *A. flavicaudus* in these two characters. Gosline (1951) remarked on *A. flavicaudus,* "snout more or less elliptical in cross section, without lateral ridges." However, the holotype of *S. flavicaudus* has a sort of shelf over the anterior nostril (D. G. Smith, pers. comm.). Although Jordan and Snyder (1901) did not refer to the presence of lateral ridges on the snout in the original description of *S. moseri,* the present study shows that our material has well-developed lateral ridges on its snout which is triangular in cross section. Body color of the holotype of *S. flavicaudus* is pale olive, and its tail is nearly white (Snyder, 1904). Snyder (1904) also noted that one specimen had two white spots on the side of the head: the anterior one was located just behind eyes, and the posterior one indistinctly connected over the occiput with its fellow on the opposite side. These spots clearly differ those in our material. The holotype of *S. flavicaudus* is completely faded (D.G. Smith, pers. comm.), and it is likely that the original description of *S. flavicaudus* was made based on a faded specimen. However, we think that *A. moseri* differs from *A. flavicaudus* in coloration of the head and tail.

In total, *A. moseri* differs from its Indo-West Pacific allies by combination of the following characters: head without papillae, short, contained 15–18 times in TL; 142–145 vertebrae; lateral line pores on head and sensory pores on side of head in conspicuous paler spots; and dusky silvery coloration of body.

Recently, an underwater observation of living snake-eels was made in Suruga Bay by Doubilet (1990). He presented two in situ photographs of the protruded heads from the sea-bottom of the different species, one of which was reported as *Apterichtus moseri* (Doubilet, 1990: 26). However, it has a circular eye contained about 4 times in snout length (taken from the photograph), and an orange colored head with three large, white spots. Coloration of its head somewhat differs from those in *A. moseri* and *A. flavicaudus.* The eye diameter of this form is smaller than in *A. moseri* (2–2.5 in snout length) and in *A. flavicaudus* (3 in snout length). It is not clear whether these characters found in this photographed from are included within the intraspecific variation

of *A. moseri* and *A. flavicaudus*.

The present specimen was dredged with many fragments of sea-shells from a sandy to pebbly bottom (E. Tsuchida, pers. comm.). Although our material is the second specimen of *A. moseri*, this species may be abundant in shell zones along the central to western Pacific coasts of Japan.

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ゴマウミヘビの2個体目の標本

町田吉彦・太田　秀

1988年の8月に，熊野灘の水深111–114 m で全長 498 mm の *Apterichtus moseri*（ゴマウミヘビ）1個体をドレッジにより採集した．本種は，1901年に Jordan and Snyder が駿河湾産の全長149 mm の完模式標本のみに基づき，*Sphagebranchus moseri* として記載して以来報告例がない．また，完模式標本は3つの断片に分かれているため，熊野灘産の標本を詳しく報告した．ゴマウミヘビ属は，鰭が全くない，前鼻孔が筒状である，後鼻孔は口外にあって皮弁を備える，目は中庸大であることを特徴とする．本種は，頭部に絨毛状突起がない，全長が頭長の 15–18 倍，脊椎骨数が 142–145，頭部の側線孔と感覚孔は淡色の小円斑中にある，体全体がくすんだ銀色であることでインド・西部太平洋産の近似種と区別される．

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