



First record of the snake mackerel *Epinnula magistralis* (Perciformes: Gempylidae) from the Tokara Islands, Japan

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Abstract. A single specimen of *Epinnula magistralis* (Perciformes: Gempylidae), collected off Taira Island in the Tokara Islands, Kagoshima Prefecture, southern Japan, represents the first record of the species from the islands and sixth individual record from Japanese waters. A detailed description of the specimen is provided.

Introduction

Snake mackerels (family Gempylidae) are currently represented in Japanese waters by 13 species (Nakabo & Doiuchi 2013; Nakayama et al. 2014). Of these, the apparently rare *Epinnula magistralis* Poey, 1854 has been recorded only from Kumanonada (Mie Prefecture; Kamohara 1938; Matsubara & Iwai 1952), Tosa Bay, (Kochi Prefecture; Kamohara 1938), and Yoron Island (Kagoshima Prefecture; Okamoto 2014).

During ichthyofaunal surveys in the Tokara Islands, conducted as a part of the Kagoshima Fish Diversity Project (e.g. Koeda & Motomura 2015a, b; Hata et al. 2015a–d), a single specimen of *E. magistralis* was obtained, having been an incidental catch during commercial fishing operations off Taira Island on 27 April 2015. The specimen, described in detail below, represents the sixth individual of the species recorded from Japanese waters.

Counts and proportional measurements followed Nakamura et al. (1983) and Nakayama et al. (2014), and are shown in Appendix 1. All measurements were made with digital calipers to the nearest 0.1 mm. Abbreviations: SL (standard length), KAUM (Kagoshima University Museum, Kagoshima), and KUN (Kinki University, Nara).

Species account

Epinnula magistralis Poey, 1854

Standard Japanese name: Ao-sumiyaki
(Fig. 1; Appendix 1)

Material examined. KAUM–I. 72269, 710.0 mm SL, off Taira Island, Tokara Islands, Kagoshima Prefecture, Japan, ca. 200 m depth, long line

(purchased at Kagoshima City Central Fish Market), 27 Apr. 2015, H. Hata.

Description. Body oblong, compressed laterally, deepest at origin of pelvic fin. Abdomen rather rounded, without mid-ventral keel. Caudal peduncle cylindrical, without keels. Dorsal profile of body convex from snout tip to origin of second dorsal-fin, thereafter decreasing rapidly to caudal-fin base. Ventral profile of body convex from tip of lower jaw to caudal-fin base. Head large, compressed laterally. First dorsal-fin origin posterior to posteriormost point of preopercle. End of first dorsal-fin base slightly anterior to anal-fin origin. Second dorsal-fin origin just above anal-fin origin. Posteriormost point of second dorsal-fin base slightly behind posterior end of anal-fin base. Uppermost point of pectoral-fin insertion just below origin of third dorsal-fin spine. Lowermost point of pectoral-fin insertion between origins of fourth and fifth dorsal-fin spines. Posteriormost point of pectoral fin reaching to a vertical line through origin of ninth dorsal-fin spine. Pelvic-fin origin posterior to posteriormost point of pectoral-fin insertion. Posterior tip of pelvic fin reaching to between vertical lines through origins of ninth and tenth dorsal-fin spines when depressed. Caudal fin forked. Snout pointed. Mouth terminal, large, posterior tip of maxilla extending beyond level of anterior margin of pupil. Eye and iris round. Interorbital space flat. Nostrils closely paired, slit-like, anterior to orbit. Anus elliptical, located just below origin of 16th dorsal-fin spine. Body covered with cycloid scales. All fins, jaws, snout, and pectoral-fin axillary region without scales. Posterior edges of preopercle and opercle smooth. Two ridges on opercle. Two pairs of canine teeth on anterior part of upper jaw. Lateral teeth on upper jaw conical, widely separated. Small uniserial conical teeth on palatine. Vomer and tongue toothless. Single pair of fangs near tip of lower jaw. Uniserial conical teeth on lateral aspect of lower jaw. Jaws without dermal processes. Gill rakers small, mostly embedded under skin. Pseudobranchial filaments present. Lateral line inserted above upper end of opercle, closely following dorsal profile to base of caudal fin; a lower branch just before level of sixth dorsal-fin spine base



Fig. 1. (A) Left side and (B) right side of fresh specimen of *Epinnula magistralis* (KAUM-I. 72269, 710.0 mm SL, Taira Island, Tokara Islands, Kagoshima Prefecture, Japan).

図 1. アオスミヤキ *Epinnula magistralis* (KAUM-I. 72269, 標準体長 710.0 mm), トカラ列島平島近海水深約 200 m で漁獲 : 左体側 (A); 右体側 (B).

descending and angling forward to near pelvic fin origin, thereafter more or less following ventral contour to caudal-fin base. Lower lateral-line on left side of body interrupted between origins of pelvic fin and anal fin (Fig. 1A).

Color when fresh (Fig. 1). Body silvery-gray, dark blue dorsally. Dorsal fin dark gray. Pectoral and pelvic fins bluish-black. Anal fin dark gray. Caudal fin blackish-brown.

Color in alcohol. Body dark silver, fins dark gray.

Distribution. *Epinnula magistralis* has been known from the Caribbean Sea (type locality: Havana, Cuba); south of Lombok Island, Indonesia; Taiwan; Japan; and the Hawaiian Islands (Poey 1854; Grey 1953; Nakamura & Parin 1993; Mundy 2005; Ho & Yee 2012; Nakabo & Doiuchi 2013). In Japan, the species has been recorded from the Tokara Islands and Yoron Island, Kagoshima Prefecture; Tosa Bay, Kochi Prefecture; Kii-Nagashima and Kumanonada, Mie Prefecture (Kubo et al. 2012; Nakabo & Doiuchi 2013; Okamoto 2014; this

study).]

Remarks. The Tokara Islands specimen was identified as *E. magistralis* on the basis of the following combination of characters, which closely matches the diagnostic features of *E. magistralis* given by Nakamura & Parin (1993) and Nakabo & Doiuchi (2013): 16 spines on first dorsal fin; pelvic fin with 1 spine and 5 soft rays; lateral line bifurcated below fifth and sixth dorsal-fin spine bases, lower branch running near ventral contour to caudal-fin base; no dermal processes on tips of jaws; abdomen rather rounded, without mid-ventral keel; lateral surface of caudal peduncle without keels; and vomer toothless. In addition, meristic and morphometric data for the present specimen were close to those for a comparative specimen (750.0 mm SL) from Yoron Island, Amami Islands, Japan (Appendix 1).

Both the present specimen (710.0 mm SL) and that from the Amami Islands had pelvic fins shorter than the pectoral fins, although Nakabo & Doiuchi (2013) noted a pelvic fin longer than the pectoral fin

as diagnostic of *E. magistralis*. However, Okamoto (2014) noted shorter pelvic fins in larger examples of the species, the pectoral fins being shorter than the pelvic fins in individuals at least smaller than 335 mm SL.

The numbers of dorsal- and anal-fin soft rays of the Pacific population of *E. magistralis* are higher than those of the Atlantic population (18 and 16 respectively vs. 16 and 13 in the latter; Poey, 1854; Grey, 1953; Nakamura & Parin 1993; Ho & Yee 2012; Okamoto 2014). The numbers of dorsal- and anal-fin soft rays of the Tokara specimens well consistent with those of the Pacific population given in Ho & Yee (2012) and Nakabo & Doiuchi (2013). Grey (1953) suggested that the Pacific and Atlantic populations represent distinct species or subspecies.

Kamohara (1938) reported two specimens of *E. magistralis* from Tosa Bay, Kochi Prefecture, and Kumanonada, Mie Prefecture, proposing the Japanese name “Ao-sumiyaki” for the species. These represented the first voucher specimen-based records of *E. magistralis* from Japanese waters. Subsequently, Matsubara & Iwai (1952) reported an individual (188 mm SL) of *E. magistralis* from off Owase, Kumanonada, Mie Prefecture. Kubo et al. (2012) reported the species from off Kii-Nagashima, Mie Prefecture, based on a voucher specimen (KUN-P 42742). Following Okamoto’s (2014) report of *E. magistralis* from Yoron Island, Amami Islands, Kagoshima Prefecture, based on a collected specimen (KAUM-I. 51544), the present report is the first record from the Tokara Islands and the sixth individual record of the species from Japanese waters.

Comparative material examined. *Epinnula magistralis*: KAUM-I. 51544, 750.0 mm SL, off Yoron Island, Amami Islands, Kagoshima Prefecture, Japan, line fishing, 29 Oct. 2012, KAUM Fish Team.

Acknowledgements

We are especially grateful to T. Tanaka (Tanaka Suisan Ltd.) for collecting the specimen. We also thank Y. Haraguchi and other volunteers, and students of KAUM for their curatorial assistance. We are also grateful to G. Hardy (Ngunguru, New Zealand), who read the manuscript and provided help with English. Thanks also go to two reviewers who improved our manuscript. This study was supported in part by the Sasakawa Scientific Research Grant from the Japan Science Society (28-745); Grants-in-Aid for Scientific Research (A:

26241027, B: 24370041 and C: 23580259 and 26450265) from the Japan Society for the Promotion of Science, Tokyo, Japan (JSPS); Core-to-Core Program, “Research and Education Network on Southeast Asian Coastal Ecosystems”; the “Coastal Area Capability Enhancement in Southeast Asia Project” of the Research Institute for Humanity and Nature, Kyoto, Japan; the “Biological Properties of Biodiversity Hotspots in Japan” project of the National Museum of Nature and Science, Tsukuba, Japan; and “Establishment of Research and Education Network on Biodiversity and Its Conservation in the Satsunan Islands” project of Kagoshima University adopted by the Ministry of Education, Culture, Sports, Science and Technology, Japan.

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Appendix 1. Counts and measurements of *Epinnula magistralis*

トカラ列島平島から得られたクロタチカマス科アオスミヤキ *Epinnula magistralis*

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要旨. トカラ列島平島近海においてアオスミヤキ *Epinnula magistralis* が 1 個体採集された。これはトカラ列島における本種の標本に基づく初めての記録であると同時に、日本からの 6 例目の記録となる。

投稿日: 2016 年 2 月 19 日

受理日: 2016 年 5 月 14 日

発行日: 2016 年 6 月 26 日

附録 1. アオスマイヤキ *Epinnula magistralis* の計数・計測形質

	Taira Island, Tokara Islands, Japan KAUM-I. 72269	Yoron Island, Amami Islands, Japan KAUM-I. 51544
Standard length (SL) 標準体長	710.0	750.0
Fork length 尾叉長	759.0	800.0
Counts 計数形質		
Dorsal-fin rays 背鰭鰭条数	XVI-I, 18	XVI-I, 18
Anal-fin rays 臀鰭鰭条数	III, 16	III, 16
Pectoral-fin rays 胸鰭鰭条数	15	15
Pelvic-fin rays 腹鰭鰭条数	I, 5	I, 5
Measurements (% of SL) 体各部の体長に対する割合 (%)		
Head length 頭長	31.5	32.4
Orbit diameter 眼窩径	6.6	7.4
Fleshy interorbital width 両眼間隔 (肉質)	7.3	6.9
Bony interorbital width 両眼間隔 (骨質)	6.1	6.0
Body depth at pelvic-fin base 腹鰭基底上端における体高	25.2	23.5
Body depth at anal-fin origin 臀鰭起部における体高	22.3	20.3
Pectoral-fin length 胸鰭長	20.0	18.4
Upper caudal-fin lobe length 尾鰭上葉長	24.8	18.5
Lower caudal-fin lobe length 尾鰭下葉長	16.6	broken
Snout length 吻長	11.7	11.2
Postorbital length 眼後長	13.6	13.8
Upper-jaw length 上顎長	15.3	15.8
Suborbital width 眼下骨幅	1.2	1.2
First pre-dorsal-fin length 第1背鰭前長	27.9	28.1
Second pre-dorsal-fin length 第2背鰭前長	71.1	70.1
First dorsal-fin base length 第1背鰭基底長	43.2	40.9
Second dorsal-fin base length 第2背鰭基底長	18.3	18.7
Pre-pectoral-fin length 胸鰭前長	31.0	33.5
Pre-pelvic-fin length 腹鰭前長	40.8	41.7
Pelvic-fin length 腹鰭長	10.5	10.0
Pre-anal-fin length 臀鰭前長	72.0	74.8
Pre-anus length 肛門前長	67.6	69.3
Anal-fin base length 臀鰭基底長	16.0	15.5
Abdominal length 腹部長	32.8	35.3
Tail length 尾部長	29.9	29.6
Caudal-peduncle length 尾柄長	14.3	14.5
Caudal-peduncle depth 尾柄高	5.5	5.4
Caudal-peduncle width 尾柄幅	2.0	1.9