

ツマリコビトザメEuprotomiscrus bispinatus(ヨロイザメ科)のフィジーからの初記録

誌名	水産大学校研究報告 = The journal of the Shimonoseki University of Fisheries
ISSN	03709361
著者名	須田,有輔 山崎,英信 Pickering,T.
発行元	水産大学校
巻/号	47巻4号
巻号補足	
掲載ページ	p. 139-143
発行年月	1999年3月

農林水産省 農林水産技術会議事務局筑波産学連携支援センター
Tsukuba Business-Academia Cooperation Support Center, Agriculture, Forestry and Fisheries Research Council
Secretariat



First Record of the Pygmy Shark, *Euprotomiscrus bispinatus* (Dalatiiformes: Dalatiidae) from Fiji

Yusuke Suda^{*1}, Timothy Pickering^{*2}, Hidenobu Yamazaki^{*3},
Tadashi Kamano^{*3}, and Teatim Tamaroa^{*2}

The pygmy shark *Euprotomiscrus bispinatus* (New Japanese name: Tsumari-kobito-zame) is one of the world's smallest living sharks, along with *Squaliolus aliae* and *S. laticaudus*. The maximum body length reaches only 27 cm in adults. During the 2nd Joint National Fisheries University and the University of the South Pacific Fisheries and Oceanography Research Cruise using T/S Koyo-maru (3–7 December 1997, Fiji), one specimen of *E. bispinatus* (TL 105.3 mm) was collected from Kadavu Passage, Fiji Islands. This is the first occurrence of this species from the tropical southwestern Pacific including Fijian waters.

1 Introduction

The pygmy shark *Euprotomiscrus bispinatus* is one of the world's smallest living sharks along with *Squaliolus aliae* and *S. laticaudus* and its maximum body length reaches only 27 cm in adults.¹⁾ Although the species is widely distributed in the temperate and tropical waters of the central to eastern Pacific, Atlantic and Indian Oceans,¹⁻⁵⁾ no records were obtained from tropical southwestern Pacific including Fijian waters.

During the 2nd Joint National Fisheries University and the University of the South Pacific Fisheries and Oceanography Research Cruise, one specimen of *E. bispinatus* was collected from Kadavu Passage, Fiji Islands. We report the first occurrence of this species from Fijian waters.

2 Materials and Methods

A female specimen of *Euprotomiscrus bispinatus* (105.3 mm in Total Length) was collected by surface ring net (1.3 m diameter, 0.3 mm mesh), from near Solo Lighthouse, Kadavu Island, Kadavu Passage, station #12-2 (18°-32.2'S, 178°-30.3'E to 18°-32.0'S, 178°-28.5'E) (Fig. 1) on 4 December 1997, by Training Ship Koyo-maru (2,342GT) of National Fisheries University, Japan. The net was towed at night time from 20:54 to 21:26 on the sea surface. The water depth was about 2050 m.

The specimen is deposited in the Fish Reference Collection held by Marine Studies Programme, The University of the South Pacific, Fiji as a catalogue number USP 4582. Measurements were taken from point to point following Hubbs et al.¹⁾ Terminology of measurements follows Compagno²⁾ except for body height and width. Measurements were made after preservation.

水産大学校研究業績 第1606号, 1998年10月22日受付.

Contribution from National Fisheries University, No.1606. Received Oct. 22, 1998.

^{*1} 水産大学校海洋生産管理学科資源環境計画学講座 (Laboratory of Marine Resources and Environment Planning, Department of Fishery Science and Technology, National Fisheries University)

^{*2} 南太平洋大学海洋研究プログラム (Marine Studies Programme, The University of the South Pacific, Fiji)

^{*3} 水産大学校練習船耕洋丸 (T/S Koyo-maru, National Fisheries University)

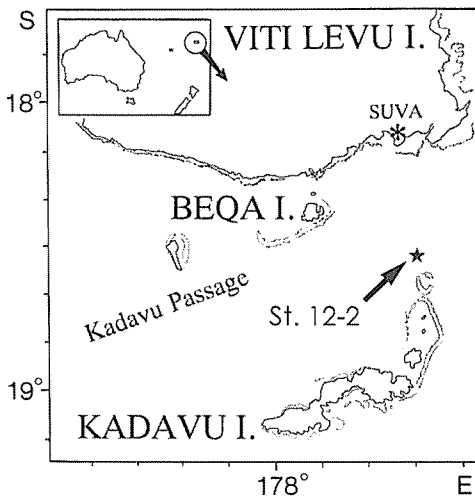


Fig. 1. Map showing sampling location of *Euprotomicrus bispinatus* (USP 4582).

The following seven specimens were also observed for comparisons: SIO (Scripps Institution of Oceanography) 63-1086, 70-399, 72-4, 76-119, 76-235, 76-236, 76-237.

3 Systematics

Genus *Euprotomicrus* Gill, 1865

(New Japanese Name: Tsumari-kobito-zame zoku)

Euprotomicrus bispinatus

(Quoy & Gaimard, 1824)

(New Japanese Name: Tsumari-kobito-zame)

(Fig. 2)

*Synonymy*²⁻⁶⁾

Scymnus bispinatus Quoy & Gaimard, 1824

(type locality: Mauritius).

Scymnus (Laemargus) labordii Müller & Henle, 1841.

Euprotomicrus bispinatus: Hubbs et al., 1967; Bass et al., 1976; Compagno, 1984; Bass et al., 1986; Castro-Aguirre & Garcia-Dominguez, 1988; Paxton et al., 1989; Springer, 1990; Last and Stevens, 1994.

Description

Measurements and proportions of the specimen are indicated in Table 1 and fall within the ranges reported in Hubbs et al.¹⁾

Body is cigar-shaped with bulbous head portion; caudal peduncle with no keels and notches; five small gill slits.

Two spineless dorsal fins present; first dorsal fin located posteriorly to the center of the whole body and closer to pelvic fin than pectoral fin; the origin of the second dorsal fin is just above the posterior end of the pelvic fin base; the base length of the second dorsal fin is clearly longer than those of the first dorsal and pelvic fins; anal fin absent. The margin of the pectoral fin is rounded. Both upper and lower lobes of the caudal fin are nearly symmetrical.

Mandibular teeth 9 (right) + 10 (left). Lip of the

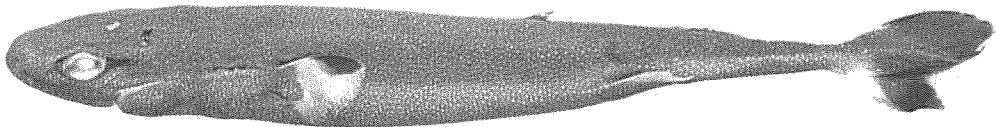


Fig. 2. *Euprotomicrus bispinatus* (USP 4582, TL 105.3 mm, female)

upper jaw has no papillae.

Upper half of the body dark gray (char coal gray), lower half reddish gray (rose gray); first dorsal fin white with black blotch on its anterodorsal part (Fig. 3A); second dorsal fin white; caudal fin black with white posterior margin, anterior part of the lower lobe of the caudal fin white (Fig. 3B); pectoral fin white with a black blotch on its posterodorsal part (Fig. 3C), whereas in larger specimens the blotch is faint or slender (Fig. 3D); pelvic fins white.

Distribution

The species is almost circumglobal in distribution, in temperate to tropical waters.¹⁻⁵⁾ The present specimen is the first occurrence of the species from tropical southwestern Pacific region.

Remarks

Euprotomicrus bispinatus is one of the smallest living sharks and a member of subfamily Euprotomicrinae⁷⁾ along with *Squaliolus aliae* (Japanese name: Tsuranaga-kobitozame⁸⁾) and *S. laticaudus* (Oome-kobitozame⁸⁾). The species reaches

maturity between 17 and 19 cm in males, 22 and 23 cm in females and the size at birth is greater than 6 cm and less than or about 10 cm.²⁾ Accordingly the present specimen is considered to be a juvenile.

E. bispinatus is externally similar to both *S. aliae* and *S. laticaudus*. It, however, can be distinguished from these two species by examination of the first dorsal fin. *E. bispinatus* has a spineless first dorsal fin located close to the pelvic fin, whereas the first dorsal fins of *S. aliae* and *S. laticaudus* have spines and are located closer to the pectoral fins. *Squaliolus* occurs in coastal waters, whereas *E. bispinatus* has a more oceanic distribution.

The present specimen slightly differs from previous descriptions and from other specimens. Although Last and Stevens mentioned the presence of low keels on the caudal peduncle,³⁾ no keels were observed in the present specimen and other comparative specimens. The position of the first dorsal fin of the present specimen is slightly more anterior than that of SIO63-1086 (TL 104.5 mm, Pre-First dorsal length 53.9%).

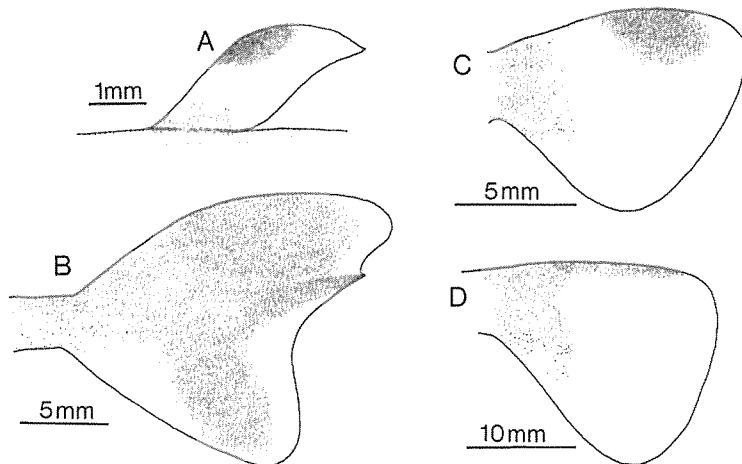


Fig. 3. Pattern of blotches on the first dorsal fin (A), caudal fin (B), pectoral fin (C) (USP 4582), and pectoral fin (D) (SIO 76-235, TL 206.4 mm, male).

Acknowledgments

We express our thanks to the people who attended the 2nd Joint National Fisheries University — The University of the South Pacific Fisheries and Oceanography Research. Our special thanks go to Professor Robin G. South and Dr. Marie Ferland of the University of the South Pacific. We also thank Dr. H. J. Walker, Jr. of Scripps Institution of Oceanography for loan of specimens, and Mr. Johnson Seeto of the University of the South Pacific for providing comments on the draft manuscript.

Literature Cited

- 1) C. L. Hubbs, T. Iwai and K. Matsubara: *Bull. Scripps Inst. Oceanogr.*, 10, 1-81 (1967).
- 2) L. J. V. Compagno: FAO Species catalogue, Vol. 4 Sharks of the world, an annotated and illustrated catalogue of shark species known to date, Part 1 Hexanchiformes to Lamniformes, FAO Fisheries Synopsis No. 125. United Nations Development Programme, FAO, 1984, 249 pp.
- 3) P. R. Last and J. D. Stevens: Sharks and rays of Australia, CSIRO, Australia, 1994, 513 pp.
- 4) A. J. Bass, J. D. D'Aubrey and N. Kistnasamy: *Investl. Rep. Oceanogr. Res. Inst. Durban*, (45), 1-103 (1976).
- 5) A. J. Bass, L. J. V. Compagno and P. C. Heemstra: Family Squalidae, in "Smiths' Sea Fishes" (eds. by M. M. Smith and P. C. Heemstra), Springer-Verlag, 1986, p. 58.
- 6) W. N. Eschmeyer ed.: Catalog of Fishes, California Academy of Sciences, San Francisco, 1998, 2905 pp.
- 7) S. Shirai: Squalan phylogeny, a new framework of "squaloid" sharks and related taxa. Hokkaido University Press, Sapporo, 1992, 151 pp.
- 8) K. Sasaki and T. Uyeno: *Japan. J. Ichthyol.*, 34, 373-376 (1987).

ツマリコビトザメ *Euprotomicrus bispinatus* (ヨロイザメ科) のフィジーからの初記録

須田有輔^{*1}・ティモシー ピカリング^{*2}・山崎英信^{*3}・鎌野 忠^{*3}・テシム タマロア^{*2}

南太平洋フィジーのビチレヴ島とカンダヴ島の間のカンダヴ水道において、丸稚ネット（径1.3m）の夜間表層曳きにより1個体のツマリコビトザメ（新称和名）*Euprotomicrus bispinatus*（ヨロイザメ科）が採集された（TL 105.3 mm メス、USP 4582; 1997年12月4日 20:54-21:26, 18°-32.2'S, 178°-30.3'E to 18°-32.0'S, 178°-28.5'E; 第2回水産大学校-南太平洋大学共同水産・海洋調査、水産大学校練習船耕洋丸、1997年12月3-7日実施）。本種は中部～東部太平洋、大西洋、インド洋の温帯、熱帯海域に広く分布するが、これまでフィジーも含めた南西太平洋熱帯海域からの記録はなかった。本個体は同海域からの初めての記録になる。

ツマリコビトザメは同じくヨロイザメ科のツラナガコビトザメ（*Squaliolus aliae*）、オオメコビトザメ（*S. laticaudus*）とともに世界で最小のサメ類の一種であり、成魚でも全長は30cmに満たない。本種の外形は黒褐色の葉巻状を呈し、これら2種と類似するが、背鰭には棘がないこと、第1背鰭は胸鰭よりも腹鰭に近く位置することで、これら2種と区別できる。