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Apristurus breviventralis, a new species of deep-water catshark (Chondrichthyes: Carcharhiniformes: Scyliorhinidae) from the Gulf of Aden

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Abstract

A new deep-water catshark of the genus *Apristurus* Garman, 1913 is described based on nine specimens from the Gulf of Aden in the northwestern Indian Ocean. *Apristurus breviventralis* sp. nov. belongs to the ‘brunneus group’ of the genus and is characterized by having pectoral-fin tips reaching beyond the midpoint between the paired fin bases, a much shorter pectoral-pelvic space than the anal-fin base, a low and long-based anal fin, and a first dorsal fin located behind pelvic-fin insertion. The new species most closely resembles the western Atlantic species *Apristurus canutus*, but is distinguishable in having greater nostril length than internarial width and longer claspers in adult males. *Apristurus breviventralis* sp. nov. represents the sixth species of *Apristurus* from the western Indian Ocean and the 38th species globally.

Key words: Scyliorhinidae, *Apristurus breviventralis* sp. nov., shortbelly catshark, new species, Socotra Islands, western Indian Ocean

Introduction

The genus *Apristurus* Garman, 1913 is one of the largest shark genera and its members are found in all oceans except for polar waters on continental slopes, trenches, and submarine ridges in depths of 200–2000 m. Sharks of this genus are characterized by having a slender body, a long, flattened snout, a long anal fin which is separated from the lower caudal fin by a notch, and the absence of distinctly enlarged dermal denticles on the upper margin of the caudal fin.

The taxonomy of the genus was locally or partially revised by Springer (1966, 1979), Nakaya (1975), and Cadenat & Blache (1981), and summarized by Compagno (1984, 1988). However, the taxonomy of the genus is still not well resolved despite numerous studies by Nakaya (1988a, 1988b, 1989, 1991), Nakaya & Séret (1992, 1999, 2000), Nakaya & Sato (1998, 1999, 2000), Nakaya & Stehmann (1998), Sato *et al.* (1999, 2008, 2013), Iglésias *et al.* (2002, 2004, 2005a), Iglésias & Nakaya (2004), Nakaya *et al.* (2008a, 2008b), Kawauchi *et al.* (2008), Sasahara *et al.* (2008), White *et al.* (2008), Iglésias (2012), and Nakaya & Kawauchi (2013). The genus *Apristurus* currently comprises 37 valid species, which are divided into three groups, i.e. the long-snouted ‘longicephalus’ group and the short-snouted ‘brunneus’ and ‘spongiceps’ groups (Nakaya & Sato 1999). These phenetic groups were later recognized as monophyletic at morphological (Sato 2000) and molecular (Iglésias *et al.* 2005b) level, as well as based on egg case morphology (Flammang *et al.* 2007). Compared with the species of the ‘spongiceps’ group, the species of the ‘brunneus’ group have higher spiral valve counts (13–22 vs. 7–12), longer upper labial furrows than the lower ones, and discontinuous supraorbital sensory canals (Nakaya & Sato 1999).

During cruise 17 of the Russian RV ‘Vityaz’ to the western Indian Ocean in 1988 and 1989, many rare and new deep-water sharks, skates and rays, and chimaeras were collected. Among them, an undescribed species of the genus *Apristurus* was discovered and is herein described as *Apristurus breviventralis* sp. nov., which is the sixth

522 mm TL, estuary off Pearl river, South China Sea. SFU D-0161 (paratype of *A. acanutus*), 520 mm TL, South China Sea. USNM 93135 (holotype of *A. verweyi*), male, 303.0 mm TL, Sibuko Bay, Borneo.

Non-types. BSKU 22337, female, 345 mm TL, Kochi Prefecture, Japan. BSKU 22788, female, 355 mm TL, Tosa Bay. BSKU 26866, BSKU 27062, BSKU 27063, BSKU 27064, BSKU 27065, BSKU 27594, BSKU 27597, BSKU 33521, BSKU 33522, BSKU 33523, BSKU 33524, BSKU 33525, BSKU 33972, HUMZ 103699, HUMZ 145155, HUMZ 145156, HUMZ 145162, HUMZ 145163, HUMZ 145169, HUMZ 145157, HUMZ 145158, HUMZ 145159, HUMZ 145160, HUMZ 145170, 8 males and 16 females, 280–591.9 mm TL, Okinawa Trough, Japan. FRLM 27652, HUMZ 103700, 2 males, 484–692 mm TL, Kumano-nada, Mie Prefecture, Japan. HUMZ 191332, male, 490 mm TL, off Sumatra Island, Indonesia. TMFE 21, TMFE 22, TMFE 23, 3 females, 645–680 mm TL, 1 male and 3 females, Suruga Bay, Shizuoka Prefecture, Japan. TMFE 40, male, 536 mm TL, Suruga Bay, off Hagachi Cape, Shizuoka Prefecture, Japan. TMFE 286, TMFE 287, 2 females, 609–630 mm TL, off Heta, Shizuoka Prefecture, Japan. TMFE 591, TMFE 592, 1 male and 1 female, 602–617 mm TL, off Omaezaki, Shizuoka Prefecture, Japan. AMS I 20068-016, male, 408 mm TL, east of Broken Bay, New South Wales, Australia. AMS I 20920-020, female, 285 mm TL, north-east of Raine Island, Queensland, Australia. AMS I 21724-018, male, 708 mm TL, east of Broken Bay, New South Wales, Australia. AMS I 24101-005, male, 604 mm TL, off Sydney, New South Wales, Australia. AMS I 24356-008, female, 552 mm TL, off Shoalhaven Bight, New South Wales, Australia. CSIRO H 913-01, male, 666 mm TL, east of Sugarloaf Point, New South Wales, Australia. CSIRO H 1201-02, female, 426 mm TL, Houtman Abrolhos Islands, Western Australia, Australia. CSIRO H 1280-07, female, 512 mm TL, east of Nowra, New South Wales, Australia. CSIRO H 1286-03, female, 548 mm TL, Marian Plateau, northeast of Whitsunday Group, Queensland, Australia. CSIRO H 1343-01, male, 669 mm TL, east of Nowra, New South Wales, Australia. CSIRO H 1537-02, female, 416 mm TL, east of Brush Island, New South Wales, Australia. CSIRO H 1543-01, female, 507 mm TL, east of Brush Island, New South Wales, Australia. CSIRO H 2265-02, male, 695 mm TL, west of Geraldton, Western Australia, Australia. CSIRO H 2336-01, CSIRO H 2336-02, CSIRO H 2336-03, CSIRO H 2336-04, 2 males and 2 females, 430–682 mm TL, east of Tuncurry, New South Wales, Australia. CSIRO H 2337-01, female, 529 mm TL, east of Nowra, New South Wales, Australia. CSIRO H 2500-01, male, 568 mm TL, east of Broken Bay, New South Wales, Australia. FSFL ED 308, male, 525 mm TL, Norfolk Ridge, Australia. HUMZ 105984, HUMZ 105985, TMFE 520, ZUMT 3424, 3 males and 1 female, 438–739 mm TL, locality unknown.

Apristurus cf. *platyrhynchus*: 1 specimen. ZMH 26051, adult male, 710 mm TL, Madagascar Ridge, 33°01.6'S, 44°49.2'E–33°04'S, 44°49.1'E, 9 Dec 1988, 1090–1100 m depth.

Apristurus sp.: 3 specimens. ZMH 25599, 2 females, 299–335 mm TL, off Madagascar, 22°17'4"S, 42°50'5"E–22°22'6"S, 42°52'E, 3 Dec 1988, 1380–1450 m depth; ZMH 26052, juvenile female, 245 mm TL, off Mozambique, 25°13'9"S, 35°32'1"E–25°18'S, 35°27'5"E, 25 Nov 1988, 980–1000 m depth.

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