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## A review of the finless snake eels of the genus *Apterichtus* (Anguilliformes: Ophichthidae), with the description of five new species

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### Abstract

The 18 species of finless snake eels of the genus *Apterichtus* (family Ophichthidae, subfamily Ophichthinae) are reviewed. Included are: *A. anguiformis* from the Mediterranean and eastern Atlantic; *A. ansp* from the Carolinas to Brazil in the western Atlantic; *A. australis* from South and Central Pacific islands, including Japan; *A. caecus* from the Mediterranean and eastern Atlantic; *A. equatorialis* from the eastern Pacific; *A. flavicaudus* from Hawaii, Midway Island, and possibly Australia and Seychelles; *A. gracilis* from the eastern central Atlantic; *A. hatookai* from Japan and China; *A. kendalli* from the western Atlantic and St. Helena Island; *A. klazingai* from South Africa to Hawaii; *A. monodi* from the eastern Atlantic; *A. moseri* from Japan; and *A. orientalis* from Japan. Five new species are described and illustrated: *A. dunalailai* from Vanuatu and Fiji at 291–450 m; *A. jeffwilliamsi* from Vanuatu at 4–16 m; *A. malabar* from New South Wales, Australia at 44–66 m; *A. mysi* from the Marquesas Islands at 35–64 m; and *A. nariculus* from Ambon Island, Indonesia at 28–30 m. A neotype is designated for *Apterichtus caecus*. An identification key is provided. The synonymy of the genus *Apterichtus* is reviewed. *Apterichtus keramanus* Machida, Hashimoto & Yamakawa 1997, is referred to *Ichthyapus*.

**Key words:** Pisces, Ophichthidae, *Apterichtus*

### Introduction

The finless snake eels of the genus *Apterichtus* Duméril 1806 are elongate cylindrical eels, sharp-pointed at both ends, rare in collections and poorly known taxonomically or biologically. They are found in the coastal waters of nearly all tropical and subtropical seas. They have yet to be found in the Red Sea, but we would not be surprised if they eventually are discovered there. They typically burrow in sand substrates at depths ranging from tidepools to 450 m. They are seen by divers on rare occasions when their heads and pointed snouts are exposed (Figs. 1–3). Some species have colorful spotting on their heads but specimens become pale after preservation. They are probably not abundant in that they are mostly known from single (or partial) specimens collected using dredges or ichthyocides. On rare occasions they have been found within the gut cavity of benthic predators; however nothing is known to regularly feed upon them.

Knowledge of the species of *Apterichtus* has been limited by the few and often dredge-damaged specimens available for study. We have examined the majority of the extant museum specimens and the types of those species. We are now confident to review the genus and herein recognize 18 valid species, describe 5 new species, and designate a neotype for *Apterichtus caecus* (Linnaeus 1758) which was lost long ago.

### Material and methods

Specimen measurements are straight-line, made either with a 300 mm ruler with 0.5 mm gradations (for total length, trunk length, and tail length) and recorded to the nearest 0.5 mm, or with dial calipers (all other measurements) and recorded to the nearest 0.1 mm. Total length (TL) is identical to Standard Length (SL) in these finless eels, and only TL is included here. Body length comprises head and trunk lengths. Head length is measured

China, and deposited in the National Taiwan Ocean University collection (NTOU AE 6662). It is in excellent condition. The second additional specimen (USNM 427492) is from Vanuatu and was captured in 9–16 m along with the holotype of *A. jeffwilliamsi* (USNM 363869). Their measurements (in mm) and counts are (NTOU followed by USNM): total length 314 (63.5); head length 28.8 (8.1); trunk length 126.2 (22.9); tail length 159 (32.5); upper jaw length 11.5 (2.8); snout length 4.3 (0.9); eye diameter 1.5 (0.6); interorbital distance 1.2 (0.4); body depth at gill openings 7.6 (1.4); preanal vertebrae 55 (57); total vertebrae 118 (121). Both have 4 preopercular pores, 5 supratemporal pores, several vomerine teeth, and the same facial coloration as that of the holotype. After our examination of the holotype and these additional specimens we conclude that *keramanus* belongs within the genus *Ichthyapus*.

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