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Description of a new species of *Microstoma* (Pisces, Microstomatidae) from the southwestern Pacific Ocean

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Abstract

A new species of the microstomatid genus *Microstoma* is described from specimens collected in the SW Pacific Ocean off New Zealand and Australia. *Microstoma australis* n. sp. differs from *M. microstoma* of the Mediterranean and Atlantic Ocean in having a higher number of gill rakers and vertebrae. Both species are compared with available data for NE Pacific specimens.

Key words: distribution, fishes, *Microstoma australis* n. sp., *Microstoma microstoma*, New South Wales, New Zealand, taxonomy

Introduction

The Microstomatidae is a small family of small, mesopelagic to bathypelagic fishes of no commercial value (Carter & Hartel 2002), currently comprising three genera and 19 species (Eschmeyer 2014; Eschmeyer & Fong 2014). Specimens are rare in collections and, unlike the closely related Bathylagidae, a number of species are known from single captures. Their small size probably allows them to pass through the mesh of commercial trawls, but as they are also easily damaged, there would be little interest in collecting specimens. Currently monotypic, the genus *Microstoma* had several species names attributed to it in the past that have all been placed in the synonymy of *Microstoma microstoma* (Risso 1810) by Cohen (1958, 1973). *Microstoma schmitti* Fowler 1934 seems to be the only Pacific Ocean species originally described in this genus (Eschmeyer 2014) but, as Chapman (1948) pointed out, with the dorsal fin more or less in the middle of the body and its origin in front of pelvic-fin insertion, and an adipose fin, it is a species of *Nansenia*. Moser and Butler (1996) identified an undescribed species of *Microstoma* from early life history stages collected in the California Current system. Although they provided illustrations and descriptions of the material they examined they did not name the species.

In this paper we describe a new species of *Microstoma* from seven specimens found in the fish collections of the Museum of New Zealand Te Papa Tongarewa, Wellington, and the Australian Museum, Sydney. The New Zealand specimens were collected during fisheries surveys of the Exclusive Economic Zone of New Zealand since the advent of the Orange Roughy fishery in the late 1970s. The Australian specimens were collected during continental shelf and slope fisheries surveys off the coast of New South Wales (NSW) by FRV *Kapala*, NSW Fisheries, and during current and eddy studies carried out by the CSIRO chartered vessels RV *Courageous* and RV *Sprightly* in 1978–1984 off the NSW coast and in the Tasman Sea.

Materials and methods

We examined, borrowed and received data for specimens from the Australian Museum, Sydney (AMS); California Academy of Sciences, San Francisco (CAS); Museum of New Zealand Te Papa Tongarewa, Wellington (NMNZ); Museum of Comparative Zoology, Harvard University, USA (MCZ); and the South African Institute for Aquatic Biodiversity (SAIAB). Type specimens were lodged with AMS, NMNZ and SAIAB.

The new species is markedly larger, at 266.2 mm SL (280 mm SL freshly thawed), than has been recorded for *Microstoma microstoma* (210 mm TL: Cohen 1986).

The illustration of a 28.3 mm juvenile from the NE Pacific in Moser and Butler (1996) shows the melanophores on the side of the body arranged along the myomere septa, and melanophores present on the middle section of dorsal-, anal- and pelvic-fin rays. The same pattern of melanophores is also visible along the side of the body of the smaller specimens of *M. australis* and is still visible in a 54.9 mm paratype (SAIAB 194659); a similar pattern was described by Cohen (1964) in *Microstoma microstoma*. We observed dark pigment near the edge of the dorsal and anal fins, but not on the pelvic fin in a 33.6 mm specimen of *M. microstoma* (MCZ 66041) that had relatively undamaged fins. None of the specimens of *M. australis* had pigment on these three fins.

Microstoma sp. of the NE Pacific (Moser & Butler 1996) differs from *M. australis* in having fewer vertebrae and gill rakers. In addition, Moser and Butler (1996) counted 11 pectoral-fin rays in their specimens, a significantly higher count compared to the 7–8 rays found in *M. australis* and *M. microstoma* (Table 5, Cohen 1986, McEachran & Fechhelm 1998). This count (if correct), together with the aforementioned two characters, suggest that the NE Pacific fish represent another undescribed species.

TABLE 5. Number of Pectoral-fin rays in species of *Microstoma*.

	Pectoral-fin rays				
	7	8	9	10	11
<i>Microstoma australis</i> (New Zealand & Australia)	2	4			
<i>Microstoma</i> sp. (NE Pacific)*					1*
<i>M. microstoma</i> (Mediterr.)	3				
<i>M. microstoma</i> (E Atlantic)	4				
<i>M. microstoma</i> (W Atlantic)	2	1			

*Data source: Moser & Butler (1996); number of specimens counted unknown

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