
Addition of blacklip dragonet, *Synchiropus atrilabiatus* Garman 1899 (Pisces: Callionymidae) to the California ichthyofauna

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ABSTRACT - Dragonets (family Callionymidae) are widespread and diverse in the Indo-West Pacific and Atlantic Oceans, but only one species, blacklip dragonet (*Synchiropus atrilabiatus*), occurs in the Eastern Pacific. This article reports the first occurrences of this species in California waters. Two specimens were collected by trawl in the Southern California Bight following the 1997-1998 El Niño, one (56 mm standard length; SL) at 97 m off Santa Catalina Island on July 23, 1998 and one (90 mm SL) at 100 m off Point Loma, California, on July 19, 1999. The capture of the blacklip dragonet off Santa Catalina Island represents a range extension of 650 km north of its northernmost record near Bahía Playa Maria, Baja California, Mexico.

Dragonets (family Callionymidae) are small, often colorful, benthic fishes found in coastal tropical waters of the Atlantic, Indian, and Pacific Oceans, but primarily in the Indo-West Pacific (Nelson 1994). The systematics of this family are not well known, with numbers of taxa ranging from 8 genera and 40 species to 19 genera and 139 species (Grove and Lavenberg 1997). The only dragonet known from the Eastern Pacific is the blacklip dragonet, *Synchiropus atrilabiatus* (Garman 1899), which is primarily found off Mexico and Central America (Grove and Lavenberg 1997).

Following the 1997-1998 El Niño, two specimens of the blacklip dragonet were collected in the Southern California Bight (SCB) by small (7.6-m wide headrope) semiballoon otter trawls with 1.2-cm cod-end mesh. The first specimen (56 mm SL) was

collected on July 23, 1998 off Santa Catalina Island at lat. 33°17.68' N and long. 118°17.00' W at a depth of 97 m. It was collected during the Southern California Bight 1998 Regional Survey (Bight'98), a bight-wide survey of the mainland and island shelves of southern California coordinated by the Southern California Coastal Water Research Project. The second specimen was 90 mm SL and was collected on January 19, 1999 off Point Loma, California, at lat. 32°37.54' N and long. 117° 19.37' W at a depth of 100 m. It was captured at one of the City of San Diego, Metropolitan Wastewater Department, Environmental Monitoring and Technical Services' long-term, fixed-location trawl monitoring stations. City of San Diego marine biologists brought this specimen to the attention of R.H. Rosenblatt (Scripps Institution of Oceanography; SIO), who identified it as a blacklip dragonet. This was the first specimen identified from California waters although it was the second specimen collected. M. J. Allen (Southern California Coastal Water Research Project; SCCWRP) identified the first-caught specimen later when voucher specimens collected during the Bight'98 survey were sent to SCCWRP for taxonomic confirmation. Both specimens have been catalogued in the SIO Marine Vertebrates Collection: SIO 00-79 (from Santa Catalina Island) and SIO 99-1 (from Point Loma). Both specimens had similar meristics (Table 1).

The previous published geographic range of this species was from Bahía Magdalena, Baja California Sur, Mexico and the Gulf of California to Talara, Peru, including Gorda Banks (off Cabo San Luca, Baja California Sur, Mexico), Cocos Island, and the Galapagos Islands (Cruz-Aquero *et al.* 1994, Grove and Lavenberg 1997). The capture of a blacklip

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TABLE 1. Location and meristic data for blacklip dragonet (*Synchiropus atrilabiatu*s) specimens collected in southern California in 1998 and 1999.

Category	California Specimen (SIO Collection No.)	
	SIO 00-79	SIO 99-1
Collection Information		
Date	23-Jul-98	19-Jan-99
Location	Santa Catalina Island, CA	off Point Loma, CA
Latitude N	33°17.68'	32°37.54'
Longitude W	118°17.00'	117°19.37'
Depth (m)	97	100
Standard Length (mm)	56	90
Meristic Counts		
Dorsal Fin Elements	IV, 9	IV, 9
Anal Fin Rays	8	8
Pectoral Fin Rays	20	22
Pelvic Fin Elements	I, 5	I, 5
Principal Caudal Fin Rays	10	10

dragonet at Santa Catalina Island represents a range extension of 1,250 km north of its northernmost published record at Bahia Magdalena, Mexico (lat. 24°35.0' N) (Cruz-Aquero *et al.* 1994, Love *et al.* 1996²) and about 650 km from its previous northernmost unpublished occurrence (i.e., Bahia Playa Maria, Baja California, Mex., lat. 28°52.0' N, long. 114°30.0' W, September 1, 1952; SIO 52-60).

Blacklip dragonet occurs on soft bottoms on the mainland and island shelf. Benthic individuals range in depth from 12 to 150 m in sand and mud habitats, and to a lesser degree [in tropical areas] in coral rubble (Grove and Lavenberg 1997). Although the species transforms from larva to juvenile at 8.3-12.5 mm (Watson 1996), pelagic juveniles are caught in midwater to 39 mm SL (SIO 72-342). Larvae and pelagic juveniles have been taken offshore to 300 km near the surface over water depths of 4,000 m or more (Grove and Lavenberg 1997). Maximum size of adults is 121 mm (Grove and Lavenberg 1997).

Blacklip dragonet has a cottiform body with a small mouth (Figure 1) and superficially resemble sculpins (family Cottidae). It differs from all sculpins in having a tiny gill opening reduced to a pore on the dorsal surface behind the head (Figure 1); sculpins have relatively large lateral gill openings. It is scaleless with a pointed snout and highly protrusible upper jaws. Characteristics of blacklip dragonet that

distinguish it from other callionymids include numerous small dark blotches on the body, a dorsal fin with dark oval blotches between the third and fourth spines, black coloration on the lower half of the anal fin, and a black margin on the upper jaw (Grove and Lavenberg 1997). Fin element ranges are the following: dorsal fin (IV, 8-9), anal fin (7-8), pectoral fins (18-23), pelvic fins (I, 5), principal caudal rays (5+5), and procurrent caudal rays (2-3 upper, 2 lower). There are 6 branchiostegal rays.

The appearance of blacklip dragonet in the waters of the Southern California Bight at the time of collection may be related to the physical oceanographic conditions associated with the 1997-1998 El Niño. This was just one of many tropical species collected for the first time in California after the warm water intrusion that was first detected in Southern California during July and August 1997 (Lea and Rosenblatt 2000). These fishes may have come into the area as larvae or juveniles with the warm water mass which moved up from the south. While no ages were determined for the two specimens discussed here, they were collected at relatively small sizes (56 mm in July 1998 and 90 mm in January 1999). If juveniles are pelagic to about 39 mm (as indicated by SIO collection data), the first specimen may have settled to the bottom in spring of 1998. The second specimen may have settled at this time also

²Love, M.S., L. Thorsteinson, C.W. Mecklenburg, and T.A. Mecklenburg. 1996. A checklist of marine and estuarine fishes of the North East Pacific, from Alaska to Baja California. National Biological Service. Located at website lovelab/home.html.

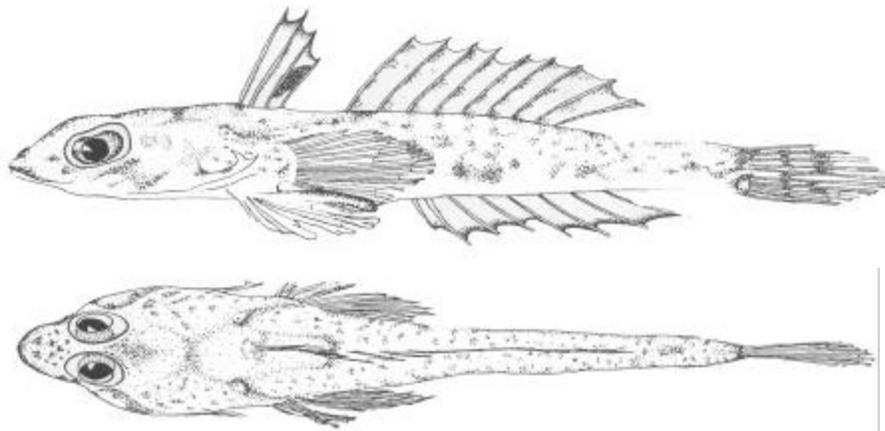


FIGURE 1. Blacklip dragonet (*Synchiropus atrilabiatus*). Top and side view of specimen from Santa Catalina Island, 56 mm SL; SIO 00-79 (drawing by Atsuhiko Kubo).

and grown to its length at capture in nearly a year's time; however, the growth rate of this species is not known.

Little is known about the ecology or behavior of this species. However, callionymids typically feed on small benthic invertebrates and creep along the seafloor on their pelvic fins; some species bury in the sand (Grove and Lavenberg 1997). They are sexually dimorphic with larger males and have elaborate courtship rituals (Grove and Lavenberg 1997). Blacklip dragonet is oviparous with planktonic eggs and larvae (Watson 1996). Larvae are taken throughout the year, with young larvae collected primarily during summer (Watson 1996).

The common name 'blacklip dragonet' was suggested by R. H. Rosenblatt (SIO) in reference to its black upper lip and its scientific name *atrilabiatus* (black lip). Other English common names for this species include 'sleepy dragonet' (Bussing and Lopez 1994) and 'antler dragonet' (Grove and Lavenberg 1997); in Spanish, it is known as 'gobio vistoso' (Bussing and Lopez 1994) and 'dragonito de asta' (Grove and Lavenberg 1997). We recommend 'blacklip dragonet' as an English common name for this species as this name has more diagnostic value than the other common names.

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