Asemichthys taylori Gilbert, 1912, Spinynose Sculpin, New to the California Marine Fauna

Milton S. Love,1* Gregory C. Jensen,2 and Kevin Lee3

1Marine Science Institute, University of California, Santa Barbara, CA 93106
2Gregory C. Jensen, School of Aquatic and Fishery Sciences, Box 355020, University of Washington, Seattle, WA, 98195
3Fullerton, CA 92822

On 21 June 2017, Author K. Lee, diving in 29 m of water at Esalen Pinnacle (36°07.6′′N, 121°39′′W), central California, photographed a fish we have identified as Asemichthys taylori Gilbert, 1912 [referred to by some authorities as Radulinus taylori (Gilbert 1912)], the spinynose sculpin (Fig. 1). We identified this fish through a combination of characters that we have compared with Radulinus asprellus Gilbert, 1890 (slim sculpin) and Radulinus boleoides Gilbert, 1898 (darter sculpin), the two species A. taylori most closely resembles (Table 1). The most diagnostic characters for this specimen are possession of 1) a dark lower half of the head, 2) a light band behind the eye, and 3) blue edging to some of the saddles (Table 1). Other characters that we can gauge from the photograph, including number of pectoral rays, number of scale rows behind the eye, and the relation of orbit width into snout length, all tend to confirm our identification (Table 1). Visual comparison of an image of R. asprellus (Figure 2) with both the central California and British Columbia fishes clearly demonstrates a range of differences including long nasal spines in R. asprellus (lacking in A. taylori), as well as a lack of the diagnostic characters listed above. Lastly, this specimen compares well with that of an A. taylori photographed within its previously known range in the San Juan Islands, Salish Sea (Fig. 3).

Asemichthys taylori was originally collected in Departure Bay, Vancouver Island (about 49°12′N, 123°58′W) (Gilbert 1912). All subsequent captures have occurred in a relatively restricted area from southeastern Alaska, at the junction of Sumner and Clarence straits off Strait Creek (56°12′N, 133°15′W) (Love et al. 2005), to Keystone Jetty, Whidbey Island, Puget Sound (Kent et al. 2011). This new record represents a geographic range extension of about 1,400 km (870 mi). The maximum size of this species is 7.4 cm (Peden and Wilson 1976) and its documented depth range is 5–27 m (min.: Peden and Wilson 1976; max.: this paper). An undocumented capture has been reported at a depth of 49 m (W.A. Palsson, pers. comm. to M.L.).

Relatively little is known of this species biology and behavior. In Washington State it typically occurs in the shallow subtidal on fragmented-shell bottoms adjacent to rock reefs (G.C. Jensen, pers. obs.) and is rarely taken in trawls. Spawning occurs at least during February and March in subtidal waters. At least in southern British Columbia spinynose sculpin exclusively lay their eggs in the nests of Enophrys bison Girard, 1854, the buffalo sculpin (Kent et al. 2011). Eggs are usually green in color, but may also be pink or orange. While it feed on a variety of crustaceans and bivalves, this species appears to be unique among cottids in ingesting large numbers of snails (Norton 1988). Upon capturing a snail, the sculpin punches holes in the gastropod’s shell using specialized vomerine teeth.

* Corresponding author: love@lifesci.ucsb.edu