

FIRST RECORDS OF THE FRINGED SCULPIN, *ICELINUS FIMBRIATUS* (SCORPAENIFORMES: COTTIDAE), OFF THE WEST COAST OF BAJA CALIFORNIA, MEXICO

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The family Cottidae is represented by about 275 species in 70 genera (Nelson 2006), with greatest diversity along the North Pacific coastline from Japan to southern California. The genus *Icelinus* contains 11 species (Bolin 1936, Yabe et al. 1980, Yabe et al. 2001, Rosenblatt and Smith 2004), all occurring in the North Pacific. Only *Icelinus quadriseriatus* (Lockington 1880), *Icelinus tenuis* Gilbert, 1890, and *Icelinus cavifrons* Gilbert, 1890 are found along the Mexican coast (Love et al. 2005).

We report the first records of the fringed sculpin, *Icelinus fimbriatus* (Gilbert 1890), off the west coast of Baja California. The previous known distribution of *I. fimbriatus* extends from Pendrell Sound in southern British Columbia to San Diego, California (Peden 1984), usually at depths from 30 to 265 m (Miller and Lea 1972, Peden 1984).

The two specimens were among demersal fishes sampled during surveys in October 2004 and March 2005 off the coast of Baja California. A network of stations were sampled along the coast, extending some distance offshore. Each trawl lasted about 15 to 20 minutes with the research vessel at a cruising speed of about ~2.5 knots per hour.

We collected the first *I. fimbriatus* specimen on 23 October 2004 off Isla de Cedros (lat. 28°25'N, long. 115°35'W) at a depth of 74 m. A second specimen was captured in front of Bahía Tortugas (lat. 27°44'N, long. 115°17'W) on 28 March 2005 at a depth of 250 m. After collection, the specimens were stored in a refrigerator for transfer to the laboratory. In the laboratory, the two specimens were fixed in 10% formaldehyde buffered with sodium borate prior to permanent preservation in 70% ethyl alcohol. We identified the two specimens to species level using guides and fish keys (Bolin 1936, Miller and Lea 1972, Eschmeyer et al. 1983, Peden 1984). Common names of fishes follow Nelson et al. (2004).

Finally, the specimens were deposited and catalogued in the ichthyological collection at CIBNOR in La Paz, B.C.S., Mexico. Specimen #1 was identified as a mature female, while specimen #2 was of indeterminate sex as well as being slightly dehydrated. All measurements (Table 1) were made on the preserved specimen.

The specimens were identified as *Icelinus fimbriatus* based on two low, blunt,

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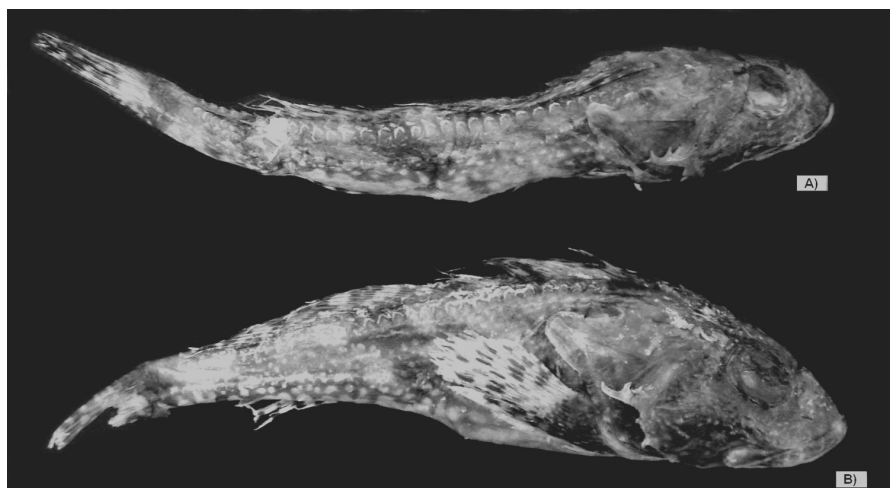


Figure 1. External appearance of fringed sculpin, *Icelinus fimbriatus* (Gilbert 1890) from Baja California, Mexico. (A) Slightly dehydrated specimen of indeterminate sex (CIBNOR N4336), (B) Mature female (CIBNOR N4335).

recumbent spines at an upper posterior angle of orbit, the lack spines on post-temporal, and a small sharp spine at the lower angle of the subopercle (Fig. 1). Also nasal cirrus large, with an expanded palmate tip, a fringe of cirri on posterior end of maxillary, and lateral line covered with 32 to 34 scales. Dorsal scale band originated under the third dorsal spine (Bolin 1936).

Table 1. Morphometric and meristic characteristics for two specimens of fringed sculpin, *Icelinus fimbriatus*, from Baja California, Mexico. * percentage (%) of the standard length.

Characteristic	Specimen 1	Specimen 2
Total length (mm)	149	155
Standard length (mm)	125	129
Maximum body height*	19.8	14.4
Head length*	33.9	30.6
Snout length*	14.1	13.2
Interorbital distance*	0.2	0.1
Ocular diameter*	7.7	7.2
Caudal peduncle height*	0.6	0.5
Dorsal fin	X, 15	X, 15
Anal fin	12	12
Pectoral fin	17	17
Pelvic fin	I, 2	I, 2
Number of dorsal scales	32	34
Weight (g)	45	25

Other fishes collected with the fringed sculpin were the California skate, *Raja inornata*, the Pacific argentine, *Argentina sialis*, the California lizardfish, *Synodus lucioceps*, the Pacific hake, *Merluccius productus*, the spotfin cusk-eel, *Ophidion galeoides*, the California scorpionfish, *Scorpaena guttata*, the buccaneer rockfish, *Sebastes exsul*, the Mexican rockfish, *S. macdonaldi*, the halfbanded rockfish, *S. semicinctus*, the shortspine combfish, *Zaniolepis frenata*, the smooth stargazer, *Kathetostoma avertuncus*, the Pacific scabbardfish, *Lepidopus fitchi*, the bigmouth sole, *Hippoglossina stomata*, the slender sole, *Lyopsetta exilis*, the diamond turbot, *Pleuronichthys guttulatus*, the hornyhead turbot, *P. verticalis* and the dark flounder, *Monolene asadai*.

Species of the genus *Icelinus* produce a single clutch of 200-250 adhesive eggs that are negatively buoyant after being spawned by the female. The planktonic larval stage may last for as long as 2 months (Feeney 1987). During this phase, the currents are an extremely important mechanism in dispersion of larvae to other areas (Lea and Rosenblatt 2000). Perry et al. (2005) shows that climate change is having detectable impacts on marine fish distributions, mainly in species with life history traits associated with smaller body sizes, faster maturation, and smaller sizes at maturity. This record may indicate a southward shift in its distribution mainly have been caused by physical processes (gyres and upwelling). The western shelf of the Baja California Peninsula is part of the California Current System region, one of the world's most productive and dynamic areas (Zaytsev et al. 2003).

The presence of the species in the area constitutes the first record in Mexican Pacific coastal waters. This new record constitutes an addition to a list of recently reported range expansions of warm-temperate and tropical demersal fishes species off the west coast of Baja California (González-Acosta et al. 1999; Rodríguez-Romero et al. 2007). Previous absence of *Icelinus fimbriatus* is most likely because of the dearth of ichthyological studies in this area. If the new records just reflected increased sampling effort, one would expect to find both warm-temperate and tropical species incrementing their distributional ranges.

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