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**ANNOTATED CHECKLISTS OF FISHES**

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**Family Ptilichthyidae Jordan & Gilbert 1883**

quillfishes

By

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The extremely slender, elongate body and long, tall dorsal and anal fins of *Ptilichthys* give the fish the appearance of a bird's wing feather, or writing quill. The generic name is derived from the Greek word (*ptilon*) for quill. Head small, 4–7% of body length, with a broad fleshy appendage at the symphysis of the lower jaw. Dorsal fin starting at nape and comprising 79–90 isolated, low spines followed by 130\*–157 soft rays. Anal fin beginning far forward (at about 30% of standard length) and comprising 166–196 soft rays. Dorsal and anal fins confluent with much reduced caudal fin and, with growth of fish, fleshy extension of tail which becomes relatively longer and almost filamentous. Pectoral fins rounded, with 11–13 rays. Pelvic fins and girdle absent. One pair of nostrils (posterior absent). Scales cycloid, very small and scattered; or absent. Mechanosensory canals of the head reduced, remaining canals with few pores: nasal 1, interorbital 1, postorbital 1, preopercular 3, mandibular 2. Trunk lateral line canal absent, superficial neuromasts presumed present. Jaw teeth closely set, uniserial, with sharp conical tips; vomerine and palatine teeth absent. Gill membranes broadly united, free from the isthmus. Gill rakers as low, stout nubs. Branchiostegal rays 5–7. Pyloric caeca and swim bladder absent. Vertebrae 222–240. Yellow or orange to greenish gray, somewhat translucent; dark streak along body and others on head in preserved specimens. Size to 39 cm (15.3 in) not including caudal “filament” (Mecklenburg et al. 2002 [ref. 25968]). Northern North Pacific Ocean to depths of 360 m or more, typically at shallower depths over the middle and inner continental shelf. Quillfish may burrow in sand and mud during the day, but their daytime behavior is not known with certainty. At night they migrate to the surface to feed and are attracted by lights to docks and boats. One species.

Differences in meristics among specimens from Japan (Kobayashi 1961 [ref. 26851], Nakabo 2002 [ref. 26193]), the eastern North Pacific (Hart 1973 [ref. 26850], Richardson and DeHart 1975 [ref. 26852], Matarese et al. 1984 [ref. 13672]; E. Hilton and N. Kley, pers. comm., June 2003); and Bering Sea (Makushok 1958 [ref. 2878]) produce wide ranges in the counts (see above) and suggest clinal variations or the existence of subspecies or undescribed species. Discrepancies in the reporting of osteological and soft anatomy features may reflect the existence of separate forms, as well as developmental changes, and at the least indicate the need for further study. Obtaining adequate numbers of specimens for study may be difficult. *Ptilichthys* are not available in large numbers in museum collections. This scarcity is likely due to *Ptilichthys*' shape, great agility, and serpentine movements, which allow these fish to avoid capture and to

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\*The low-end figure of 115 dorsal rays given by Matarese et al. (1984:572 [ref. 26884]) was later corrected to 137 by Matarese et al. (1989:528 [ref. 26885]). Hilton and Kley's (pers. comm., June 2003) count of 130 in two quillfish (119 and 124 mm TL) from Friday Harbor, Puget Sound, Washington, is the lowest verifiable dorsal fin soft ray count reported.

easily slip through net mesh once caught; and the probability that they bury themselves in the substrate and are therefore inaccessible via bottom trawling. Most knowledge of the quillfish family comes from specimens found in the stomachs of other fishes. The largest quillfish on record was found in the mouth of a Pacific cod (*Gadus macrocephalus*).

The first use of the family-group name apparently was by Jordan and Gilbert (1883:369 [ref. 2476]) as a subfamily in Mastacembelidae, which at that time were classified as close relatives of Notacanthidae in an order of spiny eels (Opisthomi Gill). Gill (1885:259 [ref. 1653]) later made *Ptilichthys* the type of the family Ptilichthyidae and placed it provisionally among the blennioid fishes. The blennioid group of that era is now considered to include four suborders, of which the Zoarcoidei includes Ptilichthyidae (Nelson 1984 [ref. 13596], 1994 [ref. 26204]) and the other northern blennylike fishes. The relationships of the Ptilichthyidae to other zoarcoids have not been established.

### Genus *Ptilichthys* Bean 1881

*Ptilichthys* Bean 1881:157 [ref. 223]. Type species *Ptilichthys goodei* Bean 1881. Type by monotypy.

#### *Ptilichthys goodei* Bean 1881

*Ptilichthys goodei* Bean 1881:157 [ref. 223] (entrance to Port Levasheff [now Captains Bay], Unalaska, Aleutian Islands, Alaska, U.S.A., 10 fm). Holotype: USNM 26619 (poor condition, in pieces).

DISTRIBUTION: North Pacific: southern Bering Sea to Oregon and to Okhotsk and Japan seas.

REMARKS: In addition to the 160-mm holotype, Bean had a 302-mm specimen from Unalaska Island on loan from the Alaska Commercial Company of San Francisco. The whereabouts of the paratype are unknown (Springer and Anderson 1997 [ref. 22953]). The holotype was illustrated later by Goode and Bean (1896:fig. 304 [ref. 1848]). The depth of “~110 m” given for the holotype by Springer and Anderson (1997:7) evidently is an error; the 10 fm given by Bean (1881:157) converts to 18.3 m.

### Summary Lists

#### Genus-Group Names of Family Ptilichthyidae

*Ptilichthys* Bean 1881 = *Ptilichthys* Bean 1881

#### Incertae Sedis Genus-Group Names

None

#### Unavailable Genus-Group Names

None

#### Species-Group Names of Family Ptilichthyidae

*goodei*, *Ptilichthys* Bean 1881 = *Ptilichthys goodei* Bean 1881

#### Incertae Sedis Species-Group Names

None

#### Unavailable Species-Group Names

None

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