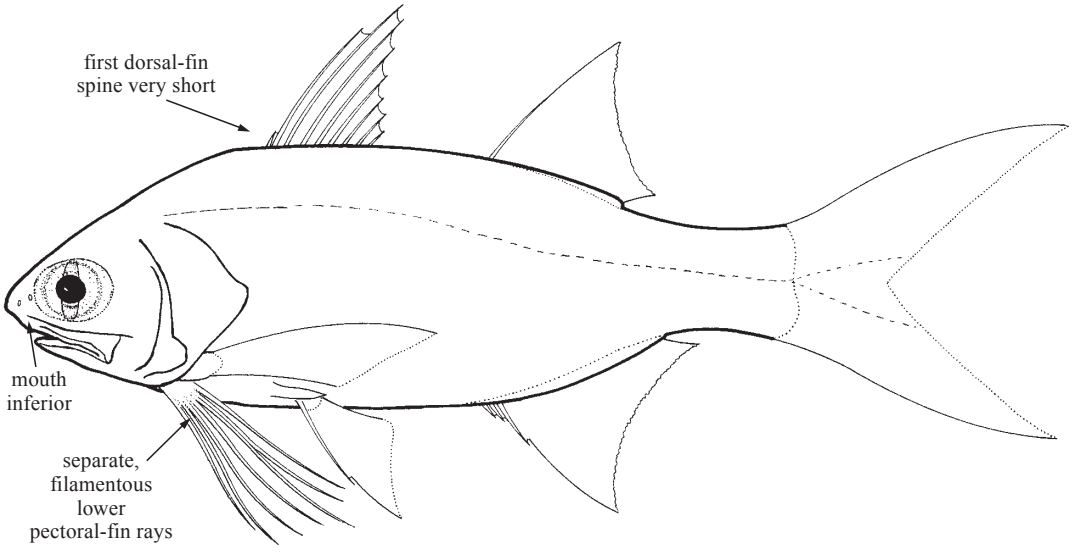
click for previous page

POLYNEMIDAE

Threadfins

by R.M. Feltes, Rutgers, The State University of New Jersey, USA

Diagnostic characters: For species in the WCA area. Perciform fishes with a range of maximum size from 33 to 46 cm, specimens commonly reaching size of 16 cm; oblong, somewhat compressed body. **Eye covered by adipose**, eye diameter greater than snout length. **Conical snout protruding anteriorly past mouth**; mouth large, subterminal, extending posteriorly past eye; upper lip thin; lower lip moderate. Supramaxillae absent; maxilla posteriorly broadened to varying degrees. Cardiform teeth on premaxillae, palatines, and ectopterygoids; tooth patch on vomer a wide "v" shape to a rounded triangle in large adults; premaxillary, dentary, palatine, and ectopterygoid tooth patches all moderate to wide; no wide gap separating teeth on opposing premaxillae. Branchiostegal rays 7. Maximum number of gill rakers from 22 to 38, of moderate length. **Two widely separated dorsal fins**; second or third spines of first dorsal fin longest; margins of second dorsal fin and anal fin variously concave, anterior soft rays longest; first dorsal fin with 8 spines, first spine very small; second dorsal fin with 1 spine and 11 to 13 soft rays; anal-fin insertion ventral to anterior part of second dorsal-fin base, anal fin with 3 spines (first spine very small) and 11 to 15 soft rays; base of anal fin longer than base of second dorsal fin; snout to second dorsal-fin origin greater than or equal to distance from snout to anal-fin origin; caudal fin deeply forked with pointed lobes, 17 principal caudal rays; pectoral fins insert low on body, pectoral fins reach to 3/4 of pelvic fin to past end of pelvic fin; **7 to 9 separate pectoral filaments below 14 to 16 normal pectoral-fin rays**, extending to 3/4 of pelvic fin or past origin of anal fin; pelvic fins abdominal, inserted behind bases of pectoral fins, with 1 spine and 5 branched rays, reach near or past anus. Body, most of head, and much of fins covered with finely ctenoid scales; **lateral line continuous, extending to the caudal-fin margin** and **typically bifurcates on caudal fin** with branches terminating between first and second medial rays of both upper and lower caudal-fin lobes; lateral-line scales 54 to 73; scales above lateral line 6 to 9; scales below lateral line 10 to 14. Nasal bones anterior with lateral aspects surrounding anterior of nasal capsules. Ventral section of the coracoid with foramina and anterior margin of this section greatly expanded; long posterior process of coracoid extends dorsally, medial to pectoral radials. Fourth pectoral radials elongate. **Basipterygia not in direct contact with cleithra**, but in ligamentous contact with second postcleithra. Precaudal vertebrae 10 and caudal vertebrae 14. Swimbladder simple, elongate, and usually moderate to large in size. **Colour:** silvery, golden, or light brown dorsally to yellowish or whitish ventrally; dark silvery spot on opercles; fins usually off white, yellow, and often dusky or to varying degrees of black.

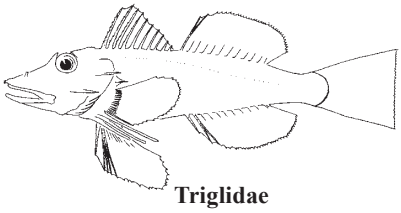


Habitat, biology, and fisheries: Polynemids often inhabit sand and mud flats. Some species enter estuaries or rivers. Development is without marked metamorphosis. No external sexual dimorphism. Some other species in family are hermaphrodites. Recorded life span from 1 to 8 years. Most species feed largely on polychaetes, fishes, and crustaceans, especially prawns. No fishery statistics are reported by FAO for this family in Area 31. Represents little commercial value in the Western Central Atlantic. Some species of eastern Atlantic of more commercial significance as are several other species in Indo-Pacific areas. Usually marketed fresh. The swimbladders of some other polynemids have also been valued for isinglass.

Remarks: Species in this area belong in the genus *Polydactylus* Lacepède, although these and other species are sometimes wrongly placed in *Polynemus* Linnaeus. The 3 species of *Polydactylus* in this area are very similar to each other in shape.

Similar families occurring in the area

None. The Polynemidae have detached lower pectoral-fin rays that are thread-like. The Triglidae have 2 or 3 detached lower pectoral-fin rays that are more fleshy.



Triglidae

Key to the species of Polynemidae occurring in the area

Remark on key character: Lateral-line scale count is to base of caudal fin.

1a. Pectoral filaments 8 (rarely 9); gill rakers 34 to 38. . . . . ***Polydactylus octonemus***

1b. Pectoral filaments 7 (rarely 8); gill rakers 22 to 30. . . . . → ***2***

2a. Lateral-line scales 67 to 73 (mean =70); anal-fin rays 13 to15 (mean =14) . . . ***Polydactylus oligodon***

2b. Lateral-line scales 54 to 63 (mean =58); anal-fin rays 12 to14 (mean =13) . . ***Polydactylus virginicus***

List of species occurring in the area

The symbol is given when species accounts are included.

Polydactylus octonemus (Girard, 1858).

Polydactylus oligodon (Günther, 1860).

Polydactylus virginicus (Linnaeus, 1758).

References

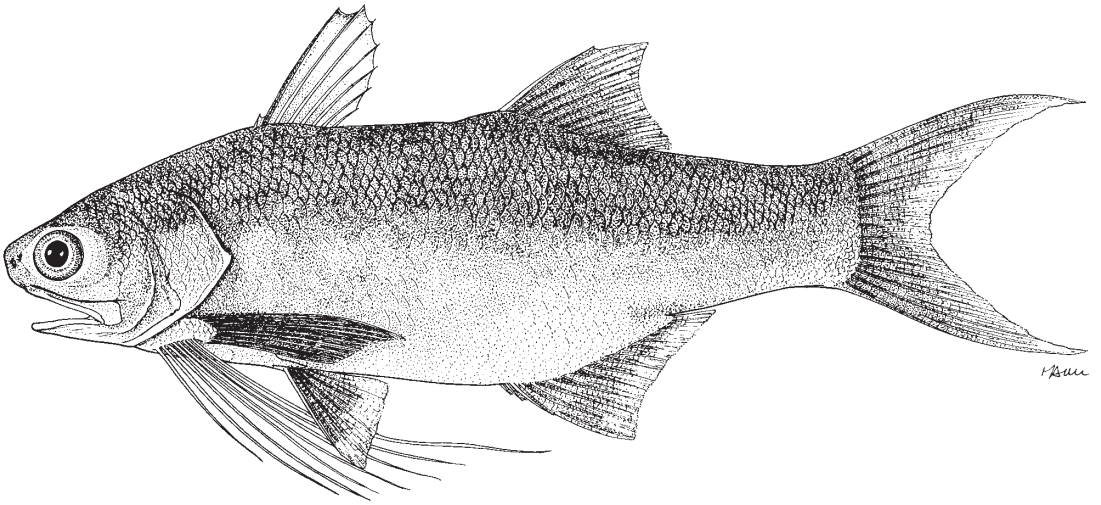
Dentzau, M.W. and M.E. Chittenden, Jr. 1990. Reproduction, movements, and apparent population dynamics of the Atlantic threadfin *Polydactylus octonemus* in the Gulf of Mexico. *US Nat. Mar. Fish. Serv. Fish. Bull.*, 88(3):439-462.

Randall, J.E. 1966. On the validity of the western Atlantic threadfin fish *Polydactylus oligodon* (Gònther). *Bull. Mar. Sci.*, 16(3):599-602.

Polydactylus octonemus (Girard, 1858)

Frequent synonyms / misidentifications: *Polynemus octonemus* Girard, 1858; *Trichidion octofilis* Gill, 1861 / None.

FAO names: En - Atlantic threadfin; **Fr** - Barbure à huit barbillons; **Sp** - Barbudo ocho barbas.

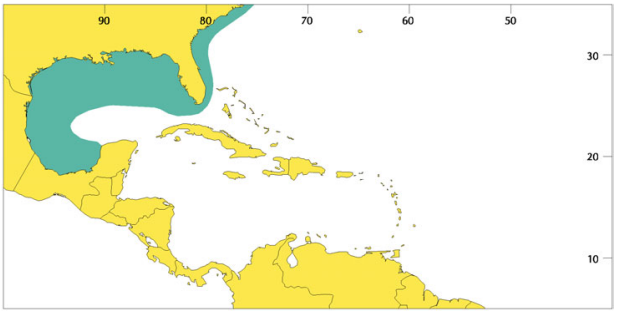


Diagnostic characters: Medium-sized, somewhat elongate and compressed species. Body depth at first dorsal-fin origin 3.1 to 3.9 times in standard length. Head length 3.0 to 3.7 times in standard length; posterior margin of preopercle has less than 45 serrations. **Gill rakers 34 to 38 (mean 36)**. First dorsal fin with 8 spines; second dorsal fin with 1 spine and 11 to 13 (mean 12) soft rays; **anal fin with** 3 spines and **12 to 14 (mean 13) soft rays; base of anal fin 4.4 to 6.0 in standard length; pectoral fin with 14 to 16 (mean 15) simple rays, 8 (rarely 9) pectoral filaments**, eighth filament, from ventral-most, usually longest. **Scales in lateral line 56 to 64 (mean 59); scales above lateral line 6 or 7 (mean 6); scales below lateral line 10 to 12 (mean 11). Colour:** head and body light olive to light yellow or dull silver with dusky scale margins dorsally, lighter ventrally becoming yellowish or off white; dorsal and anal fins dusky yellow, black distally, anterior anal-fin rays may be white, ventral fins whitish with darker outer rays, pectoral fins black, pectoral-fin filaments translucent.

Size: Medium-sized species attaining 23 cm, some authors claim to 33 cm; commonly to 20 cm.

Habitat, biology, and fisheries: Taken along coasts over sand or mud flats and beaches; frequently caught in the surf; most abundant at depths of 5 to 22 m; 4 to 6 cm larval specimens taken at surface in water to 2 736 m deep; currents bring larvae into shore, then fish disperse offshore as they develop, becoming pelagic; commonly enters estuaries, taken in wide range of salinities. Larger specimens taken along coast of Texas from April to October, with peak in midsummer; second most abundant noncommercial fish in Louisiana estuaries during much of summer, moving offshore in August; largely absent from Louisiana estuaries from November through March; small numbers taken out in Gulf of Mexico during November. Probably spawns off Louisiana and Texas from December to March; mature at 16 to 21 cm. Typical life span one year. Caught incidentally, of little commercial importance.

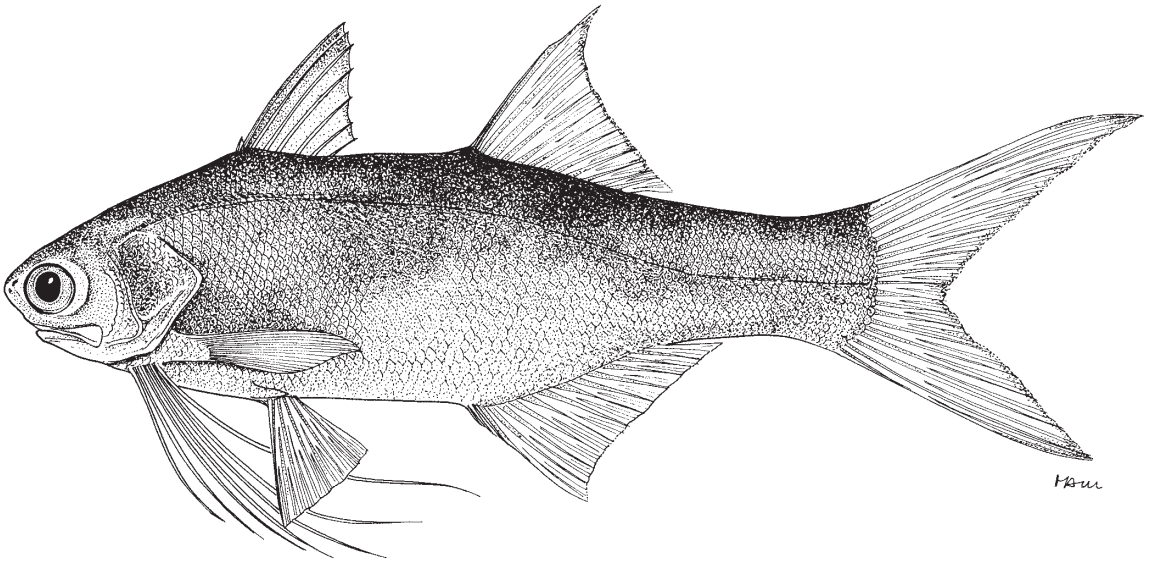
Distribution: Rare along eastern coast of the USA, strays north to Long Island, New York; occurs around Florida and along the coast of the Gulf of Mexico to approximately 20° N on Yucatán, seasonally abundant in northwestern Gulf of Mexico; annual abundance highly variable. Juveniles taken over deep water in Gulf of Mexico. Some authors cite presence off Nicaragua and Venezuela.



Polydactylus oligodon (Günther, 1860)

Frequent synonyms / misidentifications: *Polynemus oligodon* Günther, 1860 / None.

FAO names: En - Littlescale threadfin; **Fr** - Barbure à sept barbillons; **Sp** - Barbudo sietebarbas.

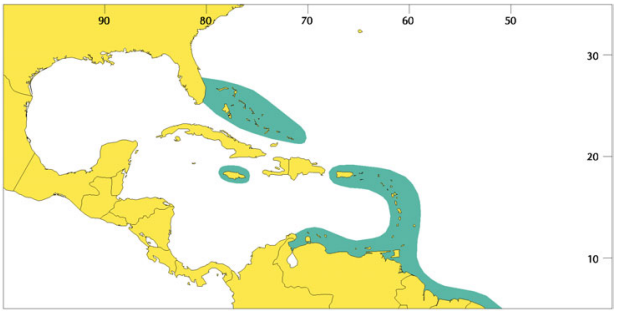


Diagnostic characters: Medium-sized, somewhat elongate and compressed species. Body depth at first dorsal-fin origin 3.3 to 3.9 times in standard length. Head length 2.9 to 4.3 times in standard length; posterior margin of preopercle has less than 65 serrations. **Gill rakers 22 to 30 (mean 27)**. First dorsal fin with 8 spines; second dorsal fin with 1 spine and 11 or 12 (mean 12) soft rays; **anal fin with 3** spines and **13 to 15 (mean 14) soft rays; base of anal fin 3.9 to 5.3 in standard length; pectoral fin with 15 or 16 (mean 16) simple rays, 7 (rarely 8) pectoral filaments**, seventh filament, from ventral-most, usually longest. **Scales in lateral line 67 to 73 (mean 70); scales above lateral line 7 to 9 (mean 9); scales below lateral line 11 to 14 (mean 13).** **Colour:** head and body dull silver dorsally, lighter ventrally, becoming off white; dorsal and caudal fins blackish, anal fin and paired fins dusky sometimes with lighter borders, degree of darkness of fins variable, first dorsal and pectoral fin may be black distally, pectoral fins pigmented largely laterally and dorsomedially, pectoral-fin filaments white.

Size: Medium-sized species reportedly **attaining 46 cm**; greater than maximum size of *Polydactylus virginicus* or *Polydactylus octonemus*. Largest size observed in collections 35 cm.

Habitat, biology, and fisheries: Taken close to shore in surf along exposed sand beaches in seines and trawls; caught incidentally, of little commercial importance, marketed fresh.

Distribution: East coast of Florida, at least to Fort Lauderdale, through the Antilles, including Jamaica and Trinidad, and south along the east coast of South America to Santos, Brazil.

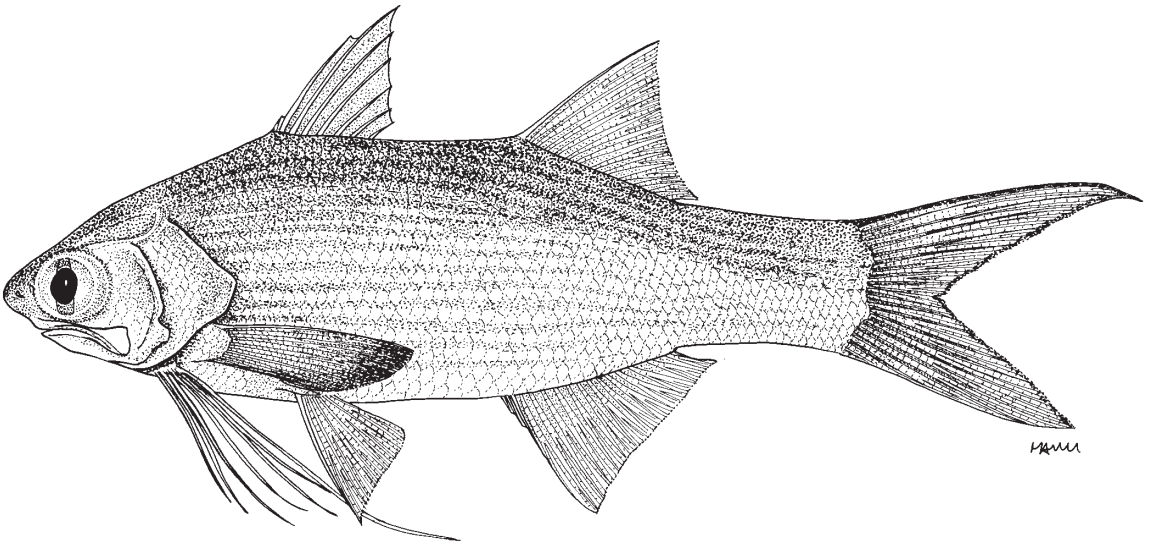


Remarks: Randall (1966) noted differences between *Polydactylus virginicus* and *P. oligodon* in shape of posterior margin of maxilla and in pigmentation. I found too much variation in specimens I examined to clearly distinguish *P. virginicus* and *P. oligodon* by these two characters. Due to the relatively recent distinction between these 2 species literature references may be confused. *P. virginicus* appears to be the more common of the 2 species.

Polydactylus virginicus (Linnaeus, 1758)

Frequent synonyms / misidentifications: *Polynemus virginicus* Linnaeus, 1758 / None.

FAO names: En - Barbu threadfin (AFS: Barbu); **Fr** - Barbure argenté; **Sp** - Barbudo barbu.

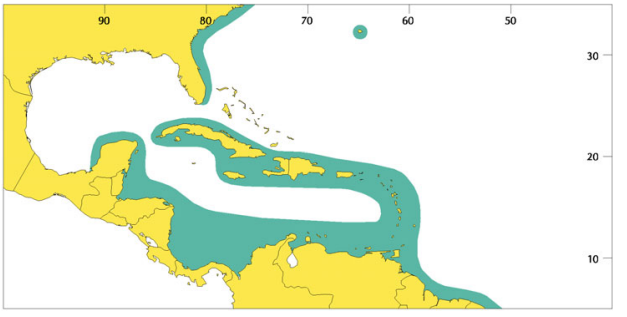


Diagnostic characters: Medium-sized, somewhat elongate and compressed species. Body depth at first dorsal-fin origin 3.0 to 3.9 times in standard length. Head length 2.8 to 3.6 times in standard length; posterior margin of preopercle has less than 65 serrations. **Gill rakers 26 to 30 (mean 28)**. First dorsal fin with 8 spines; second dorsal fin with 1 spine and 11 or 12 (mean 12) soft rays; **anal fin with** 3 spines and **11 to 14 (mean 13) soft rays; base of anal fin 4.7 to 6.2 in standard length; pectoral fin with 14 to 16 (mean 15) simple rays, 7 pectoral filaments**, seventh filament, from ventral-most, usually longest. **Scales in lateral line 54 to 63 (mean 58); scales above lateral line 6 to 8 (mean 7); scales below lateral line 10 to 12 (mean 11). Colour:** head and body olive or blue-grey dorsally, lighter ventrally becoming yellowish or off white; dorsal, anal, and pelvic fins are pale or yellowish with dark punctations, degree of darkness of fins variable, first dorsal fin and pectoral fin often black distally, pectoral filaments white.

Size: Medium-sized species attaining 33 cm; less than maximum size of *Polydactylus oligodon*; commonly to 16 cm in collections.

Habitat, biology, and fisheries: Taken along coasts over sand or mud flats and beaches, and among mangroves; frequently caught in the surf; commonly enters estuaries; taken to 55 m, but scarce at that depth; small specimens caught in large numbers at mouths of rivers. Feeds mostly on crustaceans, followed by chaetognaths, polychaetes, fishes, and some plant material; may feed primarily at night; common presence of small juveniles throughout year suggests prolonged spawning season. Taken in beach seines and trawls, bycatch of trawl fishery for shrimp; caught incidentally, of little commercial importance, marketed fresh.

Distribution: East coast of North America, Sommers Point, New Jersey, Bermuda, and south through the Antilles. All coasts of Yucatán Peninsula, Mexico, south along the east coast of Central America and South America to Salvador, Brazil.



click for next page