

ON THE VALIDITY OF THE WESTERN ATLANTIC
THREADFIN FISH *POLYDACTYLUS OLIGODON*
(GÜNTHER)

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ABSTRACT

The polynemid fish *Polydactylus oligodon* (Günther), previously placed in the synonymy of *P. virginicus*, is here regarded as a valid species. It is distinguished from *virginicus* principally by having 68 to 74, instead of 53 to 62, lateral-line scales, 16 instead of 15 upper pectoral fin-rays, a longer anal fin base, and a larger maximum size (at least 16 inches [41 cm] total length). The species originally was described from Brazil and Jamaica, and is here recorded also from Trinidad and Southern Florida.

In the current literature, only two species of threadfin fishes (family Polynemidae) are positively known from the western Atlantic: *Polydactylus virginicus* (Linnaeus) (Fig. 1 A), and *P. octonemus* Girard. A third species, *Pentanemus quinquarius* (Linnaeus), was recorded from Cuba by Günther (1860) from a single "half-grown" specimen, but apparently no other western Atlantic specimen has been taken.

P. quinquarius is a distinctive species with five free lower pectoral rays of great length and is well represented in collections from West Africa. Its occurrence in the West Indies should be confirmed by additional specimens from this region.

Polydactylus octonemus is known from New York to the Gulf of Mexico. It is distinguished from *P. virginicus* principally in having eight instead of seven free pectoral rays. The latter species is more tropical in its distribution, occurring in the Florida Keys and throughout the Caribbean Sea to Brazil. There are two records north of Florida. Hildebrand (1941) listed it from one 310-mm specimen from Cape Lookout, North Carolina, and Richards (1963) from a single specimen (S.L. 235 mm) taken near the mouth of Chesapeake Bay. The species attains a total length of about 13 inches (33 cm).

On May 6, 1964, the author purchased a ripe female polynemid in the fish market of Port-of-Spain, Trinidad which seemed typical of *virginicus* but measured 292 mm in standard length (total length 16 inches [41 cm]). This specimen has been deposited in the United States National Museum (USNM 199611). The next day, a 298-mm specimen was obtained with a spear off Chupara Point, Trinidad over a sand bottom in about 10 feet (3 m) of water. This fish is illustrated herein (Fig. 1 B) and is deposited in the collection of the Institute of Marine Biology of the University of Puerto Rico at Mayagüez (UPR 1879).

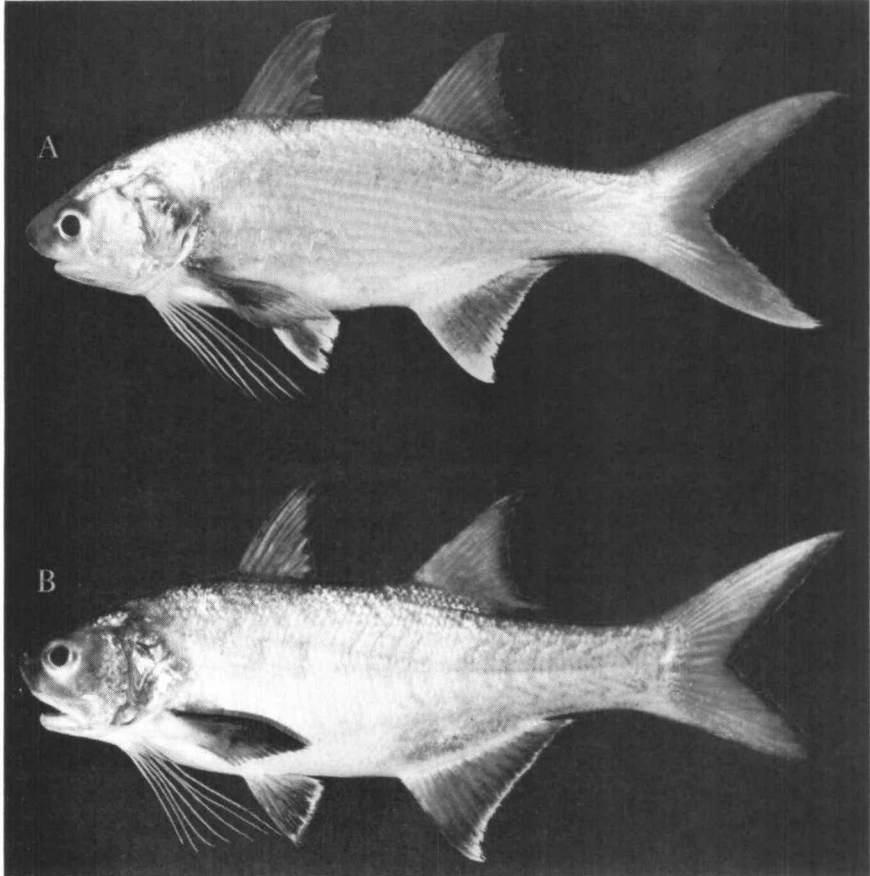


FIGURE 1. A. *Polydactylus virginicus* (Linnaeus), 192 mm standard length, UPR 1056, Puerto Rico. B. *Polydactylus oligodon* (Günther), 298 mm standard length, UPR 1879, Trinidad.

The large size of these two specimens aroused suspicion that they may not be the same as *virginicus*, many specimens of which had been collected by the author from Puerto Rico, the Virgin Islands, St. Martin, Tobago, Trinidad, and Haiti. A comparison revealed a higher count of lateral-line scales for the larger fish. One has 68 and the other 70 lateral-line scales, whereas *P. virginicus* possesses 53 to 62 lateral-line scales. Scale counts were made to the base of the caudal fin. The lateral line divides at the caudal base into two branches which continue nearly to the terminal edge of the fin.

A probable name for the large fish was promptly found. Günther (1860: 322) made a detailed description of the species, naming it *Polyne-mus oligodon*. He had two specimens, one from Rio de Janeiro, and the

TABLE 1
DIFFERENCES BETWEEN *Polydactylus virginicus* AND *P. oligodon*

Character	<i>P. virginicus</i>	<i>P. oligodon</i>
Number of lateral-line scales	53 to 62 ²	68 to 74
Number of upper pectoral fin-rays	15 ²	16
Number of anal soft fin-rays	12 to 14	12
Length of base of anal fin ¹	5.2 to 5.8 in standard length	4.4 to 4.8 in standard length
Shape of posterior edge of maxillary	rounded	truncate or slightly indented

¹The difference in the length of the base of the anal fin was not noted initially. Proportional measurements were provided by C. Richard Robins of the Institute of Marine Science, University of Miami, and John S. Ramsey of the Institute of Marine Biology, University of Puerto Rico.

²Loren P. Woods kindly checked Atlantic polynemid specimens in the fish collection of the Chicago Natural History Museum with a copy of the manuscript of this paper. A few small specimens from Panama fell outside the range of counts for *P. virginicus* (some had 16 pectoral fin-rays, and the lateral-line scale counts ranged as high as 65). He concluded, however, that all of these specimens were *virginicus*.

other, a skin, from Jamaica. These syntypes are in the British Museum (Natural History). A. C. Wheeler has kindly supplied the information that the one from Rio de Janeiro (preserved in alcohol and here designated the lectotype) is 147 mm in standard length and bears the register number 1853.4.18.23. The skin from Jamaica is the same length and is numbered 1848.1.12.890. According to Wheeler, the lateral-line scale counts of the two specimens are 73 and 71, respectively.

The Trinidad fish conform closely to the description of *oligodon* except for the dentition of the roof of the mouth. Günther stated that the villiform teeth of the palatine and pterygoid bones of *oligodon* are in narrow bands. Wheeler confirmed this, noting that the band on each palatine of the lectotype is 6 to 6.5 mm long and 0.8 to 1.0 mm wide. On the specimens from Trinidad, the patches of palatine teeth are elliptical, about half as broad as long. After examining other specimens (see below), I believe that the difference in the width of the tooth patches between the lectotype and the Trinidad fish is a function of age. The larger the fish, in general, the broader are the patches of palatine and pterygoid teeth.

Apart from lateral-line scales, meristic data for *P. virginicus* and *P. oligodon* are similar. Both, for example, have 11 to 13 + 16 or 17 gill rakers (raker at angle included with the latter, or lower-limb, count). The dorsal-ray count is VIII-I, 11 to 13 for *virginicus*. All specimens of *oligodon* which have been examined have the same dorsal-spine count and 12 soft rays. There are, however, two apparent differences in fin-ray counts. Although there are 7 lower filamentous pectoral rays for both species, there are 15 upper rays linked by membranes for *virginicus*, and 16 for *oligodon*. The anal fin-rays of *virginicus* number III, 12 to 14; those of *oligodon* have all been III, 12.

P. oligodon may be further differentiated from *virginicus* by the rounded posterior edge of the maxillary (that of *virginicus* is truncate or slightly indented) and the greater length of the base of the anal fin. These and the meristic differences are summarized in Table 1.

The color of the two species is similar. The paired fins of adult specimens of *oligodon* are almost entirely blackish (only the edges remain pale) and the spinous dorsal fin is blackish distally. The paired fins of *virginicus* may be entirely pale or may have a dusky or blackish area centrally, but it is usually not as extensive as that which occurs in specimens of *oligodon*.

Two additional lots of *oligodon* were found among the fishes in the collection of the Institute of Marine Science of the University of Miami. One is a fish 225 mm standard length (UMML 13133) collected with a spear by the author over a mud bottom in Cow Bay, Jamaica (it was identified initially as *P. virginicus*). The other is a series of six juveniles 32.5 to 65 mm standard length from Key Biscayne, Miami, Florida (UMML 49967). Thus *oligodon* appears to have a distribution similar to that of *virginicus*; it is evidently a rare species.

The common name "little-scale threadfin" is proposed for *Polydactylus oligodon*.

SUMARIO

SOBRE LA VALIDEZ DEL PEZ *Polydactylus oligodon* (GÜNTHER) DEL ATLÁNTICO OCCIDENTAL

El pez polinérido *Polydactylus oligodon* (Günther), que previamente fué colocado en la sinonimia de *P. virginicus*, es aquí considerado como una especie válida. Se distingue de *virginicus* principalmente por tener de 68 a 74, en vez de 53 a 62, escamas en la línea lateral; 16 en vez de 15 radios pectorales superiores; la base de la aleta anal mas larga y llegar a un mayor tamaño (por lo menos 41 cm de longitud total). Aunque originalmente es descrito procedente de Brasil y Jamaica, se reporta también en localidades de Trinidad y sur de la Florida.

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