DESCRIPTION OF A NEW SPECIES OF THREADFIN (FAMILY POLYNEMIDÆ) FROM JAPAN.

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In this paper is given an account of the single species which represents in Japan the tropical family of *Polynemidæ* or Threadfins.

Family POLYNEMIDÆ.

Body oblong, compressed, and covered with rather large, loosely inserted, ctenoid scales. Lateral line continuous, continued on the tail, usually forked, with a branch on each lobe. Head entirely scaly; snout more or less conical, projecting over the mouth, which is rather large, inferior, with lateral cleft; premaxillary protractile, its basal process vertical; maxillary without supplemental bone, extending much beyond the eye, which is anterior, lateral, rather large, with a well-developed, adipose eyelid. Villiform teeth on jaws, palatines, and sometimes on vomer. Pseudo-branchiæ concealed. Branchiostegals 7. Gill membranes separate and free from the isthmus. Gills, 4, a slit behind the fourth. Two separate dorsals, somewhat remote from each other, the first of 8 feeble but rather high spines, the first and last spines very short, the third longest; the second dorsal equal to first in height, but base somewhat longer, of soft rays only. Anal fin either similar to or much longer than soft dorsal; caudal fin rather long, widely forked. Second dorsal, anal, and caudal fins more or less covered with small scales; the first 3 or 4 dorsal spines winged. Ventrals I, 5, abdominal, but not far removed from pectorals; pectoral fins moderate, placed low, in two parts, the lower and anterior portion of several filiform articulated appendages, free from each other, used as organs of touch. In the young the dorsal, caudal, and pectoral fins are dusky, the anal and ventral fins white; all the fins grow darker with age, the pectorals usually becoming black, the operculum blackish. Bones of the skull with a well-developed muciferous system as in Sciænidæ. Basis cranii double, with muscular tube; post-temporal

bifurcate; hypercoracoid with median foramen; superior pharyngeal bones 4. Pectoral actinosts divided; 2 of them normal, supporting the pectoral fin, 1 longitudinal, without rays, and 1 a plate on the coracoid, supporting the pectoral filaments. Stomach cœcal, with a few pyloric appendages. Air bladder various, sometimes wanting. Vertebræ 10 + 14 = 24. Genera 4, *Galeoides*, *Polistonemus*, *Polynemus*, and *Polydactylus;* the species inhabiting sandy shores of tropical seas, and sometimes entering rivers. Most of them are valued as food-fishes, their flesh resembling that of the Sciænidæ. The relations of this peculiar family appear to be with the Sciænidæ on the one hand, and with the Mugilidæ on the other, but all these resemblances may be superficial.

POLYDACTYLUS Lacépède.

Trichidion KLEIN, Historia Piscium, Missus., 1749, V, p. 28 (*Piracoaba* MARCGRAVE=*virginicus*), (non-binomial).

Polynemus LINNÆUS, Syst. Nat., 10th ed., 1758, p. 317 (in part, *quinquarius; virginicus; paradiseus*).

Polydactylus LACÉPÈDE, Hist. Nat. Poiss., 1832, VIII, p. 181, (*plumieri=virginicus*), (leaving *Polynemus* as the name of *quinquarius*).

Polynemus GÜNTHER, Cat., 1860, II, p. 319 (*paradiseus*).

Trichidion GILL, Proc. Ac. Nat. Sci. Phila., 1861, p. 274 (*plumieri=virginicus*).

Anal fin not much longer than soft dorsal, of about 13 or 14 rays; vomer with teeth; preoperculum serrate; free filaments of pectorals mostly shorter than body. Teeth in villiform bands on both jaws, vomer, palatines, and pterygoids. Preopercle sharply serrated on its posterior margin, its angle with a scaly flap. Scales rather small, finely ctenoid. First dorsal with 7 or 8 feeble, rather high spines, the first and last short. Soft dorsal and anal fins about equaling each other; pectoral filaments 3 to 9. Pyloric cœca in great number. Species numerous in warm seas, one of them reaching the shores of Japan.

(πολύς, many; δάκτυλος, finger.)

POLYDACTYLUS AGONASI Jordan and McGregor, new species.

AGONASHI (WITHOUT JAW); TSUBAME-KONOSHIRO (SWALLOW-TAIL SHAD).[a]

Polynemus plebeius SCHLEGEL, Fauna Japonica, 1845, p. 29, pl. XI, fig. 1; Nagasaki; (not *Polynemus plebejus* of Broussonet, a species from Tahiti=*Polynemus lineatus* GÜNTHER; not *Polynemus plebejus* GÜNTHER, Cat., II, p. 329=*Polynemus zophomus* JORDAN and MCGREGOR, new name, an Indian species with larger scales and a black humeral spot.—NAMIYE, Class. Cat., 1881, p. 94; Tokyo.—ISHIKAWA, Prel. Cat., 1894, p. 45; Tokyo; Kagoshima.

Polydactylus plebeius JORDAN and SNYDER, Proc. U. S. Nat. Mus., XXIII, 1900, pp. 358, 752; Tokyo, Yokohama.—JORDAN and SNYDER, Check List, 1901, p. 85; Yokohama.

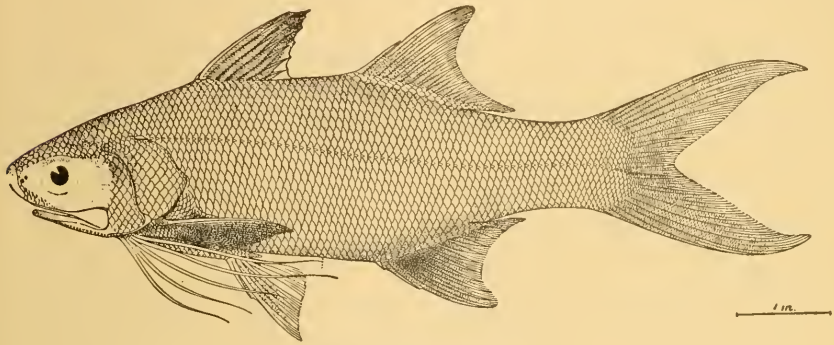
Head, 3½ in length to base of caudal; depth, 3¼.

[a] Tsubame—a swallow; konoshiro—a gizzard shad (*Konosirus punctatus*).

Dorsal, VIII–I, 13; anal, III, 12; scales, 68; 5 free pectoral rays, the longest reaching tip of ventral; eye, 4 in head; scales rather small, etenoid.

This species, the common *Polydactylus* of Japan, locally known as *Agonashi* (the fish without a jaw), was referred by Schlegel to *Polynemus plebejus* Broussonet, a common species of the coral reefs of the South Pacific originally described from Tahiti. From this species it differs notably in color and also in minor details of form. The two are, however, closely related.

In form *Polydactylus agonasi* is very similar to *P. plebejus*, but the coloration of the two species is different; in *P. plebejus* the general color is very dark, the fins are almost black and the body is brown;



POLYDACTYLUS AGONASI.

above the lateral line there is a series of narrow dark brown lines extending along the entire side of body; opposite base of second dorsal there are 7 of these dark lines above lateral line; below lateral line they are faintly developed.

The coloration in *P. agonasi* in alcohol is pale silvery yellow; first dorsal and pectoral speckled with dark brown. There are no dark stripes, or mere traces of streaks along the rows of scales.

In *P. plebejus* the second dorsal and anal are more concave and caudal more falcate than in *P. agonasi;* the scales are of the same size in the two species.

The type of *Polydactylus agonasi* (Tokyo, K. Otaki) is numbered 55600, U.S.N.M., two other specimens (cotypes, No. 9879, Stanford University) are in Stanford University from Tokyo.

The species was found by Jordan and Snyder rather common at Nagasaki and somewhat rare in the markets of Tokyo.

The specimens from Kotosho, Formosa, recorded by Jordan and Evermann,[a] with the scales 50, belongs apparently to *Polydactylus zophomus.*

[a] Proc. U. S. Nat. Mus., XXV, p. 351.