

Article XXXVII.— A NEW ANGEL-FISH (*ANGELICHTHYS TOWNSENDI*) FROM KEY WEST.

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In collecting fishes for the New York Aquarium at Key West Mr. Mowbray has found three quite distinct species of *Angelichthys* occurring there. Two of these are identifiable as *ciliaris* and *isabelita*, the forms recognized by Jordan and Evermann in Bull. 47, U. S. National Museum; for the third we propose the name *townsendi*, in appreciation of the untiring efforts of Dr. Charles H. Townsend, Director of the Aquarium, to show beautiful coral-reef fishes to the public.

***Angelichthys townsendi* sp. nov.**

Char. sp.— Eye smaller than in *ciliaris* or *isabelita* (5 in head). Preopercular spine short as in *isabelita*, the small spines above it on the ascending limb shorter more numerous and more irregular than in either of the other species. Anal spines IV instead of III as in these. Pectoral and caudal mainly yellow as in *ciliaris*, but like *isabelita* in lacking the prominent ocellus on the nape.

Type. No. 4751 Am. Mus. Nat. Hist., 285 mm. in length to tip of caudal. Key West Florida, June 1914; New York Aquarium.

Description of Type. Head in length to base of caudal 3.7. Depth 1.7. Eye 5 in head, snout 2.25. Interorbital 3. Dorsal XIII, 19. Anal IV, 19. Scales about 45, about twice as deep as broad. Last dorsal spine longest, 1.9 in head, ventral spine 1.8, last anal spine 2.0, pectoral fin 1.35, caudal 1.2. Soft dorsal and anal fins attenuate, extending well beyond tip of caudal. Caudal rounded. Preopercular spine weak for the genus, measured along groove 5 in head, 14–16 irregular very small spines on the ascending limb of preopercle. Two or three small spines on the lower limb of the preorbital angle, none on its ascending limb. Profile almost straight, snout slightly protruding.

Color when fresh grayish green, lips, interorbital, nape, upper margin of opercle, spines of head, breast, and base of pectorals light blue, cheeks and opercle pale greenish blue, inner and outer margins of vertical fins edged with bright blue, an orange stripe beginning at the base of first dorsal spine extending to produced rays, a similar less conspicuous stripe on anal, pectoral and caudal lemon yellow, ventrals very pale yellow, angle of mouth and membrane at angle of opercle orange, eye golden, extreme base of pectoral sky blue, region immediately behind pectoral bright yellow, the margins of the larger scales edged with yellow, forming diagonal lines across the body. Membrane on lower limb of opercle orange.

We have only the type specimen which lived 2 or 3 weeks in the New York Aquarium.

Angelichthys ciliaris (Linné).

For the purposes of comparison with *townsendi* we use a dried specimen 320 mm. long to tip of caudal, taken at Key West by Mr. Mowbray, June, 1912.

Head 3.8. Depth 1.65. Eye 4.5. Snout 2.3. Interorbital 2.7. Dorsal XIV, 20. Anal III, 20. Scales about 48, more than twice as deep as broad. Last dorsal spine 2.3. Ventral spine 1.6. Last anal spine 2.3. Pectoral fin 1.3. Caudal 1.2. Preopercular spine strong, with a heavy sheathing membrane, measured along groove 3 in head. Ten prominent spines on the ascending limb of preopercle. Three small spines on the lower limb of the preorbital, and 4 larger radiating ones on the ascending limb. Scales on cheeks larger than in *townsendi* or *isabelita*. Profile as in *townsendi*, but snout more protruding.

Color when fresh greenish, lips, upper edge of opercle, interorbital region, breast, and margin of vertical fins deep blue. Nape with a large ocellus, larger than eye, blue black, spotted with blue and with a narrow blue border. Extreme base of pectoral blue black with narrow border of light blue in front. Last rays of vertical fins blue black, bordered posteriorly with lighter blue. A conspicuous orange stripe extending from ocellus across base of dorsal spines, disappearing on the soft fin. A similar less conspicuous stripe on anal. Scales of sides broadly edged with yellow, forming diagonal yellow bands below lateral line, scattered yellow points above lateral line onto base of soft dorsal. Pectorals, ventrals and caudal and lobes of vertical fins yellow. Eye broadly blue above and below with golden interspace. Spines of head dark blue.

This is the species figured as *ciliaris* by Bloch, 1787, and recently by Evermann and Marsh, Fishes of Porto Rico, 1900. It is rare at Key West from where three other specimens have recently been brought to the New York Aquarium.

Angelichthys isabelita Jordan & Rutter.

The following description is taken from a specimen 325 mm. long to tip of caudal, Key West, New York Aquarium, June 1914.

Head 3.7. Depth 1.8. Eye 4.7. Snout 2.2. Interorbital 3. Dorsal XIV, 20. Anal III, 19. Scales 35, less than twice as deep as broad. Last dorsal spine 2.1. Ventral spine 1.85. Last anal spine 2.15. Pectoral fin 1.25. Caudal 1.1. Preopercular spine moderate, measured along groove 4.5. 8-10 prominent spines on ascending limb of preopercle, less strong than in *ciliaris*. Lower limb of preorbital angle with 1-3 very small spines, none on the ascending limb. Profile steep, the nape gibbous, making it concave above the eye. Snout not protruding.

Color when fresh brownish gray, the scales largely brownish, margined with gray, especially on the lower portion of the body. Cheek gray. Nape, breast, spines of the head, upper margin of eye light blue. Outer margin of dorsal and anal narrowly blue. Membrane only of upper limb of opercle blue. Base of pectoral gray, then

broadly blue, the margin first yellow and then pale. Ventrals pale yellow. Caudal dark brownish gray, edged with yellow. Vertical fins the same, produced rays yellow.

This species is common at Key West. It is much more numerous at the Bermudas where it forms one of the most important food fishes. We have several specimens from there, where it is, so far as we know, the only species found, though long wrongly identified as *ciliaris*.

In conclusion the following key may be found useful in determining adults of our Atlantic species of this genus.

- A. Ascending limb of preorbital with strong radiating spines. Preopercular spine 3 in head measured along groove. A conspicuous persistent ocellus on nape.
ciliaris.
- AA. Ascending limb of preorbital without spines. Preopercular spine 4 to 5 in head. No ocellus on nape.
 - B. 4 anal spines. Nape not gibbous. Caudal and most of pectoral yellow.
townsendi.
 - BB. 3 anal spines. Nape gibbous. Caudal and pectoral with little yellow.
isabeli'a.

