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Umbrina bussingi, a new sciaenid fish from the tropical eastern Pacific Ocean

by

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Abstract: A new sciaenid fish from moderately deep water is described from the Pacific coast of Costa Rica. *Umbrina bussingi* is characterized by a relatively large eye, long pectoral fin, a single, laterally compressed mental barbel with an elliptical pore and a low dorsal fin-ray count. In addition, the new species differs from its eastern Pacific congeners in lacking oblique black stripes on the sides. *U. bussingi* differs from its western Atlantic cognate species *U. milliae* in its longer pelvic rays, dorsal rays subequal in length and lower dorsal and anal-fin counts.

A new sciaenid fish was captured by the Spanish vessel Macuro during an exploratory fishing cruise in December 1977 off the Pacific coast of Costa Rica at depths between 183 and 290 m.

The fish has a simple swim bladder (no appendages) rounded anteriorly and sharply pointed posteriorly, and a short mental barbel, characters diagnostic of the tribe Umbrinini (Trewavas, 1964; Gilbert, 1966).

UMBRINA BUSSINGI, new species

(Figs. 1 and 2)

Holotype: LACM 38715-1, 183.5 mm SL (standard length). V/Macuro station 41, Costa Rica, Central America, 09° 02' N; 84° 13' W, taken between 183 and 290 m with semi-pelagic trawl, 19 December 1977.

Diagnosis: An *Umbrina* distinguished from its congeners by the combination of: a single, laterally compressed barbel with an elongate, elliptical pore on the anterior edge; a relatively low number of soft dorsal rays; a large eye (9.5 percent of SL) and a long second anal spine. Meristic counts are dorsal fin XI, 21; anal fin II, 7; pectoral fin i, 17; gill rakers including rudiments 8 in upper arch, 11 in lower arch and 49 or 50 lateral line scales.

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Description: Characters mentioned in the diagnosis for the species are not included here. Proportions in percentage of standard length are presented in Table 1.

Body moderately elongate, laterally compressed; anterior dorsal profile gently convex; maximum depth between second dorsal spine and origin of pelvic fin, 3.05 times in SL; slightly convex from pelvic fins to origin of anal fin and moderately concave above and below caudal peduncle. Head moderate, 3.0 times in SL; snout length less than orbit diameter, 4.0 times in HL (head length); snout projecting beyond premaxillary a distance about equal to pupil diameter and with 5 upper rostral pores and 5 marginal pores (Fig. 2D). Rostral flap divided into 4 small lobes. Mental pores 4, 2 on each side of median mental barbel; mental barbel with an anterior elliptical pore. Eyes large, orbit diameter 3.4 times in HL. Least width of interorbital 5.0 times in HL. Mouth inferior slightly oblique. Upper jaw projecting beyond lower jaw; maxillary reaching anterior margin of pupil. Teeth of both jaws in broad bands decreasing in width at symphysis. All teeth sharp and pointed, those on outer bands enlarged and more canine-like. Nares close together, anterior ones more rounded and about width of posterior ones which are vertically elongate and situated immediately anterior to eye. Preopercle with serrated margin, serrae at angle most prominent. Gill rakers at angle of first arch largest, approximately length of anterior nares.

Body covered with large ctenoid scales (49 or 50 in lateral line), largest scales on median line below middle of spinous dorsal fin base, about one-half eye diameter. Head fully scaled; small cycloid scales below anterior nares to end of maxillary; scales ctenoid on interorbital and rest of head and body. Basal one-fourth of caudal fin covered with small, elongate ctenoid scales.

Dorsal fin with 11 spines, longest (fourth spine) 2.0 times in HL and reaching tenth dorsal spine when depressed. First dorsal fin spine smallest, less than pupil diameter; second spine equal to eye. Notch between dorsal fins not extending to dorsal-fin base. Dorsal fin rays 21, last divided at its base. Anterior soft rays about 2.7 times in HL; last 5 decreasing in length, last ray 5.0 times in HL. Pre-dorsal distance 2.7 times in SL.

Anal fin with 2 spines, second spine heavy, large, as long as longest dorsal spine (2.0 times in HL) and with a pronounced groove on posterior surface; second anal spine when depressed reaching vertical from end of dorsal base. First anal ray 2.0 times in HL, last anal ray divided to base, 4.1 times in HL; anal-fin origin below the ninth dorsal soft ray. Preanal distance 4.7 times in HL. Length of anal-fin base 3.7 times in HL.

Pectoral fins i, 17; rather long, longest rays passing pelvic fins and almost reaching to above anus (1.35 times in HL); pectoral origin just posterior to membranous tip of opercle; lower margin inclined obliquely and rays rapidly decreasing in length after fifth ray.

Pelvic fins I, 5, distal tips reaching a vertical from base of last dorsal spine; origin below lower end of pectoral fin base. Length of pelvics 1.7 times in HL. Prepelvic distance 2.65 times in SL.

Caudal fin with 14 branched rays; double truncate (upper lobe broken); midcaudal rays longest.

Coloration: Color in ethyl alcohol brownish, scale centers silvery with dark pigmentation on borders; a small, faint blotch on upper sides of body, just below last three dorsal spines. Opercles and branchiostegal membranes appearing dark externally due to black lining of gill chambers. Head light brown with a great

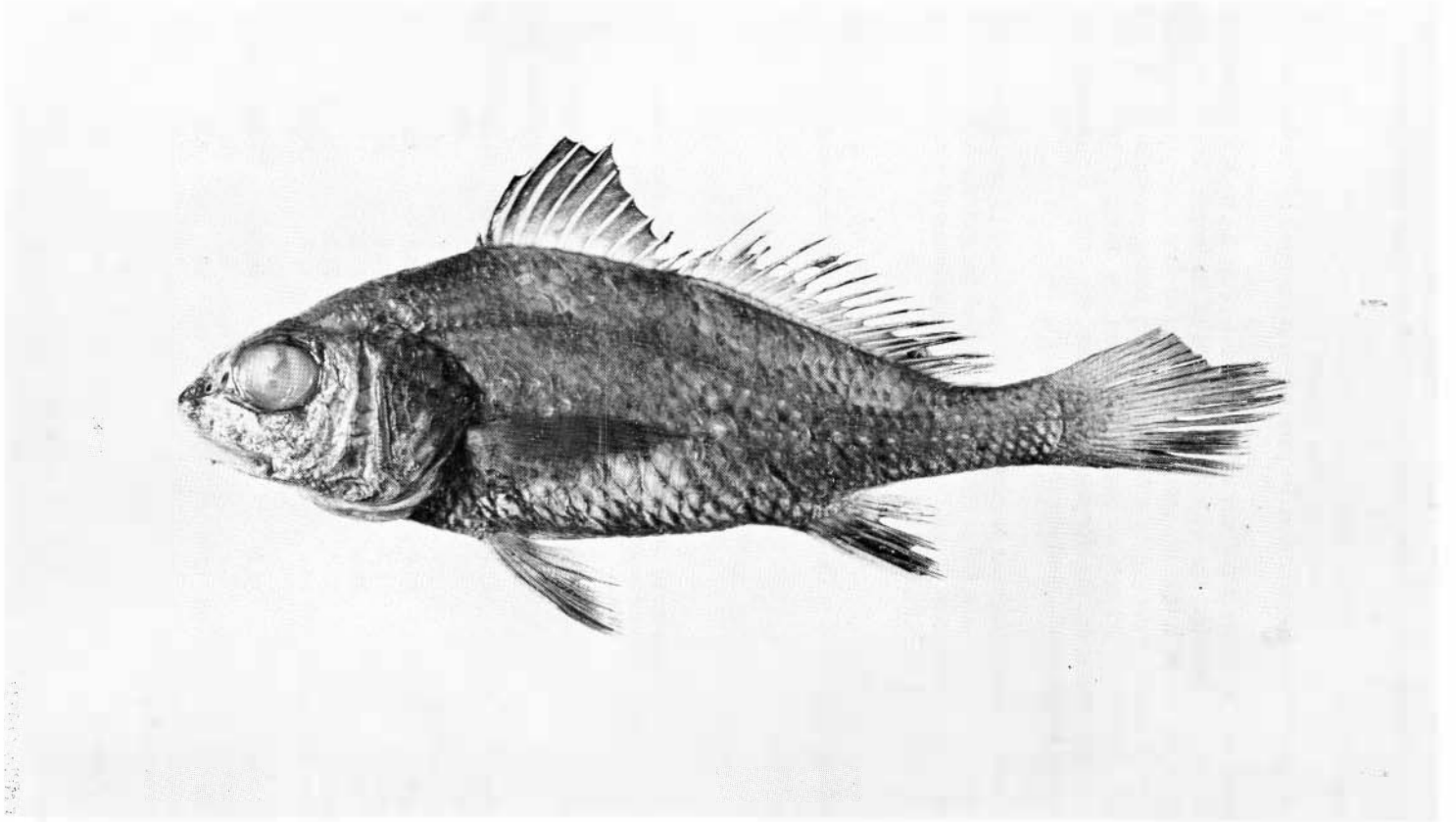

Fig. 1. *Umbrina bussingi*, new species, holotype, LACM 38715-1, 183.5 mm SL, from the Pacific coast of Costa Rica.

concentration of melanophores on snout, maxillaries, opercle and branchiostegals. Interradial membranes of spinous dorsal black anteriorly, paler basally posterior to the third dorsal spine. Soft dorsal fin dusky. Interradial membranes of anal fin black, darker between first three rays. Caudal fin base brown, distal two thirds black. Pectoral fin with scattered melanophores. Base of pelvic fins yellowish, distal half dark, two inner rays nearly colorless. Peritoneum with scattered melanophores.

Otoliths: The sagitta is the only enlarged otolith (Figs. 2A to 2C). Its length is one-half the eye diameter; the width is two-thirds of its length. The sagitta lies obliquely in the sacculus with the smooth and convex surface inside, to the median axis. As in all sciaenids the sagitta is characterized by having on its inner surface a tadpole-shaped sulcus; the anterior expanded portion, the ostium, is visible in outline, but is not channeled; the elongate bent portion, the cauda, is channeled. The outer surface has granulations on the anterior half (Fig. 2B).

Vertebral counts: *Umbrina bussingi* has 9 precaudal and 15 caudal vertebrae including the hypural plate. Other eastern Pacific *Umbrina* examined: *U. xanti* (2 specimens), *U. galapagorum* (5 specimens) and *U. tumacoensis* (4 specimens) also present 9 precaudal and 15 caudal vertebrae.

Etymology: This species is named after my husband, William A. Bussing for his valuable contributions to the knowledge of Costa Rican ichthyofauna.

TABLE 1

Counts and measurements of Umbrina bussingi *compared with two other species of* Umbrina. *Measurements are expressed in percent of standard length*

	U. bussing (Pac.)	*U. milliae** (Atl.)		*U. xanti* (Pac.)
	Holotype	Holotype	Paratype	4 specimens (UCR)
Standard length	183.5 mm	193.0 mm	160.0 mm	163.0–205.0 mm
Eye diameter	9.5	9.8	10.7	6.6– 7.4
Interorbital distance	6.8	7.1	7.1	6.1– 6.8
Head length	33.4	34.9	35.5	25.5– 29.7
Body depth	32.2	36.9	34.9	27.8– 30.3
Pectoral length	25.1	27.2	27.6	17.6– 18.1
Pelvic length	21.8	19.3	23.2	18.2– 20.3
Length second anal spine	17.4	14.5	15.7	11.2– 12.6
Dorsal fin rays	XI,21	XI,23	XI,22	XI,28–29
Anal fin rays	II,7	II,7	II,7	II,6
Pectoral fin rays	i,17	18	18	i,15–17
Pelvic fin rays	I,5	I,5	I,5	I,5
Gill rakers in lower limb	11			7–10
Total gill rakers	19	19	20	13–16
Lateral line scales	49	48	48	53–58

* After Miller (1971).

Remarks: Trewavas (1964) and Chao (1978) included *Umbrina* along with *Ctenosciaena* and *Menticirrhus* in the sciaenids with a single mandibular barbel. *Ctenosciaena* has a thin barbel without an apical pore. *Umbrina* and *Menticirrhus* have a barbel with an apical pore, however the latter group of species attains a greater size and has a longer, thinner mental barbel than the species of *Umbrina.*

In addition to *U. bussingi,* four other species of *Umbrina* from the the tropical eastern Pacific are probably valid: *U. xanti* Gill, *U. dorsalis* Gill, *U. galapagorum* Steindachner and *U. tumacoensis* Wilson. The new species has a larger eye, lower dorsal-ray count (21 vs. 25–30) and a deeper body than *U. xanti, U. galapagorum* and *U. tumacoensis. U. bussingi* has a lower dorsal-ray count (21 vs. 29–33), more gill rakers on the lower limb of the gill arch (11 vs. 6–9) and longer pectoral fins than *U. dorsalis.* All four other eastern Pacific *Umbrina* present conspicuous dark streaks along the rows of scales on the back and flanks, a pattern not found on *U. bussingi.* The new form is closest to *U. milliae* Miller which is known only from the Atlantic coast of Colombia and the two probably represent yet another transamerican species pair; *U. bussingi* has a different shaped and more elongate apical pore, shorter pectoral and pelvic fins and different outline of the soft dorsal fin than *U. milliae.*

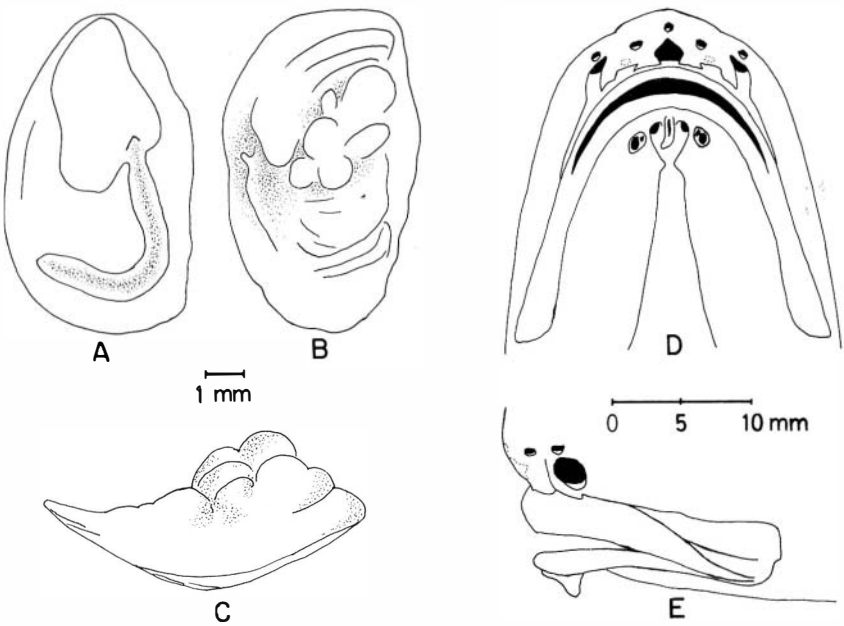

Fig. 2. Sagitta, pore pattern and mental barbel of *Umbrina bussingi.* A, Inner surface; B, Outer surface; C, Lateral view. D, Snout and mental pore pattern. E, Lateral view of mental barbel.

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RESUMEN

Se describe como nueva especie de la familia Sciaenidae, *Umbrina bussingi* de la costa Pacífica de Costa Rica. Además de esa especie, existen dos formas más en esta zona del mismo género: *U. xanti* y *U. dorsalis;* la nueva especie se diferencia de ambas por la combinación de las siguientes características: número menor de radios dorsales, diámetro orbital mayor y diferente morfología del barbo mandibular y del patrón de coloración. Se considera a *U. bussingi* como la especie cognada de *U. milliae* del Atlántico de Colombia, constituyendo así otro par de formas transamericanas.

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