

Pomadasys empherus, a new species of haemulid fish from
the tropical eastern Pacific*

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Abstract: A fifth eastern Pacific species of *Pomadasys* is described from four specimens collected from two localities on the west coast of Costa Rica. The species is similar to *P. branickii* in a number of respects, but in general appearance most resembles *P. macracanthus*. It is distinguished by the coarse serrations on the preopercular margin, deep body, long first anal fin spine and numerous other characteristics in which it differs from other *Pomadasys* species.

Key words: New species, eastern Pacific, Pisces, Haemulidae, *Pomadasys*.

The genus *Pomadasys* contains about 25 species (Smith and McKay 1986) found in most tropical and subtropical seas. Nearly a hundred years ago Jordan and Fesler (1893) reviewed the sparoid fishes of America and Europe, which included species currently belonging to the genus *Pomadasys*. Recently R. J. McKay (in prep.) reviewed the eastern Pacific species of Haemulidae for the forthcoming FAO identification sheets of important eastern central Pacific fishes; he is also preparing a revision of the world Haemulidae. McKay (in prep.) recognizes four valid species of eastern Pacific *Pomadasys*: *bayanus* (Jordan and Evermann 1898), *branickii* (Steindachner 1879), *macracanthus* (Günther 1864) and *panamensis* (Steindachner 1875). The four species which López (1981) recently considered as belonging to *Pomadasys*,

subgenus *Haemulopsis* Steindachner are retained by Johnson (1980) and McKay (in prep.) in the genus *Haemulopsis*.

Meek and Hildebrand (1925) reported two species of *Pomadasys* on the Atlantic coast of Panama: *P. approximans* Bean and Dresel (1884) and *P. corvinaeformis* (Steindachner 1868). They identified two striped juvenile specimens from Porto Bello, Panama as *P. approximans* based on the larger (180 mm total length) type specimen from Jamaica. Small juveniles of *P. empherus* would presumably have a vertical bar pattern rather than three longitudinal stripes and *empherus* differs in a number of other respects from the specimens described by Meek and Hildebrand. *P. corvinaeformis* shares the characteristics of its four eastern Pacific congeners and is included in the genus *Haemulopsis*. The combination of characteristics of *P. empherus* are also not found in species descriptions of Mediterranean and Indo-Pacific *Pomadasys*.

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Some species of *Pomadasys* form an important part of the fish catch in different parts of the world tropics. In Central America *P. bayanus* and *P. panamensis* reach a total length of about 60 cm, whereas *P. branickii* and *P. macracanthus* reach 30 and 40 cm respectively. The hitherto unrecognized species, *P. emperus*, is here described on the basis of four specimens from two Costa Rican localities. Since numerous collections have been made in similar Pacific coast habitats without yielding the new species, I see no reason to further delay the description of this apparently rare species. The species occurs syntopically with other species of *Pomadasys* and, especially smaller individuals, are easily confused with small *P. macracanthus*, each of which have a similar body morphology and sometimes possess a faint vertical bar pattern on the body.

MATERIAL AND METHODS

Counts and measurements follow Hubbs and Lagler (1958); other measurements are described when used in the description. All measurements of length refer to standard length (SL). Measurements in percent of SL for the types of *P. emperus* are included in Table 1.

Where comparative morphometric comparisons are made with other species of *Pomadasys*, ten specimens within the same size

range as the new species are used except in the case of *P. macracanthus* where only four specimens available fall in that range. Comparative meristic data are based on 30 specimens of each species mentioned; especially pertinent meristic data for the five eastern Pacific species of *Pomadasys* are presented in Table 2.

TABLE 2

Comparison of meristic counts for five species of the genus *Pomadasys*

	Dorsal fin elements						Anal rays			
	XII	XIII	11	12	13	14	6	7	8	9
<i>emperus</i>		4	1	3						4
<i>macracanthus</i>	29	1		6	22	2				1 29
<i>branickii</i>	1	29	3	27						3 27
<i>bayanus</i>		30	1	29						2 27 1
<i>panamensis</i>	30			2	28					2 26 2

	Longitudinal scales										
	42	43	44	45	46	47	48	49	50	51	>60
<i>emperus</i>				1	1	1	1				
<i>macracanthus</i>	3	5	6	7	5	4					
<i>branickii</i>					2	2	14	8	3	1	
<i>bayanus</i>											30
<i>panamensis</i>							6	14	8	2	

TABLE 1

Proportional measurements in percent of SL for the holotype and three paratypes of *Pomadasys emperus*

	Holotype		Paratypes		
	174.6 mm	119.0 mm	107.2 mm	98.1 mm	
Standard length	174.6 mm	119.0 mm	107.2 mm	98.1 mm	
Head length	35.9	36.6	36.5	36.2	
Orbit diameter	8.2	9.8	10.8	10.4	
Snout length	12.1	11.6	11.7	11.8	
Maxillary length	11.2	11.3	11.6	11.6	
Fleshy interorbital	8.8	9.0	9.0	8.7	
Body depth at pelvics	41.2	40.1	39.6	39.6	
C peduncle depth	12.3	12.4	13.1	13.5	
C peduncle length	15.6	16.8	16.0	17.0	
Predorsal distance	41.4	41.2	40.5	40.6	
Preanal distance	73.7	72.3	73.4	71.3	
Pectoral length	28.1	27.9	29.1	28.6	
First anal spine	10.8	10.9	11.4	12.1	
Second anal spine	25.6	26.5	28.3	29.3	
Third anal spine	15.6	17.2	18.3	19.7	
Fourth dorsal spine	21.0	28.9	23.9	23.1	

Pomadasys emperus, new species

Holotype: LACM 45569-1, 174.6 mm, collected in Estero Negro, in vicinity of Damas Estuary north of Quepos, Pacific coast of Costa Rica. Taken with seine on 3 July 1985 by Hubert Araya (ex UCR 1690-12).

Paratypes: LACM 45569-2, 1, 98.1 mm, same data as holotype. UCR 1690-12, 1, 119 mm, same data as holotype. UCR 1268-27, 1, 107.2 mm, mouth of Río Lagarto, south of Punta Morales, Pacific coast of Costa Rica; taken in fresh water with seine between shore and 2 m depth on 1 September 1979 by W. Bussing, Klaus Gocke, and Luis Cruz.

Diagnosis: A deep-bodied species of *Pomadasys* with a straight predorsal profile,

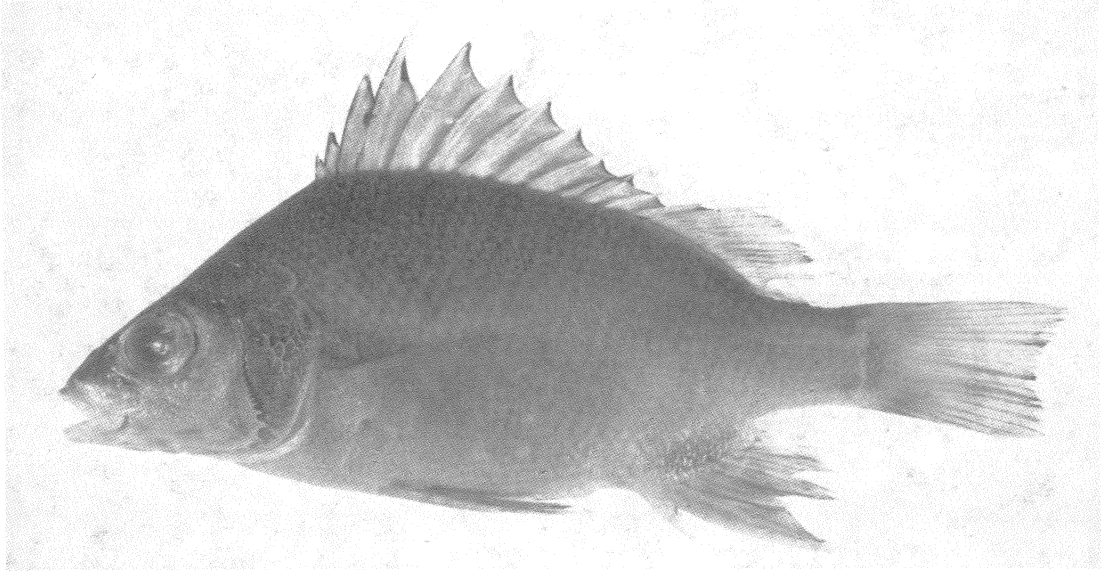


Fig. 1. *Pomadasys emperus*, n. sp., UCR 1690-12, paratype, 119 mm, from Estero Negro, Quepos, Costa Rica.

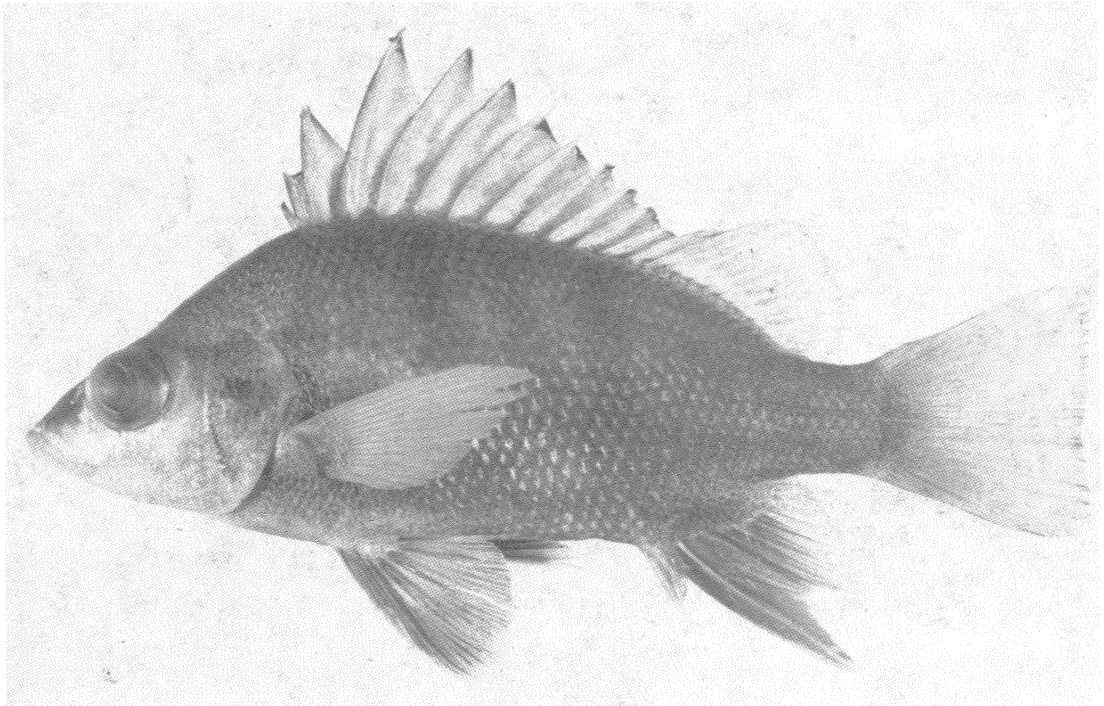


Fig. 2. *Pomadasys emperus*, n. sp., UCR 1268-27, paratype, 107.2 mm, from mouth of Río Lagarto, Costa Rica.

depth 2.4 or 2.5 times in SL (39.6 - 41.2 % of SL); no scales on interradi al membranes of soft dorsal fin; very coarse serrations on angle of preopercular margin; short pectoral fin not

reaching to tip of pelvic fin, 1.3 in (HL) head length (27.9 - 29.1 % of SL); high spinous dorsal fin, longest spine (fourth, but fifth may be equally long) 1.3 - 1.7 in HL (21.0 - 28.9 %

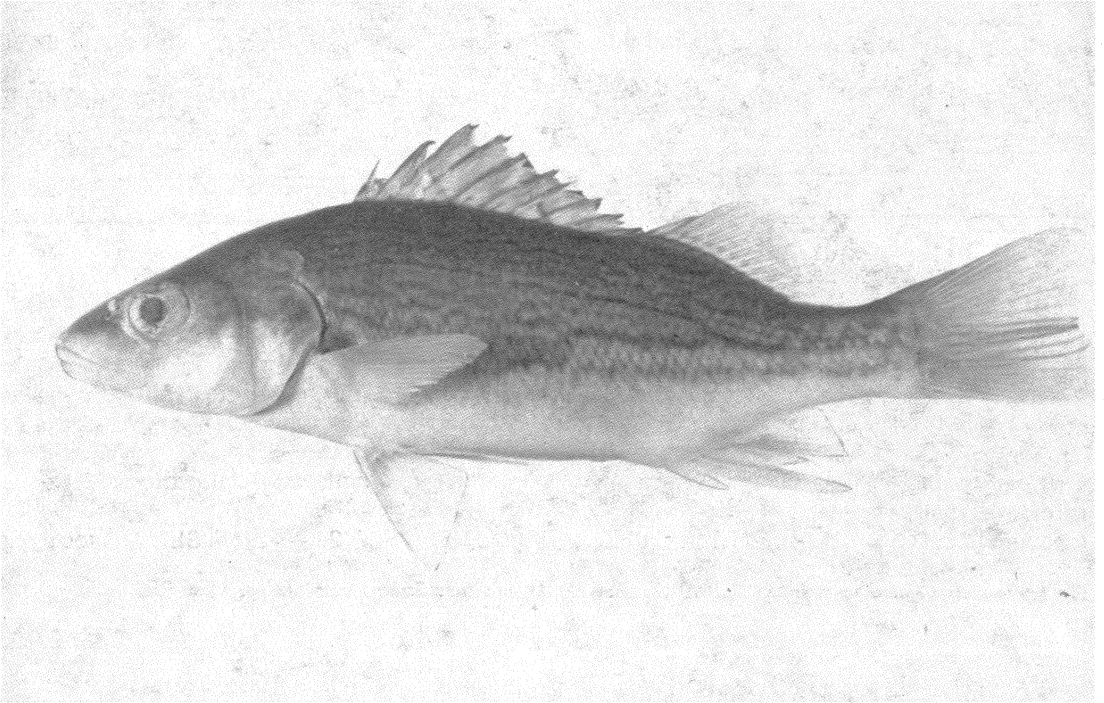


Fig. 3. *Pomadasys bryanus*, UCR 101-12, 173 mm, from Río Nuevo, Costa Rica.

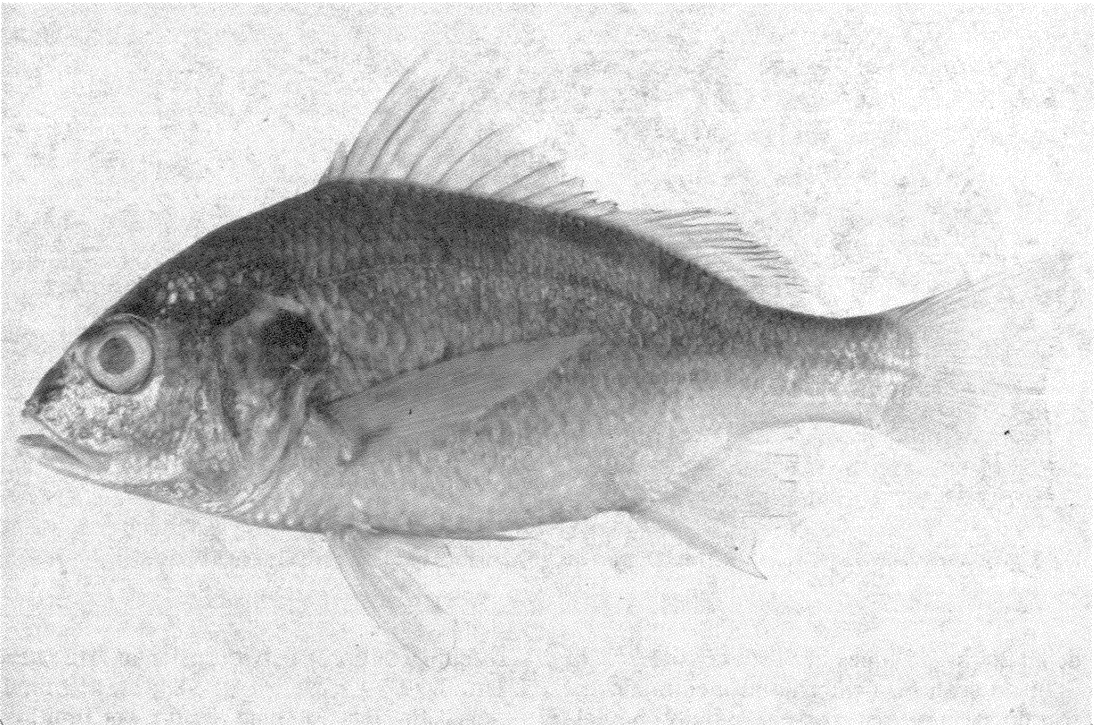


Fig. 4. *Pomadasys panamensis*, UCR 1247-4, 181 mm, from Golfo de Papagayo, Costa Rica.

of SL); relatively long first and second anal fin spines, 3.0 - 3.4 in HL (10.8 - 12.1 % of SL) and 1.2-1.4 in HL (25.6 - 29.3 % of SL) respectively; maxillary reaching to anterior border of eye or slightly beyond.

Based on comparative specimens of the same size range as *P. empherus*, *P. bayanus* (Fig. 3) differs in its much slimmer body (3.1 - 3.4 vs. 2.4 or 2.5 in SL); smaller scales (longitudinal scale count 60 - 67 vs. 45 - 48) and shorter pectoral fin (1.5 - 1.9 vs. 1.3 in HL).

P. panamensis (Fig. 4) differs in its very long pectoral fin, which reaches origin of anal fin (1.0 - 1.2 vs. 1.3 in HL); convex predorsal profile; blue-black spot on upper opercle; and larger maxillary (2.8 - 3.1 vs. 3.1 or 3.2 in HL).

P. macracanthus (Fig. 5) has small scales on interradiar membranes of soft dorsal fin (specimens >110 - 125 mm SL); usually 12 dorsal fin spines vs. 13; longer pectoral fin (1.1 - 1.2 vs. 1.3 in HL); lower spinous dorsal fin (fourth spine 1.9 - 2.2 vs. 1.3-1.7 in HL); shorter first anal fin spine (5.3 - 6.8 vs. 3.0 - 3.4 in HL); shorter second anal fin spine (1.6 - 1.9 vs. 1.2 - 1.4 in HL); and long head length (2.4 - 2.7 vs. 2.7 or 2.8 in SL).

P. branickii (Fig. 6) differs in its slimmer body (2.8 -3.1 vs. 2.4 or 2.5 in SL); convex or double convex predorsal profile; larger orbit (2.9 - 3.8 vs. 3.4 - 4.4 in HL); smaller maxillary (3.3 - 3.8 vs. 3.1 or 3.2 in HL); lower spinous dorsal fin (1.6 - 2.2 vs. 1.3 - 1.7 in HL); shorter first anal fin spine (4.0-5.8 vs. 3.0 - 3.4 in HL); and shorter second anal fin spine (1.4 - 1.9 vs. 1.2 - 1.4 in HL).

Description: Measurements in percentage of SL appear in Table 1. Body deep, compressed, greatest depth at vertical through origin of pelvic fins (2.4 or 2.5 in SL). Predorsal profile straight with slight depression above eye; profile below dorsal fin and ventral body profiles convex. Least depth of caudal peduncle 2.7 - 2.9 in HL; length of caudal peduncle 2.1 - 2.3 in HL.

Head length 2.7 or 2.8 in SL. Eyes touching dorsal profile of head; eye large, horizontal diameter of fleshy orbit 3.4 - 4.4 in HL; fleshy interorbital distance convex, 4.0 - 4.2 in HL. Snout profile straight or slightly convex and slightly greater than orbit diameter, snout length 3.0 - 3.2 in HL. A single pore on each side of symphysis of dentaries and a median

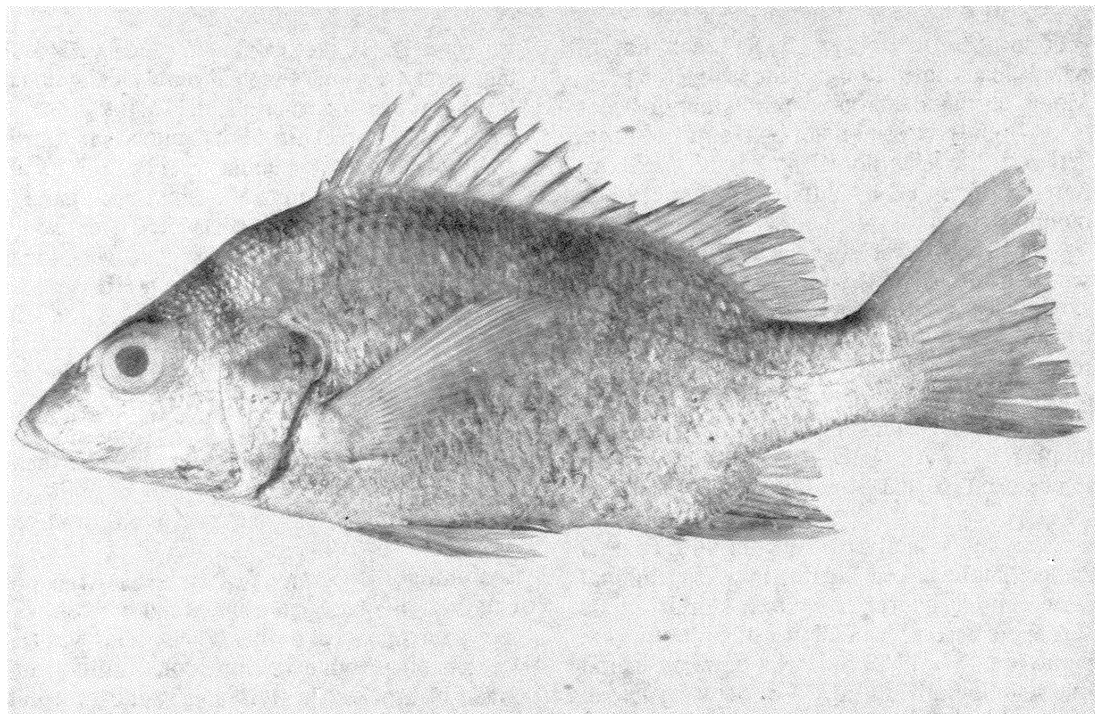


Fig. 5. *Pomadasys macracanthus*, UCR 1685-1, 217 mm, from Punta Morales, Costa Rica.

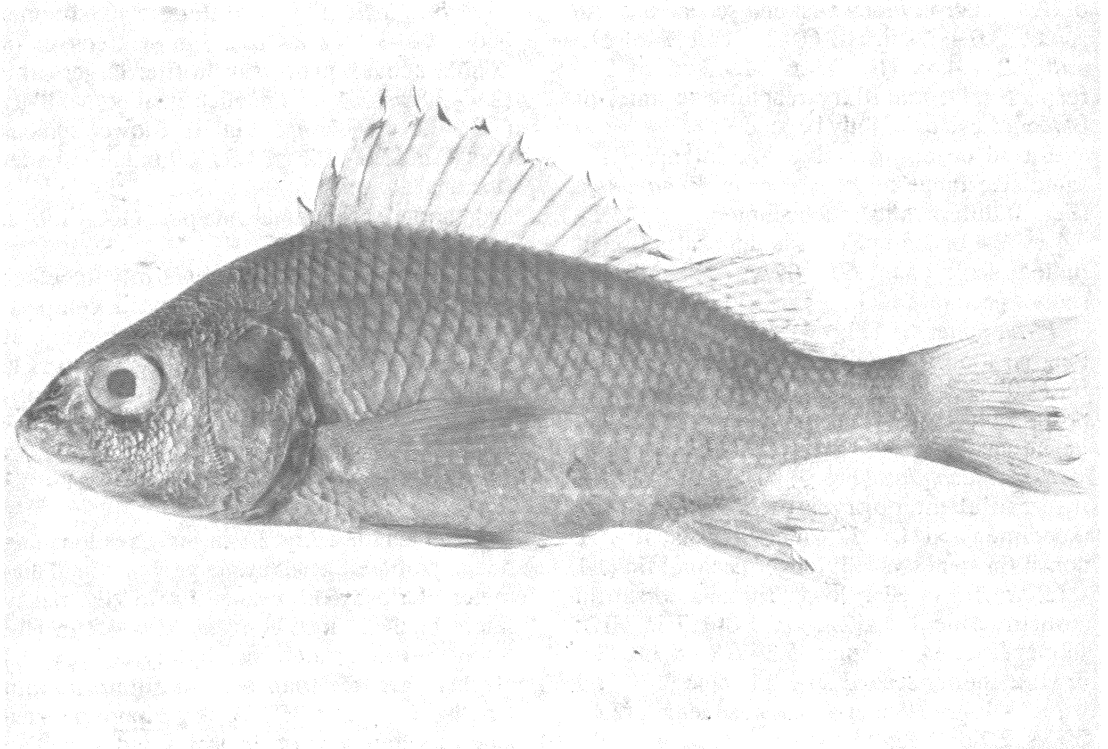


Fig. 6. *Pomadasys branickii*, UCR 1964-10, 185 mm, from Bahía Brasilito, Costa Rica.

groove posterior to symphysis, each side of which leads into a large hidden lateral pore. Mouth terminal and oblique. Maxillary reaches to or slightly beyond anterior margin of orbit, 3.1 or 3.2 in HL; dorsal border of maxillary partly concealed by suborbital bone when mouth is closed.

Upper and lower jaws each with a band of small conical teeth, bands interrupted at symphysis of each jaw and consisting of 4 or 5 irregular rows (premaxillaries) and 6 - 8 rows (dentaries) at anterior end of jaws, becoming a single row posteriorly. Tongue and palate without teeth. Gill rakers of moderate size, total number 19 or 20; upper limb 6; lower limb 13 in one paratype and 14 in two paratypes and the holotype.

Body, nape and most of head with ctenoid scales; snout naked. Scales in a longitudinal series above lateral line, from supraclavicle serrae to base of caudal fin of holotype 48; paratypes 45 - 47. Scale rows between lateral line and spinous dorsal fin 6, between lateral line and soft dorsal 4. On one paratype total

vertebrae 26 (10 precaudal + 16 caudal). A 107.2 mm paratype with a simple swimbladder with no forward projecting anteriolateral "horns".

Spinous dorsal fin high, spines 13; fourth spine the longest or equal to fifth, 1.3-1.7 in HL; dorsal-fin soft rays of holotype 12, paratypes 11 or 12. Predorsal distance 2.4 or 2.5 in SL. Anal fin with 3 spines, second very long; length of first spine 3.0 - 3.4 in HL, second spine 1.2 - 1.4 in HL; third spine 1.8 - 2.3 in HL. Preanal distance 1.4 in SL. Holotype with 17 pectoral-fin rays, paratypes 16 or 17. Pelvic fin with one spine and five soft rays.

Etymology: From the Greek *empheres* meaning like or similar, in reference to its similarity to *P. macracanthus*; to be treated as an adjective.

Ecology: Specimens of *P. empheres* were collected in a brackish estuary and in fresh waters at the mouth of a river. The species was collected only twice in numerous collections made in brackish waters and suggests it has very specific habitat requirements. The species

was taken in company with its other congeners. The genus as a whole is found most commonly in shallow coastal waters over sandy or mud substrates where they feed on a variety of invertebrates and small fishes (Yáñez-Arancibia 1980, Amezcua 1990). Some species are common in the shrimp by-catch, others are mainly captured by seine or gill-netted in appropriate littoral habitats.

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RESUMEN.

Se describe la quinta especie de *Pomadasys* del Pacífico Oriental utilizando cuatro especímenes recolectados en dos localidades en la costa occidental de Costa Rica. Esta nueva especie es similar a *P. branickii* en varias características, pero se parece más a *P. macracanthus* en su morfología general. Se distingue por los dentículos grandes del margen del preopérculo, el cuerpo más alto, las primeras dos espinas anales más largas y difiere en muchas otras características individuales de las otras especies de este género.

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