

## A New Percichthyid Fish *Synagrops trispinosus* from the Caribbean Sea and Its Adjacent Waters

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**Abstract** A new percichthyid fish *Synagrops trispinosus* is described from the Caribbean Sea and its adjacent waters at the depths between 180–540 m. This new species is distinguished from the congeners by the combination of the following characters: pelvic spine with serrations on its anterior edge; dorsal fin VIII–I, 10; anal fin III, 8–9 (mostly III, 9); pored scales on lateral line 46–51 (mean 48) to hypural end.

The genus *Synagrops* has been recognized as a large group of Percichthyidae, consisting of about ten species (Schultz, 1940; Kotthaus, 1970). An undescribed species of the genus was discovered among the fish collections in the U.S. National Museum of Natural History (USNM) and the National Science Museum, Japan (NSMT). It is described as a new species in the present paper.

Counting and measuring procedures were done mostly according to Hubbs and Lagler (1964). Vertebrae, predorsal bones and vertical fin rays were counted from X-ray photographs.

### *Synagrops trispinosus* sp. nov.

(Fig. 1)

*Synagrops* sp. Fujii in Uyeno et al., 1983: 298.

**Holotype.** USNM 232321, 75 mm in standard length (SL), 10°45'N, 66°37'W (off Venezuela), 230 m depth, flat trawl, Oct. 17, 1963.

**Paratypes.** USNM 108329, 2 specimens, 95, 97 mm SL, 18°35'30"N, 65°23'54"W (off Virgin Islands), 540 m depth, Feb. 26, 1933; USNM 185698, 1 specimen, 76 mm SL, 07°27'N, 54°27'W (off Surinam), 220–250 m depths, flat trawl, Sept. 9, 1958; USNM 186436, 2 specimens, 73, 82 mm SL, 10°03'N, 60°01'W (off Venezuela), 360 m depth, shrimp trawl, Nov. 3, 1957; USNM 197478, 2 specimens, 59, 94 mm SL, 17°53'N, 77°56'W (off Jamaica), 270 m depth, May 16, 1962; USNM 229552, 1 specimen, 84 mm SL, 17°50'N, 77°52'W (off Jamaica), 310 m depth, May 16, 1962; USNM 229553, 4 specimens, 78–89 mm SL, 11°03'N, 75°10'W (off Colombia), 180–200 m depths, shrimp trawl, May 23, 1964; USNM 229554, 1 specimen, 78 mm SL, captured with USNM 229553; USNM 229555, 5 specimens, 100–116 mm SL, 13°13'N,

82°16'W (off Nicaragua), 200–220 m depths, shrimp trawl, Feb. 4, 1967; USNM 229556, 5 specimens, 87–94 mm SL, 14°00'N, 81°50'W (off Nicaragua), 360 m depth, June 5, 1962; USNM 232320, 6 specimens, 77–85 mm SL, captured with the holotype; NSMT-P 21426–21434, 9 specimens, 80–97 mm SL, 07°22'N, 53°45'W (off Surinam), 224 m depth, bottom trawl, Nov. 24, 1980.

**Diagnosis.** This species is distinguished from other members of the genus *Synagrops* by the combination of the following characters: pelvic spine with distinct serrations on the anterior edge; dorsal fin VIII–I, 10; anal fin III, 8–9 (mostly III, 9); pored scales on lateral line 46–51 (mean 48) to hypural end.

**Description.** Counts and proportional measurements are shown in Table 1.

The following description is based on the holotype. Characters on the paratypes, when different from those of the holotype, are in parentheses.

Body elongate, compressed, covered with large, deciduous cycloid scales. Head scaly, except for snout. Interorbital space flat. Eye large. Nostrils close to each other; the anterior with very small flap. Mouth large, oblique; lower jaw slightly projecting. Maxillary reaching below anterior margin of pupil. Supramaxillary single. Preopercle with double edges; posterior edge membranous, its angle with weak serrations. Opercle with two flat, flexible spines. Pseudobranchiae well developed.

Premaxillary with a strong canine-like tooth near symphysis, followed posteriorly by a broad band of villiform teeth. Dentary with a canine-like tooth near symphysis, single row of about five canine-like teeth on each side, of which the



Fig. 1. Holotype of *Synagrops trispinosus* sp. nov., USNM 232321, 75 mm SL, 10°45'N, 66°37'W, off Venezuela.

Table 1. Counts and proportional measurements of *Synagrops trispinosus* sp. nov. from the Caribbean Sea and its adjacent waters.

Characters	Holotype	Paratypes		
	USNM 232321	Range	Mean	N
Standard length in mm	75	59-116	87	38
<b>Counts</b>				
Dorsal fin rays	VIII-I, 10	VIII-I, 10	VIII-I, 10	38
Anal fin rays	III, 9	III, 8-9	III, 9	38
Pectoral fin rays	17	16-18	17	38
Pelvic fin rays	I, 5	I, 5	I, 5	38
Branched caudal fin rays	8+7	8+7	8+7	38
Lateral-line scales to hypural end	47	46-51	48	38
Transverse scales (above/below lateral line)	—	2.5-3.5/9-12	3.5/11	12/2
Gill rakers (upper+middle+lower)	4+1+13	3-5+1+11-15	4+1+13	38
Vertebrae	10+15	10+15	10+15	38
Predorsal bones	3	3	3	38
Branchiostegals	7	7	7	38
<b>Measurements in standard length</b>				
Head length	2.68	2.64-2.94	2.78	37
Body depth	4.17	3.73-4.83	4.17	36
Body width	7.50	6.77-9.83	7.96	36
Snout to origin of dorsal fin base	2.50	2.38-2.70	2.53	34
Snout to end of dorsal fin base	1.23	1.20-1.28	1.24	34
Snout to origin of anal fin base	1.47	1.37-1.54	1.47	32
Snout to end of anal fin base	1.21	1.15-1.25	1.21	32
Snout to pectoral insertion	2.50	2.44-2.82	2.67	32
Snout to pelvic insertion	2.34	2.21-2.74	2.45	32
Snout to vent	1.53	1.44-1.66	1.57	32
<b>Measurements in head length</b>				
Snout length	4.00	3.16-4.00	3.46	37
Eye diameter	3.11	2.94-3.78	3.31	37
Interorbital space	4.00	3.86-4.67	4.25	37
Upper jaw length	2.15	1.94-2.25	2.08	37
Caudal peduncle depth	4.00	3.50-4.29	3.86	37
Caudal peduncle length	2.00	1.72-2.21	1.95	37
3rd spine length of 1st dorsal fin	—	2.43-2.52	2.48	3
3rd spine length of anal fin	4.67	3.53-4.83	4.26	20
Length of pectoral fin	—	1.17-1.50	1.28	17
Length of pelvic spine	—	2.70-3.53	3.12	21

anterior ones smaller, and with a patch of villiform teeth on both the anterior and posterior parts. Vomer with a  $\wedge$ -shaped (sometimes triangular) patch of villiform teeth. Palatine with a single row of very small teeth anteriorly, forming two rows posteriorly (sometimes a narrow band). Tongue smooth.

Dorsal fins completely separated by distance of interorbital space. Third and fourth spines of first dorsal fin longest. First dorsal fin naked, depressible in a groove. All spines of dorsal fins without any serrations on the anterior edge. Bases of second dorsal and anal fins covered with a row of scales. First anal spine very short; the third longest; the second not serrated. Pectoral fin reaching above anus in the paratypes (in the holotype the pectoral broken near its tip). Anterior edge of pelvic spine serrated. Caudal fin deeply forked, with small scales near its base.

In alcohol, body color uniformly dark purplish brown (sometimes yellowish brown). Throat blackish.

**Distribution.** This new species is distributed from the Caribbean Sea to off Surinam.

**Remarks.** Except for the present new species, all species belonging to the genus *Synagrops* have two anal spines. This meristic count has been recognized as a very important generic character of *Synagrops*. Although this new species has three anal spines, it is adequate to place the species in the genus *Synagrops* on the basis of the following combinations of several other characters: separate dorsal fins; vertebral count of 10+15; scales on body cycloid; anterior edge of pelvic spine serrated; one or two canine-like teeth near symphysis on both upper and lower jaws; a single row of about five canine-like teeth on lateral side of lower jaw (Schultz, 1940; Katayama, 1960).

The present species is closely related to *S. microlepis* Norman and *S. pseudomicrolepis* Schultz in having ten rays in the second dorsal fin and mostly nine rays in the anal fin. But it is different from the two species by the three anal spines (two in the latter), the serrated pelvic spine (smooth in the latter) and the eight spines in the first dorsal fin (nine in the latter) (Norman, 1935; Schultz, 1940). This new species resembles *S. philippinensis* (Günther), *S. argyrea* (Gilbert et Cramer), *S. spinosus* Schultz,

*S. serratospinosus* Smith et Radcliffe and *S. adeni* Kotthaus in having the serrated pelvic spine. It is, however, easily distinguished from them in having the following three characters: anal fin mostly III, 9 (II, 7 in the latter); dorsal fin VIII-I, 10 (IX-I, 9 in the latter); 46-51 pored scales on lateral line (less than 33 in the latter) (Schultz, 1940; Kotthaus, 1970).

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カリブ海およびその周辺海域から得られた新種 *Synagrops trispinosus*

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スマクイウオ属 *Synagrops* の新種 *S. trispinosus* をカリブ海とその周辺海域の水深 180-540 m から得ら

れた標本に基づき記載した。本種は本属の他種とは、腹鰭棘前縁が鋸歯状であること、第1背鰭が8棘、第2背鰭が1棘10軟条であること、臀鰭が3棘8~9軟条(普通9軟条)であること、有孔側線鱗数が46~51(平均48)であることにより容易に区別できる。

スミクイオ属はスズキ科の中で臀鰭棘が2本であることが重要な形質のひとつであるとされてきた。しかし、本種のように、臀鰭棘を3本もっていても、他

の形質でスミクイオ属に含ませるのが妥当と考えられるものが出現した。近縁属を含め、分類学的な再検討が必要である。

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