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The Percoid Genus *Sphyraenops*, from the Pacific Ocean, with Discussion on *Scombrosphyraena*

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Characters of Pacific Ocean materials we examined (of these, four from off the northwestern coast of Australia, one from near the Ogasawara Islands, Japan, and one from northern Micronesia), generally agree with the descriptions of *Scombrosphyraena oceanica*. Fraser and Fourmanoir (1971), however, mentioned that *S. oceanica* have no supramaxillary and seven branchiostegals. Pacific specimens have a long supramaxillary and six branchiostegals. We checked the Fraser and Fourmanoir's specimen from the Caribbean Sea (USNM 204646). It has, actually, a long supramaxillary and six branchiostegals and agrees with Pacific specimens.

Sphyraenops bairdianus Poey, 1858～61 was based on a specimen taken from off Cuba. *Scombrosphyraena oceanica* Fourmanoir, 1970 was recorded from the South-central Pacific and Caribbean Sea (Fourmanoir, 1970; Fraser and Fourmanoir, 1971). These two forms are similar and peculiar in having bony serrations along the anterior rim of the orbit directed towards the center of eye.

On comparing ZUMT materials from the Pacific Ocean with the USNM specimen, we could not find evidence that they are different at the species level and *Scombrosphyraena oceanica* is regarded here as a junior synonym of *Sphyraenops bairdianus*.

Material

ZUMT (Department of Zoology, University Museum, University of Tokyo) 54149～54152, 4 specimens, off northwestern coast of Australia (15°40′S, 118°25′E), larva net, surface tow, 1968-1-21, 1:30～1:45 a.m. (of these, ZUMT 54149 and 54150 are cleared, stained and skeletonized). ZUMT 54252, 1 specimen, near Ogasawara Islands, Japan, 1974-6 (from stomach of *Etelis carbunculus* Cuvier fished by hook and line). USNM (United States National Museum) 204646, 1 specimen, Caribbean Sea (13°26′N, 81°52′W), at 380 m by a trawl, 1968-11-21, (female, described in Fraser and Fourmanoir, 1971). 1 specimen, northern Micronesia (20°49′N, 149°47′E), oblique tow of opening closing net (1600～0 m), Kaiyo-maru, 1983-5-15.

Genus *Sphyraenops* Gill, 1858～61

(New Japanese name: Togeme okimutsu zoku)

Sphyraenops Gill in Poey, 1858～61: 349 (type species: *Sphyraenops bairdianus* Poey, 1858～61 by monotypy); Jordan and Evermann, 1896: 1114 (after Gill, 1858～61); Jordan, 1923: 189 (listed); Golvan, 1962: 99 (listed).

Scombrosphyraena Fourmanoir, 1970: 28 (type species: *Scombrosphyraena oceanica* Fourmanoir, 1970 by monotypy); Fraser and Fourmanoir, 1971: 3. New synonymy (indicated by Johnson (1983)).

Negative synonymy:

Howella Ogilby, 1898: 734 (type species: *Howella brodiei* Ogilby, 1898 by monotypy); Whitley, 1951: 65; Norman, 1966: 242A.

Galeagra Heller and Snodgrass, 1903: 193 (type species: *Galeagra pammelas* Heller et Snodgrass, 1903 by monotypy); Whitley, 1951: 65; Golvan, 1962: 99.

Rhectogramma Norman, 1930: 348 (type species: *Rhectogramma sherborni* Norman, 1930 by monotypy); Whitley, 1951: 65; Golvan, 1962: 99.

Schistoperca Fowler, 1943: 61 (type species: *Schistoperca macrobrachium* Fowler, 1943 by monotypy); Whitley, 1951: 65.

Whitley (1951:65) indicated without reason that the genera *Howella, Galeagra, Rhectogramma*, and *Schistoperca* were synonyms of *Sphyraenops*. Golvan (1962) partly followed Whitley and noted *Galeagra* and *Rhectogramma* as junior synonyms of *Sphyraenops*. Norman (1930) treated *Sphyraenops* as one of the synonyms of *Howella*, together with *Galeagra* and *Rhectogramma*; he might have regarded *Sphyraenops*, senior to *Howella*, as nomen dubium. *Howella* lacks all characters listed in the diagnosis of *Sphyraenops* and is not particularly related with *Sphyraenops*. Other genera listed in negative synonymy may or may not be synonyms of *Howella*.

Very recently, Johnson (1983) indicated that *Scombrosphyraena* is a synonym of *Sphyraenops* without comments.

Diagnosis. A genus of lower percoid fishes which can be distinguished from other members by the following combinations of characters: much reduced ascending process of premaxillary, posteriorly pointed maxillary, lachrymal with

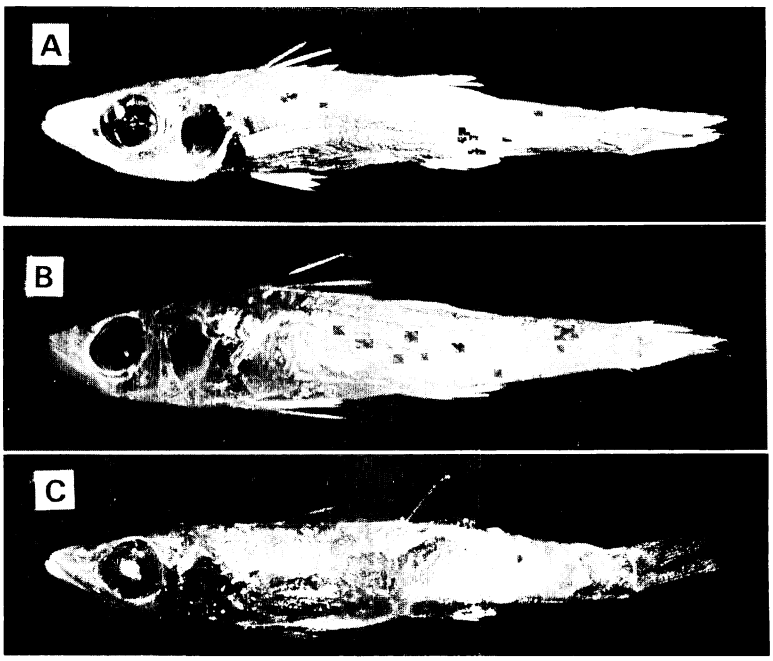

Fig. 1. *Sphyraenops bairdianus*. A, USNM 204646, 92.8 mm in standard length, Caribbean Sea; B, ZUMT 54151, 46.5 mm, off northwestern coast of Australia; C, ZUMT 54252, 77.2 mm, near Ogasawara Islands.

serrations on its orbital margin, and six branchiostegals.

Sphyraenops bairdianus Poey, 1858～61

(New Japanese name: Togeme okimutsu)

(Figs. 1～3)

Sphyraenops bairdianus Poey, 1858～61: 350 (pl. 2, fig. 12, off Cuba); Jordan and Evermann, 1896: 1114 (after Poey, 1858～61).

Scombrosphyraena oceanica Fourmanoir, 1970: 27 (fig. 5, South Pacific); Fraser and Fourmanoir, 1971: 4 (fig. 1, Caribbean Sea). New synonymy.

Description

D. VII～VIII-I, 10; A. III, 7; P_1. 14～15; P_2. I, 5. Gill rakers on first arch 22～24+1+8～9. Branchiostegals 6 (3 on ceratohyal, 1 on junction between ceratohyal and epihyal, 2 on epihyal). Lateral-line scales 50～56 (to the posterior margin of hypurals). Vertebrae 25 (10 abdominal and 15 caudal).

Body slender. Snout pointed. Eye large. Upper jaw hardly protractile. Ascending process of premaxillary much reduced. Maxillary reaches anterior margin of pupil and its posterior tip not expanded. One supramaxillary present; very thin and membrane-like; its-length about 2/3 of maxillary; its posterior end nearly reaches end of maxillary and beyond end of premaxillary. Posterior part of dentary raised dorsally. Fine conical teeth on dentary, vomer and palatine. Those of dentary and palatine in a single row. Premaxillary and ectopterygoid toothless.

Infraorbitals 7, including lachrymal and dermosphenotic. Orbital margin of first infraorbital (lachrymal) strongly serrated; oribital margins of second and third infraorbitals have a few fine dorsoposteriorly directed spines and same part of fourth infraorbital has one strong backwardly directed spine. Posteroventral corners of third to fourth infraorbitals with one or two strong spines. Infraorbital shelf absent.

Posterolateral corner of frontal pointed posteriorly at just anterodorsal to seventh infraorbital (dermosphenotic).

Posterior margin of preopercle finely serrated; posteroventral corner has two or three strong spines; posteroventral corner of ridge of preopercle pointed. Opercle has three spines; the middle one largest. Posteroventral corner of interopercle ends as a spine. Ventral margin

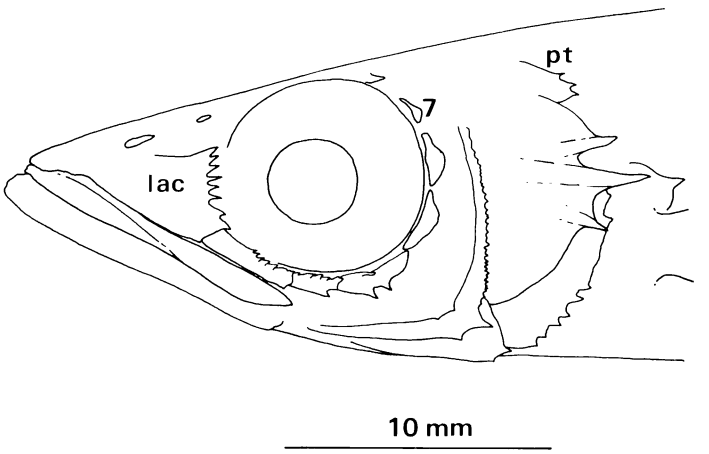

Fig. 2. Head region of *Sphyraenops bairdianus*, ZUMT 54252. lac, lachrymal; pt, posttemporal; 7, 7th infraorbital (dermosphenotic).

of subopercle serrated. Posterior margin of posttemporal serrated. Infraorbital and preopercle sensory canals run in open grooves (Fig. 2).

The last (8th) spine of first dorsal fin very small or absent (Fig. 3).

Scales ctenoid. No scales on maxillary, dentary and dorsal, pectoral and pelvic fins. Caudal fin scaled basally.

Lateral-line scales extends onto caudal fin. No accessory scales at the base of pelvic fin.

Rounded pigmentless area just anteroventral of pectoral fin prominent in USNM 204646; less prominent but distinctly present in ZUMT

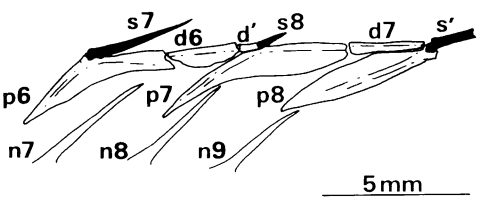

Fig. 3. Posterior part of the first dorsal fin, USNM 204646. d6～7, 6～7th distal pterygiophore; d', bony piece of the 6th distal pterygiophore; n7～9, 7～9th neural spine; p6～8, 6～8th proximal pterygiophore; s7～8, 7～8th dorsal spine; s', spine of second fin. In ZUMT 54159, 1st dorsal-fin spines are 7 in number due to absence of s8.

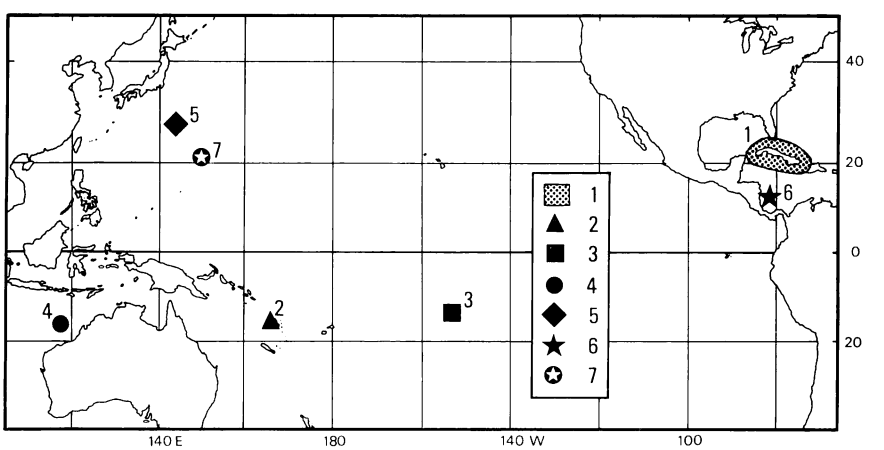

Fig. 4. Distribution of *Sphyraenops bairdianus*. 1, type locality of *Sphyraenops bairdianus*; 2, holotype and 4 paratypes of *Scombrosphyraena oceanica*; 3, 1 paratype of *S. oceanica*; 4, ZUMT 54149～54152; 5, ZUMT 54252; 6, USNM 204646; 7, 1 non-catalogued specimen.

54252; faint in other smaller specimens.

For distribution, see Fig. 4.

Discussion

Fraser and Fourmanoir (1971) regarded that a specimen from Caribbean Sea (USNM 204646) belongs to *S. oceanica* and mentioned this species is probably pantropical in its distribution. As shown in Table 1, differences between Pacific and Atlantic specimens are trivial. Although we have not checked the type material of *Scombrosphyraena oceanica*, we agree with Fraser and Fourmanoir (1971) that Caribbean and Pacific specimens are conspecific.

On the other hand, USNM 204646 does not conflict with the original description of *Sphyraenops bairdianus*. We found, however, the 8th first-dorsal-fin spine which is tiny and was overlooked by Fraser and Fourmanoir (1971). *Scombrosphyraena oceanica* is here treated as a junior synonym of *Sphyraenops bairdianus*. The genus *Sphyraenops* (syn. *Scombrosphyraena*) has been allocated in various lower percoid families. The osteological evidence indicates that *Sphyraenops* is allied to *Epigonus*.

Information on types of *Scombrosphyraena oceanica*

In the original description, Fourmanoir (1970) wrote that the holotype of *Scombrosphyraena oceanica* was deposited in the Los Angeles County Museum. Actually, it is absent in that Museum. Two type materials (probably paratypes) are in the Museum National d'Histoire Naturelle de Pairs as N° 1970-32.

Acknowledgments

Drs. Muneo Okiyama (Ocean Research Institute, University of Tokyo) and Hitoshi Ida (Faculty of Fisheries, Kitasato University) kindly offered us the present ZUMT materials. Messrs. Kenji Tabata and Eiichi Fujii (Tokai

Table 1. Comparisons of characters of *Sphyraenops bairdianus*. — absent in the description;

	Atlantic specimens		
	Original description of *Sphyraenops bairdianus* off Cuba (Poey, 1858～61)	USNM 204646 Caribbean Sea	Original description of *Scombrosphyraena oceanica* South Pacific (Fourmanoir, 1970)
Standard length (mm)	—	92.8	35～60
In % of standard length:			
Body depth	19.2*	17.9	18.2～21.3
Head length	33.3*	31.9	30.4**
Eye diameter	11.1*	10.8	8.7**
Snout length	11.9**	9.3	9.3**
Upper jaw length	18.0**	15.1	14.3**
Pectoral fin length	17.0**	17.1	15.8**
Pelvic fin length	17.1**	11.9	13.9**
Interorbital width	—	6.6	—
Snout to 1st dorsal fin	37.5**	36.3	36.0**
Snout to 2nd dorsal fin	60.2**	60.1	65.1**
Snout to anal fin	61.7**	63.4	68.0**
Caudal peduncle depth	9.5**	7.5	10.0**
Caudal peduncle length	24.5**	25.0	22.1**
Pelvic fin to anal fin	27.0**	31.9	35.2**
Pelvic fin to anus	—	26.7	—
Dorsal fin rays	VII-I, 10	VIII-I, 10	VIII-I, 10
Pectoral fin rays (l/r)	—	14 / 14	14
Gill rakers on 1st arch (l/r)	—	24+1+9/24+1+9	22+1+8
Lateral-line scales (l/r)	—	54 / 56	50

Regional Fisheries Research Institution) kindly showed us an additional specimen. We thank Dr. Ernest A. Lachner (United States National Museum) for USNM material; Drs. Robert J. Lavenberg (Los Angeles County Museum), M. L. Bauchot and Pierre Fourmanoir (Museum National d'Histoire Naturelle de Paris) for information on type material of *Scombrosphyraena oceanica*; Dr. Tokiharu Abe (Department of Zoology, University Museum, University of Tokyo) for access to Poey's paper.

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*after Jordan and Evermann (1896); **taken from the original figures by present authors.

Pacific specimens					
ZUMT 54149	ZUMT 54150	ZUMT 54151	ZUMT 54152	ZUMT 54252	1 specimen
Off northwestern coast of Australia				Near Ogasawara Islands	Northern Micronesia
54.0	50.0	46.5	49.0	77.2	29.6
20.7	20.6	19.4	19.4	18.0	21.3
32.6	34.2	34.4	33.9	31.7	37.2
9.3	11.6	10.1	9.8	10.9	11.5
10.0	9.0	10.1	10.0	9.5	11.5
16.5	16.4	15.9	15.1	15.3	15.5
16.5	12.8	15.7	13.9	17.5	17.9
16.3	15.8	16.8	17.1	14.9	19.6
7.2	7.2	7.7	7.6	6.7	8.1
37.8	36.8	37.6	36.5	35.9	39.5
61.5	57.8	61.3	61.0	59.1	61.1
64.6	60.6	64.5	63.7	64.5	64.9
8.1	8.0	7.7	8.0	8.2	8.8
27.6	27.6	24.3	24.1	25.3	25.0
31.7	29.8	30.1	30.2	30.8	30.7
26.9	27.0	24.5	24.3	26.3	26.4
VII–I, 10	VIII–I, 10	VIII–I, 10	VIII–I, 10	VIII–I, 10	VIII–I, 10
15 / 15	15 / 15	? / 15	? / 14	15 / 15	15 / 15
?/21+1+8	22+1+9/ 22+1+9	22+1+8/ 22+1+8	22+1+8/ 23+1+9	23+1+9/ 23+1+9	?
?	?	?	?	?	52 / 51

77～243+i～x.
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太平洋産スズキ亜目魚類，トゲメオキムツ属（新称）と *Scombrosphyraena* 属とのシノニム関係

須田有輔・富永義昭

オーストラリア北西岸沖，小笠原諸島近海およびミクロネシア北部海域から得られた6個体のスズキ亜目魚類は南太平洋とカリブ海から報告されている *Scombrosphyraena oceanica* Fourmanoir, 1970 と一致した．一方，*Scombrosphyraena oceanica* とキューバ沖から報告された *Sphyraenops bairdianus* Poey, 1858～61（新称：トゲメオキムツ）は酷似しており，種レベルでの相違は見出せなかった．従って，これら両種を同一種とみなし，*Scombrosphyraena oceanica* をトゲメオキムツのジュニア・シノニムとした．

トゲメオキムツは前上顎骨の柄状突起が退縮していること，主上顎骨の後端が尖っていること，涙骨の眼窩縁が鋸歯状になっていることや鰓条骨が6本ある等の特徴の組合せで他の原始的なスズキ亜目魚類から区別される．

小笠原諸島近海から得られた1個体のトゲメオキムツは本種の日本初記録である．

(須田：113 東京都文京区弥生 1-1-1 東京大学農学部水産学科；富永：113 東京都文京区本郷 7-3-1 東京大学総合研究資料館)