

Record of the flathead fishes (Perciformes: Platycephalidae) collected from Nha Trang, Vietnam

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Abstract—The platycephalids collected from Nha Trang, Vietnam were studied taxonomically to record seven species, *Elates ransonnetii* (Steindachner 1876), *Inegocia japonica* (Tilesius 1812), *Onigocia macrolepis* (Bleeker 1854), *Platycephalus cultellatus* Richardson 1846, *Rogadius asper* (Cuvier 1829), *R. serratus* (Cuvier 1829) and *R. tuberculatus* (Cuvier 1829). *Elates ransonnetii* and *R. serratus* are newly recorded from Nha Trang. *Platycephalus cultellatus* and *R. asper* have been confused with *P. indicus* (Linnaeus 1758) and *R. pristiger* (Cuvier 1829) respectively by many authors and the specimens of *P. cultellatus* and *R. asper* represent the reliable first record of these species from Nha Trang. The key characters separating *R. asper* and *R. pristiger* are given for the first time. Although the maximum total length of *R. tuberculatus* was reported to be ca. 14 cm, our largest specimen of the species attains ca. 18 cm.

Key words: Platycephalidae, Nha Trang, first record, maximum total length

Introduction

Nha Trang, belonging to Vietnam, situates at the north-eastern part of the Indochina Peninsula (ca. 12°15'N, 109°15'E) and faces to the South China Sea. In October 2004, a party including two of authors (HI and YT) captured many fish specimens, including the platycephalids, from the markets and landing port in Nha Trang. After the examination of the platycephalids, we classified them into the following seven species: *Elates ransonnetii* (Steindachner 1876), *Inegocia japonica* (Tilesius 1812), *Onigocia macrolepis* (Bleeker 1854), *Platycephalus cultellatus* Richardson, 1846, *Rogadius asper* (Cuvier 1829), *R. serratus* (Cuvier 1829) and *R. tuberculatus* (Cuvier 1829). Of them, *E. ransonnetii* and *R. serratus* were initially recorded from Nha Trang. *Platycephalus cultellatus* and *R. asper* have been confused with *P. indicus* (Linnaeus 1758) and *R. pristiger* (Cuvier 1829) by many authors, respectively; and thus, this paper represents the reliable first record of these two species from Nha Trang. We herein report the platycephalids collected from Nha Trang in 2004.

Counts and measurements were made according to Hubbs and Lagler (1958). Measurements were made with calipers to the nearest 0.1 mm. Terminology of head spines follows Knapp et al. (2000). Specimen length is expressed as standard length (mm). Institutional acronyms follow Leviton et al. (1985). Generic placement of the species follows Imamura (1996). The descriptions of the species are arranged alphabetically.

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Taxonomic Results

Elates ransonnetii (Steindachner 1876)

(Fig. 1)

Platycephalus ransonnetii Steindachner 1876: 209 (original description, type locality: Singapore)

Elates thompsoni Jordan and Seale 1907: fig. 12 (original description, type locality: Manila, Philippines)

Hyalorhynchus pellucidus Ogilby 1910: 118 (original description, type locality: off Pine Peak and Cape Gloucester, Queensland)

Material examined. HUMZ 190537 (131.3 mm), fish landing port, Nha Trang, 8 Oct. 2004.

Description. Counts: dorsal fin rays (D) VI-14, anal fin rays (A) 13, pectoral fin rays (P1) 21, pelvic fin rays (P2) I, 5, lateral line scales (LLS) 94 (no scales with spines). Proportions (as % SL): head length (HL) 28.3, snout length (SnL) 11.0, orbital diameter (OD) 5.6, interorbital width (IW) 0.8, upper jaw length (UJ) 8.5.

Body greatly slender and elongate. Head moderately depressed. Dorsal surface of head with ridges and spines. Single ocular spine present. Suborbital ridge with 3 spines, including single preorbital spine. Preopercle with single long



Fig. 1. Dorsal (upper) and lateral (lower) views of *Elates ransonnetii*, HUMZ 190537, 131.3 mm.

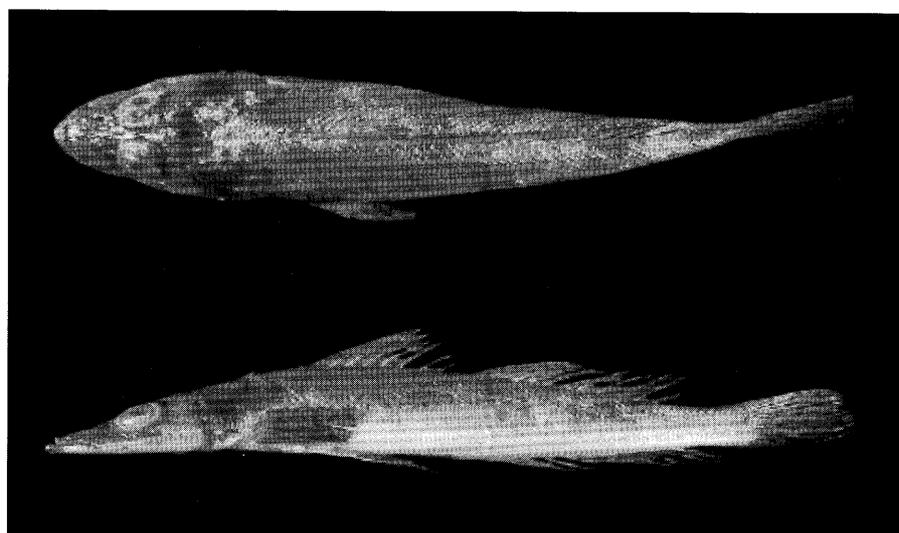


Fig. 2. Dorsal (upper) and lateral (lower) views of *Inegocia japonica*, HUMZ 190443, 172.8 mm.

spine, reaching to posterior margin of opercle. Eye without ocular flaps. Iris lappet not developed. Teeth on vomer in 2 separate patches. Interopercular flap absent. Cheek region lacking skinny sensory tubes. Lateral line scales with single opening to exterior. Single upper caudal fin ray ending in elongate filament.

Color in alcohol.—Body and head light brown above, whitish below. Lateral side of body with a series of grayish spots. Dorsal fins with small blackish spots. Anal fin weakly pigmented. Pectoral fin dusky. Pelvic fin with several irregular brownish bands posteriorly.

Distribution. Known from the western Pacific, including Nha Trang, Gulf of Thailand, Singapore, Indonesia, the Timor Sea off Australia to Papua New Guinea and northern Queensland, and the Philippines (Knapp 1999, this study).

Remarks. *Elates ransonnetii*, a sole member of *Elates* Jordan and Seale 1907, differs from other platycephalids in having 6 dorsal fin spines, very slender and elongate body, single preopercular spine and single upper caudal fin ray ending in

elongate filament (e.g., Imamura 1996, Knapp 1999).

Knapp (1999) showed that *Elates ransonnetii* is distributed in the southern part of Vietnam (lower than 10°N); however, it has not been reported further into the northern coast of the Indochina Peninsula. Therefore, this represents the first record of *E. ransonnetii* from Nha Trang and also the northernmost record of the species in this peninsula, although *E. ransonnetii* was reported from Manila, Luzon Island, northern Philippines (ca. 14°30'N) (Jordan and Seale 1907, Knapp 1999).

Inegocia japonica (Tilesius 1812)

(Fig. 2)

Platycephalus japonicus Tilesius 1812: 59 (original description, type locality: Nagasaki, Japan)

Platycephalus isacanthus Cuvier in Cuvier and Valenciennes 1829: 246 (original description, type locality: Waigeo and Bourou, Indonesia)

Platycephalus borboniensis Cuvier in Cuvier and Valenci-

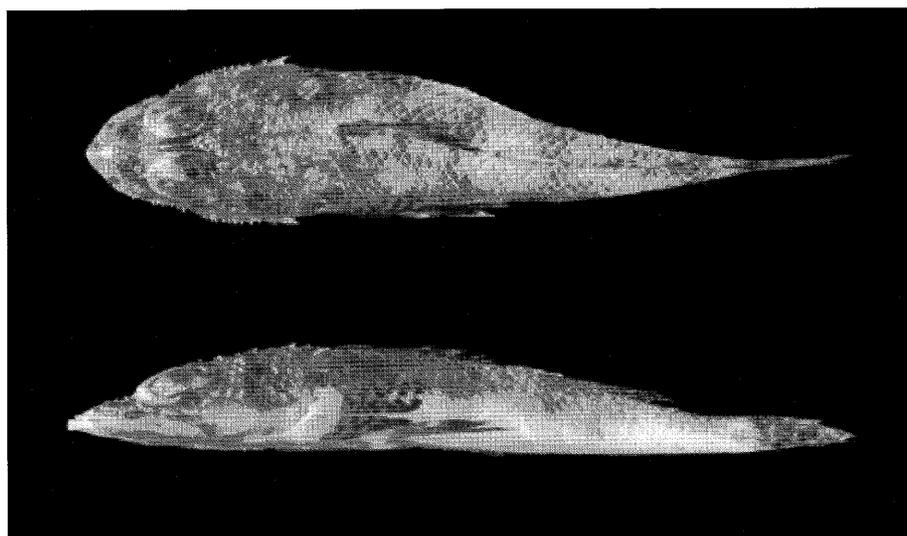


Fig. 3. Dorsal (upper) and lateral (lower) views of *Onigocia macrolepis*, HUMZ 190600, 100.0 mm.

ennes 1829: 252 (original description, type locality: Reunion Island)

Material examined. HUMZ 190441–190443 (3, 183.2–212.5 mm), Cho Moi Market, Nha Trang, 5 Oct. 2004.

Description. Counts: D IX-12, A 12, P1 18-19, P2 I, 5, LLS 54–55 (anterior 4–12 scales with a spine). Proportions (as % SL): HL 31.9–33.6, SnL 9.5–9.9, OD 6.6–8.1, IW 1.9–2.3, UJ 12.4–13.3.

Body elongate. Head moderately depressed. Dorsal surface of head with ridges and spines. Single ocular spine present. Suborbital ridge with 2 spines (preorbital spine absent). Eye without ocular flaps. Iris lappet long and branched. Teeth on vomer in 2 separate patches. Finger-like interopercular flap present. Cheek region lacking skinny sensory tubes. Lateral line scales with two opening to exterior.

Color in alcohol.—Body and head right brown above, whitish below. First and second dorsal, and caudal fins with dark brownish spots. Anal fin dusky. Pectoral fin with many brownish spots. Pelvic fin with dark brownish spots posteriorly.

Distribution. Known from the Indian Ocean and western Pacific, ranging from southern Japan to Sri Lanka and northern Australia (i.e., Matsubara and Ochiai 1955, Knapp 1984, 1999).

Remarks. *Inegocia japonica* can be easily separable from other members of *Inegocia* Jordan and Thompson 1913, including *I. bosschei* (Bleeker 1860), *I. guttata* (Cuvier 1829) and *I. harrisii* (McCulloch 1914) (but Knapp 1999 moved *I. bosschei* from *Inegocia* to *Cymbacephalus* Fowler 1938), in having a finger-like interopercular flap [vs. the flap broad in *I. bosschei* and *I. guttata* (it also bears shallow incisions in the former) and lacking the flap in *I. harrisii*]. *Inegocia japonica* also differs from *I. bosschei* in having the lateral line scales with two openings to exterior (vs. with single

opening in *I. bosschei*). The numbers of the soft dorsal and anal fin rays are also useful to separate *I. japonica* from *I. guttata* and *I. harrisii* (both usually 12 in *I. japonica* vs. usually 11 in *I. guttata* and *I. harrisii*) (data from Matsubara and Ochiai 1955, Knapp 1999, this study).

Onigocia macrolepis (Bleeker 1854)

(Fig. 3)

Platycephalus macrolepis Bleeker 1854: 339 (original description, type locality: Nagasaki, Japan)

Material examined. HUMZ 190600 (100.0 mm), fish landing port, Nha Trang, 7 Oct. 2004.

Description. Counts: D IX-11, A 12, P1 21, P2 I, 5, LLS 38 (anterior 5 scales with a spine). Proportions (as % SL): HL 39.3, SnL 10.8, OD 11.7, IW 2.5, UJ 16.0.

Body elongate. Head depressed. Dorsal surface of head with spines. Single ocular spine present. Suborbital ridge with serrations. Preopercle with 3 spines. Eye with single ocular flap. Iris lappet short and branched. Teeth on vomer in 2 separate patches. Interopercular flap absent. Cheek region with well developed skinny sensory tubes. Lateral line scales with two openings to exterior.

Color in alcohol.—Body and head brown above, whitish below. First dorsal fin with submarginal blackish band. Second dorsal fin with many dark brownish spots. Pectoral and caudal fins with several brownish irregular bands. Pelvic fin dusky, having several blackish spots.

Distribution. Known from southern Japan, Yellow Sea, South China Sea, Philippines to the northwestern shelf of Australia, Indonesia, Gulf of Thailand and Andaman Sea (e.g., Knapp, 1999, this study).

Remarks. *Onigocia macrolepis* is easily distinguished from other species of *Onigocia* Jordan and Thompson 1913 [*O. bimaculata* Knapp, Imamura and Sakashita 2000, *O.*

grandisquama (Regan 1908), *O. oligolepis* (Regan 1908), *O. pedimacula* (Regan 1908) and *O. spinosa* (Temminck and Schlegel 1843)] in having a single preocular spine, single ocular flap, iris lappet short and branched, no interopercular flap, 32-36 lateral line scales and 2-5 lateral line scales with spine (vs. lacking the combination of these characters in others). See Imamura and Sakashita (1997) and Knapp et al. (2000) for the detail of these characters in *Onigocia*.

***Platycephalus cultellatus* Richardson 1846**

(Fig. 4)

Platycephalus cultellatus Richardson 1846: 217 (original description, type locality: Canton, China)

Material examined. HUMZ 190447 (233.1 mm), fish landing port, Nha Trang, 8 Oct. 2004.

Description. Counts: D I-I-VII-13, A 13, P1 20, P2 I, 5, LLS 67 (anterior 2 scales with a spine). Proportions (as % SL): HL 30.9, SnL 8.2, OD 3.8, IW 4.8, UJ 11.4.

Body elongate. Head strongly depressed. Spines on dorsal surface of head obscure. Single preocular spine present. Preopercle with 2 spines. Eye without ocular flaps. Iris lappet with simple elongated lobe. Teeth on vomer in a single band. Finger-like interopercular flap present. Cheek region lacking

skinny sensory tubes. Lateral line scales with single opening to exterior.

Color when fresh based on photograph.—Body and head light brown above, whitish below. Dorsal fins with small dark spots. Anal fin pale. Pectoral and pelvic fins light brown with brown spots. Caudal fin with 4 horizontal blackish bands, including that on middle of the fin. Color in alcohol similar to that when fresh.

Distribution. Known from the South China Sea, including at least Canton and Nha Trang (Richardson 1846, this study).

Remarks. *Platycephalus cultellatus* has been mistakenly identified with *P. indicus* (Linnaeus 1758). Present species can be easily separated from *P. indicus* in having the caudal fin without a yellow blotch (vs. with a yellow blotch near middle of fin in *P. indicus*, according Knapp 1999 and this study). Therefore, this paper represents the reliable first record of *P. cultellatus* from Nha Trang. Detail description and discussion on this species are prepared by one of authors (TY).

***Rogadius asper* (Cuvier 1829)**

(Fig. 5)

Platycephalus asper Cuvier in Cuvier and Valenciennes 1829: 425, pl. 82 (original description, type locality:

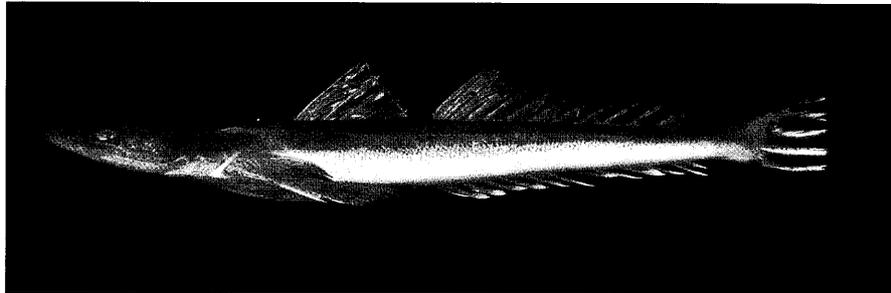


Fig. 4. Lateral view of *Platycephalus cultellatus*, HUMZ 190447, 233.1 mm.

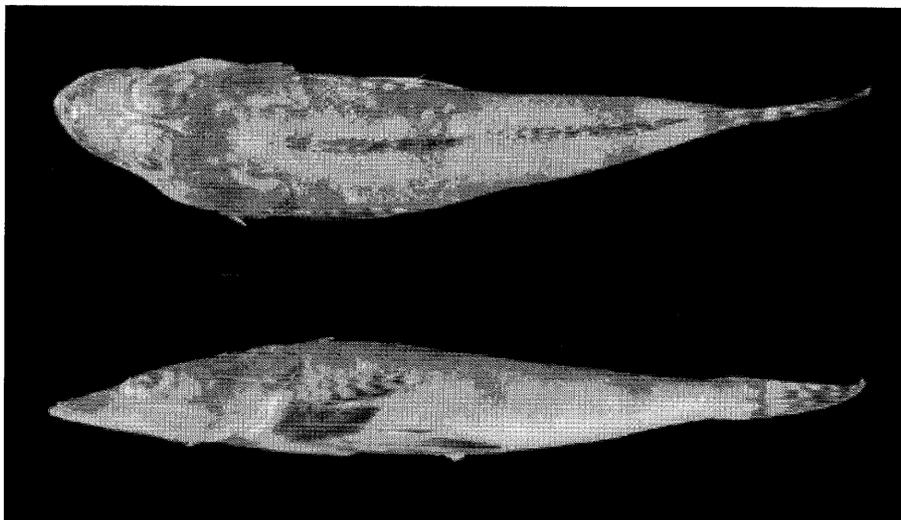


Fig. 5. Dorsal (upper) and lateral (lower) views of *Rogadius asper*, HUMZ 190449, 171.8 mm.

Japan)

Material examined. HUMZ 190449 (171.8 mm), Dum Market, Nha Trang, 9 Oct. 2004; HUMZ 190593, 190599 (2, 83.8–88.4 mm), fish landing port, Nha Trang, 7 Oct. 2004.

Comparative materials. *Rogadius asper* (12 specimens): HUMZ 49466, 62651, 71649, 71658, 74823–74828 (10, 85–140 mm), Japan; HUMZ 71649, 71658 (2, 67–109 mm), Taiwan.

Rogadius pristiger (12 specimens): CSIRO CA1860, H3306-12, H3316-01, H3361-06 (6, 95–130 mm), Australia; MNHN 6855 (syntype, 119 mm), Papua New Guinea; MNHN 6856 (syntype, 108 mm), Celebes; MNHN 4529 (101 mm), Celebes; HUMZ 131413, 131415 (2, 110–123 mm), Papua New Guinea.

Description. Counts: D IX-11, A 11, P1 22–23, P2 I, 5, LLS 51–53 (anterior 13–16 scales with a spine), oblique scale rows slanting downward and forward above lateral line 69–71. Proportions (as % SL): HL 37.4–40.2, SnL 11.3–11.9, OD 9.3–10.4, IW 1.9–2.3, UJ 15.2–16.4.

Body elongate. Head moderately depressed. Dorsal surface of head with spines and tubercles. Single preocular spine present. Suborbital ridge with fine serrations. Preopercle with five spines, including single strong antrorse lowermost spine. Eye without ocular flaps. Iris lappet bilobed. Teeth on vomer in 2 separate patches. Interopercular flap absent. Cheek region with well developed skinny sensory tubes. Lateral line scales with two openings to exterior.

Color in alcohol.—Body and head light brown above, whitish below; body with several indistinct brown band dorsally. First dorsal fin with 3–5 irregular blackish bands. Second dorsal fin with many blackish spots. Pectoral fin with several irregular blackish bands; lower half of the fin dark. Pelvic fin blackish posteriorly, with white margin. Caudal fin with 4–5 blackish irregular bands, including that on base of the fin.

Distribution. Known from the western Pacific, including at least southern Japan, Korea, East China Sea, Taiwan and Nha Trang (e.g., Matsubara and Ochiai 1955, Shao and Chen 1987, Lee and Joo 1998, this study).

Remarks. Many authors confused *Rogadius asper* and *R. pristiger* (Cuvier 1829) (e.g., Knapp 1979, Sainsbury et al. 1985) and no studies showed the significant characters separating these two species. They commonly possess a strong antrorse preopercular spine [vs. the spine short or absent in other members of *Rogadius* Jordan and Thompson 1913 (sensu Imamura 1996)] and *R. pristiger* also recorded from Nha Trang (Knapp 1999). It was found here for the first time that these species can be separated by the numbers of the oblique scale rows slanting downward and forward above the lateral line (66–76 in *R. asper* vs. 51–61 in *R. pristiger*) (this study, including data of *R. asper* from Nha Trang and other regions). In addition, these species are separable from the

coloration of the first dorsal and caudal fins (first dorsal fin with 3–5 irregular blackish bands or randomly arranged blackish spots and caudal fin with 3–5 irregular blackish bands or a basal blackish band and randomly arranged blackish spots posteriorly in *R. asper* vs. the former with a black marginal band and latter with a white basal band, a broad dusky submarginal band and a narrow white edge in *R. pristiger* (Knapp 1999, this study).

Because *Rogadius asper* had been confused with *R. pristiger*, its southern border of distribution is unclear [*R. asper* has been previously reported from southern Japan to Taiwan, according to such as Matsubara and Ochiai (1955) and Shao and Chen (1987)]. Therefore, present study represents the southernmost record of *R. asper* at present and also the reliable first record from Nha Trang.

Rogadius serratus (Cuvier 1829)

(Fig. 6)

Platycephalus serratus Cuvier in Cuvier and Valenciennes 1829: 259 (original description, type locality: Trincomalee, Sri Lanka)

Platycephalus polijodon Bleeker 1853: 462 (original description, type locality: Jakarta [Batavia], Java, Indonesia)

Material examined. NSMT-P 69917 (135.9 mm), fish landing port, Nha Trang, 8 Oct. 2004.

Description. Counts: D IX-11, A 11, P1 22, P2 I, 5, LLS 54 (anterior 3 scales with a spine). Proportions (as % SL): HL 37.0, SnL 11.4, OD 9.9, IW 1.8, UJ 14.8.

Body elongate. Head moderately depressed. Dorsal surface of head with spines. Single ocular spine present. Suborbital ridge with fine serrations. Preopercle with 4 spines, including single short antrorse lowermost spine. Eye without ocular flaps. Iris lappet bilobed. Teeth on vomer in 2 separate patches. Interopercular flap absent. Cheek region with well developed skinny sensory tubes. Lateral line scales with two opening to exterior.

Color when fresh based on photographs.—Body and head brownish above, whitish below; body with several dark brownish bands and spots. First dorsal fin with submarginal blackish band. Second dorsal fin with many dark brownish spots. Pectoral fin with many irregular dark brownish bands in upper portion, blackish in lower half; posterior margin of the fin white. Pelvic fin blackish, with irregular two blackish bands posteriorly; posterior margin of the fin white. Caudal fin with a blackish band basally and posteriorly. Color in alcohol similar to that when fresh.

Distribution. Known from the Indian Ocean and western Pacific, including Mauritius, Seyshelles, Somalia, Pakistan, Sri Lanka, Maldives, Chagos Archipelago, Indonesia, Nha Trang, Philippines, Port Moresby, northern Queensland, and New Caledonia (Knapp 1999, this study).

Remarks. *Rogadius serratus* can be easily separated from

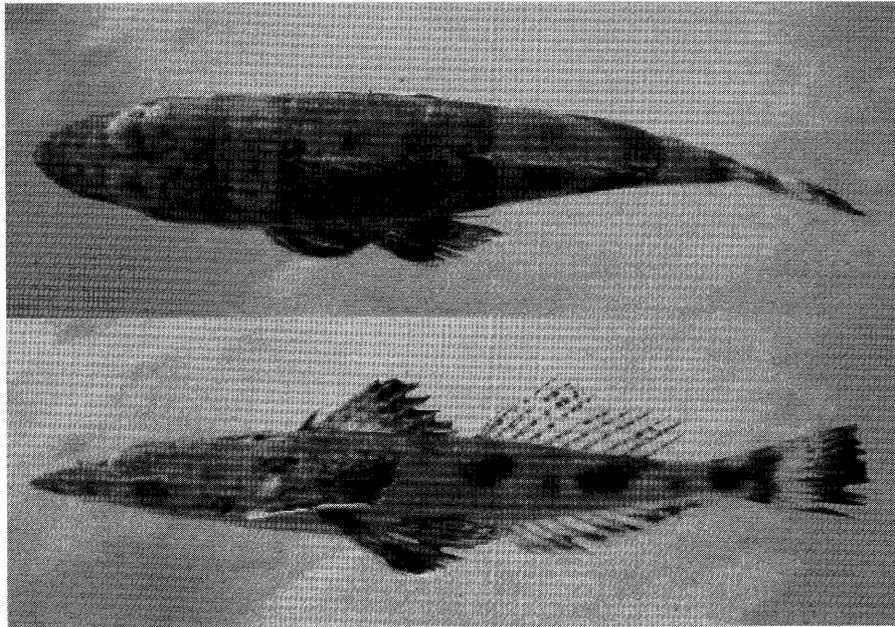


Fig. 6. Dorsal (upper) and lateral (lower) views of *R. serratus*, NSMT-P 69917, 135.9 mm (K. Shibukawa).

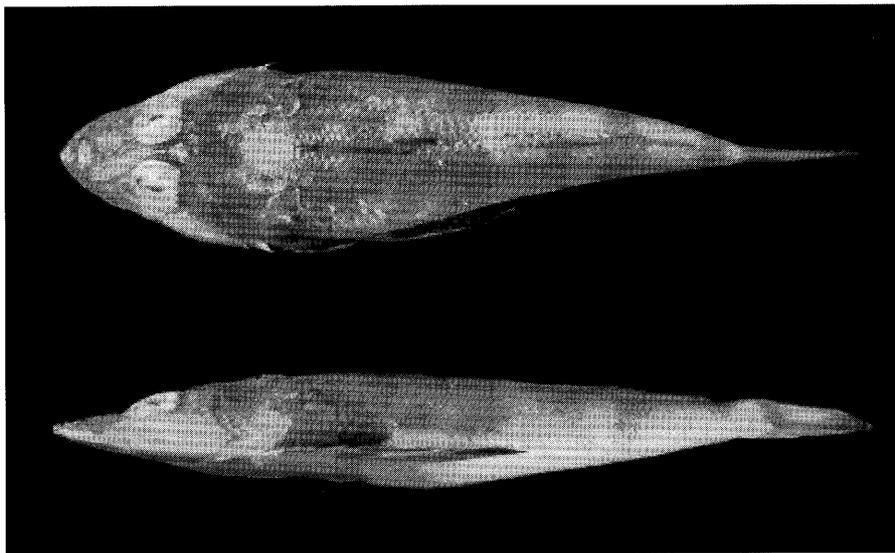


Fig. 7. Dorsal (upper) and lateral (lower) views of *R. tuberculatus*, HUMZ 190450, 156.6 mm.

other members of the genus *Rogadius*, except for *R. welanderi* (Schultz 1966), in having a short antrorse preopercular spine (vs. having a strong spine in *R. asper* and *R. pristiger*, or lacking the spine in others). It differs from *R. welanderi* in having a single preocular spine (vs. having 2–3 spines) (data from Imamura and Amaoka 1996, Knapp 1999, this study).

Rogadius serratus has not been reported from Nha Trang and this paper represents the first record of this species from the area.

***Rogadius tuberculatus* (Cuvier 1829)**
(Fig. 7)

Platycephalus tuberculatus Cuvier in Cuvier and Valenciennes 1829: 258 (original description, type locality: Trincomalee, Sri Lanka)

Sorsogona serrulata Herre 1934: 67 (original description, type locality: Magallanes, Sorsogon Prov., Luzon I., Philippines)

Material examined. HUMZ 190448, 190544 (2, 102.3–133.2 mm), fish landing port, Nha Trang, 8 Oct. 2004; HUMZ 190450 (156.6 mm), Dum Market, Nha Trang, 9 Oct.

2004; HUMZ 190583–190590 (8, 100.0–132.9 mm), fish landing port, Nha Trang, 7 Oct. 2004.

Description. Counts: D IX-11, A 11, P1 19-21, P2 I, 5, LLS 50–54 (24–48 scales with a spine). Proportions (as % SL): HL 33.8–35.7, SnL 9.9–10.8, OD 7.6–8.4, IW 2.6–3.2, UJ 13.2–14.3.

Body elongate. Head moderately depressed. Dorsal surface of head with spines and tubercles. Two to 6 preocular spines present. Suborbital ridge with fine serrations. Lower half of preopercle roughly serrated, lacking the antrorse spine. Eye without ocular flaps. Iris lappet scalloped. Teeth on vomer in 2 separate patches. Interopercular flap absent. Cheek region with well developed skinny sensory tubes. Lateral line scales with two opening to exterior. Scales on anterior portion of body with one or more spines.

Color in alcohol.—Body and head light brown above, whitish below; body with several indistinct brown bands dorsally. Dorsal fins with many brownish spots. Pectoral fin with many irregular brownish bands; posterior portion of the fin blackish except for upper. Pelvic fin with irregular brownish spots. Caudal fin dusky.

Distribution. Widespread, ranging from the Okinawa Island to Persian Gulf and northern Australia (e.g., Knapp, 1999; Sakashita et al., 2003; this study).

Remarks. *Rogadius tuberculatus* differs from other nine members of this genus in having such as the following characters: usually 11 soft dorsal and anal fin rays, 2–6 preocular spines, antrorse preopercular spine absent, anterior 24–48 lateral line scales having a small spine (e.g., Knapp and Wongratana 1987, Knapp 1999, this study). See Knapp and Wongratana (1987) for the comparison of four species of the genus *Sorsogona* Herre 1934, in which *R. tuberculatus* had been included.

Knapp (1999) pointed out the maximum total length of *Rogadius tuberculatus* (as *Sorsogona tuberculata*) being about 14 cm. Therefore, our largest material in 156.6 mm SL (HUMZ 190450, 180.9 mm in total length) is the record of the maximum size.

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