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Short Communication: A new record of *Giganthias immaculatus* Katayama, 1954 (Perciformes: Serranidae) from Indonesia

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ABSTRACT

Peristiwady T, Makatipu PCh, Du J. 2014. A new record of Giganthias immaculatus *Katayama, 1954 (Perciformes: Serranidae) from Indonesia. Biodiversitas 15: 104-107.* Three specimens of *Giganthias immaculatus* Katayama, 1954, were collected from Bitung, North Sulawesi, in October 2009, November 2009 and June 2012. The morphological data for *G. immaculatus* are similar to those for *G. serratospinosus* White & Dharmadi, 2012; those species share the following characters: dorsal fin rays IX, 11-13, anal fin rays III, 8 and lateral line high arched. However, the former is clearly distinguishable from G. *serratospinosus* by pectoral-fin rays 16 or 17 (vs. 13 or 14 for G. *serratospinosus*); gill rakers (10) + (21-24) (vs. 10 + 20 for *G. serratospinosus*). It also differs in the following: body depth, head length, predorsal length, preanal length, upper-jaw length, interorbital width. Initially, this species was collected from Izu-Õshima, Japan. Other localities of capture for this species are: Ago Bay, Shimacho Goza, Shima City, Mie Pref., Tomari, Okinawa, Japan and Taiwan and now recorded also off Bitung, Sulawesi Island, Indonesia.

Key words: Anthiinae, *Giganthias immaculatus*, Indonesia, new record, Serranidae

INTRODUCTION

Fishes of the genus *Giganthias* Katayama, 1954 are moderate size species living in hard-bottom habitats beyond scuba-diving depths are rarely catch by divers, gillnetting or trawling. The present specimen was taken by vertical hand-line together with the others target deep-water groupers (*Epinephelus*), big eye (*Priacanthus*) and snappers (*Pristipomoides* and *Etelis*).

The genus *Giganthias* belongs to the subfamily Anthiinae of the family Serranidae, although Katayama (1960) placed it in a separate subfamily, the Giganthiinae. This genus is characterized by a combination of the following characters: nine dorsal-fin spines, serrated tip to third dorsal spine and pelvic spine, a supplementary maxillary and a very highly arched lateral line (Katayama 1954). Sub-family Giganthiinae currently consists of one genus, with two species. In the world, two species of *Giganthias* have been reported, *Giganthias immaculatus* Katayama, 1954 from Ryukyus, Japan (Katayama 1954; Masuda et al. 1984; Nakabo 2002), from Taiwan (Lee 1990) and *G. serratospinosus* White and Dharmadi, 2012 from Indonesia (White and Dharmadi 2012).

During the ichthyofaunal survey in Bitung, North Sulawesi, Indonesia, three specimens of *Giganthias immaculatus* were collected from Bitung. The species has been previously known only from the Ryukyu Islands and Taiwan, then the Indonesian specimen, herein described, represent the first record of the species outside Japan and Taiwan and bring the total number of species of this genus recorded from Indonesia to two species.

Materials and Methods

Three specimens of *Giganthias immaculatus* were collected from off Girian, Bitung, North Sulawesi, Indonesia. The present specimens were taken by vertical hand-line from the depth of more than 150 m together with other deep-water groupers, big eye and snappers. Methods of counting and measuring followed Randall and Heemstra (2006) with additional measurements of all dorsal and anal fins spine and rays length measuring as distance from tip and base of spine and suborbital width measuring as least distance between orbit and jaws. All measurements were made with digital calipers to the nearest 0.01 mm. Cyanine blue was used to examine and scale counts.

Standard and head lengths are abbreviated as SL and HL, respectively. Institutional codes follow Eschmeyer (2013) with additional abbreviations as follow: LBRC-F (The Reference Collection of LIPI Bitung, Technical Implementation Unit for Marine Biota Conservation, Indonesian Institute of Sciences, Bitung, North Sulawesi, Indonesia. Institutional acronyms for types and comparative material are those of Leviton et al. (1985).

Giganthias immaculatus Katayama, 1954

(Figure 1; Table 1).

Giganthias immaculatus Katayama, 1954: 57, fig.1 (type locality: off Izu-Õshima, Japan): Katayama in Masuda et al. 1984: 132, pl. 119 (off Izu-Õshima, Japan); Lee 1990: 64 (Taiwan), Nakabo 1993: 634 (Japan); Randall *in* Randall & Lim 2000: 610, Nakabo 2002: 733 (Izu Isls., Ryukyu, Japan), White and Dharmadi 2012: 65; Huang and Liu 2012: 150.

Figure 1. Color photograph of *Giganthias immaculatus* Katayama, 1954, LBRCF 1380, 205 mm SL, Bitung, North Sulawesi, Indonesia.

Table 1. Proportional measurements of *Giganthias immaculatus* from Japan and Bitung, Indonesia. Minimum and maximum measurements are presented as percentages of SL and HL, mean value between brackets.

Parameters	**NSMT P18654(1) Holotype**	**Japanese specimens**	**Indonesian specimens**
Dorsal rays	IX-11	IX (11-13)	IX (11-13)
Anal rays	III-8	III (8)	III (8)
Pectoral rays	17	16-17	16-17
Pelvic-fin rays	I-5	I (5)	I (5)
Gill-rakers	-	10+20	10+(21-24)
Scales in Lateral line	44	41-43	39-41
Scales above lateral line	7 or 8	6-8.5	6-8.5
Scales below lateral line	18-19	16.5-18	16.5-18
In SL			
Body depth	44.8	42.1 - 47.6 (44.7)	43.4 - 46.5 (45.4)
Body width	20.3	18.8 - 23.2 (20.8)	20.1 - 21.7 (20.7)
Head length	35.5	34.3 - 39.8 (36.0)	38.1 - 39.6 (39.0)
In HL			
Snouth length	26.4	24.9 - 26.6 (25.9)	24.7 - 40.3 (31.2)
Orbit diameter	30.9	30.9 - 32.6 (31.3)	28.1 - 34.6 (31.6)
Interorbital width	36.6	34.0 - 39.5 (36.9)	33.8 - 36.9 (35.3)
Upper-jaw length	53.5	47.9 - 54.4 (51.9)	47.1 - 52.3 (49.6)
Caudal-peduncle depth	42.0	38.8 - 44.3 (42.0)	34.0 - 41.5 (36.9)
First dorsal spine	12.2	12.2 - 14.2 (13.1)	12.1 - 12.6 (12.3)
Second dorsal spine	20.5	20.5 - 24.2 (22.9)	21.9 - 27.2 (23.9)
Third dorsal spine	28.4	28.4 - 33.6 (31.7)	29.3 - 33.4 (31.4)
Fourth dorsal spine	29.2	29.2 - 33.4 (31.5)	33.5 - 36.8 (34.7)
Last dorsal spine	26.6	26.6 - 33.1 (29.2)	22.2 - 29.4 (25.8)
First dorsal ray	41.8	41.8 - 43.1 (42.5)	38.4 - 42.6 (40.5)
Longest dorsal ray	52.3	42.8 - 53.3 (49.4)	40.9 - 48.5 (44.3)
Last dorsal ray	25.2	25.2 - 33.1 (29.1)	26.9 - 33.0 (29.9)
First anal spine	14.9	14.9 - 19.0 (16.7)	15.0 - 15.5 (15.2)
Second anal spine	27.2	26.4 - 29.0 (27.5)	26.3 - 29.0 (27.6)
Third anal spine	27.4	25.4 - 28.3 (27.0)	25.3 - 29.4 (27.3)
Longest anal ray	47.9	45.1 - 53.7 (48.9)	40.8 - 47.4 (44.3)

Material examined: *Giganthias immaculatus*: NSMT-P 18654 (formerly KFC 1534), holotype, 252 mm SL, off Izu-Õshima, Japan, collected by S. Igarashi, October 1952; FRLM 03665: 205.5 mm SL, Ago Bay, Shimacho Goza, Shima City, Mie Pref., Japan, 7 September 1982, collected by Seishi Kimura and others; LBRCF 1380, 205 mm SL, Girian Fish Market, Bitung, Indonesia, T. Peristiwady, 25 November 2009; LBRCF 1803, 214 mm SL, Girian Fish Market, Bitung, Indonesia, T. Peristiwady, 17 October 2009; LBRCF 2910, 250.5 mm SL, Girian Fish Market, Bitung, Indonesia, T. Peristiwady, 20 June 2012; ; URM-P 3764, 239.95 mm SL, Fish landing Okinawa Island, Yoshino, June 1982; URM-P 39792, 267.95 mm SL; fish market of Okinawa Pref. Fishery Cooperation, Tomari, Okinawa, Japan, Fujioka, 10 April 1999;

***Description*:** Dorsal-fin rays IX, 10-13, filament between spine incised, 4th dorsal-fin spine longest, 3rd ray longest, all dorsal rays branched, the last rays joint to its base; anal-fin rays III, 8; 2nd spine longest; 2nd, 3rd or 4th anal ray longest, all anal rays branched, the last rays joint to its base; pectoral-fin rays 16-17, uppermost and lowermost un-branched; pelvic-fin with I spine and 5 branched rays; lateral-line complete, lateral-line scales 39-41, scales above lateral line 7-9, scales below lateral line 17-18; circumpeduncular scales 25; gill rakers 10+(21-24).

Body oblong and moderately elongated, its depth 2.2-2.3 (2.2) in SL; body compressed, the width 2.1-2.3 (2.2) in body depth; head length 2.1-2.5 (2.4) in SL; eye large, orbit diameter 2.9-3.6 (3.2) in HL; snout short, 2.5-4.0 (3.3) in HL; interorbital slightly convex, the least width 2.7-3.0 (2.8) in HL; caudal-peduncle depth 2.4-2.8 (2.7) in HL; caudal-peduncle length 1.6-1.9 (1.7) in HL. Mouth large, the maxilla extending just to a vertical line at mid pupil, the upper-jaw length 1.9-2.1 (2.0) in HL; mouth terminal, forming an angle of about 50° to horizontal axis of head and body, lower jaw rather projecting; anterior tip of upper and

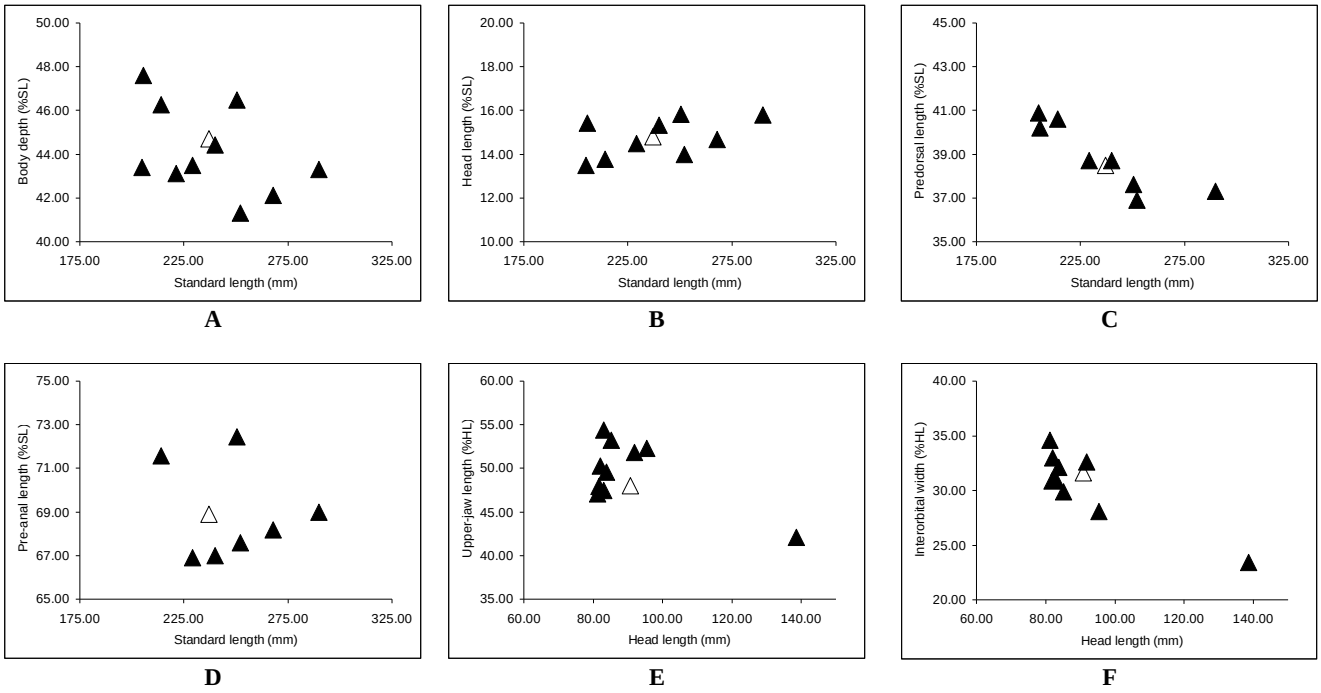

Figure 2. Ratio of body depth (A), head length (B), predorsal length (C), preanal length (D), upper-jaw length (E) and interorbital width (F) of *Giganthias immaculatus* (▲) and *G. serratospinosus* (Δ). Data *G. serratospinosus* recalculated from White and Dharmadi, 2012.

lower jaws with elevated patch of large conical teeth, posterior base of lower jaw with a elevated patch of large conical teeth, patch of villiform teeth on vomer and palatines with conical teeth.

Nostrils located directly anterior to eyes at about above a horizontal line of upper level of pupil, the anterior with a short flap, posterior nostril posterodorsal to anterior nostril and large. Opercle with three flat spines, upper opercular spine blunt and covered by scale, the middle spine pointed reaching posterior edge of fleshy opercle; lowest spine shorter than two upper spine; posterior margin of preopercle with serration and margin of interopercle smooth, angle of preopercle without serrae;

Scales ctenoid; scales progressively smaller anteriorly on head; predorsal area scaled to about level of anterior nostril, preorbital, lips, throat and mandible scaled; small scales basally on soft portions of dorsal, smaller scales on caudal fin extending at about posterior margin; small scales on basal of pectoral fins.

Lateral line high arched below the fifth dorsal spine. Origin of dorsal fin over upper second opercular spine, dorsal fin continuous and not really incised at junction of spines and soft rays, the four anterior dorsal spines stout, two anterior tips of dorsal spine with coarse serration, third and fourth spine not smooth; first dorsal spine 0.4-0.6 (0.5) length of second dorsal spine, fourth dorsal spine longest, 2.7-3.0 (2.9) in HL; soft rays not forming filament, the third rays longest, 2.1-2.4 (2.30) in HL, last two branched rays joint in the base; origin of anal fin below base of first or second dorsal rays; anal spines smooth without serration, anal spines short and stout, first anal spine about half length of second; second and third anal spine about same length; second, third or fourth anal soft ray longest, 3.0-3.7 (3.4) in HL; caudal fin forked, the lobes not tapering, the fin length 3.2-3.4 (3.3) in SL; caudal concavity 2.6-3.1 (2.8) in HL; pectoral fins long and pointed, asymmetric, reaching anus, 1.2-1.3 (1.2) in HL; pelvic-fin stout, anterior tip of spine with serration, second ray of pelvic fins longest.

***Color when fresh (Fig.1)*:** Head and body deep pink dorsally grading to paler ventrally; nape and around orbit yellowish; nape to back below spinous dorsal spine yellow, several yellow blotches on head, anterior to eye, upper lip and maxilla to suborbital space; and as a bar on preopercular margin; dorsal fin pale pink, soft portion of dorsal fin yellow distally, membranes of the spinous portion whitish; pelvic and anal spine pinkish, pectoral and caudal fin pinkish orange, posterior margin of caudal fn whitish.

Color in preserved specimens: Head and body pale brownish uniformly.

***Distribution*:** The present specimen was taken by handline together with the target deep-water groupers (*Epinephelus*), big eye (*Priacanthus*) and snappers (*Pristipomoides* and *Etelis*). Initially this species was described as new species from Izu-Õshima, Japan (Katayama 1954). This species from other locations was reported from Ago Bay, Shimacho Goza, Shima City, Mie Prefecture; Okinawa, Japan (Nakabo 2002) and Taiwan (Lee 1990) and now recorded also in Bitung, Sulawesi Island, Indonesia.

Comparison with other species: The meristic data of *Giganthias immaculatus* Katayama, 1954 is similar to *G. serratospinosus* White and Dharmadi, 2012 in sharing the following characters: dorsal fin soft rays X, 11-13, anal fin soft rays III, 8 and lateral line high arched. However, the

former is clearly distinguishable from G. *serratospinosus* by pectoral rays 16-17 (vs. 13-14 for G. *serratospinosus*); gill rakers (10) + (21-24) (vs. 10-20 for *G. serrato-spinosus*). It also differs in the following characteristics: body depth, head length, predorsal length, preanal length, upper-jaw length, interorbital width as shown Figure 2. Color image of *G. immaculatus* and *G. serratospinosus* from Lombok, Indonesia allowing a comparison of the fresh coloration of the two species. The color of these two species of genera *Giganthias* is very similar.

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