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The first record of *Saloptia powelli* from Maluku waters, Eastern Indonesia

Gino V Limmon and JA Pattikawa

Abstract

Four specimens of golden grouper *Saloptia powelli* were collected during the research to inventory reef food fish in Ambon Island from Mardika Fish Market and Asilulu village, Ambon Island, Maluku Province, Indonesia. This was the first reported of *S. powelli* so far in Maluku waters. Meristic characters of *S. powelli* were dorsal fin rays VIII,11; anal fin rays III, 8; pelvic fin rays I, 5; pectoral rays 14-15; caudal fin rays 17-18; scales on lateral line 76-78 and total gill rakers 24-26. The finding in the present study added new range distribution of *S. powelli* in Indonesian waters.

Keywords: *Saloptia powelli*, golden grouper, serranidae, new record, Ambon Island

1. Introduction

The physical seascape and complex geological history, has resulted in Indonesia having the greatest marine biodiversity in the world ^[1]. As one of the largest countries within the Coral Triangle, a global centre of marine endemism, Indonesia is considered to have the world's richest coral reef fauna ^[1]. One of those coral reef fauna is fish of the family Serranidae. The serranid subfamily Epinephelinae recognized as groupers are the most important and economical fish in tropical and subtropical countries comprises about 160 species of marine fishes in 15 genera ^[2]. Seven genera comprises 39 species belong to subfamily Epinephelinae can be found in Indonesian waters ^[3, 4].

Saloptia powelli or golden grouper is a deep waters species of the subfamily Epinephelinae. As a deep water species, distribution of this species is lacking. According to Heemstra & Randall (1993) ^[2], *S. powelli* is not present in Indonesian waters, but only found in Western Pacific to French Polynesia: Okinawa, Taiwan, South China Sea, Mariana Islands, Society Islands, Cook Islands, American Samoa, Fiji, and the Tuamotus. However, a recent study showed that this species also occurs in Indonesian waters, i.e. in North Sulawesi ^[5].

This paper aims to describe morphological characters (measurement and count) of golden grouper *S. powelli*. This species was found during the research to inventory reef food fish in Ambon Island and never been reported to be present in Maluku waters, Eastern Indonesia ^[6, 7].

2. Materials and Methods

Specimens of *S. powelli* were collected at Mardika Fish Market and at Asilulu village, Ambon, Maluku Province. The fishes were captured by traditional fishers of Asilulu Village using fish trap at the depth of 80 – 120m in Pulau Tiga (P. Ela, P. Hatala and P. Lain; Fig. 1).

Each specimen of *S. powelli* was measured using caliper (accuracy 0.05mm) and then photographed by using Canon EOS 500D camera. Tissue was collected from the right part of the dorsal of the fish and then preserved in 95% ethanol. Voucher specimens (fish, tissue and photograph) were deposited at Marine Science Center of Excellence, Pattimura University Ambon.



Fig 1: Map showing sampling site (red square)

3. Results and Discussion

Four specimens of golden grouper *S. powelli* were collected during the research to inventory reef food fish in Ambon Island. This species was first reported from Cook Islands and described by Smith (1964) [8]. In Indonesia waters, *S. powelli* was first reported from North Sulawesi by Burhanuddin *et al.* (2017) [5] and named it in Indonesian as *Kerapu emas*.

3.1. Material examined.

Four specimens of *S. powelli* Smith 1964 [8] (Fig. 2): BMF 00615 collected on 21 June 2016 at Mardika Fish Market;

BMF 01107 collected on 25 July 2016 at Asilulu village; BMF 01365 and BMF 01366 both collected on 17 April 2017 at Mardika Fish Market.

3.2. Colour

Body is bright yellow to orange becoming white or pink ventrally; caudal, dorsal and anal fins are yellow with white margin; dorsal-fin spines sometimes streaked with red; the snout, lips, top of the eye and dorsal part of head covered with red.

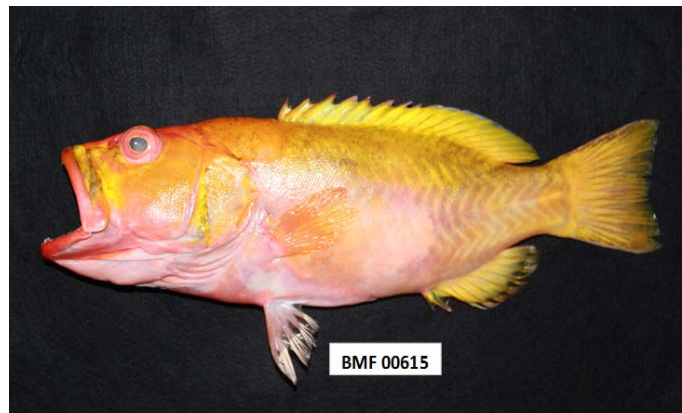


Fig 2: *Saloptia powelli* from Maluku Waters

3.3. Diagnosis

Morphological characters (measurement and count) are presented in Table 1.

Meristic characters of golden grouper are as follows: Dorsal-fin rays VIII, 11, Anal-fin rays III, 8 and Pelvic-fin rays I, 5. Pectoral fin round with 14 or 15 rays.

Body compressed elongated, its depth 2.63-2.90 times in standard length (SL) and its width 2.20-2.43 in body depth. Head length (HL) 2.50-2.61 in SL; the posterior nostril vertically oval and enlarged, its greatest diameter 2.21-2.47

times larger than diameter of anterior nostril; upper jaw length 1.96-2.03 in HL; the longest dorsal spine 3.3-4.0 in HL, the third spine the longest; pelvic fins short, not reaching anus, 2.07-2.22 in HL; caudal peduncle depth 3.01-3.39 in HL while its length 2.87-3.14 in HL; caudal fin truncate to emarginate, length 1.64-1.80 in HL; the longest anal ray 2.71-2.80 in HL. These morphometric and meristic characters match the description of *Saloptia powelli* given by other authors [2, 5, 8, 9].

Table 1: Count and measurement (as percentage of standard length) of *Saloptia powelli*

Morphological Character	Reference			
	Present Study	[5]	[9]	[8]
Measurement				
Total length (mm)	351.00-374.00 (358.93)	370.0	Max. 470	-
Standard Length (mm)	284.00-303.8 (291.33)	300.0	237 – 385	340.0
Head length	38.25-39.93 (39.21)	38.3	-	-
Body depth	34.49-38.06 (36.47)	35.1	-	-
Body width	15.17-16.09 (15.71)	14.7	-	-
Predorsal length	41.35-43.92 (41.63)	-	-	-
Prepelvic length	39.20-51.13 (40.22)	-	-	-
Preanal length	63.32-66.12 (64.57)	-	-	-
Caudal-peduncle depth	11.66-12.71 (12.29)	-	-	-
Caudal-peduncle length	21.76-23.48 (22.91)	-	-	-
Dorsal-fin base	32.59-47.66 (42.59)	41.6	-	-
1th dorsal spine	5.05-5.76 (5.41)	-	-	-
2nd dorsal spine	9.03-9.57 (9.26)	-	-	-
3th dorsal spine	9.90-11.49 (10.99)	-	-	-
4th dorsal spine	8.89-10.83 (10.13)	-	-	-
5th dorsal spine	9.43-10.75 (10.05)	-	-	-
6th dorsal spine	9.54-10.62 (10.28)	-	-	-
7th dorsal spine	9.78-10.73 (9.28)	-	-	-
8th dorsal spine	8.66-9.86 (9.46)	-	-	-
Longest dorsal ray length	12.98-14.53 (13.81)	-	-	-
Anal-fin base	16.98-18.65 (17.87)	-	-	-
First anal spine	4.24-5.09 (4.66)	-	-	-
Second anal spine	7.37-8.58 (7.75)	-	-	-
Third anal spine	6.92-7.89 (7.60)	-	-	-
Longest anal ray	14.01-14.75 (14.32)	-	-	-
Caudal-fin length	21.76-23.48 (22.91)	-	-	-
Pectoral-fin length	18.05-18.70 (18.37)	-	-	-
Pelvic spine length	8.49-9.08 (8.92)	-	-	-
Pelvic-fin length	17.36-19.10 (18.18)	-	-	-
Snout length	11.45-12.00 (11.65)	-	-	-
Orbit diameter	7.44-8.67 (8.19)	-	-	-
Interorbital width	7.74-9.64 (8.90)	-	-	-
Upper-jaw length	19.26-19.88 (19.62)	-	-	-
COUNT				
Dorsal-fin rays	VIII, 11	VIII, 11	VIII, 11	VIII, 11
Anal-fin rays	III, 8	III, 7	III, 8	III, 7
Pelvic-fin rays	I, 5	-	-	-
Pectoral-fin rays	14 – 15	14	14 – 15	15
Caudal-fin rays	17 – 18	-	-	-
Scales on lateral line	76 – 78	77	70 – 78	75
Gill rakers on upper limb	8 – 9	9	8 – 9	-
Gill rakers on lower limb	16 – 17	17	16 – 17	-
Total gill rakers	24 – 26	26	24 – 26	-

Notes: Burhanuddin *et al* (2017) [5]; Randall and Heemstra (1991) [9]; Smith (1964) [8]; values in bracket are mean

3.4. Remarks

Golden grouper *S powelli* is a deep water species inhabits rocky substrates at the depth 140 – 367 m [2]. In the Pacific, this species is caught by hand line and traps at 100 – 200 m depth [10]. The largest specimen examined so far was reported from Guam, Mariana Island: 385 mm SL (470 mm TL) [9]. Golden grouper is not an abundant species, but it is one of the most deep water grouper caught by handliner in Mariana Island and it become an important food fish in the Ryukyu Islands of southern Japan [9].

3.5. Extended Distribution

Western Pacific to French Polynesia: Okinawa, Taiwan, South China Sea, Mariana Islands, Society Islands, Cook Islands, American Samoa, Fiji, the Tuamotus [2] and Indonesia: North Sulawesi [5] and Maluku (present study)(Figure 3)

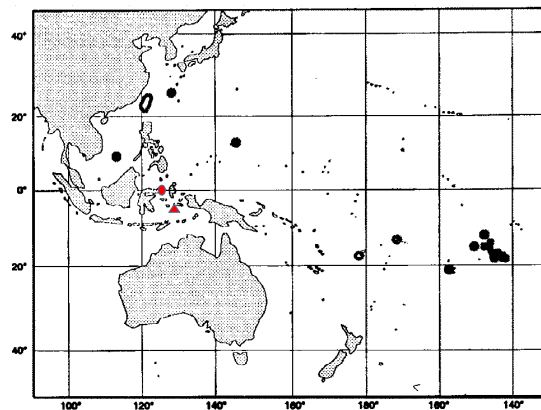


Fig 3: Map showing distribution of *Saloptia powelli* in the world, black circle [2]; red circle [5]; red triangle (present study) (Map source: Heemstra and Randall 1993 [2])

4. Conclusion

Golden grouper *S. powelli* is reported for the first time in Ambon Island, Maluku Province. The current finding of *S. powelli* of family Serranidae in Maluku waters enrich the marine biodiversity lists of Indonesian waters of reef fishes and provides new information to revise the range of geographical distribution of the groupers. The present study and other recently new records from Indonesia underline the importance of the Indonesian fauna as part of the marine biodiversity within Coral Triangle.

5. Acknowledgement

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