

New record of *Parascolopsis rufomaculata* Russell, 1986 (Perciformes: Nemipteridae) from Indonesian waters, Eastern Indian Ocean

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Abstract. *Parascolopsis rufomaculata* was originally described from the North-West Shelf, Australia, by B.C. Russell in 1986. After examination of a single *Parascolopsis* specimen collected during the South Java Deep-Sea (SJADES) Biodiversity Expedition 2018, we report its presence in Indonesian waters, Eastern Indian Ocean for the first time. This new record extends the distribution of this rare species, which was formerly recorded only in north-western Australia.

Key words. Eastern Indian Ocean, new record, Nemipteridae, *Parascolopsis*, SJADES 2018

INTRODUCTION

The dwarf monocle breams, genus *Parascolopsis*, was named by Boulenger (1901) based on a new species, *Parascolopsis townsendi*, from the Gulf of Oman. *Parascolopsis* can be separated from *Scolopsis* Cuvier by its lack of a suborbital spine, differences in jaw structure, development of the infraorbital bones, number of epipleural ribs, and degree of development of the second anal spine (Boulenger, 1901; Russell & Gloerfelt-Tarp, 1984).

Species of the genus *Parascolopsis* usually occur over the outer shelf and continental slopes in water depths between 40 to 500 m (Russell, 1986, 1990; Russell & Golani, 1993). Furthermore, they are generally found in deeper waters, differing from *Scolopsis* that inhabit shallow water reefs (Russell & Gloerfelt-Tarp, 1984). *Parascolopsis* are distributed in the Indo-West Pacific, ranging from the western Indian Ocean (including the Red Sea and the Persian Gulf) to north-eastern Australia, south-east Japan, and southwards to Delagoa Bay on the coast of East Africa (Russell & Golani, 1993).

There are 12 valid species of *Parascolopsis*, including *P. rufomaculata*. This species was described by Russell (1986) from 16 specimens. In this study, one specimen

was collected during the two-week SJADES cruise on RV *Baruna Jaya VIII* conducted from March to April 2018. So far, this species has only been reported from the North-West Shelf, Australia. This specimen represents the first confirmed record of *Parascolopsis rufomaculata* in Indonesian waters, Eastern Indian Ocean.

MATERIAL AND METHODS

The specimen of *Parascolopsis rufomaculata* was collected by beam trawl at station CP37 of SJADES 2018 expedition, south of West Java (see Chim et al., 2021). The specimen of *P. rufomaculata* was photographed and then preserved in 10% formalin and transferred to 70% ethanol for permanent preservation and further examination. Methods of counts and measurements follow Russell (1986). The last two rays of the dorsal and anal fins are counted as single rays. All measurements were made with digital calipers to the nearest 0.01 mm. Cyanine blue was used to examine and count the scales. All lengths are reported as standard length (SL), head length (HL), body depth (BD) and eye diameter (ED). The specimen is deposited at the reference collection of Bitung Research Station, Research Center for Oceanography, Indonesian Institute of Sciences, Bitung, North Sulawesi, Indonesia (LBRC) under registration number LBRC-F 4718.

RESULTS

Family Nemipteridae

Parascolopsis Boulenger, 1901

Parascolopsis rufomaculata Russell, 1986

Parascolopsis sp. 1 – Sainsbury et al., 1985: 208, 209, 341.
Parascolopsis rufomaculatus – Russell, 1986: 139, figs. 1, 2.

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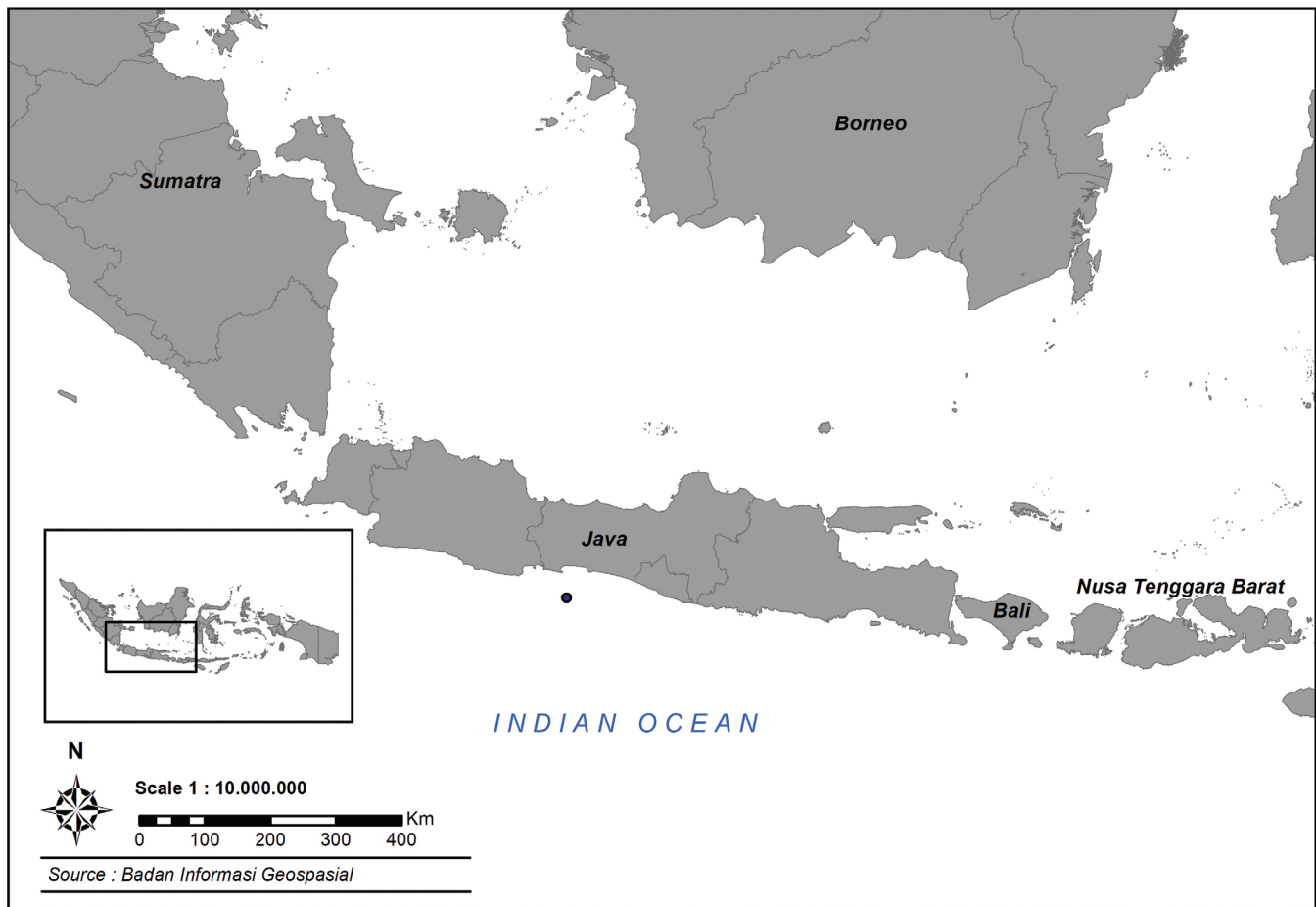


Fig. 1. Sampling site (●) of *Parascolopsis rufomaculata* in Indonesian waters, Eastern Indian Ocean.

Material examined. LBRC-F 4718, 1 specimen, 68.97 mm SL; beam trawl, depth 163 m, SJADES 2018, station CP37, 8°07.864'S, 109°06.470'E, South of Cilacap, East Java, eastern Indian Ocean, Indonesia, 30th March 2018, by R/V *Baruna Jaya VIII* (Fig. 1).

Diagnosis. A species of *Parascolopsis* with the following combination of characters: pectoral-fin rays ii, 13–15; pectoral fins moderately long, reaching to or just before of level of vent; pelvic fins short, not reaching to level of vent; gill rakers on first arch 8–12; scales on top of head reaching forward to about level of middle of eye; suborbital naked; posterior and anteroventral margin of suborbital finely denticulate; lower limb of preopercle naked; bright red spot on dorsal fin between eighth and tenth spines.

Description. Measurements and counts are shown in Table 1. Dorsal-fin rays X, 9; anal-fin rays III, 7; all dorsal and anal-fin rays branched, the last joined to the base; pelvic-fin rays I, 5, all rays branched; pectoral-fin rays ii, 14; uppermost two rays unbranched, others rays branched; lateral line scales 39; scales above lateral line to origin of dorsal-fin 3.5; scales below lateral line to origin of anal-fin 15.5; transverse scale rows 5/15; transverse rows of scales on cheek 5, gill rakers 5 + 3 (total gill rakers 8).

Body moderately deep, 2.4 times in SL; the width 5.7 times in SL; head length 2.5 times in SL; body depth slightly greater

than head, 0.9 times in HL; eye large, diameter of eye 2.9 times in HL; snout short, bluntly rounded, 4.2 times in HL; snout length times 0.7 in diameter of eye; interorbital space slightly convex, interorbital width 1.2 times in eye diameter, suborbital depth 3.3 times in eye diameter; opercle with one flat spine, tip of right spine forming two small pointed spines; posterior margin of left and right preopercle edge with 47 and 53 denticulations; left and right side of subopercle with 3 denticulations; left and right side of interopercle with 9 and 0 denticulations; branchiostegal rays 7.

Mouth terminal, not large, the lower jaw not projecting, maxilla reaching slightly posterior to a vertical through anterior of orbit; some small canine-like teeth throughout upper and lower jaws; anterior part of upper jaws with 4–7 canine-like teeth, just curved backwards and much longer than others; nostrils slightly upper of horizontal line passing centre of pupil.

Lateral line complete, arched over pectoral fin, running parallel to dorsal body contour below dorsal fin, its highest point below base of 6th to 7th dorsal-fin spine.

Origin of dorsal-fin above the post-temporal, predorsal length 2.5 times in SL; dorsal-fin base length 2.0 times in SL; first dorsal-fin spine short, 1.2 times in second dorsal-fin spine; second dorsal-fin spine 1.3 times in third dorsal-fin spine; third dorsal-fin spine 1.0 times in fourth dorsal-fin spine;



Fig. 2. *Parascolopsis rufomaculata*, LBRC-F 4718, 68.97 mm SL, SJADES 2018 St. CP37 (Photographed by Peristiwady).

fourth dorsal-fin spine longest, 2.4 times in HL and 1.6 times length of first dorsal-spine; third through to fifth soft dorsal-fin rays usually longest, 0.9 times length of longest spine. Origin of anal-fin beneath last dorsal-fin spine and first dorsal-fin rays; anal-fin length 5.4 in SL; first anal-fin spine 1.4 in second anal-fin; second anal-fin spine 1.1 times in third anal-fin spine; third anal-fin spine longest, 3.2 times in HL; pectoral-fin 1.5 times in HL; pelvic-fin 1.5 times in HL; pectoral-fin 1.0 times in pelvic-fin length.

Scales ctenoid; scales on top of head extending forward between eyes to about level of middle of eye; snout naked; maxilla naked, interopercular and subopercle with scales; suborbital naked; suborbital with fine denticulations on posterior edge and on anteroventral margin; preopercle scaly, lower limb naked; posterior margin of preopercle finely denticulate; dorsal-fin emarginate; caudal-fin emarginated to slightly forked; base of membrane of dorsal and anal-fin without scales; base of caudal-fin with scales.

Colour when fresh (Fig. 2). Body rosy pink, pearly white below midlateral line; a pale golden band running beneath lateral line from the upper corner of opercle to caudal peduncle, followed by a pale pinkish midlateral band and faint golden band; dorsal-fin pale yellow with a bright red

spot between eighth and tenth dorsal-fin spines. Pectoral-fin base yellowish; other fins pale translucent whitish.

Colour after preservation. Head and body uniformly pale brownish, posterior part of opercle to caudal peduncle pale whitish, posterior margin of scales on body just greyish or dark; dorsal fin with traces of grey along the membranous margin; other fins hyaline.

Distribution. *Parascolopsis rufomaculata* was first described by Russell (1986) based on material obtained from the North-West Shelf, Australia. Our study shows that *P. rufomaculata* also occurs in Indonesian waters, eastern Indian Ocean. This record expands its distribution westwards, although the distribution map in Russell (1986) showed that *P. rufomaculata* was found in northern Flores, Bali Strait, southern Lombok, and Sumba, Indonesia. However, this information contradicts the explanation in the Remarks section, which stated that this species was only found on the North-West Shelf, Australia. There appears to be an error in the distribution map, in which the locations shown are reversed with those for *P. tanyactis*.

Remarks. The specimen's measurements differed slightly from the original description of *Paracolopsis rufomaculata*

Table 1. Morphometric and meristic data of *Parascolopsis rufomaculata*, *P. baranesi*, and *P. boesemani* specimens. Data from Russell (1986), Russell & Golani (1993), and Naik et al. (2002) are included for comparison. All morphometric measurements are expressed as ratios.

Species	<i>P. rufomaculata</i>		<i>P. baranesi</i>	<i>P. boesemani</i>
Source	Russell (1986)	LBRC-F 4718	Russell & Golani (1993)	Naik et al. (2002)
Dorsal-fin rays	X,9	X,9	X,9	X,9
Anal-fin rays	III,7	III,7	III,7	III,7
Pectoral-fin rays	ii,14 (13–14/15)	ii,14	ii,14	Ii,14
Lateral line scales	36 (35–37)	39	39	39–41
Transverse scale rows	5/15 (4/13–5/15)	5/15	3/14	3/14
Gill rakers	9 (9–12)	8	9	9
Body depth in SL	2.4 (2.4–2.7)	2.4	2.7	2.5–2.7
Head length in SL	2.8 (2.7–2.8)	2.5	2.8	2.4–2.5
Head length in BD	0.9 (0.9–1.0)	0.9	0.9	0.9–1.0
Snout length in HL	3.5 (3.3–4.5)	4.2	4.6	5.2–5.4
Eye diameter in HL	3.4 (2.6–3.5)	2.9	2.5	3.2–3.6
Eye diameter in snout length	1.0 (0.7–1.0)	0.7	0.5	1.5–1.6
Interorbital width in ED	1.0 (1.0–1.3)	1.2	1.6	1.1–1.3
Suborbital depth in ED	3.0 (3.0–5.1)	3.3	5.8	4.8
Dorsal fin length in SL	1.9 (1.9–2.2)	2.0	1.9	2.0–2.3
Longest of fourth to sixth dorsal-fin spines times first dorsal-fin spine	1.5 (1.6–1.9)	1.6	2.2	1.9–2.3
Longest of third to fifth soft dorsal-fin rays times longest dorsal-fin spine	0.8 (0.8–1.0)	0.9	0.8	1.1–1.2
Anal fin length in SL	6.2 (5.0–6.1)	5.4	5.5	7.2–6.6
1 st anal-fin spine in 2 nd anal-fin spine	1.4 (1.3–1.6)	1.4	1.5	1.6–1.9
2 nd anal-fin spine in 3 rd anal-fin spine	1.0 (0.9–1.1)	1.1	1.0	1.0
Pectoral-fin length in HL	1.4 (1.4–1.6)	1.5	1.5	1.4
Pelvic-fin length in HL	1.6 (1.6–1.9)	1.5	1.8	1.7–2.0
Pectoral-fin length in pelvic-fin length	0.9 (0.8–0.9)	1.0	0.8	

(see Russell, 1986), in having eight gill rakers, 39 lateral line scales (versus 35–37 in the type specimens), the ratio between head length in standard length, pelvic-fin base length in head length, and pectoral-fin in pelvic-fin ratio (Table 1). While these measurements do not conform exactly to the range of measurements of type specimens, we suggest these slight differences are within the confines of intraspecific variation. In all other characters, they match well with the type specimens of *P. rufomaculata* and we therefore confirm the identity of our specimen to be the same species.

Parascolopsis rufomaculata is most similar to *P. baranesi* Russell & Golani, 1993, and *P. boesemani* (Rao & Rao, 1981) in sharing a prominent red spot in the middle of the dorsal-fin, between the eighth and tenth dorsal-fin spines. However, *Parascolopsis rufomaculata* differs from these two

congeners in having the scales on top of the head reaching forward to the middle of the eye (versus reaching forward to about the level of the anterior nostrils in *P. baranesi* and reaching forward to the posterior nostrils in *P. boesemani*); the head length of *P. rufomaculata* is shorter or equal to body depth (versus body depth less than head length in *P. boesemani*); the pectoral and pelvic fins are relatively short, reaching to or short of the level of vent (versus reaching to beyond of vent in *P. boesemani*).

Russell (1986) reported that *P. rufomaculata* was trawled from depths of 210–320 m in north-western Australia. Our study found this species at a shallower depth, at about 163 m. This record is a new addition to the species list of fishes from Indonesian waters.

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AUTHORS' CONTRIBUTIONS

SO, TP, THH, and HCH performed data collection, data analysis and interpretation, and drafted the article; all authors are equal contributors to this article.

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