
Pseudojuloides severnsi, a new species of wrasse from Indonesia and Sri Lanka (Perciformes: Labridae)

David R. Bellwood* and John E. Randall**

* Department of Marine Biology, James Cook University, Townsville,
Qld 4811, Australia.

** Division of Ichthyology, Bishop Museum, P.O. Box 19000A, Honolulu,
Hawai'i, 96817-0916, U.S.A.

Corresponding Author: David R. Bellwood

Email: David.Bellwood@jcu.edu.au

Abstract

Pseudojuloides severnsi n. sp. is described from 11 specimens 50.7 – 91.5 mm SL: 9 from Indonesia, 2 from Sri Lanka. It is distinguished from other members of the genus by the following characters: Terminal Phase with large blue-margined black patch covering the posteriodorsal region of the head and the dorsal anterior third of the body, an orange submarginal line along the length of the dorsal fin, and upper and lower rays of the caudal fin forming dark lobes which protrude beyond the medial caudal margin.

Keywords: Labridae; *Pseudojuloides*; wrasse; coral reef fish.

Introduction

The wrasses (family Labridae) are one of the most widespread and diverse groups of marine teleosts. Wrasse extend from Greenland in the North to their southernmost extreme off the South Island of New Zealand. However, it is in the tropics that they achieve their greatest diversity, with the highest number of species being recorded from the Indo-Australian Archipelago. Together, the Labridae and Scaridae comprise a monophyletic assemblage of approximately 522 species (Parenti and Randall, in press).

Wrasse are a conspicuous component of reef fish assemblages where they represent one of the dominant groups of benthic invertebrate feeding fishes. *Pseudojuloides* is one of the more distinctive of the 80 labrid genera. They are small fishes (usually less than 100 mm) characterised by a slender body (4-5 in SL), dorsal fin with IX spines and 11-12 rays, a single pair of canines anteriorly in the jaws followed by incisiform teeth, and a small truncate or nearly truncate caudal fin. The size of the caudal fin of *Pseudojuloides* gives rise to the common name "small-fin wrasse". *Pseudojuloides* is a relatively deep-water genus with most species been recorded between 10 and 60 m, often over coral rubble.

The genus *Pseudojuloides* was reviewed by Randall and Randall (1981), who recognised eight

species. Since that time there has been one additional species described, *P. kaleidos* Kuitert and Randall (1995). The species to be described herein was first photographed by the junior author in 1996 when several individuals were located in Kalabahi Bay, Alor, Indonesia. Although similar to *P. erythroptus* Randall and Randall it was clear from the photographs that it represented a new species. Attempts to collect material in 1997 were frustrated when an influx of cool water (17-18 °C) appeared to displace the species from the site where it was originally recorded. In 1998 Mike Severns, Pauline Fiene-Severns and Antonius Gali returned to the location and were able to obtain eight specimens for examination (5 Terminal Phase and 3 Initial Phase; initially deposited in the BPBM). Previously, in 1991, two specimens were obtained by B. C. Russell from an aquarium dealer in Colombo, who reported that they had been collected from Trincomalee, Sri Lanka. An additional specimen was recovered by B.C. Russell from Gloerfelt-Tarp's 1981 collections from Indonesia. Colour photographs of this species were also to be found in Burgess et al (1988) and Masuda and Kobayashi (1994). The aim of the present paper is to describe this new species and to distinguish it from the closely related *P. erythroptus*.

Methods

Standard length (SL) is measured from the most anterior end of the snout (either upper lip or upper canines, whichever is more anterior) to the base of the caudal fin. Head length is measured from the same anterior point to the end of the opercular flap. Body depth is the greatest depth taken from the base of the dorsal spines to the ventral margin of the abdomen (correcting for any obvious malformation of preservation). Width of body is measured immediately posterior to the gill opening. Orbit diameter is the greatest fleshy diameter. Interorbital width is the least bony width. Depth of caudal peduncle is the least depth; length of caudal peduncle is the horizontal distance between verticals at the rear base of the anal fin and base of the caudal fin. The length of fin spines and rays are measured from their distal tips to the extreme bases (from X-radiographs or by transmitting bright light through bases of fins). Pectoral fin length is taken from the distal tip of the longest ray to the extreme base of that ray. The upper rudimentary pectoral ray is included in the count of this fin. Gill-raker counts include all rudiments. Scales above the lateral line are counted above the first pored scale diagonally upward and posterior to the base of the first dorsal spine. Median predorsal scale counts for *Pseudojuloides* specimens are only approximate as these scales are not in a regular series.

In the descriptions of the new species, data in parentheses refer to paratypes.

Pseudojuloides severnsi new species

Figs 1-5, Table 1

Pseudojuloides sp. Burgess et al. 1988, p 461, Fig. 358. (location unknown).

Pseudojuloides sp. Masuda and Kobayashi 1994, p 264, figs 1, 2. (Japan).

Holotype. BPBM 38483, 75.7 mm SL, Terminal Phase. Collected over rubble, 21 m, barrier net, south side Kalabahi Bay, Alor Island, Indonesia, 124°29'35"E, 18°14'48"S, 4 Nov. 1998, Mike Severns, Pauline Fiene-Severns and Antonius Gali.

Paratypes. BPBM 38484 77.3 mm SL, Terminal Phase (TP), 50.7 mm SL, Initial Phase (IP); AMS I.39077-001, 72.4 mm SL, TP, 59.7 mm SL, IP; BMNH 1999.3.30.1 72.7 mm SL, TP; CAS 206852, 69.1 mm SL, TP, 53.3 mm SL, IP; collection details as for Holotype. Northern Territory Museum of Arts and Sciences, Darwin (NTM) S.10747-002, 91.5 mm SL, TP, 8 – 60 m, trawl, Sumba, Indonesia, 120°22'E,

10°18'S, July 1981, T. Gloerfelt-Tarp. NTM S.13161-001, 69.0 mm SL, TP, 65.0 mm SL, TP, aquarium dealer, 25 m, hand net, Trincomalee, Sri Lanka, 28 Sept, 1991, B.C. Russell.

Diagnosis

P. severnsi differs from all other members of the genus in possessing a large blue-margined black patch covering the posteriodorsal region of the head and the dorsal anterior third of the body, an orange submarginal line along the length of the dorsal fin, and upper and lower rays of the caudal fin forming dark lobes that protrude beyond the medial caudal margin.

Description

Dorsal rays IX,11, all segmented rays branched; anal rays III,12, all segmented rays branched; pectoral rays 13, including upper rudimentary ray, scales above lateral line to origin of dorsal fin 4 (3-4); scales below lateral line to origin of anal fin 8½ (8-8½); median predorsal scales about 7 to 9; gill rakers 15 (15-17).

Body very elongate, the depth 4.8 (4.4-5.3) in SL, and only slightly compressed, the width 1.7 (1.7-2.0) in depth; head length 2.9 (2.7-3.0) in SL; snout 3.0 (3.2-4.2) in head; orbit diameter 4.8 (3.8-4.6) in head; interorbital space broadly convex (the eye near centre of head), the least bony width 4.9 (4.3-5.6) in head; caudal peduncle usually slightly longer than peduncle depth, the least depth 4.0 (3.2-3.9) in head. The proportional measurements (Table 1) differ little from those of other *Pseudojuloides* species.

Mouth small, terminal, the gape slightly oblique, the maxilla reaching a vertical through anterior nostril. Lips moderately thick, the upper partially overhanging the lower when mouth is closed; inner surface of upper lip with 4 or 5 longitudinal plicae; upper lip with a prominent ventral-projecting flap along side of jaw. A pair of projecting canine teeth anteriorly in each jaw, the upper pair outcurved and fitting outside lower pair when mouth closed; chisel-like incisiform teeth along side of upper jaw 5-6 (3-7) and on side of lower jaw 7-8 (3-10); no canine tooth posteriorly on upper jaw.

Upper preopercular margin free nearly to level of lower edge of orbit; lower margin free anterior to a vertical through anterior nostril. Gill rakers relatively short, the longest on first arch (at angle) about one-third length of longest gill filament.

Nostrils small, in front of upper edge of orbit, the anterior in a short membranous tube that is elevated posteriorly, the posterior in advance of a vertical through front of orbit by a distance slightly less than internarial space; anterior nostril with a

pore directly anterior to it and a second anterior pore a short distance diagonally downward; suborbital pores from anterior edge of orbit to midposterior level of orbit 7 (7-8), with another 2 of the same series anterior to orbit; series of pores along free margin of preopercle 11 (8-11). Lateral line continuous, nearly following contour of back to below base of eighth dorsal soft ray where it is deflected sharply ventrally to straight peduncular portion.

Scales on side of thorax slightly more than half as high as largest scales on side of body, becoming still smaller ventroanteriorly; head naked except for small partially embedded scales on nape; median predorsal scales extending slightly posterior to a vertical through upper free end of preopercular margin; fins naked except for scales on basal region of caudal fin (scales on fin base progressively smaller posteriorly) and midventral scale projecting posteriorly from base of pelvic fins.

Origin of dorsal fin above anterior edge of second lateral-line scale; dorsal spines progressively longer, the first 6.4 (4.8-6.9), and the ninth 3.4 (2.9-4.0) in

head; eighth or ninth dorsal soft ray longest, 3.0 (2.7-3.1) in head; origin of anal fin below base of last dorsal spine; first anal spine very short, 12.9 (9.8-18.5) in head; second anal spine 7.2 (4.4-8.9) in head; third anal spine 4.1 (3.5-7.4) in head; second or third anal soft ray longest, 3.7 (3.5-3.8) in head; caudal fin rounded in Initial Phase, with protruding upper and lower lobes in Terminal Phase (males), caudal fin length 1.6 (1.5-1.8) in head (caudal rays, as well as dorsal and anal soft rays, relatively shorter with age); third or fourth pectoral rays longest, 2.0 (1.8-2.1) in head; pelvic fins moderately long but not reaching anus, 2.1 (2.0-2.3) in head.

Colour of holotype (Terminal Phase) in alcohol: Dark brown to black patch extending from posterior margin of orbit, along dorsal flank, ventrally to line from mid orbit to posterior extreme of operculum, extending onto body ventrally to upper edge of pectoral fin base and upper abdomen, posteriorly to level with 8-9th dorsal spine. Remainder of head pale with faint broad dark line from anterior margin of the orbit, narrowing anteriorly before terminating

Table 1. Proportional measurements of type specimens of *Pseudojuloides severnsi* expressed as a percentage of the standard length (holotype: BPBM 38483; paratypes: a. AMS I.39077-001; b. BMNH 1999.3.30.1; c. BPBM 38484; d. CAS 206852; e. NTM S.10747-002; f. NTM S.13161-001. * – damaged).

Colour phase	Holotype		Paratypes								
	TP	TP	a IP	b TP	c TP	c IP	d TP	d IP	e TP	f TP	f TP
Standard length (mm)	75.7	72.4	59.7	72.7	77.3	50.7	69.1	53.3	91.5	65	69
body depth	21.1	21.7	18.9	21.7	22.5	20.7	22.1	19.5	21.7	20.2	20.6
body width	12.5	12.8	11.1	12.9	12.9	10.8	12.4	9.9	13.2	12.5	13.0
head length	33.9	34.0	33.3	33.4	34.7	32.9	34.4	33.8	36.2	35.2	34.2
snout length	11.2	10.1	10.6	9.2	10.6	9.9	10.7	8.1	12.3	10.5	10.7
Orbital diameter	6.3	7.3	7.9	7.6	7.5	8.7	8.0	8.3	6.9	7.2	7.2
interorbital width	6.9	6.6	6.4	7.7	7.1	5.9	6.5	6.4	7.8	7.5	8.3
caudal peduncle depth	8.5	8.8	9.4	9.4	9.1	10.1	8.8	9.4	8.6	8.3	8.4
caudal peduncle length	13.1	10.2	8.5	12.5	12.2	8.9	11.7	8.6	9.1	10.0	8.8
predorsal length	31.6	30.8	29.8	30.3	30.4	30.0	30.5	31.3	32.2	29.2	30.1
preanal length	58.1	55.1	58.8	54.2	57.4	59.6	56.7	59.7	59.9	56.9	56.5
prepelvic length	36.9	37.3	35.7	36.3	38.7	34.7	37.8	35.3	38.7	35.5	36.1
caudal fin length	20.6	21.5	19.8	21.7	21.6	20.1	20.5	20.6	20.4	22.3	21.7
first dorsal spine	5.3	6.8	6.9	6.7	6.2	4.8	*	5.7	4.5	5.8	3.3
ninth dorsal spine	9.9	11.4	10.8	9.8	11.0	8.3	11.3	11.9	7.1	10.4	10.9
longest dorsal ray	11.2	12.0	12.4	12.5	11.0	11.2	11.9	11.9	11.2	10.8	11.8
base of dorsal fin	55.5	60.1	56.6	60.2	58.9	57.0	56.3	55.7	56.5	55.4	57.1
first anal spine	2.6	1.8	3.4	2.4	3.0	2.1	2.3	3.5	2.7	3.1	2.3
second anal spine	4.7	4.0	7.1	5.8	5.1	5.3	3.9	7.7	4.2	5.4	4.2
third anal spine	8.2	4.6	8.1	9.5	7.5	7.2	5.8	8.9	5.7	6.9	6.0
longest anal ray	9.1	8.9	9.5	9.2	10.0	9.1	9.7	9.6	11.2	9.4	9.1
anal fin base	35.1	35.5	31.8	34.7	34.5	32.0	34.6	32.6	34.8	33.4	34.3
pectoral fin length	17.3	16.4	15.7	18.2	16.8	18.1	18.4	17.6	16.6	16.6	17.2
pelvic spine	10.7	10.2	9.7	11.0	9.7	9.1	9.3	9.9	9.2	9.4	8.8
pelvic fin length	15.9	14.6	14.6	16.9	15.8	14.8	15.3	15.0	14.9	14.8	14.6
upper jaw length	7.9	7.6	8.4	8.0	8.2	6.9	8.0	5.8	7.4	8.3	9.4



Figure 1. *Pseudojuloides severnsi*, Holotype BPBM 38483 Terminal Phase 75.7 mm SL above; Paratype BPBM 38484, Initial Phase, 50.7 mm SL, below. Alor Island, Indonesia. P. Fiene-Severns.

at base of upper jaw. Irregular dark markings along dorsal midline extending from interorbital region anteriorly onto upper lip. Abdomen and remaining body pale grey with dark stripe 1.5 scales wide on upper flank extending back to caudal fin base. Second lateral stripe 0.5 scales wide extending from the dark patch anteriorly, along mid-flank to mid caudal peduncle, then inflecting dorsally to meet dark upper caudal lobe. Caudal fin pale except for broad black upper and lower lobes, dark lower lobe with pale medial region. Dorsal fin with dark margin and dusky dark-edged submarginal line which fades posteriorly, posterior rays dark at bases. Anal fin with dusky submarginal line, dark stripe along base, remaining fin area translucent grey. Pectoral and pelvic fins uniformly pale.

Colour of TP (based on slide of holotype shortly after collection; Fig. 1): head with two purple bands, one from upper jaw to dorsal margin of eye, the other

from the corner of mouth horizontally across head, beneath eye, past end of operculum, then becoming irregular on body (this band delineates ventral margin of a black patch which extends from interorbital, over head and anterior third of dorsal flank, and below midline onto abdomen); ventral part of head and body anterior to pelvic base grey-yellow; ventral portion and lateral body to caudal rays bright yellow; broad irregular line composed of black and blue patches along midline from black patch to base of caudal rays; upper dorsal third of body dark grey extending posteriorly onto dorsal rays of caudal fin (live individual shows grey region bordered along ventral margin by irregular line composed of black and blue patches; Fig. 3); dorsal fin translucent with narrow dusky margin, a pale orange band along the length of the fin, and a hint of blue at base of anterior portion of fin; anal fin hyaline with pink hue, narrow blue submarginal band, base with blue hue; basal scaled part of caudal fin and ventral margin of caudal peduncle yellow like body but with faint orange hue; unscaled part with broad black upper and lower lobes, with narrow irregular pale blue margins, the central region of caudal fin with pale orange hue; pelvic fins pale yellowish; outer iris yellow, red near pupil.

Colour of Initial Phase in alcohol: uniformly pale.

Colour of Initial Phase in life (based on paratype BPBM 38484 photographed shortly after collection Fig. 1 and live individual Fig. 4): dorsal part of body light orange-red grading to off white over abdomen and ventral head; white line extending along upper jaw and passing below orbit to rear margin of orbit, lips white; dorsal, anal and caudal fins with pale orange-red spines and rays, paler membranes; pectoral fin hyaline; iris mainly golden yellow with faint red ring.

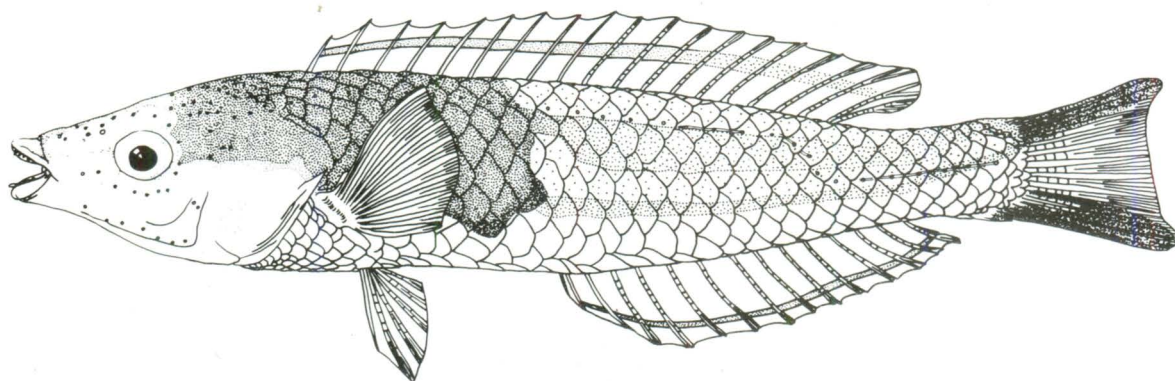


Figure 2. *Pseudojuloides severnsi*, figure based on Holotype BPBM 38483, 75.7 mm SL.



Figure 3. *Pseudojuloides severnsi*, 80 mm SL, Terminal Phase, Alor Island, Indonesia. J.E. Randall.



Figure 4. *Pseudojuloides severnsi*, 75 mm SL, Initial Phase, Alor Island, Indonesia. J.E. Randall.



Figure 5. *Pseudojuloides severnsi*, Paratype NTM S.13161-001, aquarium dealer, ex. Trincomalee, Sri Lanka. B.C. Russell.

Etymology

The specific name refers to Mike Severns who organised the collection and deposition of the type material from Alor, Indonesia.

Remarks

Pseudojuloides severnsi appears to be most closely related to *P. erythroptus* Randall and Randall from Mauritius. In both species, the TP has a dark area on the head and anterior body, blue lines enclosing the eye, irregular longitudinal blue lines on the body, and dark lobes on the upper and lower margins of the caudal fin. However, in *P. erythroptus* the head and anterior body are dark whilst in *P. severnsi* the pale body colour extends along the ventral flank to the snout. Furthermore, in comparison with *P. erythroptus*, *P. severnsi* lacks the blue patches on the head, the abdomen is yellow rather than white as in *P. erythroptus*.

The presence of this species in Indonesia (Alor and Sumba), Sri Lanka and the Ryukyu Islands (Masuda and Kobayashi, 1994) suggests that it may be widespread in the West Pacific and eastern Indian Ocean. In Alor, however, *P. severnsi* had a highly localised distribution, being recorded from only few sites on the southern margin of Kalabahi Bay. It was observed over low coral rubble on a gently sloping reef base between 12 and 30 m. Although the area possessed patches of coral and rocks, *P. severnsi* most frequently occupied areas of open ground covered with rubble. This species appears to live in small harems of 6 - 7 IPs (females?) and one TP (male). They feed on material on the substratum.

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