

A new species of damselfish (*Chrysiptera*: Pomacentridae) from Irian Jaya, Indonesia

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Abstract

A new species of pomacentrid, *Chrysiptera pricei*, is described from 48 specimens collected during 1991 at Yapen Island, northern New Guinea (Indonesian province of Irian Jaya). It belongs to a complex of closely related species containing *C. hemicyanea* (Weber), *C. oxycephalus* (Bleeker), *C. parasema* (Fowler), *C. sinclairi* Allen, and *C. springeri* Allen. Colour pattern differences provide the best means of separation. *C. pricei* is the only member of this complex with a combination of blue upper body, whitish ventral parts, and a small black area around the vent and genital papilla.

Introduction

Damselfishes (Pomacentridae) are among the most speciose and conspicuous of all fish groups associated with tropical and subtropical reefs. The family was reviewed by Allen (1991), who recognized 322 species in 28 genera. The present paper describes a new species belonging to the genus *Chrysiptera* Swainson that was collected during a recent visit by G. Allen to Yapen (sometimes spelled Japen) Island on the north coast of New Guinea.

The methods of counting and measuring are the same as those described by Allen (1972) except the length of the dorsal and anal spines are measured proximally at the base of the spine rather than the point where the spine emerges from the scaly sheath. Counts and proportions appearing in parentheses apply to the paratypes. Proportional measurements expressed in thousandths of the standard length are provided in Table 1. A summary of counts for fin rays, lateral-line scales and gill rakers on the first arch appears in Table 2. Type specimens have been deposited at Pusat Penelitian dan Pengembangan Oseanologi, Jakarta, Indonesia (NCIP); and the Western Australian Museum, Perth (WAM).

Systematics

Chrysiptera pricei sp. nov.

Figure 1; Table 1

Holotype

NCIP 4025, 32.0 mm SL, coral reef on edge of Ampimoi Bay across from Warironi Village, near Arareni Point, Yapen Island, Irian Jaya, Indonesia (approximately 01° 53'S, 136° 32'E), 2-5 m, rotenone, G. Allen and D. Price, 26 May 1991.

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Paratypes (collected with holotype)

NCIP 4026, 42 specimens, 8.9-34.7 mm SL; WAM 30391-001, 5 specimens, 23.3-31.3 mm SL.

Diagnosis

A species of the pomacentrid genus *Chrysiptera* with the following combination of characters: dorsal rays usually XIII, 10 (occasionally XII, 10 or XIII, 9); anal rays usually II, 12 (occasionally II, 11); pectoral rays usually 14 (rarely 13 or 15); gill rakers on first branchial arch 7 + 14-16, total rakers 21 to 23; tubed lateral-line scales 11-14; colour in life bright blue above a line connecting upper pectoral-fin base and base of uppermost caudal rays, whitish below; a small black spot on upper opercular margin and at base of uppermost pectoral rays; a black area surrounding vent and genital papilla. The new species belongs to a complex containing *C. hemicyanea* (Weber), *C. oxycephalus* (Bleeker), *C. parasema* (Fowler), *C. sinclairi* Allen, and *C. springeri* Allen. Colour pattern differences provide the best means of separation (see remarks).

Description

Dorsal rays XII, 10 (XII or XIII, 9 or 10); anal rays II, 11 (II, 10-12); pectoral rays 14 (13 or 14); gill rakers on first branchial arch 7 + 16 (7 + 14-16), total rakers 23 (21-23); lateral-line scales with tubes 11 (12-14); vertical scale rows 27 (27 or 28); scales above lateral-line to base of middle dorsal spines 1 1/2; scales below lateral line to anus 9.

Body moderately deep for the genus, the depth 1.9 (1.9-2.2) in standard length, and compressed, the width 2.7 (2.7-3.0) in depth; head length contained 3.0 (2.8-3.1) in standard length; snout 3.8 (3.6-4.6), eye 2.6 (2.4-2.8), interorbital space 3.6 (3.6-4.4), least depth of caudal peduncle 2.3 (2.2-2.6), length of caudal peduncle 2.2 (1.9-2.4), all in head length.

Mouth oblique, terminally located, the maxillary reaching to a vertical through anterior edge of eye; teeth of jaws biserial anteriorly, those of outer row conical posteriorly, becoming incisiform with flattened or gently rounded tips towards front of jaws, upper and lower jaw each with about 40 teeth in outer row, the largest about one-fourth diameter of pupil in height; a secondary row of slender buttress teeth at front of jaws, behind those of outer row in the spaces between them; single nasal opening on each side of snout; nostril with a low fleshy rim; margin of preorbital and suborbital smooth; pre and suborbital relatively narrow, the greatest depth about one-third eye diameter; margin of preopercle smooth to weakly crenulate; opercular series smooth except a blunt, flattened spine present on upper portion near angle.

Scales of head and body finely ctenoid; preorbital, suborbital, snout tip, lips, chin, and isthmus naked; preopercle with 2 major scale rows and a supplementary row of small scales along lower margin, rear margin narrowly naked; dorsal and anal fins with a basal scaly sheath; caudal fin scaled about half distance to end of lobes; paired fins scaled only basally; axillary scale of pelvic fins slightly more than half length of pelvic spine.

Tubes of lateral line ending below posterior spines of dorsal fin; pored scales posterior to tubed scales 8 (4-8); a series of 6 (6-9) pored scales mid-laterally on caudal peduncle to caudal base.

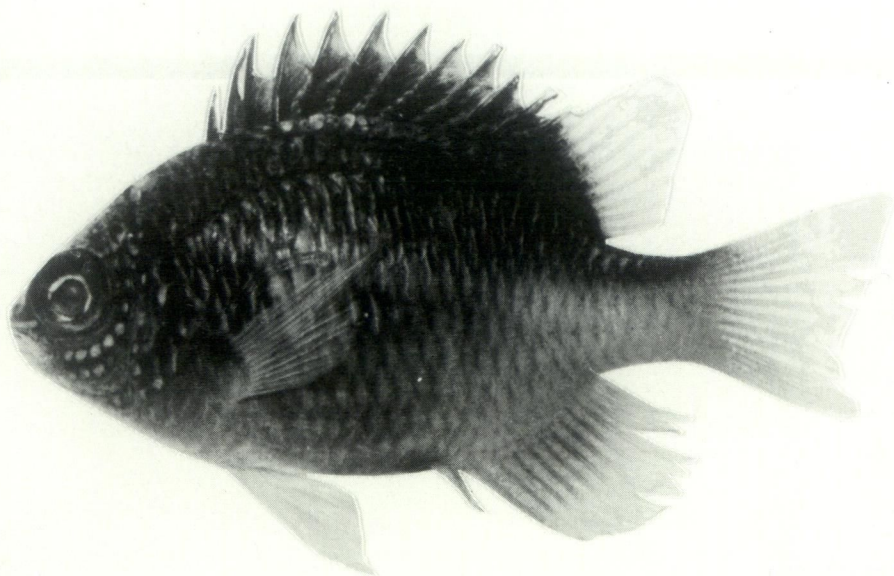


Figure 1 *Chrysiptera pricei*, holotype, 32.0 mm SL.

Origin of dorsal fin at level of third tubed scale of lateral line; spines of dorsal fin gradually increasing in length to sixth or seventh spine, remaining spines slightly decreasing in length; membrane between spines deeply incised; first dorsal spine 1.9 (1.3-1.8) in second dorsal spine; second dorsal spine 1.3 (1.3-1.8) in sixth dorsal spine; sixth dorsal spine 1.8 (1.7-1.9) in head; longest soft dorsal ray 1.4 (1.3-1.4) in head; length of dorsal fin base 1.7 (1.7-1.8) in standard length; first anal spine 2.4 (2.3-2.6) in second anal spine; second anal spine 1.7 (1.7-2.2) in head; longest soft anal ray 1.4 (1.3-1.5) in head; base of anal fin 2.2 (2.2-2.4) in base of dorsal fin; caudal fin emarginate with pointed lobes, its length 1.1 (1.0-1.1) in head length; pectoral fin relatively short, just reaching a vertical through origin of anal fin in adults, the longest ray 1.1 (1.0-1.1) in head length; filamentous tips of pelvic fins of adults reaching origin of anal fin or slightly beyond, the longest ray 1.1 (1.0-1.1) in head length.

Colour of holotype in alcohol (after nine months preservation): brown on upper half of head and on body above a line connecting upper pectoral-fin base and base of uppermost caudal rays, pale yellowish tan on lower parts except small area around vent and genital papilla black; a vertical blue streak across basal portion of each scale on upper sides; each scale of cheek and opercular series with prominent blue spot or streak; a short blue stripe on side of snout from front of eye; faint bluish spots also evident on top of head; a small black "ear" spot on upper edge of operculum anterior to and slightly below lateral-line origin; spinous dorsal fin and basal scaly sheath of soft dorsal fin bluish

Table 1 Morphometric proportions of type specimens of *Chrysiptera pricei* (as percentage of the standard length)

| Character | Holotype | WAM | | Paratypes | WAM | | NCIP 4026 |
|--------------------------------|--------------|-------------|-------------|--------------------|-------------|-------------|--------------|
| | NCIP 4025 | P.30391-001 | P.30391-001 | WAM P.30391-001 | P.30391-001 | P.30391-001 | |
| Standard length (mm) | 32.0 | 23.3 | 25.4 | 28.2 | 31.3 | 34.7 | |
| Body depth | 51.3 | 46.8 | 46.1 | 52.1 | 48.6 | 48.4 | |
| Body width | 17.8 | 15.5 | 15.4 | 18.8 | 18.2 | 18.2 | |
| Head length | 32.8 | 35.6 | 33.9 | 34.0 | 31.3 | 32.9 | |
| Snout length | 7.2 | 9.0 | 8.7 | 8.2 | 8.6 | 8.6 | |
| Eye diameter | 12.5 | 15.0 | 12.2 | 13.1 | 12.8 | 12.7 | |
| Interorbital width | 8.8 | 8.2 | 7.9 | 9.6 | 9.3 | 9.2 | |
| Least depth of caudal peduncle | 14.7 | 15.0 | 14.2 | 13.1 | 14.4 | 14.1 | |
| Length of caudal peduncle | 15.6 | 15.0 | 17.7 | 15.6 | 16.6 | 15.3 | |
| Snout to origin of dorsal fin | 40.0 | 42.5 | 40.9 | 40.4 | 40.3 | 40.3 | |
| Snout to origin of anal fin | 67.5 | 67.0 | 67.3 | 68.1 | 68.4 | 67.1 | |
| Snout to origin of pelvic fin | 39.7 | 42.1 | 39.8 | 41.8 | 41.2 | 39.8 | |
| Length of dorsal fin base | 57.5 | 59.7 | 54.3 | 60.3 | 59.4 | 58.5 | |
| Length of anal fin base | 25.0 | 24.5 | 23.6 | 27.7 | 25.9 | 26.2 | |
| Length of pectoral fin | 30.6 | 32.6 | 30.7 | 31.9 | 31.9 | 30.3 | |
| Length of pelvic fin | 29.1 | 32.2 | 31.5 | 29.4 | 29.1 | 28.5 | |
| Length of pelvic spine | 17.8 | 18.5 | 18.1 | 18.4 | 16.0 | 18.2 | |
| Length of 1st dorsal spine | 7.5 | 8.2 | 8.7 | 6.0 | 8.6 | 7.8 | |
| Length of 2nd dorsal spine | 14.4 | 11.6 | 12.2 | 10.6 | 11.2 | 12.4 | |
| Length of 6th dorsal spine | 18.1 | 18.9 | 18.9 | 19.1 | 17.9 | 19.0 | |
| Length of longest dorsal ray | 24.1 | 25.8 | 23.6 | 23.8 | 23.0 | 24.8 | |
| Length of 1st anal spine | 8.1 | 7.7 | 7.1 | 7.4 | 7.3 | 8.4 | |
| Length of 2nd anal spine | 19.4 | 18.0 | 15.7 | 19.5 | 17.6 | 19.6 | |
| Length of longest anal ray | 24.1 | 25.8 | 24.0 | 23.8 | 20.8 | 24.5 | |
| Length of caudal fin | 30.6 | 32.2 | 30.7 | 30.1 | 31.9 | 30.3 | |

brown; remainder of fins pale; a small black spot at base of uppermost pectoral fin rays. The paratypes have a similar coloration.

Colour in life: mainly bright blue on upper half of head and on sides of body above a line connecting upper pectoral-fin base and base of uppermost caudal rays, whitish below; a dark charcoal streak on each scale of upper sides, but overall impression is bright blue; metallic blue spots and streaks on cheek, gill cover, and top of head. The blue coloration dorsally on the caudal peduncle is particularly evident underwater.

Remarks

Chrysiptera Swainson is a diverse group containing 25 species, all from the Indo-West and Central Pacific region. Allen (1975 and 1991) characterised the genus (formerly known as *Glyphidodontops* Bleeker) as small damselfishes, usually with a relatively elongate body (2.1-2.7 in SL for most species), with smooth preopercular and suborbital margins, and biserial dentition in most species. The group is in need of revision, and may ultimately be split into several genera. The new species belongs to a complex containing *C. hemicyanea* (Weber), *C. oxycephalus* (Bleeker), *C. parasema* (Fowler), *C. sinclairi* Allen, and *C. springeri* Allen. This group is mainly restricted to the area that includes Indonesia, Philippines, New Guinea, and Solomon Islands. The various species have allopatric distributions except for *C. oxycephalus*, which is widespread through the region and generally sympatric with each of the other species. These fishes have a distinctive shape that is relatively deep-bodied for the genus (1.9-2.2 in SL), a deeply incised spinous dorsal fin, and bright coloration consisting largely of blue or a combination of blue and yellow. Colour pattern differences provide the best means of separation. *C. hemicyanea* is mainly bright blue with yellow ventrally. *C. parasema* is bright blue except for a yellow caudal peduncle and yellow pelvic, soft dorsal, and anal fins. *C. oxycephalus* is overall pale yellow with numerous small blue spots covering the head and body. *C. sinclairi* and *C. springeri* are entirely blue without any yellow and the latter species differs from the other members of the complex in having 12 dorsal spines instead of 13. *C. pricei* also differs from *C. oxycephalus* and *C. sinclairi* in having a lower gill raker count (21-23 versus usual counts of 30-34). *C. pricei* is the only member of this complex that has a whitish colour ventrally and a small black spot covering the vent and genital papilla. Illustrations and a brief diagnosis of each member of the complex and all other species of *Chrysiptera* were provided by Allen (1991).

The species is thus far known only from the type locality, but collections of reef fishes from northern Irian Jaya are generally lacking. The habitat of the type locality consists of a fringing reef in a sheltered bay with a high percentage of live coral cover (both soft and stony) and heavy silt deposition from nearby rivers. The depth range extends from about two to 10 m. Fish are seen solitarily or in groups of up to 20-30 individuals that hover a short distance above the bottom. Presumably they feed primarily on plankton.

It is named *pricei* in honour of Mr. David Price who assisted with the collection of type specimens.

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References

- Allen, G.R. (1972). *Anemonefishes, their classification and biology*. 288 pp. (T.F.H. Publications, Inc., Neptune, New Jersey).
- Allen, G.R. (1975). *Damselfishes of the south seas*. 240 pp. (T.F.H. Publications, Inc., Neptune, New Jersey).
- Allen, G.R. (1991). *Damselfishes of the world*. 271 pp. (Mergus Publishers, Melle, Germany).