



## *Neopomacentrus aktites*, a new species of damselfish (Pisces: Pomacentridae) from Western Australia

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### Abstract

A new species of damselfish, *Neopomacentrus aktites* n. sp., is described on the basis of 50 specimens, 17.8–54.1 mm SL, collected from Western Australia. The new species was formerly confused with *Neopomacentrus filamentosus*, an Indo-Malayan species that appears morphologically indistinguishable and has a mostly similar color pattern. However, the new species lacks several markings characteristic of *N. filamentosus*, i.e. a large black spot on the pectoral-fin axil, a large dark marking at the lateral-line origin, and yellow or gold color on the upper edge of the rear opercle. The two species differ by 7.55% (K2P) in the sequence of the mtDNA-barcode marker COI. The new species is only 2.19% divergent from an undescribed damselfish species from eastern Australia and southern New Guinea, but differs from that species by having dark margins on the proximal half of the caudal fin and lacking a bright yellow caudal fin, caudal peduncle, and posterior parts of the dorsal and anal fins.

**Key words:** taxonomy, systematics, ichthyology, coral-reef fishes, Indo-Pacific Ocean, DNA barcoding.

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## Introduction

The pomacentrid genus *Neopomacentrus* Allen, 1975 was described to accommodate a discrete group of relatively small and slender Indo-Pacific damselfishes that were formerly included in either *Abudefduf* Forsskål, 1775 or *Pomacentrus* Lacèpede, 1802, depending on the degree of serration of the posterior margin of the preopercle. The monophyly of the group was confirmed by Cooper *et al.* (2009) and Cooper & Santini (2016), who included it in the subfamily Pomacentrinae, with the closest affiliation to *Pristotis* Rüppell, 1838 and *Teixeirichthys* Smith, 1953. Damselfishes of *Neopomacentrus* comprise about 18 species, including several undescribed taxa, and are common inhabitants of Indo-Pacific coral reefs, as well as occupying inshore, estuarine, and even freshwater habitats (Allen 1991). About half of the described species inhabit the Indo-Malayan region (Allen 1991, Allen & Erdmann 2012). A revision of the genus, based on morphological and genetic data, is currently in progress by the first author in collaboration with M.V. Erdmann and B.C. Victor.

The present paper describes a new species of *Neopomacentrus* from Western Australia that has been confused with *Neopomacentrus filamentosus* Macleay, 1882, originally described from New Guinea. The two species are apparently morphologically indistinguishable and have a similar color pattern, however a close examination of underwater photographs, fresh specimens, and mtDNA sequencing reveal clear differences in markings and a large genetic divergence.

## Materials and Methods

Type specimens are deposited at the Western Australian Museum, Perth (WAM). Tissues from specimens of the new species and comparison species obtained from Indonesia, Papua New Guinea, and Hong Kong (the former two by the first author and M.V. Erdmann and the latter from J. Kang). All tissues were sequenced for the mtDNA-barcode marker COI, following the procedure recently detailed in Allen & Erdmann (2017). Sequence divergences were calculated using the Barcode of Life Database (BOLD) with the Kimura 2-parameter (K2P) model generating a mid-point rooted neighbor-joining (NJ) phenogram to provide a graphic representation of the species' sequence divergence. Genetic distances were calculated by the BOLD algorithm, both as K2P distances and uncorrected p-distances.

Lengths of specimens are given as standard length (SL) measured from the anterior end of the upper lip to the base of the caudal fin (posterior edge of the hypural plate); head length (HL) is measured from the same anterior point to the posterior edge of the opercle flap; body depth is the maximum depth taken vertically between the belly and base of the dorsal-fin spines; body width is the maximum width just posterior to the gill opening; snout length is measured from the anterior end of the upper lip to the anterior edge of the eye; orbit diameter is the horizontal fleshy diameter, and interorbital width the least fleshy width; upper-jaw length is taken from the front of the upper lip to the posterior end of the maxilla; caudal-peduncle depth is the least depth, and caudal-peduncle length is the horizontal distance between verticals at the rear base of the anal fin and the caudal-fin base; lengths of fin spines and rays are measured to their extreme bases (i.e. not from the point where the ray or spine emerges from the basal scaly sheath); caudal-fin length is the horizontal length from the posterior edge of the hypural plate to a vertical at the tip of the longest ray; caudal concavity is the horizontal distance between verticals at the tips of the shortest and longest rays; pectoral-fin length is the length of the longest ray; pelvic-fin length is measured from the base of the pelvic-fin spine to the filamentous tip of the longest soft ray; pectoral-fin ray counts include the small, splint-like, uppermost rudimentary ray; only the tube-bearing anterior lateral-line scales are counted; a separate count is given for the deeply pitted scales occurring in a continuous series midlaterally on the caudal peduncle; the scale-row count including “.5” above and below the lateral line refers to a small truncated scale at the bases of the dorsal and anal fins; gill-raker counts include all rudiments and are presented as separate counts for the upper and lower limbs, as well as a combined count; the last fin-ray element of the dorsal and anal fins is usually branched near the base and is counted as a single ray. Counts and proportions in parentheses are the range for the paratypes, if different from the holotype. Proportional measurements (expressed as percentage of the standard length) and counts for soft dorsal-fin rays, soft anal-fin rays, pectoral-fin rays, total gill rakers on the first arch, and tubed lateral-line scales are presented in Tables 1 and 2.

*Neopomacentrus aktites*, n. sp.

Western Australian Demoiselle

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Figures 1–4; Tables 1 & 2.

*Neopomacentrus filamentosus* [non Macleay] Allen & Swainston 1988: 102 (Western Australia); Allen 1985: 2374, fig. 267 (Western Australia).

**Holotype.** WAM P.34738-009, 39.7 mm SL, Western Australia, Dampier Archipelago, Flying Foam Passage,  $-20.46743^{\circ}$ ,  $116.82782^{\circ}$ , 2–9 m, clove oil, G.I. Moore & M.G. Allen, 23 March 2017.

**Paratypes.** (all Western Australia) WAM P.26668-007, 6 specimens, 43.6–54.1 mm SL, Shark Bay, Sunday Island, approx.  $-26.126^{\circ}$ ,  $113.229^{\circ}$ , 1–2 m, rotenone & spear, J.B. Hutchins, 13 April 1979; WAM P.30311-018, 3 specimens, 19.3–21.1 mm SL, Kimberley District, Institut Islands, Monge Island, Voltaire Pass, approx.  $-14.207^{\circ}$ ,  $125.610^{\circ}$ , 3–4 m, rotenone, G.R. Allen, 20 August 1991; WAM P.30312-011, 8 specimens, 24.0–39.7 mm SL, Kimberley District, small island just south of Cleghorn Island, approx.  $-14.376^{\circ}$ ,  $125.415^{\circ}$ , 6–7 m, rotenone, G.R. Allen, 20 August 1991; WAM P.31391-010, 6 specimens, 23.1–35.4 mm SL, Kimberley District, Beagle Bay, approx.  $-16.98^{\circ}$ ,  $122.67^{\circ}$ , 9–10 m, rotenone, J.B. Hutchins, 28 August 1997; WAM P.31812-015, 6 specimens, 19.2–44.6 mm SL, Dampier Archipelago, West Lewis Island, approx.  $-20.585^{\circ}$ ,  $116.606^{\circ}$ , 5–6 m, rotenone, J.B. Hutchins, 26 July 2000; WAM P.34736-020, 7 specimens, 22.7–43.8 mm SL, Delambre Island, Dampier Archipelago,  $-20.50217^{\circ}$ ,  $117.06042^{\circ}$ , 10–13 m, clove oil, G.I. Moore & M.G. Allen, 22 March 2017; WAM P.34737-007, 2 specimens, 37.6–41.8 mm SL, Flying Foam Passage, Dampier Archipelago,  $-20.42312^{\circ}$ ,  $116.86233^{\circ}$ , 10–12 m, clove oil, G.I. Moore & M.G. Allen, 22 March 2017; WAM P.34739-004, 4 specimens, 31.9–35.1 mm SL, Flying Foam Passage, Dampier Archipelago,  $-20.46743^{\circ}$ ,  $116.82782^{\circ}$ , 2–8 m, clove oil, G.I. Moore & M.G. Allen, 23 March 2017; WAM P.34742-013, 37.0 mm SL, Nelson Rocks, Dampier Archipelago,  $-20.44203^{\circ}$ ,  $116.6697^{\circ}$ , 10–18 m, clove oil, G.I. Moore & M.G. Allen, 25 March 2017; WAM P.34743-009, 5 specimens, 29.4–41.5 mm SL, Malus Island, Dampier Archipelago,  $-20.50242^{\circ}$ ,  $116.68084^{\circ}$ , 8–10 m, clove oil, G.I. Moore & M.G. Allen, 25 March 2017; WAM P.34750-009, 17.8 mm SL, between Malus & Rosemary islands, Dampier Archipelago,  $-20.50227^{\circ}$ ,  $116.63283^{\circ}$ , 10–12 m, clove oil, G.I. Moore & M.G. Allen, 28 March 2017.



**Figure 1.** *Neopomacentrus aktites* n. sp., fresh holotype, WAM P.34738-009, 39.7 mm SL, Dampier Archipelago, Western Australia (M.G. Allen).

**Diagnosis.** Dorsal-fin elements XIII,10–12 (usually 11); anal-fin elements II,10–12 (usually 11); pectoral-fin rays 17–19 (rarely 19); tubed lateral-line scales 16–19 (usually 17–18); total gill rakers on first arch 21–23 (usually 21–22); body depth 2.2–2.4 in SL; ventral margin of suborbital exposed (i.e. not hidden by scales); middle fin rays of dorsal and anal fins filamentous; dorsal and ventral margins of caudal fin filamentous; mainly dark brown in life except pale posteriormost parts of dorsal and anal fins and pale central portion of caudal fin; dark margins of caudal fin restricted to proximal half of fin; small dark spot at upper pectoral-fin base, but not extending into axil of fin.

**Description.** Dorsal-fin elements XIII,11 (XIII,10–12); anal-fin elements II,11 (II,10–12); all dorsal and anal-fin soft rays branched, last to base; pectoral-fin rays 17/18 (17–19, except one specimen with 13 on one side), lowermost 1–2 rays and uppermost pair unbranched; pelvic rays I,5; principal caudal-fin rays 15, median 13 branched; upper procurent caudal-fin rays 7 (5–7) and lower procurent caudal-fin rays 7 (5–7), posterior pair segmented; scales in longitudinal series 27; tubed lateral-line scales 18 (16–19); posterior midlateral scales with a pore or deep pit (in continuous series) 8 (5–8); scales above lateral line to origin of dorsal fin 3; scales above lateral line to base of middle dorsal-fin spine 1.5; scales below lateral line to origin of anal fin 9; gill rakers 6 + 16 (6–7 + 15–17), total rakers 22 (21–23); pseudobranch filaments 12 (12–14); total vertebrae 26 (11 specimens).

Body ovate, depth 2.3 (2.2–2.4) in SL, and compressed, width 2.5 (2.3–2.8) in body depth; head length 3.3 (3.0–3.3) in SL; dorsal profile of head evenly rounded from dorsal-fin origin to snout; snout shorter than orbit, its length 4.0 (3.6–4.3) in HL; orbit diameter 2.7 (2.5–3.2) in HL; interorbital space convex, its width 3.4 (3.2–3.7) in HL; caudal-peduncle depth 1.9 (1.8–2.0) in HL; caudal-peduncle length 1.8 (1.8–2.3) in HL.

Mouth terminal, small, and oblique, forming an angle of about 35–40° to horizontal axis of head and body; maxilla reaching a vertical about even with anterior edge of pupil, upper-jaw length 3.2 (3.0–3.4) in HL; teeth of jaws uniserial posteriorly, becoming biserial at front of jaws with addition of slender buttress teeth in spaces between main row of larger teeth; teeth incisiform to conical, about 32–42 in main row (excluding buttress teeth) of each jaw. Tongue triangular with rounded tip, set far back in mouth. Gill rakers long and slender, longest on lower limb near angle, about 60–70% length of longest gill filaments. Nostril round with slightly raised rim, level with lower edge of pupil and about midway between anterior edge of eye and upper lip.

Opercle ending posteriorly in flat spine, tip obtuse, barely projecting from beneath a large scale; rear margin of preopercle smooth or with a series of tiny, poorly-developed serrae; posterior portion of preorbital (lacrimal) forming downward-projecting bulge above posterior edge of mouth; lower edge of suborbital series smooth and exposed (not hidden by scales).

Scales finely ctenoid; head scaled except lips and tip of snout; suborbital with a single row of scales, continuing around posterior margin of eye; scaly sheath at base of dorsal and anal fins, averaging about two-thirds pupil width at base of dorsal fin and about same width at base of anterior part of anal fin, tapering on anteriormost and posteriormost sections; a column of scales on each membrane of dorsal and anal fins, narrowing distally, columns on spinous portion of dorsal fin progressively longer, reaching at least two-thirds distance to spine tips

TABLE 1

Frequency distribution of soft dorsal-fin rays, anal-fin rays, pectoral-fin rays, total gill-rakers, and lateral-line scales for *Neopomacentrus aktites*, n. sp.

(pectoral-fin rays and lateral-line scales recorded for both sides unless damaged on one side; one specimen with aberrant pectoral-fin-ray count of 13 on one side not listed)

Soft dorsal-fin rays			Soft anal-fin rays			Pectoral-fin rays			Total gill rakers			Lateral-line scales			
10	11	12	10	11	12	17	18	19	21	22	23	16	17	18	19
5	27	1	5	27	1	21	43	2	12	12	6	4	30	29	2

TABLE 2

Proportional measurements of selected type specimens of *Neopomacentrus aktites*, n. sp.  
as percentages of the standard length

	holotype			paratypes						
	WAM P.34738 -009	WAM P.26668 -007	WAM P.26668 -007	WAM P.26668 -007	WAM P.34736 -020	WAM P.34743 -009	WAM P.34742 -013	WAM P.30312 -011	WAM P.34743 -009	WAM P.30312 -011
Standard length (mm)	39.7	53.5	51.8	45.1	43.8	41.5	37.0	36.3	33.9	31.7
Body depth	43.8	44.6	45.7	43.8	46.1	42.9	41.4	43.5	44.0	41.4
Body width	17.7	16.2	17.9	15.9	19.0	17.3	14.9	18.8	17.7	17.8
Head length	30.6	31.3	32.0	30.8	33.5	32.2	33.1	31.8	32.4	30.7
Snout length	7.7	8.3	8.3	7.7	9.4	8.8	8.5	8.0	8.2	7.1
Orbit diameter	11.2	9.9	10.3	9.8	11.1	11.3	11.0	11.7	12.6	12.5
Interorbital width	9.0	8.6	8.6	9.2	10.0	9.8	9.3	10.0	10.1	9.6
Caudal-peduncle depth	9.7	9.8	9.5	9.8	10.7	10.4	10.1	10.4	9.5	10.2
Caudal-peduncle length	14.7	15.7	16.1	15.3	16.5	15.4	14.8	14.8	14.7	14.2
Upper-jaw length	16.9	15.1	15.5	13.6	14.5	14.8	14.3	17.9	15.0	15.7
Predorsal length	35.4	34.7	34.2	34.0	37.6	37.8	33.5	38.2	37.2	37.9
Preanal length	64.5	65.8	66.6	69.5	67.9	64.0	66.6	39.4	63.8	67.0
Prepelvic length	41.8	45.3	40.4	46.0	44.1	40.5	42.3	39.4	39.6	39.1
Length dorsal-fin base	55.5	58.4	61.7	56.8	57.8	57.5	57.7	56.7	58.2	55.5
Length anal-fin base	23.4	23.5	25.5	23.3	24.6	24.3	23.5	21.5	22.8	23.2
Length pectoral fin	26.3	26.6	26.8	27.3	29.4	28.0	28.1	27.6	26.9	26.9
Length pelvic fin	34.4	30.1	33.1	31.7	36.5	32.7	35.8	35.1	26.3	29.3
Length pelvic-fin spine	18.8	15.7	17.6	18.1	20.6	17.2	18.8	18.8	18.9	18.3
Length first dorsal spine	6.8	7.2	7.2	7.3	8.6	7.6	9.1	7.2	8.9	6.8
Length second dorsal spine	15.5	12.9	15.8	11.2	17.6	17.1	16.6	15.8	16.2	13.6
Length seventh dorsal spine	17.5	16.6	20.8	15.5	21.1	17.8	16.2	18.0	17.5	16.5
Length longest dorsal ray	44.4	35.3	40.6	40.9	48.7	44.0	41.5	36.4	33.6	29.0
Length first anal spine	8.9	8.0	9.5	9.9	9.7	9.0	9.5	10.1	7.7	8.6
Length second anal spine	19.4	18.7	20.7	19.2	23.1	19.3	19.3	20.9	20.0	18.0
Length longest anal ray	36.3	34.0	38.6	34.7	39.4	43.8	43.2	31.8	26.5	26.5
Length caudal fin	35.8	47.8	52.8	42.2	50.2	46.2	51.3	48.5	41.3	39.6
Caudal concavity	14.5	24.5	32.5	18.5	30.8	30.3	34.2	27.7	23.8	22.5



**Figure 2.** *Neopomacentrus aktites* n. sp., aquarium photograph of freshly collected adult, approx. 45 mm SL, Dampier Archipelago, Western Australia (G.R. Allen).

on posterior membranes, and covering as much as half of soft portion of dorsal and anal fins; small scales on caudal fin extending about 60–70% distance to posterior margin; small scales on basal 25–30% of pectoral fins; a cluster of several scales forming a median process extending posteriorly from between base of pelvic fins, its length slightly greater than half that of pelvic-fin spine; axillary scale above base of pelvic-fin spine, its length 60–83% length of pelvic-fin spine.

Origin of dorsal fin over second or third tubed lateral-line scale, predorsal distance 2.8 (2.6–3.0) in SL; base of soft portion of dorsal fin contained about 2.6–2.7 times in base of spinous portion; dorsal-fin spines gradually increasing in length to last spine; first dorsal-fin spine 4.5 (3.4–5.2) in HL; seventh dorsal-fin spine 2.0 (1.9–2.3) in HL; last dorsal-fin spine 1.7 (1.5–2.1) in HL; interspinous membranes of dorsal fin incised, first for more than half length of spine, indented progressively less posteriorly; membrane from near tip of each spine extending posteriorly, supported by marginal thickening, ending in short filament; tips of fourth and fifth dorsal-fin soft rays long and filamentous, 2.3 (2.0–3.7) in SL; first anal-fin spine 3.4 (3.1–4.2) in HL; second anal-fin spine 1.6 (1.4–1.8) in HL; longest (sixth) anal-fin soft ray 2.8 (2.3–3.8) in SL, often filamentous in larger specimens; caudal fin lunate, upper and lower lobes filamentous; total fin length (to tip of upper-lobe filament) 2.8 (1.9–3.3) in SL; caudal concavity 6.9 (2.8–8.7) in SL; pectoral fins rounded, fourth to sixth rays longest, 3.8 (3.4–3.9) in SL; pelvic-fin spine 1.6 (1.6–1.9) in HL; first pelvic-fin soft ray filamentous, reaching to or beyond origin of anal fin, 2.9 (2.7–3.8) in SL.

**Color of fresh holotype.** (Fig. 1) Head and body generally brownish gray to bluish gray; dorsal and anal fins dark gray, grading to blackish on elongate filamentous portions, except posteriormost portions abruptly semi-translucent whitish or slightly pale yellowish; caudal fin mainly translucent with brownish gray dorsal and ventral margins on basal half to two-thirds; pelvic fins backish with narrow blue anterior margin; pectoral fins translucent with small dark-brown spot at base of uppermost ray.

**Color of adult in life.** (Fig. 2) Generally dark brown on head and body; dorsal and anal fins mainly dark brown with narrow blue margin, except posteriormost portion more or less abruptly semi-translucent pale yellowish to pale brownish; filamentous parts of dorsal and anal fins blackish; caudal fin dark brown basally and along dorsal and ventral margins of fin to at least middle portion of fin, also narrow blue dorsal and ventral margins; pelvic fins dark brown with narrow blue anterior margin; pectoral fins translucent with small dark-brown spot at base of uppermost ray.



**Figure 3.** *Neopomacentrus aktites* n. sp., underwater photograph of juvenile, approx. 25 mm SL, Cassini Island, Kimberley District, Western Australia (G. R. Allen).

**Color of juvenile in life.** (Fig. 3) Head and body generally grayish brown grading to bluish ventrally; dorsal fin grayish brown except posteriormost portion abruptly translucent; anal fin bluish gray, both dorsal and anal fins with narrow blue outer margin; caudal fin translucent whitish with dark brown dorsal and ventral margins on basal portion; pelvic fins bluish gray with narrow blue anterior margin; pectoral fins translucent with a small dark-brown spot at base of uppermost ray.

**Color in alcohol.** (Fig. 4) Head and body generally brown; dorsal and anal fins brown to nearly blackish (at least elongate filamentous portions blackish in many individuals), except posteriormost portions abruptly translucent or pale grayish; caudal fin mainly pale gray to translucent with dark brown to blackish dorsal and ventral margins; pelvic fins brown; pectoral fins translucent with a small dark-brown spot at base of uppermost ray.



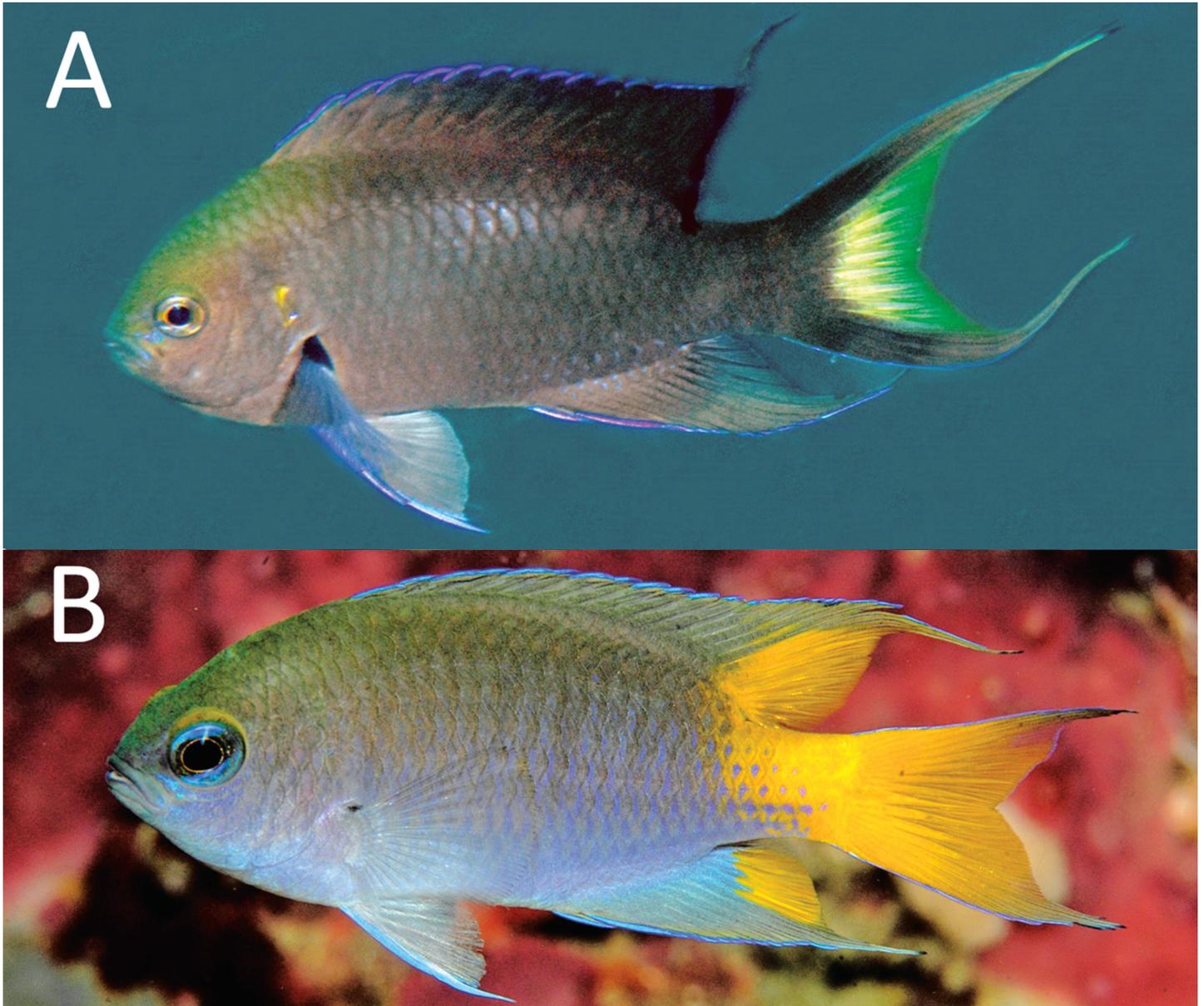
**Figure 4.** *Neopomacentrus aktites* n. sp., preserved paratype, WAM P.30312-011, 39.7 mm SL, Cleghorn Island, Kimberley District, Western Australia (G.R. Allen).

**Etymology.** The species is named *aktites* (Greek: shore dweller) with reference to its relatively shallow-water habitat. The specific epithet is treated as a noun in apposition.

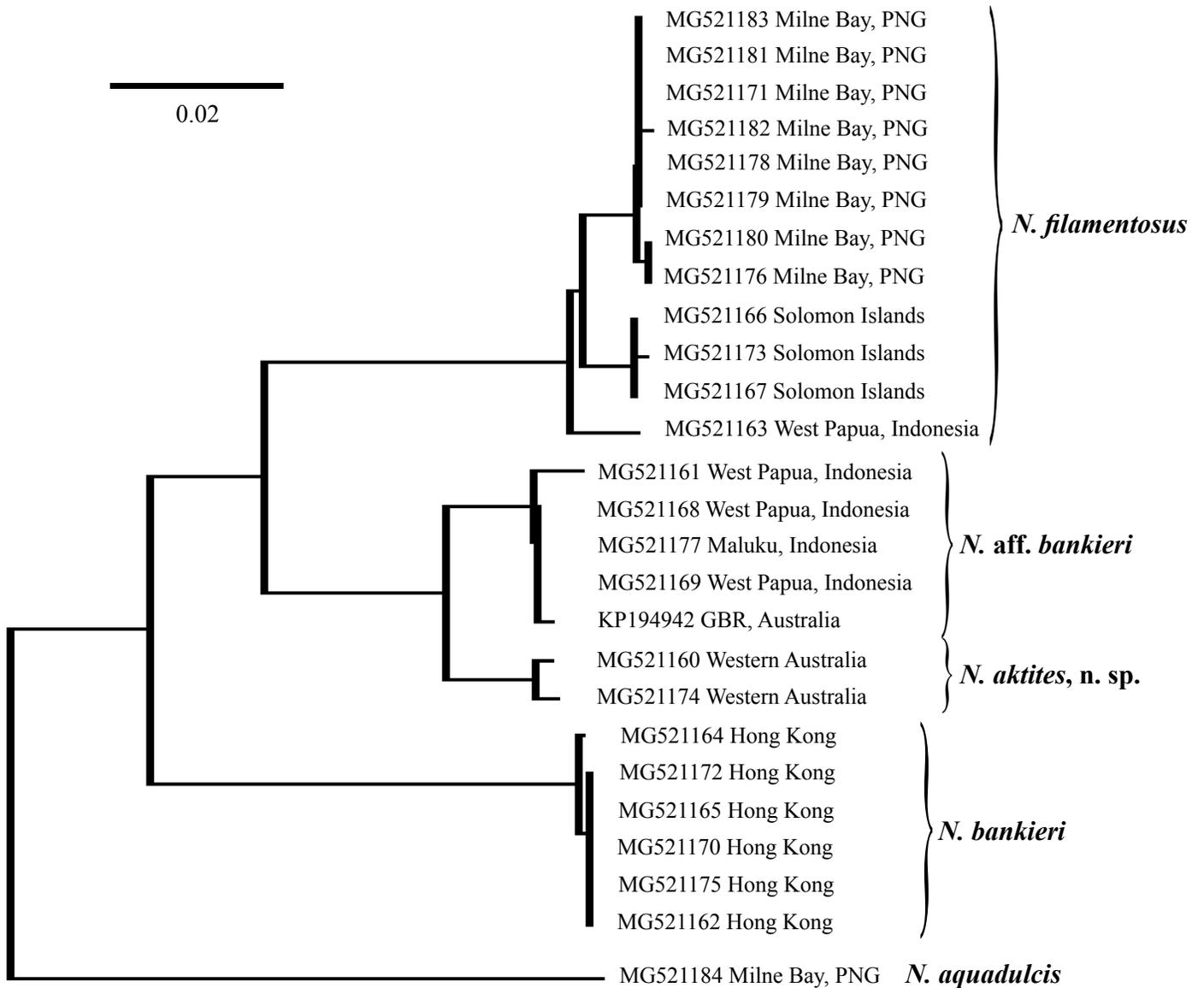
**Distribution and habitat.** The new species is currently known only from Western Australia, ranging from Shark Bay northward to the Kimberley coast in the far northern portion of the state. The species is generally associated with rocky substrates with ample crevices and coral formations, which are utilized for shelter. Capture depths range from about 1–10 m, but there is considerable tidal fluctuation (10+ m), especially along the Kimberley coast. They frequently occur in large aggregations, which feed well above the bottom on zooplankton.

**Comparisons.** The new species is part of a group of *Neopomacentrus* species that possess an exposed (i.e. not hidden by scales) suborbital margin and dark upper and lower margins, or at least tips, of the caudal fin (Allen 1991). Illustrations and a brief diagnosis were provided for nearly all of the species inhabiting the Indo-Australian Archipelago by Allen & Erdmann (2012).

The new species bears a strong resemblance to *N. filamentosus* (Fig. 5A), with which it has been previously confused (Allen & Swainston 1988, Allen 2009). However, the two species differ with respect to the dark marking on the upper pectoral-fin base, which is relatively small and restricted to the upper edge of the fin base in *N. aktites*, but large, covering the entire fin side of the pectoral axil, in *N. filamentosus*. Furthermore, adults of *N. filamentosus* possess a large dark marking at the lateral-line origin (although faint in Fig. 5A; just above small yellow marking) and frequently exhibit yellow or gold color on the upper rear edge of the opercle. In addition,



**Figure 5.** A: *Neopomacentrus filamentosus*, approx. 45 mm SL, New Britain, Papua New Guinea; B: *Neopomacentrus* aff. *bankieri*, approx. 35 mm SL, Misool Island, West Papua, Indonesia (G. R. Allen).



**Figure 6.** The neighbor-joining phenetic tree of 4 *Neopomacentrus* species following the Kimura two-parameter model (K2P) generated by BOLD (Barcode of Life Database). The scale bar at left represents a 2% sequence difference. GenBank accession numbers and collection locations for specimens are indicated, and *N. aquadulcis* is used as an outgroup.

the dark markings on the upper and lower edges of the caudal fin are usually better developed in *N. filamentosus*, extending the entire length of the fin, in contrast to *N. aktites*, which has abbreviated markings that extend about half way along the fin.

*Neopomacentrus taeniurus* is also similar in coloration and widely distributed in the Indo-West Pacific, from East Africa to Vanuatu and New Caledonia. However, it is not recorded from Australia and is usually found in brackish mangroves or the lower reaches of freshwater streams. This species notably differs from *N. aktites* in having a mainly yellow caudal fin between the dark upper and lower margins, and yellow areas posteriorly on both dorsal and anal fins.

*Neopomacentrus bankieri* was described from Hong Kong and ranges through the South China Sea to the Andaman Sea and western Indonesia. It differs from the new species by having a bright yellow caudal fin with the dark margin only on the rear half of the fin and large areas of yellow on the caudal peduncle and posterior dorsal and anal fins. An undescribed species *N. aff. bankieri*, found in eastern Australia and southern New Guinea (including the Aru Islands which, although in Maluku Province of Indonesia, are geologically part of New Guinea), is closely related to the new species, however it also differs by having a bright yellow caudal fin with only dark tips and large areas of yellow on the caudal peduncle and posterior dorsal and anal fins (Fig. 5B and see p. 606 in Allen & Erdmann [2012]).

**DNA Comparisons.** The neighbor-joining phenetic tree based on the COI mtDNA sequences of the species allied to *Neopomacentrus filamentosus*, following the Kimura two-parameter model (K2P) generated by BOLD (the Barcode of Life Database), shows relatively deep divergences between species and relatively small differences within species (Fig. 6). The new species *N. aktites* differs from *N. filamentosus* by 7.55% (K2P; 7.07% uncorrected pairwise) and from *N. bankieri* by 8.9% (K2P; 8.29% uncorrected pairwise). Its nearest relative appears to be the undescribed damselfish from Australia and New Guinea, *N. aff. bankieri*, from which it diverges by only 2.19% (K2P; 2.15% uncorrected pairwise).

#### **Other material examined.**

*Neopomacentrus bankieri*: WAM P.29342-001, 6 specimens, 39.7–44.5 mm SL, Hong Kong, China. *Neopomacentrus filamentosus*: WAM P.30403-001, 4 specimens, 35.4–53.8, Sabah, Malaysia; WAM P.34518-004, 4 specimens, 32.7–52.7 mm SL, Milne Bay, Papua New Guinea. *Neopomacentrus aff. bankieri*: WAM P.26964-001, 4 specimens, 24.5–36.9 mm SL, Cape York, Queensland, Australia; WAM P.28194-003, 64 specimens, 16.8–43.4 mm SL, Daru, Papua New Guinea; WAM P.33695-001, 6 specimens, 33.6–46.5 mm SL, Misool, West Papua Province, Indonesia; WAM P.34514-001, 2 specimens, 26.7–31.5 mm SL, northern Great Barrier Reef, Queensland, Australia; WAM P.34645-001, 6 specimens, 28.7–32.4 mm SL, Aru Islands, Indonesia.

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