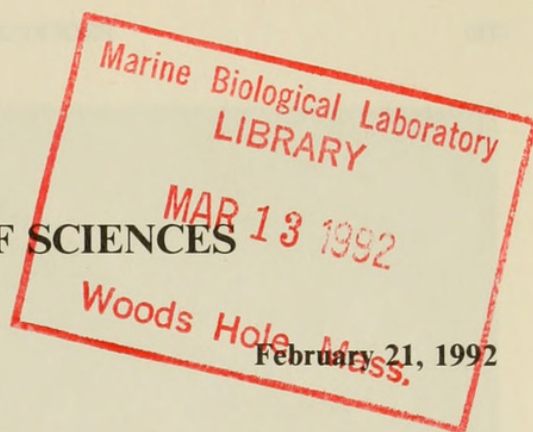


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TWO NEW DAMSELFISHES OF THE GENUS *CHROMIS*  
(PERCIFORMES: POMACENTRIDAE) FROM THE  
SOUTH PACIFIC

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**ABSTRACT:** Two new pomacentrid fishes of the genus *Chromis* are described from the South Pacific. *Chromis pamae*, collected at the Pitcairn group, southern Tuamotus, and the Austral Islands, is distinctive in having XV, 10-11 (usually 10) dorsal rays, II, 10-12 anal rays, 18-21 tubed lateral-line scales, a slender body (depth 2.7-3.1 in SL), and blue-green color (scales edged in brown dorsally), the median fins black (except posteriorly), and the pectorals with a large black spot at the base and axil; it is closely allied to *C. randalli* Greenfield and Hensley from Easter Island. *Chromis bami*, from the Pitcairn group, Austral Islands, and Tonga (based on a photograph), has XII, 13-14 (usually 13) dorsal rays, II, 12-14 anal rays, 16-18 pectoral rays, 14-16 tubed lateral-line scales, body depth 2.1-2.2 in SL, free margin of suborbital extending to below rear edge of pupil, and coloration dark brown, becoming brownish yellow on chest and abruptly white a short distance posterior to rear base of dorsal fin; its closest relative appears to be *C. alleni* Randall, Ida, and Moyer, from southern Japan and Taiwan.

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INTRODUCTION

Commencing in December 1970, the senior author, with support from the National Geographic Society, had the opportunity to collect fishes in French Polynesia, the Pitcairn group, and the Cook Islands from the 30 m schooner *Westward*. Two specimens of a slender damselfish of the genus *Chromis* that were unknown to him were speared outside the reef at Temoe Atoll in the Gambier group of the Tuamotu Archipelago, and detailed color notes were taken. Two

days later a series of 26 specimens of the same species were obtained in a large rotenone station at uninhabited Oeno Atoll in the Pitcairn group. Among the 55 other species of fishes taken were five specimens of a dark brown, white-tailed *Chromis* believed at the time to be *C. margaritifera* Fowler. Additional specimens of both species of *Chromis* were collected later at Pitcairn Island and the Austral Islands. A color photograph was taken of the slender *Chromis*, but no photograph or color notes were made of the dark brown



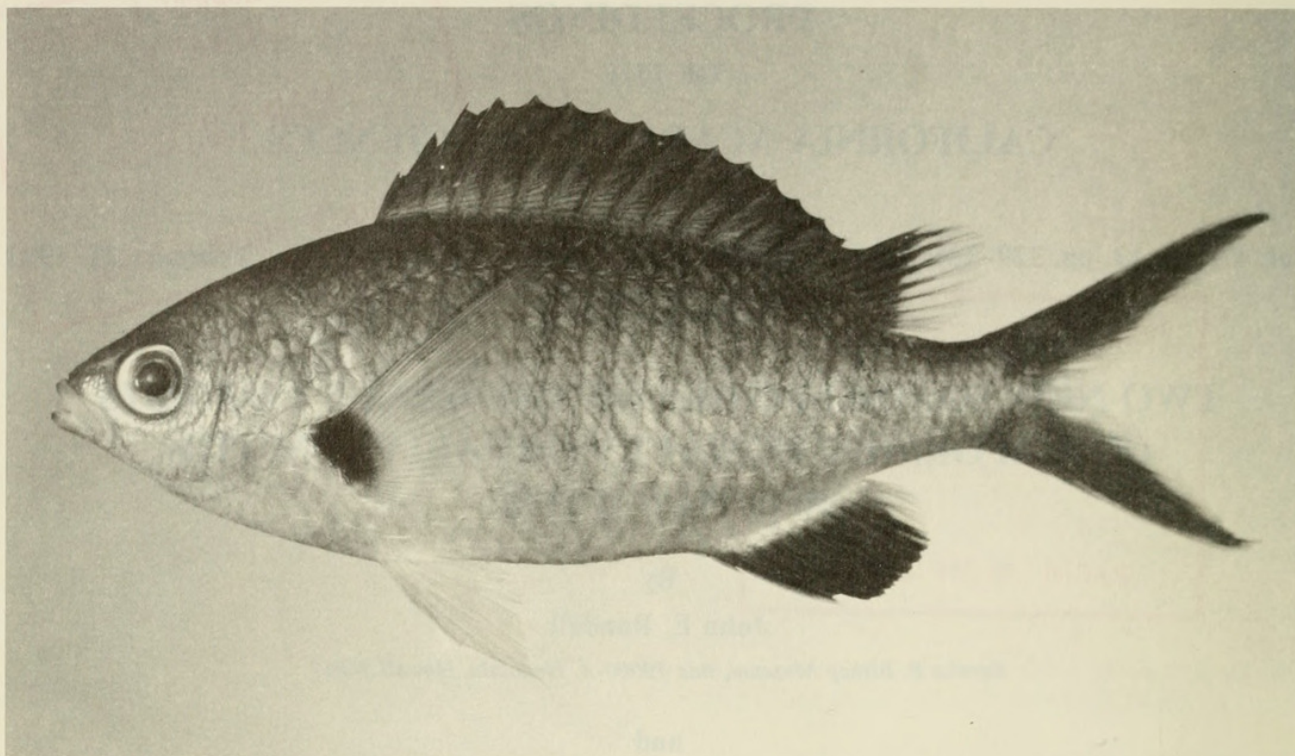


FIGURE 1. *Chromis pamae* n. sp., holotype, 103.8 mm SL, Pitcairn Island, BPBM 16905.

*Chromis* with the white tail. Had the senior author been aware, as he is today, that there are at least 14 Indo-Pacific species of *Chromis* that are dark brown with white or whitish tails, the Pitcairn specimens might have received more attention.

Later, when curating fishes of the *Westward* collections at the Bishop Museum, Gerard R. Allen noted that the brown, white-tailed *Chromis* was not *C. margaritifer* but probably an undescribed species. In his *Damselfishes of the South Seas*, Allen (1975) discussed it as *Chromis* sp. "E," provided a diagnosis, and published a photograph of a preserved specimen. He treated the slender *Chromis* similarly as sp. "H," but utilized a color photograph provided by the senior author of a specimen from Pitcairn (not Mangareva as labeled by Allen).

In March 1983, the senior author observed a single individual of a dark brown *Chromis* with a pure white caudal peduncle and fin in 17 m at Vava'u, Tonga, which he did not recognize; it had a distinct yellow cast on the chest, whitish lips, and a large black spot covering the pectoral-fin base. An underwater photograph was taken (unfortunately slightly out of focus). The fish was speared but escaped and was not seen again. The sharp vertical demarcation from the brown body

to the white tail on the photograph is slightly posterior to the rear base of the dorsal and anal fins. This is the same location for the color demarcation of the Pitcairn and Austral Islands specimens. The latter specimens also have the same black spot at the pectoral-fin base.

When the junior author visited Pitcairn in 1988, he collected more specimens of the brown, white-tailed *Chromis* and recorded its life color. He and resident Steven Christian (who at age 15 had been among the collectors of the two species of *Chromis* at Pitcairn in early 1971) obtained eight additional specimens of the species. His color notes match that of the photograph of the Tonga *Chromis*. There is little doubt that the Tonga fish is the same species as the one in Pitcairn. During that visit, the junior author was able to collect additional specimens of species of *Chromis* previously unknown from Pitcairn.

With the description of these two new species of *Chromis*, we now recognize 56 valid Indo-Pacific species of the genus, not including seven with which the senior author is familiar but that remain unpublished (two of these represented only by small juveniles and one only from a photograph taken from a submersible). In addition to Allen (1975), other publications that regionally review the Indo-Pacific species of *Chromis*



are Randall and Swerdloff (1973); Allen and Randall (1980); Randall, Ida, and Moyer (1981); Allen (1985); Allen *in* Smith and Heemstra (1986); and Randall, Allen, and Steene (1990).

#### MATERIALS AND METHODS

Type specimens of new species of *Chromis* have been deposited in the Australian Museum, Sydney (AMS); British Museum (Natural History), London (BMNH); Bernice P. Bishop Museum, Honolulu (BPBM); California Academy of Sciences, San Francisco (CAS); National Science Museum of Tokyo (NSMT); and the U.S. National Museum of Natural History, Washington, D.C. (USNM).

Lengths given for type specimens are standard length (SL), which is the straight-line distance from the front of the upper lip or median upper teeth (whichever is most anterior) to the base of the caudal fin (distal end of the hypural plate). Head length is measured from the same anterior point to the end of the opercular membrane, and snout length from the same point to the fleshy edge of the orbit. Body depth is the maximum depth from the base of the dorsal fin. Body width is the greatest width just posterior to the gill opening. Orbit diameter is the greatest fleshy diameter, and interorbital width the least fleshy width. Caudal peduncle depth is the least depth, and caudal peduncle length is measured horizontally from the rear base of the anal fin to the caudal fin base. The length of the base of the spinous portion of the dorsal fin is measured from the front of the base of the first dorsal spine to just behind the base of the last dorsal spine. Caudal concavity is the horizontal distance from vertical at the tips of the shortest and longest caudal rays.

The last two dorsal and anal rays are counted as one when there is no space between their bases. Pectoral-ray counts include the slender, short, uppermost ray. Lateral-line scale counts are made only of those scales with external tubes; usually there is at least one pored scale posterior to the last tubed scale. Gill-raker counts include rudiments; the upper limb count is given first, and the raker at the angle is included in the count of the lower limb.

Proportions in the text are step-in measurements rounded to the nearest 0.05. Data in parentheses in the descriptions below refer to paratypes.

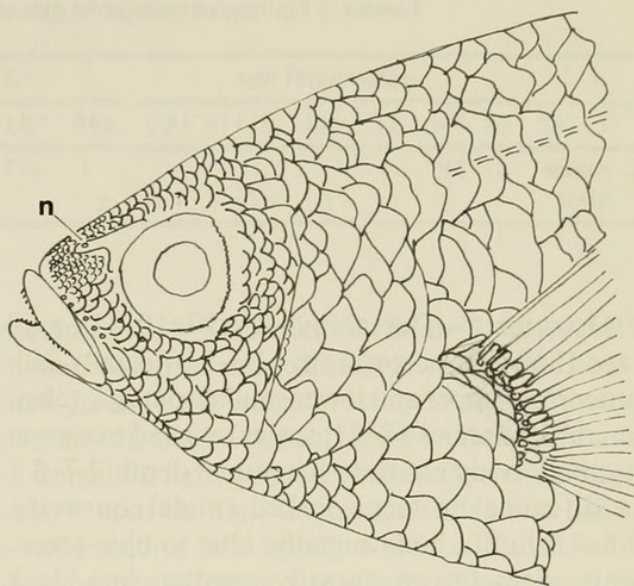


FIGURE 2. Head of *Chromis pamae* n. sp., paratype, 72.5 mm SL, Oeno Atoll, CAS 76003. Nasal opening indicated by "n."

#### *Chromis pamae* n. sp.

(Figs. 1, 2; Tables 1–3)

*Chromis* sp. "H" Allen, 1975:98, figure at bottom of p. 101.

*Chromis* sp. Randall, Smith, and Feinberg, 1990:24.

*Chromis* sp. 5 Allen, 1991:89.

**HOLOTYPE.**—BPBM 16905, male, 103.8 mm SL, Pitcairn Island (25°04'S, 130°06'W), off Christian's Point, reef in 7.5 m, spear, J. Randall, 3 Jan 1971.

**PARATYPES.**—BPBM 13501, 4 (78.0–87.8 mm), Tuamotu Archipelago, Gambier group, Temoe Atoll, outside reef on north side, 4.5–9 m, spear, J. Randall, 16 Dec 1970. AMS I.31222-001, 3 (67.5–75.7 mm), BMNH 1991.5.20.4-6, 3 (73.2–75.5 mm), BPBM 16457, 10 (41.0–86.9 mm), CAS 76003, 4 (43.7–72.5 mm), NSMT-P.34681, 3 (49.4–75.0 mm), and USNM 316516, 4 (48.0–76.5 mm), Pitcairn group, Oeno Atoll, north side, outside reef off small boat passage, reef and adjacent sand, 12–18.5 m, rotenone, J. Randall and crew of *Westward*. BPBM 16922, 5 (48.6–101.7 mm), Pitcairn Island, off The Rope, reef in 28–30.5 m, rotenone, J. Randall and party, 23 Dec 1970. BPBM 16887, 9 (28.3–55.8 mm), Pitcairn Island, reef on north side of Gannet Ridge, 40–44.5 m, rotenone, J. Randall and party, 6 Jan 1971. BPBM 12958, 93.8 mm, Rapa, off Hiri Bay, reef in 18 m, spear, J. Randall, 10 Feb 1971. BPBM 13681, 60.2 mm, Austral Islands, Tubuai, ca. 2 km SW of anchorage off pass, reef in 15 m, spear, J. Randall, 26 Feb 1971.



TABLE 1. Fin-ray counts of holotypes and paratypes of *Chromis pamae* and *C. bami*.

	Dorsal soft rays					Anal soft rays					Pectoral rays					
	10	11	12	13	14	10	11	12	13	14	16	17	18	19	20	21
<i>C. pamae</i>	23	4				1	23	3							2	25
<i>C. bami</i>				26	1			2	21	4	2	22	3			

DIAGNOSIS.—Dorsal rays XV,10 (10–11); anal rays II,10–12; pectoral rays 20–21 (usually 20); procurent upper and lower caudal spines 2; tubed lateral-line scales 18–21; scales on head extremely small; body elongate for genus, depth 2.7–3.1 in SL; caudal fin deeply forked, caudal concavity, 3.8–4.7 in SL; body metallic blue to blue-green, scale edges brown dorsally; median fins black except clear posteriorly; a large black spot at base and axil of pectoral fins.

DESCRIPTION.—Dorsal rays XV,10 (10–11), first soft ray simple, remaining rays branched; anal rays II,11 (10–12), all soft rays branched; pectoral rays 21 (20–21), upper and lower two simple; pelvic rays I,5, all soft rays branched; principal caudal rays 15, median 13 branched; upper and lower procurent caudal rays 4, anterior 2 spiniform; tubed lateral-line scales 19 (18–21); posterior midlateral pored or weakly tubed scales in continuous series 7 (7–12); longitudinal scale series from upper end of gill opening to base of caudal fin 29 (29–31); scales above lateral line to origin of dorsal fin 3; scales below lateral line to origin of anal fin 8; circumpeduncular scales 16; gill rakers 9 + 26 (9–10 + 24–27; total gill rakers 33–37); branchiostegal rays 6; supraneural (predorsal) bones 3; vertebrae 11 + 15 (5 specimens).

Body elongate, depth 2.75 (2.7–3.1) in SL, and compressed, width 2.15 (2.0–2.2) in depth; head length 3.45 (3.1–3.5) in SL; dorsal profile of head only slightly convex; snout length 3.65 (3.7–4.1) in head; orbit diameter 3.7 (2.8–3.65) in head; venteroposterior edge of orbit rimmed with small fleshy papillae; interorbital space convex, the least width 3.2 (2.85–3.3) in head; caudal peduncle

longer than deep, the least depth 2.35 (2.35–2.6) in head.

Mouth terminal to slightly inferior, strongly oblique, forming an angle of about 45° to longitudinal axis of body; mouth small, upper jaw length 3.1 (2.9–3.2) in head, maxilla extending slightly posterior to a vertical at front edge of orbit; an outer row of conical teeth in jaws, 30 on side of upper jaw and 25 on side of lower of holotype, progressively larger anteriorly, stoutest at front of lower jaw; an inner band of small villiform teeth in jaws in 3–4 irregular rows anteriorly in upper jaw and 2–3 in lower, narrowing to a single row on sides of jaws; tongue triangular with rounded apex; longest gill raker on lower arch near angle, as long as longest gill filaments, 1.95 in orbit diameter of holotype; nostril prominent, with a low fleshy rim, anterior to upper edge of pupil nearly half the distance to front of snout at base of upper lip; pores of lateralis system on head very small and difficult to detect.

A small, flat, acute spine on opercle in line with upper end of preopercular margin and lower edge of pupil; margin of preopercle smooth to slightly irregular, the corner rounded and not projecting; anterior end of preopercular margin slightly anterior to a vertical at front of pupil; lower edge of suborbital scaled.

Scales finely ctenoid; anterior lateral line ending below onset of soft portion of dorsal fin; scales on head extremely small, progressively smaller anteriorly; head fully scaled except for lips, a narrow zone at front of snout at base of upper lip, front of chin, edge of orbit, and a narrow diagonal zone from orbit to anterior nostril; a low scaly sheath at base of dorsal and anal fins with a narrow pointed band of small scales extending out on each interradi al membrane, one edge of this band adjacent to the posterior spine; very small scales extending nearly to posterior border of caudal fin; small scales basally on paired fins; a narrow, pointed, scaly process about three-fourths length of pelvic spine midventrally between bases of pelvic fins; a slender axillary scale

TABLE 2. Counts of tubed lateral-line scales of type specimens of *Chromis pamae* and *C. bami*.

	14	15	16	17	18	19	20	21
<i>C. pamae</i>					1	12	13	1
<i>C. bami</i>	2	22	3					



TABLE 3. Gill-raker counts of type specimens of *Chromis pamae* and *C. bami*.

	Upper rakers			Lower rakers								Total rakers									
	8	9	10	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
<i>C. pamae</i>		21	6					1	10	11	5						1	7	14	3	2
<i>C. bami</i>	8	19		2	9	9	6	1				2	4	6	9	6					

above each pelvic fin about half length of pelvic spine.

Origin of dorsal fin above third to fourth lateral-line scales; its interspinous membranes only slightly incised except for first two; dorsal spines slender; the first 3.3 (3.15–3.65) in head, the second 2.3 (2.15–2.55); fifth usually longest, 1.75 (1.8–2.1) in head; last dorsal spine about half length of longest spine; third dorsal soft ray usually longest, 1.55 (1.6–1.75) in head; origin of anal fin below base of twelfth dorsal spine; anal spines notably stouter than dorsal; first anal spine short, 5.0 (4.4–5.1) in head, second 1.75 (1.7–1.85); first anal soft ray longest, 1.65 (1.6–1.85) in head; caudal fin long and deeply forked with attenuate tips, fin length 2.95 (2.55–3.0) in head, caudal concavity 4.55 (4.0–4.7) in head; third or fourth pectoral ray longest, 3.6 (3.6–3.8) in SL; origin of pelvic fins below lower pectoral-fin base, first soft ray longest, just reaching or extending slightly beyond anus, 3.95 (3.5–4.45) in SL.

Color of holotype in alcohol brown, paler ventrally and on head; lips notably pale; fins pale except scaled base of dorsal and anal fins and lobes of caudal fin; a dark brown spot at base of pectoral fins; axil of pectoral fins dark brown. The holotype has faded more than the paratypes; dorsal and anal fins of paratypes are dark brown and paler posteriorly.

Color of holotype when fresh (from 120 mm color transparency) light metallic blue (dusky blue dorsally), with scale edges brown (brown scale edges broader and darker dorsally), shading to silvery-lavender ventrally on body and head; dorsal and anal fins black except posteriorly where membranes are bluish white, rays brown to dark brown; a narrow bluish silver band at base of anal fin; caudal fin black, shading to bluish white on posterior margin, rays in this zone partly brown; pectoral fins with clear membranes, rays narrowly edged in brown; a large black spot at base and axil of pectoral fin; pelvic fins yellowish; iris yellow, inwardly blackish yellow.

The following color notes were made from four

specimens, 78–87.8 mm SL, from Temoe Atoll in the Tuamotus immediately after capture: body blue-green, scale edges brown; centers of scales dorsally on caudal peduncle just behind rear base of dorsal fin light greenish yellow (seen as a faint yellow spot in life); dorsal and anal fins black except second anal spine, which is bluish, and membranes of outer two-thirds of soft portion of dorsal fin and outer part of membranes of last four anal rays, which are clear; pectoral fins slightly dusky with a large black spot at base and axil; pelvic fins light yellow.

ETYMOLOGY.—Named *pamae* in honor of Pamela J. McCosker, a slender specimen of comparable beauty.

REMARKS.—This species is known from two islands of the Pitcairn group, one atoll in the Gambier group of the Tuamotu Archipelago, and Tubuai in the Austral Islands; these islands lie between latitudes 23° and 25°S. The fish is common in the Pitcairn Islands; it has been collected from depths of 4.5–44.5 m.

Its closest relative, known only from Easter Island, is *Chromis randalli* Greenfield and Hensley, which also has a fusiform body, a dorsal ray count of XV,10 (these are the only two *Chromis* with XV dorsal spines), and very small scales on the head. Also unique within the genus is the presence in both species of fleshy papillae at the posterior and ventral edge of the orbit. These orbital papillae are also seen on the damselfish *Lepidozygous tapeinosoma* and certain species of the serranid genus *Pseudanthias*. All of these fishes are slender-bodied; they feed on zooplankton well above the substratum but must swim swiftly to cover with the approach of predaceous fishes. We believe the papillae may function to ensure a smooth flow of water over the eye when swimming rapidly.

*Chromis pamae* differs from *C. randalli* in its more slender form (average body depth 2.83 in SL, compared to 2.58 for *C. randalli*); modally 11 instead of 10 anal soft rays; 18–21 instead of 21–22 tubed lateral-line scales; smaller size (the



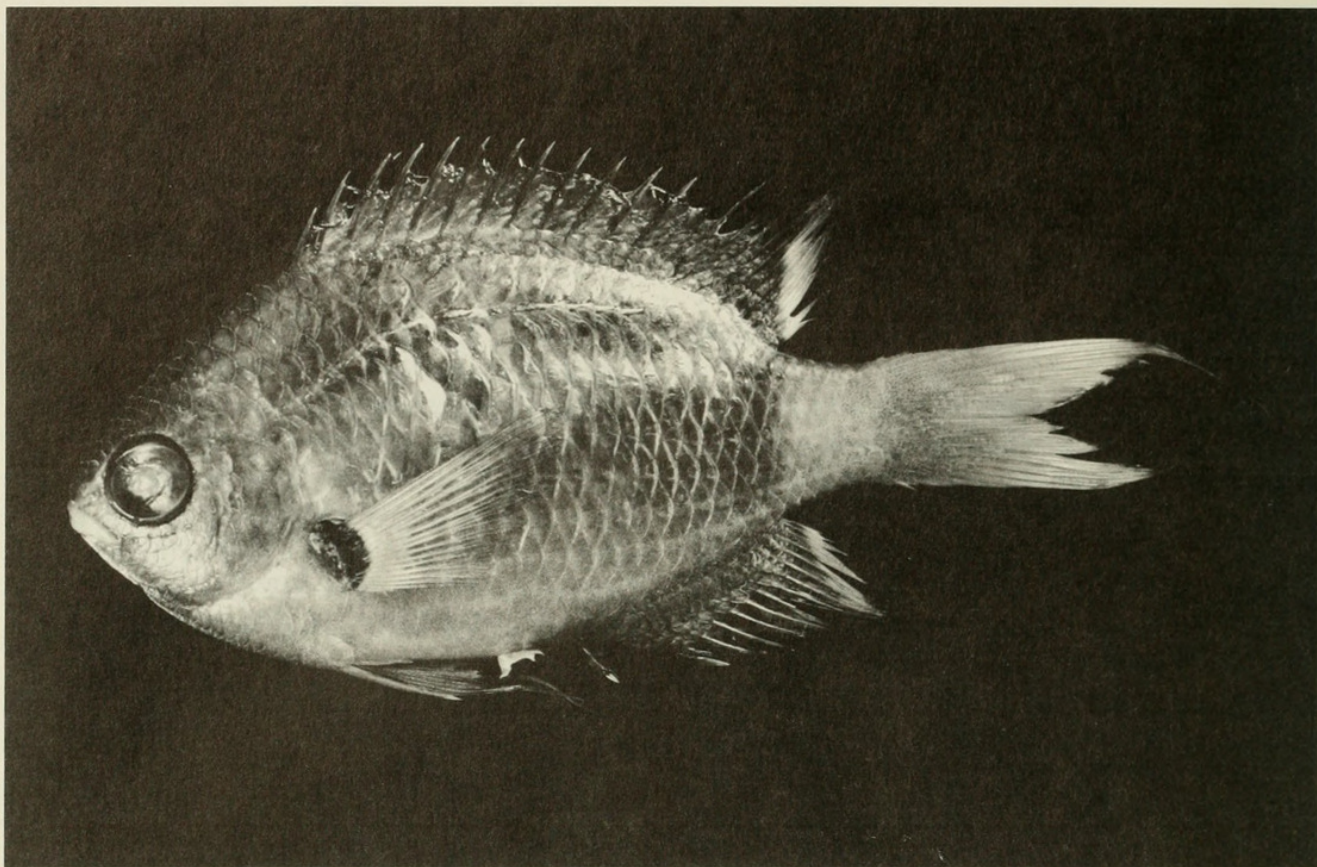


FIGURE 3. *Chromis bami* n. sp., holotype, 49.2 mm SL, Pitcairn Island, CAS 75992.

holotype, largest of 47 specimens, was 103.8 mm SL, as compared to 18 specimens of *C. randalli* reported by Greenfield and Hensley (1970), five of which were 124–128 mm SL); and in its color. *Chromis randalli* lacks the large black spot at the pectoral base (although it has a small diffuse dark spot at the upper edge of the base).

### ***Chromis bami* n. sp.**

(Figs. 3–4, Tables 1–3)

*Chromis* sp. “E” Allen, 1975:95, lower figure of p. 100.

*Chromis* sp. 2 Allen, 1991:88.

**HOLOTYPE.**—CAS 75992, 49.2 mm SL, male, Pitcairn Island, Bounty Bay, about 1 km north of Duddie’s Cocknuts, reef with live coral, 30.5–36.5 m, quinaldine, J. McCosker and S. Christian, 13 May 1988.

**PARATYPES.**—CAS 63215, 7 (23.2–46.0 mm), collected with the holotype. BPBM 16524, 5 (37.6–55.0 mm), Pitcairn group, Oeno Atoll, north side, outside reef off small boat passage, reef and adjacent sand, 12–18.5 m, rotenone, J. Randall and crew of *Westward*, 18 Dec 1970. AMS I.31223-001, 2 (38.0–47.5 mm), BMNH

1991.5.20.2-3, 2 (33.2–52.0 mm), NSMT-P.34680, 3 (34.7–58.5 mm), and USNM 316515, 3 (30.2–58.3 mm), Pitcairn Island, off Bounty Bay, reef at edge of sand with live coral, 30.5–40 m, rotenone, J. Randall, D. Cannoy and D. Bryant, 26 Dec 1970. BPBM 16687, 8 (28.3–55.8 mm), Pitcairn Island, reef on north side off Gannet Ridge, 40–44.5 m, rotenone, J. Randall and party, 6 Jan 1971. BPBM 12782, 2 (34.3–55.5 mm), Austral Islands, Raivavae, outside barrier reef south of Motu Haa, reef in 33 m, spear and quinaldine, J. Randall, 25 Feb 1971. BPBM 13683, 47.3 mm, Austral Islands, Tubuai, outside barrier reef 1 mile SW of anchorage off pass, reef in 15 m, powerhead blast, J. Randall and R. McNair, 26 Feb 1971. BPBM 13695, 2 (20.7–56.8 mm), Austral Islands, Rurutu, northeast side off Moerai, 27.5 m, quinaldine, J. Randall and D. Cannoy, 27 Feb 1971.

**DIAGNOSIS.**—Dorsal rays XII, 13–14 (usually 13); anal rays II, 12–14; pectoral rays 16–18; upper and lower procurrent spiniform caudal rays 2; tubed lateral-line scales 14–16; gill rakers 8–9 + 20–24; body depth 2.1–2.2 in SL; orbit diameter 2.25–2.7 in head; free margin of subor-



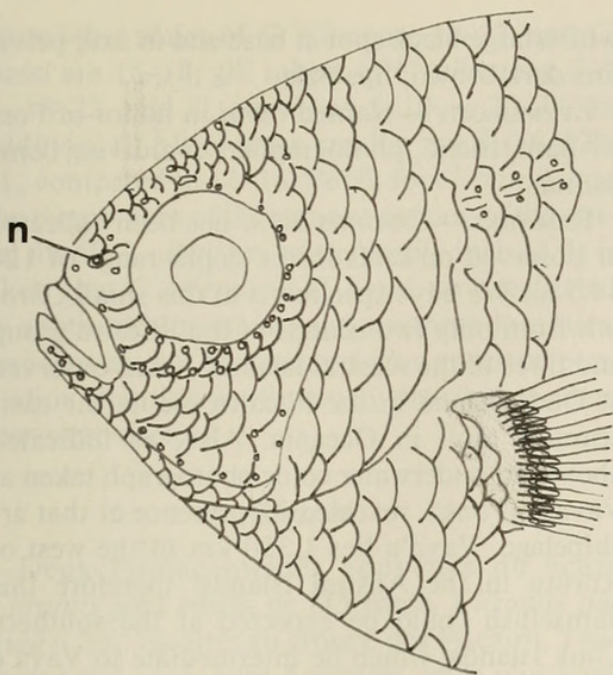


FIGURE 4. Head of *Chromis bami* n. sp., holotype, 49.2 mm SL, Pitcairn Island, CAS 75992. Nasal opening indicated by "n."

bital extending posterior to or nearly to a vertical at rear edge of pupil; caudal fin deeply forked, second and thirteenth branched ray filamentous, caudal concavity 1.95–4.45 in SL; body coloration dark brown with a yellow cast over chest, abruptly white posterior to a demarcation on caudal peduncle a short distance behind rear base of dorsal and anal fins; lips whitish; a large black spot at pectoral-fin base; triangular distal end of each dorsal interspinous membrane black.

**DESCRIPTION.**—Dorsal rays XII,13 (13–14); anal rays II,13 (12–14), all soft rays of dorsal and anal fins branched in adults (first rays of these fins may be simple in juveniles); pectoral rays 15 (14–16), upper two and lower two rays simple; pelvic rays I,5, all soft rays branched; principal caudal rays 15, median 13 branched, second and thirteenth produced to long filaments; upper and lower procurent caudal rays 4, anterior two spiniform; tubed lateral-line scales 15 (14–16); pored scales in continuous series midlaterally on caudal peduncle 8 (7–11); longitudinal scale series from upper end of gill opening to caudal-fin base 28 (27–28); scales above lateral line to origin of dorsal fin 3; scales below lateral line to origin of anal fin 8; circumpeduncular scales 16; gill rakers 9 + 23 (8–9 + 20–24); branchiostegal rays 6; supraneural (predorsal) bones 3; vertebrae 11 + 15 (4 specimens).

Body moderately deep, depth 2.05 (2.1–2.2) in SL, and compressed, width 2.7 (2.6–2.9) in depth; head length 3.3 (3.05–3.4) in SL; dorsal profile of head slightly convex; snout length 3.5 (3.5–3.9) in head; orbit diameter 2.6 (2.25–2.7) in head; interorbital space convex, the least width 2.7 (2.6–2.9) in head; caudal peduncle depth about equal to its length, the least depth 2.0 (1.95–2.35).

Mouth terminal and strongly oblique, forming an angle of about 45° to longitudinal axis of body; mouth small, upper jaw length 3.0 (2.9–3.1) in head, maxilla just reaching or extending slightly posterior to a vertical at front edge of orbit; an outer row of conical teeth in jaws, largest anteriorly, particularly three pairs of upper and two of lower teeth; 25 upper and 23 lower teeth on each side of jaw of holotype; a narrow band of villiform teeth lingual to outer row, in two to three irregular rows anteriorly in jaws, narrowing to a single row on side of jaws; tongue triangular, the tip rounded; longest gill raker on first gill arch (on lower limb near angle) as long as longest gill filaments, about one-third orbit diameter of holotype; nostril large with a fleshy rim, located at level of upper edge of pupil, more than one-third distance to front of snout at base of upper lip; pores of lateralis system on head prominent (see Fig. 4).

Opercle ending posteriorly in a small flat spine varying from slightly acute to slightly obtuse and covered by a scale; edge of preopercle smooth to slightly irregular, the corner broadly rounded (some specimens with a slight concavity in margin above corner); upper end of preopercular margin covered by scales; ventroanterior end of margin nearly reaching a vertical at front edge of orbit; free edge of suborbital nearly or just reaching a vertical at rear edge of pupil.

Scales finely ctenoid; anterior lateral line ending beneath front of soft portion of dorsal fin; scales on head not very small; head fully scaled except for lips, a narrow zone at front of snout at base of upper lip, and a narrow diagonal band containing nostrils that passes from orbit to front of snout; a low scaly sheath at base of dorsal and anal fins; a narrow pointed band of scales on each interspinous membrane of dorsal and anal fins, reaching about three-fourths distance to spine tips; small scales on soft portions of dorsal and anal fins extending a maximum of about one-third distance to fin margin; small scales on caudal fin extending more than three-fourths dis-



tance to posterior margin (ignoring length of filamentous rays); small scales present only basally on pectoral fins; pelvic fins with a slender scaly process midventrally between bases that extends about half distance to pelvic spine tips; a slender pointed axillary scale above and adjacent to each pelvic fin, about two-thirds length of pelvic spine.

Origin of dorsal fin above third lateral-line scale; interspinous membranes of dorsal fin moderately incised; dorsal spines slender; first dorsal spine 3.2 (3.2–3.75) in head; second dorsal spine 2.2 (2.0–2.5) in head; fifth to twelfth dorsal spines subequal, the longest 1.8 (1.75–2.0) in head; sixth dorsal soft ray longest, 1.1 (1.05–1.25) in head; origin of anal fin below base of tenth dorsal spine; first anal spine slender, 3.05 (2.9–3.4) in head; second anal spine twice as stout as dorsal spines, its length 1.5 (1.55–1.7) in head; seventh or eighth anal soft ray longest, 1.15 (1.15–1.35) in head; caudal fin deeply forked, the second and thirteenth principal rays filamentous (being branched, each has two long filaments), fin length (including filaments when intact) 1.8 (1.35–2.35) in SL, caudal concavity 3.5 (1.95–4.45) in SL; third or fourth pectoral ray longest, 3.1 (2.8–3.2) in SL; origin of pelvic fins below lower pectoral-fin base; first pelvic soft ray filamentous, reaching beyond origin of anal fin, its length 2.75 (2.4–3.0) in SL.

Color of holotype in alcohol dark brown to a vertical demarcation about a pupil distance posterior to rear base of dorsal fin; caudal peduncle and fin posterior to demarcation whitish; spinous portion of dorsal fin dark brown, the outer triangular part of each interspinous membrane, including cirrus at tip, black; soft portion of dorsal fin dark brown anteriorly to margin at fourth ray, the rest of fin whitish distally, the brown progressively more restricted to base until last ray where only the short basal scaled part brown; anal fin dark brown to eighth soft ray tip, then abruptly whitish like dorsal fin, the brown progressively less to end of fin where only basal part of last ray pigmented; pectoral fins pale except brown at edges of rays and a large oblong black spot at base and axil of fin; pelvic fins dark brown.

Color of head and body of holotype in life dark brown, shading to brownish yellow on chest and abruptly white on anterior caudal peduncle; caudal fin white; dorsal and anal fins dark brown like body, except black at edge of membrane between spine tips and transparent posteriorly in a vertical demarcation; pectoral fins transparent

with a large black spot at base and in axil; pelvic fins dark brown; lips pale.

ETYMOLOGY.—Named *bami* in honor of Foster Bam, friend, photographer, and diving companion.

REMARKS.—*Chromis bami* has been collected or observed on reefs in the depth range of 12–44.5 m. We have specimens of this small *Chromis* from only two islands of the Pitcairn group and three of the Austral Islands. It was observed at Ducie Island in the Pitcairn group, the easternmost atoll in Oceania. Also, as indicated above, an underwater color photograph taken at Vava'u, Tonga, revealed its presence at that archipelago. Vava'u lies 1,350 km to the west of Rurutu in the Austral Islands; therefore this damselfish could be expected at the southern Cook Islands, which lie intermediate to Vava'u and the Australs. It might also extend to the west of Tonga in the same southern subtropical latitude. Several insular shore fishes are broadly distributed across the South Pacific in the southern subtropical zone but are not reported from tropical waters. Examples are the muraenid *Enchelycore ramosus* (Griffin), the serranid *Trachypoma macracanthus* Günther, the labrid *Anampses femininus* Randall, and the soleid *Aseraggodes bahamondei* Randall and Meléndez, all of which range from Easter Island to at least Lord Howe Island (the last-mentioned species is known thus far only from these two islands). Other species of *Chromis* collected in the Pitcairn group include *C. acares* Randall, *C. agilis* Smith, *C. xanthura* (Bleeker), and *C. vanderbilti* (Fowler), all of which occur in tropical as well as subtropical seas.

*Chromis bami* seems most closely related to *C. alleni* Randall, Ida, and Moyer (1981) from southern Japan and Taiwan, sharing with it a similar color pattern with the abrupt transition from dark anterior body to white tail at exactly the same place on the anterior caudal peduncle, similar body proportions and meristic data, the free margin of the suborbital extending the same distance posteriorly, and the same caudal fin morphology. *Chromis alleni* differs in its overall dark head and body coloration being a deep yellow-brown or orange-brown; also it lacks the distal black pigmentation on the interspinous membranes of the dorsal fin. There are slight meristic differences: the dorsal rays of *C. alleni* are XII–XIII, 12–13, and *C. bami* is XII, 12–14; tubed



lateral-line scales of *C. alleni* are 15–17, and *C. bami* are 16–18; gill rakers of *C. alleni* are 7–9 + 18–22, and *C. bami* has 9–10 + 20–24. In addition, *C. alleni* has a smaller eye (10.6–12% SL, compared to 11–14.5% SL for *C. bami*), and the membranes of the spinous portion of the dorsal fin of *C. alleni* are more deeply incised. It is likely that *C. alleni* and *C. bami*, now restricted to subtropical northern and southern localities, respectively, are descendants of an ancestral population that was continuously distributed when seas were cooler.

#### RÉSUMÉ

Deux Pomacentridés nouvelles du genre *Chromis* sont édités de l'Océanie. *Chromis pamae* n. sp., récoltés au groupe des Pitcairn, Tuamotus sud, et les Isles Australes, est la plus voisine de *C. randalli* de l'Isle de Pâques. *Chromis bami* n. sp., du groupe des Pitcairn, les Isles Australes, et Tonga (elle a été photographié, mais non récoltée), est la plus voisine de *C. alleni* du sud de Japon et de Taiwan. Les deux espèces nouvelles sont distingués par leur couleurs et caractères méristiques et morphométriques.

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