Five New Wrasses of the genera *Cirrhilabrus* and *Paracheilinus* (Perciformes: Labridae) from the Marshall Islands

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Abstract—Four new species of labrid fishes of the genus *Cirrhilabrus* and one of the related genus *Paracheilinus* are described from the Marshall Islands. *C. luteovittatus,* a close relative of *C. cyanopleura,* is distinct in having 6 median predorsal scales (five on other Marshall Islands species), 16–19 gill rakers, and a dark spot or bar at lower pectoral base; males have a broad yellow stripe on lower side and long pelvic fins. *C. balteatus,* a relative of *C. temminckii,* usually has only 1 row of scales under the eye except for 2 anteriorly, 15–18 gill rakers, and very long pelvic fins in the male for which the most characteristic color feature is a broad salmon pink bar in the pectoral region; adults of both sexes have longitudinal dark band in the dorsal and anal fins. *C. rhomboidalis* occurs at 40 m or more; it has a rhomboid caudal fin, 16–17 gill rakers, short pelvic fins, and irregular longitudinal blue lines on the head and anterior body; it seems most closely related to *C. lineatus. C. johnsoni* is a small species (the largest specimen, 47 mm SL) which has 13–16 gill rakers, a truncate to emarginate caudal fin in females but a very lunate fin in males; the membranes of the spinous portion of the dorsal fin of males extend well above the spine tips; males are orange-yellow with 3 purple lines on the head which are continuous with 2 diagonal ones on the body; the median and pelvic fins are red with blue posterior margins. Species of *Paracheilinus* have IX,11 dorsal rays, in contrast to XI,9 for *Cirrhilabrus. P. bellae* has a straight dorsal head profile, 15 + 5 or 6 lateral-line scales, and 13–14 gill rakers; males have 5 or 6 filamentous dorsal soft rays and a lunate caudal fin. A key to all the species of *Paracheilinus* is included. Each of these Pacific Plate endemics except *C. johnsoni* appears to have as its sister group a Western Pacific (non Pacific Plate) species.

Introduction

The fish fauna from the Marshall Islands is among the best known of any archipelago of the Indo-Pacific region. Huge fish collections were made in the Marshalls in 1946 and 1947 following atom bomb tests, and additional collections in 1948 and 1949. This material was the principal basis for a three-volume work by Schultz and collaborators (1953–1966) in which 543 species of fishes were reported from these islands. Only one species of the Indo-Pacific labrid fish genus *Cirrhilabrus* Temminck and Schlegel was included, and none of the closely related genus *Paracheilinus* Fourmanoir.

Ichthyological activity continued in the Marshall Islands largely because of the establishment of the Mid-Pacific Research Laboratory on Enewetak Atoll. Also the presence of numerous SCUBA divers at Kwajalein has stimulated the investigation of the fishes of this largest of atolls. Randall (1986) reviewed the species of fishes that have been reported from the Marshall Islands since the work of Schultz and collaborators and added 99 new records, among them *Cirrhilabrus exquisitus* Smith. Randall and Randall (1987) provided a checklist of all the reef, shore, and epipelagic fishes of the Marshall Islands; they recorded 817 species.

The *Cirrhilabrus* reported by Schultz in Schultz and collaborators (1960) was represented by 13 juvenile specimens from Bikini and Rongelap. It was identified as *C. temminckii* Bleeker, previously known only from Japan and the Philippines. The later collection of adults of this fish from Enewetak and Kwajalein reveals that it is an undescribed species. Three other new species of this genus have been found in recent years in the Marshalls as well as an undescribed species of *Paracheilinus*. One of the new *Cirrhilabrus* occurs only at depths of 40 m or more which explains how it was missed in earlier collections. The *Paracheilinus* and one of the *Cirrhilabrus* were discovered in a deep lagoon habitat that had been overlooked, an area of dense benthic algal growth in 18.5–30.5 m.

The fishes of these 2 genera are small, none known to exceed 12.5 cm total length. They occur on reefs or rubble bottoms, usually in small aggregations. In feeding on zooplankton, they rise a meter or more above the bottom. With the approach of danger they take refuge in the holes and cracks in the substratum. Males are larger, with elongate pelvic fins, and usually more colorful than females. No small males have been found, so it is assumed that all are a result of sex reversal. Males are few in numbers compared to females; typically individual males maintain large harems. They are often seen in courtship, at which time many of the species flash iridescent hues of violet or blue.

Cirrhilabrus, Paracheilinus, and the related bottom-oriented *Pseudocheilinus* Bleeker, *Pseudocheilinops* Schultz, and *Pteragogus* Peters have a curious double pupil which may be a specialization that enables them to better perceive small prey animals (Springer and Randall, 1974).

When Schultz identified Marshall Islands specimens of *Cirrhilabrus* as *temminckii,* only 3 other valid species of the genus were known: *C. cyanopleura* (Bleeker), *C. jordani* Snyder, and *C. exquisitus* Smith. Selective collecting for the genus in recent years has resulted in material for the description of 10 more species (review by Randall and Lubbock, 1982, plus an additional species named by Randall and Emery, 1983). With the description of the 4 species in the present paper and 4 more from southern Japan, Taiwan, and the Marianas under study by the author and John W. Shepard, the total will be raised to 22, making it the second largest genus of the family Labridae (after *Halichoeres* Rüppell). Still more species remain to be described.

The genus *Paracheilinus* was not described until Fourmanoir in Roux-Estève and Fourmanoir (1955) named *P. octotaenia* from the Red Sea. Allen (1974) described the second species, *P. filamentosus,* from the Indo-Malayan region. Randall and Harmelin-Vivien (1977) named 2 more from Madagascar and the Comoros, and Randall and Lubbock (1981) 3 from the Philippines. The one described in the present paper brings the total species for the genus to 8.

Type specimens of the new species of *Cirrhilabrus* and *Paracheilinus* from the Marshall Islands have been variously deposited at the following institutions: Academy of Natural Sciences of Philadelphia (ANSP); Australian Museum, Sydney (AMS); Bernice Pauahi Bishop Museum, Honolulu (BPBM); British Museum (Natural History), London [BM(NH)]; California Academy of Sciences, San Francisco (CAS); Museum National d'Histoire Naturelle, Paris (MNHN); Royal Ontario Museum, Toronto (ROM); U.S. National Museum of Natural History, Washington, D.C. (USNM); and Department of Zoology, University Museum, University of Tokyo (ZUMT).

Methods of Counting and Measuring

Counts of fin spines are given in Roman numerals and soft rays in Arabic. Pectoral-ray counts include the rudimentary upper ray. The lateral line of these fishes is interrupted; the count of the anterior part is given first, followed by a plus sign and the peduncular part. Only lateral-line scales with tubes are counted (1 or more scales at the anterior end of the peduncular part of the lateral line may be notched or have only a pore; these are not counted). All the tubed scales of the peduncular part are counted even though one is usually located posterior to the base of the caudal fin. The number of scales in the rows on the cheek are counted from where they commence below the front of the orbit to behind the center of the orbit. Gill-raker counts include all rudiments. Because it may be difficult to decide which raker is at the angle, only the total gill-raker count is given. The pores adjacent to the orbit are counted by the method given by Randall and Carpenter (1980: 17, fig. 1).

Lengths of specimens are given as standard length (SL) (except estimates of total length [TL] of fishes photographed underwater); this is the straight-line measurement from the tip of the snout (front of upper lip) to the base of the caudal fin (end of hypural plate). Measurements in the tables are given as percentages of the standard length. More measurements are given in the tables than as proportional measurements in the descriptions. The latter are expressed in terms of either the standard length or the head length and rounded to the nearest 0.05. Head length is the distance from the front of the upper lip to the posterior end of the opercular membrane. Body depth is the greatest depth to the base of the dorsal fin (adjusting for any malformation of the abdomen due to preservation). Body width is measured just posterior to the opercular flap. Snout length is taken from the front of the upper lip to the fleshy edge of the orbit (if the upper jaw is protruded, it is pressed back to the nonprotractile position before this measurement is taken; the same is true of SL and head length measurements). Orbit diameter is the greatest fleshy diameter. Interorbital width is the least bony width. Caudal peduncle depth is the least depth; caudal peduncle length is the horizontal measurement between verticals at the rear base of the anal fin and the caudal-fin base. Measurements of fin spines and rays are taken to the extreme base of these elements. Caudal concavity is the horizontal distance between the tips of the longest and shortest caudal rays. Pectoral-fin length is taken from the tip of the longest ray to the base of this ray. Pelvic-fin length is measured from the base of the spine to the tip of the longest ray.

Table 1. Lateral-line Scales of New Species of *Cirrhilabrus* from the Marshall Islands

	Anterior lateral-line scales				Posterior lateral-line scales				
	15	*16*	*17*	*18*	*5*	*6*	*7*	*8*	*9*
luteovittatus	1	17	18	2	3	7	21	6	1
balteatus		8	13	1	1	9	10	1	1
rhomboidalis			3			2	1		
johnsoni	3	25	10		8	23	7		

Table 2. Gill-raker Counts of New Species of *Cirrhilabrus* from the Marshall Islands

	Gill Rakers						
	13	*14*	*15*	*16*	*17*	*18*	*19*
luteovittatus				8	19	9	1
balteatus			4	11	6	1	
rhomboidalis				1	3		
johnsoni	2	18	12	6			

In the descriptions of the new species, data in parentheses refer to paratypes. Most of the characters of the generic diagnoses are not repeated in the species descriptions.

A key is given to the 4 species of *Cirrhilabrus* known from the Marshall Islands. A key to all the species of the genus is deferred until the remaining undescribed species are named. A key to 8 species of *Paracheilinus* is given.

Lateral-line scale counts (Table 1) are of limited value in distinguishing the new species of *Cirrhilabrus*, but gill-raker counts (Table 2) may be useful.

Genus *Cirrhilabrus* Temminck and Schlegel

Cirrhilabrus Temminck and Schlegel, 1846: 167 (type species, *Cirrhilabrus temminckii* Bleeker, by subsequent designation of Bleeker, 1853).

Cheilinoïdes Bleeker, 1851: 71 (type species, *Cheilinoïdes cyanopleura* Bleeker, by original designation).

Cirrhilabrichthys Klausewitz, 1976: 12 (type species, *Cirrhilabrichthys filamentosus*, by original designation).

DIAGNOSIS. Dorsal rays XI (rarely X or VIII),9 (rarely 8 or 10); anal rays III,9 (rarely 8 or 10); principal caudal rays 13, the uppermost and lowermost unbranched; upper and lower procurrent caudal rays 6, the most posterior segmented; pectoral rays 14–16 (usually 15), the upper ray rudimentary, the second unbranched; pelvic rays I,5; scales cycloid; lateral line interrupted, the tubed scales 14–18 + 5–11; scales above lateral line to origin of dorsal fin 1½–2; scales below lateral line to origin of anal fin 6–7; median predorsal scales 5 or 6 (rarely 4); scale rows on cheek 1 or 2; circumpeduncular scales 16; a row of large scales covering branchiostegal membranes; snout and interorbital space naked; a row of large elongate scales at base of dorsal and anal fins; large scales basically on caudal fin but none on paired fins except a median ventral process extending posteriorly from base of pelvic fins; gill rakers 13–22, short (the longest one-half or less length of longest gill filament of first gill arch); branchiostegal rays 5; vertebrae 25; cornea of pupil divided nearly vertically into 2 round parts; mouth small, oblique, the maxilla not reaching a vertical at anterior edge of orbit; lips not fleshy; side of lower lip with a thin, broad, ventrally directed flap; tongue short and rounded; upper jaw with 3 pairs of large canine teeth anteriorly, progressively larger laterally, the second and especially the third pairs strongly recurved; a pair of stout divergent canine teeth anteriorly in lower jaw; a row of small conical teeth along side of jaws and a row anteriorly behind front canines of

both jaws; no tooth at corner of mouth; posterior nostril moderately large, round to oval, without a rim or with only a slight rim, anterior to upper part of eye and slightly in front of leading edge of orbit; anterior nostril small, a short membranous tube with a posterior flap, diagonally downward and anterior to posterior nostril; posterior margin of preopercle finely serrate, the broadly rounded corner and ventral margin thin and membranous; a fleshy cirrus extending from near tip of each dorsal and anal spine, serving to support interspinous membrane distal to spine tip; caudal fin varying from rounded or pointed to lunate.

Key to the Species of *Cirrhilabrus* of the Marshall Islands

1a. Median predorsal scales 6; a dark spot or bar (deep blue in preservative) at lower edge of pectoral-fin base of adults; adult males with a broad yellow stripe on lower side of body . . . . . *luteovittatus,* new species

1b. Median predorsal scales 5; no dark spot or bar at lower edge of pectoral-fin base (dark bar, if present, broadest and darkest at upper pectoral-fin base); no yellow stripe on side of body 2

2a. Caudal fin of adults rounded to rhomboid 3

2b. Caudal fin of adults truncate to slightly emarginate or lunate (slightly rounded in small adult female of *exquisitus*) 4

3a. Caudal fin rounded to slightly rhomboid, its length 3.5–4.05 in SL; a dark bar at pectoral-fin base; no dark longitudinal lines on head and anterior body; a dark longitudinal band in middle of dorsal and anal fins of adults; males with a very broad pale bar (salmon pink in life) on upper two-thirds of pectoral region of body . . . . . *balteatus,* new species

3b. Caudal fin distinctly rhomboid (at least in adults), its length 2.85–3.4 in SL; no dark bar at pectoral-fin base; dark longitudinal lines (blue in life) on head and anterior body; a broad dark submarginal band in dorsal fin of adults, none in anal fin. . . . . *rhomboidalis,* new species

4a. Gill rakers 17–21; caudal fin of small adult females slightly rounded, of males emarginate; adults with an oval black spot as large or larger than eye on upper side of caudal peduncle (East Africa to Tuamotu Archipelago) . . . . . *exquisitus*

4b. Gill rakers 13–16; caudal fin of females truncate to emarginate, of males strongly lunate; no large black spot on caudal peduncle (a small dark spot may be present on upper peduncle of juveniles) . . . *johnsoni,* new species

Cirrhilabrus luteovittatus new species
Plates I A,B; III A–C; Tables 1-3

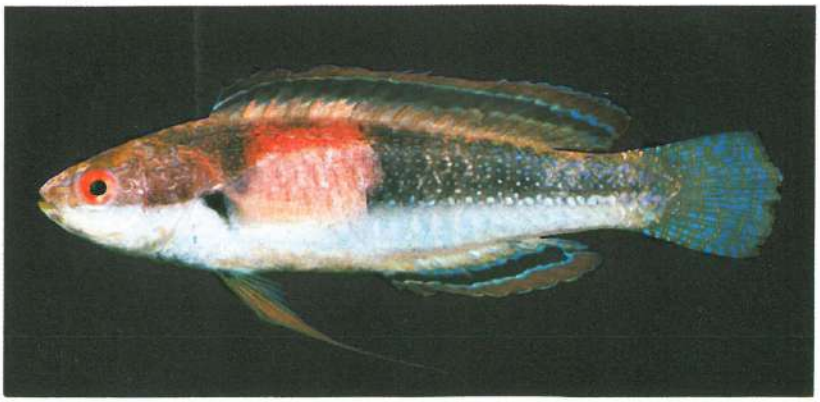
Cirrhilabrus sp. Randall and Randall, 1987 (Marshall Islands).

HOLOTYPE: BPBM 6259, male, 93.3 mm, Marshall Islands, Enewetak Atoll, deep channel, S side of Bogen Island, 15 m, rotenone, J. E. Randall and C. Powell, 4 Dec. 1967.

A. *Cirrhilabrus luteovittatus,* immature ♀, paratype, BPBM 29002, 44.8 mm SL, Enewetak, Marshall Islands.

B. *Cirrhilabrus luteovittatus,* ♂, holotype, BPBM 6259, 93.3 mm SL, Enewetak, Marshall Islands.

C. *Cirrhilabrus balteatus,* ♀, paratype, BPBM 9272, 46.7 mm SL, Enewetak, Marshall Islands.



D. *Cirrhilabrus balteatus,* ♂, holotype, BPBM 9267, 64.8 mm SL, Enewetak, Marshall Islands.

A. *Cirrhilabrus rhomboidalis,* ♀, paratype, BPBM 18439, 55.5 mm SL, Kwajalein, Marshall Islands.

B. *Cirrhilabrus rhomboidalis,* ♂, holotype, BPBM 19970, 67.0 mm SL, Kwajalein, Marshall Islands.

C. *Cirrhilabrus johnsoni.* Upper: ♂, holotype, BPBM 30639, 43.0 mm SL; lower: ♀, paratype, BPBM 28752, 30.1 mm SL, Kwajalein.

D. *Paracheilinus bellae,* ♂, holotype BPBM 28751, 51.0 mm SL, Kwajalein.

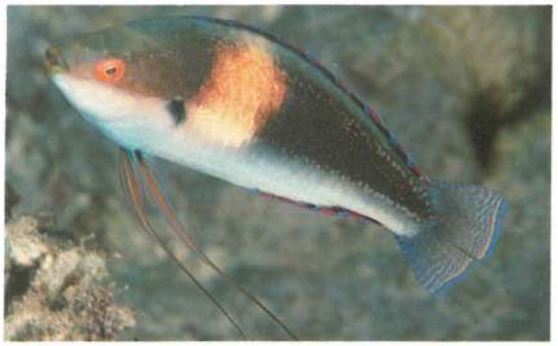
A. *Cirrhilabrus luteovittatus,* about 70 mm TL, Enewetak, Marshall Islands.

B. *Cirrhilabrus luteovittatus,* about 75 mm TL, Enewetak, Marshall Islands.

C. *Cirrhilabrus luteovittatus,* about 80 mm TL, Marshall Islands (aquarium photo).

D. *Cirrhilabrus balteatus,* about 50 mm TL, Enewetak, Marshall Islands.

E. *Cirrhilabrus balteatus,* about 60 mm TL, Enewetak, Marshall Islands.



F. *Cirrhilabrus balteatus,* about 65 mm TL, Enewetak, Marshall Islands.

G. *Cirrhilabrus rhomboidalis,* Kwajalein, Marshall Islands (Photo by David S. Johnson).

H. *Parachеilinus bellae,* Kwajalein, Marshall Islands (Photo by David S. Johnson).

PARATYPES: BPBM 9265, 55.4 mm, Marshall Islands, Enewetak Atoll, Enewetak I, coral and rubble patch in lagoon off marine pier at N end of island, 7.5 m, rotenone, J. E. Randall, G. R. Allen, and W. Hashimoto, 16 Apr. 1968; BPBM 9266, 2: 42.8–75.2 mm, same locality as preceding, quinaldine and spear, Randall, 23 Apr. 1968; BPBM 8006, 3: 48.2–64.0 mm, same locality, rotenone and spear, Randall, 25 Apr. 1968; BPBM 8227, 8: 36.2–81.8 mm, Enewetak I, lagoon, base of pinnacle reef, 12–18.5 m, coral rubble, rotenone, Allen and S. N. Swerdloff, 19 June 1968; BPBM 8204, 2: 23.0–66.5 mm, Enewetak I, lagoon off POL pier, rubble, 3–12 m, Allen, 5 Sept. 1968; MNHN 1986–456, 4: 33.4–76.6 mm; ROM 50584, 4: 39.0–79.3 mm; USNM 278973, 4: 48.4–76.9 mm; ZUMT 55210–13, 4: 49.8–70.7 mm—all with same data as BPBM 8204; AMS I.25965-001, 4: 56.8–78.4 mm, Enewetak I, patch reef in lagoon, 12–25 m, rotenone, Allen and SCUBA club, 29 Nov. 1969; ANSP 158180, 4: 43.4–79.4 mm; BMNH 1986.5.29.2–5, 4: 46.6–75.7 mm; CAS 58344, 4: 55.8–67.3 mm—all with same data as AMS I.25965-001; BPBM 8893, 2: 28.7–49.0 mm, Enewetak, lagoon, pinnacle reef 1 mile off Parry I, 21.5 m, rotenone, Allen, 17 Jan. 1970; BPBM 12186, 84.8 mm, Enewetak, patch reef in lagoon off Chinimi I, 9 m, spear, Randall, 3 Feb. 1972; BPBM 31236, 86.3 mm, Enewetak, lagoon, "Pole" pinnacle reef (near deep channel), 21.5 m, spear, B. A. Carlson, 10 June 1976; BPBM 20971, 2: 79.3–80.1 mm, Enewetak I, patch reef at white buoy in lagoon off S end of island, 7.5 m, spear, Carlson, 10 June 1976; BPBM 27980, 100.3 mm, Majuro, from aquarium fish importer P. Hoffman (via W. Klausewitz), died in aquarium, summer, 1981; BPBM 29002, 8: 22.0–45.0 mm, Enewetak I, lagoon, off Mid-Pacific Research Laboratory, dense bed of algae dominated by *Halimeda* and *Dictyota,* 21.5 m, rotenone, Randall, P. L. Colin, L. J. Bell, and S. Johnson, 24–25 Sept. 1982.

DIAGNOSIS. Dorsal rays XI,9; median predorsal scales 6; gill rakers 16–19 (modally 17); body depth 2.95–3.35 in SL; snout length 3.4–3.9 in head; caudal fin rounded in juveniles and females, rhomboid in males, its length 2.9–3.85 in SL; pelvic fins of males long, 2.25–3.05 in SL; females with a dark spot at lower pectoral-fin base (dark blue in preservative), and a blackish spot on upper side of caudal peduncle, and fin rays faintly blue-green in preservative; males with a dark bar at lower pectoral-fin base (deep blue in preservative), blue-green fin rays (faint on pectorals), the upper half of body dark brown, the lower half abruptly pale (under pale part a broad yellow stripe in life).

DESCRIPTION. Dorsal rays XI,9 (1 paratype with 8); anal rays III,9; pectoral rays 15 (3 of 37 paratypes with 14); lateral-line scales 16 + 8 (15–18 + 5–9); scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 6½; median predorsal scales 6; 2 rows of scales on cheek, the uppermost (adjacent to orbit) of 8 (7–8) scales and the lowermost of 8 (6–8) scales; gill rakers (16–18).

Body moderately elongate, the depth 3.2 (2.95–3.35) in SL, and compressed, the width 2.2 (2.1–2.3) in depth; head 3.3 (2.9–3.3) in SL (small individuals with relatively longer heads); dorsal profile of head convex; snout 3.55 (3.4–3.9) in head; orbit diameter 4.8 (3.15–4.7) in head; interorbital space very convex, the bony width 3.65 (3.75–4.1) in head; depth of caudal peduncle 2.0 (1.9–2.2) in head.

Mouth small, terminal, the maxilla reaching to below posterior nostril; dentition

Table 3. Proportional Measurements of Type Specimens of *Cirrhilabrus luteovittatus* Expressed as a Percentage of the Standard Length

	Holotype	Paratypes								
	BPBM 6259	BPBM 29002	BPBM 29002	BPBM 8893	BPBM 8006	BPBM 8204	BPBM 9266	BPBM 20971	BPBM 12186	BPBM 31236
Sex	♂	juv.	juv. ♀	♀	♀	♀	♂	♂	♂	♂
Standard length (mm)	93.3	30.3	44.8	49.0	57.2	66.5	75.2	79.3	84.8	86.3
Body depth	31.6	33.7	31.2	30.8	30.6	32.2	29.6	32.8	33.0	32.8
Body width	14.5	16.1	14.3	14.0	13.6	14.7	13.6	15.1	14.2	14.9
Head length	30.3	34.5	32.3	30.8	31.1	30.2	30.4	30.5	30.1	30.4
Snout length	8.5	8.9	8.9	8.2	8.5	8.3	8.9	8.8	8.3	8.9
Orbit diameter	6.3	10.9	8.6	8.1	7.7	7.1	6.9	6.8	6.7	6.5
Interorbital width	8.3	8.8	8.0	8.2	8.2	7.5	8.0	7.7	7.3	8.0
Caudal peduncle depth	15.1	15.8	15.7	16.0	15.7	15.1	14.7	16.0	15.4	15.5
Caudal peduncle length	16.9	16.5	17.1	16.8	16.6	16.1	17.3	16.2	16.8	15.7
Predorsal length	29.5	36.3	33.3	31.6	32.7	31.6	31.6	31.5	30.5	30.3
Preanal length	58.3	64.8	63.4	59.0	62.1	59.8	60.0	59.6	58.3	60.3
Prepelvic length	32.6	36.9	35.7	33.3	32.0	33.2	32.3	33.7	31.9	33.8
Length of dorsal fin base	60.6	52.5	55.8	55.3	56.2	58.3	57.2	61.6	60.8	60.1
Length of first dorsal spine	7.1	7.9	8.2	7.5	7.4	7.6	7.3	7.4	6.7	7.0
Length of last dorsal spine	14.0	14.2	14.5	14.2	15.1	15.2	14.7	15.1	14.0	14.8
Length of longest dorsal ray	23.5	17.4	17.3	16.7	16.6	18.3	21.7	21.6	20.3	22.0
Length of anal fin base	27.6	23.4	24.0	28.3	26.0	27.8	26.2	27.4	27.3	28.3
Length of first anal spine	5.6	9.1	8.5	7.0	6.8	6.5	6.7	5.6	6.7	6.6
Length of third anal spine	12.2	14.0	13.8	13.2	13.6	12.5	12.2	12.0	12.0	14.0
Length of longest anal ray	25.3	16.3	15.7	16.5	16.3	17.1	22.2	24.3	21.2	24.3
Caudal fin length	34.8	29.4	28.8	28.2	26.4	25.9	29.3	31.6	28.1	32.2
Pectoral fin length	21.9	20.8	21.6	20.0	21.9	21.1	21.8	21.4	21.2	21.4
Pelvic spine length	9.4	13.4	13.4	12.0	12.8	12.8	11.5	11.4	10.7	11.6
Pelvic fin length	44.2	19.8	18.5	19.6	19.3	21.5	36.2	40.8	32.6	39.1

typical of the genus, the side of upper jaw of holotype with 22 small conical teeth and the side of lower jaw with 17 teeth. Posterior margin of preopercle of holotype with 32 small serrae. Pores of cephalic lateralis system adjacent to ventroposterior half of orbit of holotype 17 (15 on other side), plus 4 or 5 of the same series anterior to orbit; a series of 9 pores along margin of preopercle linking with 4 on mandible to front of chin; a series of 10 pores from above upper edge of preopercle passing dorsal to orbit and ending in front of anterior nostril; a series of 11 pores on each side of head (2 as double pores) from first lateral-line scale to front of scaled part of nape, plus 2 middorsal pores.

Origin of dorsal fin above second lateral-line scale; first dorsal spine 4.2 (3.95–4.5) in head; remaining dorsal spines progressively longer, the last 2.1 (2.0–2.4) in head; eighth dorsal soft ray longest in holotype and male paratypes (fifth to seventh rays longest in females), 1.3 (1.4–2.0) in head; origin of anal fin slightly anterior to base of last dorsal spine; first anal spine 5.4 (3.8–5.45) in head; third anal spine 2.5 (2.15–2.5) in head; eighth anal soft ray longest in holotype and male paratypes (fifth or sixth longest in females), 1.2 (1.25–2.1) in head; caudal fin rounded in juveniles and females, rhomboid in males, its length 2.9 (3.1–3.85) in SL; third pectoral ray longest, its length 1.4 (1.4–1.65) in head; origin of pelvic fins below lower base of pectoral fins, the second soft ray longest (greatly elongate in males), its length 2.25 (2.45–5.4) in SL.

Color of holotype (a large male) in alcohol: upper half of body brown with some irregular blotching of blue (especially on scale edges; some male paratypes with deep blue edges on a few scales; on many scales in middle of body on 1 paratype); lower half of body abruptly whitish; an elongate, diagonal, intensely deep blue spot centered on lower edge of pectoral-fin base; head brown, paler ventrally, with a deep blue area over most of opercle and edge of preopercle which extends forward to chin; some deep blue rimming lower edge of orbit and continuing onto side of snout; middorsal region of nape largely blue; fins with clear membranes and all but pectorals with blue rays (though pectorals with a light blue band at base); large scales at base of median fins mainly blue.

Color of holotype when fresh: maroon on back, the edges of scales dark; a broad yellow stripe on side beginning beneath pectoral fin and ending at caudal-fin base (stripe about 1.3 orbit diameter in width anteriorly, narrowing in middle of body to about half orbit diameter; body beneath yellow stripe light red with an indistinct, irregular, narrow, blue stripe; thorax light blue; head maroon, paler ventrally, the preopercular margin and edges of scales on opercle darker; iris red with a ring of blue; rays of median and pelvic fins blue; row of elongate scales at base of dorsal fin blue, green, yellow, and red; dorsal fin membranes pink and yellow (posteriorly yellow with irregular, pink-edged blue spots); margin of dorsal fin narrowly clear with a narrow pink submarginal band; membranes of caudal and anal fins pink and yellow, the scales at base of anal fin blue; membranes of pelvic fins pink; pectoral fins pale pinkish.

Color of female paratypes in alcohol: light brown with a faint longitudinal banding on body; a dark blue-green or deep blue spot or short diagonal bar at lower edge of pectoral-fin base; a blackish spot about size of pupil posteriorly on caudal peduncle just above lateral line; spines and rays of fins (except those of pectorals) light blue-green. Juveniles generally paler without the blue-green spot at the lower pectoral base; the black peduncular spot may be relatively large.

Color note taken of a 55.4-mm female paratype (BPBM 9265) shortly after being

collected: olive, suffused with purplish blue, becoming pale blue ventrally; 2 rows of faint, small, rose spots extending posteriorly from lower pectoral-fin base and ending at lower base of caudal fin; dorsal part of head yellowish to scaled region; tip of snout, mouth, and chin rosy; iris violet with inner and outer rings of red; a blackish spot edged in dull violet posteriorly on caudal peduncle above lateral line; a small faint dark spot at upper base of pectoral fin preceded by a diffuse bluish line which ends in a dark blue spot below and adjacent to lower pectoral-fin base; dorsal fin light orange, the tips of interspinous membranes pale, the membranes of soft portion with a reticulum of hyaline pale blue; a faint dusky streak on first 2 interspinous membranes of fin; basal row of scales of dorsal fin greenish; anal fin pale, very faintly marked with light orange and pale blue; caudal fin light greenish yellow with faint orange-red dots; pectoral fins pale salmon; pelvic fins with pale bluish rays and faintly yellow membranes.

Females often exhibit bright blue-green dots on upper half of body and postorbital head, and there may be a bright blue submarginal line on each interspinous membrane of the dorsal fin. The anterior upper part of the head is sometimes red. Juveniles have a prominent yellowish white spot dorsally on tip of snout; this becomes pale red in small females.

REMARKS. *Cirrhilabrus luteovittatus* is thus far known only from the Marshall Islands. All of the type specimens were collected in the Enewetak lagoon except one from Majuro. The author has observed it at Kwajalein, and it has been photographed underwater there by Nathan A. Bartlett. Arnold Y. Suzumoto, collection manager of the Division of Ichthyology of the Bishop Museum, observed it at Bikini. It is usually encountered in small aggregations on patch reefs or over rubble bottoms. The depths of collection ranged from 7.5–25 m.

The smallest mature female measures 49 mm SL and the largest 72.5 mm. Males range from 75.2–100.3 mm SL.

This species is named *luteovittatus* from the Latin *luteus* (yellow) and *vitta* (band or stripe) in reference to the conspicuous yellow stripe on the lower side of the male.

C. luteovittatus is most similar to *C. cyanopleura* (Bleeker), sharing the same meristic data, most of the same body and fin proportions, and similarity in color, particularly of females and juveniles. They differ in snout length (3.4–3.9 in head in *luteovittatus*, compared to 3.8–4.4 for *cyanopleura*) and in life color of males. The upper head and anterior body of *cyanopleura* is blue (red in *luteovittatus*), and *cyanopleura* of the Western Pacific lacks the broad yellow stripe on the side found on *luteovittatus*. *C. cyanopleura* is known from Indonesia, Philippines, Taiwan, the Ryukyu Islands, and Belau (Randall and Shen, 1978), hence the Pacific Plate endemic has as its putative closest relative a Western Pacific (non Pacific Plate) species, as hypothesized by Springer (1982).

Cirrhilabrus balteatus new species
Plates I C,D; III D–F; Tables 1, 2, 4

Cirrhilabrus temminckii (non Bleeker) Schultz, 1960: 132, pl. 93 F,G (Bikini and Rongelap, Marshall Islands).

Cirrhilabrus sp. Randall and Randall, 1987 (Marshall Islands).

Table 4. Proportional Measurements of Type Specimens of *Cirrhilabrus balteatus* Expressed as a Percentage of the Standard Length

	Holotype	Paratypes								
	BPBM 9267	BPBM 17953	ZUMT 55207	BPBM 9264	BPBM 18430	BPBM 17957	CAS 58342	USNM 278975	BPBM 8195	BPBM 12187
Sex	♂	juv.	♀	intersex	♀	♂	♀	♀	♂	♂
Standard length (mm)	64.8	22.5	47.0	53.2	56.7	59.8	60.3	65.3	68.7	80.0
Body depth	27.4	28.4	29.4	27.7	27.1	28.7	30.0	30.6	29.9	29.2
Body width	13.1	13.1	14.3	13.8	12.7	14.6	14.7	13.8	13.8	13.8
Head length	31.3	35.5	33.8	33.1	32.1	32.7	31.6	30.6	30.8	31.6
Snout length	8.8	9.8	9.2	9.4	9.1	9.9	8.7	8.9	8.8	9.7
Orbit diameter	7.0	11.1	8.5	8.2	7.6	7.5	7.0	7.0	6.2	6.5
Interorbital width	7.8	8.2	7.9	8.1	7.7	7.7	7.5	7.8	7.9	7.9
Caudal peduncle depth	13.8	14.9	14.9	14.1	13.9	14.3	14.6	14.5	14.7	14.0
Caudal peduncle length	17.2	14.2	16.6	16.7	16.8	16.7	18.5	18.7	18.6	18.6
Predorsal length	31.2	38.2	34.0	33.5	31.2	32.2	32.9	32.2	31.3	29.7
Preanal length	58.0	64.5	61.7	58.3	61.2	60.2	57.8	57.1	56.5	56.3
Prepelvic length	32.3	37.3	35.5	33.3	32.3	31.9	31.7	31.3	31.3	32.5
Length of dorsal fin base	57.3	52.5	55.3	56.4	56.8	56.5	59.8	58.3	57.7	59.8
Length of first dorsal spine	7.6	7.8	7.2	7.5	6.7	7.2	7.7	7.1	7.7	7.1
Length of last dorsal spine	15.0	16.4	14.5	14.7	14.6	15.0	15.8	15.3	16.2	15.2
Length of longest dorsal ray	18.1	16.9	17.0	17.2	17.7	19.4	18.3	18.4	20.8	20.0
Length of anal fin base	26.1	25.7	26.4	26.5	26.4	26.6	27.2	26.4	27.4	28.3
Length of first anal spine	7.7	8.8	7.8	7.5	6.9	7.1	7.4	7.1	7.0	6.5
Length of third anal spine	12.5	14.6	13.4	13.2	12.2	12.8	12.7	12.2	11.7	11.6
Length of longest anal ray	17.0	17.8	16.7	17.4	17.3	21.4	18.2	17.1	22.1	22.2
Caudal fin length	25.4	28.4	27.0	24.8	25.4	25.9	25.2	24.6	24.8	25.0
Pectoral fin length	20.8	18.7	19.2	21.1	19.4	20.1	19.4	19.5	20.0	21.3
Pelvic spine length	12.0	13.3	11.7	11.8	11.9	11.8	12.8	11.9	12.9	11.1
Pelvic fin length	46.0	18.0	21.7	26.2	31.6	49.8	34.8	34.8	47.9	50.5

HOLOTYPE: BPBM 9267, male, 64.8 mm, Marshall Islands, Enewetak Atoll, Enewetak I, coral and rubble patch in lagoon off marine pier at N end of island, 7.5 m, quinaldine, J. E. Randall, 16 Apr. 1968.

PARATYPES: BPBM 9272, 46.7 mm, same data as holotype; BPBM 9264, 2: 49.6–53.2 mm, same locality, spear, Randall, 23 Apr. 1968; BPBM 8195, 68.7 mm, Enewetak I, off POL pier, rubble bottom in 3–21.5 m, rotenone, G. R. Allen, 5 Sept. 1968; AMS I.25967–001, 59.2 mm; ANSP 158182, 66.1 mm; BM(NH) 1986.5.29.1, 49.5 mm; CAS 58342, 60.3 mm; MNHN 1986–454, 53.3 mm; ROM 50582, 56.0 mm; USNM 278975, 65.3 mm; ZUMT 55207, 47.0 mm—all with same data as BPBM 8195; BPBM 12187, 80 mm, Enewetak, patch reef in lagoon off Chinimi I, 6 m, spear, Randall, 3 Feb. 1972; BPBM 17957, 59.8 mm, Enewetak, patch reef in lagoon off Japtan I, 18.5 m, spear, Randall, 12 Dec. 1974; BPBM 17953, 22.5 mm, Enewetak, patch reef in lagoon off Japtan I, 18.5 m, rotenone, Randall, R. M. McNair, and P. Lamberson, 13 Dec. 1974; BPBM 18430, 56.7 mm, Kwajalein Atoll, outside reef off small boat passage at S end of atoll, 12 m, spear, Randall, 18 July 1975; BPBM 30934, 4: 21.5–27.0 mm, Enewetak I, lagoon off Mid-Pacific Research Laboratory, dense bed of algae dominated by *Halimeda* and *Dictyota,* 21.5 m, rotenone, Randall, P. L. Colin, L. J. Bell, and S. Johnson, 24–25 Sept. 1982.

DIAGNOSIS. Dorsal rays usually XI,9; median predorsal scales 5; scales on cheek in 2 rows only anteriorly under eye (usually only 2 scales in lower row but there may be a double row of as many as 6 scales); gill rakers 15–18 (modally 16); body depth 3.25–3.7 in SL; pelvic fins of males very long, 2.0–2.2 in SL; adults with upper three-fifths of body abruptly darker than lower two-fifths, the upper part red or brownish red in females and blackish on males except for a broad zone of salmon pink in pectoral region; a longitudinal dark band in middle of dorsal and anal fins; a dark bar at pectoral-fin base.

DESCRIPTION. Dorsal rays XI,9 (I paratype with X,10); anal rays III,7 (holotype aberrant in soft ray count; all paratypes with 9 anal rays except 1 with 10); pectoral rays 16 (all paratypes with 15 rays except 1 with 14); lateral-line scales 17 + 6 (16–18 + 5–9); scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 6½; median predorsal scales 5; 2 rows of scales on cheek only anteriorly below orbit, the double row of scales in holotype and most paratypes consisting of 2 scales (but varying from 1 to 6 in other paratypes); upper row of cheek scales with 8 (7–9) scales; on 2 paratypes (1 with 5 and the other with 6 double rows of scales) the lower row of scales continues as a single row dorsal to the upper row (this lower row of each paratype consisting of 8 scales); gill rakers 17 (15–18).

Body elongate, the depth 3.65 (3.25–3.7) in SL, and compressed, the width 2.1 (1.95–2.2) in depth; head length 3.2 (2.8–3.25) in SL; dorsal profile of head nearly straight; snout 3.55 (3.25–3.7) in head; orbit diameter 4.5 (3.2–4.95) in head; interorbital space slightly convex, the bony width 4.0 (3.9–4.35) in head; depth of caudal peduncle 2.25 (2.1–2.4) in head.

Mouth small, terminal to slightly inferior, the maxilla reaching slightly posterior to a vertical through posterior nostril; dentition typical of the genus, the side of upper jaw of

holotype with 18 small conical teeth and the side of lower jaw with 19 teeth. Posterior margin of preopercle finely serrate, the holotype with 33 small serrae. Pores of cephalic lateralis system adjacent to ventroposterior half of orbit of holotype 17 on one side and 16 on other (plus 4 or 5 in same series extending anterior to orbit); 8 pores along margin of preopercle linking with 4 on mandible to front of chin; a series of 12 or 13 pores from above upper end of preopercle, passing dorsal to orbit, and ending in front of anterior nostril; a series of 9 pores on each side of head from first lateral-line scale to front of scaled part of nape, plus 2 middorsally; 2 additional middorsal pores in interorbital space.

Origin of dorsal fin above third lateral-line scale; first dorsal spine 4.1 (4.0–4.8) in head; remaining dorsal spines progressively longer, the last 2.1 (1.9–2.3) in head; seventh (sixth or seventh) dorsal soft ray longest, 1.75 (1.5–2.1) in head; origin of anal fin slightly anterior to a vertical at base of tenth dorsal spine; first anal spine 4.05 (4.05–4.85) in head; third anal spine longest, 2.5 (2.45–2.7) in head; seventh or eighth anal soft ray longest (except 22.5-mm juvenile for which the third and fourth rays are longest), the length 1.85 (1.4–2.0) in head; caudal fin rounded to slightly rhomboid, its length 3.95 (3.5 in juvenile, 3.7–4.05 in adults) in SL; third and fourth pectoral rays longest. 1.5 (1.5–1.9) in head; origin of pelvic fins below upper base of pectoral fins, the second ray longest (very prolonged in males, reaching to base of fifth or sixth anal soft rays), 2.2 (2.0–5.55) in head.

Color of holotype (a male) in alcohol: pale on head, lower two-fifths of body and on broad zone anterodorsally on body between verticals from bases of third to ninth dorsal spines; upper three-fifths of body anterior and posterior to this pale zone dark brown; dorsal and anal fins pale with a broad, longitudinal, dark brown band slightly above middle of these fins; caudal fin dusky with dark dots, those posteriorly in fin forming curved bands paralleling posterior margin; paired fins pale, the base of pectorals with a dark bar which is broader and more intensely pigmented dorsally; pelvic fins with a small dark spot at base of spine and first 2 soft rays.

Color of holotype shortly after being collected: head and body above level of lower edge of eye olive, largely overlaid with blackish except a large square region of salmon pink just behind pectoral-fin base, and extending from level of lower pectoral base to dorsal-fin base (except for a small area of olive in upper middle part); blackish region along side of postorbital head and body posterior to salmon pink region with small iridescent blue spots and some of salmon pink (the latter mainly in 3 groups, 2 dorsally on caudal peduncle and 1 beneath front of soft portion of dorsal fin); head and body beneath level of lower edge of eye bluish white; faint blue lines on snout, short curved ones behind eye, and a pale one rimming lower edge of orbit; a curved whitish band dorsally on nape at juncture of scaled and naked parts, and a straight one across front of interorbital space; iris light orange-red with some yellow; basal part of dorsal fin a mixture of greenish, blackish, and salmon, the distal part dusky red with a broad, blue-edged black band in median part of fin, the upper blue edge crossing diagonally through band anteriorly, ending nearly at base of first dorsal spine; margin of dorsal fin blue with a dark maroon submarginal line, the posterior soft portion with a yellowish line below the maroon; anal fin similar to dorsal but the basal part yellowish white, and the outer blue edge of the black band not crossing through the black band anteriorly; caudal fin with dusky rays, the membranes with irregular rows of blue spots and small dark-edged orange spots (spots of the same color join to

form alternating curved bands posteriorly in fin); posterior edge of fin narrowly bluish white; pectoral fins pale salmon with a triangular black bar at base; pelvic fins pale red over spine and first 3 soft rays, mainly light blue on the last 2 soft rays, with a small black spot basally on anterior half of fin.

Color of female paratypes in alcohol similar to males in having the dark bands of the dorsal and anal fins (faint on smaller specimens) and the dark bar at the pectoral-fin base, but dark upper part of body less marked, the large square pale area anteriorly on body not present, and the caudal fin pale.

Color of 47-mm female paratype (BPBM 9272) when fresh: head and body salmon pink above level of lower edge of eye, this region overlaid with dusky (but fine markings of salmon still apparent, especially ones outlined in dusky to form a longitudinal series of dashes following scale rows); a small blackish spot posteriorly on side of caudal peduncle just above lateral line; upper part of snout and anterior interorbital space yellowish; a small pale yellowish spot dorsally at tip of snout; iris pale violet with an inner ring of orange-red; dorsal and anal fins pale reddish with a faint dusky median band edged in pale blue, the dorsal with a slight concentration of dark pigment on first interspinous membrane; caudal fin pale orange-yellow with orange dots that tend to form rows; paired fins orangish, the pectorals with a narrow, triangular, black spot at base.

An underwater photograph of an adult female taken by the author at Enewetak shows a series of irregular salmon pink lines dorsally on the head and body: a double one dorsally on snout, 1 across interorbital space, 2 on nape, 3 below dorsal fin, and 2 on caudal peduncle.

REMARKS. *Cirrhilabrus balteatus* is known from the atolls of Enewetak, Bikini, Rongelap, and Kwajalein in the Marshall Islands. It might be expected from the Gilbert Islands (Kiribati) as well. It occurs in both the lagoon and outer-reef areas; it has been taken in the depth range of 7.5–21.5 m.

The smallest mature female specimen measures 46.7 mm SL; one of 47.0 mm SL is fully ripe. Specimens of 21.5–27 mm SL are immature. No specimens in the size range of 28–46 mm SL were collected. The largest female measures 56.7 mm SL. The smallest male is 59.8 mm SL, and the largest 80 mm SL.

The species is named *balteatus* from the Latin *balteus* for girdle or belt, in reference to the broad salmon pink zone dorsoanteriorly on the body of the male.

Of the described species of *Cirrhilabrus, balteatus* is most closely related to *C. temminckii* Bleeker. Both have the same head shape and caudal-fin shape, and the males of both have extremely long pelvic fins. They share certain features of color, especially in the female phase. Females of both species have a red upper and abruptly white lower part of the body, a blue-edged blackish band in the dorsal and anal fins, a dark bar at the pectoral base, and a small dark spot anteriorly at the base of the pelvic fins. The species differ in body depth, that of *temminckii* deeper (3.0–3.3 in SL, compared to 3.25–3.7 for *balteatus*), in the pattern of scales on the cheek (double row of scales under the eye for 5 scales or more on *temminckii*), and in color of the male. *C. temminckii* lacks the broad salmon pink zone anteriorly on the body; instead it has a red band from the tip of the snout through the upper part of the orbit and along the base of the dorsal fin.

Cirrhilabrus rhomboidalis new species
Plates II A,B; III G; Tables 1, 2, 5

Cirrhilabrus sp. Randall and Randall, 1987 (Marshall Islands).

HOLOTYPE: BPBM 19970, male, 67.0 mm, Marshall Islands, Kwajalein Atoll, outside reef at S end of atoll 50 m SE of small boat passage, 70° drop-off, sand and dead coral in 40 m, spear, J. E. Randall, 8 April 1976.

PARATYPES: BM(NH) 1986.5.29.8, 44.4 mm, same locality as holotype, 38–40 m, spear, Randall, 18 July 1975; USNM 278972, 60.7 mm, same data as preceding; BPBM 18439, 55.5 mm, same data as preceding except date, 19 July 1975.

DIAGNOSIS. Dorsal rays XI,9; median predorsal scales 5; gill rakers 16–17; body depth 3.0–3.3 in SL; caudal fin rhomboid, its length 2.85–3.4 in SL; pelvic fins of males 3.0–4.1 in SL; head and anterior body with irregular, longitudinal, dark lines (blue in life); a broad, dark, submarginal band in dorsal fin.

DESCRIPTION. Dorsal rays XI,9; anal rays III,9; pectoral rays 15; lateral-line scales 17 + 6 (17 + 6 or 7); scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 6½; median predorsal scales 5; rows of scales on cheek 2, the uppermost (adjacent to lower and posterior edge of orbit) with 6 (6–7) scales, and the lowermost with 8 (7) scales; gill rakers 17 (16–17).

Body moderately elongate, the depth 3.0 (3.0–3.3) in SL, and compressed, the width 2.35 (2.1–2.3) in depth; head 3.1 (2.95–3.1) in SL; dorsal profile of head nearly straight; snout 3.8 (3.7–3.8) in head; orbit diameter 4.35 (3.8–4.05) in head; interorbital space convex, the bony width 4.1 (4.0–4.4) in head; depth of caudal peduncle 2.1 (2.0–2.1) in head.

Mouth small, slightly inferior, the maxilla reaching to below posterior nostril; dentition as for the genus, the side of upper jaw of holotype with 22 small conical teeth and the side of lower jaw with 15. Posterior preopercular margin of holotype with 31 small serrae. Pores of cephalic lateralis system adjacent to ventroposterior half of orbit 17 on one side of holotype and 13 on the other (4 additional pores of suborbital series anterior to front edge of orbit); a series of 6 pores along margin of preopercle, linking with 4 on mandible ending at front of chin; a series of 9 pores from first lateral-line scale to front of scaled part of nape; 3 small pores forming a triangle in midinterorbital space.

Origin of dorsal fin above base of third lateral-line scale; first dorsal spine 4.2 (4.2–4.3) in head; remaining dorsal spines progressively longer, the last 2.0 (2.05–2.15) in head; seventh dorsal soft ray longest on holotype and male paratype, sixth on female paratypes, the length 1.45 (1.75–1.8) in head; origin of anal fin below base of tenth dorsal spine; first anal spine 4.15 (4.15–4.65) in head; third anal spine longest, 2.4 (2.4–2.5) in head; seventh anal soft ray longest, 1.35 (1.65–1.75) in head; caudal fin rhomboid, its length 2.85 (3.25–3.4) in SL; third and fourth pectoral rays longest, 1.5 (1.5–1.7) in head; origin of pelvic fins below lower pectoral-fin base; second pelvic ray longest, espe-

Table 5. Proportional Measurements of Type Specimens of *Cirrhilabrus rhomboidalis* Expressed as a Percentage of the Standard Length

	Holotype	Paratypes		
	BPBM 19970	BMNH 1986.5.29.8	BPBM 18439	USNM 278972
Sex	♂	♀	♀	♂
Standard length (mm)	67.0	44.4	55.5	60.7
Body depth	33.5	30.1	33.6	31.6
Body width	14.3	14.2	14.9	13.7
Head length	32.4	34.0	32.7	32.5
Snout length	8.5	9.2	8.7	8.5
Orbit diameter	7.5	9.0	8.1	8.2
Interorbital width	7.9	7.7	8.0	8.1
Caudal peduncle depth	15.2	14.2	16.0	14.4
Caudal peduncle length	15.4	16.2	16.4	16.5
Predorsal length	33.4	34.9	32.8	34.6
Preanal length	61.1	59.7	59.6	60.4
Prepelvic length	35.0	34.5	33.8	33.0
Length of dorsal fin base	59.6	58.1	60.1	57.5
Length of first dorsal spine	7.7	7.9	7.7	7.6
Length of last dorsal spine	16.0	16.1	16.0	15.0
Length of longest dorsal ray	22.7	18.0	18.1	18.3
Length of anal fin base	27.8	25.0	26.4	26.4
Length of first anal spine	7.8	7.3	7.9	7.9
Length of third anal spine	13.4	13.4	13.5	12.9
Length of longest anal ray	23.3	19.3	19.0	19.8
Caudal fin length	34.9	29.2	30.3	30.7
Pectoral fin length	21.6	20.0	21.5	20.1
Pelvic spine length	12.2	12.9	13.4	11.7
Pelvic fin length	33.6	19.2	22.4	24.4

cially in the large male holotype where it reaches to base of second anal soft ray, the fin length 3.0 (4.1–5.2) in SL.

Color of holotype (a male) in alcohol: head and anterior fourth of body dark brown (except dorsally on snout and interorbital space which is light brown), the side of head and anterior body with irregular, longitudinal, pale lines (very irregular on opercle and lower head) which are narrower than dark interspaces, these lines breaking into series of small spots on body; rest of body pale except for a broad dark brown zone above base of anal fin; dorsal fin dusky with short diagonal pale lines, a black area on basal scaled part of first 5 interspinous membranes, and a narrow pale margin and a broad dark brown submarginal band (absent from first three membranes and faint on fourth); anal fin with a faint irregular longitudinal banding of light brown and pale; caudal fin dusky with narrow diagonal pale bands parallel with posterior margin of fin, the centrobasal part dark brown; paired fins pale.

When fresh the dark brown areas of the holotype were blue, the pale posterior part of the body light yellowish gray, and the pale lines yellow to yellow-orange; the posterior

three-fourths of body had numerous short segments and dots of yellow-orange (see Plate II B). In life the blue color of large males is brighter, and the yellow markings lighter; the dorsal part of the head is suffused with yellow (Plate III G).

Female paratypes are paler but still have irregular dark lines on the side of the head and anterior body; there is no dark area basally in the anterior part of the dorsal fin nor any broad zone of dark brown above the base of the anal fin; all fins are pale except for a submarginal dusky band in the spinous portion of the dorsal fin.

When fresh, females have the same alternating longitudinal lines of blue and yellow on the head and anterior body, but these are less irregular than on males; the posterior three-fourths of the body is salmon pink, shading to lavender ventrally, with short yellow-orange segments and indistinct narrow bluish stripes (Plate II A).

REMARKS. This species is known from only 4 specimens from the outer reef slope at the south end of Kwajalein Atoll, Marshall Islands in depths of 38–40 m. It was not observed at Enewetak in spite of more extensive diving there. It should be pointed out, however, that this species seems more inclined to stay near the substratum than the other Marshall Islands species of the genus, hence is not so easily seen.

C. rhomboidalis is named from the Latin *rhombus* (and Greek *rhombos*) for a parallelogram of unequal angles, in reference to the shape of the caudal fin.

This *Cirrhilabrus* seems to be most similar to *C. lineatus* Randall and Lubbock (1982), known from New Caledonia, the Loyalty Islands, and the Great Barrier Reef, hence a non-Pacific Plate species. Both have a linear color pattern which is most evident anteriorly, the same meristic data (though more specimens might demonstrate a modal difference of 1 in gill-raker count), and similar fin and body proportions. They differ in the larger eye of *lineatus* (when equal-sized fishes are compared) and in a rounded and shorter caudal fin in *lineatus* (3.3–3.7 in SL compared to 2.85–3.5 for *rhomboidalis*). The dark lines of *lineatus* are straighter, and they are narrower than the interspaces (which are lavender-pink in life, not yellow).

Cirrhilabrus johnsoni new species
Plate II C; Tables 1, 2, 6

Cirrhilabrus sp. Randall and Randall, 1987 (Marshall Islands).

HOLOTYPE: BPBM 30639, male, 43.0 mm, Marshall Islands, Kwajalein Atoll, Bigej-Mack reef in lagoon (8°58′N, 167°44′E); dense bed of algae (*Halimeda, Padina, Caulerpa, Dictyota*) in 18.5–27.5 m, rotenone, J. E. Randall, D. S. Johnson, and L. J. Bell, 18 Sept. 1982.

PARATYPES: BPBM 28752, 8: 23.5–41.7 mm, same data as holotype; BPBM 28765, 13: 18.8–45.7 mm, same locality as holotype, Randall, Johnson, Bell, and M. Alderson, 19 Sept. 1982; AMS I.25966-001, 2: 27.0–43.0 mm, ANSP 158181, 2: 26.5–44.5 mm, BM(NH) 1986.5.29.6–7, 2: 28.5–46.0 mm, CAS 58343, 2: 29.0–40.1 mm, MNHN 1986–455, 2: 26.0–37.5 mm, ROM 50583, 2: 27.1–35.0 mm; USNM 278974, 2: 25.0–43.6 mm, ZUMT 55208–9, 2: 29.5–44.5 mm—all with same data as preceding; BPBM 29128, 41.5 mm, Marshall Islands, Enewetak Atoll, lagoon off Mid-Pacific Re-

Table 6. Proportional Measurements of Type Specimens of *Cirrhilabrus johnsoni* Expressed as a Percentage of the Standard Length

	Holotype	Paratypes							
	BPBM 30639	BPBM 28765	BPBM 28765	BPBM 28765	BPBM 28765	BPBM 28765	CAS 58343	USNM 278974	BPBM 28765
Sex	♂	immature	♀	♀	♀	♀	♂	♂	♂
Standard length (mm)	43.0	18.8	26.2	28.0	31.5	36.0	40.1	43.6	45.7
Body depth	30.7	32.5	32.0	31.8	32.4	30.6	31.7	31.4	31.0
Body width	14.0	15.4	15.8	15.9	15.7	15.6	14.8	15.2	14.5
Head length	34.0	37.5	35.7	35.8	34.9	34.0	33.4	33.7	33.4
Snout length	9.3	10.4	10.8	10.2	9.5	9.7	9.5	9.2	8.9
Orbit diameter	8.8	12.2	11.5	11.1	10.4	9.3	9.0	8.8	8.6
Interorbital width	7.7	8.5	8.4	8.2	8.2	8.1	7.8	7.7	7.9
Upper jaw length	8.3	8.8	8.9	8.3	8.9	8.4	8.6	8.7	8.4
Caudal peduncle depth	15.2	16.7	14.9	14.3	15.5	14.7	15.2	15.3	14.9
Caudal peduncle length	14.7	13.6	12.9	13.4	14.3	14.4	14.5	14.9	15.3
Predorsal length	34.4	39.3	39.1	39.2	37.8	35.6	35.2	35.0	35.2
Preanal length	62.8	67.7	68.4	69.0	65.7	62.5	63.9	61.6	63.6
Prepelvic length	37.0	42.5	42.4	39.7	39.0	36.7	37.6	37.4	37.1
Length of dorsal fin base	56.2	47.1	49.7	53.6	53.9	55.7	55.1	56.2	56.3
Length of first dorsal spine	7.4	8.0	7.9	7.2	7.9	7.8	7.8	7.7	7.7
Length of last dorsal spine	16.1	14.4	15.2	14.6	14.9	15.2	16.2	15.6	16.8
Length of longest dorsal ray	18.7	17.0	16.3	16.7	16.5	17.2	19.7	18.3	19.6
Length of anal fin base	25.6	21.3	22.5	22.8	23.0	24.9	25.0	25.3	26.2
Length of first anal spine	9.2	9.6	8.8	7.5	7.7	8.4	7.7	7.8	8.4
Length of third anal spine	12.8	14.4	13.4	13.4	13.3	13.0	12.9	12.7	12.7
Length of longest anal ray	15.1	16.2	15.7	15.0	15.8	16.1	15.2	15.2	15.3
Caudal fin length	42.1	29.7	27.8	28.2	28.3	30.5	41.6	41.7	39.0
Caudal concavity	18.2	–	–	–	0.5	2.8	17.9	18.1	15.6
Pectoral fin length	20.4	18.9	19.4	20.3	19.7	21.4	20.2	20.6	20.5
Pelvic spine length	11.7	13.3	13.0	13.6	13.5	13.3	12.7	13.1	11.6
Pelvic fin length	23.2	18.3	19.1	18.5	19.0	21.1	23.7	24.5	23.6

search Laboratory, dense bed of algae dominated by *Halimeda*, 24.5 m, spear, P. L. Colin, 6 Oct. 1982; BPBM 29249, 46.7 mm, same locality and collector as preceding, 24 m, 24 Aug. 1983.

DIAGNOSIS. Dorsal rays XI,9; median predorsal scales 5; gill rakers 13–16; body depth 3.1–3.25 in SL; interspinous membranes of dorsal fin of males elevated well above spine tips; caudal fin of females truncate to emarginate, of males strongly lunate, the caudal concavity as great as 1.85 in head; pelvic fins not long, 4.4–5.4 in SL; females light red, paler ventrally, with very faint, narrow, pale bars; males orange-yellow with 3 purple lines on head which are continuous with 2 diagonal ones anteriorly on body, and 1 along base of dorsal fin; a longitudinal purple line posteriorly on lower side of body and base of caudal fin; median and pelvic fins bright red with blue posterior margins (forming a crescent centroposteriorly in caudal fin); a black spot anteriorly in dorsal fin continuing as a faint longitudinal blackish streak in fin.

DESCRIPTION. Dorsal rays XI,9; anal rays III,9 (1 of 37 paratypes with III,10); pectoral rays 15 (1 paratype with 14 and 1 with 16); lateral-line scales 17 + 7 (15–17 + 5–7); scales above lateral line to origin of dorsal fin 2 (1½–2); scales below lateral line to origin of anal fin 6½ (6–6½); scale rows on cheek 2, the upper row with 6 (6–9) and the lower row with 8 (6–8) scales; gill rakers 14 (13–16).

Body moderately elongate, the depth 3.25 (3.1–3.25) in SL, and compressed, the width 2.2 (1.95–2.15) in depth; head length 2.95 (2.65–3.0) in SL; dorsal profile of head convex; snout 3.65 (3.3–3.75) in head; interorbital space moderately convex, the bony width 4.4 (4.15–4.4) in head; depth of caudal peduncle 2.25 (2.2–2.5) in head.

Mouth small, terminal to slightly inferior, the maxilla reaching slightly posterior to a vertical through posterior nostril; dentition typical of the genus (holotype unusual in having 4 canines anteriorly on one side of upper jaw), the holotype with 18 upper and 21 lower conical teeth along side of jaws. Serrae on posterior margin of holotype 32. Pores of cephalic lateralis system adjacent to ventroposterior half of orbit of holotype 13 (plus 4 of the same series on side of snout anterior to orbit); 8 pores along edge of preopercle linking with 4 on mandible to front of chin; a series of 9 pores from above upper end of preopercle, passing over orbit, to front of anterior nostril; a series of 9 pores anterior to first lateral-line scale to front of scaled area of nape, plus 1 of the same series middorsally; 1 pore middorsally in interorbital space.

Origin of dorsal fin over base of third lateral-line scale; first dorsal spine 4.6 (4.3–4.95) in head; remaining dorsal spines progressively longer, the last 2.1 (2.0–2.45) in head; interspinous membranes of dorsal fin of males elevated above spine tips by a distance about equal to a third of the spine lengths; first dorsal soft ray of males longest (third to sixth rays of females longest), the length 1.8 (1.7–2.2) in head; origin of anal fin below base of tenth dorsal spine; first anal spine 3.7 (3.9–4.8) in head; third anal spine longest, 2.65 (2.6–2.7) in head; third to fifth anal soft rays subequal, the longest 2.25 (2.1–2.4) in head; caudal fin of females truncate to emarginate, of males lunate, the fin length 2.4 (2.4–3.6) in head; caudal cancavity of males 1.85 (1.85–2.15) in head; third pectoral ray longest, 1.65 (1.6–2.05) in head; origin of pelvic fins below middle of pectoral-fin base, the fin length 1.45 (1.4–2.05) in head.

Color of holotype (a male) in alcohol: pale with a narrow dusky band just beneath peduncular part of lateral line and continuing faintly anterior and slightly ventral to it; a narrow dusky band at base of dorsal fin, becoming broad and diffuse on side of nape; a slightly diagonal, diffuse, dusky band from anterior part of lateral-line nearly to below tip of pectoral fin, and another from anterior lateral line to below basal part of pectoral fin; a dusky diagonal line from center of anterior edge of orbit to side of mouth; a large, slightly dusky, triangular area dorsally on snout, the apex of tip of snout, the base continuous with slightly dusky coloration of interorbital space; a broad, median longitudinal blackish band covering most of dorsal fin, becoming solid black on first membrane (where it covers all but a basal triangular part of membrane) and anterior part of second membrane; blackish band also more strongly pigmented on posterior 3 or 4 membranes and as a submarginal line more anteriorly in soft part of fin; anal fin pale with a diffuse, dusky, median longitudinal band (progressively darker posteriorly), a narrow pale margin, and black submarginal line; caudal fin pale with a narrow, crescentic, hyaline zone centroposteriorly in fin, preceded by a semicircular black area with 7 tongues of dark pigment extending anteriorly, 1 on each membrane; paired fins pale.

Color of holotype when fresh: orange-yellow, shading ventrally to yellowish white, the dusky bands mentioned above purple (those of the head lighter than the caudal-peduncular and dorsal-base bands); a narrow lavender band from corner of mouth through lower part of eye, across cheek, to pectoral-fin base; a second band starting from chin and running below and parallel to the aforementioned; a faint, third, narrow band below it; narrow blue lines dorsally on snout, interorbital space and unscaled part of nape; iris orange-yellow; dorsal and anal fins bright red with a median blackish band as described above and a narrow blue margin which becomes broader and submarginal posteriorly; scaled basal part of caudal fin colored like body, the unscaled bright red with a broad centroposterior hyaline band preceded by a crescentic area of bright blue edged anteriorly in blackish, with anterior extensions of blue; pectoral fins hyaline with an orange bar at base containing a lavender line; pelvic fins red, becoming bluish white on last 2 rays.

Color of female paratypes in alcohol: pale, the smallest specimens (less than 26 mm SL) with a small dusky spot posteriorly on lateral line half way between lateral line and dorsal margin of peduncle.

Color of female paratypes when fresh: body light red-orange with faint dotted lines of bluish white edged in lavender, and very faint, narrow, irregular, yellowish white bars (a diffuse one on nape, 3 below dorsal fin, 1 on caudal peduncle, and 1 on caudal-fin base); head yellowish with reddish-edged narrow blue lines on snout and unscaled part of nape and narrow, lavender stripes on postorbital and ventral regions; median fins yellowish, the dorsal and anal with a hyaline margin, the dorsal and causal with some white dots basally; paired fins pale, the pectoral base with a dark orange bar containing a pale lavender band.

REMARKS. This species is presently known only from a unique lagoon habitat at the atolls of Kwajalein and Enewetak, a bed of very dense benthic algae, of which the genera *Halimeda, Caulerpa, Padina,* and *Dictyota* predominate, in the depth range of 18.5–27.5 m. It is a small species, hence easily takes shelter in the algae. The largest male measures 46.7 mm SL, and the smallest 37.7 mm. The largest female is 36.0 mm SL and the smallest mature female is 25.0 mm.

Other fishes collected with rotenone at the same stations with *C. johnsoni* include the

new *Paracheilinus* described below, *Apogonichthys perdix* Bleeker, *Siphamia fuscolineata* Lachner, *Asterropteryx ensiferus* (Bleeker), juvenile *Parupeneus barberinoides* (Bleeker), *Cheilinus bimaculatus* Valenciennes, *C. orientalis* Günther, *Pseudojuloides cerasinus* (Snyder), and *Sparisoma spinidens* (Quoy and Gaimard). All except the *Siphamia* represent new records for the Marshall Islands (Bruce and Randall, 1985; Randall and Randall, 1987; Randall, 1986), though not all are restricted to the algal bed habitat. Adults of *Mulloides pflugeri* Steindachner were attracted to the rotenone stations in which these small fishes were affected, and one was speared. It is also a new record for the Marshalls.

Cirrhilabrus johnsoni is named in honor of David S. Johnson, an underwater photographer at Kwajalein who first observed the species and assisted in collecting the type specimens.

C. johnsoni appears to have no close relatives among the described species of the genus. It is unique in its small size, the lunate caudal fin of the male, and its coloration.

Genus *Paracheilinus* Fourmanoir

Paracheilinus Fourmanoir, in Roux-Estève and Fourmanoir, 1955: 199 (type species, *Paracheilinus octotaenia* Fourmanoir, by original designation).

DIAGNOSIS. Dorsal rays IX (rarely VIII or X),11; anal rays III,9; pectoral rays 14 (rarely 13 or 15), the upper ray rudimentary, the second unbranched; pelvic rays I,5; principal caudal rays 13, the median 11 branched; scales cycloid; lateral line interrupted, the tubed scales 14–17 + 4–9; scales above lateral line to origin of dorsal fin 1½–2; scales below lateral line to origin of anal fin 6–7; median predorsal scales 5 (rarely 4 or 6); scale rows on cheek 2; circumpeduncular scales 16; branchiostegal membranes covered by 1 row of scales; snout and interorbital space naked; a row of elongate scales basally on dorsal and anal fins; gill rakers 12–18; branchiostegal rays 5; vertebrae 25; body depth 2.8–4.1 in SL; snout short, 3.3–4.8 in head; cornea of pupil divided nearly vertically into 2 round parts; mouth small, oblique, the maxilla not reaching a vertical front edge of orbit; side of lower lip with a thin, broad, ventrally directed flap; tongue short and rounded; upper jaw with 3 pairs of large canine teeth anteriorly, progressively larger laterally, the second and especially the third pairs strongly recurved; a pair of stout divergent to strongly recurved teeth in lower jaw; a row of small conical teeth behind anterior canines and along side of both jaws; no tooth at corner of mouth; posterior margin of preopercle finely serrate, the broadly rounded corner and ventral margin thin and membranous; dorsal and anal spines progressively longer posteriorly; one or more dorsal rays may be filamentous; caudal fin varying from rounded to lunate.

Key to the Species of *Paracheilinus*

1a. Caudal fin round 2
1b. Caudal fin emarginate to lunate 5
2a. No dorsal rays prolonged; gill rakers 16–18; body of adults with 8 continuous narrow dark stripes (only about 4 upper stripes visible in preserved juveniles) (Red Sea) . . . . . *P. octotaenia*
2b. One or more dorsal rays prolonged, at least in adults; gill rakers 13–17;

stripes, if present, not exceeding 5, only one of which extends full length of body 3

3a. Color pattern of longitudinal rows of dark dots and short dashes; ninth dorsal spine 5.4–6.2 in SL (Philippines) . . . . . *P. lineopunctatus*

3b. Color pattern not as in 3a; ninth dorsal spine 6.2–7.5 in SL 4

4a. Only the first dorsal soft ray prolonged in adults (at a SL of about 38 mm or more); penultimate dorsal soft ray of males 1.6–2.0 in head; a single short dark stripe under pectoral fin; gill rakers 13–15 (Indian Ocean) . . . . . *P. mccoskeri*

4b. Two to 4 dorsal soft rays prolonged in adults; penultimate dorsal soft ray of males 1.8–2.2 in head; 2 short dark stripes under pectoral fin; gill rakers 14–17 (Philippines) . . . . . *P. carpenteri*

5a. Adults with 2–6 dorsal soft rays prolonged as filaments; nonfilamentous rays of anterior half of dorsal fin approximately equal in length 6

5b. No dorsal soft rays prolonged as filaments; dorsal soft rays progressively longer to the eighth or ninth 7

6a. Body depth 3.0–3.25 in SL; tubed peduncular scales 5–9 (usually 6 or 7, rarely 5); pelvic fins 1.85–2.3 in head (Indo-Malayan region) . . . . . *P. filamentosus*

6b. Body depth 3.6–3.65 in SL; tubed peduncular scales 5–6 (rarely 6); pelvic fins 1.6–1.7 in head (Marshall Islands) . . . . . *P. bellae*, new species

7a. Body depth 3.2–3.3 in SL; caudal fin of adult males emarginate; third anal spine 3.5–4.15 in head; no dark markings on body of preserved specimens (Philippines). . . . . *P. angulatus*

7b. Body depth 3.4–4.1 in SL; caudal fin of adult males deeply lunate; third anal spine 1.8–2.55 in head; 6 longitudinal dark brown lines on anterior third of body of preserved specimens (Madagascar) . . . . . *P. hemitaeniatus*

Paracheilinus bellae new species
Plates II, D; III, H; Table 7

Paracheilinus sp. Randall and Randall, 1987 (Marshall Islands).

HOLOTYPE: BPBM 28751, male, 51.0 mm SL, Marshall Islands, Kwajalein Atoll, lagoon, Bigej-Mack Reef (8°58′N, 167°44′E); thick algal bed dominated by *Halimeda, Padina, Caulerpa,* and *Dictyota,* 18.5–27.5 m, rotenone, J. E. Randall, D. S. Johnson, and L. J. Bell, 18 Sept. 1982.

PARATYPES: BPBM 28764, 46.6 mm SL, same locality as holotype, 30.5 m, rotenone, Randall, Johnson, Bell, and M. Alderson, 19 Sept. 1982; USNM 278976, 51.8 mm SL, same locality as holotype, 30.5 m, spear, Randall, 19 Sept. 1982.

DIAGNOSIS. Dorsal rays IX,11; 5 or 6 dorsal soft rays of males very prolonged; caudal fin of males lunate with filamentous lobes; dorsal profile of head nearly straight; lateral-line scales 15 + 5 or 6 (usually 5); gill rakers 13–14; body depth 3.6–3.65 in SL; no dark markings on body of preserved specimens; spines and rays of fins of preserved male specimens violet (only basally on pectoral rays).

Table 7. Proportional Measurements of Type Specimens of *Paracheilinus bellae* Expressed as a Percentage of the Standard Length

	Holotype	Paratypes	
	BPBM 28751	BPBM 28764	USNM 278976
Sex	♂	♂	♂
Standard length (mm)	51.0	46.6	51.8
Body depth	27.9	27.5	27.6
Body width	13.1	13.3	11.8
Head length	30.8	31.2	31.0
Snout length	8.3	8.2	8.1
Orbit diameter	6.5	7.3	6.5
Interorbital width	7.1	7.0	7.1
Upper jaw length	7.9	8.0	7.8
Caudal peduncle depth	13.5	14.2	13.9
Caudal peduncle length	19.6	19.3	19.7
Predorsal length	29.9	31.1	30.6
Preanal length	55.7	56.7	55.0
Prepelvic length	35.0	35.4	35.3
Length of dorsal fin base	56.3	56.2	55.7
Length of first dorsal spine	3.9	5.7	3.9
Length of ninth dorsal spine	13.4	13.9	13.8
Length of first dorsal ray	59.3	broken	57.5
Length of second dorsal ray	11.8	38.2	11.2
Length of anal fin base	28.6	27.2	28.0
Length of first anal spine	8.3	8.6	8.7
Length of third anal spine	9.9	10.3	10.6
Length of longest anal ray	28.8	26.4	28.2
Caudal fin length	59.0	36.8	58.0
Caudal concavity	39.5	15.1	39.0
Pectoral fin length	21.4	20.8	21.0
Pelvic spine length	9.7	10.4	9.7
Pelvic fin length	18.5	19.3	18.5

DESCRIPTION. Dorsal rays IX,11; anal rays III,9; pectoral rays 14; principal caudal rays 13 (upper and lower rays unbranched); upper and lower procurrent caudal rays 5 (4 upper rays on 1 paratype), the most posterior segmented; lateral-line scales 15 + 6 (5 on other side) (15 + 5); scales above lateral line to origin of dorsal fin 1½; scales below lateral line to origin of anal fin 6; median predorsal scales 5; gill rakers 13 (14).

Body elongate, the depth 3.6 (3.6–3.65) in SL, and compressed, the width 2.1 (2.05–2.35) in depth; head 3.25 (3.2) in SL; dorsal profile of head nearly straight; snout 3.7 (3.8–3.85) in head; orbit diameter 4.75 (4.3–4.75) in head; interorbital space convex, the body width 4.35 (4.35–4.45) in head; depth of caudal peduncle 2.3 (2.2) in head.

Mouth small, terminal, and oblique, the maxilla approaching a vertical at front edge of orbit; pair of canine teeth anteriorly in lower jaw strongly recurved; side of jaws with a row of slender conical teeth (22 of these teeth on each side of upper jaw and 15 on lower

jaw of holotype). Gill rakers short, the longest contained 3 times in length of longest gill filament of first gill arch, and about 4.7 in orbit diameter of holotype. Posterior nostril directly anterior to upper bony edge of orbit, about twice as large as nearest pore; anterior nostril diagonally forward and downward from posterior nostril, with a fleshy rim and a posterior flap, the aperture smaller than posterior nostril; distance between nostrils contained 2.7 times in orbit diameter.

Posterior margin of preopercle finely serrate (13 serrae on holotype). Two rows of scales on cheek, the first from below front of orbit to behind middle of orbit consisting of 7 scales, the second, below and adjacent to it, of 6 scales; a row of large pointed scales on base of dorsal and anal fins; large scales covering basal half of caudal fin (as measured to end of middle caudal rays); no scales on base of paired fins except for a pointed midventral process of 2 scales extending posteriorly from base of pelvic fins.

Orbit encircled by 11 prominent pores of the cephalic lateralis system (not counting 1 anterior to posterior nostril); a small middorsal pore in interorbital space (2 on 1 paratype); an arc of 5 pores at edge of anterior scaled portion of nape which link on each side to front of lateral line; 2 pores above upper free edge of preopercle; pores of preopercular series obscure, but 4 on mandible prominent.

Origin of dorasl fin above second lateral-line scale; first dorsal spine short, 7.9 (5.5–7.95) in head; remaining spines progressively longer, the last 2.3 (2.25) in head; a slender filament at tip of each interspinous membrane of dorsal fin; first, third, fifth, seventh, and eighth soft rays of dorsal fin prolonged as simple filaments, the first ray longest, 1.7 (1.75) in SL; second, fourth, and sixth rays of holotype and largest paratype short and unbranched (except sixth ray of largest paratype which is branched at tip), the remaining rays branched, the last to base (see Remarks for discussion of dorsal soft rays of smallest male paratype); origin of anal fin below base of first dorsal soft ray; first anal spine 3.7 (3.55–3.6) in head; third anal spine 3.1 (2.9–3.0) in head; penultimate anal soft ray longest, 1.05 (1.1–1.2) in head; all anal soft rays branched, the last to base; caudal fin lunate, the 2 uppermost and 2 lowermost principal caudal rays prolonged as filaments; caudal fin length 1.7 (1.7–2.7) in SL, the caudal concavity 2.55 (2.55–6.6) in SL; pectoral fin length 1.45 (1.45–1.5) in head; upper 2 pectoral rays unbranched, the remaining rays branched; origin of pelvic fins below midbase of pectoral fins; pelvic fin length 1.65 (1.6–1.7) in head.

Color in alcohol: body pale without dark markings; brown lines dorsally on head, forming a near-complete circle at front of interorbital space and rear of snout, an arc at front of snout, and 2 middorsal streaks; a few dusky spots dorsally on nape; bony edge of orbit violet; bony preopercular margin faintly violet; spines and rays of median fins of the three type specimens (all males) violet; base of pectoral rays faintly violet.

Color of holotype when fresh: body and postorbital head a complex mixture of red, orange-yellow and dull blue-violet associated with the scales; iris with an outer ring of dark red and an inner ring of orange-yellow; snout and interorbital space orange-yellow with red-edged light blue bands; spinous portion of dorsal fin orange-yellow with irregular red-edged light blue markings; soft portion of fin an irregular mixture of red, orange-yellow and bluish, the rays dark purplish red; scales at base of dorsal and anal fins dull reddish violet; anal fin deep red with a bluish white margin; caudal fin red with a large centroposterior crescent of yellow, the rays dark purplish red; pectoral fins pale, the rays red-edged; pelvic fins purplish with pale blue on first and last membranes.

REMARKS. The 46.6-mm male paratype has only the sixth dorsal soft ray short, the second and fourth are filamentous. However, the second ray has narrowed and just broken below a point at half its length, but still held in place by membrane. This suggests that all the anterior soft rays of the dorsal fin become filamentous as the rays of males develop and later the prolonged outer part of the second, fourth, and sixth rays breaks off.

This species was seen only in dense algal beds in the lagoon of Kwajalein at depths of 18–31 m. It was more often observed in the deeper part of this range. Unfortunately no females or juveniles were collected, though a few were fleetingly seen before seeking cover in the algae. David S. Johnson obtained a color photo of a presumed female (see Plate III H). *Cirrhilabrus johnsoni* was much more common in the same habitat.

P. bellae is named in honor of Lori J. Bell, one of the collectors of the type specimens, in recognition of her research on Marshall Islands fishes.

This little wrasse is most similar to *P. filamentosus* Allen, differing in having a more slender body and longer pelvic fins than *filamentosus,* usually 5 tubed peduncular lateral-line scales (*P. filamentosus* has 5–9 peduncular scales, mostly 6; of 29 specimens in the Bishop Museum, only 1 has 5 peduncular lateral-line scales), and in color. *P. filamentosus* is known from Indonesia, New Guinea, Solomon Islands, and the Philippines. *P. bellae* as a Pacific Plate endemic also conforms to the hypothesis of Springer (1982) that its closest relative will be a species not found on the Pacific Plate.

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Addendum

M. Gawel recently collected a male of *Cirrhilabrus luteovittatus* on a reef in 10 m at Pohnpei, eastern Caroline Islands, thus a significant range extension from the Marshall Islands. The specimen, which measures 75 mm SL, is now deposited at the Bishop Museum under BPBM 32809.