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Three New Labrid Fishes Of the Genus *Cirrhilabrus* From the Southwestern Pacific

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THE GENUS *Cirrhilabrus* Temminck and Schlegel consists of a large assemblage of small wrasses of the tropical Indo-West Pacific region. It is characterized as follows: dorsal rays XI,9; anal rays III,9; a cirrus just behind tip of each dorsal and anal spine; 11 branched caudal rays; an interrupted lateral line, the dorsoanterior part with 15-18 pored scales and the peduncular part with 5-8 pored scales (plus one or 2 posterior to hypural plate); rows of scales on cheek one or 2; scales of thorax not notably smaller than those on side of body; small acute serrae on posterior margin of preopercle; 3 pairs of prominent canine teeth at front of upper jaw, the posterior 2 pairs larger and recurved; a single pair of canine teeth at front of lower jaw; no canine tooth at corner of mouth; sides of jaws with a row of small conical teeth; pharyngeal teeth conical to caniform; eye with scleral cornifications forming a double pupil (Springer and Randall, 1974); a moderately elongate body, the depth about 3-3.5 in standard length; branchiostegal rays 5; vertebrae 9 + 16.

These fishes tend to occur in aggregations on coral reefs or rocky or rubble bottoms. They feed on zooplankton about one to 2 m above the substratum. With the approach of danger they retire quickly to cover on the bottom. Males are larger and more colorful; during courtship they may flash iridescent colors, particularly pale blue or violet. Since no small males are found, it may be assumed that the large ones are a result of sex reversal. They are greatly outnumbered by females; each male appears capable of maintaining a large harem of females.

Norman (1957) stated that the genus *Cirrhilabrus* is represented by 2 species, *C. temminckii* Bleeker (the type species) and *C. cyanopleura* (Bleeker); however, he overlooked the Hawaiian *C. jordani* Snyder. Smith (1957) described a fourth species, *C. equisitus*, from East Africa (later shown to be wide-ranging in the Indo-Pacific). In recent years the number of recognized species in the genus has increased sharply. Springer and Randall (1974) described *C. rubriventralis* and *C. blatteus* from the Red Sea; Klausewitz (1976) described *Cirrhilabrichthys filamentosus* (=*Cirrhilabrus filamentosus*) from the Java Sea; Randall and Shen (1978) named *C. melanomarginatus* from Taiwan; Randall and Carpenter (1980) described *C. flavidorsalis, C. lubbocki* and *C. rubripinnis* from the Philippines; Shepard and Randall (MS) will name 4 new species from southern Japan.

1. Deceased September 1981.

The authors and colleagues have collected 3 more new species of *Cirrhilabrus* from New Caledonia, Loyalty Islands, Kenn Reef, and Great Barrier Reef which are described herein, thus bringing to 18 the number of species known in the genus. At least 7 more species of *Cirrhilabrus* remain to be described.

Type specimens of 2 of the new species have been deposited at the following institutions: Australian Museum Sydney (AMS); British Museum (Natural History), London [BM(NH)]; Bernice P. Bishop Museum, Honolulu (BPBM); California Academy of Sciences, San Francisco (CAS); Museum National d'Histoire Naturelle, Paris (MNHN); U.S. National Museum of Natural History, Washington, D.C. (USNM), and Western Australian Museum, Perth (WAM). The third species is known from a single specimen in the Bishop Museum.

In the description of the new species, data in parentheses refer to paratypes. Proportional measurements are given in Tables 1-3 as percentages of standard length. Many of the same measurements are presented in the text as quotients of the standard length, depth of body, or head length for convenience; these measurements are rounded to the nearest .05.

Standard length (SL) is measured from the anterior end of the snout in the median line (either upper lip or upper canines, whichever is more anterior) to the base of the caudal fin (posterior end of hypural plate). Head length is measured from the same anterior point to the posterior end of the opercular flap. Body depth is the greatest depth from the base of the dorsal spines to the ventral margin of the abdomen (correcting for any obvious malformation of preservation). Width of body is measured immediately posterior to opercular flap. Orbit diameter is the greatest fleshy diameter; interorbital width is the least bony width. The depth of the caudal peduncle is the least depth; the length of the caudal peduncle is measured horizontally between verticals at the rear base of the anal fin and base of caudal fin. The lengths of fin spines and rays are measured from their distal tips to the extreme bases; pectoral fin length is taken from the tip of the longest ray to the extreme base of this ray.

Counts of pectoral rays include the uppermost rudimentary ray. Gill-raker counts include rudiments.

Cirrhilabrus laboutei, new species

Plate I A, B; Table 1

Cirrhilabrus sp. Fourmanoir and Laboute, 1976, Poissons de Nouvelle Calédonie et des Nouvelles Hébrides, p. 121, figure on right (New Caledonia).

Holotype

BPBM 22595, 54.9 mm SL, female, New Caledonia, Bulari Pass (south of Nouméa), southeast side, 30 m, bottom mainly dead coral and coral rubble, rotenone, J.E. Randall and J.-L. Menou, 16 January 1979.

Paratypes

BPBM 15048, 2: 68.6-86.7 mm SL, Coral Sea, Kenn Reef, 7.5-12 m, back reef open area with a few boulders; D. R. Robertson, September 1970; USNM 211300, 55.0 mm SL, New Caledonia, off south end of island, Puetege Reef (22° 22′ S, 167° 8′ E), 25 m, spear, G. R. Allen, 15 June 1973; WAM P24952, 65.2 mm SL, Loyalty Islands, Uvéa Atoll, outer reef, G.R. Allen and W.A. Starck, II, 18 June 1973; AMS I.18093-002, 47.0 mm SL, Great Barrier Reef, Capricorn Group, southern end of One Tree Island reef, 15 m, R.H. Kuiter, 21 September 1974; BM(NH) 1975. 12.11.9-11, 3: 28.4-31.8 mm SL, New Caledonia, Grand Récif Oest, Fausse Passe de Uitoe, 50-55 m, coral on rubble, R. Lubbock, Y. Magnier and B. Naçeri, 20 March 1975; BPBM 22596, 9: 24.8-60.6 mm SL, CAS 44371, 34.2 mm SL, MNHN 1979-434, 63.2 mm SL, all with same data as holotype.

Description

Dorsal rays XI,9 (last branched to base); anal rays III,9 (one of 16 paratypes with 8; last branched to base); pectoral rays 15 (one paratype with 16 on one side; uppermost ray rudimentary, second unbranched); pelvic rays I,5; principal caudal rays 13 (upper and lower unbranched); upper and lower procurrent caudal rays 6; lateral-line scales 17 + 6 (plus one posterior to caudal base) (16-18 + 5-7); scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 6 (6-7); median predorsal scales 5; median preventral scales 7; circumpeduncular scales 16 (15 or 16, usually 16); first scale on cheek (under middle of eye) single, followed by 2 scales, one above the other, the remaining scales large and in one row (paratypes with 0 to 2 sets of double scales on cheek); gill rakers 18 (17-21); branchiostegal rays 5; vertebrae 9 + 16.

Depth of body 3.15 (3.05-3.45) in SL; width of body 2.25 (1.95-2.3) in depth; head length 3.1 (2.7-3.05) in SL; snout length 3.65 (3.5-4.2) in head; orbit diameter 3.85 (3.2-4.8) in head; interorbital space convex, the width 3.9 (3.75-4.7) in head; depth of caudal peduncle about equal to length, the least depth 2.15 (2.15-2.6) in head.

Mouth terminal (lower jaw projecting when mouth open), oblique, and small, the maxilla reaching a vertical at posterior nostril; 3 pairs of projecting canine teeth anteriorly in upper jaw, progressively longer and stronger posteriorly, the third pair recurved and outflaring (more so on larger individuals); lower jaw with a single anterior pair of projecting, slightly diverging, canine teeth; side of jaws with a row of small conical teeth, 16 (14-20) in upper jaw and 18 (16-22) in lower jaw; a row of small conical teeth anteriorly in jaws medial to anterior canines, this row extending a short distance medial to outer row of conical teeth at side of jaws.

Pharyngeal definition for 86.7-mm paratype: each triangular upper pharyngeal bone with 9 broad-based (in anterior-posterior direction) conical teeth, the distal ends slender and recurved, in approximately 4 rows (the first of a single tooth) with about 6 smaller conical teeth posteriorly; posterior limb of T-shaped lower pharyngeal bone with 2 rows of similar but slightly smaller broad-based (the bases curving anterior to tips) conical teeth, 11 in the posterior row, the most lateral the longest and most slender; median limb of lower pharyngeal bone with a single row of 7 slender conical teeth.

Lips not fleshy, the inner surface of upper lip plicate; side of lower lip with a broad, thin, ventrally projecting flap. Tongue short and broadly rounded. Longest gill raker contained about 2 times in longest gill filament, about 5.5 in orbit diameter.

Anterior nostril small, in a membranous tube with a pointed posterior flap, anterior to upper fourth of orbit; posterior nostril larger, oval, with a slight rim, obliquely dorsoposterior to anterior nostril, very slightly anterior to a vertical at front edge of orbit.

Ventral margin of preopercle free to a vertical anterior to front edge of pupil; posterior margin of preopercle free dorsally to level of center of eye; posterior margin of preopercle free dorsally to level of center of eye; posterior margin of preopercle with 23 small, acute, close-set serrae (number appearing to increase with size from 20 in 27-mm paratype to 32 in 86.7-mm paratype); rounded corner and ventral margin of preopercle thin and membranous.

Suborbital pores from midposteriorly to orbit to below front edge of orbit 14 (12-14), not counting double pores (a pair of pores perpendicular to orbit; not present in small specimens, but 5 pairs in 65.2-mm paratype and 7 pairs in 86.7-mm paratype); number of pores along free margin of preopercle 8 (plus 4 in mandibular series anterior to free edge of preopercle).

Scales cycloid; head scaled except snout, interorbital space, and ventrally; base of dorsal and anal fins with a row of large elongate scales, one per membrane, the longest (in middle of fins) reaching about three-fourths distance to spine or ray tips (these scales progressively smaller posteriorly on soft portion of fins); caudal fin with large scales basally, the very large median posterior scale reaching two-thirds distance to posterior margin of fin; pectoral fins scaleless; pelvic fins with 2 midventral scales extending posteriorly from between base of fins, the posterior one very long, nearly reaching tip of pelvic spines; axillary scale of each pelvic fin slightly more than half length of pelvic spine.

Origin of dorsal fin over second to third lateral-line scales; dorsal spines progressively longer

Table 1
Proportional Measurements of Type Specimens of *Cirrhilabrus laboutei* Expressed as a Percentage of the Standard Length

	Holotype	Paratypes							
	BPBM 22595	BPBM 22596	BM(NH) 1975.12. 11.9-11	BPBM 22596	BPBM 22596	BPBM 22596	BPBM 22596	WAM P24952	BPBM 15048
Standard length (mm)	54.9	27.0	30.4	32.9	52.5	58.9	60.6	65.2	86.7
Depth of body	31.6	29.0	32.2	32.7	29.4	31.5	31.4	29.1	31.1
Width of body	14.1	14.8	14.8	14.3	13.6	14.9	14.5	13.5	15.3
Head length	32.4	36.1	36.9	35.0	32.6	33.3	33.2	32.7	32.6
Snout length	8.9	9.6	8.8	9.1	9.3	9.4	8.9	9.3	9.2
Orbit diameter	8.4	11.2	10.9	10.3	8.5	8.5	8.1	7.6	6.8
Interorbital width	8.3	7.7	7.9	7.6	8.0	8.3	8.3	8.4	8.7
Depth of caudal peduncle	15.1	15.5	14.1	15.8	15.1	15.3	14.0	14.5	14.3
Length of caudal peduncle	14.8	13.0	12.9	15.2	15.0	15.3	14.3	15.6	15.0
Predorsal length	34.2	38.5	39.1	36.0	34.4	33.4	34.4	35.5	34.4
Preanal length	65.6	68.0	67.7	66.7	66.3	64.4	66.0	63.8	63.2
Prepelvic length	36.5	42.2	38.1	37.5	39.3	38.0	38.8	36.8	37.0
Length of dorsal fin base	57.9	48.6	52.6	52.3	54.0	58.2	57.6	55.2	56.3
Length of anal fin base	24.9	22.2	21.0	22.2	23.6	23.5	24.8	24.5	25.3
Length of first dorsal spine	7.0	8.5	7.9	8.2	7.2	7.0	7.3	7.6	9.2
Length of second dorsal spine	9.8	12.5	10.9	11.5	10.2	10.2	10.2	10.6	10.6
Length of longest dorsal spine	12.2	15.5	14.5	12.5	13.9	13.7	13.8	13.9	14.2
Length of longest dorsal ray	15.0	18.1	17.7	17.9	16.6	16.5	15.3	17.1	17.9
Length of first anal spine	8.2	10.4	8.6	8.5	7.7	8.3	8.4	9.7	abnormal
Length of second anal spine	11.9	15.8	13.1	13.8	13.2	12.2	11.9	13.3	13.2
Length of third anal spine	12.5	15.0	12.8	13.1	11.6	12.2	11.8	11.4	12.0
Length of longest anal ray	14.5	18.1	16.1	17.0	15.5	13.4	14.4	17.3	18.0
Length of caudal fin	26.1	27.9	29.6	27.9	27.8	25.5	25.1	26.4	26.8
Length of pectoral fin	20.0	18.3	20.4	19.8	20.1	21.7	19.7	21.6	23.6
Length of pelvic spine	11.6	14.7	12.9	13.0	11.8	11.4	11.5	11.5	10.7
Length of pelvic fin	17.1	18.7	17.1	18.1	17.2	17.1	16.5	17.4	17.1

posteriorly (though fifth to eleventh nearly equal), the first 4.65 (3.55-4.75) in head, the second 3.3 (2.9-3.25) in head, and the eleventh 2.65 (2.3-2.8) in head; cirri from behind tips of dorsal and anal spines extending slightly beyond spine tips in holotype and female paratypes; cirri more prolonged in males, those of anterior dorsal spines of largest paratype about one-third length of spines and those of second and third anal spines about equal to spine lengths; longest dorsal soft ray (fifth to eighth) 2.15 (1.8-2.15) in head; origin of anal fin below base of last dorsal spine; first anal spine 3.95 (3.35-4.3) in head; second anal spine 2.7 (2.3-2.8) in head; third anal spine 2.6 (2.4-2.9) in head; longest anal soft ray (fourth to eighth) 2.25 (1.8-2.5) in head; caudal fin rounded, 1.25 (1.15-1.3) in head; pectoral fins rounded, the fourth ray longest (but third and fifth nearly as long), 1.6 (1.4-1.95 in head; origin of pelvic fins below midbase of pectoral fins; pelvic spine 2.8 (2.45-3.05) in head; pelvic fins short, not reaching anus, 1.9 (1.9-2.15) in head.

Color of holotype (a female) in alcohol: body pale with 2 faint bluish stripes, one passing from upper end of caudal fin to beneath rear base of dorsal fin, the second from beneath basal part of pectoral fin, rising obliquely to middle of body where it continues straight along mid-lateral line to base of caudal fin (the 2 stripes joined anteriorly by a bluish band); a bluish band across and extending below base of pectoral fins; dorsal part of head and side of snout dusky with a middorsal pale line from upper lip to origin of dorsal fin, one on each side of middorsal line following center of scale row on nape and extending into interorbital space, and one on next ventral row of scales on nape (and faintly on back) passing through upper edge of orbit and continuing on side of snout to edge of upper lip; a large, diffuse, dusky patch just behind eye extending from above level of center of eye to below its lower margin; a large, more diffuse, dusky patch on opercle; a bluish streak (broader ventrally) just posterior to preopercular margin; fins pale except for a dusky spot anteriorly on dorsal fin (covering most of first membrane and part of second), and some dusky pigment distally on pelvic fin membranes; spines and rays of median fins faintly bluish (darkest on caudal rays).

Juveniles of 24.8-35 mm SL colored much like holotype but bluish stripes on body less evident, a dusky region between these stripes anteriorly, and a prominent dark brown spot posteriorly on caudal peduncle and base of caudal fin just above lateral line.

Color in alcohol of 86.7-mm male paratype: pale with 2 faint blue-green stripes as described for the holotype but with a fainter one in the broad anterior zone between the 2; a broad, dark brown area dorsally on head from upper lip, including all of interorbital space, and narrowing to origin of dorsal fin, this area faintly edged with a pale line on that part posterior to orbit; chin dusky; a horizontal dusky streak from corner of mouth across cheek, curving upward to join diffuse dusky patch on opercle; teeth bluish; dorsal fin dusky with a pale margin, blackish submarginal line, and some small pale spots posteriorly; anal fin dusky with a dark-edged pale band near base of fin, a pale margin, dark submarginal line, and 4 small pale spots posteriorly; caudal fin pale with 2 faint irregular dark lines paralleling curve of posterior border; pectoral fins pale; pelvic fins black except spine and extreme base which are pale.

Color of holotype when fresh: yellowish brown dorsally, white tinged with lavender ventrally, the bluish stripes and bands (as described for the preserved specimen) magenta; pale pink lines, edged with dusky magenta dorsally on head, one extending faintly from nape along base of dorsal fin to caudal fin base; a narrow magenta band passing from corner of mouth, below orbit, across preopercle, then angling obliquely upward to posterior edge of opercle at level of dorsal part of pectoral base; a broader magenta band from dorsal part of orbit to upper end of gill opening; iris pink with an inner rim of pale yellowish; dorsal fin tan, the extreme base magenta, the large basal scales partly dusky purplish, the margin pale bluish with a reddish submarginal line; a longitudinal series of 6 purple-edged, blue dashes in about middle of soft portion of dorsal fin; anal fin yellowish with a magenta band at base, a blue band below this, a purple-edged irregular blue band in about middle of fin, a pale bluish margin and dark reddish submarginal line; caudal fin faintly yellowish with a thin pale blue border, a dark submarginal line and 3 curved, irregular, dark-edged, blue lines or rows of spots paralleling curve of posterior border of fin; a broad, diagonal, diffuse, violet band dorsally and ventrally at extreme base of caudal fin; pectoral fins clear; pelvic fins bluish white, becoming blue distally.

The stripes on the 35-mm juvenile (Plate I A) were deep rose pink instead of magenta and the blue markings were lacking on the median fins.

D. Ross Robertson, who collected the 2 largest male paratypes at Kenn Reef, provided the following brief life color note: ground color light purplish-blue with markings of dark purplish-blue.

Remarks

This species is named in honor of Pierre Laboute whose underwater photo (in Fourmanoir and Laboute, 1976) was the first of this colorful wrasse. He advised the senior author where to collect specimens during the latter's visit to New Caledonia in 1979.

C. laboutei appears to be confined to the southwestern part of the Pacific; it is known at the present time from New Caledonia, Loyalty Islands, Kenn Reef, and the Great Barrier Reef. Our collections of this species have come from 30-55 m, but others were found between 7.5 and 15 m in depth.

The unique color pattern of *C. laboutei* readily distinguishes it from all other species of *Cirrhilabrus*. It is perhaps most closely related to *C. lineatus* (see Remarks of the following species account).

Cirrhilabrus lineatus, new species

Plate I C; Table 2

Holotype

BPBM 22593, 47.3 mm SL, female, New Caledonia, off south end of island, outside barrier reef west of Mato Pass, 30-40 m, rotenone, P. Laboute and J.-L. Menou, 13 January 1979.

Paratypes

BM(NH) 1975.12.11.1-5, 5: 19.6-45.4 mm SL, New Caledonia, Grand Récif Ouest, Fausse Passe de Uitoe, coral and rubble, 50-55 mm, rotenone, R. Lubbock, Y. Magnier, and B. Naçeri, 20 March 1975; CAS 47988, 23.9 mm SL, MNHN 1981-721, 25.8 mm SL, WAM P.27047.001, 22.0 mm SL, same data as preceding; AMS I.19476-015, 77.0 mm SL, Great Barrier Reef, Yonge Reef (near Lizard Island), drop-off, 40 m, explosives, R.H. Kuiter, 25 November 1975; BPBM 22592, 79.8 mm SL, Loyalty Island, Maré, steep drop-off, 40 m, rotenone, P. Laboute and Y. Magnier, 4 December 1975; USNM 226000, 79.6 mm SL, same data as preceding.

Description

Dorsal rays XI,9 (last branched to base); anal rays III,9 (last branched to base); pectoral rays 15 (one paratype with 16; uppermost rudimentary, second unbranched); pelvic rays I,5; principal caudal rays 13 (upper and lower unbranched); upper and lower procurrent caudal rays 6; lateral-line scales 16 + 6 (plus one posterior to caudal base) (15 + 4 – 17 + 6); scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 6 (6-7); median predorsal scales 5; median preventral scales 7; circumpeduncular scales 16; horizontal scale rows on cheek 2; gill rakers 18 (17-18); branchiostegal rays 5; vertebrae 9 + 16.

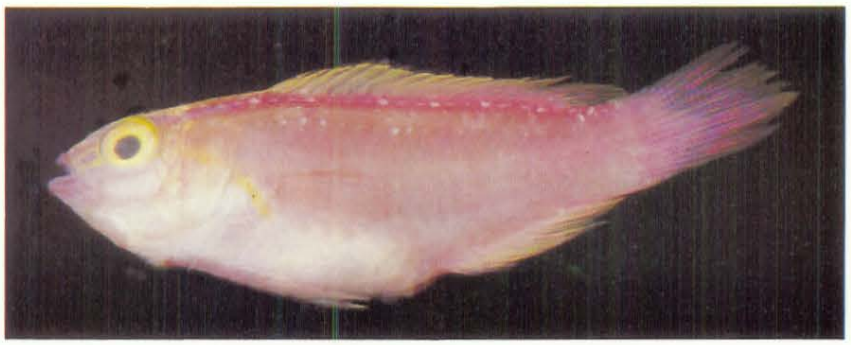
Depth of body 2.9 (2.9-3.1) in SL; width of body 2.3 (2.05-2.55) in depth; head length 2.75 (2.65-3.0) in SL; snout length 3.6 (3.5-4.5) in head; orbit diameter 3.85 (3.0-4.1) in head; interorbital space slightly to moderately convex, the width 4.2 (4.0-4.9) in head; depth of caudal peduncle slightly deeper than long in small individuals and slightly longer than deep in large ones, the depth 2.1 (2.25-2.45) in head.

Mouth terminal (lower jaw projecting when mouth open), oblique, and small, the maxilla reaching a vertical at anterior end of posterior nostril; 3 pairs of projecting canine teeth anteriorly in upper jaw, progressively longer posteriorly, the third pair recurved and outflaring

A. Paratype of *Cirrhilabrus laboutei,* juv., 35.0 mm SL, New Caledonia, BPBM 22956.

B. Holotype of *Cirrhilabrus laboutei,* ♀, 54.9 mm SL, New Caledonia, BPBM 22595.

C. Holotype of *Cirrhilabrus lineatus,* ♀, 47.3 mm SL, New Caledonia, BPBM 22593.



D. Holotype of *Cirrhilabrus roseafascia,* 46.3 mm SL, New Caledonia, BPBM 22551.

(more so on larger individuals); a single pair of projecting, slightly divergent canine teeth anteriorly in lower jaw; side of jaws with a row of small conical teeth, 16 (15-21) in upper jaw and 20 (17-22) in lower; a row of small conical teeth anteriorly in jaws medial to canines, this row extending a short distance medial to outer row of conical teeth at side of jaws.

Pharyngeal dentition of 79.8-mm paratype: similar to that of *C. laboutei*, each upper pharyngeal bone with 8 conical teeth, the distal ends of which are slender and recurved, and 7 smaller, blunter, conical teeth posteriorly; posterior limb of lower pharyngeal bone with 10 teeth in back row; median limb with a single row of 8 slender conical teeth.

Lips not fleshy, the inner surface of upper lip plicate, the side of lower lip with a broad, thin, ventrally-projecting flap. Tongue short and broadly rounded. Longest gill raker contained about 2.2 times in longest gill filament, about 6 in orbit diameter.

Anterior nostril small, in a membranous tube with a pointed posterior flap, in front of upper fourth of orbit; posterior nostril larger, oval, with a slight rim, obliquely dorsoposterior to anterior nostril, slightly anterior to a vertical at front edge of orbit.

Ventral margin of preopercle free anterior to a vertical at front of pupil; posterior margin of preopercle free dorsally to about level of center of eye; posterior margin of preopercle with 20 (17-22) small, acute, close-set serrae; rounded corner and ventral margin of preopercle thin and membranous.

Suborbital pores from midposteriorly to orbit to below anterior edge of orbit 14 (14-15; 2 double pores of 79.6-mm paratype counted as one), number of pores along free margin of preopercle 9 (8-9), plus 4 in mandibular series anterior to free edge of preopercle.

Scales cycloid; head scaled except snout, interorbital space, and ventrally; base of dorsal and anal fins with a row of large elongate scales, one per membrane, the longest (in middle of fins) reaching nearly three-fourths distance to spine or ray tips (these scales progressively smaller posteriorly on soft portions of fins); caudal fin with large scales basally, the very large median posterior scale reaching about two-thirds distance to posterior margin of fin; pectoral fins scaleless; pelvic fins with 2 midventral scales extending posteriorly from between base of fins, the posterior scale elongate, nearly reaching tips of pelvic spines; axillary scale of each pelvic fin about two-thirds length of pelvic spine.

Origin of dorsal fin over second to third lateral-line scales; dorsal spines progressively longer posteriorly, the first 4.25 (3.9-5.15) in head, the second 3.05 (2.95-3.8) in head, and the eleventh 2.45 (2.15-2.95) in head; cirri from behind tips of dorsal and anal spines not greatly prolonged; longest dorsal soft ray (usually the sixth) 2.1 (1.6-2.45) in head; origin of anal fin below tenth to eleventh dorsal spines; first anal spine 4.95 (4.45-6.05) in head; second anal spine 3.05 (2.95-3.6) in head; third anal spine 2.85 (2.65-3.2) in head; longest anal soft ray (fifth to seventh) 2.3 (1.55-2.4) in head; caudal fin rounded, 1.35 (1.15-1.35) in head; pectoral fins rounded, the third to fifth rays longest, 1.65 (1.35-1.95) in head; origin of pelvic fins below middle to upper base of pectoral fins; pelvic spine 2.6 (2.4-3.2) in head; pelvic fins short in females, elongate in males (reaching posterior to origin of anal fin), the length 1.85 (1.0-2.2) in head.

Color of holotype (a female) in preservative: pale with horizontal dark brown lines on head and body as follows: 2 on nape which join below origin of dorsal fin and continue as a band beneath dorsal fin, narrowing and breaking into a series of progressively fainter spots posteriorly, ending at upper base of caudal fin; one from upper edge of orbit to upper end of gill opening (a trace of pigment anteriorly on lateral line in alignment with this line); 2 from posterior edge of orbit, curving slightly dorsally as they pass onto body, the uppermost extending as a series of progressively fainter small spots to beneath posterior part of dorsal fin, the lower to about middle of body; a faint line on chin extending just below eye and darkening as it passes to edge of opercle at level of dorsal edge of pectoral base where it bifurcates, the upper part continuing on body parallel to previous lines and the lower part ending on midbase of pectoral fin; one from lower part of corner of preopercle to lower pectoral base in line with one from lower axil of pectoral which ends below distal end of pectoral fin; a short line from thorax below pectoral base to upper abdomen; faint horizontal broken lines anteriorly between the 4 dark lines on

Table 2
Proportional Measurements of Type Specimens of *Cirrhilabrus lineatus*
Expressed as a Percentage of the Standard Length

	Holotype	Paratypes					
	BPBM 22593	BM(NH) 1975.12. 11.1-5	BM(NH) 1975.12. 11.1-5	BM(NH) 1975.12. 11.1-5	BM(NH) 1975.12. 11.1-5	USNM 226000	BPBM 22592
Standard length (mm)	47.3	27.3	30.1	35.4	45.4	79.6	79.8
Depth of body	34.7	33.3	32.2	35.3	34.2	33.4	33.9
Width of body	15.0	14.3	14.0	15.3	16.7	13.2	13.2
Head length	36.5	37.7	36.2	36.7	36.4	33.5	34.8
Snout length	9.7	8.4	8.0	9.0	8.2	9.5	9.2
Orbit diameter	9.5	12.5	11.0	11.0	10.8	8.4	8.5
Interorbital width	8.7	7.7	7.5	8.2	8.6	8.4	8.1
Depth of caudal peduncle	17.3	15.8	14.6	16.4	15.0	14.9	15.1
Length of caudal peduncle	16.1	13.2	13.3	14.1	15.4	17.1	17.5
Predorsal length	36.2	39.6	37.9	38.1	37.9	35.2	34.8
Preanal length	65.2	69.6	68.1	63.8	67.2	64.7	64.8
Prepelvic length	36.8	38.1	40.5	36.4	37.2	37.4	37.1
Length of dorsal fin base	56.4	50.2	53.5	55.6	53.7	56.3	55.1
Length of anal fin base	24.8	22.0	21.6	22.3	21.1	25.0	24.3
Length of first dorsal spine	8.6	7.3	8.0	9.3	9.2	8.6	7.8
Length of second dorsal spine	12.0	9.9	10.6	11.0	12.1	11.3	11.3
Length of longest dorsal spine	14.8	12.8	13.0	13.3	14.8	15.6	15.0
Length of longest dorsal ray	17.4	15.4	15.9	16.4	18.0	20.8	19.1
Length of first anal spine	7.4	7.0	7.3	6.2	6.0	7.5	6.1
Length of second anal spine	12.0	11.0	12.3	11.9	10.6	10.4	9.7
Length of third anal spine	12.8	11.7	12.6	12.4	12.5	12.7	11.7
Length of longest anal ray	15.7	15.8	15.3	16.1	16.5	21.3	20.8
Length of caudal fin	27.0	29.7	26.9	29.7	30.2	28.9	28.8
Length of pectoral fin	22.4	20.6	19.3	20.6	22.0	25.2	24.9
Length of pelvic spine	14.1	12.7	11.3	12.7	12.2	13.1	14.4
Length of pelvic fin	19.8	17.2	17.3	17.2	broken	broken	34.5

side of body; a broad diffuse dark band on side of snout divisible into a darker upper part ending at orbit at level of upper edge of pupil and a lower part in line with lower part of pupil; fins pale except for a dusky band about two-thirds way out in spinous portion of dorsal fin, this band broadest and darkest anteriorly.

The 2 large male paratypes are colored similarly to the holotype, differing in the broken intermediate lines anteriorly on side of body being more distinct, the dark band dorsally on body more evident and continuing as a solid band to upper base of caudal fin, a similar but less distinct dark band from anal region to lower caudal base, and 3 curved rows of dusky spots in caudal fin.

Color of holotype when fresh: body lavender-pink, shading to white ventrally, the dark lines as described above purple; anterior part of head between purple lines yellow; a pale pink blotch on nape just posterior to interorbital space and a second smaller one anterior to dorsal fin origin; median fins yellow, the dark band in dorsal fin purple (actually violet, edged in deep blue); margin of dorsal fin clear light blue with a submarginal red line; a faint broken red line in spinous portion of dorsal fin between red submarginal line and purplish band (formed by an elongate red spot on each membrane); anal fin with a blue margin, reddish submarginal line and a row of dark-edged blue spots (2 rows posteriorly); caudal fin with 3 irregular curved rows of small dark-edged blue spots; pectoral fins clear, the rays edged in light red; pelvic fins pale bluish.

Color of a 77-mm specimen (presumed male) from the Great Barrier Reef from a photo taken by Rudie H. Kuiter: lavender-pink with purple lines (the centers of some lines on head lavender or blue); dorsal fin with a deep blue band anteriorly which narrows to a light magenta line posterior to seventh dorsal spine and breaks into dark-edged pale blue spots posteriorly (a few other similar spots below these); rest of fin largely yellow except for a broad zone or orange above magenta line between fourth dorsal spine and anterior soft portion of fin; margin of dorsal fin light blue with a red submarginal line, the cirri pink; anal fin orange-yellow with a blue margin, violet submarginal line, and a violet line from base of origin of fin passing to outer three-fourths of fin, breaking up to a series of diagonal lines in middle of fin; a few small dark-edged pale blue spots posteriorly in lower part of fin; caudal fin orange-yellow, shading to light orange distally, with a pale blue margin, narrow red submarginal line and irregular curved rows of magenta-edged small blue spots, the spots of the outer row nearly completely joined to form a solid line; pectoral fins hyaline with red-edged rays; pelvic fins pale bluish with a yellowish band on first ray.

Remarks

This species is named *lineatus* from the Latin *linea* for line, in reference to the numerous purple lines on the head and body of both females and males. Although some other species of *Cirrhilabrus* exhibit longitudinal bands, none are as narrow and dark nor as numerous as on this fish.

Our specimens of *C. lineatus* have come from New Caledonia, the Loyalty Islands, and Yonge Reef, Great Barrier Reef (14° 35′ S) in the depth range of 20-55 m.

Of the known species of *Cirrhilabrus*, *C. lineatus* appears most closely related to the sympatric *C. laboutei*, differing in having longer rays of the median and paired fins on the average (compare Tables 1 and 2), prolonged pelvic fins in the male, an apparent lower average gill-raker count, fewer preopercular serrae, and in color pattern.

Cirrhilabrus roseafascia, new species

Plate I D; Table 3

Holotype

BPBM 22551, 46.3 mm SL, New Caledonia, Bulari Pass (south of Noumea), 100 m, crab pot, M. Barro, 20 November 1978.

Description

Dorsal rays XI,9 (last branched to base); anal rays III,9 (last branched to base); pectoral rays 15 (uppermost rudimentary, second unbranched); pelvic rays I,5; principal caudal rays 13 (upper and lower unbranched); upper and lower procurrent caudal rays 7; lateral-line scales 16 + 5; scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 6; median predorsal scales 5; median preventral scales 7; circumpeduncular scales 15; scales on cheek in 2 horizontal rows anteriorly and one row (of large scales) posteriorly; gill rakers 16; branchiostegal rays 5; vertebrae 9 + 16.

Depth of body 3.2 in SL; width of body 2.45 in depth; head length 2.75 in SL; snout length 3.9 in head; eye relatively large, the orbit diameter 2.7 in head; interorbital space slightly concave medially, rounded at edges, the width 4.4 in head; caudal peduncle slightly deeper than long, the depth 2.2 in head.

Mouth terminal (lower jaw prominently projecting when mouth opened), oblique, and small, the maxilla reaching a vertical at front of posterior nostril; 3 pairs of projecting canine teeth anteriorly in upper jaw, progressively longer posteriorly, the third pair recurved and outflaring; a single pair of slightly diverging, projecting, canine teeth anteriorly in lower jaw; side of jaws with a row of small conical teeth (19 in upper jaw and 22 in lower); a row of small conical teeth anteriorly in jaws medial to anterior canines, this row extending a short distance medial to outer row of conical teeth at sides of jaws.

Lips not fleshy; inner surface of upper lip plicate; side of lower lip with a thin ventrally directed flap. Tongue short and rounded. Gill rakers short, the longest about 6 in orbit diameter.

Anterior nostril in a membranous tube with a pointed posterior flap, anterior to upper third of orbit; posterior nostril oval, relatively large, with a very slight rim, obliquely dorsoposterior to anterior nostril and very slightly anterior to a vertical at front edge of orbit.

Ventral margin of preopercle free anteriorly to below anterior fifth of orbit; posterior margin of preopercle free dorsally slightly above level of center of eye; posterior margin of preopercle with 41 close-set, acute serrae; rounded corner and ventral margin of preopercle thin and membranous.

Suborbital pores not paired; number of pores from midposterior edge of orbit to below anterior edge of orbit 16; number of pores along free margin of preopercle 8; mandibular pores anterior to preopercular series 4.

Scales cycloid; head scaled except snout, interorbital space, and ventrally; base of dorsal and anal fins with a row of large elongate scales, one per membrane; caudal fin with large scales basally, the very large median posterior scale pointed, reaching about half distance to posterior margin of fin; pectoral fins without scales; pelvic fins with 2 midventral scales extending posteriorly from between base of fins, the more posterior one very long, nearly reaching tips of pelvic spines; axillary scale of each pelvic fin about two-thirds length of pelvic spine.

Origin of dorsal fin over second lateral-line scale; dorsal spines progressively longer anterior to posterior, the first 4.3 in head, the second 3.4 in head, and the eleventh 2.5 in head (last 3 spines nearly equal in length); cirri from behind tips of dorsal and anal spines not greatly prolonged; longest dorsal soft ray (sixth to eighth subequal) 1.9 in head; origin of anal fin below bases of tenth and eleventh dorsal spines; first anal spine 4.3 in head; second anal spine 2.9 in head; third anal spine 2.6 in head; fifth anal soft ray longest, 2.0 in head; caudal fin rounded, 3.1 in head; pectoral fins 1.7 in head; pelvic spine 2.6 in head; origin of pelvic fins below midbase of pectoral fins; pelvic fins relatively short, not reaching anus, 1.8 in head.

Color in alcohol: head and body pale; 2 longitudinal violet streaks on each side of chin, one in front of the other; bones of jaws adjacent to bases of teeth faintly violet; soft rays of median fins violet; pelvic fins slightly dusky.

Color when fresh: pink, shading to whitish ventrally on abdomen, thorax, and ventral part of head; a narrow, deep-pink stripe along back beginning on nape, passing adjacent to base of dorsal fin, and ending dorsally on caudal peduncle, this stripe bisected by a line of white dashes, every third or fourth of which is expanded to a small oval white spot; a less distinct dotted

Table 3
Proportional Measurements of the Holotype of *Cirrhilabrus roseafascia* Expressed as a Percentage of the Standard Length

Standard length (mm)	46.3	Length of anal fin base	23.2
Depth of body	31.5	Length of first dorsal spine	8.5
Width of body	12.9	Length of second dorsal spine	10.8
Head length	36.5	Length of longest dorsal spine	14.6
Snout length	9.3	Length of longest dorsal ray	19.2
Orbit diameter	13.4	Length of first anal spine	8.5
Interorbital width	8.3	Length of second anal spine	12.7
Depth of caudal peduncle	16.4	Length of third anal spine	14.1
Length of caudal peduncle	15.1	Length of longest anal ray	18.3
Predorsal length	38.7	Length of caudal fin	32.4
Preanal length	65.5	Length of pectoral fin	21.7
Prepelvic length	37.2	Length of pelvic spine	14.0
Length of dorsal fin base	53.6	Length of pelvic fin	20.1

white line on upper side of body, but not contained within a light red stripe; region of mouth lavender-pink; 2 parallel narrow yellow bands on side of snout from upper lip to orbit, a suffusion of yellow on head behind orbit and middorsally on head; iris yellow; spinous portion of dorsal fin light yellow, soft portion pink; anal fin pale yellowish; caudal fin pink, tinged with yellow posteriorly; paired fins pale pinkish, the pectorals with a streak of yellow on extreme base.

Remarks

This species is named *C. roseafascia* from the Latin *rosea*, meaning rosy, and *fascia*, band or stripe, in reference to the deep-pink stripe along the back. The name is here used as a noun in apposition.

We have but a single specimen of this wrasse from 100 m in Bulari Pass, New Caledonia, kindly sent to us by Pierre Fourmanoir.

The viscera of the holotype are partly decomposed; it is not possible to determine the sex of the specimen.

C. roseafascia is most closely related to an undescribed species from the Chagos Archipelago in the Indian Ocean, differing in having a larger eye, longer caudal fin, and in color pattern. The Chagos species shares some features of color but lacks the rose stripe on the back, has a vertical violet streak on the scales of the side of the body, no pink in the region of the mouth, and a caudal fin with violet-edged whitish rays and transparent membranes with irregular vertical rows of small yellow spots.

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