

An underwater photograph showing a large school of fish, likely a species of snapper or surgeonfish, swimming in clear blue water. The fish are silvery with a yellowish-brown stripe along their sides and blue-tinted fins. They are swimming in a loose formation. In the background, there is a dense school of smaller, similar fish. In the foreground, a coral reef is visible, with various types of coral and other marine life. The lighting is bright, suggesting a shallow depth.

VOLUME 4

COASTAL FISHES OF THE
**WESTERN
INDIAN
OCEAN**

EDITED BY

Phillip C Heemstra • Elaine Heemstra • David A Ebert • Wouter Holleman • John E Randall

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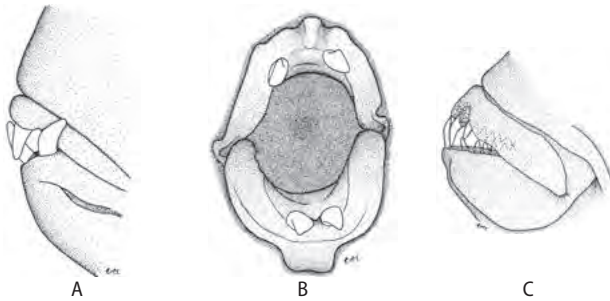
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FAMILY LABRIDAE

Wrasses

John E Randall and Benjamin C Victor

One of the most species-rich families in the Indo-Pacific region, second only to the Gobiidae, and the most diverse in body size and form. Body shapes vary from elongate to oblong, and slightly to strongly compressed; size varies from the slender *Minilabrus striatus* at 45 mm long, to the deep-bodied giant humphead wrasse *Cheilinus undulatus* at >2 m long. Dorsal fin continuous (except for some species of *Iniistius*), with 8–21 spines, 6–21 rays; anal fin 2 or 3 spines (except 4–6 in *Acantholabrus* and *Ctenolabrus*, not present in WIO), 7–14 rays; pelvic fins 1 spine, 5 rays. Mouth small to moderate, protractile, and terminal or occasionally with lower jaw projecting (as in some *Cheilinus*); lips often fleshy. Teeth in jaws conical, usually some canines at front, and specialised incisiform teeth in *Anampses* and *Pseudodax*; canine may be present at corners of mouth; usually no teeth on palate (rarely on vomer in a few species); paired upper pharyngeal bones and single lower pharyngeal plate (triangular, Y-shaped or T-shaped) with conical, nodular or molariform teeth. Branchiostegal rays 5 or 6. Lateral line continuous or interrupted. Scales cycloid; head often naked, or only cheeks and opercles scaly. Vertebrae 23–41 (with higher numbers in the temperate species).



Teeth of (A) *Choerodon robustus*; (B) *Anampses caeruleopunctatus*; (C) *Novaculichthys taeniourus*.

Most species are especially colourful and many have complex patterns; juveniles often differ in colour from adults, and many species exhibit sexual dichromatism, generally associated with a change in sex from female to male. The first colour form of those species with sex reversal is termed the initial phase (IP in picture captions), and is usually less colourful than the terminal male phase (TP in picture captions). The terminal male tends to establish a territory and maintain a harem of females, mating with one female at a time, typically after a rapid, upward spawning rush. Those species with both females and males in the initial phase usually spawn in aggregations. (Thus, a species may have two different styles of reproduction.) Unless sex

change is definitely known for a species, the terms ‘initial phase’ and ‘terminal male’ are not used here. A few temperate labrids build nests in seaweeds, but the great majority of wrasses produce numerous, tiny pelagic eggs.

Mainly shallow-water fishes, though some species of *Bodianus* and *Decodon* occur in deep water (200+ m). Most live on coral reefs or rocky substrate, a few in seagrasses or thick algal beds, and the razorfishes (*Cymolutes*, *Iniistius*, *Novaculops* and *Xyrichtys*) are found over open stretches of sand into which they dive when disturbed. Wrasses are carnivorous; some species, such as those of the genera *Cirrhilabrus*, *Paracheilinus* and *Pseudocoris*, feed on zooplankton, but most prey on a large variety of invertebrates, especially hard-shelled molluscs, sea urchins and crustaceans, which they crush with their pharyngeal teeth, and a few prey on small fishes. *Labroides* and the young of some other wrasses, e.g., *Bodianus*, *Pseudodax* and *Thalassoma*, feed in part on crustacean ectoparasites as well as the mucus of other fishes. *Labropsis*, *Labrichthys* and *Larabicus* are also well known as ‘cleaner wrasses’ in their juvenile stage, whereas the adults feed mainly on coral polyps. Wrasses are diurnal; many of the smaller species bury in sand at night, whereas others lodge tightly in the reef to sleep.

Priority has been given in the synonymies to publications that provide good illustrations of WIO fishes. The *Poissons de l’océan Indien et de la mer Rouge* by Marc Taquet and Alain Diringier (2012) is not cited because localities are not given. *Terelabrus flavocephalus* Fukui & Motomura 2016 was described from Maldives recently (but is not included here).

Labridae *sensu stricto* contains 556 species in 60 genera as of 2020 (reviewed in Parenti & Randall 2000, and updated in Parenti & Randall 2011 & 2018); 39 genera and 158 species in WIO.

KEY TO GENERA

- | | | |
|----|---|----------------------|
| 1a | Dorsal fin 12 or 13 spines | 2 |
| 1b | Dorsal fin 8–11 spines | 4 |
| 2a | First 3 spines of dorsal fin much longer than remaining spines and almost separated from rest of fin; LL scales 50–52 | <i>Anchichoerops</i> |
| | | |
| 2b | First 3 spines of dorsal fin shorter than remaining spines and not separated from rest of fin; LL scales 29–46 | 3 |

Continued...

KEY TO GENERA

- 3a Second pair of canine teeth at front of lower jaw curved laterally; cheek scales not anterior to middle of eye; no scaly sheath at base of dorsal and anal fins *Choerodon*



- 3b Second pair of canine teeth at front of lower jaw not curved laterally; cheek scales extending forward to or almost to corner of mouth; prominent scaly sheath at base of dorsal and anal fins *Bodianus*

- 4a Scleral pupil of eye divided into 2 near-equal parts 5
4b Scleral pupil of eye not divided 8

- 5a Lateral line continuous, LL scales 22–24; median predorsal scales 4; body depth 2.2–2.7 in SL *Pteragogus*
5b Lateral line interrupted, LL scales 14–18 + 6–8; median predorsal scales 4–6; body depth 2.6–4.1 in SL 6

- 6a Dorsal fin 11 spines, 9 rays *Cirrhilabrus*
6b Dorsal fin 9 spines, 11 rays 7

- 7a Three pairs of large canines at front of upper jaw; snout length 3.3–4.7 in HL; branchiostegal rays 5 *Paracheilinus*
7b Two pairs of large canines at front of upper jaw; snout length 2.5–3.3 in HL; branchiostegal rays 6 *Pseudocheilinus*

- 8a Dorsal fin 8 spines 9
8b Dorsal fin 9–11 spines 11

- 9a Canine present posteriorly in upper jaw, at corners of mouth; teeth on sides of upper jaw rudimentary or absent; pectoral fins 14 rays; maximum size ~6 cm SL *Minilabrus*
9b No canine at corners of mouth; teeth well-developed on sides of upper jaw; pectoral fins 15–17 rays; maximum size 16–43 cm SL 10

- 10a Snout of adults elongate, 1.7–2 in HL; mouth extremely protrusile; 2 pairs of canines at front of jaws *Gomphosus*
10b Snout not elongate, 2.5–3.4 in HL; 1 pair of canines at front of upper jaw and 1 or 2 pairs at front of lower jaw *Thalassoma*

- 11a Dorsal fin 11 spines 12
11b Dorsal fin 9 spines 13

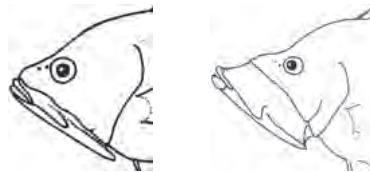
- 12a Dorsal fin 12 rays; anal fin 14 rays; pair of spatulate incisors at front of jaws, forming beak-like structure *Pseudodax*
12b Dorsal fin 9 rays; anal fin 10 rays; dentition not as above *Decodon*

- 13a Pair of forward-projecting incisors at front of jaws, upper pair broader, usually with upcurved pointed tips; remaining teeth in jaws minute or absent, none at corners of mouth *Anampses*



- 13b Canines present at front of jaws; distinct conical teeth on sides of jaws (except *Pseudojuloides* with incisors); canine often present at corners of mouth 14

- 14a Jaws extremely protrusile; lower jaw very long, extending behind lower margin of opercle; preopercle margin scaly *Epibulus*



- 14b Jaws not extremely protrusile; lower jaw not extending behind eyes; preopercle margin without scales (except *Wetmorella*) 15

- 15a Body elongate, depth 5.5–8 in SL; lateral line continuous, sloping gradually from upper end of gill opening to midway onto caudal-fin base *Cheilio*
15b Body not elongate, depth 2.2–5.5 in SL; lateral line abruptly deflected downward below rear end of dorsal fin, or line divided into 2 parts 16

- 16a Lips modified: either plicate and forming short tube when mouth closed, or lower lip bilobed with U-shaped notch between lobes 17
16b Lips not modified, neither bilobed nor forming tube when closed 20

- 17a Lower lip bilobed, separated by U-shaped notch; body slender, depth 4.1–4.7 in SL *Labroides*
17b Lower lip not bilobed; lips plicate, forming short tube when mouth closed; body not slender, depth 2.6–3.3 in SL 18

Continued ...

KEY TO GENERA

- 18a Single pair of canines at front of upper jaw, followed by small teeth; pectoral fins 13 rays; body depth 1.8–2.3 in SL; top of head with scales to rear edge of eyes *Larabicus*
- 18b Two pairs of canines at front of upper jaw, and no small teeth on sides of jaw; pectoral fins 14 or 15 rays; body depth 2.6–3.8 in SL 19
- 19a LL scales 25–27; scales dorsally on head extending forward onto rear half of snout; body depth 2.6–3.2 in SL *Labrichthys*
- 19b LL scales 46–49; scales dorsally on head not extending forward to interorbital area; body depth 3.4–3.8 in SL *Labropsis*
- 20a Lateral line complete, LL scales continuous from upper end of gill opening to caudal-fin base 21
- 20b Lateral line interrupted, 1st series of LL scales from upper end of gill opening to below rear of dorsal fin, 2nd series midlaterally on rear part of body 31
- 21a LL scales 91–118; body slender, width 2.8–3.2 in depth; 2 pairs of large canines at front of jaws *Hologymnosus*
- 21b LL scales 27–78; body not slender, width 2–2.8 in depth; usually a single pair of large canines at front of jaws (2nd pair, if present, $\leq \frac{2}{3}$ length of anterior canines, or strongly recurved) 22
- 22a LL scales 47–78; first 2 dorsal-fin spines closer together than spacing between following spines 23
- 22b LL scales 25–27; all dorsal-fin spines equally spaced 24
- 23a Pair of canines at front of jaws, not laterally curved; canine present at corners of mouth (except *C. nigrotaenia*); caudal fin rounded (except truncate in large males of *C. formosa*); eyes closer to dorsal head profile than to ventral profile; large molars present on pharyngeal plates *Coris*
- 23b Pair of small canines at front of jaws, upper pair laterally curved; no canine at corners of mouth; caudal fin truncate to slightly emarginate; eyes positioned near centre of sides of head; no molars on pharyngeal plates *Pseudocoris*
- 24a Two pairs of canines at front of upper jaw, 1 pair in lower jaw, and no canine at corners of mouth; snout profile forming $\sim 55^\circ$ angle; colour in life blue, with narrow yellow stripe dorsally on body below dorsal-fin base *Frontilabrus*
- 24b Dentition not as above; snout profile forming $< 55^\circ$ angle; colour in life not as above 25
- 25a Teeth on sides of jaws uniserial, incisiform and close-set; no canine at corners of mouth 26
- 25b Teeth on sides of jaws conical; canine present at corners of mouth 27

- 26a No canines at front of jaws; LL scales 25; scales on chest as large or larger than those on body; pectoral-fin base oblique (closer to horizontal than vertical); body depth 2.7–4.1 in SL.... *Stethojulis*



- 26b Canines present at front of jaws, and teeth on sides of jaws conical; LL scales 27; scales on chest much smaller than those on body; pectoral-fin base closer to vertical than horizontal; body depth 3.8–5.6 in SL *Pseudojuloides*
- 27a Lips thick and fleshy, lower lip vertically divided at midline; body depth 2.3–2.5 in SL; preopercle with near-vertical band of small scales *Hemigymnus*
- 27b Lips not thick and fleshy, lower lip not divided at midline; body depth 3–4.6 in SL; no near-vertical band of small scales on preopercle 28
- 28a Two pairs of canines at front of jaws, 2nd pair strongly curved laterally; pharyngeal plates without molars; body depth 4–4.7 in SL *Leptojulius*
- 28b One pair of canines at front of jaws; pharyngeal plates with molars; body depth 2.6–4.2 in SL 29
- 29a Dorsal-fin origin anterior to vertical at upper end of gill opening; anal fin 10 rays; rear free margin of preopercle short, not reaching level of ventral edge of eye (usually not above level of mouth), ventral margin barely extending beyond the rounded corner; lower pharyngeal plate with large molar flanked by only 1–3 small teeth and preceded by 4–9 small teeth *Macropharyngodon*
- 29b Dorsal-fin origin posterior to vertical at upper end of gill opening; anal fin 12 or 13 rays; rear free margin of preopercle extending to or above level of ventral edge of eye, ventral margin extending below or anterior to front of eye; lower pharyngeal plate with ≥ 1 large molars (but none as large as the largest of *Macropharyngodon*), flanked on each side by > 3 small teeth, and preceded by ≥ 10 small teeth 30
- 30a Cheeks with small scales; opercles covered with large scales *Suezichthys*
- 30b Cheeks and opercles naked, except for dorsal patch of small scales in a few species *Halichoeres*

Continued...

KEY TO GENERA

- 31a No canines at front of jaws; head acutely pointed; preopercle margin scaly; maximum length ~6 cm SL *Wetmorella*
- 31b Canines present at front of jaws; head not acutely pointed; preopercle margin without scales; maximum length 8–170 cm SL 32
- 32a Dorsal fin without flexible spines; 2 pairs of canines at front of jaws; opercle fully scaly 33
- 32b Dorsal fin with 1st or more spines fin flexible; 1 pair of canines at front of jaws; opercle naked except for 1–4 scales dorsally 34
- 33a Body moderately deep, depth \geq HL, 2.3–3.1 in SL; lower jaw not protruding *Cheilinus*
- 33b Body more slender, depth <HL, 2.8–4 in SL; lower jaw protruding *Oxycheilinus*
- 34a LL scales 48–68 + 15–22; caudal fin 10 branched rays, and anal fin 2 or 3 spines *Cymolutes*
- 34b LL scales 13–15 + 5–9; caudal fin 11 or 12 (rarely 11) branched rays, and anal fin 3 spines 35
- 35a Pair of canines at front of jaws not curved posterolaterally; body depth 2.7–3 in SL; anal-fin rays notably longer than dorsal-fin rays *Novaculichthys*

- 35b Pair of canines at front of jaws curved posterolaterally; body depth 3.2–4 in SL; anal-fin rays not twice as long as dorsal-fin rays 36



- 36a Second pair of canines in jaws half length of 1st pair; head short, HL 3.4–3.7 in SL; body depth 3.4–4 in SL; dorsal and anal fins each with 13 rays; longest ray of dorsal fin about twice as long as longest spine *Novaculooides*
- 36b No 2nd pair of canines at front of jaws; HL 3.1–3.4 in SL; body depth 2.3–3.4 in SL; dorsal and anal fins each with 12 rays; longest ray of dorsal fin at most 1.5 times longest spine 37
- 37a Dorsal-fin origin over eyes or $< \frac{1}{2}$ eye diameter behind eyes; space between dorsal-fin spines 2 and 3 much greater than spaces between other spines; dorsal-fin membrane between spines 2 and 3 deeply incised or fully separated *Iniistius*
- 37b Dorsal-fin origin more than an eye diameter behind eyes; space between dorsal-fin spines 2 and 3 subequal to space between other spines; dorsal-fin membrane between spines 2 and 3 not incised 38
- 38a First spine of dorsal fin slender, flexible, and not sharp-pointed; suborbital depth 4–6 in HL; front of head without distinct sharp ridge; no scales on head *Novaculoops*
- 38b First spine of dorsal fin stiff and sharp-pointed; suborbital depth ~2 in HL; front of head with distinct sharp ridge; scales present on suborbital (presence unlikely in WIO) *Xyrichtys*

GENUS *Anampses* Quoy & Gaimard 1824

Single pair of forward-directed incisors at front of jaws, those in upper jaw broader, usually with slightly upcurved tips; other teeth minute to imperceptible; no molariform pharyngeal teeth. Dorsal fin 9 spines, 12 (rarely 11 or 13) rays; anal fin 3 spines, 12 (rarely 11 or 13) rays; pectoral fins 13 (rarely 12 or 14) rays; dorsal-fin spines and rays progressively longer, and rays slightly higher than spines, and membrane not notched; caudal fin rounded to emarginate. Lateral line continuous, deflected sharply downward below rear of dorsal fin to midlateral part of peduncle.

Species of *Anampses* forcefully strike the substrate with their forward-projecting incisors, and at the same time apply suction to obtain tiny crustaceans, molluscs, worms and foraminifera, together with sand and detritus. Thirteen species in Indo-Pacific, 4 in WIO. *Anampses viridis* Valenciennes 1840 was described from 2 dried specimens from Mauritius, distinct in having small scales on the nape. Barry Russell (pers. comm.)

considers this species is a synonym of *A. caeruleopunctatus*, as the scales on the nape of the dried specimens mistakenly resemble valid embedded scales. *Anampses geographicus* Valenciennes 1840, reported from Mauritius by Peters (1876: 443) only in a list, was probably a misidentification as it has not been recorded since and is not known elsewhere in WIO.

KEY TO SPECIES

- 1a LL scales 27; body depth 2.3–3.2 in SL; initial phase brown, with dark-edged blue spot on each scale, and head reddish brown, with blue lines radiating from eyes; terminal male olive-green, with vertical blue line on each scale, often with broad pale green bar beneath pectoral fins, and head with irregular, narrow, dark-edged blue bands *A. caeruleopunctatus*
- 1b LL scales 26; body depth 3–3.4 in SL; colour not as above 2

Continued...

KEY TO SPECIES

- 2a Caudal fin truncate (initial phase) to emarginate (terminal male); GR 18–20; initial phase dark brown, with small white spots on head, body, and dorsal and anal fins, and caudal fin uniformly bright yellow; terminal male dark brown, with dark-edged blue spot or line on each scale, and caudal fin dull orange, with dark-edged blue spots and whitish posterior crescent *A. meleagrides*
- 2b Caudal fin rounded; GR 14–19; colour not as above 3
- 3a GR 14–16; body orangish brown, with narrow, dark-edged, pale blue-green stripes along middle of scale rows; basal two-fifths of caudal fin white, rest of fin black with hyaline margin *A. lineatus*
- 3b GR 16–19; body brown, with scattered, small, dark-edged blue spots, shading to yellow on lower part of head, chest and abdomen; caudal fin pale red, with small dark-edged blue spots and pale blue margin *A. twistii*

Anampses caeruleopunctatus Rüppell 1829

Bluespotted tamarin

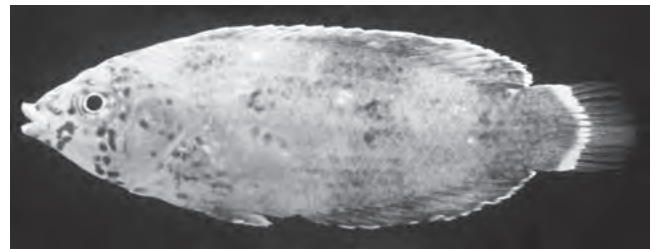
PLATE 55

Anampses caeruleopunctatus Rüppell 1829: 42, Pl. 10, Fig. 1 (Red Sea); Playfair & Günther 1867; Day 1877; Baissac 1953; Smith 1955*; Smith & Smith 1963*; SFSA No. 786; Randall 1972*, 1983, 1992, 1995*; Jones & Kumaran 1980; SSF No. 220.1*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; Heemstra *et al.* 2004; Lieske & Myers 2004.
Anampses diadematus Rüppell 1835: 21, Pl. 6, Fig. 3 (El Tur, Sinai, Egypt, Red Sea); Playfair & Günther 1867; Baissac 1953; Smith 1955; SFSA No. 785; Jones & Kumaran 1980.
Anampses lineolatus Bennett 1836: 208 (Mauritius, Mascarenes).
Anampses chlorostigma Valenciennes (ex Ehrenberg) in Cuv. & Val. 1840: 9 (Red Sea).
Anampses taeniatus Liénard in Sauvage 1891: 457 (Mauritius, Mascarenes).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays, pectoral fins 13 rays. Pair of forward-projecting incisors in both jaws, those in upper jaw broader, usually with upcurved pointed tips, lower pair down-curved and almost conical; remaining teeth tiny to imperceptible. Body depth 2.3–3 in SL; body width 2.3–2.7 in body depth; caudal fin rounded in juveniles, slightly rounded to truncate in adults; pelvic fins short, 2.1–2.5 in HL. GR 18–21. LL scales 27.

Females olivaceous to reddish brown or brownish yellow, with small, dark-edged blue spot on each scale; head with dark-edged blue lines, most radiating from eyes, and dark-edged blue spots or dashes on nape and opercle; median fins coloured like body, except more reddish, with outer blue margin and blackish submarginal line; dorsal and anal fins with row of blue dashes at base, dorsal fin with 2 or 3 irregular

rows of small dark-edged blue dots, anal fin with only one row; pectoral fins translucent yellowish with black spot at upper base; pelvic fins reddish with blue leading edge; males olive-green with dark-edged vertical blue line on each scale of body, and blue dashes or small spots on chest and abdomen; broad pale green bar often on body below base of 6th dorsal-fin spine; head with faint narrow, irregular, dark-edged blue lines and broad blue band across interorbital area; lips blue and pink. Juveniles more blackish, suffused with yellow dorsally, the spots and margin on dorsal and anal fins white; outer third of caudal fin bluish white. Attains 42 cm TL.



Anampses caeruleopunctatus, 3 cm SL, juvenile (South Africa). © T Harrison

DISTRIBUTION Indo-Pacific to eastern Pacific. WIO: Red Sea (including Gulf of Aqaba), Oman to South Africa (Aliwal Shoal; juveniles to Algoa Bay), Madagascar, Seychelles and Mauritius; elsewhere to Line Is. and Easter I.

REMARKS An inshore species of coral reefs or rocky coasts, especially areas exposed to surge; to 18 m deep.

Anampses lineatus Randall 1972

Lined tamarin

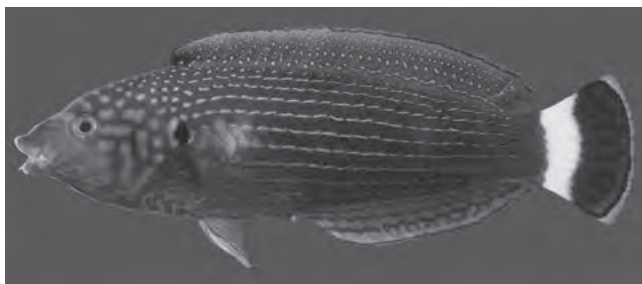
PLATE 55

Anampses melanurus lineatus Randall 1972: 172, Fig. 7 (Eilat, Israel, Gulf of Aqaba, Red Sea).
Anampses lineatus: Randall 1983, 1992, 1995*; SSF No. 220.2*; Goren & Dor 1994; Randall & Van Egmond 1994; Heemstra *et al.* 2004; Lieske & Myers 2004.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Dentition as in *A. caeruleopunctatus*. Body depth 3.2–3.4 in SL; body width 2.2–2.3 in body depth; pelvic fins 1.9–2.2 in HL; caudal fin rounded. GR 14–16. LL scales 26; no median predorsal scales.

Females dark orangish brown with slightly irregular, pale blue-green dashes following longitudinal scale rows; head and nape with small pale yellowish spots, becoming dots on nape; large black spot on opercular flap; dorsal fin dark yellowish brown with row of irregular whitish dashes along base and 3 or 4 longitudinal rows of small spots, margin narrowly blue;

anal fin dark brown grading to yellowish brown distally with irregular pale blue line at base and row of irregular, dark-edged, blue markings that resemble Arabic letters; caudal fin dark brown with broad transverse white bar near base and white rear margin; males with longitudinal series of blue dashes on body, irregular pale blue bands and spots on head, black opercular spot rimmed in blue; large irregular orange-yellow blotch on body beneath upper part of pectoral fin, and black bar at base of fin; dorsal fin as in female but row of markings basally in fin more irregular; anal fin with basal two-fifths bright blue, outer three-fifths yellow, bisected by median blue line, the margin blue; caudal fin like that of female but with narrower white bar; 24-mm juvenile dark brown with white bar from abdomen, broadening across body and anterior dorsal fin, and continuing as broad margin posteriorly on fin; head and body anterior to white bar with small yellow spots, becoming irregular dashes on opercle and chest; median dorsal fin pale yellow line on head; body behind white bar with 8 large, complex yellow markings and small yellow spots basally on median fins; caudal fin translucent whitish, with broad white bar at base. Attains 12 cm TL.



Anampses lineatus, 9 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indian Ocean. WIO: Red Sea (including Gulf of Aqaba) and southern Oman to South Africa (KwaZulu-Natal), Comoros, Mauritius, Seychelles and Maldives; elsewhere to Andaman Sea and Indonesia.

REMARKS Closely related to *Anampses melanurus* Bleeker 1862 of the Pacific. The extensive collections by Winterbottom *et al.* (1989) from Chagos did not include this species. Records from the Mascarenes by Harmelin-Vivien (1976) as *Anampses melanurus*, by Cornic (1987), by Fricke (1999), who listed the record of Guichenot (1863) of *A. cuvier* Quoy & Gaimard 1824 (a Hawaiian endemic that has rows of pale spots, not lines, on the body) as *A. lineatus*, and by the sight record for Rodrigues by Heemstra *et al.* (2004) for the Mascarenes, are all by name only (positive records for the Mascarenes should include a specimen or quality photograph). Known from 20–50 m.

Anampses meleagrides Valenciennes 1840

Yellowtail tamarin

PLATE 55

Anampses meleagrides Valenciennes in Cuv. & Val. 1840: 12 (Mauritius, Mascarenes); Baissac 1953; Munro 1955; Smith 1955; SFSA No. 786a; Randall 1972, 1983, 1992, 1995*; SSF No. 220.3*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Heemstra *et al.* 2004; Lieske & Myers 2004.

*Anampses meleagr*is Günther 1862: 135 [unjustified emendation for *meleagrides*]; Playfair & Günther 1867.

Anampses amboinensis Bleeker 1857: 80 (Ambon I., Moluccas, Indonesia); Playfair & Günther 1867; Jones & Kumaran 1980.

Anampses lunatus Sauvage (ex Liénard) 1891: 459 (Mauritius, Mascarenes).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Dentition as in *A. caeruleopunctatus*. Body depth 3.1–3.4 in SL; pelvic fins 1.5–2 in HL; caudal fin of juveniles rounded, of adults truncate to emarginate. GR 18–20. LL scales 26.

Females dark brown, with round white spot on each scale of body; head with small white spots anteriorly and dorsally, becoming larger and more oval posteriorly and ventrally; dorsal and anal fins dark brown with 3 rows of white to pale blue spots, basal row oval, large ocellus posteriorly in fin, and narrow blue margin; caudal fin bright yellow; males orangish brown with vertical, dark-edged, blue-green line on each scale, becoming horizontal dark-edged dashes or oval spots ventrally; head with very irregular, dark-edged, blue-green lines; dorsal and anal fins with 3 or 4 rows of dark-edged blue lines (irregular on anal fin); caudal fin orange basally, with dark-edged blue spots to curved blue and black line forming anterior demarcation to crescentic transparent rear of fin, and upper and lower edges blue with black submarginal line. Attains 22 cm TL.



Anampses meleagrides, 12 cm TL, female (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Red Sea (including Gulf of Aqaba), southern Oman to South Africa (Sodwana Bay) and Mauritius; elsewhere to Andaman Sea, Indonesia, Ryukyu Is., Great Barrier Reef, Tuamotu Is. and Line Is.

REMARKS Often found in mixed coral rubble and sand, with coral patches; known from 1–60 m.

Anampses twistii Bleeker 1856

Yellowbreasted tamarin

PLATES 55 & 56

Anampses twistii Bleeker 1856: 56 (Ambon I., Moluccas, Indonesia); Lunel 1881; Baissac 1953; Smith 1955, 1957; Smith & Smith 1963*; Dor 1970; Randall 1972, 1992; Allen & Steene 1987; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; Heemstra *et al.* 2004; Lieske & Myers 2004; Fricke *et al.* 2009.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body depth 3–3.3 in SL; pelvic fins 1.8–2.3 in HL; caudal fin rounded. GR 16–19. LL scales 26.

Females dark brown dorsally on head and body, with small black-edged blue spot on each scale, grading to bright yellow ventrally on head, chest and abdomen, and to orangish posteriorly on body; black spot on opercular flap with small red and green spot dorsally on base of flap; dorsal and anal fins dark orangish brown with large blue-edged black spot posteriorly in each fin, scattered pale blue spots basally in fins, and blue margin and black submarginal line; caudal fin pale orange-red with small blue spots and rear pale blue margin that broadens toward corners; paired fins yellow; mature males with head and chest entirely yellow, without small blue spots; body dark brown, the small blue spots replaced with vertical blue lines or vertical rows of dots, that become isolated pink dots anterodorsally on body and nape; ocellus in dorsal and anal fins lost. Juveniles dusky orange, grading to bright yellow ventrally on head and abdomen, with numerous irregular black-edged bright blue spots and short irregular bands, some extending into dorsal and anal fins; deep blue spot, rimmed partly in yellow and paler blue, posteriorly in dorsal and anal fins; caudal fin transparent with broad white bar at base. Attains 18 cm TL.



Anampses twistii, 5 cm SL (Rodrigues). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific (widespread but uncommon).

WIO: Red Sea, Tanzania, Mozambique (Pinda), Rodrigues and Mauritius; elsewhere to Andaman Sea, Indonesia, French Polynesia (except Marquesas Is.) and Pitcairn Is.

REMARKS Occurs in areas of mixed coral, rubble and sandy bays, lagoons, and seaward reefs, in 1–30 m.

GENUS *Anchichoerops* Barnard 1927

Diagnosis as for the single species.

Anchichoerops natalensis

(Gilchrist & Thompson 1909)

Natal wrasse

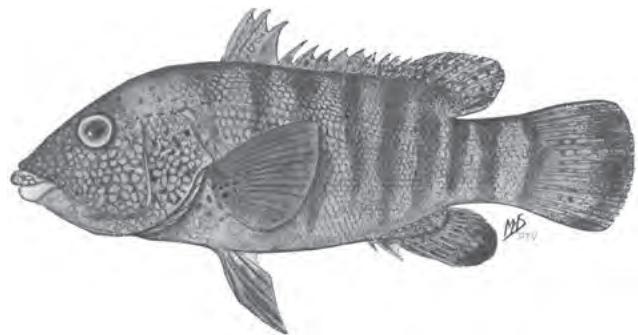
PLATE 56

Choerops natalensis Gilchrist & Thompson 1909: 250 (KwaZulu-Natal, South Africa).

Anchichoerops natalensis: Barnard 1927; SFSa No. 771; Van der Elst 1981; Gomon in Fischer & Bianchi 1984; Heemstra & Heemstra 2004*.

Dorsal fin 13 spines (first 3 spines longer than remaining spines, with deeply incised membranes, and almost separate from rest of fin), 9 rays; anal fin 3 spines, 10 or 11 rays; pectoral fins 17 rays; caudal fin rounded. Jaws with pair of prominent canines anteriorly on each side; small granular teeth on sides more or less coalesced into band; pharyngeal dentition well-developed; lips very thick and fleshy. Lateral line continuous, with 50–52 pored scales; postorbital part of head and cheeks with small scales; preopercle margin naked; well-developed scaly sheath at base of dorsal and anal fins.

Colour very variable: ground colour olivaceous to reddish or yellowish brown, densely spotted with small yellow to orangish spots, often with 8 or 9 pale bars on body that may be equal in width or narrower than interspaces; some individuals with scattered small blue spots on head and bright blue margins on median and pelvic fins; lower lip often bright yellow. The possible correlation of colour differences with sex remains to be determined. Attains 75 cm TL.



Anchichoerops natalensis, 65 cm TL (South Africa). Source: SSF

DISTRIBUTION WIO: endemic to South Africa (KwaZulu-Natal to Eastern Cape).

REMARKS Found on rocky reefs, to ~55 m deep. Not common. Seldom takes a hook; protected by law from being speared. Reported by Van der Elst (1981) to have a varied diet,

including sponges, ascidians, corals, crabs and crayfish (but the corals and sponges may have been ingested while preying on crustaceans).

GENUS *Bodianus* Bloch 1790

Two pairs of prominent canines at front of jaws, and usually 1 canine (rarely 2 or 3) posteriorly in upper jaw. Dorsal fin long-based and of uniform height, 12 (rarely 13) spines, 9–11 (usually 10) rays; anal fin 3 spines, usually 12 (rarely 11 or 13) rays. Lateral line smoothly curved, continuous, with 29–48 pored scales; scaly sheath at base of dorsal and anal fins. Forty-five species: 5 in Atlantic, 2 in eastern Pacific, 37 in Indo-Pacific, with at least 14 in WIO. Genus revised by Gomon (2006); of the 13 generic synonyms, he recognised 8 as subgenera and described 2 new subgenera. Gomon also noted that Baranes *et al.* (2017) documented *Bodianus rubrisos*, a western Pacific species, from the Red Sea, but this has still to be substantiated.

KEY TO SPECIES

- 1a Scales dorsally on head not extending forward of eyes 2
 1b Scales dorsally on head extending forward of eyes 9
- 2a LL scales 36–46 3
 2b LL scales 29–32 5
- 3a Snout of adults short, ~4 in HL, and profile steep, at >60° angle to horizontal axis of body; body deep, ~2.7 in SL (adults); caudal fin of adults truncate to double emarginate with produced lobes; no black spot on opercle; attains 82 cm TL *B. macrognathos*
 3b Snout of adults long, ~2.7–3 in HL, and profile sloping to >45° angle to horizontal axis of body; body slender, depth ~4–5 in SL; caudal fin truncate to slightly rounded; large black spot on opercle; attains 20 cm TL 4
- 4a LL scales 40–46; head and body with 3 broad red stripes alternating with white *B. opercularis*
 4b LL scales 36–40; body yellow, with 1 or 2 broken orange-red midlateral stripes anteriorly *B. tanyokidus*
- 5a Pelvic fins of adults short, not extending to anus; caudal fin truncate to slightly rounded; blackish spot at caudal-fin base 6
 5b Pelvic fins extending to or beyond anus; caudal fin of adults emarginate or double emarginate, fin of juveniles truncate; no blackish spot at caudal-fin base 7

KEY TO SPECIES

- 6a Body depth 3.6–4 in SL; predorsal scales 8–10; scales above lateral line 3½; body yellow dorsally, above narrow orange-red band from eyes to black spot at caudal-fin base, mainly pink below; large blue-black opercular spot *B. bimaculatus*
 6b Body depth 3–3.4 in SL; predorsal scales 17–25; scales above lateral line 4–4½; colour not as above *B. diana*
- 7a Scales present posteriorly on lower jaw, extending anterior to forward end of ventral preopercular edge (scales often embedded); adults with distinct black band encircling body posteriorly and black marginal stripe on anal fin *B. macrourus*
 7b Scales absent on lower jaw; not extending anterior to forward end of ventral preopercular edge; adults without black band encircling body posteriorly and black marginal stripe on anal fin 8
- 8a Head with posteriorly flared blackish stripe or series of spots directed posteriorly from corner of mouth *B. bilunulatus*
 8b Head without blackish markings; large black spot or smudge often below dorsal fin posteriorly, but not extending onto caudal peduncle *B. atrolumbus*
- 9a Snout rounded; dorsal and ventral corners of caudal fin prolonged into filaments *B. anthioides*
 9b Snout sharply pointed; dorsal and ventral corners of caudal fin not prolonged into filaments 10
- 10a Prominent black spot distally on dorsal and anal fins immediately posterior to last spine; juveniles and some females with prominent large white spots, one on belly immediately anterior to anal-fin origin *B. axillaris*
 10b Adults without distinct black spot on dorsal and anal fins posterior to last spine; juveniles without large white spot on belly immediately anterior to anal-fin origin 11
- 11a Vomerine teeth absent; adults pale (rose red anterodorsally, yellow posteroventrally in life) without stripes or horizontal rows of spots; juveniles blackish with prominent white spots, including large horizontally elongate spot midlaterally posterior to pectoral-fin base and below lateral line *B. neilli*
 11b One or more canines on vomer; body in life with three or more interrupted red or black stripes or horizontal rows of spots 12
- 12a Four narrow red stripes on body, and 2 rows of black dots anteriorly between 2nd and 3rd stripes; large dark red to black spot anteriorly on dorsal fin and at pectoral-fin bases *B. leucosticticus*
 12b Five narrow red stripes on body; no black dots between 2nd and 3rd stripes, and no large dark red to black spot anteriorly on dorsal fin; narrow black bar at pectoral-fin bases *B. trilineatus*

Continued...

Bodianus anthioides (Bennett 1832)

Lyretail hogfish

PLATE 56

Crenilabrus anthioides Bennett 1832: 167 (Mauritius, Mascarenes).

Cossyphus boutoni Liénard in Sauvage 1891: 452 (Mauritius, Mascarenes).

Cossyphus bicolor Liénard in Sauvage 1891: 453 (Mauritius, Mascarenes).

Lepidaplois anthioides: Smith 1955, 1957; Smith & Smith 1963*;

SFSA No. 774a.

Bodianus anthioides: Bemert & Ormond 1981*.

Bodianus anthioides: Randall 1983; SSF No. 220.5*; Winterbottom *et al.*

1989*; Allen & Smith-Vaniz 1994; Heemstra *et al.* 2004; Lieske & Myers

2004; Gomon 2006.

Dorsal fin 12 spines, 9 or 10 rays; anal fin 3 spines, 10–12 rays; pectoral fins 15–17 rays; caudal fin deeply emarginate in adults, lunate in young. Preopercle margin coarsely serrate. Both jaws with 2 pairs of prominent canines at front, and upper jaw with 1 or 2 canines posteriorly on each side (as in other *Bodianus* spp.); snout short, ~4 in HL, profile steep, at ~70° angle to horizontal axis of body, and head profile smoothly convex. Total GR 16. Lateral line curved gradually (as in other *Bodianus* spp.); LL scales 30 or 31; predorsal scales ~36, extending to nostrils.

Adults white, with scattered small dark grey spots behind curved line from rear of spinous dorsal fin to front of anal fin, dark brownish orange in front of line, grading to bluish black anteriorly and ventrally on head; caudal fin with blackish upper and lower margins that continue as bands onto peduncle. Juveniles with head and anterior of body bright orange-yellow (except for white snout) to line from base of 4th dorsal-fin spine to pelvic-fin origins, white posteriorly with scattered small reddish black spots, those dorsally and ventrally on peduncle merging to form band that continues marginally onto lobes of caudal fin. Attains 21 cm TL.



Bodianus anthioides, 3 cm SL (Comoros). © R Winterbottom, ROM

DISTRIBUTION Indo-Pacific. WIO: Red Sea, Tanzania to South Africa (Sodwana Bay), Comoros, Maldives and Mauritius; elsewhere to Marshall Is. and Tuamotu Is.

REMARKS Rare at most localities. Adults known from 20–60 m, juveniles as shallow as 6 m. Named for its resemblance to serranid fishes of the family Anthiadidae. Although its form suggests it should be a zooplankton-feeder, it is benthic, usually found over mixed sand and coral rubble near reefs. Feeds on benthic invertebrates, and often seen following foraging goatfishes; juveniles have been observed cleaning other fishes.

Bodianus atrolumbus (Valenciennes 1839)

Blackside hogfish

PLATE 56

Cossyphus atrolumbus Valenciennes in Cuv. & Val. 1839: 123 (Mauritius, Mascarenes).

Cossyphus nigromaculatus Gilchrist & Thompson 1908: 197 (KwaZulu-Natal, South Africa).

Chaeropsodes pictus Gilchrist & Thompson 1909: 260 (Durban market, KwaZulu-Natal, South Africa).

Lepidaplois perditio [in part]: Baissac 1953; Smith 1957; SFSA No. 776.

Bodianus perditio [in part]: Gomon in Fischer & Bianchi 1984; SSF No.

220.10*; Van der Elst & King 1990; Heemstra *et al.* 2004; Gomon 2006.

Bodianus atrolumbus: Randall & Victor 2013*.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 17 rays. Body depth 2.6–3.1 in SL; pelvic fins almost extending to anus in juveniles, to anal-fin origin in large adults; caudal fin of juveniles and subadults truncate, becoming double emarginate in large adults, with moderately elongated lobes. Total GR 19–23. LL scales 30 or 31; scales dorsally on head extending to rear edge of eyes; interorbital area naked; cheek scales extending slightly forward to corners of mouth; lower jaw naked; well-developed scaly sheath at base of dorsal and anal fins.

Juveniles brown on head and anterior part of body, as far as white bar in middle of body extending to tip of 8th dorsal-fin spine, followed by broad black zone to anterior of peduncle that extends broadly into base of soft-rayed portions of dorsal and anal fins; peduncle brown with white midlateral spot; lobes of caudal fin yellow; with growth body becomes more yellow overall, black zone regressing dorsally. Adults with spindle-shaped pinkish white bar in middle of body across LL; body anterior to bar with dense yellow spots, becoming short irregular yellow bands on head; lower jaw pale yellow to white without spots; body posterior to pinkish white bar lavender-pink, grading to blue dorsally and ventrally, all scales strongly bordered by black; elliptical black patch of variable size at base of soft-rayed portion of dorsal fin. Attains at least 46 cm SL, ~57 cm TL (Gomon 2006), but possibly 80 cm TL.



Bodianus atrolumbus, 18 cm SL (Rodrigues). PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: Mozambique and South Africa (KwaZulu-Natal), Mascarenes, Walters Shoals and St Brandon Shoals.

REMARKS Occurs on coral or rocky reefs, in 10–50+ m. Closely related to and long considered a synonym of *Bodianus perditio* (Quoy & Gaimard 1834). Randall & Victor (2013) consider the two are valid species, differentiated by colour and strong genetic differences. Adults of *B. atrolumbus* have a whitish bar near the midbody; *B. perditio* lacks this bar, having instead a large yellow blotch dorsally on the body. Feeds on hard-shelled invertebrates, such as sea urchins, crabs and gastropod molluscs (Van der Elst 1981).

Bodianus axillaris (Bennett 1832)

Turncoat hogfish

PLATE 57

Labrus axillaris Bennett 1832: 166 (Mauritius, Mascarenes).

Cossyphus axillaris: Valenciennes in Cuv. & Val. 1839; Playfair & Günther 1867; Day 1877.

Cossyphus octomaculatus Liénard in Sauvage 1891: 454 (Mauritius, Mascarenes).

Lepidaplois axillaris: Barnard 1927; Baissac 1953; Smith 1955, 1957; Smith & Smith 1963*; SFSa No. 775*.

Lepidaplois albomaculatus Smith 1957: 101, Fig. 1 [based on Col. Pike's illustration of female] (Mauritius, Mascarenes).

Bodianus axillaris: Randall 1983*; Gomon in Fischer & Bianchi 1984; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; Randall 1995*; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004; Gomon 2006.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 or 13 rays; pectoral fins 15–17 rays. Body depth 2.8–3.3 in SL; caudal fin truncate (slightly rounded in small juveniles). GR 15–18. LL scales 29 or 30; predorsal scales 28–35, extending in front of nostrils; scales on cheeks extending below nostrils; scaly sheath at base of dorsal and anal fins 2½–3 scales in height.

Juveniles black, with white snout and chin, 3 large white spots dorsally and 3 ventrally on body, and smaller white spot dorsally and ventrally at caudal-fin base (in the Pacific, the

dark white-spotted phase appears to be confined to juvenile stage); caudal, pectoral and posterior portion of dorsal and anal fins transparent with reddish rays. Females dark reddish brown with same white spots, grading on peduncle to dark brassy yellow with narrow grey stripes separating longitudinal scale rows; caudal fin and soft-rayed portion of dorsal and anal fins with brownish yellow rays and transparent membranes; large black spot in front of soft-rayed portion of dorsal and anal fins, spinous portion of dorsal fin, and pectoral-fin bases. Males dark purplish grey anterior to diffuse oblique line from rear dorsal-fin base to anterior abdomen, white posteriorly; fins coloured as in females, with same 4 large black spots. Attains 20 cm TL.



Bodianus axillaris, 10 cm SL; 16 cm TL (Seychelles). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Red Sea (including Gulf of Aqaba) to South Africa (KwaZulu-Natal), Madagascar, Seychelles, Mascarenes, Maldives and Chagos; elsewhere to Pitcairn Is. and Line Is.

REMARKS Known from 3–40 m. Adults feed mainly on small crustaceans, gastropods, bivalves and worms; juveniles are usually found in caves, and are often seen cleaning other fishes.

Bodianus bilunulatus (Lacepède 1801)

Saddleback hogfish

PLATE 57

Labrus bilunulatus Lacepède 1801: 454, 526, Pl. 31, Fig. 2 (Indian Ocean [probably Mauritius]).

Cossyphus bilunulatus: Playfair & Günther 1867.

Lepidaplois hirsutus (*non* Lacepède 1801): Barnard 1927; Baissac 1953; Smith 1957; Smith & Smith 1963*; SFSa No. 773*.

Bodianus bilunulatus: SSF No. 220.7*; Allen & Steene 1987; Anderson *et al.* 1998; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Gomon 2006.

Bodianus bilunulatus bilunulatus: Gomon in Fischer & Bianchi 1984; Winterbottom *et al.* 1989*; De Bruin *et al.* 1994.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 or 13 rays; pectoral fins 16 or 17 rays; pelvic fins almost extending to anus (sometimes slightly beyond); caudal fin truncate in juveniles, emarginate to double emarginate in adults, and

lobes moderately produced in large adults. No small canines posteriorly on upper jaw. Total GR 17–21. LL scales 30–32; scales dorsally on head extend forward to rear edge of eyes; scales on cheeks extending slightly in front of corners of mouth; scales on interopercle not extending anterior to preopercle; scaly sheath at base of dorsal and anal fins usually 2½–3 scales in height.

Juveniles bright yellow above oblique line from lower lip and snout through eyes to most of spinous portion of dorsal fin; head and body below line white with red lines separating longitudinal scale rows; very broad, slightly oblique, black bar across rear of body, covering most of anal fin, soft-rayed portion of dorsal fin, and anterior part of peduncle. Adults pink dorsally, grading to white on side and pale blue ventrally, with orange-red lines following longitudinal scale rows and vertical lines creating serial cubical pattern of scales; large elliptical blue spot below rear dorsal fin, extending anteriorly onto peduncle; broad white band across cheek and opercle, bordered ventrally by blue; large black spot on membrane between 2nd and 3rd dorsal-fin spines; dorsal and ventral margins of caudal fin yellow, with yellow continuing dorsally onto peduncle. Attains 44 cm TL.



Bodianus bilunulatus, 30 cm TL. Source: SFSA

DISTRIBUTION Indo-Pacific. WIO: Somalia to South Africa (KwaZulu-Natal), Seychelles, Mauritius, Walters Shoals, Chagos and Sri Lanka; elsewhere to Indonesia, Japan and Australia.

REMARKS Van der Elst (1981) reported its occurrence in KwaZulu-Natal, South Africa, on deeper coral and rocky reefs, feeding mainly on gastropods, limpets, sea urchins and crabs, crushing the hard parts with its pharyngeal plates and rejecting inedible fragments.

Bodianus bimaculatus Allen 1973

Twospot hogfish

PLATE 57

Bodianus bimaculatus Allen 1973: 386, Fig. 1 (Palau); Allen & Steene 1987; Cornic 1987; Randall & Anderson 1993; Gomon 2006.

Dorsal fin 12 spines, 9 or 10 rays; anal fin 3 spines, 12 rays; pectoral fins 16 rays. Body elongate, depth 3.6–4 in SL; snout short, 3.7–4.2 in HL; eyes large, diameter slightly greater than snout length in juveniles, shorter in adults; pelvic fins short, not extending to anus; caudal fin rounded. GR 14–16. LL scales 30 or 31; predorsal scales 8–10, not extending in front of interorbital area.

Adults yellow above narrow red stripe from eyes to caudal-fin base, pink below this and with indistinct narrow yellow bars; irregular ocellated black spot posteriorly on opercle over red stripe; pupil-sized dark brown spot on caudal-fin base at end of red stripe (spot relatively large and rimmed with pale blue in young). Attains 8 cm TL.



Bodianus bimaculatus, 4 cm TL, juvenile (South Africa).

PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Red Sea, South Africa (Aliwal Shoal), Madagascar, Mauritius and Maldives; elsewhere to Indonesia, Japan, Palau, Australia, New Caledonia and northern New Zealand.

REMARKS Collected from deep reefs, often on vertical drop-offs, in 30–65 m.

Bodianus diana (Lacepède 1801)

Diana's hogfish

PLATE 58

Labrus diana Lacepède 1801: 450, 522, Pl. 32, Fig. 1 (Indian Ocean).

Cossyphus diana: Günther 1862; Playfair & Günther 1867; Day 1877.

Cossyphus spilotes Guichenot 1863: C-13 (Réunion, Mascarenes); Sauvage 1891.

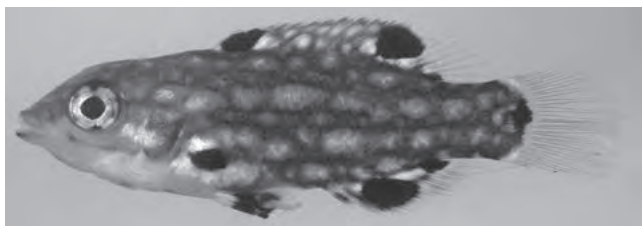
Lepidaplois diana: Barnard 1927; Baissac 1953; Smith 1955, 1957; SFSA No. 774*.

Lepidaplois aldabrensis Smith 1955: 932, Pl. 24a (Aldabra).

Bodianus diana: Randall 1983, 1992, 1995*; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.8*; Allen & Steene 1987; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Heemstra & Heemstra 2004*; Lieske & Myers 2004; Gomon 2006.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 15–17 rays. Body elongate, depth 3.1–3.4 in SL; head pointed, dorsal profile straight, at ~30° angle to horizontal axis of body; pelvic fins not extending to anus; caudal fin slightly rounded in juveniles, slightly rounded to truncate or slightly double emarginate in adults. Total GR 15–18. LL scales 30; scales dorsally on head extending forward to above middle of eyes; cheek scales extending to corners of mouth; scaly sheath at base of dorsal and anal fins maximum 2½ scales high.

Adults red to brownish or purplish red on head, blue ventrally, with black line curved ventrally from corner of mouth; red dorsally on head continuing on body above LL, with series of 4 small irregular white spots, each scale on rear half with prominent black spot; side of body broadly yellow to peduncle, each scale with red rear rim; ventral and rear of body lavender-pink, scales still red-rimmed; dorsal and anal fins red, the membranes transparent posteriorly; caudal fin lavender-pink with pupil-sized black spot near midbase; pelvic fin anterior half bright red with pink leading edge, posterior half pale yellow. Juveniles dark reddish brown, with longitudinal rows of white dashes alternating with rows of white dots; dorsal and anal fins with large ocellated black spot in front of soft-rayed portion; caudal fin as in adults; pelvic fins largely black. Attains 20 cm TL.



Bodianus diana, 2 cm SL (South Africa). © R Winterbottom, ROM

DISTRIBUTION Indian Ocean. WIO: Red Sea to South Africa (Aliwal Shoal; juveniles to Eastern Cape), Madagascar, Comoros, Maldives, Réunion, Aldabra and Chagos; elsewhere to Andaman Sea, Cocos (Keeling) Is. and Christmas I.

REMARKS Occurs on coral and rocky reefs, in 1–80 m. Feeds mainly on hard-shelled molluscs, crabs and sea urchins. Swims using both pectoral fins and caudal fin (Van der Elst 1981). Juveniles are active cleaners of other fishes, and often found near gorgonians or black corals. Closely resembles *B. dictynna* Gomon 2006 of the Pacific, but distinguished from that species by Gomon (2006).

Bodianus leucosticticus (Bennett 1832)

Lined hogfish

PLATE 58

Labrus leucosticticus Bennett 1832: 166 (Mauritius, Mascarenes).

Cossyphus leucosticticus: Günther 1862.

Lepidaplois leucostictus: Baissac 1953; Smith 1957.

Lepidaplois bourboni Fourmanoir & Guézé 1961: 7,

Fig. 1 (Réunion, Mascarenes).

Bodianus leucostictus: Baissac 1976; SSF No. 220.9*.

Bodianus leucosticticus: Gomon 2006; Baranes *et al.* 2017.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 16 rays. One or more canines on vomer. Body depth 2.9–3.2 in SL; pelvic fins almost extending to anus in large adults; caudal fin truncate to slightly rounded. Total GR 16–19. LL scales 30; scales dorsally on head extending in front of nostrils; cheek scales extending anterior to corners of mouth; low scaly sheath at base of dorsal and anal fins.

Body orange-yellow, shading to white or pale yellow ventrally, with 4 or 5 red, or red and black lines on body, upper 3 extending to eye (lines may be broken into segments, or the black part may be a series of spots or dashes superimposed on the red); black spot on pectoral-fin base present or absent (appears to be reduced to small red spot or disappears with age); black or red dots on body in irregular rows between lines (also seem to disappear with age). Attains 23 cm TL.



Bodianus leucosticticus, 23 cm TL (Myanmar). © Alvheim, IMR © FAO

DISTRIBUTION Indo-Pacific. WIO: Réunion and Mauritius; elsewhere, Myanmar, Taiwan and Japan.

REMARKS Usually found at moderate depths (~50 m). *Bodianus bourboni* (Fourmanoir & Guézé 1961) from Réunion was mistakenly considered valid in Parenti & Randall (2018) based on Baranes *et al.* (2017), but it was listed as a synonym of *B. leucosticticus* in that paper.

Bodianus macrognathos (Morris 1974)

Giant hogfish

PLATE 58

Lepidaplois macrognathos Morris 1974: 632, Figs. 1–2 (Kanyika I., Kenya).
Bodianus macrognathos: Gomon in Fischer & Bianchi 1984; Randall 1995*;
Manilo & Bogorodsky 2003; Lieske & Myers 2004; Gomon 2006.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 17 rays. Body depth 2.6–3.1 in SL, proportion changing with growth; snout profile increasingly steep with growth, at ~80° angle in large adults; upper jaw protruding; lower jaw massive in adults; membranes of spinous dorsal and anal fins deeply incised; pelvic fins almost extending to anus in large adults; caudal fin slightly rounded in juveniles, double emarginate in large adults, with elongate lobes. Total GR 16–19. LL scales 40–42; predorsal scales 17 or 18; scales above lateral line 6½; scales dorsally on head extending to posterior part of interorbital area; small scales on cheeks extending to below eyes; well-developed scaly sheath at base of dorsal and anal fins.

Juveniles and initial-phase adults white, scale edges dark, with broad black stripe from front of snout (except white lips), through eye, and on sides of body above pectoral fins, expanding in caudal fin; median black stripe on nape, continuing dorsally on body and entire dorsal fin, except posterior 3 or 4 rays. Head of adult males dark greenish to purplish grey, lower jaw varying from dark blue-green to dark purple; body pale yellowish grey, scale edges dark, with very broad dark bar or double bar across middle of body and double bar posteriorly, centred on rear dorsal-fin base, both continuing into adjacent fins; caudal fin and rear of peduncle dark purplish to greenish grey. Females without dark head and bars. Attains 83 cm TL; 78-cm-TL specimen from Gulf of Oman weighed 7.3 kg.

DISTRIBUTION WIO: Kenya to Oman, Pakistan and India.

REMARKS Observed in Oman in shallow water along rocky shores, to 65 m deep (Randall 1995).

Bodianus macrourus (Lacepède 1801)

Black-banded hogfish

PLATE 58

Labrus hirsutus Lacepède 1801: 429, 473, Pl. 20, Fig. 1 (Mauritius, Mascarenes).
Labrus rubrolineatus Lacepède 1801: 433, 480 (Madagascar; Réunion, Mascarenes).
Labrus macrourus Lacepède 1801: 438, 493, Pl. 9, Fig. 3 (Indian Ocean).
Crenilabrus croceus Lesson 1828: 407 (Mauritius, Mascarenes).
Crenilabrus chabrolii Lesson 1829: 133 (Mauritius, Mascarenes).

Labrus spilonotus Bennett 1836: 207 (Mauritius, Mascarenes).
Cossyphus maldat Valenciennes in Cuv. & Val. 1839: 114 (Mauritius, Mascarenes).

Lepidaplois hirsutus: Baissac 1953; Smith 1957; SFSA No. 774.
Bodianus macrourus: Gomon in Fischer & Bianchi 1984; Heemstra *et al.* 2004; Gomon 2006.
Bodianus hirsutus: Cornic 1987.
Bodianus macrurus: Allen & Steene 1987.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 17 rays. Body depth 2.8–3.3 in SL; pelvic fins long, extending to anus in juveniles, and to base of 3rd anal-fin spine in large adults; caudal fin of juveniles and subadults truncate, becoming double emarginate with moderately elongate lobes in large adults. Total GR 17–21. LL scales 30–32; scales dorsally on head extending to posterior edge of eyes; interorbital area naked; cheek scales extending slightly in front of corners of mouth; scales present posteriorly on lower jaw (often embedded); well-developed scaly sheath at base of dorsal and anal fins.

Juveniles yellow, with white bar as broad as orbit diameter across middle of body, followed by black bar 2–2.5 times broader than white, extending broadly onto dorsal and anal fins. Adults brownish red dorsally with curved lines of blue dashes following scale rows to just below LL, white below, with yellow longitudinal lines separating scale rows (the scales appear like series of white squares); very broad black bar across rear of body, covering posterior part of soft-rayed portion of dorsal fin and ending at base of about posterior 5 rays of anal fin, the irregular rear margin less than half length of bluish white peduncle; snout and posterior part of head orange with narrow pale blue bands that link to every other row of pale blue dashes on body; ventral part of head bluish white with irregular orange-yellow bands; large black spot covering most of first 3 membranes of dorsal fin; pectoral fins translucent whitish; pelvic fins black. Attains 33 cm TL.



Bodianus macrourus, 23 cm SL (Mauritius). PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: Madagascar, Réunion, Mauritius and St Brandon Shoals.

REMARKS Inhabits coral reefs, in ~13–40 m. Lacepède (1801) described this species under three separate names. Gomon (2006) explained that Günther (1862) was the first subsequent author to clearly provide an opinion for selecting *B. macrourus*.

Bodianus neilli (Day 1867)

Neill's hogfish

PLATES 58 & 59

Cossyphus neilli Day 1867: 560 (Chennai, India).

Cossyphus axillaris var.: Day 1877.

Bodianus luteopunctatus (non Smith 1957): Burgess & Axelrod 1973.

Bodianus neilli: Anderson 1996; Gomon 2006.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 17 rays. Vomer with at least one small canine. Body depth 2.9–3.7 in SL, deeper with growth; pelvic fins short, usually not extending to anus; caudal fin truncate to slightly rounded. Total GR 17–19. LL scales 30–32; predorsal scales 25–31; predorsal midline scales reaching forward to about nostril; cheek scales extending forward to corners of mouth, on some specimens to below nostrils; scales posteriorly on lower jaw may be embedded; well-developed scaly sheath at base of dorsal and anal fins.

Juveniles dark brown to black, with 2 rows of large white spots (a dorsal row with 2 spots below dorsal fin and one at upper caudal-fin base, and lateral row of 2 large subrectangular spots, one on upper pectoral-fin base and extending below fin, and one in midbody, followed by smaller one on lateral line anteriorly on peduncle, and one at lower caudal-fin base); head black, abruptly pale yellowish grey ventrally, with mid-dorsal row of 4 small white spots, white spot above opercle and 2 spots below eye; large ocellated black spot in front of soft-rayed portion of dorsal and anal fins; pelvic fins white with large black spot. Adults greyish pink on head and anterodorsally on body, abruptly pale lavender ventrally on head, grading posteriorly on body to brownish and yellowish grey, and ventrally to bluish grey; unscaled anterior soft-rayed portion of dorsal and anal fins with broad bright red band, rays pale yellow posteriorly with translucent membranes; caudal fin with pink rays, translucent membranes and red dorsal and ventral margins; pelvic fins pale yellow. Attains 21 cm TL.

DISTRIBUTION Indian Ocean. WIO: Maldives, India to Sri Lanka; elsewhere, Andaman Sea.

REMARKS Satapoomin *in* Kimura *et al.* (2009) found this species on coastal reefs in southwestern Thailand, in 2–25 m. Owing to the similarity of this species to *Bodianus axillaris*, Day (1877) reclassified *Cossyphus neilli* as a variety of *C. axillaris*.

Bodianus opercularis (Guichenot 1847)

Red-striped hogfish

PLATE 59

Cossyphus opercularis Guichenot 1847: 283 (Madagascar).

Trochocopus opercularis Günther 1862: 100 (Mauritius, Mascarenes?)

[subjectively invalid].

Cheiliopsis bivittatus Steindachner 1863: 1113, Pl. 24, Figs. 1–1c (Mauritius, Mascarenes).

Bodianus opercularis: Baissac 1976; Randall 1981; Cornic 1987;

Allen & Smith-Vaniz 1994; Khalaf & Disi 1997; Lieske & Myers 2004;

Gomon 2006.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 16 or 17 rays. No teeth on vomer. Body elongate, depth 4.1–4.8 in SL; snout pointed, 2.8–3 in HL; caudal fin slightly rounded. GR 15–17. LL scales 40–46; scales dorsally on head extending to behind edge of eyes, those on cheeks not reaching corners of mouth; low scaly sheath at base of dorsal and anal fins.

Body white to pale yellow, with 3 broad red stripes: 1st dorsally on body, expanding posteriorly onto dorsal-fin base and to upper edge of peduncle; 2nd from front of snout through eye to caudal-fin base, then narrowing to end of caudal fin; 3rd stripe from ventrally on head, through lower pectoral-fin base to ventral part of peduncle, then converging obliquely and narrowing to almost join midlateral caudal stripe; prominent semicircular black spot dorsally on opercle within middle red stripe; first 2 red stripes may be joined by red bar basally in caudal fin; dorsal fin with broad submarginal red stripe ending in middle of soft-rayed part of fin; anal fin with broad basal red stripe. Attains 18 cm TL.

DISTRIBUTION Indian Ocean. WIO: northern Red Sea, Kenya, Madagascar and Mauritius; elsewhere, Christmas I.

REMARKS Found on steep seaward reef slopes and drop-offs, in 35–80 m; usually solitary. The type locality was resolved by Bauchot & Blanc (1961) who listed the locality for both of Guichenot's syntypes as Madagascar.

Bodianus tanyokidus Gomon & Madden 1981

Ear-ring hogfish

PLATE 59

Cossyphus opercularis (non Guichenot 1847): Gudger 1929.

Lepidaplois sanguineus (non Jordan & Evermann 1903): Fourmanoir 1955.

Bodianus tanyokidus Gomon & Madden 1981: 122, Figs. 2–3 (Mauritius,

Mascarenes); Gomon 2006.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 17 rays. No teeth on vomer. Body elongate,

depth 3.9–4.3 in SL; snout pointed, length ~2.8–3 in HL; head profile at ~20° angle to horizontal axis of body; pelvic fins short, not extending to anus; caudal fin slightly rounded. GR 12–17. LL scales 36–41; predorsal scales 11 or 12; scales on head extending to rear edge of eyes, those on cheeks not reaching corner of mouth; lower jaw naked; low scaly sheath at base of dorsal and anal fins.

Adults with diffuse orange-red band, approximately eye diameter in width, below dorsal fin, ending dorsally on peduncle, grading to yellow on side and ventrally, with broken orange-red line extending back from upper end of gill opening, ending below middle of soft-rayed portion of dorsal fin; snout and head behind eyes orange-red, grading to yellow ventrally; irregular, vertically elliptical black spot, more than orbit diameter in height, posteriorly on opercle at level of eye; iris yellow; fins yellow, outer part of spinous membranes of dorsal fin translucent; small orange-red spot at caudal-fin base. Attains 21.5 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Comoros and Mauritius; elsewhere, southern Japan.

REMARKS The story of this unique species began with a painting by Col. Nicolas Pike of a specimen from Mauritius. Gudger (1929) misidentified it as *Cossyphus opercularis* Guichenot 1847, followed by additional misidentifications by Fourmanoir (1955) and Gushiken (1972) of specimens they obtained. Masuda *et al.* (1975) reported two specimens from Okinawa, Japan, taken by handline in >100 m as *Bodianus* sp. Gomon & Madden (1981) described the species as new, and differentiated it from *B. sanguineus* and *B. opercularis*. The few records of this species are undoubtedly due to its deep-reef habitat and being too small to be sought by fishermen.

Bodianus trilineatus (Fowler 1934)

Threeline hogfish

PLATE 59

Lepidaplois trilineatus Fowler 1934: 492, Fig. 47 (KwaZulu-Natal, South Africa); Smith 1957; SFSA No. 772.

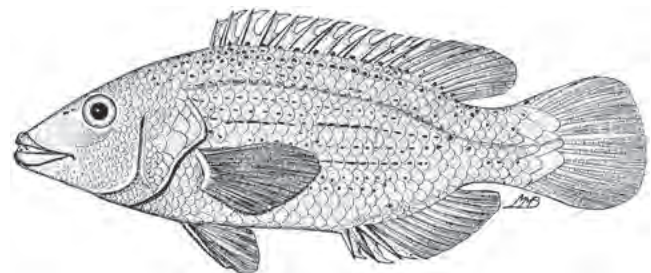
Lepidaplois luteopunctatus Smith 1957: 102, Pl. 1a (Maputo Bay, Mozambique); Smith & Smith 1963*.

Bodianus trilineatus: Smith in Bruton & Cooper 1980; Heemstra & Heemstra 2004*; Gomon 2006; Baranes *et al.* 2017.

Dorsal fin 12 spines, 10 rays; anal fin 3 spines, 12 rays; pectoral fins 15 or 16 rays. Vomer with ≥1 canines. Body depth 2.6–3.1 in SL; pelvic fins not extending to anus; caudal fin usually slightly rounded. Total GR 17–19. LL scales 29 or 30; predorsal scales 19–33, scales dorsally on head extending from

above eyes to anterior nostrils; cheek scales extending slightly anterior to corners of mouth; low scaly sheath at base of dorsal and anal fins.

Body orange-red dorsally, grading through yellow to pale blue or lavender ventrally on head, chest and abdomen, with 5 longitudinal orange-red lines on body, upper 3 heavily superimposed with black and converging anterior of eyes; fins pale yellow to orange-yellow; curved dark red to black bar at pectoral-fin base; subadults with large elliptical black spot in dorsal fin at juncture of spines and rays, and smaller spot in anal fin; black spot at end of 3rd black line at midcaudal-fin base. Attains 27 cm TL.



Bodianus trilineatus, 27 cm TL, holotype of *Lepidaplois luteopunctatus* (S Mozambique). Source: Smith 1957

DISTRIBUTION WIO: Gulf of Aden, Somalia, southern Mozambique to South Africa (Park Rynie).

REMARKS Reported from off Somalia and in the Gulf of Aden (where the sea is cooler from upwelling). Heemstra & Heemstra (2004) give the depth range as 25–200 m, and Gomon (2006) as 50–80 m. Van der Elst (1981) reported feeding mainly on gastropod and bivalve molluscs and noted that it is a popular aquarium fish.

GENUS *Cheilinus* Lacepède 1801

Single pair of prominent canines at front of jaws, none at back of upper jaw; dorsal fin long-based, with 9 spines, 9–14 rays (except *Cheilinus chlorourus* with 10 spines, 9 rays); anal fin 3 spines, 8–12 rays; pectoral fins 12 rays (except *C. quinquecinctus* with 11 rays). Mouth terminal or with lower jaw slightly projecting. Lateral line interrupted, with 15 or 16 scales in upper part, ending beneath soft-rayed part of dorsal fin, and 6 or 7 pored scales midlateral on peduncle; scaly sheath at base of dorsal and anal fins. Eight species, all in WIO and/or Red Sea, and 5 ranging to Pacific.

KEY TO SPECIES

- 1a Dorsal fin 10 spines, 9 rays; caudal fin strongly rounded, adult males with filamentous uppermost principal ray, some with lower ray also elongate; body dark brown to dark olive, with red, pink or white dots on head, body and fins, those on body often as 2 or 3 in vertical alignment on scales; large ovate bluish or greenish spot on opercle *C. chlorourus*
- 1b Dorsal fin 9 spines, 9–11 rays; colour not entirely as above 2
- 2a Adults with prominent fleshy hump on forehead, deep-bodied (body depth ~2.2–2.3 in SL) and strongly compressed; greyish to yellowish green, with narrow, spindle-shaped, dark brown vertical bands on scales behind pectoral fins; irregular narrower dark brown bands and lines anteriorly; fine reticular pattern on cheeks and opercles; scattered white markings and wavy lines sometimes present on nape; 2 long, close-set, black lines extending back from eye, and often double dark band from eye to corner of mouth; maximum size >170 cm TL *C. undulatus*
- 2b No prominent hump on forehead of adults; colour not as above; maximum length ~40 cm TL 3
- 3a Head profile concave from mouth to above eyes; caudal fin rounded; body usually red to reddish brown, with numerous bright red to white dots on head and body; 2 or 3 close-set, square, dark brown spots on each side of upper lip; 3 or 4 black spots (at most pupil-sized) in midlateral row posteriorly on body, last spot at caudal-fin base *C. oxycephalus*
- 3b Head profile straight or convex from mouth to above eyes; caudal fin rounded, truncate or double emarginate, with or without one or more filamentous rays; no prominent dark brown spots on sides of upper lip, and no midlateral row of black spots posteriorly on body 4
- 4a Pelvic fins of adults elongate, in males almost twice length of pectoral fins, extending beyond anal-fin spines; caudal fin slightly rounded, each branch of principal rays of adult males greatly elongated as filament; 6th dorsal-fin ray and 5th anal-fin ray the central ray of lobed portion, up to half caudal-fin length in adult males; adult females green, with 4 double dark olive bars on body, scales with long vertical pink lines (as well as green lines within the dark bars); both sexes with scattered pink dots on head; lips and chin bright blue, pectoral fins bright yellow, and vertically elongate black spot on opercular flap containing irregular yellow mark; body of adult males behind pectoral fins dark olive, with vertical pink and green lines on scales; irregular yellow bar beneath pectoral fins *C. lunulatus*
- 4b Pelvic fins of males not long; caudal fin with rays exerted only in *C. abudjubbe* (free rays $\frac{1}{2}$ caudal-fin length); colours not as above 5

Continued ...

KEY TO SPECIES

- 5a Pelvic fins barely extending to anus; anterior third of body orange (including chest and pectoral fins), body pale brownish grey to dark grey posteriorly, with 5 narrow whitish bars, extending and expanding onto bases of dorsal and anal fins; many scales on body with narrow, spindle-shaped, vertical black streaks 6
- 5b Pelvic fins extending beyond anus, often to or beyond anal-fin origin; colour not as above 7
- 6a Caudal fin of adults deeply emarginate, caudal concavity up to half of HL; pectoral fins 12 rays; longest dorsal-fin ray 2.2–2.4 in HL; orange-red lines radiating from lower half of eyes *C. fasciatus*
- 6b Caudal fin of adults truncate, with one to several elongate rays, none longer than quarter of HL; pectoral fins 11 rays; longest dorsal-fin ray 1.6–1.8 in HL; no orange-red lines radiating from lower half of eyes (Red Sea) *C. quinquecinctus*
- 7a Caudal fin of adult males rounded with numerous elongate rays, fin length without elongate rays subequal to HL; longest dorsal-fin ray 1.4–1.7 in HL; pelvic fins of adult males extending well beyond anal-fin origin; scales of anterior half of body with red and pale green dots, red mostly in vertical series of 3; scales of posterior half of body with vertical red and pale green lines; pink lines radiating in all directions from eyes *C. abudjubbe*
- 7b Caudal fin of adult males rounded, only the uppermost and lowermost principal rays elongated as filament, fin length without filaments ~1.5 in HL; longest dorsal-fin ray 1.8–2.4 in HL; pelvic fins of adult males just extending to or slightly behind anal-fin origin; scales of body with vertical magenta and pale green lines (no dots); pink lines extending only above and in front of eyes *C. trilobatus*

Cheilinus abudjubbe Rüppell 1835

Abudjubbe

PLATE 59

Cheilinus abudjubbe Rüppell 1835: 18 (Jeddah, Saudi Arabia, Red Sea); Randall 1983 [photograph is of *C. trilobatus*]; Gomon in Fischer & Bianchi 1984; Field & Field 1998*; Lieske & Myers 2004.

Cheilinus trilobatus (non Lacepède 1801): Dor 1984.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth of adults 2.3–2.5 in SL; snout length 3.2–3.6 in HL; snout profile in adults straight, at ~45° angle; rear margin of dorsal fin of adults angular, longest ray 1.4–1.7 in HL; pelvic fins of adult males extending beyond anal-fin origin; caudal fin of adult males rounded, rays becoming elongate and free of membrane with growth (uppermost principal ray first to become longer and generally longest); caudal-fin length without elongate rays subequal to HL. GR 12 or 13. LL scales 14 or 15 + 7 or 8.

Body dark olive-brown, scales of anterior half of body with red and pale green dots, red mostly in vertical series of 3; scales of posterior half of body with vertical red and pale green lines; head green with pink lines radiating in all directions from eyes; series of prominent white blotches of variable size dorsally and ventrally on body; numerous small white spots on median fins. Attains 40 cm TL.

DISTRIBUTION WIO: Red Sea (including Gulf of Aqaba) and Gulf of Aden.

REMARKS Usually found on shallow silty reefs of sheltered bays and lagoons, in 2–30 m. Solitary; juveniles and females secretive, males swim more in the open but are difficult to approach. Replaced in remainder of Indo-Pacific by the similar-looking *Cheilinus trilobatus*.

Cheilinus chlorourus (Bloch 1791)

Floral wrasse

PLATES 59 & 60

Sparus chlorourus Bloch 1791: 24, Pl. 260 (Japan).

Cheilinus punctatus Bennett 1832: 167 (Mauritius, Mascarenes); Playfair & Günther 1867.

Cheilinus punctulatus Valenciennes in Cuv. & Val. 1840: 87, Pl. 396 (Seychelles).

Cheilinus chlorurus: Bleeker 1874; Barnard 1927; Munro 1955; Jones & Kumaran 1980; Gomon in Fischer & Bianchi 1984; Allen & Smith-Vaniz 1994.

Thalliurus chlorurus: Smith 1957; Smith & Smith 1963*; SFSA No. 818.

Cheilinus chlorourus: SSF No. 220.12*; Randall 1992; Fricke 1999; Manilo & Bogorodsky 2003; Heemstra *et al.* 2004.

Dorsal fin 10 spines, 9 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 2.3–2.8 in SL, less deep with growth; snout profile straight to slightly concave, dorsal profile slightly convex on rest of head and nape; snout length ~3 in HL; pelvic fins of adult males elongate, extending at least to anal-fin origin; caudal fin strongly rounded, upper ray and to lesser extent lower ray elongate in large adult males. LL scales 15 + 5–8; head scaly dorsally anterior to eyes.

Body dark brown to olivaceous, with numerous, orange-pink to red dots, often with 2–4 per scale; head more densely dotted; no red lines radiating from eyes (but may be a few short, broad red dashes anterior and dorsal to eyes); ovate bluish grey spot almost eye-sized on opercular flap; median and pelvic fins with numerous whitish dots; bluish black blotch on 1st or 2nd interspinous membranes of dorsal fin; caudal fin with large middle bluish black zone, preceded by broad irregular whitish bar, followed by very broad orangish border, entire fin finely flecked with white; pectoral-fin rays whitish, membranes transparent. Attains 36 cm TL.



Cheilinus chlorourus, 18 cm SL (Rodrigues). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Arabian Sea, Kenya to Mozambique, Seychelles, Rodrigues and Mauritius; elsewhere to Japan, Micronesia and French Polynesia.

REMARKS Inhabits coral reefs and seagrass beds, in 1–30 m. Feeds mainly on hard-shelled benthic invertebrates.

Cheilinus fasciatus (Bloch 1791)

Redbreasted wrasse

PLATE 60

Sparus fasciatus Bloch 1791: 18, Pl. 257 (Japan).

Labrus enneacanthus Lacepède 1801: 433, 480 [no locality given].

Sparus bandatus Perry 1810: no page number, Pl. 8 ('Eastern Ocean').

Cheilinus fasciatus: Valenciennes in Cuv. & Val. 1840; Playfair & Günther 1867; Bleeker 1874; Day 1877; Baissac 1953; Smith 1957; Smith & Smith 1963*; Jones & Kumaran 1980; Winterbottom *et al.* 1989*; Randall 1992 [photograph is of *C. quinquecinctus*]; De Bruin *et al.* 1994; Heemstra *et al.* 2004.

Cheilinus fasciatus fasciatus: Gomon in Fischer & Bianchi 1984; Fricke 1999.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 2.3–2.8 in SL, less deep with growth; head profile straight in juveniles, becoming convex in adults; snout length 2.2–2.6 in HL; margin of soft-rayed portion of dorsal fin rounded, longest ray ~2.5 in HL; anal fin acutely pointed, longest ray ~1.2–1.4 in HL; pelvic fins short, not extending to anus, length ~2.2 in HL; caudal fin slightly rounded in juveniles, lunate in adult males, with caudal concavity ~2 in HL. GR 12–15. LL scales 14–16 + 7–9; head scaly dorsally anterior to eyes.

Body greenish grey, grading to orange anteriorly on body (covering pectoral fins and including chest), with vertical, spindle-shaped black bar on scales; body crossed by 6 narrow, curved white bars that expand into adjacent dorsal and anal fins, 1st beneath pectoral fins and ending anteriorly on abdomen, last on peduncle; head olive-green to green, grading

to orange behind eyes and expanding onto opercles; 2 curved white bars on nape, most anterior bar ending on eye; orange lines radiating from lower half of eyes; caudal fin white with broad black bar in middle of fin and black on middle of rear margin. Attains 33 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Tanzania, Mozambique, Madagascar, Mascarenes, Maldives and Chagos; elsewhere to Indonesia, Ryukyu Is., Micronesia, Great Barrier Reef, Lord Howe I. and Samoa.

REMARKS More common on lagoonal than on seaward reefs; seemingly the least wary species of the genus. Replaced in the Red Sea by the similar-looking *C. quinquecinctus* (once considered a subspecies).

Cheilinus lunulatus (Forsskål 1775)

Broomtail wrasse

PLATE 60

Labrus lunulatus Forsskål in Niebuhr 1775: 37, xi (Red Sea).

Cheilinus lunifer Nichols 1923: 3, Fig. 3 (Djibouti, Gulf of Aden).

Cheilinus lunulatus: Smith 1957; Klausewitz & Nielsen 1965; Randall 1983, 1995*; Dor 1984; Carpenter *et al.* 1997*; Field & Field 1998*; Lieske & Myers 2004.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 2.4–2.7 in SL, less deep with growth; head profile of juveniles almost straight, at ~45° angle; snout progressively steeper with growth, to ~60° angle in large males; snout length of adults 2.6–2.9 in HL (to 3.5 in juveniles); pelvic fins of adults very long, in males almost twice length of pectoral fins, extending beyond anal-fin spines; dorsal- and anal-fin lobes elongate, with 6th dorsal-fin ray and 5th anal-fin ray the central rays respectively, and extending back as much as half the caudal-fin length in adult males; caudal fin slightly rounded, each branch of principal rays of adult males greatly elongated as filament up to half total fin length. GR 10–12. LL scales 15 or 16 + 8 or 9; head scaly dorsally anterior to eyes.

Adult females green, with 4 double dark olive bars on body, scales with long vertical pink lines (as well as green lines within the dark bars); both sexes with scattered pink dots on head; lips and chin bright blue, pectoral fins bright yellow, and vertically elongate black spot on opercular flap, containing irregular yellow mark (sometimes looking like a bent question mark). Adult males dark olive on body behind pectoral fins, with vertical pink and green lines on scales; irregular yellow bar anteriorly on body, passing beneath pectoral fins. Males attain 50 cm TL

DISTRIBUTION WIO: Red Sea (including Gulf of Aqaba) to Gulf of Oman and Persian/Arabian Gulf.

REMARKS Found on coral reefs and adjacent habitats, to ~30 m deep; solitary and difficult to approach. Feeds primarily on benthic invertebrates, especially molluscs and crustaceans. Males maintain a harem and are strongly territorial.

Cheilinus oxycephalus Bleeker 1853

Snooty wrasse

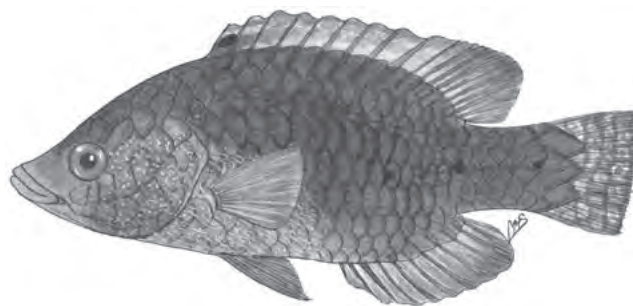
PLATE 60

Cheilinus oxycephalus Bleeker 1853: 349 (Ambon I., Moluccas, Indonesia); Smith 1957; Smith & Smith 1963*; SSF No. 220.14*; Winterbottom *et al.* 1989*; Randall 1992; Fricke 1999.

Cheilinus calopthalmus Günther in Playfair & Günther 1867: 90, Pl. 11, Fig. 4 (Zanzibar, Tanzania).

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 2.4–3 in SL; head profile concave from mouth to above eyes; snout short, length 3.1–3.7 in HL; pelvic fins short, length subequal to pectoral fins and usually just reaching anus; soft-rayed portions of dorsal and anal fins not acutely pointed; caudal fin rounded in all stages. LL scales 15 or 16 + 6 or 7; head scaly to above middle of eyes.

Colour variable, usually brownish red, but may be bright red or olive mottled with small whitish spots; juveniles and subadults often with 4 irregular narrow whitish bars across body; 3 or 4 dark brown spots of about pupil-sized midlaterally on posterior half of body, last at midcaudal-fin base; each side of upper lip usually with 2 or 3 close-set, square, dark brown spots; often 2 dark lines diverging behind eye; dark brown or black spot of pupil size or larger on membrane between first 2 dorsal-fin spines, partly bordered in red, sometimes extending onto 2nd membrane. Attains 17 cm TL.



Cheilinus oxycephalus, 12 cm SL (N Mozambique). Source: Smith & Smith 1963

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (Aliwal Shoal), Tanzania (Zanzibar), Madagascar, Comoros, Seychelles, Mauritius, Maldives and Chagos; elsewhere to Indonesia, Ryukyu Is., Great Barrier Reef, Tuamotu Is. and Line Is.

REMARKS Shelters on coral reefs; among the most difficult of reef fishes to approach. Two older names for this species were *C. ketlitzii* Valenciennes 1840 and *C. sanguineus* Valenciennes 1840, both described from specimens from the Caroline Is. (M Westneat, pers. comm.). Randall & Parenti (1999) successfully petitioned for suppression of these names to conserve *C. oxycephalus*.

Cheilinus quinquecinctus Rüppell 1835

Whitebarred wrasse

PLATE 61

Cheilinus quinquecinctus Rüppell 1835: 19, Pl. 6, Fig. 1 (Jeddah, Saudi Arabia, Red Sea).

Chilinus fasciatus (non Bloch 1791): Klunzinger 1871.

Cheilinus fasciatus quinquecinctus Klauswitz 1967: 59 (Sarso I., Red Sea); Gomon in Fischer & Bianchi 1984.

Cheilinus fasciatus (non Bloch 1791): Bemert & Ormond 1981; Randall 1983; Dor 1984; Field & Field 1998*.

Cheilinus quinquecinctus: Lieske & Myers 2004.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 11 rays. Body depth 2.4–2.6 in SL; snout length 2.2–2.6 in HL; head profile of juveniles almost straight, at ~30° angle; head profile of adults straight to above eyes, at ~45° angle, then convex to dorsal-fin origin; rear margin of dorsal and anal fins angular; pelvic fins short, not extending to anal-fin origin; caudal fin slightly rounded in juveniles, truncate in females, and rays in adult males free of membranes posteriorly (uppermost principal ray first to elongate). GR 12–15. LL scales 14–16 + 7–10.

Juveniles brown with 3 white bars that cross body and extend into adjacent fins, bars broader and brighter anteriorly; faint 4th bar at front of peduncle, and 2 faint short bars on nape; short oblique white band from eye to across preopercle; white band at caudal-fin base; midlateral row of small black spots, and large black spot anteriorly on dorsal fin; females with same white bars as juveniles, with additional fainter bar between first 2 bars, ending posteriorly on abdomen; vertical black lines or rows of small black spots on scales anteriorly on body and on head behind eyes; postorbital part of head and anterior body suffused with orange; caudal fin broadly white basally, followed by slightly broader black zone, the outer fifth pale grey; males with vertically elongate, spindle-shaped black streaks on scales at margins of white bars on body, and much heavier orange-red pigment overlying front of body, especially abdomen, beneath pectoral fins, and variably onto head. Attains ~35 cm TL.

DISTRIBUTION WIO: endemic to Red Sea.

REMARKS Occurs on both sheltered and seaward reefs, in 4–40 m, often in adjacent sand and rubble areas. Has been observed following foraging goatfishes to take advantage of exposed hard-shelled invertebrates. Differs somewhat in colour from *C. fasciatus* from Indo-Pacific, and in having elongate caudal-fin rays in males. Parenti & Randall (2000, 2011, 2018) considered this species a synonym of *C. fasciatus*.

Cheilinus trilobatus Lacepède 1801

Tripletail wrasse

PLATE 61

Cheilinus trilobatus Lacepède (ex Commerson) 1801: 529, 537, Pl. 31, Fig. 3 (Madagascar; Réunion and Mauritius, Mascarenes); Valenciennes in Cuv. & Val. 1840; Günther 1862; Playfair & Günther 1867; Day 1875; Smith 1957; Smith & Smith 1963*; SFSA No. 816*; Baissac 1968; Jones & Kumaran 1980; Gomon in Fischer & Bianchi 1984; SSF No. 220.15*; Winterbottom *et al.* 1989*; Randall 1992; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Fricke 1999.

Cheilinus sinuosus Quoy & Gaimard 1824: 278 (Madagascar; Mariana Is.).

Cheilinus fasciatopunctatus Steindachner 1863: 1114, Pl. 23 (Red Sea).

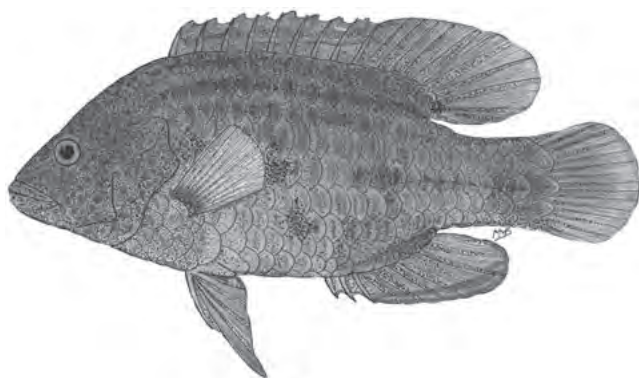
Chilinus trilobatus: Peters 1877.

Julis trilobata: Sauvage 1891.

Cheilinus chlorurus (non Bloch 1791): Cornic 1987.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 2.3–2.6 in SL; head profile straight to above eyes, then slightly convex; pelvic fins of adults long, extending to near anal-fin origin; posterior dorsal- and anal-fin rays of adult females forming rounded margin, longest dorsal-fin ray 1.8–2.4 in HL, but these fins in adult males acutely pointed, longest anal-fin ray ~1.5 in HL; caudal fin rounded, upper and lower rays of adult males elongate, giving fin trilobed shape. GR 10 or 11. LL scales 14–16 + 7 or 8; head scaly dorsally to above middle of eyes.

Adults olive-green, with narrow, vertical, pink to magenta lines on scales of body, spindle-shaped posteriorly; head green with numerous pink dots; pink lines extending anteriorly and ventrally from eyes; lower lip and chin blue; 2 broad white bars often present on adults, one anteriorly on peduncle, other at caudal-fin base; broad middle zone of caudal fin with black membranes and green rays; distal part of fin pink to magenta; scaly basal part of dorsal and anal fins with linear pattern like body; margin of fins pink to magenta, with submarginal line of same colour; base and rays of pectoral fins yellow, membranes transparent. Attains 40 cm TL.



Cheilinus trilobatus, 12 cm TL, juvenile (S Mozambique). Source: SSF

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (Sodwana Bay), Madagascar, Seychelles, Réunion, Mauritius, Maldives and Chagos; elsewhere to Indonesia, Ryukyu Is., Mariana Is., New Caledonia, Austral Is. and Tuamotu Is.; not known from Red Sea.

REMARKS Found on coral reefs and adjacent habitats. At Madagascar feeds heavily on gastropods, followed by crabs, bivalve molluscs and hermit crabs (Harmelin-Vivien 1979).

Cheilinus undulatus Rüppell 1835

Humphead wrasse or Napoleonfish PLATES 61 & 62

Cheilinus undulatus Rüppell 1835: 20, Pl. 6, Fig. 2 (Jeddah, Saudi Arabia, Red Sea); Playfair & Günther 1867; Smith 1957; Smith & Smith 1963*; SFSA No. 817a*; Randall 1983, 1992; Gomon in Fischer & Bianchi 1984; SSF No. 220.16*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Field & Field 1998*; Lieske & Myers 2004.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth to 2.7 in SL in juveniles, to 2.3 in SL in large adults; head profile of juveniles straight, profile of adults straight to eyes and then convex, large adults develop fleshy hump on forehead that protrudes anterior to eyes; mouth terminal, with thick lips; snout length 2–2.7 in HL, proportion increasing with growth; pelvic fins of adults extending well behind anus; dorsal and anal fins of adults acutely pointed, extending up to half distance to end of caudal fin; caudal fin rounded. GR 19–21. LL scales 14–16 + 7 or 8; low scaly sheath at base of dorsal and anal fins.

Juveniles pale greenish grey, with vertically elliptical black spot on each scale, except for 3 vertical white bars across body that extend onto dorsal fin, and narrower white bar on nape at dorsal-fin origin; head with many black spots and pair of irregular black lines extending anteriorly and behind eye; median fins greenish to yellowish grey, crossed by irregular

black bands. Subadults olive- to blue-green with vertical, spindle-shaped, dark brown band on each scale; 2 closely parallel black lines extending back across head from eye and 2 obliquely downward from each eye to end of maxilla. Adults with dark bands on scales, becoming narrower, with irregular vertical dark lines developing in interspaces; fine reticulated pattern develops on head; rays of median fins crossed by fine striation of yellow and dark brown; caudal-fin margin pale, submarginal band dark. Attains at least 170 cm TL.



Cheilinus undulatus, 60 cm TL (Zanzibar). Source: SSF

DISTRIBUTION Indo-Pacific. WIO: Red Sea to Mozambique (Inhaca I.), Madagascar, Mauritius, Maldives, Maldives and Chagos; elsewhere to Japan, Australia, New Caledonia, Pitcairn Is. and Hawaii.

REMARKS The largest of the wrasses. Solitary or occasionally in pairs, adults active on reefs by day; benthopelagic, in 2–60 m. Feeds on gastropods, crabs and other crustaceans, sea urchins, bivalve molluscs and fishes, with lesser amounts of brittlestars and sea stars (Randall *et al.* 1978). Choat *et al.* (2006) estimated an age of 23 years for a 140-cm-TL specimen from otolith rings. Sadovy *et al.* (2003) reviewed the biology and discussed the threat from overfishing. IUCN Red List conservation status Endangered.

GENUS *Cheilio* Lacepède 1801

Genus diagnosis as for the single species.

Cheilio inermis (Forsskål 1775)

Cigar wrasse PLATE 62

Labrus inermis Forsskål in Niebuhr 1775: 34, xi (Al-Mukha, Yemen, Red Sea).

Cheilio auratus Lacepède (ex Commerson) 1802: 432, 433 (Mauritius, Mascarenes).

Cheilio fuscus Lacepède (ex Commerson) 1802: 432, 433 (Mauritius, Mascarenes).

Labrus fusiformis Rüppell 1835: 7, Pl. 1, Fig. 4 (Jeddah, Saudi Arabia, and Massawa, Eritrea, Red Sea).

Cheilio cyanochloris Valenciennes in Cuv. & Val. 1839: 346, Pl. 382 (Mauritius, Mascarenes).

Cheilio bicolor Bianconi 1857: 100 (Mozambique).

Cheilio inermis: Günther 1862; Playfair & Günther 1867; Bleeker 1874; Sauvage 1891; Gilchrist & Thompson 1908; Barnard 1927 [as *Chilio inermis*]; Baissac 1953, 1968; Smith 1955, 1957; Smith & Smith 1963*; SFSA No. 770*; Jones & Kumaran 1980; Randall 1983; Gomon in Fischer & Bianchi 1984; SSF No. 220.17*; Winterbottom *et al.* 1989*; Randall & Anderson 1993; Allen & Smith-Vaniz 1994; Field & Field 1998*; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004; Fricke *et al.* 2009.

Cheilio cyanochloris: Guichenot 1863.

Dorsal fin 9 spines, 12–14 rays; anal fin 3 spines, 11 or 12 rays; pectoral fins 12 rays. Jaws with pair of canines at front, followed by row of small conical teeth. Body elongate and little compressed, depth 5.5–7.9 in SL; snout long and pointed, 2.2–2.4 in HL; caudal fin rounded to slightly rhomboid. Lateral line continuous, gently curved, LL scales 45–59; head naked except for 1 row of scales on preopercle and a few scales dorsally on opercle; no scaly sheath at base of dorsal and anal fins.

Colour varying from shades of green, brown to bright yellow, often with narrow midlateral dark stripe, with body below stripe sometimes silvery; males with a few small orange to pink blotches, sometimes with black spots on side of body behind pectoral fins. Attains 50 cm TL.



Cheilio inermis, 10 cm SL (Comoros). © R Winterbottom, ROM

DISTRIBUTION Indo-Pacific to eastern Pacific (widespread). WIO: Red Sea to South Africa, Madagascar, Comoros, Seychelles, Mascarenes and Chagos; elsewhere to Indonesia, southern Japan, Australia, Lord Howe I., Rapa Iti, Hawaii and Easter I.

REMARKS Typically found in seagrasses or dense algal beds. Feeds on gastropods, bivalve molluscs, hermit crabs, crabs, sea urchins and shrimps (Randall 1985).

GENUS *Choerodon* Bleeker 1847

Two pairs of strong canines at front of jaws, 2nd pair in lower jaw curved laterally in some species (including both species in WIO); sides of jaws with row of close-set conical teeth, those in front may be joined into a ridge; small canine present posteriorly on each side in upper jaw. Dorsal fin 12 or 13 spines, 7 or 8 rays; anal 3 spines, 9 or 10 rays; pectoral fins 13–15 rays. Body depth 2.2–3 in SL; head profile of adults steep and convex; caudal fin varying from slightly emarginate to slightly convex. Lateral line continuous, smoothly curved, 24–29 pored scales; cheeks and opercles at least partly scaly; no scaly sheath at base of dorsal and anal fins. Twenty-seven species, all in Indo-Pacific, possibly 4 in WIO, but 2 to be confirmed. *Choerodon anchorago* (Bloch 1791) ranges from Sri Lanka to the western Pacific.

KEY TO SPECIES

- 1a Pectoral fins 14 or 15 rays; body depth ~3 in SL; females orange-brown dorsally, with indistinct orange-red stripe on body above pectoral-fin bases, body below stripe yellowish white; large lavender area on cheeks and opercles, grading to yellow ventrally, with 2 angular violet streaks; large blue-green spot dorsoposteriorly on opercle; males dark grey-green dorsally, pale bluish grey ventrally, with 2 parallel stripes of close-set purplish blue spots, one per scale (1st stripe from above middle of pectoral fins to upper part of caudal-fin base; 2nd stripe from ventral edge of pectoral fins to midpart of caudal-fin base; head mainly blue-green, grading to yellow ventrally, with narrow blue stripe from eye to upper lip, and narrow blue stripe just below eye *C. gymnogenys*
- 1b Pectoral fins 16 rays; body depth 2.5–2.6 in SL; curved dark brown band from upper part of pectoral-fin base to below rear part of dorsal-fin base, broadly bordered below by white band; body above band yellowish grey, and pale yellowish below band, with pale blue rims on scales, becoming narrow longitudinal blue bands on peduncle and continuing irregularly onto caudal fin; no blue band from eye to maxilla *C. robustus*

Choerodon gymnogenys (Günther 1867)

Purple-lined tuskfish

PLATE 62

Xiphochilus gymnogenys Günther in Playfair & Günther 1867: 85, Pl. 12, Fig. 4 (Zanzibar, Tanzania).

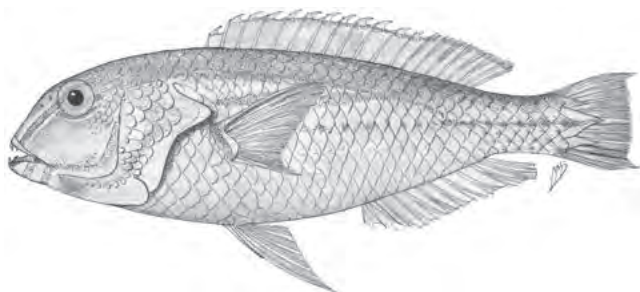
Peaolopesia matthaei (non Valenciennes 1839): Smith 1957.

Peaolopesia gymnogenys: SFSA No. 776a*.

Dorsal fin 12 spines, 8 rays; anal fin 3 spines, 10 rays; pectoral fins 14 or 15 rays. Front of jaws with pair of stout well-separated canines, 2nd pair laterally curved; sides of jaws with

row of stout, close-set conical teeth, anterior teeth coalesced into ridge. Dorsal and anal fins each continuous, soft-rayed parts almost uniform in height; pectoral-fin margins concave, ray conspicuously elongate; pelvic fins pointed, extending to anus; caudal fin relatively small, varying from slightly rounded to slightly emarginate or double emarginate. Lateral line gently curved posteriorly, straight on peduncle, LL scales 29; large scales on opercle; a few small scales on cheeks.

Females with indistinct orange-red stripe on body above pectoral-fin bases, body above stripe dull orange-red, suffused with lavender, and body below stripe lavender-grey with yellow in pectoral region; large lavender area on cheeks and opercles, grading to yellow ventrally, with 2 angular violet streaks; large blue-green spot dorsoposteriorly on opercle. Males dark grey-green dorsally, pale bluish grey ventrally, with 2 parallel stripes of close-set purplish blue spots, one per scale, 1st from above middle of pectoral fins to upper edge of caudal fin, 2nd from ventral edge of pectoral fins to midpart of caudal-fin base; head mainly blue-green, grading to yellow ventrally, where crossed by 2 oblique bright blue bands, rear band almost 3 times length of front band; narrow blue stripe from eye to blue upper lip, and narrow blue stripe just below eye; oblique blue band at pectoral-fin bases; dorsal fin orange; caudal and anal fins yellow. Individuals of both sexes from deeper depths more red overall. Attains 20 cm TL.



Choerodon gymnogenys, 15 cm TL, male (WIO). Source: SFSA

DISTRIBUTION WIO: Tanzania (Zanzibar), southern Mozambique, Seychelles Bank, and St Brandon Shoals.

REMARKS Known from 43–60 m. The specimens reported as *Choerodon gymnogenys* from Japan by Yamakawa *in* Masuda *et al.* (1984) and by Shen *et al.* (1993) from Taiwan are *Choerodon japonicus* (Kamohara 1958), described from a market specimen at Kochi City, Japan. *Choerodon skaiopygmaeus* Gomon 2017 (with no species account or photograph) is known only from 7 specimens collected off Somalia in 25–60, with live colours unknown; it is in the same species complex (with falcate pectoral fins) as *C. gymnogenys*, but has a more expansively scaled cheek.

Choerodon robustus (Günther 1862)

Robust tuskfish

PLATE 62

Xiphochilus robustus Günther 1862: 98 (Mauritius, Mascarenes); Playfair & Günther 1867; Klunzinger 1871.

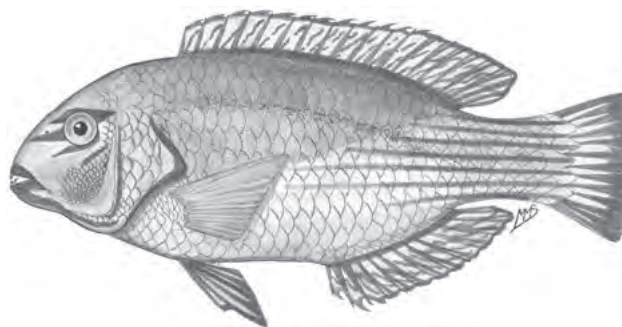
Cossyphus maxillosus Guichenot 1863: C-23 (Réunion, Mascarenes).

Choerops dodecanthus Bleeker 1868: 275 (Réunion, Mascarenes).

Choerodon robustus: Baissac 1953; Smith 1957; Gomon *in* Fischer & Bianchi 1984; Randall 1995*; Fricke 1999; Fricke *et al.* 2009.

Dorsal fin 13 spines, 8 rays; anal fin 3 spines, 10 rays; pectoral fins 16 rays. Dorsal fin interspinous membranes incised; 6th dorsal-fin ray longest, ~1.5 times longest dorsal-fin spine; caudal fin truncate. LL scales 29, gently curved backwards to straight on peduncle; large scales on opercle, small scales on cheek.

Females with oblique brown band from upper pectoral-fin base to rear dorsal-fin base, with broader white band adjacent and ventral; body above brown band orangish brown, becoming grey-brown dorsally and on head; body below white band yellowish, scales with pale blue vertical line except on peduncle where they become spots or join to form longitudinal blue lines; head with blue markings around eyes; upper lip with blue stripe; lower jaw yellow with broad blue stripe; lower edge of opercle blue; median fins yellow with longitudinal blue bands, corners of caudal fin blue. Males similar in colour, white band changing to orange, blue markings on body and fins disappearing, and ventral part of head and chest becoming blue. Attains 35 cm TL.



Choerodon robustus, 21 cm TL, male (Zanzibar). Source: Smith & Smith 1963

DISTRIBUTION Indo-Pacific. WIO: Persian/Arabian Gulf, Red Sea (including Gulf of Aqaba), Tanzania (Zanzibar), Oman to Mozambique, Seychelles, Réunion and Mauritius; elsewhere to Indonesia, Taiwan and Ryukyu Is.

REMARKS Known from 20–250 m. Feeds on hard-shelled invertebrates, such as crustaceans, molluscs and sea urchins (Khalaf & Disi 1997). *Choerodon cypselurus* Gomon 2017, known only from a single collection on Saya de Malha Bank of the Seychelles, from preserved specimens only, is distinguished from *C. robustus* by an emarginate caudal fin.

Three pairs of canines at front of upper jaw that are progressively longer, more outflaring and recurved posteriorly; single pair of small canines at front of lower jaw; small conical teeth in single row on side of jaws; no tooth at corner of mouth; scleral cornea of pupil modified to form a double pupil (Springer & Randall 1974 suggested that the round anterior part may serve as a close-up lens for feeding on small prey such as copepods); dorsal fin 11 spines, 9 (rarely 8 or 10) rays; anal fin 3 spines, 9 or 10 rays; LL interrupted, scales 15–18 + 4–11; median predorsal scales 4–6; margin of preopercle serrate. Juveniles of known species red overall, with prominent black spot on upper half of peduncle and white marking dorsally on snout. Genus with 61 species, all in Indo-Pacific, 8 in WIO.

Two newly described species, *Cirrhilabrus africanus* Victor 2016 (Plate 62), from coastal East Africa, Mozambique and South Africa (KwaZulu-Natal), and *C. rubeus* Victor 2016 (Plate 64), from the Maldives and Sri Lanka, were separated from *C. rubriventralis*, but too late for inclusion here, as it was for *C. wakanda* (see under *Cirrhilabrus blatteus*).

KEY TO SPECIES

[Adult males]

- 1a Caudal fin rhomboid to lanceolate 2
- 1b Caudal fin rounded to double emarginate 4

- 2a Caudal fin rhomboid; 3.2–3.7 in SL; head and body bright red anterior to curved line ending at anal-fin origin, scales posteriorly on head, chest, and anteriorly on body to pectoral-fin tips rimmed with deep magenta; remainder of body yellow *C. rubrisquamis*
- 2b Caudal fin lanceolate, 2.4–3.3 in SL; colour not as above 3

- 3a Caudal-fin length 2.9–3.3 in SL; beige with broad yellow bar across body before anal-fin origin, containing irregular, oblique, red triangle extending two-thirds distance to anal-fin origin; head orange, yellow ventrally; caudal fin multicoloured *C. sanguineus*
- 3b Caudal-fin length 2.4–2.9 in SL; body tan above and white below midlateral, irregular, narrow magenta stripe; 2nd magenta stripe at dorsal-fin base, continuing dorsally onto peduncle; caudal fin with large triangular bright yellow area covering more than basal half of fin *C. blatteus*

Continued ...

KEY TO SPECIES

- 4a Pelvic fins broad and very long, extending beyond base of anal-fin spines; cirri of first 2 dorsal-fin spines elongated as long filaments; caudal fin rounded, corners slightly elongate; pelvic and anal fins largely bright red; no black spot on peduncle *C. rubriventralis*
- 4b Pelvic fins not extending to anal-fin origin; caudal fin double emarginate, corners extending middle of fin; pelvic and anal fins not red; large oval to semicircular black spot on peduncle just above lateral line *C. exquisitus*

Cirrhilabrus blatteus Springer & Randall 1974

Purple-boned fairy wrasse

PLATE 63

Cirrhilabrus blatteus Springer & Randall 1974: 48, Figs. 2–3 (Eilat, Israel, Gulf of Aqaba, Red Sea); Dor 1984; Randall 1995; Lieske & Myers 2004; Tea *et al.* 2019.

Dorsal fin 11 spines, 9 rays; anal fin 3 spines, 10 rays; pectoral fins 15 rays. Body depth 3.1–3.5 in SL; HL 3–3.5 in SL; snout length 3.8–4.5 in HL; caudal fin rhomboid in females, lanceolate in large males, fin length in males 2.4–2.9 in SL; pelvic fins short, not extending to anal-fin origin. GR 17–19. LL scales 15–17 + 6 or 7; median predorsal scales 5.

Females pinkish tan, white ventrally, with midlateral row of vertically elongate magenta spots; preopercle margin magenta; a broad oblique orange band dorsally on opercle, narrowing at pectoral-fin base; iris red; basal scaly area of caudal fin pale yellow with broad blue-edged red zone in outer part. Males tan above and white below a midlateral, narrow, irregular, magenta stripe; 2nd magenta stripe at dorsal-fin base, continuing onto peduncle; large white-bordered, red area on opercle, with oblique band to pectoral-fin base; caudal fin with large triangular bright yellow area, bordered by pink extending into narrowing median rear filament. Attains 16.5 cm TL.

DISTRIBUTION WIO: northern Red Sea.

REMARKS Type specimens collected from 43–46 m; reported to 70 m on mesophotic coral reefs. The scientific name *blatteus*, Latin for purple, is in reference to the colour of some of the bones and scales. Recently, a related species, *Cirrhilabrus wakanda* Tea, Pinheiro, Shepherd & Rocha 2019, was described from mesophotic reefs off Tanzania. Males have prominent purple lateral scales and share the purple bones of *C. blatteus*.

Cirrhilabrus exquisitus Smith 1957

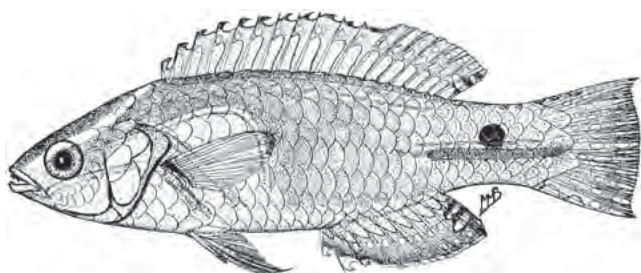
Exquisite fairy wrasse

PLATE 63

Cirrhilabrus exquisitus Smith 1957: 109, Fig. 4, Pl. 2e (Pinda, Mozambique); Smith & Smith 1963*; Burgess & Axelrod 1973; Jones & Kumaran 1980; SSF No. 220.19*; Cornic 1987; Winterbottom *et al.* 1989; Allen & Smith-Vaniz 1994; Randall & Van Egmond 1994; Randall 1995; Heemstra & Heemstra 2004*.

Dorsal fin 11 spines, 9 rays (rarely 8); anal fin 3 spines, 9 rays; pectoral fins 14–16 rays. Body depth 3.2–3.5 in SL; HL 2.9–3.2 in SL; snout length 3.8–4.4 in HL; caudal fin of females truncate to slightly rounded, of adults double emarginate, lobe tips of fin of mature males extending beyond rounded middle part of fin. GR 17–22. LL scales 16–18 + 5–7; median predorsal scales 5; horizontal scale rows on cheek 2.

Adults complexly coloured, variable with locality, but 2 markings are common to all: large, oblong black spot on upper half of peduncle, lower edge (which may be straight) adjacent to lateral line, and narrow, wedge-shaped black bar, bordered in blue, on pectoral-fin base; narrow blue band usually from corner of mouth, below eye to upper end of black bar at pectoral-fin base. Attains 11 cm TL.



Cirrhilabrus exquisitus, 9 cm TL, holotype (N Mozambique).
Source: Smith 1957

DISTRIBUTION Indo-Pacific. WIO: Mozambique, South Africa (Sodwana Bay), Comoros, Maldives and Seychelles; elsewhere to Japan, Great Barrier Reef, Tuamotu Is. and Line Is.

REMARKS Occurs in aggregations on reefs, in 6–32 m. Males maintain large harems, exhibiting brilliant hues during courtship. Feeds on zooplankton. Part of a broad Indo-Pacific species-complex with both colour pattern differences and distinctly divergent mtDNA lineages, not yet divided taxonomically. The type population is from the African coast and thus the name here will not change.

Cirrhilabrus rubrisquamis Randall & Emery 1983

Strawberry fairy wrasse

PLATE 63

Cirrhilabrus rubrisquamis Randall & Emery 1983: 21, Fig. 1 (Peros Banhos Atoll, Chagos); Randall & Anderson 1993; Randall 1995.

Dorsal fin 11 spines, usually 9 (rarely 8) rays; anal fin 3 spines, 9 rays; pectoral fins 14–16 rays. Body depth 3.1–3.5 in SL; HL 2.8–3 in SL; snout length 3.5–3.7 in HL; dorsal and anal fins elevated in mature males, longest dorsal-fin spine 1.7–2.2 in HL; longest anal-fin ray 1.4–2 in HL; caudal fin slightly rounded in juveniles, strongly rounded in adults, sometimes slightly rhomboid in males, 3.2–3.7 in SL; pelvic fins not extending to anus in females, extending to or slightly beyond anus in males, 1.4–1.9 in HL. GR 15–18. LL scales 15–17 + 5 or 6; median predorsal scales 4 or 5; horizontal scale rows on cheek 2.

Juveniles orange-red on head and about anterior third of body, pale greenish grey posteriorly, with series of 4 broken whitish lines from top of head along upper third of body, often containing white spots or double spots; lower part of head, chest and abdomen pale blue with purple marks; base of scales in pectoral region with arc of magenta; iris yellow with circle of pink; females similar, with fewer whitish lines, head and anterior of body more pink, scales broadly rimmed with orange and magenta, body pale greenish yellow posteriorly; caudal fin blue with magenta rays and submarginal blue and dark purple V-shaped mark; dorsal and anal fins pink with broad blue margin; males red anteriorly, with magenta rims on scales, grading to pale lavender ventrally on head and with purple rims on scales; posterior two-thirds of body pale orangish with faint magenta longitudinal lines; median fins pale orange with purple rays, soft-rayed parts of dorsal and anal fins with pale blue margin, caudal fin with pale blue submarginal band. Attains 10 cm TL.

DISTRIBUTION Indian Ocean. WIO: Chagos, Maldives and Sri Lanka.

REMARKS Described from one 40.6-mm specimen from Chagos, collected from a cave in a vertical drop-off, in 41–48 m. Reported by Randall & Anderson (1993) from the Maldives from 6 adult specimens collected on seaward side of North Malé Atoll, in 52 m. The species has entered the aquarium trade from the Maldives. Hiroyuki Tanaka (pers. comm.) reported the species as rare in Sri Lanka.

Cirrhilabrus rubriventralis Springer & Randall 1974

Social fairy wrasse

PLATES 63 & 64

Cirrhilabrus rubriventralis Springer & Randall 1974: 52, Figs. 4–5 (Eilat, Israel, Gulf of Aqaba, Red Sea); Randall 1983, 1995*.

Dorsal fin 11 spines, 9 rays; anal fin rays 3 spines, 9 rays; pectoral fins 15 rays. Body depth 3.1–3.4 in SL; snout pointed, length 3.2–3.7 in HL (longer in males); head profile of males almost straight, profile of females convex to above eyes and then straight to dorsal-fin origin; cirri of first 2 dorsal-fin spines of males elongated as long filaments, 2nd generally more than twice length of 1st, extending to caudal-fin base when fully developed and intact; caudal fin rounded, corners slightly elongate in males. GR 14–16. LL scales 15–17 + 5–7; median predorsal scales 4 or 5; single horizontal row of scales on cheeks below eyes.

Juveniles orangish pink, with 5 longitudinal, dark-edged, pale blue lines or rows of small spots, one per scale (lateral line appears as row of dashes), abruptly white below level of lower pectoral-fin base; dark brown spot approximately pupil-sized posteriorly on peduncle above lateral line, and prominent white spot mid-dorsally on snout, extending onto upper lip; large yellow spot in axil of pectoral fins; females lose basicaudal dark spot and white spot on snout, and pale blue lines become dusky purple and progressively fainter; males red to mottled red, abruptly pale yellow on head below level of eyes and white on body; dorsal and anal fins red with blue margin, black submarginal line, and usually row of blue spots (mid-height in dorsal fin, basal in anal fin); caudal fin dark blue with bright pale blue spots along rays; pelvic fins red, black at base. Attains 8 cm TL.

DISTRIBUTION WIO: Red Sea (including Gulf of Aqaba) and Oman.

REMARKS Common in the Gulf of Aqaba, but only a single individual was seen in many days of diving off Port Sudan. Usually found in aggregations feeding on zooplankton over substrata of mixed sand and coral rubble with patches of live coral, taking refuge as needed within the rubble. Males display in courtship by elevating the dorsal fin, lowering the long pelvic fins, and fluttering the bright blue caudal fin. Females mature by 38.5 mm SL. Victor (2016) confirmed this species is limited to the Red Sea and Oman, and described the sister species *C. africanus* from Kenya, Mozambique and South Africa (Plate 62) and *C. rubeus* from Maldives and Sri Lanka (Plate 64).

Cirrhilabrus sanguineus Cornic 1987

Red-blotched fairy wrasse

PLATE 64

Cirrhilabrus sanguineus Cornic 1987: 140, Fig. (Mauritius, Mascarenes); Randall 1995.

Dorsal fin 11 spines, 9 rays; anal fin rays 3 spines, 9 rays; pectoral fins 15 rays. Body depth 3.2–3.6 in SL; HL 2.9–3 in SL; head profile convex; snout length 3.6–3.9 in HL; dorsal and anal fins not elevated; 7th dorsal-fin ray longest, 1.8–2.1 in HL; caudal fin of males rhomboid to slightly lanceolate, 2.9–3.3 in SL; pelvic fins just extending to anus in adult males. GR 16–19. LL scales 15–17 + 5–7; median predorsal scales 5; horizontal rows of scales on cheek 2.

Body pinkish beige with broad pale yellow bar across body anterior to anal-fin origin, and irregular, oblique, red triangle extending two-thirds distance to anal-fin origin; head orange, grading to yellow ventrally, with narrow mid-dorsal yellow stripe, narrowing onto nape; anal fin, pelvic fins, and spinous portion of dorsal fin yellow with magenta spines and pink rays; caudal fin and soft-rayed portion of dorsal fin with green and blue membranes and magenta rays; outer margin of soft-rayed part of median fins blue. Attains 9 cm TL.

DISTRIBUTION WIO: Mauritius and Réunion.

REMARKS Known from 42–52 m. Originally briefly described in a small guidebook, with no type specimens designated. Randall (1995) provided a complete description and designated a neotype.

GENUS *Coris* Lacepède 1801

Front of jaws with single pair of strong, slightly recurved canines, followed on side of jaws by an outer row of close-set conical teeth and with a few irregular rows of small molars medially; small canine present or absent at corners of mouth; dorsal fin 11 spines, 11–13 rays; anal fin 3 spines, 11 or 12 rays; pectoral fins 12–15 (usually 13 or 14) rays; lateral line continuous, deflected sharply downward below rear of dorsal fin, with 47–96 pored scales; no scales on head. Twenty-seven species, 2 in eastern Atlantic and 25 in Indo-Pacific, 7 in WIO.

KEY TO SPECIES

- 1a Dorsal and anal fins 11 rays; narrow black bar across pectoral-fin base 2
- 1b Dorsal and anal fins 12 rays; no narrow black bar across pectoral-fin base 3

Continued ...

KEY TO SPECIES

- 2a Body depth 3.3–3.6 in SL; adults with series of 7 dusky orange bars dorsally on body (plus 2 on nape) much broader than pale interspaces; males without numerous small black spots on body *C. latifasciata*
- 2b Body depth 3–3.1 in SL; adults with series of 7 vertical broken white lines on body above lateral line; males with numerous small, irregular, black spots on body below lateral line *C. variegata*
- 3a Pectoral fins 14 rays; hump on forehead of adults (very pronounced on large males); caudal fin of adults with very elongate rays; maximum 60 cm TL *C. aygula*
- 3b Pectoral rays 13; no hump on forehead; caudal fin without elongate rays; maximum 16.3–44.3 cm TL 4
- 4a LL scales 47–52 5
- 4b LL scales 70–84 6
- 5a Canine tooth at corner of mouth (on upper jaw); anterior LL scales with 2 pores; first 2 dorsal-fin spines with filamentous extensions at tips *C. caudimacula*
- 5b No canine tooth at corner of mouth; anterior LL scales with single pore; first 2 dorsal-fin spines without filamentous extensions, spines progressively longer posteriorly *C. nigrotaenia*
- 6a Nape with scales dorsally; chest with scales; no black spots or dark bars on body or fins; head green with 2 broad, curved, slightly oblique dark reddish or purple bands across cheek and lower opercle; males with narrow pale green bar on side of body above origin of anal-fin origin *C. cuvieri*
- 6b Nape with narrow, naked zone mid-dorsally; chest with broad, naked area anteroventrally; body and base of caudal and dorsal fins with small blackish spots (initial-phase adult) or body with dark bars (terminal-male phase); no broad near-horizontal bands across lower half of head *C. formosa*

Coris aygula Lacepède 1801

Clown coris

PLATE 64

Coris aygula Lacepède 1801: 96, 97, Pl. 4, Fig. 1 (Mauritius, Mascarenes); Günther 1862; Day 1877; Baissac 1953; Randall 1983, 1992, 1995*, 1999; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.20*; Winterbottom *et al.* 1989; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Fricke 1999; Lieske & Myers 2004.

Coris angulatus Lacepède (ex Commerson) 1801: 96, 99, Pl. 4, Fig. 2 [no locality given].

Labrus cingulum Lacepède (ex Commerson) 1801: 448, 517, Pl. 28, Fig. 1 (Mauritius, Mascarenes).

Labrus aureomaculatus Bennett 1830: no page number, Pl. 20 (Sri Lanka).

Julis ruppelii Bennett 1831: 128 (Gulf of Setie, Red Sea).

Julis gibbifrons Quoy & Gaimard 1834: 707, Pl. 19, Fig. 3 (Mauritius, Mascarenes).

Julis semipunctatus Rüppell 1835: 12, Pl. 3, Fig. 3 (Al Muwaylih, Saudi Arabia, Red Sea).

Coris angulata: Smith 1955, 1957; Fourmanoir & Guézé 1961; Smith & Smith 1963*; SFS No. 806*.

Dorsal fin 9 spines (flexible in adults, and first 2 spines closer together than remaining spines), 12 or 13 rays; anal fin 3 spines, 12 rays; pectoral fins 14 rays. Mouth terminal; pair of strong protruding canines at front of jaws, followed by progressively smaller teeth, inner row of small nodular teeth and 1 or 2 teeth on upper jaw at corner of mouth of adults (dentition comparable in other *Coris* spp.). Body depth 2.6–3.4 in SL (depth increasing with growth); adults developing hump on forehead that becomes very pronounced in large males; caudal fin rounded in young and females, almost truncate in males, with elongated rays. LL scales 59–67, all with single pore, sharply deflected downward below rear of dorsal fin; head naked except nape (as other *Coris*).

Juveniles whitish with small black spots on head and front of body; 2 large, semicircular orange-red spots on back, with large, ocellated black spot above each in dorsal fin. Small females with body pale yellowish, scales narrowly dark-edged, except for white bar across body just in front of anal fin; head with dark red spots; median fins green, with dark red spots and yellow outer margins. Adult females olive-green, the white bar pale green, spots on head pink and those on fins and chest orange; head and anterior body paler with red spots. Adult males deep green to blue-green (may appear black underwater), often with 1 and sometimes 2 pale greenish bars on side of body. Attains 60 cm TL.

DISTRIBUTION Indo-Pacific (widespread). WIO: Red Sea, Oman to South Africa (Eastern Cape), Mauritius and Sri Lanka; elsewhere to Indo-Malayan region (few records), Japan (Sagami Bay), Australia, Pitcairn Is. and Line Is.

REMARKS Found on coral reefs, especially adjacent rubble and sand habitat, in 1–50 m. A major predator of shelled molluscs and hermit crabs, which it crushes with its pharyngeal teeth; also feeds on brachyuran crabs and echinoids (including *Echinometra* and *Diadema*), occasionally on tunicates. Has been observed turning over rocks to expose invertebrate prey.

Coris caudimacula (Quoy & Gaimard 1834)

Spottail coris

PLATE 65

Julis caudimacula Quoy & Gaimard 1834: 710, Pl. 15, Fig. 2 (Mauritius, Mascarenes); Valenciennes *in* Cuv. & Val. 1839; Harmelin-Vivien 1976.

Halichoeres multicolor Rüppell 1835: 15, Pl. 4, Fig. 3 (Jeddah, Saudi Arabia, Red Sea).

Coris caudimacula: Günther 1862; Playfair & Günther 1867; Barnard 1927; Smith 1955, 1957; Smith & Smith 1963*; SFSA No. 807; Randall 1983, 1995*, 1999; SSF No. 220.21*; Field & Field 1998*; Heemstra *et al.* 1999; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Hemicoris caudimacula: Bleeker 1873.

Coris multicolor: Barnard 1927; SFSA No. 808*.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Canine at corners of mouth. Body depth 3.4–4.2 in SL, depth increasing with growth; space between dorsal-fin spines of females equidistant, spines progressively longer; space between first 2 spines of males narrower than between remaining spines, 1st spine, including filamentous tip, ~1.5 times longer than 2nd spine; caudal fin rounded; pelvic fins 1.6–2.1 in HL in juveniles, to 1.2–1.5 in HL in adults. GR 17–22. LL scales 50–52, anterior scales with 2 pores.

A 61-mm-TL juvenile was reddish orange dorsally, pale yellow ventrally, with broad pink stripe on side rimmed with yellow dorsally and containing yellow streaks and spots; head yellow dorsally with 2 lavender-pink lines, one from upper lip through eye and ending at lateral line, the other from chin under eye across opercle, then curved upward to form anterior margin of black and yellow spot on opercular flap. The pattern of these 2 pink lines links a variety of colour patterns that would otherwise be suggestive of several species: the posterior end of the lower pink line (can be blue-green in males) becomes a hook in adults (photograph of a 15-cm-TL female can be linked to the juvenile, and a 19.7-cm-TL specimen with greater blue colouration is a male); other juveniles can be yellowish green or pink, with or without a dark stripe; the stripe with growth can break into a series of 6 dark squares or rectangles. Attains at least 19.5 cm TL.



Coris caudimacula, 15 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indian Ocean. WIO: northern Red Sea, southern Oman to South Africa (East London; juveniles to Mossel Bay), Madagascar, Comoros, Seychelles and Mauritius; elsewhere, isolated population off Western Australia.

REMARKS Seen most often in sandy or algal-rich areas near reefs or in seagrass beds; to 57 m deep. Feeds on crustaceans, molluscs, worms and brittlestars. One of a complex of five Indo-Pacific species that exhibit a bewildering display of colour variation. The others are *C. debueni* Randall (Easter I.), *C. dorsomacula* Fowler (western Pacific), *C. roseoviridis* Randall (Pitcairn Is. to Rarotonga) and *C. venusta* Vaillant & Sauvage (Hawaii). Heemstra & Heemstra (2004) illustrate some of the colour variation of *C. caudimacula*.

Coris cuvieri (Bennett 1831)

Cuvier's coris

PLATE 65

Julis cuvieri Bennett 1831: 128 (Mauritius, Mascarenes).

Julis stellatus Valenciennes *in* Cuv. & Val. 1839: 499 (Mauritius, Mascarenes).

Coris cuvieri: Günther 1862; Playfair & Günther 1867; Baissac 1953; Smith & Smith 1963*; Fricke 1999; Randall 1999; Heemstra *et al.* 2004; Lieske & Myers 2004.

Coris gaimard (*non* Quoy & Gaimard 1824): Smith 1955; SFSA No. 809; Randall 1983.

Coris gaimard africana Smith 1957: 119, Pls. 1a–2a, Fig. 1 (Mahé, Seychelles); Gomon *in* Fischer & Bianchi 1984; Winterbottom *et al.* 1989*.

Coris africana: SFSA No. 809*; De Bruin *et al.* 1994; Randall 1995*.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Small canine at corners of mouth in males, none in females. Body depth 3.1–3.7 in SL, depth increasing with growth; dorsal-fin spines of juveniles firm and sharp, of adults flexible; first 2 dorsal-fin spines of adults elongate and close together; caudal fin rounded, 1.4–1.6 in HL of adults; pelvic fins of large males extending at most to base of 1st anal-fin ray. GR 16–20. LL scales 71–84, all with single pore; median dorsal zone of nape scaly, becoming naked in large males.

Juveniles orange, shading to dark brown anteriorly on head and ventrally on body, with 3 large, vertically elongate, broadly black-edged, white spots dorsally on body (2 anterior spots extending into dorsal fin) and 2 similar but small elongate spots dorsally on head; large oval black spot near middle of dorsal fin. Adults reddish on body, each scale with narrow green mark at base; head green with broad reddish bands, most conspicuous from corner of mouth across lower preopercle to edge of subopercle and interopercle, and one above and approximately parallel to it from snout through lower part of eye to edge of opercle. Males with pale green bar on body above anal-fin origin. Attains at least 35 cm TL.



Coris cuvieri, 30 cm TL, holotype head (Seychelles). Source: Smith 1957

DISTRIBUTION Indian Ocean. WIO: northern Red Sea, Kenya, Mozambique, South Africa (Aliwal Shoal), Seychelles, Mascarenes and Chagos; elsewhere to Andaman Sea.

REMARKS Smith (1957) proposed the subspecies *Coris gaimard africana* for the WIO, with the more colourful *C. gaimard gaimard* from central and western Pacific; he was followed by Gomon in Fischer & Bianchi (1984). In SFSA, Smith elevated *africana* to species, unaware that in 1831 ET Bennett had named specimens from Mauritius *C. cuvieri*. In addition to colour differences between *C. gaimard* and *C. cuvieri*, there is a modal difference in number of LL scales and gill rakers (Randall 1999).

Coris formosa (Bennett 1830)

Queen coris

PLATE 66

Labrus formosus Bennett 1830: no page number, Pl. 16 (Sri Lanka).

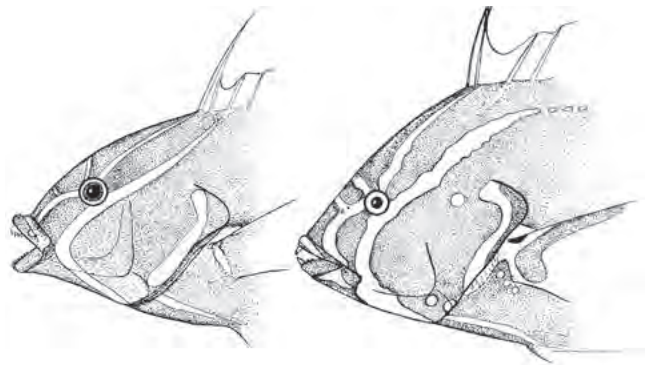
Coris frerei Günther in Playfair & Günther 1867: 101, Pl. 13 (Zanzibar, Tanzania); Smith 1957*; Smith & Smith 1963*; Jones & Kumaran 1980; Randall 1992, 1994, 1995*; De Bruin *et al.* 1994; Anderson 1996.

Coris gaimard (*non* Quoy & Gaimard 1824): SFSA No. 809* [Pl. 58, middle figure].

Coris formosa: Playfair & Günther 1867; SFSA No. 809a; Kotthaus 1977; Jones & Kumaran 1980; Gomon in Fischer & Bianchi 1984; SSF No. 220.22*; Winterbottom *et al.* 1989*; Fricke 1999; Lieske & Myers 2004.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Small canine (sometimes 2) at corner of mouth (on upper jaw). Body depth 2.3–3.3 in SL, increasing with growth; first 2 dorsal-fin spines of adults greatly elongate (slightly elongate on large juveniles), space between them less than between remaining spines; caudal fin rounded, becoming truncate in large males; pelvic fins extending to or beyond anal-fin origin. LL scales 70–78, all with single pore; narrow naked zone mid-dorsally on nape; no naked area anteroventrally on chest.

Juveniles orange-red with 5 large black-edged white spots dorsally on head and body (1st on snout, 2nd above and behind eye, 3rd across front of dorsal fin and narrowing across body to abdomen, 4th from soft part of dorsal fin to middle of body, and the last dorsally on peduncle); dorsal fin with large black spot narrowly rimmed in yellow between 8th spine and 3rd ray. Females grey on body and scaly caudal-fin base, with scattered black spots smaller than eye (few in front of anal-fin origin); head yellow, grading to grey posteriorly, with 2 oblique blue bands, narrow 1st band from front of snout through front of eye to dorsal-fin origin, 2nd band approximately parallel, through rear of eye, curved upward on head to join submarginal yellow to red band that extends back on opercle; dorsal and anal fins grey basally with small black spots, mainly orange distally with narrow olive-green band and very narrow, pale blue margin; broad naked central part of caudal fin orange-red, followed by broad white margin. Males densely dotted with small green spots and crossed by 10 purplish grey bars narrower than interspaces; green dots at front of body above pectoral fins larger, many yellow, forming irregular oblique rows; head grey with bands similar to those of females, but green, more irregular, some grading posteriorly to yellow; dorsal and anal fins complexly banded and spotted, with narrow pale blue margin, filamentous 1st ray of dorsal fin orange; caudal fin purplish blue, with numerous small green spots, and orange-red margin. Attains at least 44 cm TL (Seychelles), possibly ~60 cm TL.



Coris formosa, 29 cm TL (left); ~38 cm TL (right). Source: Smith 1957

DISTRIBUTION WIO: southern Red Sea, Oman to South Africa (KwaZulu-Natal), Seychelles, Mauritius, Maldives, Chagos and Sri Lanka.

REMARKS Known from 2–40 m; usually found on sand and rubble adjacent to coral reefs. Randall (1999) used the name *Coris frerei* Günther 1867, based on the male, instead of *Labrus formosus* Bennett 1851, based on the female, but the latter is invalid as it is a homonym of *Labrus formosa* Shaw 1803.

Coris latifasciata Randall 2013

Broad-barred coris

PLATE 66

Coris variegata (non Rüppell 1835): Allen & Steene 1987; Winterbottom *et al.* 1989*.

Coris batuensis (non Bleeker 1856): Randall 1992, 1999; Randall & Anderson 1993.

Coris latifasciata Randall 2013: 2, Figs. 1–3 (Peros Banhos Atoll, Chagos).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 (rarely 15) rays. Canine at corners of mouth. Body depth 3.3–3.6 in SL; 1st dorsal spine 3.7–3.9 in HL; 9th spine 2.3–2.5 in HL; caudal fin slightly rounded to truncate, 1.3–1.5 in HL; pelvic fins of adults almost or just extending to anus, 1.4–1.6 in HL. GR 19–22. LL scales 50–52, +1 on caudal-fin base; most anterior scales with 2 pores, remainder with 1; predorsal scales to above vertical preopercle margin on sides of nape.

Juveniles green dorsally, grading to pale blue ventrally and on head, with scattered small red spots on postorbital part of head and body, larger on head and abdomen; black line on side of snout and black markings dorsally on head; ocellus in dorsal fin centred on 2nd dorsal-fin ray, with a smaller ocellus posteriorly. Adults pale blue to blue-green, centre of each scale whitish, especially on abdomen; 6 dusky orange bars dorsally on body, much broader than whitish interspaces, and 2 small bars on nape; broadest bar below 4th–8th dorsal-fin spines, curved backward ventrally; head pale green with oblique pink bands; scattered small orange spots posteriorly on body of females, and pink spots dorsoposteriorly on males; ocellated black spot between 1st and 2nd dorsal-fin rays; black spot at upper base of pectoral fin, continuing as narrowing line across the base. Attains 11.5 cm TL.

DISTRIBUTION WIO: Chagos and Maldives.

REMARKS Usually found on coral reefs and adjacent habitats, in 10–30 m. One of a complex of three species, with 11 dorsal- and anal-fin rays (the remaining species of the genus with 12); the other two are *C. variegata*, endemic to the Red Sea and western Gulf of Aden, and *C. batuensis* from the Andaman Sea to Indonesia, the Marshall Is. and Tonga. Formerly identified as *C. batuensis*, but differentiated by smaller eyes, fewer LL scales (*batuensis* with 52–55), more GR (*batuensis* with 17–20), and size (*C. batuensis* attains 14.5 cm SL, compared to 9.4 cm SL for *C. latifasciata*; one fully mature female of *C. latifasciata* measures only 6.8 cm SL).

Coris nigrotaenia Mee & Hare 1995

Blackbar coris

PLATES 66 & 67

Coris nigrotaenia Mee & Hare 1995: 248, Figs. 1–3 (Oman); Randall 1995*.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 or 14 rays. No canine at corners of mouth. Body depth 2.7–3.4 in SL, terminal male deeper-bodied (depth to 2.7 in SL), snout profile steep, at ~65° angle; dorsal-fin spines sharp-tipped, the 1st spine shortest, space between first 2 spines of adults $\frac{1}{2}$ – $\frac{2}{3}$ space between 2nd and 3rd spines; caudal fin slightly rounded to truncate with rounded corners; pelvic fins long and filamentous (extending beyond anal-fin spines), 1.2–2 in HL. GR 21–25. LL scales 47–50, all with single pore; predorsal scales extending to above preopercle margin.

Juveniles brownish grey with 4 large, irregular white blotches along back and 4 along ventral part of body; large black blotch below outer part of pectoral fins between dorsal and ventral white blotches; black spot almost as large as eye on caudal-fin base just above lateral line; head mainly yellowish brown dorsally and white ventrally; dorsal and anal fins with alternate zones of black and pale whitish; caudal fin whitish. Females yellowish brown dorsally on body, scales rimmed with pale blue-green, changing about midlaterally on body to pale yellow with rows of pale blue-green spots, one per scale; broad oblique blackish bar on upper half of body, centred below base of 7th dorsal-fin spine; head yellowish grey-brown, with irregular pale blue-green lines and spots, grading to pale yellowish ventrally; dorsal and anal fins mustard yellow with blue margin, dorsal fin strongly dotted with pale blue-green, anal with irregular blue lines; caudal fin dark yellowish grey with irregular vertical blue lines and blue upper and lower margins. Attains 43 cm TL.

DISTRIBUTION WIO: Oman (Dhofar coast and Masirah I.); not known from Gulf of Oman.

REMARKS Observed along exposed rocky shores, in 1.5–20 m.

Coris variegata (Rüppell 1835)

Dapple coris

PLATE 67

Halichoeres variegata Rüppell 1835: 14, Pl. 4, Fig. 2 (Massawa, Eritrea, Red Sea).

Julis variegata: Valenciennes *in* Cuv. & Val. 1839.

Coris variegata: Günther 1862; Smith 1957; Randall 1983, 1999; Field & Field 1998*; Lieske & Myers 2004.

Coris (*Hemicoris*) *variegata*: Kossmann & Räuber 1877.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 rays. Canine at corners of mouth; anterior canines twice length of 2nd tooth in jaws. Body depth 3–3.1 in SL (deeper with growth); dorsal-fin spines sharp-tipped and progressively longer, 1st spine 1.5–1.6 in length of 9th spine, space between first 2 spines of adults $\sim\frac{3}{4}$ space between 2nd and 3rd spines; caudal fin slightly rounded to truncate, 1.3–1.4 in HL; pelvic fins short, usually not extending to anus, length 1.5–1.8 in HL. GR 21–25. LL scales 51–53, anterior scales with 2 pores; predorsal scales extending to rear edge of interorbital area.

Juveniles pale blue-green, finely and densely spotted with grey dorsally, on side of body by dull orange spots that merge to form irregular lines, and by 2 irregular rows of small orange-red spots ventrally; grey spots on lateral line almost completely merged to solid line; 8 narrow irregular white bars dorsally on nape and body, and 2 longitudinal rows of 5 or 6 irregular white spots on side of body; yellow and black band on side of snout bordered above by irregular white band that passes above eyes onto nape; 3 ocelli in dorsal fin, anterior ocellus on soft-rayed part of fin largest; irregular black line at pectoral-fin base. Females similar, with same 8 narrow white bars dorsally on nape and body and 3 ocelli in dorsal fin, but more pale blue on side and ventrally, and more numerous and smaller red spots on lower side of body (but fewer on abdomen); head pale green with irregular pale pink bands; front of snout yellow. Males dull blue-green with same narrow white bars dorsally on body; sides and ventral part of body densely spotted with black and pale red; head pale yellowish green, with irregular pale red bands, and vertical black mark behind eyes; ocelli in dorsal fin either lost or vestigial. Attains 15 cm TL.

DISTRIBUTION WIO: Red Sea (including Gulf of Aqaba) and western Gulf of Aden.

REMARKS Recently found in western Gulf of Aden (JM Rose, pers. comm.). Usually found on sand and rubble areas of coral reefs.

GENUS *Cymolutes* Günther 1861

Mouth terminal, front of jaws with pair of long, slender canines projecting beyond lips when mouth closed; conical teeth in band at side of jaws, those of outer row largest; no canine at corners of mouth; dorsal fin 9 spines, 12–15 rays; anal fin 2 or (usually) 3 spines, 11–13 rays; caudal fin 10 branched rays. Body slender and compressed, depth 4–4.8 in SL; head profile strongly convex; eyes near dorsal profile; dorsal fin low and continuous; pelvic fins short; caudal fin slightly rounded; paired fins short. Lateral line interrupted; head naked. Three

Indo-Pacific species, as diagnosed by Schultz *in* Schultz *et al.* (1960), 2 in WIO; the third species, *C. lecluse* (Quoy & Gaimard 1824), is endemic to Hawaii.

KEY TO SPECIES

- 1a Dorsal fin 13 rays; submarginal black line on 1st membrane of dorsal fin; no oblique black band behind head of males *C. praetextatus*
- 1b Dorsal fin 12 rays; no submarginal black line on 1st membrane of dorsal fin; oblique band (or double band) behind head, ending beneath pectoral-fin base *C. torquatus*

Cymolutes praetextatus (Quoy & Gaimard 1834)

Knifefish

PLATE 67

Julis praetextata Quoy & Gaimard 1834: 712, Pl. 15, Fig. 4 (Mauritius, Mascarenes).

Cymolutes praetextatus: Günther 1862; Playfair & Günther 1867; Day 1877; SSF No. 220.24*; Randall & Anderson 1993; Allen & Smith-Vaniz 1994; Fricke 1999.

Cymolutes lecluse (*non* Quoy & Gaimard 1824): Baissac 1953; Smith 1957; SFSA No. 820*; Jones & Kumaran 1980; Winterbottom *et al.* 1989*.

Dorsal fin 9 spines, 13 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body moderately compressed, depth 4.1–4.6 in SL; snout profile of adults steep, $\geq 60^\circ$ angle; dorsal fin spines progressively longer posteriorly; caudal fin truncate to slightly rounded. LL scales 48–68 + 15–22.

Females pale bluish grey dorsally, grading to white ventrally, large individuals with ~ 12 faint bluish bars equal in width to pale interspaces posteriorly on body, from above anal-fin origin; slightly oblique, white-edged, submarginal black line on 1st dorsal-fin membrane; iris violet with inner yellow ring; individuals less than ~ 8 cm with small black spot dorsally at caudal-fin base. Males olive, scale edges darker, except broadly white over chest and abdomen, with ~ 12 indistinct orangish brown bars posteriorly on side of body; small white-edged black spot sometimes present on body at level of eyes below 6th or 7th dorsal-fin spines; front of head with yellowish grey enclosing eye; cheek and opercle whitish; margin of opercle broadly yellowish grey; median fins olive, dorsal fin with broad dull-orange margin; paired fins pale grey, with yellowish grey bar at base of pectoral fins. Attains 12 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (KwaZulu-Natal), Seychelles, Mauritius, Maldives, Chagos, India and Sri Lanka; not known from Red Sea; elsewhere to Indonesia, Marshall Is. and Society Is.

REMARKS Inhabits open stretches of sand bottom; dives head-first into sand when approached.

Cymolutes torquatus (Valenciennes 1840)

Collared knifefish

PLATES 67 & 68

Xyrichthys torquatus Valenciennes in Cuv. & Val. 1840: 54, Pl. 392 (Surinam [probably Indonesia]).

Cymolutes praetextatus (non Quoy & Gaimard 1834): Günther 1862; Day 1877.

Cymolutes lecluse (non Quoy & Gaimard 1824): Munro 1955.

Cymolutes torquatus: Heemstra *et al.* 2004.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 11 or 12 rays; pectoral fins 12 rays. Body moderately compressed, depth 4.2–4.5 in SL; snout of adults steep, at 60° angle; dorsal-fin spines progressively longer posteriorly; caudal fin slightly rounded. LL scales 56–69 + 16–22.

Females pale brown dorsally, shading to white ventrally, posterior two-thirds of body with narrow near-vertical brown bars, most joined dorsally by narrow dark brown stripe; vertical dark brown streak on rear of opercle, oblique blue line from behind eyes almost to corners of mouth; dorsal fin with faint red and green bands. Males pale green, the lines on body broader and orange; narrow oblique black streak with pale centre anteriorly on body, from lateral line to below front of pectoral fin; head greenish dorsally, shading to yellowish ventrally, with oblique blue line below eyes and blue-edged vertical orange streak posteriorly on opercle; dorsal fin red, with green reticulum; caudal fin with broad red margin. Attains 20 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Kenya, Mozambique, Mauritius and Rodrigues; elsewhere to Indonesia, southern Japan, Australia and New Caledonia.

REMARKS Occurs on sand flats or sand and sparse seagrasses; dives into sand as a refuge. Clark & Petzold (1998) documented the spawning behaviour.

GENUS *Decodon* Günther 1861

Each side of front of upper jaw with 2 prominent canines of about equal length, followed by 5–13 lesser canines in irregular row; lower jaw also with 2 prominent canines on each side, 2nd longer, followed by lesser canines; teeth on vomer present or absent. Dorsal fin 11 spines, 9 or 10 rays; anal fin 3 spines, 9 or 10 rays; pectoral fins 16–18 rays. Lateral line continuous

and gently curved, LL pored scales 27–30; predorsal scales ~20, extending forward to slightly in front of nostrils; cheek scales not extending to corner of mouth; no scaly sheath at base of dorsal and anal fins. GR 12–19. Vertebrae 28. Four species (1 in Atlantic, 1 in eastern Pacific, and 2 in Indo-Pacific), 1 in WIO.

Decodon grandisquamis (Smith 1968)

Largescale wrasse

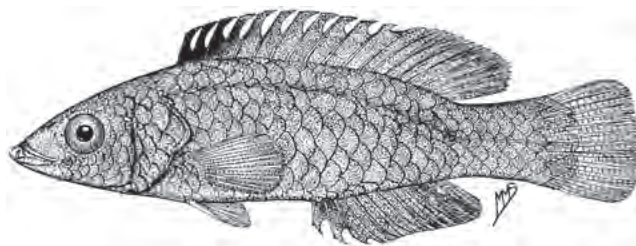
PLATE 68

Lepidaplois (Pariolanthus) grandisquamis Smith 1968: 343, Figs. 1–2 (Ponta da Barra Falsa, Mozambique).

Decodon grandisquamis: Gomon in Fischer & Bianchi 1984; SSF No. 220.25*; Gomon 1997.

Dorsal fin 11 spines, 9 or 10 rays; anal fin 3 spines, 10 rays; pectoral fins 16 rays. Two prominent canines anteriorly on each side of both jaws, outer flaring laterally; 1–3 canines at corner of mouth. Body depth 3.7 in SL; head moderately pointed, profile slightly and evenly convex, at ~30° angle; 1st dorsal spine subequal to eye diameter, next 4 spines gradually increasing in length, remaining spines equal; membranes of spinous portion of dorsal and anal fins deeply incised; caudal fin truncate to slightly rounded; pectoral fins rounded, 1.8 in HL; pelvic fins very short, 2.7 in HL. Preopercle margin with ~35 serrae. GR 6/11. LL scales 26.

Spinous dorsal fin pale reddish orange with large blackish area anteriorly, soft dorsal-fin whitish with fin rays yellow distally; anal and pelvic fins whitish; pectoral fins hyaline reddish; caudal fin whitish proximally, yellow distally; peduncle, dorsal head and body reddish orange; head with yellow band below eyes and yellowish, ventral head and body silvery pink to whitish. Attains at least 19 cm TL.



Decodon grandisquamis, 19 cm TL, holotype (S Mozambique).

Source: Smith 1968

DISTRIBUTION Known only from the holotype taken by trawl in 200 m off Mozambique at 23° S, and 2 juveniles from 50 m off Kosi Bay (South Africa).

GENUS *Epibulus* Cuvier 1815

Jaws extremely protrusible, capable of being extended forward by $< \frac{1}{2}$ HL; 2 large canines at front of each jaw, none at corners of mouth. Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 or (rarely) 9 rays. Lateral line interrupted, LL scales 14 or 15 + 6–8. Two species, 1 in WIO.

Epibulus insidiator (Pallas 1770)

Slingjaw wrasse

PLATE 68

Sparus insidiator Pallas (ex Schlosser) 1770: 41, Pl. 5, Fig. 1 (Java, Indonesia).

Epibulus insidiator: Valenciennes in Cuv. & Val. 1839; Playfair & Günther 1867; Smith 1957; Smith & Smith 1963*; SFSA No. 817b*; Jones & Kumaran 1980; Randall 1983*, 1992; Gomon in Fischer & Bianchi 1984; Winterbottom *et al.* 1989*; Letourneur *et al.* 1993; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Field & Field 1998*; Fricke 1999; Heemstra *et al.* 2004; Lieske & Myers 2004; Carlson *et al.* 2008.

Epibulus incidiator: Baissac 1953.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 or (rarely) 9 rays; pectoral fins 12 rays. Pair of prominent canines at front of jaws, upper teeth forward-projecting; mouth oblique, lower jaw extending back to lower edge of opercle; rear part of dorsal and anal fins of adults prolonged, especially the anal fin, extending to or slightly beyond end of caudal fin in mature males; caudal fin of juveniles rounded, of subadults truncate, of females slightly emarginate, and of adult males lunate; pelvic fins of adults extending well beyond anal-fin origin. No free preopercle margin (covered by scales). Lateral line interrupted. Scales large; LL scales 14 or 15 + 6–8; scales dorsally on head to above eyes.

Juveniles dark brown with 2 narrow, dark-edged, white bars across middle of body, and 2 at each end of peduncle; 4 narrow dark-edged white bands radiating from eye; 2 black spots in dorsal fin and 1 in anal fin crossed by white line. Females with 2 colour phases: brown or yellow, both usually with vertical black line on each scale except chest and abdomen; narrow blue margin to orbit, often blue mark anteriorly on dorsal fin followed by 1 or 2 orange stripes; males variable in colour, may be dark brown to dark olive with black edges to scales; often with pale grey head and irregular narrow black band from eyes across back of head; short, thin black line extending forward from eyes, and very short oblique line up and back from eyes; a common variant has orange above pectoral fins, with vertical zone of yellow behind pectoral fins, and remainder of body green, with black scale edges. Attains at least 54 cm TL (usually 40 cm TL).



Epibulus insidiator, 23 cm SL, mouth extended (Rodrigues).
PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Red Sea, Kenya to Mozambique (Maputo Bay), Madagascar, Comoros, Seychelles, Mauritius, Rodrigues, Maldives, Chagos and Lakshadweep; elsewhere to Indonesia, southern Japan, New Caledonia, Tuamotu Is. and Hawaii.

REMARKS Found on coral reefs, and more often in lagoons and bays than exposed reefs, in 2–40 m. Capable of extremely rapid protrusion of jaws to capture prey (Westneat & Wainwright 1989). Adults are difficult to approach; small juveniles are cryptic and rarely seen. Feeds on small fishes, crabs and shrimps.

GENUS *Frontilabrus* Randall & Condé 1989

Genus diagnosis as for the single species.

Frontilabrus caeruleus Randall & Condé 1989

Blue wrasse

PLATE 68

Frontilabrus caeruleus Randall & Condé 1989: 90, Figs. 1–3 (North Malé Atoll, Maldives).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Mouth terminal; single pair of canines at front of upper jaw, none posteriorly on jaw; 2 pairs of canines at front of lower jaw, lateral pair largest and slightly recurved; teeth on side of jaws laterally compressed and blunt. Body moderately elongate, depth 3.7 in SL, and moderately compressed, width 2.3 in body depth; head profile steep, snout profile at $\sim 50^\circ$ angle to horizontal axis of body, and only slightly convex (becoming strongly convex on nape), HL 3 in SL; eyes moderately large, eye diameter 4.9 in HL; spines of dorsal fin progressively longer posteriorly, 9th spine 2.6 in HL; caudal

fin slightly rounded, length 1.6 in HL; pelvic fins short, 2.5 in HL. GR 18. Lateral line continuous, deflected ventrally below soft-rayed portion of dorsal fin to midlateral on peduncle; LL scales 25; head naked, 5 rows of oblique scales on side of nape; 2 rows of large scales between lateral line and dorsal fin; circumpeduncular scales 16; scales on chest three-quarters height of largest scales on sides of body; no scaly sheath at base of dorsal and anal fins. Vertebrae 25.

Freshly dead specimen: dorsal half of body blue, edges of scales grey, ventral half grey, 3 scales a deeper blue in oblique row above pectoral fin, in line with 6th dorsal-fin spine; head olivaceous anteriorly, suffused with blue posteriorly, with oblique pale grey band (bright yellow in life), bordered by blue, extending dorsally from eye, and curved on nape to continue along dorsal-fin base; iris yellow with narrow outer blue ring; median fins yellowish grey, broadly blue basally; pectoral fins translucent; pelvic fins white. Attains at least 11 cm TL.

DISTRIBUTION Known only from the holotype collected in the Maldives.

REMARKS Caught by an aquarium fish collector and sent, live, to the aquarium in Nancy, France, where it was observed to feed on shrimps; unfortunately, the live colour was not photographed.

GENUS *Gomphosus* Lacepède 1801

Two species currently recognised: *G. varius* in the Pacific and *G. caeruleus* in the Indian Ocean. Klausewitz (1962) divided *G. caeruleus* into 2 subspecies: *G. caeruleus klunzingeri* for the Red Sea population, and *G. caeruleus caeruleus* for the remainder of the Indian Ocean. Further study might result in the elevation of these subspecies to species. *Gomphosus* differs from *Thalassoma* primarily in having an elongate snout. A genetic study by Bernardi *et al.* (2004) showed *Gomphosus* nested within *Thalassoma*, and Randall & Allen (2004) described a hybrid of *G. varius* and *T. lunare*.

Gomphosus caeruleus Lacepède 1801

Blue bird wrasse

PLATES 68 & 69

Gomphosus caeruleus Lacepède (ex Commerson) 1801: 100, 101, Pl. 5, Fig. 1 (Mauritius, Mascarenes); Shaw 1803; Valenciennes *in* Cuv. & Val. 1840; Playfair & Günther 1867; Day 1877; Harmelin-Vivien 1976; Randall 1983, 1992; SSF No. 220.27*; De Bruin *et al.* 1994; Anderson 1997; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Gomphosus fuscus Bennett 1828: no page number, Pl. 3 (Sri Lanka).

Gomphosus varius (*non* Lacepède 1801): Playfair & Günther 1867; Baissac 1953; Smith 1955; SFSA No. 784*.

Gomphosus caeruleus: Bleeker 1874; Barnard 1927; Baissac 1953; Smith 1955; SFSA No. 783*; Jones & Kumaran 1980; Winterbottom *et al.* 1989*.

Gomphosus tricolor (*non* Quoy & Gaimard 1824): Smith 1957.

Gomphosus caeruleus caeruleus: Klausewitz 1962; Gomon *in* Fischer & Bianchi 1984.

Gomphosus caeruleus klunzingeri: Klausewitz 1962; Gomon *in* Fischer & Bianchi 1984; Field & Field 1998*.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 15 rays. Pair of moderate, recurved canines at front of jaws; remaining teeth progressively smaller. Body depth ~3.5 in SL in juveniles, to ~4 in adults; snout of adults elongate and tubular, its length < ½ HL, gape of jaws ~½ snout length; caudal fin slightly rounded in juveniles, truncate in initial phase, and slightly rounded to truncate with elongate lobes in terminal male; dorsal-fin spines progressively longer, and rays progressively shorter; pelvic fins small. Preopercle without free ventral margin. Lateral line deflected downward below rear of dorsal fin, LL scales 25 or 26, +2 on caudal-fin base; head naked except for a few small scales dorsally on opercle; scales basally on dorsal and anal fins.

[Indian Ocean fish] Juveniles pale green, grading to blue anterodorsally on body, with black spot on each scale; greenish white on abdomen, chest and ventrally on head; narrow black stripe from front of snout through eyes, dividing into 2 broken lines behind eyes; large black spot at front of dorsal fin, with yellow and red outer margin. Initial phase pale yellowish green, with black spot on each scale, except on chest and lower abdomen, suffused with blackish pigment dorsally on posterior half of body; broad reddish black stripe from front of snout through eyes; anal fin green with broad black margin; caudal fin dark olive with hyaline rear margin and broad black submarginal band; paired fins pale, with black spot dorsally on pectoral-fin base. Terminal male deep blue-green; unscaled part of dorsal and anal fins green; caudal fin coloured as for body except for large blue-green outer crescent. Attains 28 cm TL.

[Red Sea fish] Juveniles similar to Indian Ocean form in colour. Initial phase deep blue dorsally on body, pale green ventrally, with purplish spots or streaks along midlateral part of body, grading to near-white on abdomen and chest, and to yellow posteriorly on peduncle; head purplish grey dorsally, suffused with blue-green behind eyes, abruptly white ventrally at level of lower third of eyes; dorsal fin dark blue-green with yellow at tips of anterior 2 membranes, grading to yellowish posteriorly; anal, caudal and pelvic fins yellow; pectoral fins translucent with black spot at upper base and axil.



Gomphosus caeruleus, 5 cm SL (Comoros). PC Heemstra © NRF-SAIAB

DISTRIBUTION Red Sea (*G. c. klunzingeri*); and Indian Ocean (*G. c. caeruleus*): Gulf of Oman to South Africa (Aliwal Shoal; juveniles to Eastern Cape), Madagascar, Comoros, Seychelles, Mascarenes, Maldives, India and Sri Lanka; elsewhere to Andaman Sea and Indonesia (Sumatra and Bali).

REMARKS Inhabits coral-rich areas of lagoon and seaward reefs; a solitary species.

GENUS *Halichoeres* Rüppell 1835

Mouth terminal, relatively small, maxilla not reaching vertical at front edge of orbit; pair of moderate canines at front of jaws, followed by row of progressively smaller conical teeth, with a few small medial teeth at front of jaws; canine at back of upper jaw at corners of mouth in adults (except in females of 1 species); pharyngeal dentition well-developed; dorsal fin continuous, with 9 spines, 11–14 rays; anal fin 3 spines, 11–13 rays (in WIO species); caudal fin slightly to moderately rounded, and double emarginate in large adults of a few species, with 14 principal rays. Scales cycloid; lateral line complete, abruptly bent downward below rear of dorsal fin to straight on peduncle, LL pored scales 25–29; head naked except for nape and patch of small scales dorsally on opercle of a few species (1 species with narrow band of scales behind eyes); scales on chest distinctly smaller than those on body; no scaly sheath at base of dorsal and anal fins. The number of suborbital pores (from behind middle of eye to below anterior margin of orbit) is useful for separation of some species. The largest genus of the family, with 80 species: 16 in the Atlantic, 12 in the eastern Pacific, and 52 in the Indo-Pacific; at least 21 in WIO.

KEY TO SPECIES

- | | | | | | |
|----|--|----------------------|----|---|-----------------------|
| 1a | LL scales 26 | 2 | 5a | Pectoral fins usually 15 (rarely 14 or 16) rays | 6 |
| 1b | LL scales 27–29 | 4 | 5b | Pectoral fins usually 13 or 14 (rarely 12 or 15) rays | 7 |
| 2a | Isolated small patch of scales on opercle; no elongate horseshoe-shaped green mark on cheek; no small green circle above and behind eyes | 3 | 6a | LL scales 27; suborbital pores 8–12; 9th dorsal-fin spine 2.7–2.9 in HL; small triangular black spot at upper pectoral-fin base; males without prominent U-shaped black mark above pectoral fins | <i>H. dussumieri</i> |
| 2b | No isolated small patch of scales on opercle; elongate horseshoe-shaped green band on cheek, open end at chin | <i>H. zulu</i> | 6b | LL scales 28; suborbital pores 6 or 7; 9th dorsal-fin spine 2.8–3.2 in HL; no black spot at upper pectoral-fin bases; males with prominent blackish, U-shaped mark between lateral line and pectoral-fin tips | <i>H. stigmaticus</i> |
| 3a | Near-vertical band of small scales behind eye; suborbital pores of adults 20–40; no dark stripe on body; adults with series of black-edged square white blotches following scale rows; yellow spot on body at base of 4th and 5th dorsal-fin spines, followed by large black blotch | <i>H. hortulanus</i> | 7a | Pectoral fins usually 14 (rarely 13 or 15) rays | 8 |
| 3b | No band of small scales behind eyes; suborbital pores of adults 9–11; dark stripe from eyes to upper part of caudal-fin base (zigzagged on body of adults); no series of dark-edged white spots following scale rows; no yellow or black spot at dorsal-fin base | <i>H. scapularis</i> | 7b | Pectoral fins usually 13 (rarely 12 or 14) rays | 12 |
| 4a | Dorsal fin 13 or 14 rays; females dark brown with longitudinal yellow lines separating scale rows, caudal fin white; males dark green with dark purple spot on each scale; nape and dorsoanterior part of body with yellowish lines separating scale rows; head orangish with narrow oblique blue-green bands; caudal fin crossed by broad curved purple band, dotted with green | <i>H. marginatus</i> | 8a | Body slender, depth 4–4.3 in SL; 1st dorsal-fin spine 1.3–1.6 in length of 9th spine; females orangish brown, with white stripe from chin and just below lateral line to caudal-fin base, and black spot on fin base; broken whitish line from eyes following lateral line dorsally on body (males with same stripe, but green); body above stripe orange with blue spot on each scale, suffused dorsally with green; first 2 dorsal membranes mainly black, followed by yellow on next 2 membranes | <i>H. signifer</i> |
| 4b | Dorsal fin 11 or 12 (rarely 13) rays; colour not as above | 5 | 8b | Body not slender, depth 3–3.6 in SL; 1st dorsal-fin spine 1.6–2.8 in length of 9th spine; colour not as above | 9 |

Continued...

KEY TO SPECIES

- 9a Suborbital pores 16–23; anterior LL scales with 3–9 pores; body with 5 vertical rows of indistinct blotches (formed by dark edges on scales), arranged in 3 longitudinal series *H. pardaleocephalus*
- 9b Suborbital pores 6–14; anterior LL scales with 1–3 pores; colour not as above 10
- 10a Dorsal and anal fins 11 rays; suborbital pores 10–14; 1st dorsal-fin spine 1.6–1.9 in 9th spine; mottled dark green dorsally on body; females with large rectangular pink area on posterior half of abdomen (reduced to oblong spot in males, followed by pink to orange bars above anal fin); both sexes with large oval black spot anteriorly on soft-rayed portion of dorsal fin, rimmed in yellow in females and irregular with blue edge in males *H. nebulosus*
- 10b Dorsal and anal fins 12 rays; suborbital pores 6–8; 1st dorsal-fin spine 2.3–3.3 in 9th spine; colour not as above 11
- 11a First dorsal-fin spine 2.3–2.8 in 9th spine; pelvic fins of males short, not extending to anus, 1.7–2 in HL; females olivaceous to grey-brown, with longitudinal series of green dashes following scale rows; 5th and 7th rows midlateral on body, with larger white dash separating every third green dash; 6 dark bars on body interrupted by lateral line; dark brown stripe on side of snout broadly bordered in white; males orange, with round green spot rimmed in dark blue on each scale (those on lateral line may coalesce into zigzag pattern); head salmon-pink, with large irregular yellow-green bands; median fins orange, with rows of dark-edged yellow-green spots, and narrow blue margin; no large yellow area at pectoral-fin bases, but with black spot at upper part of base *H. argus*
- 11b First dorsal-fin spine 3–3.8 in 9th spine; pelvic fins of males long, extending to anal-fin origin, 1.2–1.4 in HL; females with alternating blue and yellow stripes following longitudinal scale rows; males salmon-pink to yellow, with longitudinal rows of blue-green bell-shaped spots following longitudinal scale rows; 4 short green bars dorsally on posterior half of body; pectoral-fin bases included in large bright yellow spot with triangular black spot at upper part of base *H. vrolikii*
- 12a No canine tooth at corners of mouth; body depth 3.8–4.4 in SL; colour of females pale green with narrow mid-dorsal dusky pink stripe, midlateral dusky orange stripe, ending in small black spot at caudal-fin base, irregular ventral stripe passing through pectoral-fin base, and scattered pink spots between first 2 stripes, some on lateral line (colouration of males unknown) *H. leptotaenia*
- 12b Canine tooth at corners of mouth on upper jaw; body depth 2.4–4 in SL; colour not as above 13
- 13a Anterior LL scales with 1 pore; small black spot at upper pectoral-fin bases; females with broad yellow or orange stripe extending from eyes to scaly part of caudal-fin base 14
- 13b Anterior LL scales with 2–5 pores; no black spot at upper part of pectoral-fin bases; females without broad yellow or orange stripe in life 15
- 14a Caudal fin of males rounded; body blue-green, with purple band from corner of mouth to eyes, expanding broadly behind eyes and continuing along upper half of body, scales with salmon-pink spot, narrowing on peduncle and scaly caudal-fin base, and ending in broad transverse purplish bar; caudal-fin margin broadly blue-green; dorsal fin black, with narrow blue-green stripe at base *H. pelicieri*
- 14b Caudal fin of males slightly double emarginate; head and front of body to beneath pectoral fins blue-green, with 2 oblique pink bands extending forward and upward from eyes; orange stripe suffused with black, especially posteriorly, with irregular margins finely spotted with blue, extending back from below pectoral-fin tips; large irregular blue-edged black spot on body above pectoral-fin tips *H. zeylonicus*
- 15a No median dorsal scales on nape, no median ventral scales on chest; body depth 2.8–3.3 in SL; snout profile of adults steep, at ~60° angle to horizontal axis of body 16
- 15b Median dorsal scales present on nape and chest (though scales on nape may be embedded); body depth 3.3–4.1 in SL; snout profile of adults not steep, at ≤45° angle to horizontal axis of body 17
- 16a Third and 4th dorsal-fin spines slightly longer than 5th and 6th spines; 3rd anal-fin spine 3.2–3.5 in HL; females olivaceous to reddish brown with numerous small white spots dorsally on body, irregular white bars or vertical rows of white spots ventrally, 3 vertical rows of large black spots on side of body below lateral line; cheek and opercle white, crossed by 3 oblique dark bars, the 1st curved behind eye; males dark salmon-pink with numerous, irregular, dark-edged, green bands and spots, and large irregular black spot above pectoral fins *H. lapillus*
- 16b Third and 4th dorsal-fin spines shorter than 5th and 6th spines; 3rd anal-fin spine 3.7–3.9 in HL; males deep red (appear black underwater), colour of females unknown *H. melas*
- 17a Dorsal and anal fins each with 11 rays; body with alternating stripes of salmon-pink and green that converge onto head, uppermost green stripe branching to eye; males with 4 large, irregular blue-green spots on posterior half of upper 3 green stripes that may enlarge to form bars *H. cosmetus*
- 17b Dorsal and anal fins each with 12 rays; colour not as above 18

Continued...

KEY TO SPECIES

- 18a Females with dark brown body, except for reddish band along base of dorsal fin, 2–3 scales wide, to base of anal fin; brown continuing into middle of caudal fin, where encircled by red band; head and chest orange, grading to blue-green on nape, with narrow green bands that converge onto snout; black and yellow spot behind eye; dorsal fin yellowish white with black spot on 1st membrane; males with head more yellow, and green bands more irregular, forming W-shaped mark on head behind eyes incorporating eye and black spot *H. iridis*
- 18b Colours not as above 19
- 19a Females with dorsal half of head and body bright yellow, including scaly adjacent part of caudal fin; ventral half white, suffused with pale blue-green, especially on chest and abdomen; dorsal fin yellow with 3 ocelli; small black spot in outer yellow basal part of caudal fin; males with same basic pattern, scale centres in ventral white part of body with pale pink spot; ventral part of head pale green with 12 yellow stripes; dorsal fin with 3 black spots (not ocellated), joined in lower part of fin with orange stripe; anal fin with blue-green stripe; lower part of caudal fin translucent orange with oblique blue-green stripe *H. leucoanthus*
- 19b Females pink dorsally, grading to white ventrally, with dorsal row of 4 black dots, 1st on nape, last below middle of dorsal fin; narrow red-edged pale blue stripes on head, 3 on snout (one passing above eye, one below, and one midlateral), 2 extending back from eye; 3 ocellae on dorsal fin, 1st covering anterior 3 membranes; caudal fin with 2 or more ocellated black spots on dorsal basal half of fin; broad crescentic yellow submarginal band; males pinkish white with narrow pale green stripe from lower lip across head just below eye and one extending back from upper part of eye; 2 red lines extending back from eye; anterior ocellus on dorsal fin reduced in size and more ovate, other 2 ocelli absent; caudal fin coloured similar to that of females *H. trispilus*

Halichoeres argus (Bloch & Schneider 1801)

Argus wrasse

PLATE 69

Labrus guttatus Bloch 1791: 149, Pl. 287, Fig. 2 [no locality given]
[name preoccupied by *Labrus guttatus* Bonnaterre 1788 and
Labrus guttatus Gmelin 1789].

Labrus argus Bloch & Schneider 1801: 263 (Australia).

Labrus guttulatus Lacepède 1801: 446, 514 [unjustified emendation of
Labrus guttatus].

Julis (*Halichoeres*) *leparensis* Bleeker 1853: 730 (Lepar I., western Sumatra,
Indonesia).

Halichoeres argus: Bleeker 1862.

PlatyGLOSSUS leparensis: Day 1877.

Halichoeres argus: Jordan & Seale 1907; De Beaufort 1940; Jones &
Kumaran 1980.

Dorsal fin 9 spines, 11 or 12 (usually 12) rays; anal fin 3 spines 12 (rarely with 11 or 13) rays; pectoral fins 14 (rarely 13) rays. Canine (sometimes 2) present at corners of mouth (generic except for *H. leptotaenia*); front of jaws with pair of projecting, slightly recurved canines, followed by 2nd recurved pair $\sim\frac{3}{4}$ as long. Body depth 2.9–3.4 in SL; 1st dorsal-fin spine 3–3.3 in length of 9th spine; caudal fin rounded; pelvic fins short and not extending to anus, 1.2–1.3 in HL. GR 17–19. LL scales 27 (rarely 26), anterior scales with 1–3 (usually 2) pores; suborbital pores 6–8; no median naked zone on nape, scales extending at most to vertical at rear edge of eyes.

Females olivaceous to grey-brown with longitudinal series of green dashes following scale rows; 5th and 7th rows midlateral on body with larger white dash after every third green dash; 6 dark bars on body interrupted by lateral line; dark brown stripe on side of snout broadly bordered in white. Males orange with round green spot rimmed in dark blue on each scale (those on lateral line may coalesce into zigzag pattern); head salmon-pink with large irregular yellow-green bands; median fins orange with rows of dark-edged yellow-green spots and narrow blue margin; no large yellow area at pectoral-fin bases, and no triangular black spot dorsally at pectoral-fin base. Attains \sim 11 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Lakshadweep and Sri Lanka; elsewhere to Andaman Sea, Philippines, Indonesia, Ryukyu Is., Taiwan, Great Barrier Reef, Fiji and Tonga.

REMARKS Usually found in shallow sheltered waters of bays and lagoons, especially in seagrass beds or areas with heavy algal growth, but over sand substrates as well. One collection of 25 specimens was made by beach seine, in Trincomalee Harbour, in 1–1.5 m.

Halichoeres cosmetus Randall & Smith 1982

Adorned wrasse

PLATES 69 & 70

Halichoeres cosmetus Randall & Smith 1982: 15, Pls. 6c & 7a–b

(North Malé Atoll, Maldives); SSF No. 220.28*; Cornic 1987;

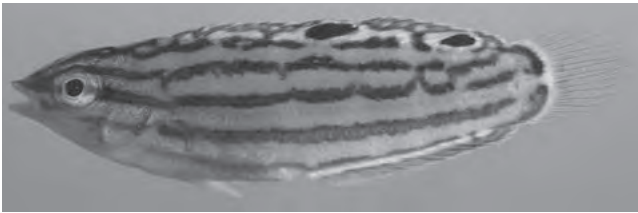
Winterbottom *et al.* 1989; Randall 1992; Randall & Van Egmond 1994;

Fricke 1999; Heemstra *et al.* 2004.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12–14 rays. Body depth 3.3–4.1 in SL; caudal fin rounded. GR 17–20. LL scales 26–28, anterior scales with 2–4 (usually 3) pores; suborbital pores 8–11; head naked, except for triangular zone of small scales on sides of nape.

Females green to blue-green, with 5 narrow yellow stripes, 3rd and 4th dividing, then rejoining as they converge onto head; same 2 stripes curved to form U-shape and end on

upper and lower caudal-fin base; 3rd stripe dividing just before reaching eye, then rejoining just behind eye; vertical black mark behind eye; vertical rows of faint whitish spots in green of body; dorsal fin orange-pink with dark-edged blue-green spots and bands, large ocellus in front of soft-rayed part and smaller ocellus on rear of fin. Terminal male blue-green, green on head, with same basic striped pattern, but stripes yellow on body, pink on head and dorsoanteriorly on body; posterior 4 vertical pairs of whitish spots replaced by larger blue spots, which may merge to form bars that interrupt yellow stripes. Attains at least 11 cm TL.



Halichoeres cosmetus, 3 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: Gulf of Oman, Kenya to South Africa (Park Rynie), Comoros, Seychelles, Mascarenes, Chagos and Maldives.

REMARKS Kemp (2000) reported the species from the northeastern Gulf of Oman, and it has been photographed off Lamu, Kenya. Specimens were collected from coral or rocky reefs, in 5–31 m. Member of a complex of four species of similar appearance; the others are *H. ornatus* (Garrett 1863), *H. orientalis* Randall 1999 and *H. claudia* Randall & Rocha 2009.

Halichoeres dussumieri (Valenciennes 1839)

Bubblefin wrasse

PLATE 70

Julis dussumieri Valenciennes in Cuv. & Val. 1839: 478, Pl. 387 (Malabar coast, India).

PlatyGLOSSUS (LeptoJulis) dubius Steindachner 1864: 37 (Zanzibar, Tanzania).

PlatyGLOSSUS dussumieri: Playfair & Günther 1867; Day 1877.

PlatyGLOSSUS roseus Day 1888: 264 (Karachi, Pakistan).

PlatyGLOSSUS maculatus Jatzow & Lenz 1898: 520, Pl. 36, Fig. 16 (Zanzibar, Tanzania).

Halichoeres dianthus Smith 1947: 802 (Inhaca I., Mozambique); SFSA No. 739*.

Halichoeres nigrescens (non Bloch & Schneider 1801): Smith 1957; SFSA No. 791*.

Halichoeres dussumieri: Randall & Smith 1982*; SSF No. 220.29*; De Bruin *et al.* 1994; Randall 1995*; Carpenter *et al.* 1997*.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 14 or 15 rays. Body depth 2.9–3.6 in SL; 9th dorsal-fin spine 2.7–2.9 in HL; membranes between 3rd and 5th dorsal-fin spines higher than rest of fin in large adult males; caudal fin rounded. GR 18–22. LL scales 27, anterior scales with 2–5 pores; suborbital pores 8–12; head naked.

The most variable in colour among WIO species of *Halichoeres*. One unique colour feature helps to link the different colour phases: a large, irregular, S-shaped pink mark in oblique position, with upper part of S behind the eye and lower part at edge of opercle at level of pectoral-fin base; also, all have pink band at pectoral-fin base, with dark blue to black triangular spot at upper edge. Juveniles with ocellated black spot on soft-rayed dorsal fin between 4th and 5th rays. Females pale green to greenish grey, with 7 or 8 irregular chain-like bars on upper three-quarters of body from dark magenta or blackish bars at edges of scales that enclose green areas dorsally, branch ventrally, with some interconnection by oblique bars from spots on scales; midlateral series of white spots larger than pupil often present on body; some females with midlateral blackish stripe from snout to caudal-fin base (may enclose white spots along ventral edge); dorsal and anal fins with row of pale green to yellow spots near base that may join to form stripe. Terminal male yellowish green, with same barred pattern on body; head below level of lower edge of eye greenish yellow with 3 oblique, blue-edged, pink bands, 1st from upper lip to eye; dorsal fin often with black spot of near-pupil size on 5th membrane; caudal fin crossed by broad purplish crescent covering most of fin, upper and lower edges of crescent bright blue. Attains 14 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Persian/Arabian Gulf, Gulf of Oman, Tanzania (Zanzibar), Mozambique, South Africa (KwaZulu-Natal), Pakistan, India and Sri Lanka; not known from Red Sea; elsewhere to Andaman Sea, Indo-Malayan region and Hong Kong.

REMARKS Inhabits shallow-water shorelines of continents and large islands, generally not on coral reefs. Often identified as *H. nigrescens* (Bloch & Schneider 1801), but this name is based on a drawing (no extant specimen) that cannot be convincingly linked to any known species of *Halichoeres*, as explained by Parenti & Randall (2000).

Halichoeres hortulanus (Lacepède 1801)

Checkerboard wrasse

PLATE 71

Labrus hortulanus Lacepède (ex Commerson) 1801: 449, Pl. 29, Fig. 2 (Indian Ocean).

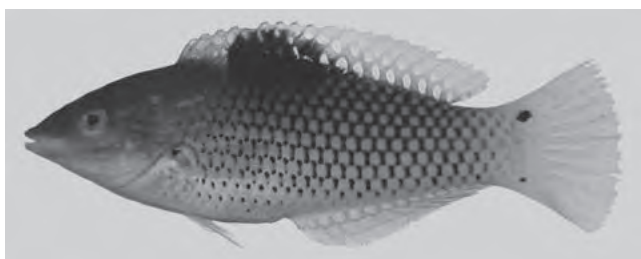
Labrus centiquadrus Lacepède 1801: 437, 493 (Madagascar; Réunion and Mauritius, Mascarenes).

Julis semidecorata Lesson 1828: 403 (Mauritius, Mascarenes).

Sparus decussatus Bennett 1829: no page number, Pl. 14 (Sri Lanka).
Halichoeres eximius Rüppell 1835: 16, Pl. 5, Fig. 1 (Red Sea).
Julis corbis Valenciennes in Cuv. & Val. 1839: 435 [no locality given].
PlatyGLOSSUS hortulanus: Günther 1862; Playfair & Günther 1867; Day 1877.
Halichoeres centriquadrus: Baissac 1953; Smith 1955; Fourmanoir & Guézé 1961; Smith & Smith 1963*; SFSa No. 793*; Jones & Kumaran 1980; Bemert & Ormond 1981.
Halichoeres hortulanus: Harmelin-Vivien 1976; Randall & Smith 1982; SSF No. 220.30*; Winterbottom *et al.* 1989*; Randall 1992, 1995*; Allen & Smith-Vaniz 1994; Anderson 1996; Field & Field 1998*; Heemstra *et al.* 2004; Lieske & Myers 2004.
Halichoeres hortulanus centriquadrus: Gomon in Fischer & Bianchi 1984.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 (rarely 13) rays. Two pairs of canines at front of upper jaw, 2nd pair strongly recurved, lower jaw with single pair. Body depth 2.7–3.7 in SL, deeper with growth; caudal fin truncate to slightly rounded. GR 20–25. LL scales 26, anterior scales with 1 pore; suborbital pores increasing with age, from 12 in juveniles (3–4 cm) to 40 in adults; head with scales dorsally to interorbital area; patch of small scales on upper part of opercle, and near-vertical band of small scales in 2 or 3 rows just behind eye.

Juveniles broadly and irregularly marked with black and white, with yellow-edged black spot in middle of dorsal fin. Females white to pale green, the purple margins of the scales on posterior of body forming squares, rimmed as faint purple bars, and longitudinal series of small dark purple dots; yellow spot developing with growth on back below 4th and 5th dorsal-fin spines and extending into fin; head pale green with oblique pink bands that break into short segments, and irregular rows of spots on head behind eyes and nape; caudal fin orange-yellow with small blackish spot dorsally at base. Males with green body, scales formed into squares by bluish purple bars and faint longitudinal purplish bands; bright yellow spot dorsally on back larger, and followed by large dark purplish spot; dorsal and caudal fins purple, sometimes shading to red distally, with rows of green spots that are progressively smaller toward outer margin; head colouration similar to females. Attains 27 cm TL.



Halichoeres hortulanus, 9 cm SL (South Africa). © RE Stobbs

DISTRIBUTION Indo-Pacific. WIO: Red Sea, southern Oman to South Africa (Aliwal Shoal), Madagascar, Comoros, Seychelles, Mascarenes, Maldives, Chagos, Lakshadweep

and Sri Lanka; elsewhere to Andaman Sea, Indonesia, Japan, Australia, Line Is. and Tuamotu Is.

REMARKS Found on coral reefs and adjacent sand and rubble, in ~1–30 m; sometime follows foraging goatfishes and steals the prey they have exposed. Feeds on bivalves, gastropods, hermit crabs, unidentified crustaceans, polychaetes and chitons, along with foraminifera and bits of sand. Easily approached underwater. Often identified as *Halichoeres centriquadrus* and described by Lacepède in the same volume as *H. hortulanus*; Valenciennes in Cuv. & Val. (1839), as first reviser, selected the latter as the senior synonym. The Pacific population differs in having a second yellow spot at dorsal-fin base on 5th–6th rays.

Halichoeres iridis Randall & Smith 1982

Rainbow wrasse

PLATE 71

Halichoeres iridis Randall & Smith 1982: 17, Pl. 7c–e (Mauritius, Mascarenes); SSF No. 220.31*; Cornic 1987; Winterbottom *et al.* 1989; Randall 1994, 1995*; Lieske & Myers 2004*.

Dorsal fin 9 spines, 12 (rarely 13) rays; anal fin 3 spines, 12 rays; pectoral fins 13 (rarely 14) rays. Pair of canines at front of jaws, next tooth half as long. Body depth 3.5–3.9 in SL; caudal fin moderately rounded, length 1.4–1.6 in HL; pelvic fins short, not extending to anus. GR 15–19. LL scales 27, anterior scales with 3–5 pores; suborbital pores 9–12; head naked except for triangular area of small scales on side of nape; scales dorsally on nape almost reaching vertical at rear edge of eye (anterior scales may be embedded).

Juvenile, female and male colour phases unusually similar: body mainly dark brown; head orange-yellow with green bands, dark spot behind eye, and black spot anteriorly on dorsal fin. Juveniles dark brown, grading dorsally on body and dorsal fin to brownish red, fin with broad pale yellow margin and 3 ocelli, 2 largest with deep blue centres; head greenish yellow, grading to red on opercle, with 2 narrow green stripes across head below eye; greenish black, quadrangular spot behind eye, and black dot at front of snout. Females with broad red band dorsally on body that curves around extension of dark brown onto caudal-fin base; head yellow, grading posteriorly to orange, with same 2 green ventral stripes, but more distinct faint mid-dorsal green band on snout ending in blue area dorsally on nape; faint green stripe from front of snout through upper part of eye, and C-shaped green mark on opercle; dark spot behind eye rimmed behind with yellow; dorsal fin pale yellow. Terminal male almost entirely dark brown; head and chest bright orange with irregular green bands, one enclosing black spot behind eye; dorsal fin

white with faint pale yellow middle stripe; basal half of anal fin red, outer half grey, bordered in blue; caudal fin broadly blue distally with large orange-red C-shaped band. Attains 11 cm TL.



Halichoeres iridis, 5 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: southern Red Sea, Oman to South Africa (Aliwal Shoal), Madagascar, Seychelles, Mauritius and Chagos.

REMARKS Known from 6–43 m (usually >20 m).

Halichoeres lapillus Smith 1947

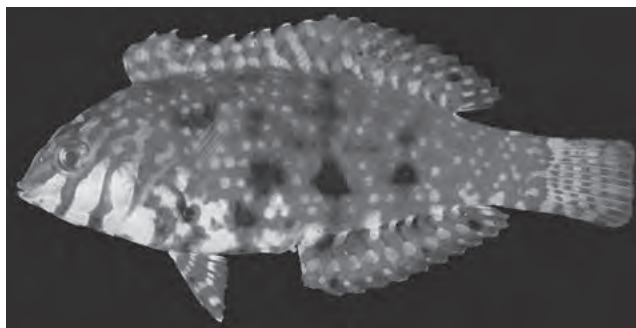
Jewelled wrasse

PLATES 71 & 72

Halichoeres lapillus Smith 1947: 801 (Inhaca I., Mozambique); SFSA No. 790*; Randall & Smith 1982; SSF No. 220.32*; Cornic 1987; Randall 1995*; Heemstra & Heemstra 2004*.

Dorsal fin 9 spines (spines 2–4 slightly longer than spines 5–6), 11 rays; anal fin 3 spines, 11 rays; pectoral fins 13 rays. GR 17–21. LL scales 27, anterior scales with 2–5 pores; suborbital pores 7–10; median dorsal zone of nape naked, scales on each side extending forward to vertical from upper end of preopercle margin; median ventral region of chest naked.

Females olive-brown dorsally, shading to reddish brown ventrally, with many small white spots dorsally and larger white spots ventrally, especially on abdomen and chest, and 2 longitudinal rows of irregular black spots, about eye size midlaterally on body; head olive dorsally, shading to white, with 5 diagonal reddish to yellowish brown bands, broader posteriorly, first 3 bands passing through or at edge of eye. Males dusky red-orange, with rows of dark-edged green spots, those on ventral half of body large and irregular; large black spot flecked with yellow on body just behind upper end of gill opening; head orange-red with diagonal green bands; black spots on lateral and ventral parts of body (in 1 specimen from Oman) so enlarged that only scattered small green and whitish spots remained. Attains 14 cm TL.



Halichoeres lapillus, 6 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: southern Oman, Mozambique, South Africa (Aliwal Shoal), Madagascar, Réunion and Mauritius.

REMARKS Usually found on rocky bottom or reefs dominated by algae, in 5–15 m.

Halichoeres leptotaenia Randall & Earle 1994

Thin-striped wrasse

PLATE 72

Halichoeres leptotaenia Randall & Earle 1994: 288, Pls. 1 & 3 (southern Persian/Arabian Gulf); Randall 1995*; Carpenter *et al.* 1997.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 13 rays. Single pair of canines at front of jaws; no canine at corners of mouth. Body slender, depth 3.8–4.4 in SL; caudal fin slightly rounded; pelvic fins short, not extending to anus. GR 15–20. LL scales 27, all with single pore; suborbital pores 6–10; head naked except for partially embedded scales on nape that extend to rear part of interorbital area; median ventral region of chest naked.

Juveniles pale greenish grey dorsally, white ventrally, with midlateral yellow stripe from front of snout, through eye, ending in small black spot on caudal-fin base. Females pale green, with 3 salmon-pink stripes containing varying amount of brown pigment: 1st from dorsally on snout, across nape and along dorsal-fin base; 2nd from front of upper lip through eye to caudal-fin base; 3rd more irregular and partly broken into spots ventrally on head and continuing on lower side of body. Male colour unknown.

DISTRIBUTION WIO: Persian/Arabian Gulf and Oman.

REMARKS The status of this species is uncertain. Randall & Earle (1994) reported that it appears very similar to the widespread *Halichoeres zeylonicus*, with which it co-occurs. The name on the photograph of the fresh holotype was subsequently changed to *H. zeylonicus* by Randall (1995). No male has been identified. The underwater photographs

from the description show a different-looking fish – with a dark stripe across the snout and a mid-dorsal-fin spot, which may represent juvenile *H. stigmaticus*.

Halichoeres leucoxanthus Randall & Smith 1982

Yellowback wrasse

PLATE 72

Halichoeres leucoxanthus Randall & Smith 1982: 20, Pl. 8c–d (Java, Indonesia); Allen & Steene 1987; Randall 1992.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Single pair of canines at front of jaws, almost twice as long as next teeth in jaws. Body depth 3.6–3.9 in SL; caudal fin moderately rounded; pelvic fins small, not extending to anus. GR 16–18. LL scales 27, anterior and descending scales with 2 or (usually) 3 pores; suborbital pores 9–11; head naked except for partially embedded scales on nape that extend in front of rear margin of preopercle, about half distance to vertical at rear edge of eye; largest scales on chest about half size of those on body.

Females with at least upper half of head and body bright yellow, abruptly white to pinkish white below, this pattern extending onto scaly caudal-fin base; vertically elongate greenish black spot behind eye, bordered behind by brighter yellow bar; faint pink stripe sometimes visible across cheek below eye; oval black spot smaller than pupil in outer yellow basal part of caudal fin; dorsal fin yellow with 3 ocelli, one in front of soft-rayed part of fin about twice as large. Males similar in colour pattern, differing in having cheek pale green with 2 yellow stripes (the ventral one obscure), 3 small black spots in place of ocelli in dorsal fin, faintly joined by orange stripe; anal fin with green stripe near middle of fin, and lower half of caudal fin with oblique green band; large males lose dorsal-fin spots, have alternating green and pink stripes ventrally on head, and pink anal fin with central green stripe. Attains 12 cm TL.

DISTRIBUTION Indian Ocean: few island localities at Maldives, Andaman Sea and Indonesia.

REMARKS Generally found at <30 m deep (one record to 50 m). Most often found on small patch reefs, usually well isolated by stretches of open sand bottom. Closely related to the all-yellow *Halichoeres chrysus* Randall 1981 from the western Pacific. Randall & Smith (1982) were unable to distinguish the two except by colour; Allen & Steene (1988) reported them as sympatric at Christmas I.

Halichoeres marginatus Rüppell 1835

Dusky wrasse

PLATES 72 & 73

Halichöres marginatus Rüppell 1835: 16 (Al Muwaylih, Saudi Arabia, Red Sea).

Julis lamarii Valenciennes in Cuv. & Val. 1839: 481 (Mauritius, Mascarenes).

PlatyGLOSSUS marginatus: Day 1877.

Halichoeres notopsis: Smith 1955, 1957, 1961; Smith & Smith 1963*; SFSA No. 792b*; Jones & Kumaran 1980.

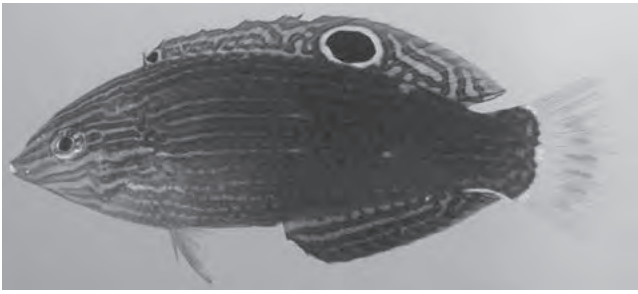
Halichoeres ianthinus Fourmanoir 1955: 217 (Anjouan I., Comoros).

Halichoeres virescens Fourmanoir & Guézé 1961: 13 (Réunion, Mascarenes).

Halichoeres marginatus: Baissac 1953; Smith 1955, 1957; Smith & Smith 1963*; Jones & Kumaran 1980; Randall & Smith 1982; Randall 1983, 1992, 1995*; Allen & Steene 1987; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; Anderson 1996; Carpenter *et al.* 1997; Field & Field 1998*; Heemstra *et al.* 2004; Lieske & Myers 2004.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 13–15 rays. Body depth 2.6–3.3 in SL; caudal fin slightly rounded; pelvic fins of adult males long, extending beyond anal-fin origin. GR 17–20. LL scales 27–29, anterior scales with 2–4 pores; suborbital pores 10–14; head naked except area of small scales on sides of nape extending to above rear edge of eyes.

Juveniles black with 5 longitudinal white to pale yellow lines, some broken into dashes or spots; 3 ocelli in dorsal fin, middle ocellus very large, flanked by white spot that links to 1st pale yellow line on body. Females olive-brown with dark purplish brown longitudinal lines following centres of scale rows; head paler bluish or greenish brown, with more irregular, narrow, dark brown lines; dorsal and anal fins olivaceous with dark-edged reddish longitudinal bands that become more irregular and broken into segments or spots on soft-rayed portion, dorsal fin with same 3 ocelli as juvenile. Head of males orange-red anteriorly, grading to orange posteriorly, with narrow blue and green bands, mainly longitudinal, that continue on body as dark green stripes (consisting of series of large contiguous dark green spots, 1 per scale); orange on body restricted to narrow lines between green stripes anteriorly, disappearing posteriorly; caudal fin coloured as for body on basal fifth, followed by pale green crescent, broad transverse dark green band dotted with pale green, and outer pale olive margin; dorsal and anal fins dark green with numerous small pale green spots. Attains 17 cm TL.



Halichoeres marginatus, 5 cm SL (Rodrigues). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Gulf of Oman, Red Sea, Yemen, Mozambique and South Africa (Umhlanga: underwater photograph of subadult), Madagascar, Comoros, Aldabra, Seychelles, Mascarenes, Chagos, Maldives, India and Sri Lanka; elsewhere to Andaman Sea, Christmas I., Indonesia, Japan, Australia, Pitcairn Is. and Hawaii.

REMARKS Usually found along edges of well-developed coral reefs in constant search for prey, reported mainly as small crustaceans, gastropods and polychaete worms. Juveniles secretive, often in narrow crevices or near sea urchins. Regional populations look different and differ in mtDNA sequences by several percent. The type population from the Red Sea has marked differences. After the complex is split, the species in the remaining WIO would be *H. lamarii*.

Halichoeres melas Randall & Earle 1994

Black wrasse

PLATE 73

Halichoeres melas Randall & Earle 1994: 296, Pl. 8 (Sawda I., Khuriya Muriya Is., Oman).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 13 rays. Body depth 2.8–3 in SL; head profile straight and steep to above eyes, at ~55° angle to horizontal axis of body; dorsal-fin origin anterior to gill opening (2nd spine in vertical alignment with upper end of gill opening); caudal fin slightly rounded; pelvic fins extending to or slightly behind anus. GR 16–19. LL scales 27 or 28, each with 2 or 3 (rarely 4) pores; suborbital pores 10–12; head naked; no median predorsal or pre-pelvic scales (ventroanterior half of chest naked); scales on sides of nape progressively smaller anteriorly, ending above free end of preopercle margin; no scales on opercle.

Colour in life black (as viewed underwater); iris yellow. Colour upon capture (males): dark red; iris mainly red; few scales posteriorly on body with 2-mm dark blue-green spot; soft-rayed portion of dorsal fin with broad median, somewhat iridescent, blue-green band; caudal fin with large, faint, dark blue-green central area and 2 tiny blue-green spots (one above other) in centre of fin. Attains 12 cm SL.

DISTRIBUTION Known only from three type specimens (males) collected at Oman.

REMARKS Taken from a reef in 9–10 m. Individuals were observed to forage over an unusually wide area. No other fish of different colour were observed in the area that might have been the female of the species, so it may also be black. From this behaviour, the body shape, and dark colouration, this fish was first thought to be a species of *Macropharyngodon*. However, the dentition is typical of *Halichoeres*. Of the species of *Halichoeres*, *H. melas* is closest to *H. lapillus*, sharing the same meristic data, anterior-set dorsal-fin origin, and half naked chest. These 2 species appear to be a link between *Halichoeres* and *Macropharyngodon*.

Halichoeres nebulosus (Valenciennes 1839)

Picture wrasse

PLATE 73

Julis nebulosus Valenciennes in Cuv. & Val. 1839: 461 (Mumbai, India).

PlatyGLOSSUS nebulosus: Day 1877.

Halichoeres kawarin (non Bleeker 1852): Baissac 1953; Smith 1955*, 1957; Smith & Smith 1963*; SFSA No. 792a*; Kotthaus 1977; Jones & Kumaran 1980.

Halichoeres margaritaceus (non Valenciennes 1839): SFSA No. 792.

Halichoeres melanurus (non Bleeker 1851): Harmelin-Vivien 1976.

Halichoeres nebulosus: Kuitert & Randall 1981*; Randall & Smith 1982; Randall 1983*, 1992, 1995*; Winterbottom *et al.* 1989*; Field & Field 1998*; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Dorsal fin 9 spines, 11 (rarely 12) rays; anal fin 3 spines, 11 rays; pectoral fins 14 (rarely 13 or 15) rays. Anterior pair of canines projecting and slightly recurved; 2nd pair of teeth in jaws almost as long and more strongly recurved. Body depth 3–3.6 in SL; caudal fin moderately rounded; pelvic fins of males barely extending to anus. GR 17–21. LL scales 27, anterior scales with 1–3 pores; suborbital pores 10–14; no scales on head; narrow median zone of nape naked, except for a few embedded scales anterior to dorsal fin; scales on sides of nape not extending to rear edge of eyes.

Females green to olivaceous dorsally, grading to pale green or white ventrally, with grey to brown stripes following scale rows on upper half of body, along with scattered whitish spots of pupil size; very large, irregular, double black spot midlateral on body, anterior part with irregular dorsal extension onto dorsal-fin base; large squarish pink spot posteriorly on abdomen over anal-fin origin, crossed by oblique bluish white line, with parallel line at anterior margin; reddish stripe from upper lip through lower part of eye, expanding posteriorly and ventrally; vertically elongate black mark behind eye, followed by irregular whitish mark; boomerang-shaped pink band on cheek; top of head with fine reticulations of reddish brown; dorsal and anal fins with

oblique olivaceous to reddish bands; large yellow-edged black spot on outer anterior soft-rayed part of dorsal fin, with smaller ocellus anteriorly; unscaled part of caudal fin without spots or bands. Males variable in colour, more green overall, some with each scale on upper half of body covered by vertically oval dark green spot (blackish on spots in middle of body); large pink area of abdomen of female smaller and orangish pink, followed by irregular orangish bars; other males with irregular reddish bands and large, branching black area in middle of body; head green, grading to yellowish green ventrally, with salmon-pink bands, one from corner of mouth through lower edge of eye, branching broadly behind eye (black mark largely absent; replaced by black spot, edged in front of blue or yellow within large branching pink band on rear of opercle); ocellus in dorsal fin replaced by large irregular black spot, and oblique bands more as spots; caudal fin with short vertical to oblique rows of small dark red spots. Attains 11 cm TL.



Halichoeres nebulosus, 7 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Red Sea, Oman to South Africa (Algoa Bay), Madagascar, Seychelles, Réunion, Mauritius Chagos and eastern India; elsewhere to Christmas I., Ryukyu Is. and Australia.

REMARKS A common inshore species (often in <1 m) on exposed coral reefs or rocky substrates; juveniles more in sandy areas.

Halichoeres pardaleocephalus (Bleeker 1849)

Lineblotch wrasse

PLATE 73

Julis (Halichoeres) pardaleocephalus Bleeker 1849: 8 (Bali, Indonesia).
Halichoeres pardaleocephalus: Bleeker 1862; Randall & Smith 1982.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 or 15 (usually 14) rays. Anterior pair of canines projecting and slightly recurved; 2nd pair of teeth in upper jaw two-thirds length of outer pair; 2nd canines in lower jaw almost as long as 1st. Body moderately deep, ~3.2 in SL; snout profile straight, at ~35° angle to horizontal axis of body, and nape profile slightly convex; caudal fin slightly rounded; pelvic

fins not extending to anus. GR 20–21. LL scales 27, anterior scales with 3–9 pores; suborbital pores 16–23; no scales on head; no narrow median naked zone on nape; scales on sides of nape almost or extending to vertical at rear edge of eyes.

Small female olive-green, with longitudinal brownish orange stripes separating scale rows; some scales of double rows of orange stripes on sides of body with dark brown to black spot, resulting in clusters of small dark spots; vertical yellow line behind eye with adjacent black blotch; dorsal and anal fins deep pink with rows of green-edged yellow spots, dorsal fin with large oval blue spot, rimmed in black and yellow, basally between 1st and 4th rays. Large female more green overall, narrow bands on head orange-yellow, those below eye and across opercle narrowly edged with dark and pale blue; vertical spot behind eye mainly blue with dark-edged orange line anterior and posterior; ocellus on dorsal fin smaller and hemispherical. Males very similar. Attains 13 cm TL.

DISTRIBUTION WIO: southern India (Kovalam and Visakhapatnam); elsewhere, Indonesia (Sumatra, Java and Bali).

REMARKS Specimens from India were collected from rock and sand bottom, in 0–2 m, and a large tidepool.

Halichoeres pelicieri Randall & Smith 1982

Pelicier's wrasse

PLATES 73 & 74

Halichoeres pelicieri Randall & Smith 1982: 12, Pls. 5c–d & 6a–b (Mauritius, Mascarenes); Randall & Steene 1984; SSF No. 220 [in key]; Baissac 1990; Fricke 1999; Victor 2016: 18, Figs 6–8.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 13 rays. Anterior pair of canines projecting and slightly recurved; 2nd pair of teeth in jaws only half as long. Body depth 3.6–4 in SL; caudal fin slightly rounded; pelvic fins not extending to anus. GR 18–2. LL scales 27, anterior scales with 1–3 pores; suborbital pores 8–11; no scales on head; narrow median zone of nape naked, except for a few embedded scales anterior to dorsal fin; small scales on sides of nape extending forward almost to vertical at rear edge of eyes; small scales on caudal-fin base.

Juveniles and females salmon-pink with a broad yellow midlateral band ending in a rounded black spot at the base of the caudal fin, often blackened scales in band before spot. Males overall green with a bright blue green stripe above and behind the eye, a black dorsal fin, a black spot on upper pectoral axil and a black moustache. Midlateral band becomes wider posteriorly and darker yellowish green with scalloped edges and a row of yellowish spots above the band. Caudal and anal fins with a distal yellow band. Attains 11 cm TL.

DISTRIBUTION WIO: Mauritius and Réunion.

REMARKS The seven type specimens were females collected in 20–35 m, on sand and rubble substrates. Males were discovered more recently in deeper water. Victor (2016) described the related new species *Halichoeres gurrobyi* Victor 2016 also from deep reefs in Mauritius. Immatures and females have two lateral yellow stripes and a large black blotch over the caudal peduncle (Plates 70 & 71). Males develop a larger posterior black blotch, and a bright yellow cheek overlying a blue isthmus.

Halichoeres scapularis (Bennett 1832)

Zigzag wrasse

PLATE 74

Julis scapularis Bennett 1832: 167 (Mauritius, Mascarenes).

Halichoeres coeruleovittatus Rüppell 1835: 14, Pl. 4, Fig. 1 (Jeddah, Saudi Arabia, Red Sea).

Julis leschenaulti Valenciennes in Cuv. & Val. 1839: 453 (Réunion, Mascarenes).

PlatyGLOSSUS scapularis: Playfair & Günther 1867; Day 1877; Gilchrist & Thompson 1917.

PlatyGLOSSUS (Güntheria) pagenstecheri Kossmann & Räuber 1877: 407, Pl. 3, Fig. 5 (Red Sea).

PlatyGLOSSUS (Güntheria) scapularis: Bleeker 1879.

Halichoeres scapularis: Baissac 1953; Smith 1955*; SFSA No. 795*; Kotthaus 1977; Jones & Kumaran 1980; Smith in Bruton & Cooper 1980; Allen & Steene 1987; Winterbottom *et al.* 1989*; Randall 1992, 1995; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Field & Field 1998*; Fricke 1999; Heemstra *et al.* 2004; Lieske & Myers 2004.

Pseudojuloides trifasciatus (non Weber 1913): Allen & Steene 1987.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 rays. Two pairs of canines at front of jaws, 2nd pair almost as large as 1st and more strongly recurved. Body depth 2.4–3.9 in SL, deeper with growth; snout short; caudal fin slightly to moderately rounded; pelvic fins of large adult males extending to anal-fin origin. GR 17–21. LL scales 26, anterior scales with 1 pore; suborbital pores 9–11; head naked except for patch of 9–12 small scales dorsally on opercle; no median naked zone on nape, scales extending forward to vertical at rear edge of eyes.

Juveniles white, with yellow stripe from eye to caudal-fin base above LL, very broad and irregular behind eye, progressively narrower on body as series of contiguous black blotches about half pupil diameter for most of body, then progressively smaller and more separated, ending as dots on tiny yellow spots on peduncle. Females similar, becoming pale green dorsally on body, yellow stripe now evident on side of snout to eye, the black blotches of dark stripe larger and well joined, except on peduncle where separate and smaller than

pupil; median fins pale yellowish; pink stripe on dorsal fin near base, and outer stripe, submarginal in soft-rayed part of fin; anal-fin base white with pink stripe. Large females pale blue-green dorsally, black stripe broader and in zigzag pattern. Terminal male greenish yellow on head, with irregular large pink bands and spots; body pale blue-green, grading ventrally to white, with vertically elongate, irregular, pink bands on scales; zigzag line along lateral line broader and pink, overlaid with blackish pigment anteriorly, enlarged to irregular black spot covering 3 or 4 scales below middle of spinous dorsal fin; dorsal and anal fins pale green with 2 pink stripes; caudal fin pale blue-green in broad central part, with irregular, vertical, interconnected pink bands, becoming broadly yellow posteriorly and narrowly yellow on upper and lower margins. Attains 20 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Red Sea to South Africa (KwaZulu-Natal), Madagascar and Mascarenes; elsewhere to Indonesia, southern Japan, Palau, Great Barrier Reef and New Caledonia.

REMARKS Typically found in bays or lagoons, on sand, rubble or seagrasses, and generally near reefs or rocky areas, in 1–20 m. Often follows goatfishes to find invertebrates exposed by their rooting in sand. Terminal males in Red Sea and Gulf of Aden appear to be smaller in size and differ in colour: the dorsum is yellow, instead of green, and the interspaces between pink bands on the head are blue or blue-green instead of green; the caudal fin often has a large central blackish area obscuring the pink bands, as seen on the species elsewhere.

Halichoeres signifer Randall & Earle 1994

Flag wrasse

PLATE 74

Halichoeres signifer Randall & Earle 1994: 292, Pls. 5–7 (Masirah I., Oman); Randall 1995.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 13–15 rays. Single pair of canines at front of jaws, 2nd tooth almost as large in some individuals; canine at corners of mouth. Body slender, depth 4–4.3 in SL; caudal fin slightly rounded; pelvic fins short, not extending to anus. GR 17–21. LL scales 27–29, anterior scales with 3–5 pores; suborbital pores 6–13; broad median naked zone on nape; scales on sides of nape extending forward almost to vertical at rear margin of preopercle; no scales on opercle or cheek.

Juveniles green, scale edges reddish brown, grading anteriorly to reddish brown, with white stripe from chin through lower part of eye, across lower side of body, ending as faint pale streak in caudal fin; oblique oval black spot at

caudal-fin base (adjacent to white stripe); whitish line from upper part of eye following dorsoanterior part of lateral line; median fins mainly red. Females similar but more green and lacking black basicaudal spot. Males dusky orange, with blue spot on each scale, paler to near-white ventrally, with narrow pale green stripe across body, commencing above pectoral-fin base and continuing onto scaly caudal-fin base; head dull orange dorsally grading to yellowish ventrally, with irregular oblique pale blue lines; dorsal fin orange with row of blue spots, one per membrane, at base; first 2 membranes mainly bluish black, next 2 with large yellow area distally; caudal fin orange with 4 vertical rows of blue spots, progressively darker distally; upper and lower margins narrowly blue. Attains 10 cm TL.

DISTRIBUTION WIO: Oman.

REMARKS Seen at the interface of low rocky reef and sand, in 3–12 m. Forages both on reefs and adjacent sand. Males maintain a harem of ~10 females, the male often seen elevating the dorsal fin to display the black and yellow anterior portion; this courtship is more typical of species of *Leptojulius* than *Halichoeres*. The molariform pharyngeal teeth less-developed than those of other *Halichoeres* spp. is an additional similarity with *Leptojulius*.

Halichoeres stigmaticus Randall & Smith 1982

U-spot wrasse

PLATES 74 & 75

Halichoeres stigmaticus Randall & Smith 1982: 7, Pl. 3a–b (Bahrain, Persian/Arabian Gulf); Randall 1995*; Carpenter *et al.* 1997*.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 (rarely 11 or 13) rays; pectoral fins 14–16 (usually 15) rays. Pair of projecting, slightly recurved canines at front in both jaws, followed by 2nd recurved pair ~ $\frac{3}{4}$ as long. Body depth 3.4–3.8 in SL; caudal fin slightly to moderately rounded; pelvic fins short, not extending to anus. GR 18–21. LL scales 28 (rarely 27 or 29), anterior scales with 3–5 pores; suborbital pores 6 or 7; head naked, except for triangular patch of small scales on sides of nape, extending forward to or slightly anterior of vertical at upper end of preopercle margin.

Females pale green on upper quarter of nape and body, scale centres pale pink; next quarter of body pink with pale green spot on each scale (forming irregular green to blue-green lines in pink zone on head behind eye); below this, just above pectoral-fin base, narrow, pale yellow zone rimmed with irregular blue-green line; ventral third of body whitish; large blackish U-shaped mark on side of body above pectoral-fin tip, obscured by 4 curved, pale yellow streaks (conspicuous

in preservative); ventral third of body whitish, with faint pale blue spots; head pale orange-pink, grading to pale yellow on cheek, with oblique pale blue lines; tip of snout, including front of upper lip, blue; dorsal fin mainly salmon-pink, the first 2 membranes mainly deep blue and yellow. Males similar, but with black 'V' of 5 or 6 scales below anterior of dorsal fin. Attains 13 cm TL.

DISTRIBUTION WIO: Persian/Arabian Gulf (common) and Gulf of Oman (rare).

REMARKS Known from 3–25 m.

Halichoeres trispilus Randall & Smith 1982

Triplespot wrasse

PLATE 75

Halichoeres trispilus Randall & Smith 1982: 18, Pl. 8a–b (North Malé Atoll, Maldives); SSF No. 220 [in key]; Baissac 1990; Lieske & Myers 1994; Randall & Van Egmond 1994; Winterbottom & Anderson 1997; Fricke 1999.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Pair of projecting, slightly recurved canines at front of jaws, almost twice as long as teeth behind. Body depth 3.4–3.6 in SL; caudal fin slightly rounded; pelvic fins short, not extending to anus. GR 16–18. LL scales 27, anteriormost and descending scales with 2 or 3 pores; suborbital pores 9–11; head naked, except for triangular zone of partially embedded small scales on sides of nape extending almost to vertical at rear edge of eyes.

Females pale pink, scales barely evident from near-white centres; head pale red dorsally, pinkish white ventrally; upper lip bright red, crossed by bluish white line that extends to front of eye; narrow bluish white band, bordered narrowly by pale red, extending from corner of upper lip below end of opercle; 2 similar bands from behind eye across back of head; oblique, red-edged, broken, pale greenish white line curved over eye and extending faintly across remainder of head; median dorsal part of head with intricate pattern of curved whitish lines and dots; series of 4 small, pale-edged, brown spots from side of nape above and parallel to lateral line, ending in middle of body; dorsal fin with 3 large ocelli, 1st full height of fin, next 2 about half as large, well-separated in soft-rayed part of fin; naked part of caudal fin bluish white, with cluster of ocellated black spots on upper basal half of fin, uppermost larger than pupil, and yellow crescent in outer half of fin. Males brighter pale pink; 2 greenish white lines extending back on snout from upper half of eye and across head behind eyes; narrow greenish white band extending from lower lip, below eye, across head; 2 bright red lines extending back from eye in spaces between

pale greenish white lines; narrow red bar at pectoral-fin base; only anterior ocellus remaining in dorsal fin, rimmed in blue, with yellow line across the top; outer half of caudal fin bright yellow, broadly bordered in blue; basal half bluish white, with few small dark bluish spots dorsally (vestiges of the ocelli of females). Attains 10 cm SL.



Halichoeres trispilus, 10 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indian Ocean. WIO: South Africa, Seychelles and Maldives; elsewhere, Andaman Is. and Indonesia (Sumatra and Java).

REMARKS Inhabits rubble and sand areas adjacent to coral reefs, in 15–50 m.

Halichoeres vrolikii (Bleeker 1855)

Pinstriped wrasse

PLATE 75

Julis (Halichoeres) vrolikii Bleeker 1855: 323 (Batu Is., Sumatra, Indonesia).

Halichoeres hoevenii (non Bleeker 1851): Randall & Smith 1982.

Halichoeres vrolikii: Randall 1992*; Randall & Anderson 1993.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 (rarely 11 or 13) rays; pectoral fins 14 (rarely 13) rays. Pair of projecting, slightly recurved canines at front of jaws, followed by pair of recurved teeth $\sim\frac{3}{4}$ as long. Body depth 3–3.4 in SL; 1st dorsal-fin spine 3–3.3 in length of 9th spine; caudal fin rounded; pelvic fins of males long, extending to anal-fin origin, length 1.2–1.3 in HL. GR 19–21. LL scales 27 (rarely 26), anterior scales with 1–3 pores; suborbital pores 6 or 7; no median naked zone on nape, scales extending to or slightly anterior to vertical at rear edge of eyes.

Females orange-yellow, with 10 or 11 narrow blue lines that converge, progressively narrower, onto head; median fins orange-yellow, dorsal fin with irregular blue line at base, black ocellus anteriorly on soft-rayed part of fin (sometimes with

blue spot in centre), narrow median blue stripe that arches over ocellus, and narrow blue margin; anal fin with blue line along base, 2nd line one-third from base, faint broken narrow blue-green line two-thirds from base, and blue margin; caudal fin with curved blue line at end of scaly fin base, blue margin, sometimes with scattered small blue spots in orange unscaled part of fin. Males orange dorsally, green ventrally, with longitudinal series of 11 or 12 green stripes, consisting of series of bell-shaped spots, one per scale; bright orange dorsoanteriorly on body forming irregular lines; 4 dark-edged bright green bars of variable length dorsally on body below base of soft-rayed portion of dorsal fin; head green with irregular, blue-edged pink bands; ventral part of head and chest suffused with blue; median fins dusky orange with rows of dark-edged green spots; pectoral-fin axil and base bright yellow, with triangular black spot at dorsal edge. Attains 13 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Maldives and Sri Lanka; elsewhere to Andaman Sea, Indonesia and Philippines.

REMARKS Found mainly on sheltered coral reefs and adjacent habitats, generally in <15 m. Often confused with the very similar *Halichoeres melanurus* (Bleeker 1851) from the East Indies. Bleeker (1851) described the female of that species (as *Julis hoevenii*) and male (as *Julis melanurus*) in the same paper from specimens from the Banda Is., Indonesia, unaware of the dramatic change in colour from female to male. He described *Julis chrysotaenia* Bleeker 1853, another blue and yellow thin-striped female wrasse, from Java in 1853, and *Julis vrolikii* in 1855. In *Atlas Ichthyologique* Bleeker (1862: 112) placed *J. chrysotaenia* in the synonymy of *PlatyGLOSSUS hoevenii*. Allen & Erdmann (2012) regarded *H. chrysotaenia* as the senior synonym, believing it to be the initial phase of *H. vrolikii* (and the older name). Their photograph of the initial phase shows *H. cosmetus*, from WIO. Gerald Allen (pers. comm.) argues that *H. melanurus* (and hence its female *H. hoevenii*) is not known from the Java Sea. That might be true today, where the sea north of Java is muddy brown up to 50 km offshore, but the Java Sea off Batavia (present-day Jakarta) was very different in 1851 to what it is today. Furthermore, the first of eight Indonesian localities listed for *H. melanurus* by Bleeker in *Atlas Ichthyologique* (1862: 109) is Bawean I., which lies in the Java Sea. We follow Bleeker and regard *H. chrysotaenia* as unavailable as a senior synonym and continue to use *H. vrolikii* for this species; the holotype of *H. chrysotaenia* has not been found, a situation that also favours this decision.

Halichoeres zeylonicus (Bennett 1833)

Goldstriped wrasse

PLATES 75 & 76

Julis zeylonicus Bennett 1833: 183 (Sri Lanka).*Halichöres bimaculatus* Rüppell 1835: 17, Pl. 5, Fig. 2 (Massawa, Eritrea, Red Sea).*PlatyGLOSSUS zeylonicus* Günther 1862: 158 [unjustified emendation of *zeylonicus*].*PlatyGLOSSUS bimaculatus*: Day 1877.*Pseudojulis trifasciatus* (non Weber 1913): Kuronuma & Abe 1972.*Halichoeres zeylonicus*: Randall & Smith 1982*; Dor 1984; SSF No. 220 [in key]; Randall & Anderson 1993; De Bruin *et al.* 1994; Randall 1995*; Victor 2016.*Halichoeres zeylanicus*: Cornic 1987.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 13 rays. Pair of projecting, slightly recurved canines at front of jaws, about twice as long as adjacent following teeth. Body depth 3.7–4 in SL; caudal fin slightly rounded, becoming slightly double emarginate in large males; pelvic fins short, not extending to anus. GR 17–21. LL scales 27, all with single pore; suborbital pores 6 or 7; head naked, except for partially embedded small scales on sides of nape extending forward of vertical at upper end of preopercle margin, some almost to rear edge of eyes.

Females bluish grey dorsally, pale grey ventrally, with irregular yellow stripe, suffused with brown, $\frac{1}{2}$ – $\frac{3}{4}$ eye diameter in width, from behind eye to small black spot at end of scaly caudal-fin base; 2nd, more irregular yellow stripe from beneath pectoral fin, breaking into series of spots for posterior three-quarters of its length; narrow, irregular, orange-yellow band from above eye to below front of dorsal fin; oblique yellow stripe from eye to upper lip, and another curved from eye across corner of mouth to chin; blackish blotch on upper side below 8th dorsal-fin spine, between lateral line and yellow midlateral stripe; pectoral fins with yellow band at base and small, blue-edged, black spot at upper edge; median fins whitish, dorsal fin with faint orangish yellow stripe beginning at base of origin of fin, rising to $\sim\frac{1}{3}$ height of fin centrally, then descending; anal fin with faint yellow and blue basal band; caudal fin with faint orange-yellow cross bands. Males green, yellow markings of head and band at pectoral-fin base replaced by lavender; yellow stripe on body more orange, mixed with lavender, and bordered above by pale blue-green line that arcs over black spot below 8th dorsal-fin spine; series of ~ 6 lavender bars below stripe in middle of body; dorsal fin with 2 longitudinal series of blue spots and blue submarginal line; anal fin with narrow blue stripe near base; caudal fin blue with submarginal crescentic yellow band and transverse, black-edged, pale blue-green lines. Attains 20 cm TL.

*Halichoeres zeylonicus*, TP (Tanzania). M Mwale © NRF-SAIAB

DISTRIBUTION Indian Ocean. WIO: Persian/Arabian Gulf, Red Sea, Oman to Tanzania (Zanzibar), South Africa, Seychelles, Mauritius, Maldives, India and Sri Lanka; elsewhere to Bali, Indonesia.

REMARKS Found over open sand or rubble bottom, and near isolated rocks or coral heads; usually in 20–35 m. Difficult to approach underwater, especially large males. A close relative of *Halichoeres hartzfeldii* (Bleeker 1852) of the western Pacific.

Halichoeres zulu Randall & King 2010

Zulu wrasse

PLATE 76

Halichoeres zulu Randall & King 2010: 19, Fig. 1, Pl. 1a, g–j (Umhlanga Rocks, KwaZulu-Natal, South Africa).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 (rarely 13) rays. Pair of jutting, slightly recurved canines at front of jaws, remaining teeth on sides relatively small, except small canine at rear in upper jaw. Body depth 3–3.5 in SL, deeper with growth; caudal fin rounded; pelvic fins short, not extending to anus. GR 19–21. LL scales 26, anterior scales with 3–5 pores; suborbital pores 6 or 7; no scales on head; median dorsal zone on nape naked; scales on sides of nape progressively smaller and more embedded anteriorly, extending to half orbit diameter behind eyes.

Females red on nape and anterodorsally on body, soon grading ventrally to pale lavender-pink, with 3 irregular, pale green stripes that zigzag posteriorly and contain brown spots; abdomen lavender-pink, crossed by 2 triangular patches of pale greenish yellow lines; head pale orange dorsally, pale lavender-grey ventrally; green lines above and behind eye, forming irregular quadrangle; green band behind to eye leading to and enclosing semicircular dark spot on opercle; elongate horseshoe-shaped green band across lower part of head, open end anterior, upper green band ending at corner of mouth; median fins green, dorsal fin with irregular dark red bands forming reticular pattern, and oblong black spot between 2nd and 4th rays; anal fin green with dark red zigzag stripe at base, and rows of dark red spots distally; caudal fin green, with

irregular vertical rows of small dark red spots. Males with same basic colour pattern, the ground colour more orange, lines and spots brighter and darker blue-green; green spot on opercular flap with yellow mark, as well as semicircular black spot. Attains 15 cm TL.



Halichoeres zulu, 14 cm SL, male holotype (South Africa). © DR King

DISTRIBUTION WIO: South Africa (Kosi Bay to northern Eastern Cape) and Madagascar.

REMARKS The paucity of specimens is probably a result of its living along exposed rocky shores in <2 m deep, to being extremely elusive, and to its long being misidentified as *Halichoeres nebulosus*, with which it is sympatric. The two species can be separated by LL scale count (26 for *H. zulu*, 27 for *H. nebulosus*), cheek colouration (pink with green horseshoe-shaped mark for *H. zulu*, green with boomerang-shaped pink band for *H. nebulosus*), and maximum size (13.5 cm SL for *H. zulu*, 8.6 cm SL for *H. nebulosus*).

GENUS *Hemigymnus* Günther 1861

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays. Lateral line continuous, abruptly curved downward below rear part of dorsal fin, to straight on peduncle; LL scales 27 or 28. Mouth relatively small; pair of protruding canines at front of jaws; lips large and fleshy, lower divided medially into 2 lobes. Body deep, 2.3–2.6 in SL. Three species, in Indo-Pacific, all in WIO, 1 endemic to Red Sea. All species especially variable in colouration, from juvenile to female to male, and variable with growth within each phase. Schultz (1960) indicated inter-population differences of *Hemigymnus fasciatus* in the Pacific, which warrants further study.

KEY TO SPECIES

- 1a Body pale anteriorly, blackish posterior to line between dorsal- and anal-fin origins; total GR 26–29 *H. melapterus*
- 1b Body black, with 5 narrow white bars; total GR 20–24 2

Continued...

KEY TO SPECIES

- 2a Head yellow to green, with prominent pink bands on cheek and opercle; no curved black bar from nape to eye; first 2 white bars on body do not broaden ventrally; GR 22–24 *H. fasciatus*
- 2b Head white, without prominent pink bands on cheek and opercle; curved black bar from nape to eye (which may contain irregular orange-yellow spots); first 2 white bars on body broaden ventrally; GR 20–23 (rarely 23) *H. sexfasciatus*

Hemigymnus fasciatus (Bloch 1792)

Barred thicklip wrasse

PLATE 76

Labrus fasciatus Bloch 1792: 6, Pl. 290 (Japan).

Labrus fuliginosus Lacepède 1801: 437, 493, Pl. 22, Fig. 3 (Madagascar; Réunion and Mauritius, Mascarenes).

Labrus malapteronotus Lacepède 1801: 450, 518, Pl. 31, Fig. 1 (probably Mauritius).

Scarus quinquefasciatus Bennett 1830: no page number, Pl. 23 (Sri Lanka).

Thalassoma bilaterale Von Bonde 1934: 454, Pl. 23, Fig. 7 (Zanzibar, Tanzania).

Hemigymnus fasciatus: Günther 1861; Playfair & Günther 1867; Day 1877; Baissac 1953; Munro 1955; Smith 1955*, 1957; Smith & Smith 1963*; SFSA No. 787*; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.36*; Allen & Steene 1987*; Winterbottom *et al.* 1989*; Randall 1992, 1995*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Heemstra *et al.* 2004.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 rays. Single pair of strong, projecting canines at front of jaws, upper pair slightly outcurved, followed by row of ~8 small blunt conical teeth, and canine at corners of mouth. Mouth relatively small; lips thick and fleshy, lower lip deeply incised in middle to form 2 lobes. Body depth 2.3–2.6 in SL; dorsal fin continuous, rays little higher than spines, and increasing only slightly in height posteriorly; anal fin comparable; caudal fin slightly to moderately rounded. GR 22–24. LL scales 27; scales on nape extending forward at most to above middle of eye, anterior scales small and embedded; triangular patch of small scales on cheek at corner of preopercle; opercle to lower jaw naked.

Juveniles dark brown, with 6 narrow white bars, 1st across nape and chest, last at caudal-fin base; head with whitish lines radiating from eyes; lips whitish. Females black, with 6 white bars, broader and more curved than on juvenile; head pale green with broad irregular pink bands; caudal fin black or orange, grading to yellowish green posteriorly (may have pupil-sized black spot basally in orange part of fin). Males with black body and pale green bars, narrow dorsally and broad ventrally; head pale yellowish green dorsally, pale yellow ventrally, with irregular broad pink bands around and below eye, and large deep blue irregular spot ventrally; occasional males may be observed with a reversal of the green and colour pattern of the

body, believed to be courtship colouration. Reportedly attains 80 cm TL, but likely only to >40 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Oman to South Africa (KwaZulu-Natal), Aldabra, Seychelles, Mascarenes, Chagos, Maldives and Sri Lanka; elsewhere to Andaman Sea, Indonesia, Japan, Australia, Tahiti and Pitcairn Is.

REMARKS Usually solitary on sand and rubble near coral reefs, more in protected than exposed areas, generally in <20 m. Juveniles secretive, often near long-spined sea urchins. Feeds mainly by taking mouthfuls of sand and gravel, releasing sand from the gill opening, sorting the small animal prey, and ejecting the larger inorganic material from the mouth. The stomach contents of an adult examined by JE Randall contained gastropods, gammarid amphipods, isopods, crabs (including xanthids and portunids), shrimps, galatheids, isopods, polychaetes and foraminiferans, all very small. Adults feed on larger prey, especially crabs, echinoids and molluscs.

Hemigymnus melapterus (Bloch 1791)

Blackeye thicklip wrasse

PLATE 77

Labrus melapterus Bloch 1791: 137, Pl. 285 (Japan).

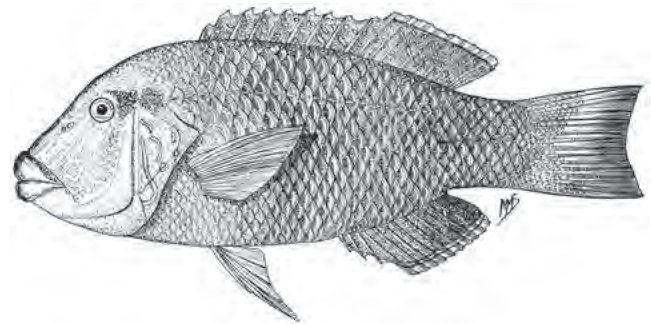
Labrus malapterus Bloch 1792: 29, Pl. 296, Fig. 2 (Japan) [misspelling of *Labrus melapterus*].

Hemigymnus melapterus: Playfair & Günther 1867; Day 1877; Peters 1877; Baissac 1953; Smith 1955*, 1957; Smith & Smith 1963*; Randall 1983*, 1992, 2013*; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.37*; Allen & Steene 1987*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Carpenter & Niem 2001*; Lieske & Myers 2004; Fricke *et al.* 2009.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 rays. Mouth small, with thick fleshy lips, the lower lip deeply incised in middle to form 2 lobes; dentition as in *H. fasciatus*. Body depth 2.3–2.7 in SL; caudal fin rounded in juveniles, slightly rounded to truncate in adults; dorsal- and anal-fin spines and rays almost uniform in height; pelvic fins of large males may extend to anal-fin origin. GR 26–29. LL scales 25; head naked except for triangular patch of small scales, at most in 3 rows, on corner of preopercle.

Small juveniles dark brown, green on snout and interorbital, with slightly oblique white bar from front of dorsal fin to abdomen and 2 narrow, pale yellowish bars below soft-rayed dorsal fin, that fade ventrally; larger juveniles with white bar from dorsal-fin origin, beneath pectoral fins onto abdomen; head and body in front of bar greyish green, behind bar black; rear peduncle and caudal fin yellow, often with 1 or 2 small black spots centrally near base. Females dark green beyond

curved line between origins of dorsal and anal fins, grading almost to black posteriorly, with blue-green line or spot on each scale; body anterior to line green dorsally, grading to pale blue-green ventrally; nape green with vertical pale green line on each scale, and short black vertical line between scales; large complex marking within pale blue area behind eye, consisting of vertically elongate blackish spot of about eye size or larger, with very irregular dusky pink band extending up, down and back (entire marking may be obscure blackish). Males dark green, with scattered pale blue-green dots, each scale with narrow pale blue-green and black rear margin; smaller scales on nape more yellowish green; chest and abdomen pinkish white with pale blue-green margin on scales of abdomen, and pale blue-green spot on scales of chest; upper half of head mainly green with bright blue ring around eye, blue-green on snout with irregular green bands and spots; large greenish yellow area on cheek devoid of markings; opercle pale pink with narrow blue-green bands and small spots; lips and lower part of head mainly pale blue. Attains 50 cm TL.



Hemigymnus melapterus, 45 cm TL (WIO). Source: SFSA

DISTRIBUTION Indo-Pacific. WIO: Red Sea to Mozambique (Pomene), Madagascar, Maldives, Seychelles, Réunion and Mauritius; elsewhere to Indonesia, Ryukyu Is., Micronesia, Marshall Is., Australia, Samoa and Society Is.

REMARKS Known from 1–30 m. Observed to feed in the same unique way as *H. fasciatus*.

Hemigymnus sexfasciatus (Rüppell 1835)

Red Sea thicklip wrasse

PLATES 77 & 78

Halichoeres sexfasciatus Rüppell 1835: 18, Pl. 5, Fig. 3 (Jeddah, Saudi Arabia, Red Sea).

Hemigymnus fasciatus (*non* Bloch 1792): Klunzinger 1871; Roux-Estève & Fourmanoir 1955; Randall 1983*; Dor 1984; Field & Field 1998*.

Hemigymnus sexfasciatus: Günther 1867; Kossman & Räuber 1877; Kuiter 2002*; Lieske & Myers 2004; Randall 2013*.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 rays. Mouth small; lips very thick and fleshy, lower lip deeply incised in middle to form 2 lobes; dentition as in *H. fasciatus*. Body depth 2.4–2.7 in SL; caudal fin rounded in juveniles, slightly rounded to truncate in adults; dorsal- and anal-fin spines and rays almost uniform in height; pelvic fins of large males extend to or nearly to anal-fin origin. GR 20–23 (rarely 23). LL scales 25; head naked except for triangular patch of small scales at corner of preopercle.

Juveniles dark green, mottled with pale yellowish green, with white bar from dorsal-fin origin to abdomen, faint narrower bars posteriorly, and 2 ventrally on chest; pale yellowish green bars radiating from orbit. Small females black, with 6 white bars, progressively narrower posteriorly, first 2 expanding ventrally; snout and forehead dull green; black bar from nape to rear edge of eye; remainder of head and chest white. Large females black, scale edges dark olive-green, with 4 white bars that broaden ventrally, progressively narrower and more obscure posteriorly (the last on peduncle barely visible); snout, head behind head, and body to 1st white bar dark olive green, with narrow white bar from in front of dorsal-fin origin broadening ventrally to chest and anteriorly over entire opercle and cheek; scales on nape and dorsal half of 1st dark bar of body with irregular orange spots (those on body mostly as irregular narrow vertical bands); irregular dull red bands extending from eye; upper lip yellow, grading to white on margin; snout and nape green anteriorly median fins dark greenish grey, spotted with black, anal fin with red margin and blue submarginal line; pelvic fins with narrow blue and orange bands parallel to rays; pectoral fins transparent with yellow rays. Males dark green, and spindle-shaped scales rimmed in pale green; anterior two-thirds of body with 3 pale greenish grey bars that broaden ventrally, small scales of abdomen and chest with orange centres and pale blue edges; head green dorsally with curved band from nape through eye to front of snout, dorsal part of this band and 1st dark bar on body with scale centres bright orange-yellow, strongly rimmed in dark green; irregular narrow green bands on snout and to eye; large area of cheek and opercle white; ventral part of head pale greyish blue; upper lip mainly greenish yellow; paired fins as in females, pectoral-fin base in large deep blue spot. Large breeding males may exhibit a reversal of the dark and pale barred pattern (Field & Field 1998). Attains 50 cm TL.

DISTRIBUTION WIO: Red Sea and Gulf of Aden.

REMARKS Feeding mode as for other two species of the genus. Found on coral reefs and adjacent sand a coral rubble, in 1–20 m.

GENUS *Hologymnosus* Lacepède 1801

Dorsal fin 9 spines, 12 rays, spines thin and flexible; anal fin 3 spines, 12 rays. Two pairs of canines at front of jaws, anterior pair largest and more projecting; no canine at corners of mouth. Body elongate and compressed, depth 3.3–5.4 in SL (larger individuals generally deeper-bodied), body width 1.9–2.7 in its depth. Lateral line continuous, deflected downward below 9th dorsal-fin spine; LL scales 91–118; head naked except nape. Four species in Indo-Pacific (Randall 1982), 2 in WIO. The WIO species have been confused by many authors because of the large variation in colour. The identity of many records cannot be determined because of inadequate colour descriptions. Günther (1862), Day (1875–1878) and Sauvage (1891) considered *Hologymnosus* a junior synonym of *Coris*. Günther (1862) treated *Coris doliatus* and *C. annulatus* as colour varieties of *C. annulata*, whereas Sauvage (1891) identified them as colour varieties of *C. doliata*.

KEY TO SPECIES

- 1a Pectoral-fin length 1.7–1.9 in HL; caudal fin emarginate, maximum caudal-fin concavity of large males about 5 in HL. Juveniles yellow, with red line on back and broad black stripe on lower side of head and body; females brown to olivaceous with numerous dark brown bars on body, and whitish crescent posteriorly in caudal fin; males green to blue-green with purplish red bars on side of body, and without broad pale bar in pectoral-fin region (pale bar, if present, narrow and centred above anal-fin origin) *H. annulatus*
- 1b Pectoral-fin length 1.9–2.1 in HL; caudal fin double emarginate, maximum caudal fin concavity of large males ~11 in HL. Juveniles white, with 3 narrow orange-red stripes (breaking into series of red spots in subadults); females pale blue-green to pink with dark bars, and without conspicuous whitish crescent in caudal fin; males pale blue-green to pale red with numerous lavender-blue bars and broad pale zone across body in pectoral-fin region, bordered by purple *H. doliatus*

Hologymnosus annulatus (Lacepède 1801)

Ring wrasse

PLATE 78

Labrus annulatus Lacepède (ex Commerson) 1801: 455, 526, Pl. 28, Fig. 3 [Mauritius?].

Labrus semidiscus Lacepède (ex Commerson) 1801: 429, 473, Pl. 6, Fig. 2 (Indian Ocean).

Julis annulatus: Valenciennes in Cuv. & Val. 1839.

Hologymnosus fasciatus (non Lacepède 1801): Bleeker 1862.

Coris elongata Günther 1862: 201 (Mauritius, Mascarenes).

Coris semipartita Günther 1862: 203 (Mauritius, Mascarenes).

Coris annulata: Playfair & Günther 1867.

Hologymnosus semipartitus: Bleeker 1874.

Hologymnosus semidiscus: Baissac 1953; Jones & Kumaran 1980.

Hologymnosus annulatus: Randall 1982*; Gomon in Fischer & Bianchi 1984; SSF No. 220 [in key]; Allen & Steene 1987*; Winterbottom *et al.* 1989*; Randall & Anderson 1993; De Bruin *et al.* 1994; Randall & Van Egmond 1994*; Field & Field 1998*; Heemstra *et al.* 2004; Lieske & Myers 2004.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Two pairs of canines at front in both jaws; no canine at corners of mouth. Body elongate, depth 3.3–5.1 in SL, deeper-bodied with growth; pectoral fins of adults 1.7–1.9 in HL; pelvic fins short; dorsal- and anal-fin spines and rays uniformly high; caudal fin slightly rounded in juveniles, emarginate in adults, caudal concavity of large males ~5 in HL. GR 18–23. LL scales 100–118; head naked.

Juveniles pale yellow, with broad dark brown stripe on lower sides and head, covering lips and lower two-thirds of eye, extending onto caudal fin; dark red to black line from front of snout along back above lateral line. Females usually pale grey-brown to olivaceous (but may be bluish, greenish or pinkish grey), with 17–22 dark bars on body, narrower than interspaces; small bicoloured spot on opercular membrane; black spot on side of lips, larger on lower; median fins dark brown with white margins, caudal fin with large white crescent. Males green, sometimes shading to blue ventrally, with 17–22 purplish red bars, often with narrow pale yellowish bar across body above anal-fin origin; head with green bands radiating from eye, one forward onto snout expanding broadly to large quadrangular area; lips pale blue to blue-green with large spot or band of deep blue or purple; caudal fin purplish blue, upper and lower margins pale blue, with pale rear crescent. Attains 40 cm TL.



Hologymnosus annulatus, 20 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific (widespread). WIO: Red Sea, Kenya to South Africa (Sodwana Bay), Madagascar, Comoros, Seychelles, Mascarenes, Chagos, Maldives and Sri Lanka; elsewhere to Indonesia, Japan, Australia, Pitcairn Is. and Line Is.

REMARKS Found on coral reefs and adjacent sand and rubble habitat, in 1–25 m. Unusual for a wrasse in feeding mainly on fishes (JE Randall opened the stomachs of 18 adult specimens: three were empty, 11 contained only fish remains, and the remainder shrimps, crabs and unidentified

crustaceans). Juveniles transform to females at ~10–12 cm SL; juveniles are reported to mimic the juvenile stage of *Malacanthus latovittatus*, which feeds on benthic invertebrates.

Hologymnosus doliatus (Lacepède 1801)

Pastel ring wrasse

PLATES 78 & 79

Labrus doliatus Lacepède (ex Commerson) 1801: 429, 473, Pl. 6, Fig. 3 (Indian Ocean).

Hologymnosus fasciatus Lacepède 1801: 556, 557, Pl. 1, Fig. 3 (Indian Ocean).

Coris (*Hologymnosus*) *doliata*: Sauvage 1891.

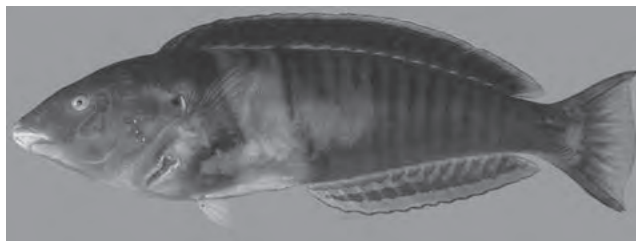
Coris annulata: Gilchrist & Thompson 1909.

Hologymnosus semidiscus (*non* Lacepède 1801): Barnard 1927; Baissac 1953; Fourmanoir & Guézé 1961; Smith & Smith 1963*; SFSA No. 810*.

Hologymnosus doliatus: Randall 1982*; Gomon in Fischer & Bianchi 1984*; Randall & Anderson 1993; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Randall 1995*; Winterbottom & Anderson 1997; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Two pairs of canines at front of jaws, 1st pair largest and more projecting; no canine at corners of mouth. Body elongate, depth 3.8–5.4 in SL, deeper-bodied with growth; dorsal- and anal-fin spines and rays almost uniform in height; pelvic fins short; caudal fin of juveniles and small females rounded, becoming double emarginate in large adults, maximum caudal concavity in large males ~11 in HL. GR 18–22. Lateral line deflected sharply downward below 9th dorsal-fin ray; LL scales 97–112; head naked.

Juveniles near-white with 3 narrow orange-red stripes that break into series of spots in subadults. Females lavender or pale bluish, greenish, or pinkish grey, with 20–23 orangish or yellowish brown bars on body, narrower than interspaces. Males pale blue-green to pale red with 20–23 lavender-blue bars, and broad pale yellowish to whitish bar, bordered by dark blue bars, in pectoral region; head green, yellow, or lavender with 2 parallel blue bands extending behind eye, first from eye to corner of mouth, second on snout; large irregular blue patches on cheek and opercle; small yellow and black spot on opercular flap. Reported to 50 cm TL; largest specimen examined 38 cm TL.



Hologymnosus doliatus, 34 cm SL, TP (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: southern Red Sea (Zubayr Is.: photograph of juvenile) and Gulf of Aden, Tanzania to South Africa (Aliwal Shoal), Madagascar, Seychelles, Mauritius, Chagos, Maldives and Sri Lanka; elsewhere to southern Japan, Australia, Lord Howe I., Samoa and Line Is.

REMARKS Juveniles transform to females at ~7.5–10 cm SL. Diet includes mostly crustaceans and fishes, but also brittlestars and polychaetes. The lack of hard-shelled invertebrate prey, such as echinoids and molluscs, is correlated with the lack of well-developed molariform teeth in the pharynx. Found on seaward reefs over mixed sand, coral and rubble, in 5–30 m.

GENUS *Iniistius* Gill 1862

Dorsal fin 9 spines, 12 rays, first 2 spines more flexible, longer, and closer together than remaining spines, membrane between 2nd and 3rd spines deeply incised or spines fully separated; anal fin 3 spines, 12 (rarely 13) rays. Body deep, 2.3–3.3 in SL,

strongly compressed, width ~ $\frac{1}{3}$ body depth; snout steep, approaching vertical in adults, front of snout narrowing to form ridge (the basis for the common name razorfish). Single pair of long, slender, recurved, and slightly outflaring teeth at front of jaws; no canine at corners of mouth. Lateral line interrupted, LL pored scales 19–22 + 4–6. Inhabit open stretches of sand into which they quickly bury themselves when threatened.

Potential undescribed species of the genus may exist in WIO. One was photographed by RC Anderson at Peros Banhos Atoll (Winterbottom & Anderson 1997); and 2 unknown types from Réunion are known from a single specimen of each. The western Pacific species *Hemipteronotus melanopus* (Bleeker 1857) was reported by Dor & Fraser-Brunner (1977) from one specimen from Eritrea, and Khalaf & Disi (1997) described and illustrated a specimen from Gulf of Aqaba (“as *Xyrichtys melanopus*”); however, both specimens have been lost and the Red Sea representatives remain to be documented. Twenty-one species, none in the Atlantic, 21 in the Indo-Pacific, including 1 reaching the eastern Pacific, and at least 8 in WIO (7 described here; see Remarks under *Iniistius pentadactylus*).

KEY TO SPECIES

- | | |
|--|---|
| <p>1a First 2 dorsal-fin spines completely separate from remainder of fin; 1st dorsal-fin spine of adults almost twice as long as longest ray (3 times longer in juveniles); adults with scale-size black spot, partly rimmed with pale blue, half on 8th LL scale and half of scale obliquely above (below base of 6th dorsal-fin spine) <i>I. pavo</i></p> <p>1b First 2 dorsal-fin spines joined by membrane to remainder of fin (though deeply incised); 1st dorsal-fin spine of adults at most slightly longer than longest ray; no black spot on lateral line below dorsal-fin base (black spot, if present, larger, more diffuse, and below lateral line) 2</p> <p>2a Dorsal-fin origin anterior of vertical at rear edge of orbit; both sexes with numerous orange or yellow dots at corners of scales on side of body, including many on lateral line; males with series of dark red spots, larger than pupil, behind eye (usually 1 just behind eye and 4 or 5 anteriorly on lateral line); females with large whitish patch dorsally over abdomen (partly overlapped by pectoral fin), with oblique orange or red lines and dots following scale rows within white patch..... <i>I. pentadactylus</i></p> <p>2b Dorsal-fin origin above or behind vertical at rear edge of orbit; colour not as above 3</p> <p>3a Column of small scales from below eye to behind corner of mouth; penultimate dorsal-fin ray long, 1.3–2.2 in HL; pelvic fins long, extending behind anus in males, 1–1.3 in HL 4</p> <p>3b One to 5 horizontal rows of small scales on cheek from below middle of eye to short distance behind eye; penultimate dorsal-fin ray short, 2.8–4 in HL; pelvic fins not extending to anus, 1.6–2 in HL. 5</p> | <p>4a Scales on cheek in up to 8 oblique rows, from below rear half of orbit to behind corner of mouth; males with black blotch as large as or larger than eye on body below pectoral-fin tips <i>I. bimaculatus</i></p> <p>4b Scales on cheek in single oblique row of 2–7 scales from below rear half of orbit to behind lower part of orbit; males without black blotch on side of body below pectoral-fin tips <i>I. cyanifrons</i></p> <p>5a Dorsal-fin origin well behind rear edge of orbit (slightly behind upper edge of preopercle); body scales of males with vertical, pale blue line; very large white blotch centred below pectoral-fin tips, preceded by large yellow or yellowish brown spot; 4 large dark blotches below dorsal-fin base, often continuing as dusky bars on body (as dark bars in juveniles), followed by roundish dark blotch on side of peduncle <i>I. aneitensis</i></p> <p>5b Dorsal-fin origin above rear edge of orbit; colour not as above 6</p> <p>6a Penultimate dorsal- and anal-fin rays longest, 3 in HL; caudal fin short, 4.9 in SL; body depth 2.7 in SL; GR 17; upper 3 pectoral-fin rays with black edges; body red above anal fin and lower half of peduncle; no blue-edged black spots above pectoral-fin tips; males without oblique, black-spotted, pale blue band across nape <i>I. brevipinnis</i></p> <p>6b Fifth and 6th dorsal- and anal-fin rays longest, 2.5–2.6 in HL; caudal fin not short, 4.7–4.9 in SL; body depth 2.5–2.6 in SL; GR 19 or 20; upper 3 pectoral-fin rays without black edges; blue-edged black spots on body above tip of pectoral fin; males with broad, oblique, black-spotted, pale blue band across nape <i>I. griffithsi</i></p> |
|--|---|

Iniistius aneitensis (Günther 1862)

Whitepatch razorfish

PLATE 79

Novacula aneitensis Günther 1862: 176 (Aneityum, Vanuatu); Playfair & Günther 1867.

Xyrichtys sp.: Winterbottom *et al.* 1989.

Xyrichtys aneitensis: Randall & Anderson 1993.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body depth at pelvic-fin origin 2.4–3.1 in SL, deeper-bodied with growth; body compressed, width 3.3–4 in body depth; head profile of adults almost vertical to level of eyes; dorsal-fin origin slightly behind vertical at rear edge of eyes; first 2 dorsal-fin spines flexible, 2–3 times longer than 3rd spine, 1st spine curved and not longer than longest ray; space between 2nd and 3rd dorsal-fin spines about twice that between first 2 spines, membranes between 2nd and 3rd spines notched half or more of length of 3rd spine; dorsal- and anal-fin rays of juveniles progressively shorter posteriorly, rays of adults subequal; caudal fin rounded, ~1.7 in HL; pelvic fins short, ~2 in HL. GR 19–23 (usually 20 or 21). LL scales 19–22 + 4–6; oblique row of small scales from below middle of eye to behind lower part of eye (some individuals with 1–4 rows of small scales below 1st row); no scales basally on dorsal and anal fins.

Males pale grey, with vertical blue line or spindle-shaped pale blue streak on each scale; large white patch on side of body centred below pectoral-fin tips, usually preceded by yellow or yellowish brown area; 4 dark blotches below dorsal-fin base (one below 4th and 5th dorsal-fin spines darkest), often continuing as dusky bars on body (as dark bars in juveniles); near-round blackish blotch on side of peduncle. Females similar to males, with large blackish blotch anterior and dorsal to large white patch on side of body, that continues as broad dusky band obliquely upward to base of 4th and 5th dorsal-fin spines. Juveniles variable in colour, usually whitish with 3 dark brown bars on body, broader ventrally, and one at caudal-fin base; 2 narrow oblique orangish brown bars across head, one ventral from eye, and one from nape across opercle. Another juvenile phase dark brown with white streak medially at front of head and white caudal fin. Attains 23 cm TL.

DISTRIBUTION Indo-Pacific (widespread). WIO: Tanzania (Zanzibar), Maldives and Chagos; elsewhere to Indonesia, Ryukyu Is., Great Barrier Reef, New Caledonia, Vanuatu, Lord Howe I., Samoa, Marshall Is. and Hawaii.

REMARKS Found on open sand, generally near reefs, in 12–92 m.

Iniistius bimaculatus (Rüppell 1829)

Two-spot razorfish

PLATE 79

Xyrichtys bimaculatus Rüppell 1829: 43, Pl. 10, Fig. 2 (Massawa, Eritrea, Red Sea); Gomon *in* Fischer & Bianchi 1984; Randall 1995*; Carpenter *et al.* 1997.

Novacula punctulata Valenciennes *in* Cuv. & Val. 1840: 73 (Mumbai, India); Day 1877.

Iniistius bimaculatus: Manilo & Bogorodsky 2003.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body depth at pelvic-fin origins 2.7–3.1 in SL, deeper-bodied with growth; body compressed, width 3.3–4 in body depth; head profile of adults almost vertical to level of eyes; dorsal-fin origin slightly behind vertical at rear edge of eyes; first 2 dorsal-fin spines flexible, 2–3 times longer than 3rd spine, space between 2nd and 3rd spines about twice that between first 2 spines, and membranes notched half or more length of 3rd spine; dorsal- and anal-fin rays progressively longer posteriorly, penultimate ray of large males almost twice length of 1st ray; caudal fin strongly rounded; 1st ray of pelvic fins of males filamentous and extending to anus, length ~1.5 in HL. GR 17–22. LL scales 19 or 20 + 4 or 5; column of small scales from below eyes to behind corners of mouth, upper row of 7–9, lower row of 2–4 scales; 2 small scales anterodorsally on opercle; no scales basally on dorsal and anal fins.

Males pale grey, edges of scales slightly darker, with blackish blotch at least as large as eye midlateral below pectoral-fin tips; scales around spot and on peduncle may have vertical white or pale blue dash; white area, sometimes partly yellowish before spot, beneath about outer half of pectoral fin; front of head with median blue line; iris orange-red and yellow; fins translucent yellowish, anal fin often with irregular blue lines. Females without lateral blackish spot. Attains 18 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Persian/Arabian Gulf, Red Sea, Tanzania (Zanzibar), Réunion, Chagos and India; elsewhere to Andaman Sea, Indonesia and New Guinea.

REMARKS Occurs on sand flats of lagoons and bays, in 3–50 m.

Iniistius brevipinnis Randall 2013

Shortfin razorfish

PLATE 79

Iniistius brevipinnis Randall 2013: 10, Fig. 6 (off Port Edward, South Africa).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body depth 3.1 in SL; body compressed, width ~2.7 in body depth; snout profile above upper lip to level of

ventral edge of eye at ~80° angle to horizontal axis of body, then broadly rounded to dorsal-fin origin; dorsal-fin origin above rear edge of eyes; first 2 dorsal-fin spines slender and flexible, 1st spine slightly longer (~3 in HL), 3rd spine 4.8 in HL, space between first 2 spines 2.3 in space between 2nd and 3rd spines, and membrane deeply notched between 2nd and 3rd spines; caudal fin slightly rounded and short, 1.8 in HL; pelvic fins short and not approaching anus, 1.7 in HL. GR 17. LL scales 21 + 5; cheeks mostly naked, except for 3 curved oblique rows of small scales from behind to below eyes, and upper row of 7 scales from below anterior third of eyes to behind lower quarter of eyes; 2nd row of 5 small scales, and 3rd row of 1 scale; 1 or 2 small scales dorsoanteriorly on opercle; no scales basally on dorsal and anal fins.

Male (fresh specimen): greenish grey, except for broad bright red zone above anal fin and on ventral half of peduncle, including peduncular LL scales; scales above lateral line with green margin and faint pale red spot, scales below with vertically elliptical violet spot, except in red area; midlateral series of 3 faint red blotches on body; oblique reddish bar directly behind eye; narrow blue median band on snout and nape; 2 parallel violet lines from ventrally on chin, across lips, and fading about half distance to eye; dorsal fin blue with irregular greenish yellow margin except anteriorly; anal fin blue with yellow margin and irregular middle yellow stripe; caudal fin blue with yellow rays; pectoral fins translucent, except for black margins on upper 3 rays; pectoral-fin base with violet bar, preceded and followed by broad lavender-pink arc; pelvic fins blue; iris yellow with broad lavender-pink ring. Attains at least 17 cm TL.



Iniistius brevipinnus, 16 cm TL (S Mozambique). O Alvheim © IMR

DISTRIBUTION Known only from the holotype collected in South Africa, and a photograph from southern Mozambique.

REMARKS Caught by hook and line in ~46 m.

Iniistius cyanifrons (Valenciennes 1840)

Indian razorfish

PLATES 79 & 80

Xyrichtys cyanifrons Valenciennes in Cuv. & Val. 1840: 46 (Puducherry, India).

Novacula rufa Day 1873: 238 (Chennai, India).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body depth at pelvic-fin origins 2.7–3 in SL, deeper-bodied with growth; body compressed, width 3.3–4 in body depth; head profile of adults almost vertical to level of eyes; dorsal-fin origin varying from slightly anterior of to slightly behind vertical at rear edge of eyes; first 2 dorsal-fin spines flexible, 2–3 times longer than 3rd spine, space between 2nd and 3rd spines about twice that between first 2 spines, membranes notched half or more length of 3rd spine; caudal fin asymmetrically rounded, length 1.5–1.7 in HL; pelvic fins with filamentous 1st ray extending to anus in females, and slightly beyond anal-fin origin in males. GR 16–19. LL scales 19 or 20 + 4 or 5; single oblique curved row of 2–7 small scales from below rear 5th of eye to behind lower edge of eye (last scale may be elongate flap, perhaps from fusion of 2 or more scales); 2 small, partly embedded scales anterodorsally on opercle; no scales basally on dorsal and anal fins.

Colour variable; the illustrated male and female obtained from fishermen in India (male from Tuticorin, and female from Vizhinjam) are not remarkable in colour, both with blue line on anterior edge of head, dark-edged blue line at anal-fin base, and pale yellow caudal fin crossed by irregular dark-edged blue lines or close-set rows of dark-edged blue spots; male with additional blue dots on spinous part of dorsal fin, and irregular blue lines on anal fin. Attains 18 cm TL.

DISTRIBUTION Indian Ocean: southwestern and east coasts of India.

REMARKS Valenciennes described the colour of the type specimens as vivid: red dorsally, yellow ventrally, with red spot around anus. Day (1873) described *Novacula rufa* from the east coast of India as rosy dorsally, yellowish ventrally. The difference in colour can be explained in terms of the colour of the substrate sediments where the fish are found.

Iniistius griffithsi Randall 2007

Griffiths' razorfish

PLATE 80

Iniistius griffithsi Randall 2007: 10, Figs. 1–3 (Mauritius, Mascarenes).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body depth 2.5–2.6 in SL; body compressed, width 2.8 in body depth; snout profile almost vertical above upper lip to lower edge of eyes, then broadly rounded to interorbital region, and almost straight on nape; dorsal-fin origin above rear edge of eyes; first 2 dorsal-fin spines slender and flexible, 1st slightly longer, 2.5–2.6 in HL, 3rd spine 4.7–4.9 in HL, space between 2nd and 3rd spines about twice that between first 2 spines, and membrane deeply notched between 2nd

and 3rd spines; caudal fin slightly rounded and short, 1.8–2.2 in HL; pelvic fins almost or just extending to anus, length 1.7–1.8 in HL. GR 19 or 20. LL scales 19 or 20 + 5 or 6; cheeks naked except for curved oblique row of 6 small scales from behind to below eye; 1 or 2 small scales dorsoanteriorly on opercle; no scales basally on dorsal and anal fins.

Body yellowish grey, scale centres pale blue; cluster of 3–6 blue-edged black spots about pupil size above pectoral-fin tips; males with broad oblique pale blue zone from nape to behind eye with many small black spots; head olivaceous with vertical blue bands, one median dorsal, 2 below eye, and 1 on opercle; broad streak of orange sometimes seen midlateral on peduncle; median fins mainly blue; pectoral fins orange, grading to yellow distally. Attains 16 cm TL.

DISTRIBUTION Indian Ocean. WIO: Mauritius and northern Madagascar; elsewhere, Andaman Is. and Christmas I.

REMARKS Described from three specimens (males) caught by handline in 120 m. Two underwater photographs were taken at Loky Bay, northern Madagascar (GR Allen): one male and one a presumed female as it lacked the broad oblique black-spotted band across the nape. Allen & Erdmann (2012) cited records for the Andaman Is. and Christmas I., and gave the depth range as 5–20 m.

Iniistius pavo (Valenciennes 1840)

Peacock razorfish

PLATE 80

Xyrichtys pavo Valenciennes in Cuv. & Val. 1840: 61, Pl. 394 (Mauritius, Mascarenes); Allen & Steene 1988; Winterbottom *et al.* 1989.

Novacula tessellata Valenciennes in Cuv. & Val. 1840: 74 (Mauritius, Mascarenes).

Novacula immaculata Valenciennes in Cuv. & Val. 1840: 75 (Mauritius, Mascarenes).

Novacula pavo: Playfair & Günther 1867.

Novacula (Hemipteronotus) immaculata: Sauvage 1891.

Novacula temporalis Regan 1905: 392, Pl. 6, Fig. 3 (Réunion, Mascarenes).

Iniistius pavo: Baissac 1953; Smith 1957; Fourmanoir & Guézé 1961;

Smith & Smith 1963*; SFSA No. 811*; Jones & Kumaran 1980.

Xyrichtys pavo: Dor 1984; Gomon in Fischer & Bianchi 1984;

SSF No. 220.67*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994;

Anderson *et al.* 1998; Field & Field 1998*.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body depth 2.3–3.3 in SL, deeper-bodied with growth; dorsal-fin origin above rear half of eyes; first 2 dorsal-fin spines flexible (all spines may be flexible in adults),

separated by broad gap from 3rd spine, 1st spine slightly curved, twice as long as longest ray in adults (~3 times longer in juveniles, with distal membranous flap); pelvic fins short in adults. GR 17–21. LL scales 19–22 + 4–6; oblique row of 1–6 small scales (often embedded and sometimes absent) extending back from below middle of eyes; 1 or 2 small scales dorsally on opercle.

Adults grey dorsally, grading to near-white ventrally, with 3 indistinct, broad, darker grey bars on body, and 1 across caudal-fin base; small blue-edged black spot on 8th LL scale and scale above; males with blue lines and dots on lower part of dark bars on body; median fins with blue submarginal line, dorsal fin with irregular oblique blue lines. Juveniles with more distinct dark bars, 2 extending onto dorsal fin where they contain ocellated black spot; other juveniles (and occasional adults) totally black except outer transparent part of caudal fin. Attains 35 cm TL.



Iniistius pavo, 7 cm TL, juvenile (Seychelles). © JE Randall, Bishop Museum

DISTRIBUTION Indo-Pacific to eastern Pacific (widespread). WIO: Red Sea and Lessepsian migrant to Aegean Sea (Corsini *et al.* 2006), Kenya to South Africa (Richards Bay), Madagascar, Seychelles, Réunion, Mauritius and Sri Lanka; elsewhere to Japan, Lord Howe I., Pitcairn Is., Hawaii and Gulf of California to Panama and Galápagos Is.

REMARKS Inhabits open stretches of sand, usually not far from reefs, in 3–100 m (generally >20 m); juveniles hold the detached anterior part of the dorsal fin forward over the head and mimic a drifting blackened leaf (Randall & Randall 1960). The black phase was regarded as a distinct species, *Xyrichtys niger* (Steindachner 1900), until placed in synonymy of *I. pavo* by Randall & Earle (2002).

Iniistius pentadactylus (Linnaeus 1758)

Five-finger razorfish

PLATES 80 & 81

Coryphaena pentadactyla Linnaeus 1758: 261 (India).

Coryphaena quinquemaculata (non Lacepède 1801): Shaw 1803.

Novacula sexmaculata Valenciennes in Cuv. & Val. 1840: 72 (Mumbai, India).

Novacula pentadactyla: Klunzinger 1871; Day 1877.

Novacula (Hemipteronotus) pentadactyla: Sauvage 1891.

Hemipteronotus pentadactylum: Barnard 1927.

Hemipteronotus quinquemaculatus: Smith 1957.

Hemipteronotus pentadactylus: Baissac 1976.

Xyrichtys pentadactylus: Gomon in Fischer & Bianchi 1984; SSF No. 220.68*; De Bruin *et al.* 1994.

Dorsal fin 8 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Body depth 2.8–3 in SL, deeper-bodied with growth; dorsal-fin origin over rear half of eyes; first 2 dorsal-fin spines flexible, about twice as long as 3rd spine, space between bases of 2nd and 3rd spines more than twice space between first 2 spines, and membranes between 2nd and 3rd spines notched less than half spine length; caudal fin slightly rounded; pelvic fins short. GR 18–20. LL scales 19 or 20 + 4 or 5; horizontal rows of small scales on cheeks below eyes, extending ventrally with progressively fewer scales per row to behind corners of mouth; upper part of opercle with a few small scales.

Both sexes pale greenish to yellowish grey with orange dot on many scales, mainly on lateral line, posteriorly on body, and caudal-fin base; anal fin with alternating irregular orange and blue bands (brighter in male); females with blackish blotch of eye size or larger on side of body between pectoral-fin tips and lateral line; large white or pale pink area on sides of body, partly overlapped by pectoral fins, and crossed by broken oblique orange lines and dots on scale edges, adult males with blackish blotch on sides more diffuse; large white area, if present, without orange markings; series of prominent dark red spots (appear black underwater) at least as large as pupil, 1st behind eye and next 3–5 on lateral line (1 per scale); iris magenta, with inner ring of yellow. Attains ~25 cm TL.



Iniistius pentadactylus, 13 cm SL (Madagascar).
E Heemstra © NRF-SAIAB/AV2010

DISTRIBUTION Indo-Pacific. WIO: Red Sea to South Africa (Umbogintwini, KwaZulu-Natal), Madagascar, Comoros, Mauritius, India and Sri Lanka; elsewhere to Indonesia, southern Japan, Guam, Great Barrier Reef and Line Is.

REMARKS Typically found in sheltered sandy areas, most often with sparse growth of the seagrass *Halophylla*, in 2–20 m. An additional related species, *Iniistius naevus* Allen & Erdmann 2012, described from the Andaman Islands, occurs in East Africa and Seychelles. A member of the *Iniistius melanopus* (Bleeker 1857) complex, males have a dark spot on the upper mid-body overlying prominent blue-edged scales in a white patch on a yellow background (Plate 80).

GENUS *Labrichthys* Bleeker 1854

Diagnosis as for the single species.

Labrichthys unilineatus (Guichenot 1847)

Tubelip wrasse

PLATE 81

Cossyphus unilineatus Guichenot 1847: 284 (Guam, Mariana Is.).

Labrichthys cyanotaenia Bleeker 1854: 331 (Flores I., Lesser Sunda Is., Indonesia); Smith 1955*, 1957; Smith & Smith 1963*; Harmelin-Vivien 1977.

Labrichthys unilineatus: Randall & Springer 1973*; Gomon in Fischer & Bianchi 1984; SSF No. 220.39*; Allen & Steene 1987*; Winterbottom *et al.* 1989*; Randall 1992.

Dorsal fin 9 spines, 11 or 12 rays; anal fin 3 spines, 11 or 12 rays; pectoral fins 14 or 15 (rarely 15) rays. Upper jaw with 2 pairs of recurved canines at front, single canine posteriorly in jaw, and no teeth inbetween; lower jaw with 1 pair of canines at front, followed by 3–5 small teeth; lips thick and fleshy, forming tube when mouth closed. Body depth 2.6–3.5 in SL; caudal fin strongly rounded; pelvic fins of males very long. Lateral line continuous and deflected downward below rear of dorsal fin, LL pored scales 25–27; head fully scaly.

Small juveniles dark brown with 2 bluish white lines, 1 midlateral and 1 on lower sides; larger juveniles lose lower line, and lateral line becomes yellow. Females yellowish brown on body, grading to yellowish or greenish brown posteriorly with blue line along centre of each scale row; head progressively more yellow or green anteriorly, lips bright yellow; blue lines on head thicker and more irregular anteriorly, ending in one that encircles base of lips; caudal fin with bright blue rear margin, broader at corners. Males dark olive, suffused with yellow or orange anteriorly on head, and

bright blue longitudinal lines on body following scale rows; broad pale yellow bar beneath and extending above pectoral fin; blue lines on head more irregular and thicker anteriorly, ending in one around lips and continuing as broad irregular band ventrally on head; fins dull orange-red with irregular blue lines basally, narrow blue margin and black submarginal line; pectoral fins with bright yellow rays. Attains 18 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (KwaZulu-Natal), Aldabra, Comoros, Chagos and Maldives; elsewhere to Indonesia, Philippines, southern Japan, Mariana Is., Micronesia, Great Barrier Reef, Lord Howe I. and Samoa.

REMARKS Occurs on shallow coral reefs in sheltered areas, generally in >20 m. Feeds on coral polyps.

GENUS *Labroides* Bleeker 1851

Dorsal fin 9 spines, 10–12 rays; anal fin 3 spines, 9–11 rays; pectoral fins 13–15 rays; caudal fin 13 principal rays. Single pair of recurved canines at front of jaws, upper pair fitting inside widely spaced lower pair when mouth closed; remaining teeth small, except for anteriorly directed large canine at rear in upper jaw. Body depth 3.3–4.7 in SL, deeper with growth, and moderately compressed; snout pointed; mouth small, with thick lips: upper lip with shallow median groove, lower lip divided into 2 prominent, anteriorly projecting lobes separated by broad U-shaped notch. Lateral line complete, angling downward below rear of dorsal fin to straight on peduncle, LL pored scales either 28, or 52 or 53; small scales on cheek, opercle and nape.

All species are active in removing ectoparasites (mainly copepods and larval gnathiid isopods) from fishes; they freely enter the mouth and penetrate the gill opening of host fishes. The 2 lobes of the lower jaw serve to direct their parasitic prey like a scoop into the mouth, along with much mucus. Gorlick (1980) reported that the cleaner wrasses show a preference for host fishes with much mucus, and that mucus is an important part of the nutrition. At least 5 species (Randall 1958; Randall & Springer 1975), all Indo-Pacific, 2 in WIO.

KEY TO SPECIES

- 1a LL scales 52 or 53; adults pale blue, with black stripe broadening posteriorly; juveniles black with narrow, bright blue stripe dorsally on head and body *L. dimidiatus*
- 1b LL scales 28; females grey anteriorly, with black mid-dorsal and lateral stripes, pale yellow posteriorly; caudal fin blue with submarginal black band; males with grey replaced by blue; juveniles black with bright yellow dorsal stripe from front of snout, above eye, dorsally on body, ending on peduncle *L. bicolor*

Labroides bicolor Fowler & Bean 1928

Bicolour cleaner wrasse

PLATE 81

Labroides bicolor Fowler & Bean 1928: 224, Pl. 18 (Philippines);

Smith 1955*; Randall 1958, 1992, 1995*; Harmelin-Vivien 1976;

Smith *in* Bruton & Cooper 1980; Gomon *in* Fischer & Bianchi 1984;

SSF No. 220.40*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994;

Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Fowlerella bicolor: Smith 1957.

Fowlereria bicolor: Harmelin-Vivien 1976.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 10 rays; pectoral fins 13 rays. Body depth 3.7–4.5 in SL; head strongly pointed, dorsal and ventral profiles almost straight; dorsal-fin spines increasing in length posteriorly, 1st spine about eye-sized, 9th about twice as long, 1st ray ~½ HL, and remaining rays progressively shorter; caudal fin slightly rounded. Lateral line deflected downward below rear of dorsal-fin base to straight on peduncle; LL scales 26, +2 on caudal-fin base; small scales on cheek, opercle and nape.

Juveniles black, grading to whitish ventrally, with brilliant yellow stripe from front of snout, above eye, along back and expanding dorsally in caudal fin. Subadults pale grey to almost white, with black lateral stripe from front of snout, on sides of body, breaking into blackish dots posteriorly. Females grey anteriorly with black mid-dorsal and lateral stripes on head and anteriorly on body, pale yellow posteriorly; caudal fin pale blue with curved black submarginal band; males with essentially same colour pattern, but grey of head and front of body replaced by blue. Attains 14 cm TL.



Labroides bicolor, 5 cm SL (South Africa). © R Winterbottom, ROM

DISTRIBUTION Indo-Pacific. WIO: Oman, Kenya to South Africa (Sodwana Bay), Madagascar, Comoros, Mascarenes and Chagos; elsewhere to Andaman Sea, Philippines and Pacific Ocean; not known from Red Sea, Persian/Arabian Gulf and Hawaii.

REMARKS Feeds on ectoparasites and mucus of fishes; moves over a reef territory in quest of host fishes, in contrast to other species of the genus that establish cleaning stations where they remain resident. Found in lagoons and seaward reefs, to at least 40 m.

Labroides dimidiatus (Valenciennes 1839)

Striped cleaner wrasse

PLATES 81 & 82

Labrus latovittatus Rüppell 1835: 7 (El Tur, Egypt, Gulf of Aqaba, Red Sea) [preoccupied by *Labrus latovittatus* Lacepède 1801].

Cossyphus dimidiatus Valenciennes in Cuv. & Val. 1839: 136 (Mauritius, Mascarenes).

Labroides dimidiatus: Playfair & Günther 1867; Day 1877; Peters 1877; Barnard 1927; Randall 1958, 1983*, 1992*, 1995*; Harmelin-Vivien 1976; Kotthaus 1977; Van der Elst 1981*; Gomon in Fischer & Bianchi 1984; SSF No. 220.41*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Anderson 1996; Carpenter *et al.* 1997; Field & Field 1998*; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Fissilabrus dimidiatus: Baissac 1953; Smith 1955*; SFSA No. 805*.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 10 rays; pectoral fins 13 rays. Body depth 4.1–4.7 in SL; lips thick, lower strongly bilobed, with broad U-shaped notch separating lobes; caudal fin truncate to slightly rounded. LL scales 52 or 53; cheek, opercle and nape with small scales.

Juveniles black with narrow bright blue stripe from tip of snout through upper part of eye, ending dorsally on caudal fin. Adults bluish grey dorsally on head, progressively more blue posteriorly, with mid-dorsal black stripe on head and nape, and lateral black stripe from corner of mouth, broadening posteriorly to end of caudal fin; spinous portion of dorsal fin black, except tips of spines and membranes pale blue, black becoming progressively narrower near base of soft-rayed part; anal fin bluish white, with black stripe near base that broadens posteriorly; ventral edge of peduncle black, continuing submarginally into ventral part of caudal fin, sometimes joining curved ventroposterior part of broad black stripe in caudal fin; short irregular black bar extending down from pectoral-fin bases. Population differences over the broad range are suggested by different patterns of black colouration, especially in the caudal fin. Attains 12 cm TL.



Labroides dimidiatus, 6 cm SL (South Africa). © R Winterbottom, ROM

DISTRIBUTION Indo-Pacific (widespread). WIO: Red Sea, Oman to South Africa (Chalumna River), Madagascar, Comoros, Aldabra, Seychelles, Mascarenes, Chagos, Maldives and Sri Lanka; elsewhere to Indonesia, Japan, Australia, Lord Howe I., Line Is. and Pitcairn Is.

REMARKS Inhabits coral reefs, in 1–30 m. Establishes cleaning stations around prominent coral formations that are visited by many different species of fishes for removal of crustacean ectoparasites, primarily copepods and larval gnathiid isopods; mucus is also ingested, facilitated by the scoop formed from the bilobed lower lip. Also freely enters the mouth and gill chamber of large fishes in quest of parasites. Advertises its role by up-and-down movements of rear of body. Mimicked by the fin-nipping blenny *Aspidontus taeniatus* Quoy & Gaimard 1834, which lurks near cleaning stations (Randall & Randall 1960). Kuwamura (1981, 1984) studied the reproduction and early life history in Japan. Males maintain a harem of 2–12 females; change of sex from female to male usually takes place shortly before age 3 years.

GENUS *Labropsis* Schmidt 1931

Small-sized, rarely exceeding 10 cm SL. Dorsal fin 9 spines, 10–12 rays; anal fin 3 spines, 9–11 (rarely 9) rays; pectoral fins 13–15 (usually 14) rays. Upper jaw with 2 pairs of recurved canines anteriorly, single canine at corners of mouth, and no teeth inbetween; lower jaw with single pair of recurved canines anteriorly, followed by 1–4 progressively shorter canines. Mouth terminal and small; lips thick and plicate, forming short tubular structure when mouth closed. Body depth 3.1–3.8 in SL; caudal fin usually rounded (may be emarginate in some males). Lateral line complete, LL pored scales 27–49. Six species, all in Indo-Pacific, 1 in WIO.

Labropsis xanthonota Randall 1981

Yellowback tubelip

PLATE 82

Labropsis sp.: Shepard & Meyer 1978.

Labropsis xanthonota Randall 1981: 138, Pl. 2a–c (Tutuila, American Samoa); Gomon in Fischer & Bianchi 1984; Cornic 1987; Allen & Smith-Vaniz 1994; Randall & Van Egmond 1994.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 10 rays; pectoral fins 14 or 15 rays. Upper jaw with 2 pairs of recurved canines at front, 2nd pair half as large as 1st, single large canine at back, and no teeth inbetween; lower jaw with single pair of recurved canines at front, followed by 2 or 3 lesser canines; lips thick and fleshy, forming tube when mouth closed. Body depth 3.4–3.8 in SL; caudal fin rounded in juveniles, slightly rounded in females, and emarginate in males. LL scales 46–49; head behind and below eyes scaly; cheek, opercle and nape with small scales.

Juveniles bluish black, with very narrow, pale blue to white stripes on head and body, becoming dotted posteriorly; dorsal fin largely pale yellow with black anterior spot. Females similar,

but narrow stripes replaced by finely dotted, pale blue lines; scales dorsally on body with yellowish brown spot. Males with dark brown head, broad deep blue reticulum, and broad bright yellow edge on opercle; body dark brown with yellow dot on each scale, including those on base of median fins; outer part of caudal fin dark grey with V-shaped central rear part, pale blue to white anteriorly, grading to darker blue posteriorly. Attains 13 cm TL.

DISTRIBUTION Indo-Pacific (widespread). WIO: East Africa, Seychelles, Mascarenes and Maldives; elsewhere (fewer records) to southern Japan, Micronesia, Great Barrier Reef, New Caledonia and Samoa.

REMARKS Inhabits coral reefs, in 7–55 m. Protogynous hermaphrodites. Adults feed on coral polyps; juveniles observed cleaning other fishes.

GENUS *Larabicus* Randall & Springer 1973

Genus diagnosis as for the single species.

Larabicus quadrilineatus (Rüppell 1835)

Fourline wrasse

PLATE 82

Labrus quadrilineatus Rüppell 1835: 6, Pl. 2, Fig. 1 (Massawa, Eritrea, Red Sea).

Cossyphus taeniatus Valenciennes (ex Ehrenberg) in Cuv. & Val. 1839: 134 (Massawa, Eritrea, Red Sea).

Labroides quadrilineatus: Günther 1862; Kossmann & Räuber 1877.

Labrichthys cousteaui Roux-Estève in Roux-Estève & Fourmanoir 1955: 199 (Abu Latt, Saudi Arabia, Red Sea); Clark *et al.* 1968.

Larabicus quadrilineatus: Randall 1983*; Dor 1984; Gomon in Fischer & Bianchi 1984; Allen & Steene 1987*; Field & Field 1998*; Lieske & Myers 2004.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 10 rays; pectoral fins 13 rays. Single pair of large recurved canines at front of jaws, followed by progressively smaller slender teeth in ~3 rows at front of upper jaw and in 2 rows in lower jaw; lips fleshy, forming tube when mouth closed. Body compressed, depth 2.9–3.3 in SL, width 1.8–2.3 in depth; snout pointed; caudal fin rounded. GR 11–13. LL scales 26 or 27, +1 or 2 on caudal-fin base; head scaly dorsally to behind interorbital area, ventrally to behind corners of mouth; scales covering basal third of dorsal and anal fins, and basal half of caudal fin.

Females dark blue with 2 pale blue stripes, one from upper lip, passing above eye, along upper side of body, ending dorsally in caudal fin; 2nd, narrower stripe from chin through lower edge of eye, along lower side of body, ending near middle of caudal fin; dorsal and anal fins dark blue with large black spot posteriorly; caudal fin with broad hyaline whitish rear margin and broader black submarginal band. Males dark purplish blue, head suffused with olive-green, with boomerang-shaped blue-green band on cheek, upper edge of angle just below eye; dorsal and anal fins with broad olive-green margin and pale blue submarginal line; caudal fin coloured as for body, except for translucent white rear crescent. Attains 11 cm TL.

DISTRIBUTION WIO: endemic to Red Sea and Gulf of Aden.

REMARKS Usually seen in close association with live corals; to ~22 m deep. Adults feed on coral polyps for which their fleshy lips and tubular mouth are adapted; subadults and juveniles often seen picking at other fishes.

GENUS *Leptojulius* Bleeker 1862

Dorsal fin 9 spines, 11 or 12 rays; anal fin 3 spines, 10–12 (rarely 10) rays; pectoral fins 12–14 (usually 13) rays. Two pairs of large canines at front of jaws, 2nd pair strongly recurved and slightly outcurved; row of moderate, close-set, conical teeth on sides of jaws; strong canine tooth (rarely 2) at back of upper jaw (sometimes absent in juveniles); no large molars on pharyngeal plates. Body moderately elongate, depth 3.7–4.9 in SL; caudal fin varying from slightly rounded to slightly rhomboid or double emarginate; pelvic fins from ~2.5 in HL to slightly longer than head. Lateral line continuous and deflected sharply downward below base of 9th dorsal-fin ray to straight on peduncle; LL pored scales 27 or 46, scales with single pore; scales present on caudal-fin base. Five species, in Indo-Pacific, 2 in WIO.

KEY TO SPECIES

- 1a Body elongate, depth 4–4.6 in SL; HL ~3–3.5 in SL; snout profile at ~25° angle to horizontal axis of body; anterior canines strongly forward-projecting; GR 19–22 *L. cyanopleura*
- 1b Body not elongate, depth 3.7–4; HL ~3 in SL; snout profile at ~45° angle to horizontal axis of body; anterior canines not strongly forward-projecting; GR 16–18 *L. chrysotaenia*

Leptojulius chrysotaenia Randall & Ferraris 1981

Jaggedband wrasse

PLATES 82 & 83

Leptojulius chrysotaenia Randall & Ferraris 1981: 91, Figs. 3–4 (Phuket, Thailand); Randall 1996*; De Bruin *et al.* 1994.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 or 13 (rarely 12) rays. Body depth 3.7–4 in SL; head profile evenly convex, snout forming ~45° angle to horizontal axis of body; caudal fin slightly rounded in females, slightly double emarginate in males, 1.5–1.6 in HL; pelvic fins short, 2–2.2 in HL. GR 16–18. LL scales 27; head naked; scales on sides of chest about two-thirds height of those on body; small scales on sides of nape extending forward slightly anterior to dorsal end of preopercle margin.

Juveniles pale grey; narrow lateral dark brown stripe with irregular margins from eye to caudal-fin base; pale yellow spot above and below end of stripe; lips orange, followed by orange band to eye; dark brown line from dorsally on snout to nape. Females pinkish grey, with broad midlateral orange stripe with irregular margins, rear three-quarters with dark brown pigment in stripe, and large green blotches along lower margin; narrow, broken dark brown band dorsally on body; head pale green with oblique salmon-pink bands. Males green, with broad pink lateral stripe with irregular margins, red spots on scales of back, except dorsally where every 4th or 5th scale lacks a spot and appears as a green spot; irregular orange bands extending ventrally from pink lateral stripe on body. Attains 11 cm TL.

DISTRIBUTION Indian Ocean. WIO: southwestern India and Sri Lanka; elsewhere to Andaman Is., Thailand and Indonesia.

REMARKS The holotype was collected from rubble bottom, in 16 m, off Phuket, Thailand, and two paratypes from silty sand and rocky bottom, in ~15 m, at Sri Lanka. A third paratype (probably a male, 92 mm SL) was purchased at a fish market in Lombok, Indonesia. An underwater photograph was taken by JE Randall, in ~4 m, off Bali, Indonesia. Allen & Erdmann (2012) reported the species in 15–30 m from the Andaman Is. and parts of Indonesia.

Leptojulius cyanopleura (Bleeker 1853)

Shoulderspot wrasse

PLATE 83

Julis finlaysoni Valenciennes *in* Cuv. & Val. 1839: 471 (Sri Lanka)
[*nomen oblitum*: Randall & Parenti 1999].

Julis purpureolineatus Valenciennes *in* Cuv. & Val. 1839: 471 (Sri Lanka)
[*nomen oblitum*: Randall & Parenti 1999].

Julis (Halichoeres) cyanopleura Bleeker 1853: 489 (Jakarta, Java, Indonesia).
Leptojulius cyanopleura: Bleeker 1862; Günther 1862; Randall & Ferraris 1981*; Randall *et al.* 1994*; Randall 1995*, 1996*; Anderson *et al.* 1998.

Dorsal fin 9 spines, 11 (rarely 12) rays; anal fin 3 spines, 10–12 (rarely 10 or 12) rays; pectoral fins 12–14 (usually 13) rays. Body slender, depth 4–4.6 in SL; snout profile at ~25° angle to horizontal axis of body; caudal fin slightly rounded in females, slightly double emarginate in large males, 1.3–1.6 in HL; pelvic fins short, 2.1–2.5 in HL. GR 19–22. LL scales 27; head naked; scales on sides of chest about two-thirds height of those on body; small scales on sides of nape not reaching vertical at end of preopercle margin.

Juveniles whitish to pale grey, with 2 narrow dark brown stripes, one from mid-dorsal on snout along dorsal-fin base and ending dorsally on caudal fin, one from upper lip through eye to caudal-fin base. Females vary from pale greenish grey to pinkish grey dorsally, with same 2 stripes, but midlateral stripe more irregular on margins, often appearing as zigzag; row of brownish orange spots, one per scale, may be present in scale row above midlateral stripe, as well as dark V-shaped mark mid-dorsally on nape, apex of the V posterior. Males bluish or greenish grey dorsally, pale blue ventrally, with orange-yellow stripe from upper lip through eye, across body above midline, to caudal fin; adjacent pair of scales black within stripe, centred below 5th and 6th dorsal-fin spines, 2 scales obliquely above also black or partly black, all edged in front with pale blue; pink stripe from lower lip across cheek; oblique pink border on opercle; V-shaped black mark within pale blue area dorsoposteriorly on nape; dorsal fin pale blue with yellow stripe anteriorly, breaking up into row of spots, one on or adjacent to each spine or ray, progressively lower in fin; outer row of larger but fainter orange spots on rear three-quarters of fin; caudal fin blue with 3 oblique orange-yellow bands above and below median orange stripe, divided into 2 narrow adjacent stripes. Attains 13 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Persian/Arabian Gulf, Gulf of Oman, Maldives (photograph) and Sri Lanka; elsewhere to Indonesia, Australia and Solomon Is.

REMARKS Known only from continental seas, except a single record from Ari Atoll, Maldives, based on a photograph by Anderson *et al.* (1998). Allen & Erdmann (2012) reported it as occurring throughout Indonesia. Collected in 4–45 m. Feeds on zooplankton in small aggregations, on or near reefs, usually where the sea is somewhat turbid and rich in plankton.

GENUS *Macropharyngodon* Bleeker 1861

Dorsal fin 9 spines, usually 11 rays; anal fin 3 spines, usually 11 rays (dorsal and anal fins each with 12 rays in 1 species from Australia); pectoral fins usually 12 rays (13 rays in 1 species from Australia). Upper jaw with 2 pairs of large canines at front (1st pair strongly projecting, 2nd pair recurved), and large canine at back that projects obliquely anteroventrally; lower pharyngeal plate with large medial molar with concave occlusal surface; paired upper pharyngeal plates with 2 moderately large molars, one before the other, and other teeth on both plates very small. Preopercle with short free ventral margin, extending little beyond rounded corner. Body moderately deep, 2.4–3.1 in SL; dorsal-fin origin in front of upper end of gill opening. Lateral line complete and angling downward below rear of dorsal fin to straight on peduncle; LL scales 27, +1 scale on caudal-fin base; no scales on head; no median predorsal scales; small scales on sides of nape; no scales on dorsal- and anal-fin bases. Twelve species, all Indo-Pacific, 5 in WIO. Some species are difficult to distinguish except by colour. Randall (1978) revised the genus, recognising 9 species, one of which was divided to 2 subspecies (from Red Sea and WIO); Randall (2013) subsequently elevated these to species.

KEY TO SPECIES

- 1a Anterior LL scales with 8–18 pores. Females orange-red, with large dark brown or black spot of about eye size, narrowly rimmed in pale blue, between upper end of gill opening and base of 4th dorsal-fin spine; cheek and opercle pale yellowish below dark orange-red line from upper lip to opercular flap; large ocellus posteriorly in dorsal fin, and small ocellus usually present posteriorly in anal fin. Males magenta dorsally, pink ventrally, with large purplish area dorsoposteriorly on opercle and adjacent body containing irregular blue lines dorsally and preceded ventrally by elliptical yellow spot larger than eye; snout and cheeks below eyes bright yellow *M. vivianae*
- 1b Anterior LL scales with 2 or 3 pores; colour not as above 2
- 2a Females dark brown, grading to yellow anteriorly on head, with small pale blue spot on each scale; reticular pattern of dark-edged pale blue lines on chest and head, except snout; caudal fin and outer spinous dorsal fin pale yellow. Males yellowish brown with dark-edged blue spot at corner of each scale; head as in females, except reticular pattern not on snout; outer half of first 2 membranes of dorsal fin pale yellow, and dorsal corner of caudal fin white *M. cyanoguttatus*
- 2b Colour not as above 3

Continued ...

KEY TO SPECIES

- 3a Females reddish anteriorly, shading to blackish posteriorly, with greenish yellow spots edged in blue and black (one per scale) on body, and comparable spots and irregular bands on head; males similar in colour, but less blackish *M. ornatus*
- 3b Females orange-red with white spots, except for large black area anteroventrally on body with irregular pale blue markings; head greenish yellow with narrow, oblique, black-edged orange band on snout and cheek, and irregular black markings on head behind eyes and opercle; median fins orange with rows of white spots; pelvic fins black with 2 white transverse bands; males green with 4 oblique, dark-edged, violet bands dorsally on head, continuing horizontally on body to above anal-fin origin, then becoming vertically oriented, irregular spots and bars, ending in irregular band that continues onto caudal fin 4
- 4a Body depth 2.9–3.2 in SL; dorsal-fin spines 3–6 subequal, 7th spine only slightly longer; GR 15–19; males with 2 large pale pink to yellow areas dorsoposteriorly on body, one beneath soft-rayed dorsal fin and the other on peduncle *M. bipartitus*
- 4b Body depth 2.6–3 in SL; dorsal-fin spines progressively longer; GR 14–17; males either without 2 large pale areas dorsoposteriorly on body, or these areas very small if present *M. marisrubri*

Macropharyngodon bipartitus Smith 1957

Vermiculate wrasse

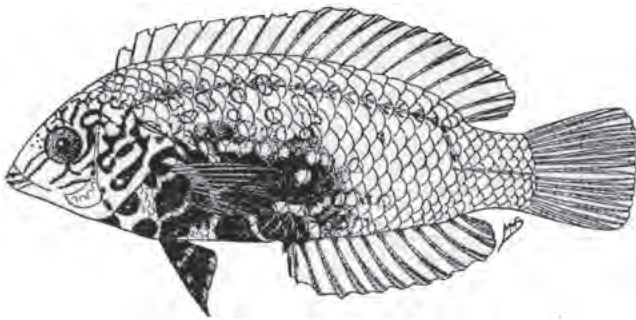
PLATE 83

Macropharyngodon geoffroy (non Quoy & Gaimard 1824): Smith 1955.*Macropharyngodon bipartitus* Smith 1957: 104, Fig. 2, Pl. 2b (Pinda,Mozambique); Smith & Smith 1963*; Smith in Bruton & Cooper 1980; SSF No. 220.42*; Allen & Steene 1987*; Randall 1992*, 1995*; Randall & Van Egmond 1994; Heemstra *et al.* 2004.*Macropharyngodon variolus* Smith 1957: 105, Fig. 3, Pl. 2a (Pinda, Mozambique); Smith & Smith 1963*.*Macropharyngodon* sp.: Harmelin-Vivien 1976.*Macropharyngodon bipartitus bipartitus*: Randall 1978*; Gomon in Fischer & Bianchi 1984; Winterbottom *et al.* 1989*; Baissac 1990; Fricke 1999.*Macropharyngodon cyanoguttatus* (non Randall 1978): Allen & Steene 1987*.

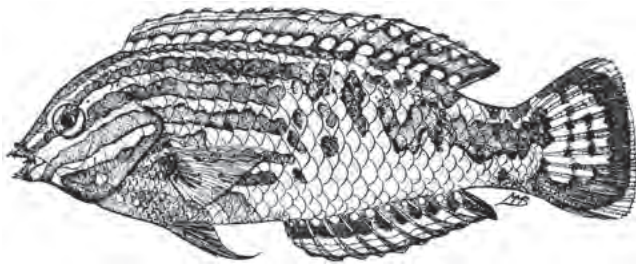
Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 rays. Body depth 2.6–3.1 in SL; caudal fin rounded. LL scales 27, anterior scales with 2 or 3 pores; head naked; no median predorsal scales.

Juveniles white with 3 white-spotted orange bars, 2nd and 3rd continuing into dorsal and anal fins, bearing ocellus;

underwater photograph shows black area beginning to form on abdomen. Females with orange-red body with white spots of variable size (small and closely spaced dorsally, larger and more widely spaced ventrally), except for large black area with bold, bright blue reticulum covering chest and abdomen, and pectoral fins, and extending to behind anal-fin origin. Males green with 4 oblique, dark-edged, violet bands on head that continue horizontally on body to above anal-fin origin, then become vertical irregular spots and bars, ending in irregular stripe that continues onto caudal fin; large triangular dark orangish to purplish brown area above anal fin, half body depth anteriorly, narrowing to end ventrally on peduncle; caudal fin almost black with 2 or 3 large, interconnected, blue-green bars centrally on fin, pale blue-green rear margin, and hyaline corners. Attains 13 cm TL.



Macropharyngodon bipartitus, 7 cm TL, IP, holotype of *M. varialvus* (Mozambique). Source: Smith 1957



Macropharyngodon bipartitus, 10 cm TL, male holotype (Mozambique). Source: Smith 1957

DISTRIBUTION WIO: Gulf of Aden and southern Oman to Mozambique and South Africa (Aliwal Shoal), Seychelles, Mascarenes, Chagos and Maldives.

REMARKS Usually seen on sand and coral-rubble bottom adjacent to coral reefs, from calm shallows to at least 25 m deep. Feeds on benthic invertebrates, especially shelled molluscs that are crushed with its exceptionally large pharyngeal molars. Males maintain a territory with a harem of females.

Macropharyngodon cyanoguttatus

Randall 1978

Bluespotted wrasse

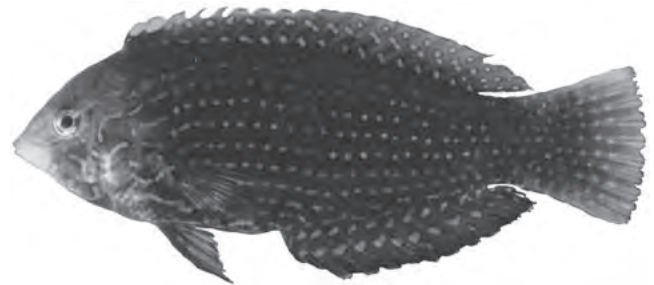
PLATES 83 & 84

Macropharyngodon cyanoguttatus Randall 1978: 749, Figs. 3c–d

(Mauritius, Mascarenes); Smith in Bruton & Cooper 1980; Gomon in Fischer & Bianchi 1984; SSF No. 220.43*; Letourneur *et al.* 1993.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 rays. Body depth 2.6–3 in SL; dorsal-fin spines progressively longer, 9th spine 3–3.4 in HL; caudal fin slightly rounded; pelvic fins barely extending to anus. LL scales 27, anterior scales with 2 or 3 pores; head naked; no median predorsal scales.

Juveniles black below anterior part of lateral line, with small blue spots that alternate with slightly larger pale blue-green spots along longitudinal scale rows; body above lateral line dull yellow with white blotches of near pupil size; opercle coloured as for lower body; rest of head bright yellow, interorbital and postorbital regions with irregular whitish vertical bands and spots; caudal fin transparent with pinkish grey rays. Females dark brown, with small blue spot on each scale, grading to dull yellow anteriorly on head; dark-edged blue lines radiating from eye, and irregular dark-edged blue lines on cheek, opercle and chest; dorsal and anal fins yellowish brown with 3 rows of dark-edged blue spots, many oblong or irregular; distal dorsal fin yellow, broader and brighter anteriorly; caudal fin in life white, lightly tinged with pink. Males yellowish brown, with black-edged bright blue spot at corner of each scale; head and chest with coarse reticular pattern of dark-edged blue lines; dorsal fin blackish with 2 or 3 rows of dark-edged blue spots, outer part of first 2 membranes bright pale yellow. Attains 12 cm TL.



Macropharyngodon cyanoguttatus, 9 cm SL (South Africa).

PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: South Africa (Sodwana to Aliwal Shoal), Réunion and Mauritius.

REMARKS Relatively rare; collected in 10–23 m. Only two males were sighted (by JE Randall and MM Smith) in two weeks of fieldwork at Réunion and Mauritius in 1973. A record from the Maldives by Allen & Steene (1987) is a misidentification of *M. bipartitus*.

Macropharyngodon marisrubri Randall 1978

Red Sea vermiculate wrasse PLATE 84

Macropharyngodon bipartitus (non Smith 1957): Dor 1970; Randall 1983*; Field & Field 1998*; Lieske & Myers 2004.

Macropharyngodon bipartitus marisrubri Randall 1978: 759, Fig. 5a–b (Taba, Egypt, Gulf of Aqaba, Red Sea).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 rays. Body depth 2.6–3.1 in SL; caudal fin rounded. LL scales 27, anterior scales with 2 or 3 pores; head naked; no median predorsal scales; small scales on sides of nape.

Juveniles white, with 3 white-spotted orange bars, 2nd and 3rd continuing into dorsal and anal fins, each with ocellus on fins; underwater photograph shows black area beginning to form on abdomen. Females orange-red, with white spots of variable size (small and closely spaced dorsally, larger and more widely spaced ventrally), except for very large black area with bold, bright blue reticulum covering chest and abdomen, and pectoral fins, and extending to anal-fin origin. Males green, with 4 oblique, dark-edged, violet bands on head that continue horizontally on body to above anal-fin origin, then become vertically oriented, irregular spots and bars, ending in irregular stripe that continues onto caudal fin; caudal fin almost black with 2 or 3 large, interconnected, blue-green bars centrally on fin, rear margin pale blue-green, corners hyaline; no pale pink to yellow saddle-like spots dorsoposteriorly on body. Attains 13 cm TL.

DISTRIBUTION WIO: endemic to Red Sea.

REMARKS Usually seen on sand and coral-rubble bottom adjacent to coral reefs, from calm shallow water to at least 25 m deep. Feeds on benthic invertebrates, especially shelled molluscs that are crushed with its exceptionally large pharyngeal molars. Males maintain a territory with a harem of females. Randall (1978) divided *M. bipartitus* into two subspecies, one in the Red Sea (*marisrubri* for Red Sea), based on different gill-raker counts (GR 14–17, mean 15.3, for the Red Sea population; GR 15–19, mean 16.8, for the Indian Ocean) and differences in male colour. Following further study

with additional specimens, the subspecies have been treated as species (Randall 2013).

Macropharyngodon ornatus Randall 1978

Ornate wrasse PLATES 84 & 85

Macropharyngodon ornatus Randall 1978: 753, Figs. 3g–h (Ambon I., Moluccas, Indonesia); Smith *in* Bruton & Cooper 1980; Gomon *in* Fischer & Bianchi 1984; SSF No. 220 [in key]; Randall & Anderson 1993.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 rays. Body depth 2.7–3 in SL; dorsal-fin spines progressively longer, 9th spine 3.3–3.7 in HL; caudal fin slightly rounded; pelvic fins short, not extending to anus. GR 15–18. LL scales 27, anterior scales with 2 or 3 pores; head naked; no median predorsal scales.

Females orange, grading to blackish posteriorly, with dark-edged green spots of pupil size or larger, one per scale, in longitudinal rows; spots merging to form irregular longitudinal bands on chest and abdomen; head orange with irregular dark-edged yellow and green bands (2 long bands on cheek and opercle; and short bands radiating from eye, 2 converging onto lips); median fins orange, variably blackish at base, with rows of dark-edged yellow-green spots, anal fin with zigzagged median yellow-green band; margins of fins (except rear edge of caudal fin) narrowly blue with black submarginal line; pectoral fins translucent with oblong black spot at base. Males show same basic pattern, but ground colour blackish red; dorsal and anal fins blackish red with row of green spots, edged in blue and black, at base, and wavy median stripe of same colour; first 3 membranes of dorsal fin black with large, bright orange spot on about outer two-fifths of each membrane, except for thin bluish white margin and black submarginal line. Attains 14 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Maldives and Sri Lanka; elsewhere, Indonesia (Kai Is. and Moluccas) and Western Australia (Dampier Archipelago and North West Cape).

REMARKS Usually found in habitats marginal to coral reefs, especially coral rubble and sand, in 2.5–18 m. A specimen from Maputo Bay, Mozambique, reported by Smith (1957) as *Macropharyngodon meleagris* was tentatively re-identified as *M. ornatus* by Randall (1978). A more definitive record for the east coast of Africa was provided by Smith (1980) from northern KwaZulu-Natal, South Africa.

Macropharyngodon vivienae Randall 1978

Vivien's wrasse

PLATE 85

Macropharyngodon vivienae Randall 1978: 764, Fig. 6 (Toliara, Madagascar); Smith *in* Bruton & Cooper 1980; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.44*.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 rays. Body depth 2.8–3.2 in SL; dorsal-fin spines progressively longer, 9th spine almost twice as long as 1st; caudal fin rounded; pelvic fins extending to anus. LL scales 27, anterior scales with 8–12 pores; head naked; no median predorsal scales.

Females pale orange-red, with darker orange-red spot basally on each scale; dark brown or black spot of about eye size, narrowly rimmed in pale blue, between upper end of gill opening and base of 4th dorsal spine; cheek and opercle pale yellowish below irregular dark brownish red line from upper lip to opercular flap; head above line and anterior body (to large black spot) brownish red, finely pale-dotted; dorsal and anal fins orange-red with rows of pale yellowish spots, largest obliquely oval at base, progressively smaller and flatter distally; large ocellus on rear of dorsal fin, and small ocellus usually present on rear of anal fin. Males magenta dorsally, pink ventrally, with large purplish area on opercle and adjacent body containing irregular blue lines dorsally, and preceded ventrally by irregular yellow spot larger than eye; snout and cheek below eye bright yellow; head and nape above eye green with small lavender-grey spots; caudal fin dark green with broad magenta upper and lower lobes. Attains 11 cm TL.



Macropharyngodon vivienae, 5 cm SL, female (South Africa).
PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: southern Mozambique to South Africa (Aliwal Shoal) and southern Madagascar.

REMARKS Known from 17–24 m.

GENUS *Minilabrus* Randall & Dor 1981

Diagnosis as for the single species.

Minilabrus striatus Randall & Dor 1981

Striped minute wrasse

PLATE 85

Minilabrus striatus Randall & Dor 1981: 155, Figs. 1–3 (Um Aabak, Dahlak Archipelago, Eritrea, Red Sea); Gomon *in* Fischer & Bianchi 1984; Lieske & Myers 2004.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 12 rays; pectoral fins 14 rays. Upper jaw with pair of anterior canines that project forward and curve laterally, canine at corners of mouth in adults, and no teeth on sides, or only a few rudimentary teeth; lower jaw with pair of forward-projecting canines, followed by series of slender conical teeth. Body slender, depth 3.8–4.4 in SL; caudal fin truncate; pelvic fins short, not extending to anus. GR 15–18. LL scales 27; scales between lateral line and dorsal-fin origin 5; head naked; no median dorsal scales.

Females yellowish grey, with 5 purple stripes on upper two-thirds of head and body, narrowing posteriorly and disappearing on peduncle; narrow uppermost stripe extending from dorsally on snout, along dorsal-fin base, ending in ocellus in front of soft-rayed dorsal fin and on adjacent body; stripes on body separated by zones of about equal width and varying from white to pale blue, blue-green or lavender; median fins with orange rays, translucent membranes. Males with broad middle blue zone, bordered above by brown, from eye to caudal-fin base, containing double orange stripe from eye, ending in short yellow bar that borders rectangular black spot in middle of body; single orange stripe then continues midlaterally from black spot to caudal-fin base; snout and ventral part of head orange-yellow, changing to blue with orange stripe for remaining ventral part of body; dorsal fin orange-red with blue line at base; caudal fin orange with blue line paralleling rays, and blue upper and lower margins. Attains 6 cm TL.

DISTRIBUTION WIO: endemic to Red Sea (southern Egypt to Eritrea).

REMARKS Occurs in aggregations over coral reefs, feeding on zooplankton, ~0.5 m above substrate; inhabits exposed outer reefs in 10–12 m, as well as sheltered reefs as shallow as 1.5 m. The Gulf of Aden record for the species by Lieske & Myers (2004) is an error (RF Myers, pers. comm.).

GENUS *Novaculichthys* Bleeker 1861

Genus diagnosis as for the single species.

Novaculichthys taeniourus Lacepède 1801

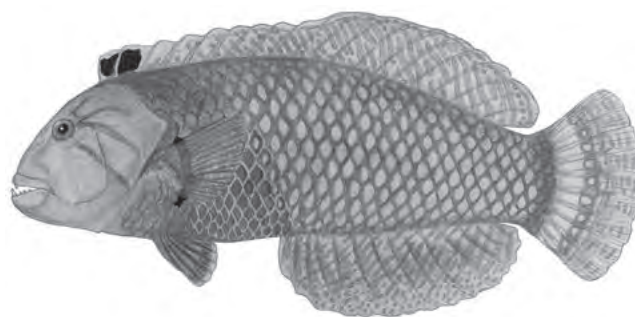
Rockmover wrasse

PLATE 85

- Novaculichthys taeniourus* Lacepède (ex Commerson) 1801: 448, 518, Pl. 29, Fig. 1 (Madagascar); Smith 1957*; Smith & Smith 1963*; SFSA No. 814*; Baissac 1976; Harmelin-Vivien 1976; Jones & Kumaran 1980; Randall 1983*, 1992*, 1995*; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.46*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Field & Field 1998*; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004.
- Sparus hemisphaerium* Lacepède 1802: 53, 160 (Madagascar).
- Sparus brachion* Lacepède 1802: 54, 160 (Madagascar).
- Xyrichthys altipinnis* Rüppell 1835: 22, Pl. 7, Fig. 1 (Jeddah, Saudi Arabia, Red Sea).
- Julis bifer* Lay & Bennett 1839: 64, Pl. 18, Fig. 2 (Oahu I., Hawaii); Smith 1957.
- Xyrichthys taeniurus*: Valenciennes *in* Cuv. & Val. 1840.
- Novacula taeniurus*: Playfair & Günther 1867.
- Novaculichthys taeniurus*: Bleeker 1874; Baissac 1953.
- Hemipteronotus taeniourus*: Cornic 1987.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Single pair of large canines at front of jaws, none at corners of mouth. Body depth 2.7–3 in SL; first 2 dorsal-fin spines flexible, elongate in juveniles; caudal fin rounded. Lateral line interrupted, LL scales 19 or 20, +5 or 6 scales on caudal-fin base; head naked except for 2 scales dorsally on opercle and near-vertical row of small scales behind eyes; scales not extending onto bases of dorsal and anal fins.

Adults dark brown, with vertically elongate white to pale yellow spot on each scale; abdomen red in females with white edges on scales, coloured as for remainder of body in males; head pale grey, females with and males without narrow dark bands radiating behind and below eye; small yellow spot usually present at upper pectoral-fin base, and pale-edged black spot largely covered by pectoral fin; dorsal fin dark brown with irregular, oblique, greenish yellow lines; anal fin dark brown with numerous close-set spots that are smaller distally; caudal fin with white bar after scaly base, followed by black bar of almost equal width and hyaline rear border. Juveniles variable in ground colour; body with 3 narrow dark bars extending into adjacent fins, and vertical row of 3 irregular white spots between bars; head with dark and pale bands radiating from eye. Attains 30 cm TL.



Novaculichthys taeniourus, 22 cm TL, IP (Mauritius). Source: CFSa

DISTRIBUTION Indo-Pacific (widespread). Throughout WIO; elsewhere to Hawaii, Gulf of California, Panama and Galápagos Is.

REMARKS Generally found in rubble and sand areas adjacent to coral reefs, in 3–25 m. Well known for the ability of adults to overturn surprisingly large rocks to expose invertebrates, such as molluscs, crabs, brittlestars and polychaete worms; a pair were observed by R Kuitert to cooperate by one fish moving the rock to expose prey to the other, then reversing roles. Juveniles effectively mimic small drifting masses of algae.

GENUS *Novaculooides* Randall & Earle 2004

Diagnosis as for the single species.

Novaculooides macrolepidotus (Bloch 1791)

Seagrass wrasse

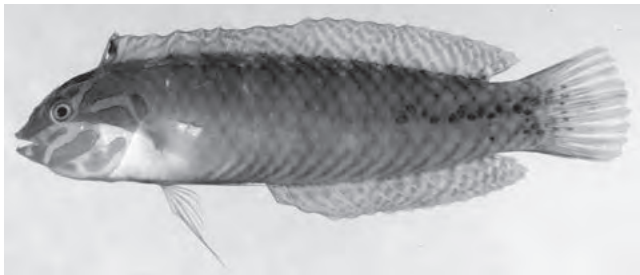
PLATE 86

- Labrus macrolepidotus* Bloch 1791: 135, Pl. 284, Fig. 2 [no locality given].
- Novacula macrolepidota*: Günther 1862; Playfair & Günther 1867.
- Novaculichthys macrolepidotus*: Bleeker 1862; Smith 1957*; Smith & Smith 1963*; SFSA No. 813*; Kotthaus 1977; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.45*; Allen & Steene 1987*; Winterbottom *et al.* 1989; Baissac 1990; Allen & Smith-Vaniz 1994; Winterbottom & Anderson 1997.
- Hemipteronotus macrolepidotum*: Barnard 1927.
- Novaculooides macrolepidotus*: Randall & Earle 2004*; Randall & Spreinat 2004.

Dorsal fin 9 spines, 12–14 rays; anal fin 3 spines, 12–14 rays; pectoral fins 12 rays. Two pairs of canines at front of jaws, each curved laterally; no canine at back in upper jaw. Body depth 3.4–3.9 in SL; head profile evenly convex, at ~45° angle to horizontal axis of body; dorsal-fin origin above rear margin

of preopercle; longest dorsal-fin ray more than twice height of shortest spine; caudal fin rounded. Lateral line interrupted, LL scales 19 or 20 + 4–6; head naked except for 1–3 oblique rows of small scales extending to well below eyes.

Colour variable, from green to brownish yellow or dark brown; females with irregular, midlateral, dark brown stripe or row of spots; males with small midlateral dark spots only posteriorly, 2 curved dark brown bands from eye across upper part of opercle; dark band or double line often present from eye to front of snout; black spot on 1st membrane of dorsal fin; large black spot usually present midventrally on chest; dorsal and anal fins with dull pink spots or bands. Attains ~16 cm TL.



Novaculoides macrolepidotus, 8 cm SL (Comoros). © R Winterbottom, ROM

DISTRIBUTION Indo-Pacific. WIO: Red Sea, Kenya to South Africa (KwaZulu-Natal), Madagascar, Comoros, Seychelles, Réunion and Chagos; elsewhere to Ryukyu Is., Australia, Lord Howe I., Mariana Is. and Tonga.

REMARKS Found in seagrass beds and on substrates with heavy algal growth, in 2–15 m; hides quickly in vegetation when approached. Randall & Spreinat (2004) reported the subadult as a mimic of species of the venomous waspfish genus *Ablabys*.

GENUS *Novaculops* Schultz 1960

Genus described in a footnote by Schultz in Schultz *et al.* (1960: 143) for *Novaculichthys woodi* Jenkins, from Hawaii, usually classified in *Xyrichtys*. Seven species, in Indo-Pacific, 1 in WIO.

Novaculops alvheimi Randall 2013

St Brandon's sandy

PLATE 86

Novaculops alvheimi Randall 2013: 20, Fig. 15 (St Brandon Shoals).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays. Mouth small and slightly oblique; pair of recurved,

outflaring canines at front of jaws, no canine at back in upper jaw. Body depth ~3.2 in SL, and moderately compressed, width 3–3.3 in body depth; head profile evenly convex, at ~45° angle to horizontal axis of body; suborbital depth short, less than eye diameter, 5.3–5.5 in HL; dorsal-fin origin one eye diameter behind rear margin of orbit; 1st dorsal-fin spine slender and flexible (~3.5 in HL), remaining spines stiff and sharp-pointed; space between first 2 dorsal-fin spines ~¾ space between following pairs of spines. GR 18–21. Lateral line interrupted, LL scales 20 + 5; no scales on head; no median predorsal scales.

Females purplish pink, with 2 broad white longitudinal bands on lower side, narrowing posteriorly, and ending before peduncle; 10 close-set, oblique, white lines crossing abdomen from lower white band; broad, oblique, dark purplish red band from nape to upper operculum; fins pale yellowish to orangish; large black spot in axil of pectoral fins. Males with series of indistinct longitudinal bands: orangish brown below dorsal-fin base, pale blue in zone along lateral line, LL pores white; pale blue suffused with yellow in broad zone midlaterally, and blue and white ventrally; snout and nape orangish grey with oblique deep orange band behind eye; remainder of head yellowish white; iris bright red; spinous dorsal fin blue with deep blue spot ventrally on each membrane; remaining median and pelvic fins pale orange; pectoral fins pale yellow with large bluish black spot in axil. Attains at least 11.5 cm TL.

DISTRIBUTION Known only from two type specimens from St Brandon Shoals.

REMARKS A mature male and female, taken by trawl from the research vessel *Dr Fridtjof Nansen*, in 58–60 m.

GENUS *Oxycheilinus* Gill 1862

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 or 13 (usually 12) rays; caudal fin 13 principal rays. Mouth moderately large; pair of strong canines at front of jaws; no enlarged tooth at back in upper jaw. Body depth 2.7–4 in SL; head pointed; caudal fin varying from slightly emarginate or double emarginate to slightly rounded or rhomboid with dorsal filament; paired fins short. Preopercle margin smooth. Branchiostegal rays 5; GR 10–16. Lateral line interrupted, LL scales 12–16 + 5–9; head mostly scaly, except for anterior interorbital area, snout, zone around eyes, along preopercle margin, and on chin. Vertebrae 23. Primarily piscivorous. Westneat (1993) established *Oxycheilinus* as a genus distinct from *Cheilinus*. Ten species, in Indo-Pacific, 5 in WIO.

KEY TO SPECIES

- 1a Body depth 2.6–3.2 in SL 2
 1b Body depth 3.3–4 in SL 4
- 2a Snout profile to above eyes convex; caudal fin of females rounded, of males rhomboid to lanceolate with filament from upper corner; black spot smaller than eye on side of body between pectoral-fin tips and lateral line *O. bimaculatus*
 2b Snout profile to above eyes slightly concave to straight; caudal fin of adults slightly rounded to slightly double emarginate; no black spot on side of body below lateral line 3
- 3a Caudal fin of adults slightly emarginate to slightly double emarginate; GR 12–14; narrow midlateral blackish stripe on body (may be present in young as series of long dashes); no parallel lines on cheek and opercle at right angle to lines extending back from and above eye; bluish black spot basally on first 2 membranes of dorsal fin *O. arenatus*
 3b Caudal fin of adults slightly rounded to truncate; GR 15 or 16; no midlateral blackish stripe on body; series of ~8 parallel purple lines on cheek and opercle at right angle to pink lines extending obliquely above and behind eye; no bluish black spot anteriorly on dorsal fin *O. digramma*
- 4a Median predorsal scales 6; anterior LL scales 14–16; GR 12–16 (usually 13–15); no midlateral orange-yellow to red stripe on head and body *O. mentalis*
 4b Median predorsal scales 5, preceded by pair of slightly smaller scales; anterior LL scales 12–14; GR 10–13 (usually 11 or 12); broad, midlateral, orange-yellow to red stripe from front of snout to caudal-fin base *O. orientalis*

Oxycheilinus arenatus (Valenciennes 1840)

Blackstripe wrasse

PLATE 86

Cheilinus arenatus Valenciennes in Cuv. & Val. 1840: 101, Pl. 397 (Réunion, Mascarenes); Günther 1862; Bleeker 1874; Baissac 1953; Smith 1957; Smith & Smith 1963*; Gomon in Fischer & Bianchi 1984; Randall & Anderson 1993.
Oxycheilinus arenatus: Winterbottom & Anderson 1997; Lieske & Myers 2004.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 or 13 rays. Mouth large, maxilla almost extending to vertical at front of eyes, lower jaw projecting. Body depth 2.8–3.3 in SL; head profile straight to above eyes, slightly concave in large adults, then slightly convex on nape; dorsal-fin rays only slightly higher than spines; caudal fin slightly rounded in juveniles, truncate to slightly double emarginate in adults; pelvic fins short, not extending to anus. LL scales 15 or 16 + 7 or 8; predorsal scales 6, extending to above middle of eyes; low scaly sheath at base of dorsal and anal fins.

Body pale reddish brown, whitish ventrally, stippled with brownish red over head, body (denser dorsally), and basally on caudal fin; narrow blackish stripe midlaterally on body, extending from behind gill opening to caudal-fin base, and continuing faintly to eye (may be broken into 5 long dashes on body in young); large bluish black spot basally on first 2 membranes of dorsal fin and extending partly onto 3rd membrane; caudal fin yellowish green, white basally, upper and lower edges mottled orangish brown. Attains 21 cm TL.



Oxycheilinus arenatus, 19 cm TL. Source: Smith & Smith 1963

DISTRIBUTION Indo-Pacific. WIO: Red Sea, Kenya to Mozambique, Seychelles, Réunion, Mauritius, Chagos and Maldives; elsewhere to Taiwan and east to Marshall Is. and Society Is.; not known from Australia and New Caledonia.

REMARKS Inhabits deep seaward reefs, often on drop-offs and in caves, in 25–60 m. Roux-Estève & Fourmanoir's (1955) first record of *Cheilinus arenatus* from the Red Sea was a misidentification of *C. mentalis* (Randall 1981).

Oxycheilinus bimaculatus (Valenciennes 1840)

Two-spot wrasse

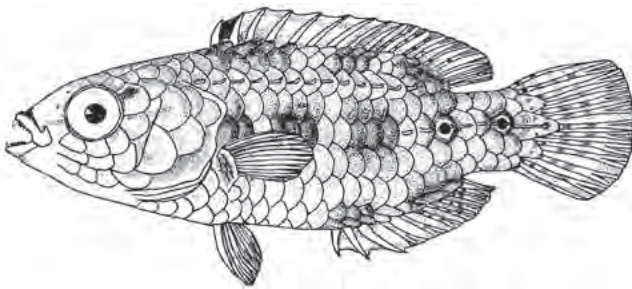
PLATES 86 & 87

Cheilinus bimaculatus Valenciennes in Cuv. & Val. 1840: 96 (Réunion, Mascarenes); Smith 1957; SFSA No. 815*; Gomon in Fischer & Bianchi 1984; SSF No. 220.11*; Cornic 1987; Allen & Steene 1987*; Randall & Van Egmond 1994.
Cheilinus mossambicus Günther 1862: 127 (Mozambique); Playfair & Günther 1867.
Oxycheilinus bimaculatus: Allen & Smith-Vaniz 1994; Randall 1995*; Heemstra & Heemstra 2004.

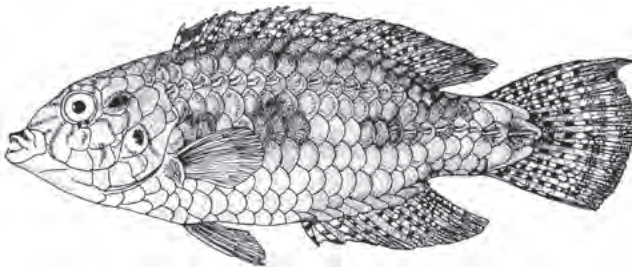
Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 or 13 (usually 12) rays. Mouth moderately large, maxilla usually reaching vertical at nostrils; lower jaw not or only slightly projecting. Body depth 2.6–3.1 in SL; head profile convex; dorsal-fin rays only slightly higher than spines; caudal fin of females rounded, of males rhomboid to lanceolate with elongate dorsal filament, and long central part of fin may be divided into 3 filaments; pelvic fins of males extending beyond anus. LL scales 15 or 16 + 7 or 8; predorsal scales 6, extending

to above middle of eyes; scaly sheath at base of dorsal and anal fins.

Females reddish to orangish brown, finely flecked and blotched with whitish, shading to yellowish on abdomen and ventrally on head; large blackish blotch on side between pectoral-fin tips and lateral line, sometimes followed by less distinct blotches; small blue or green spot behind eye, and blue spot at front of dorsal fin. Males also very variable in colour, but generally finely mottled orangish brown and pale green on body; blackish blotch on side usually evident; head mainly green with pink to orange-red lines radiating from eye; dark blue spot on 1st interspinous membrane of dorsal fin, often with bright red border dorsally. Attains 15 cm TL.



Oxycheilinus bimaculatus, 21 mm SL, juvenile (Madagascar).
Source: Harmelin-Vivien 1974



Oxycheilinus bimaculatus, 59 mm SL, female (Madagascar).
Source: Harmelin-Vivien 1974

DISTRIBUTION Indo-Pacific (widespread). WIO: Oman to South Africa (Park Rynie), Madagascar, Comoros, Seychelles, Réunion and Mauritius; not known from Red Sea; elsewhere to Japan, Australia, New Guinea, Marquesas Is. and Hawaii.

REMARKS Usually not found on coral reefs but in adjacent habitats, especially areas with heavy growth of algae or seagrass; deepest record 110 m.

Oxycheilinus digramma (Lacepède 1801)

Cheeklined wrasse

PLATE 87

Labrus digramma Lacepède 1801: 448, 518, Pl. 1, Fig. 2 (Mauritius, Mascarenes).

Cheilinus coccineus Rüppell 1828: 23 (Jeddah, Saudi Arabia, Red Sea).

Cheilinus commersoni Bennett 1832: 167 (Mauritius, Mascarenes).

Cheilinus digrammus: Valenciennes in Cuv. & Val. 1840; Guichenot 1863; Randall 1983*, 1992; Gomon in Fischer & Bianchi 1984; SSF No. 220.13*; Winterbottom *et al.* 1989*; Field & Field 1998*.

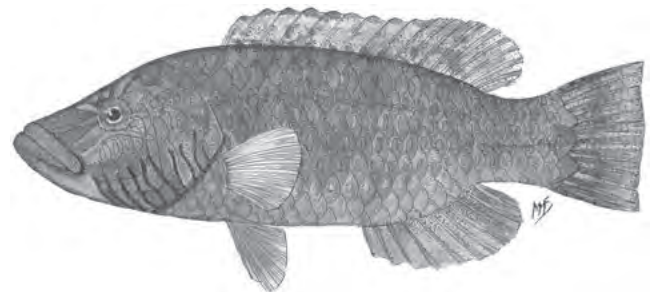
Cheilinus digrammus: Baissac 1953; Smith 1957; SFSA No. 817*; Jones & Kumaran 1980; Allen & Steene 1987*; De Bruin *et al.* 1994.

Oxycheilinus digrammus: Westneat 1993; Winterbottom & Anderson 1997; Lieske & Myers 2004.

Oxycheilinus digramma: Heemstra *et al.* 2004; Heemstra & Heemstra 2004*.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 or 13 (usually 12) rays. Mouth large and oblique, maxilla usually reaching to below nostrils, and lower jaw protruding. Body depth 2.8–3.3 in SL; snout profile straight to slightly concave to above eyes, slightly convex on nape; caudal fin slightly rounded to truncate, lobe corners slightly prolonged in large adults. GR 15 or 16. LL scales 14–16 + 7–9; predorsal scales 6, extending forward to above middle of eyes; scaly sheath 1 scale in width at base of dorsal and anal fins.

Body colour extremely variable; one common phase greenish grey dorsally, shading to pink ventrally, with dark orangish brown vertical line on each scale, with or without pale-edged dark stripe from front of snout through eye to caudal-fin base; linear pattern on head common to all phases: 3 pink lines in front of eye, 1 or 2 behind eye, and parallel line below; ~8 oblique pink to purple lines across cheek and opercle at right angles to pink lines above; juveniles with pale-edged dark stripe from front of snout to caudal-fin base, oblique lines on cheek fewer in number and only ventral. Attains ~35 cm TL.



Oxycheilinus digramma, 20 cm TL (Mozambique). Source: Smith & Smith 1963

DISTRIBUTION Indo-Pacific. WIO: Red Sea to South Africa (KwaZulu-Natal), Comoros, Seychelles, Mascarenes, Chagos and Maldives; elsewhere to Andaman Sea, Micronesia, Great Barrier Reef, New Caledonia and Samoa.

REMARKS Found on coral reefs and adjacent habitats, to at least 50 m deep. Feeds mainly on small fishes. Ormond (1980) described the amazing ability of this species to mimic the colour of non-piscivorous fish, such as goatfishes, swim with a group of these fish, and dart out to capture small fishes.

Oxycheilinus mentalis (Rüppell 1828)

Mental wrasse

PLATES 87 & 88

Cheilinus mentalis Rüppell 1828: 24 (Massawa, Eritrea, Red Sea); Valenciennes in Cuv. & Val. 1840; Günther 1862; Tortonese 1937; Randall 1983*; Dor 1984; Gomon in Fischer & Bianchi 1984. *Cheilinus venosus* Valenciennes in Cuv. & Val. 1840: 100 (Suez, Egypt, Gulf of Suez, Red Sea). *Cheilinus arenatus* (non Valenciennes 1840): Roux-Estève in Roux-Estève & Fourmanoir 1955. *Cheilinus rhodochrous* (non Playfair & Günther 1867): Smith 1957. *Oxycheilinus mentalis*: Field & Field 1998*; Lieske & Myers 2004.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 3.3–3.8 in SL, generally deeper-bodied with growth; snout profile to above eyes slightly concave, profile of nape slightly convex; caudal fin slightly rounded in small individuals, double emarginate in adults. GR usually 13–15. LL scales 14–16 + 6 or 7; scales dorsally on head extending to anterior half of interorbital area.

Colour very variable: subadults often grey to pinkish grey dorsally, scale edges white, becoming white ventrally, with faint grey to pinkish grey stripes; small black spot at midcaudal-fin base; reddish band often present from upper lip to eye; sometimes pale-edged, midlateral stripe on body; fins translucent white, mottled and blotched with red, pelvic fins with large red spot at base. Adults reddish brown dorsally, scales edged and flecked with white, usually with blackish stripe, blotched with white, from eye to whitish blotch or bar at caudal-fin base; irregular black spot often present on 2 to 4 of first 4 LL scales; reddish band from front of snout to eye; rays of median fins often greenish; dorsal fin pinkish to yellowish grey with white dots and short oblique white lines; caudal fin with reddish lobes, linked by broad reddish bar behind basal white blotch. Attains ~22 cm TL.

DISTRIBUTION WIO: Red Sea and Gulf of Aden.

REMARKS Usually found in marginal coral-reef areas with small corals, soft corals, gorgonians, on sand and coral rubble, in 1–25 m. Solitary and easily approached by divers. Like *Oxycheilinus digramma*, this species can mimic non-piscivorous fishes, such as goatfishes, group with them, and get closer to its prey of small fishes.

Oxycheilinus orientalis (Günther 1862)

Oriental wrasse

PLATE 88

Cheilinus orientalis Günther (ex Bleeker) 1862: 132 (Batjan, Indonesia) [new name for *Cheilinus coccineus* Bleeker]; Gomon in Fischer & Bianchi 1984. *Cheilinus rhodochrous* Günther in Playfair & Günther 1867: 90, Pl. 11, Fig. 3 (Zanzibar, Tanzania). *Cheilinus* sp.: Khalaf & Disi 1997. *Oxycheilinus orientalis*: Myers 1999*; Parenti & Randall 2000; Randall & Khalaf 2003.

Dorsal fin 9 spines, 10 rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Mouth large, maxilla reaching vertical at front edge of orbit. Body slender, depth 3.2–3.9 in SL, deeper with growth; head profile straight to slightly convex; snout pointed, 2.5–2.7 in HL; caudal fin rhomboid to slightly double emarginate, upper lobe corner slightly protruding in large adults; pelvic fins short. GR 10–13 (usually 11 or 12). LL scales 12–14 + 6–8; scales dorsally on head extending to anterior half of interorbital area.

Adults mottled reddish brown dorsally, whitish ventrally, scales with reddish to orange edges; broad orange-yellow to red stripe, often with darker red margins anteriorly, from eye to caudal-fin base, sometimes continuing to front of snout; 5 faint whitish bars dorsally on body, crossing midlateral stripe, and faint whitish bar at caudal-fin base; blackish blotch covering 2 or 3 scales usually present in adults between anterior lateral line and dorsal fin; small blackish or dark red spot often present at caudal-fin base, and second spot midlateral below middle of soft-rayed portion of dorsal fin. Attains 16 cm TL.

DISTRIBUTION Indo-Pacific (widespread but few localities). WIO: Red Sea (including Gulf of Aqaba), Tanzania (Zanzibar) and South Africa (KwaZulu-Natal); elsewhere, Indonesia, Ryukyu Is. and Marshall Is.

REMARKS Occurs in seagrass beds and on substrates with dense algal growth (particularly *Dictyota*, *Padina*, *Caulerpa* and *Halimeda*), in 8–42 m. Feeds in part on small fishes. Unusually small-sized at maturity (females as small as 4.2 cm SL, males as small as 7.2 cm, and an intersex specimen of 5.6 cm SL: Randall & Khalaf [2003]).

GENUS *Paracheilinus* Fourmanoir 1955

Dorsal fin 9 (rarely 8 or 10) spines, 11 rays; anal fin 3 spines, 9 (rarely 8 or 10) rays; pectoral fins 14 (rarely 13 or 15) rays. Mouth small, oblique, not reaching vertical at anterior edge of orbit; upper jaw with 3 pairs of laterally projecting canines at front, 3rd pair largest and most strongly recurved, single pair of canines at front of lower jaw, no canine at corners of mouth. Body depth 2.8–4.1 in SL; scleral cornea of pupil divided almost vertically into 2 roundish adjacent parts (believed to provide for close vision of small planktonic animals); snout short, 3.3–4.8 in HL; caudal fin varying from lanceolate to lunate. Preopercle margin finely serrate on upper part (may be reduced to a few serrae in large individuals). Lateral line interrupted, LL scales 14–17 + 4–9 pored scales; median predorsal scales usually 5 (rarely 4 or 6); head scaly except snout, chin and interorbital region. Small-sized, colourful, zooplankton-feeding fishes. Males expand the median fins in courtship, displaying brilliant colour in the dorsal fin (hence the common name flasher wrasses). Twenty species, in Indo-Pacific, 5 in WIO.

KEY TO SPECIES

- 1a Caudal fin rounded 2
- 1b Caudal fin emarginate to rhomboid or lunate 3

- 2a Body depth 3–3.4 in SL; outer margin of dorsal fin not uniformly convex, 1st ray filamentous in males (may be >½ SL); GR 13–15; 3 narrow blue stripes on body, one from nape along dorsal-fin base; one in middle of body disjunct just behind pectoral fin, and one along lower side *P. mccoskeri*
- 2b Body depth 2.7–3 in SL; outer margin of dorsal fin uniformly convex, without filament; GR 16–18; 7 or 8 uninterrupted blue lines on body *P. octotaenia*

- 3a Caudal fin of adults rhomboid to lanceolate; 1st dorsal-fin ray filamentous and very thin; GR 12–14; orange to red dorsally, grading to yellow ventrally, with 4 narrow lavender-blue stripes on head, lower 2 extending to chest and abdomen, and 3 on side of body *P. attenuatus*
- 3b Caudal fin of adults emarginate to lunate; 1st dorsal-fin ray not filamentous; GR 14–16; colour not as above 4

- 4a Caudal fin of females emarginate, of males lunate with filamentous lobes, fin length varying from 2 in SL in males to 3.6 in females; 8 narrow purplish blue stripes on body (including one below dorsal-fin base and one from chest to abdomen), middle 3 not extending half distance to caudal-fin base *P. hemitaeniatus*

Continued ...

KEY TO SPECIES

- 4b Caudal fin of females truncate, of males emarginate, fin length 3.4–4.2 in SL; 3 narrow purplish blue stripes on body, one dorsal, one from lower edge of pectoral-fin base, and one from chest to abdomen *P. piscilineatus*

Paracheilinus attenuatus Randall 1999

Diamondtail flasher wrasse

PLATES 88 & 89

Paracheilinus mccoskeri (non Randall & Harmelin-Vivien 1977):

Randall & Van Egmond 1994.

Paracheilinus attenuatus Randall 1999: 34, Figs. 2–6 (St François Atoll, Amirante Is., Seychelles).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins usually 14 rays. Body depth 3.4–3.6 in SL; dorsal profile convex on snout, almost straight on nape; dorsal-fin spines of adults progressively longer, 9th spine of males ~4–5 times longer than 1st spine; females with long filament developing from 1st dorsal-fin ray, this filament longer in males; caudal fin truncate to rounded in juveniles, lanceolate in adults (though slightly <HL); dorsal- and anal-fin rays of males long, longest anal-fin ray may be >HL; pelvic fins short, not extending to anus. Preopercle margin finely serrate, rounded corner and ventral edge thin and membranous. GR 12–14. LL scales 15–18 + 5–7; median predorsal scales 5; horizontal scale rows on cheek below eye 2; single row of elongate scales, one per membrane, along base of dorsal and anal fins.

Juveniles: upper half of body orange-yellow, lower half lavender-pink; 3 lavender-blue lines with periodic thickening on upper half of head and body from eye to caudal-fin base; large black spot, rimmed in blue, at dorsal-fin base in middle of body, and smaller ocellus on upper peduncle. Females lose ocelli, become more yellow ventrally, with 2 more stripes, one from lower edge of pectoral-fin base to lower edge of peduncle, and one from lower edge of eye to anal-fin origin. Males mainly yellow, suffused with red dorsally, especially on head, with same stripes as females but lavender-pink; dorsal fin yellow with large blue-edged red area covering most of central soft-rayed part of fin, with pointed extension into rear spines; anal fin red, separated from yellow basal part by row of irregular red-edged pink spots; middle row of small pink spots in yellow basal part of fin; caudal fin red with hyaline rear margin and pink submarginal line. Attains 8 cm TL.

DISTRIBUTION WIO: Kenya and Seychelles.

REMARKS Collected from rubble substrate, in 21–50 m, with spear, powerhead blast, and dredge. The caudal fin of an adult male from Kenya has an almost quadrangular shape, whereas that of a male from Seychelles is lanceolate (the rear margins concave), though of comparable body size. More specimens and tissue samples are needed for further study.

Paracheilinus hemitaeniatus

Randall & Harmelin-Vivien 1977

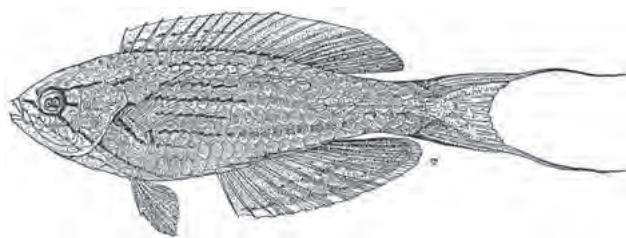
Halfbanded flasher wrasse

PLATE 89

Paracheilinus hemitaeniatus Randall & Harmelin-Vivien 1977: 338, Fig. 4 (Toliara, Madagascar); Randall & Lubbock 1981; Gomon *in* Fischer & Bianchi 1984; Randall 1999.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 14 rays. Body relatively elongate, depth 3.4–4.1 in SL; head profile slightly convex; dorsal-fin spines of adults progressively longer, 1st spine 2.4–2.5 in length of 9th spine; no dorsal-fin rays elongate as filament; caudal fin of females emarginate, of males lunate with long filamentous lobes, fin length from ~3.6 in SL in females to ~2 in males. Preopercle lower margin finely serrate, upper margin covered by a scale, and rounded corner and lower edge thin and membranous. GR 14–16. LL scales 16 + 5 or 6; median predorsal scales 5; horizontal scale rows on cheek below eye 2; single row of elongate scales, one per membrane, along base of dorsal and anal fins.

Females dusky orange-red with 8 faint short yellowish bars dorsally on body and 8 faint narrow purplish blue stripes (including one below dorsal-fin base, and one from chest to abdomen), middle 3 stripes more distinct (in more yellowish area), not extending half distance to caudal-fin base; head more reddish dorsally with irregular white lines on snout, 2 continuing onto nape; 3 narrow purplish blue stripes diverging posteriorly from eye, uppermost leading to dotted stripe following anterior LL; ventral part of head, chest and abdomen whitish; pectoral-fin base in yellow spot encircled by narrow dark purplish band; iris red. Males orangish brown, grading to pale yellow ventrally, with same pattern of narrow purplish blue stripes, but more distinct, the 3 short stripes on side of body with narrow broken purplish line in each interspace; head grading to purplish red between eyes and on snout, and brownish red dorsally on opercle; iris mainly bright orange; caudal fin bright orange-pink centrally with broad green submarginal green bands that lead to long, pale green filaments. Attains 15 cm TL.



Paracheilinus hemitaeniatus, 7 cm SL, male (Madagascar).

Source: Randall & Harmelin-Vivien 1977

DISTRIBUTION WIO: Madagascar (Toliara) and South Africa (KwaZulu-Natal: photographs only [DR King]).

REMARKS The three type specimens were collected from the outer-reef slope of a barrier reef, in 42–45 m.

Paracheilinus mccoskeri

Randall & Harmelin-Vivien 1977

McCosker's flasher wrasse

PLATE 89

Paracheilinus mccoskeri Randall & Harmelin-Vivien 1977: 332, Fig. 2 (Grande Comore, Comoros); Gomon *in* Fischer & Bianchi 1984; Winterbottom *et al.* 1989*; Randall 1992*, 1995*, 1999; Randall & Van Egmond 1994; Carpenter *et al.* 1997*.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins usually 14 rays. Body depth 3–3.6 in SL; dorsal profile convex on snout, almost straight on nape; dorsal-fin spines of adults progressively longer, 9th spine ~5–6 times longer than 1st spine of males; long filament developing from 1st dorsal-fin ray in females, reinforced by membrane basally from 2nd dorsal-fin ray, this filament longer in males; caudal fin rounded; anal-fin rays of males greatly expanded, longest ray up to 1.2–1.3 in HL; pelvic fins short, not extending to anus. Preopercle margin finely serrate, rounded corner and ventral edge thin and membranous. GR 13–15. LL scales 15–17 + 5–9; median predorsal scales 5; horizontal scale rows on cheek below eye 2; single row of elongate scales, one per membrane, along base of dorsal and anal fins.

Females orange-yellow, with narrow blue stripe on side of snout, another from dorsal part of eye to below 3rd and 4th dorsal-fin spines, one from middle of eye to pectoral-fin base, and one from corner of mouth to chest; body with 3 narrow blue stripes: one from nape along dorsal-fin base; a disjunct middle stripe, front part largely under the pectoral fin, rear part above and slightly overlapping, extending to peduncle; 3rd stripe from pectoral-fin axil, curved below fin to middle of caudal-fin base. Males orange, grading to yellow ventrally, with blue stripes as for females; dorsal fin yellow, including filament, with row of small dark-edged blue spots, one per membrane, from middle of spinous part to 1st membrane of soft-rayed

portion; rear three-quarters of soft-rayed part of anal fin banded from base to margin with red, white, yellow, and pale blue; anal fin yellow basally, broadly red distally with row of faint white spots between, and narrow lavender border; caudal fin mainly dusky yellow. Attains 7 cm TL.



Paracheilinus mccoskeri, 5 cm SL, TP (Comoros). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indian Ocean. WIO: Persian/Arabian Gulf and Oman to Kenya (aquarium trade), Tanzania photograph [A Sutton], southern Mozambique photograph [J Strömvoll], Comoros, Seychelles, Chagos and Maldives; elsewhere, Andaman Sea and Indonesia (western Sumatra).

REMARKS Usually found over rubble, in 6–50 m. Males harem; in courtship they display vivid blue colour over the soft-rayed portion of the anal fin.

Paracheilinus octotaenia Fourmanoir 1955

Eightline wrasse

PLATE 89

Paracheilinus octotaenia Fourmanoir in Roux-Estève & Fourmanoir 1955: 199, Fig. 1 (Abu Latt, Saudi Arabia, Red Sea); Randall & Harmelin-Vivien 1977; Randall 1983*; Dor 1984; Gomon in Fischer & Bianchi 1984; Field & Field 1998*; Lieske & Myers 2004.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 14 rays. Body depth 2.7–3 in SL; head profile convex; snout short, length subequal to eye diameter in adults, 4.4–4.7 in HL, profile steep, at ~50° angle; spinous membranes of dorsal and anal fins not incised; first 6 dorsal-fin spines of males progressively longer, and last 3 spines subequal and 4–5 times longer than 1st spine; caudal fin of females truncate to slightly rounded, of males strongly rounded; pelvic fins of males extending well beyond anus. Preopercle margin finely serrate. GR 16–18. LL scales 15 or 16 + 5 or 6.

Females orange-pink, abruptly pale lavender-blue ventral to eye and on chest and abdomen, with 8 continuous, dark-edged,

longitudinal blue lines on body, lowermost on chest and abdomen; 2 dark-edged blue lines radiating back from eye, and upper half of orbit with blue rim; median fins translucent with small blue spots along base; pectoral fins with basal yellow spot partly rimmed in blue. Males orange-yellow with blue lines as for females on body and on head behind eye; 2 blue lines across interorbital (rear line incomplete); dorsal and anal fins coloured as for body with pale blue margin and black submarginal line; caudal fin with broad yellow bar after basal scaly part of fin. Attains 9 cm TL.

DISTRIBUTION WIO: Red Sea (Gulf of Aqaba to at least Farasan Bank) and Gulf of Aden (Djibouti: JM Rose, pers. comm.).

REMARKS Occurs in plankton-feeding aggregations well above the substrate, generally in 5–30 m. Males maintain a harem of as many as 12 females; during courtship, they become olive-yellow with fully expanded bright red median fins, the dorsal fin orange anteriorly and with rows of magenta dots, and vivid blue lines on body and fin margins.

Paracheilinus piscilineatus (Cornic 1987)

Blue-lined flasher wrasse

PLATE 90

?*Cirrhilabrus piscilineatus* Cornic 1987: 141 (Mauritius, Mascarenes).
Paracheilinus piscilineatus: Randall 1995, 1999; Fricke 1999.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 14 rays. Body depth 3.6–3.8 in SL; snout short (3.7–3.9 in HL) and strongly convex, nape slightly convex; membranes between dorsal- and anal-fin spines not incised; first 6 dorsal-fin spines of males progressively longer, last 3 spines subequal, at most 3 times longer than 1st spine; 7th dorsal-fin ray longest in males, last ray about half as long; caudal fin truncate to slightly emarginate; pelvic fins not extending to anus, slightly longer in males than in females. Preopercle margin finely serrate. GR 15 or 16. LL scales 16 or 17 + 5–9; median predorsal scales 5.

Males orange-yellow, suffused with brown posteriorly; short purple stripe below first 3 LL scales, followed just above lateral line by broad purplish brown stripe extending to upper edge of peduncle; yellow pectoral-fin base encircled by purplish blue band curved ventrally, extending to caudal-fin base; purplish blue stripe dorsal to upper lip, below eye to lower corner of opercle; head below band green; chest and lower abdomen green with oblique blue band; margin of orbit purple, with narrow, irregular, oblique purple band ending near origin of lateral line; dotted purple line extending back from middle of orbit; dorsal fin yellow with large bright red area over most of last 5 rays and membranes; double row of small blue spots that

enlarge into irregular purple spots and bands in soft-rayed part of fin, ending in front of red area; anal fin orange; caudal fin olivaceous with large central orangish area posteriorly and blue upper and lower margins. Females mainly orange, with same pattern of bands as males, but not as well-developed; median fins mainly orange. Attains 7 cm TL.

DISTRIBUTION WIO: Mauritius.

REMARKS This species was briefly described in a small popular book on Mauritius fishes, ending in the statement that the blue lines suggest the name *piscilineatus*. No generic name was given, but *Cirrhilabrus* seems intended, as it followed a page devoted to *Cirrhilabrus* sp. Randall (1999) designated a neotype and redescribed the species in the genus *Paracheilinus* from four specimens, collected over sand and rubble bottom in ~35 m.

GENUS *Pseudocheilinus* Bleeker 1861

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 13–17 rays. Upper jaw with 3 or 4 pairs of canines at front, lateral pair enlarged and obliquely recurved, no canine at corners of mouth; lower jaw with single pair of canines at symphysis. Body depth 2.5–3.7 in SL; snout pointed, head profile straight to slightly convex; dorsal fin not notched between spines and rays; 2nd anal-fin spine longer than 3rd; caudal fin rounded; paired fins short. Preopercle margin membranous, with protruding flap at corner, edge smooth, and free as much ventrally as posteriorly (except finely serrate on lower edge of *P. hexataenia*). GR 11–18. Lateral line interrupted, LL scales 14–19 + 4–7; median predorsal scales 6; opercle covered by large scales; scale rows on cheek 2–4; series of elongate scales at bases of dorsal and anal fins. Scleral cornea of eyes divided into 2 adjacent parts (anterior part believed to serve as a close-up lens to aid in feeding on small prey). Small-sized, at most 12 cm TL. Seven species, in Indo-Pacific, 4 in WIO (Randall 1999).

KEY TO SPECIES

- 1a Pectoral fins 15–17 rays; 4 pairs of canines at front of upper jaw; free edge of preopercle usually finely serrate; black spot slightly smaller than pupil at upper caudal-fin base; 6 dark blue stripes on upper two-thirds of body; caudal fin green or greenish yellow *P. hexataenia*
- 1b Pectoral fins 14 rays; 3 pairs of canines at front of upper jaw; free edge of preopercle not serrate; colour not as above 2

Continued ...

KEY TO SPECIES

- 2a Anterior LL scales 14–16; body red with numerous fine, longitudinal white lines on body; bluish white streak extending across cheek from corner of mouth *P. evanidus*
- 2b Anterior LL scales 16–18; body yellowish with 8 pink to purplish brown stripes narrower than interspaces; no bluish white streak across cheek 3
- 3a Second anal-fin spine 7.3–8.1 in SL; 1st and 2nd anal-fin spines with long filaments; GR usually 13; body pale yellow with 8 narrow pink stripes; preserved specimens with 2 dark spots on opercle *P. dispilus*
- 3b Second anal-fin spine 5.6–6.9 in SL; 1st and 2nd anal-fin spines without long filaments; GR usually 14; body orange, pink, lavender, or pale grey with 7 or 8 narrow dark brown, red, dark pink, or violet stripes; preserved specimens without dark spots on opercle *P. octotaenia*

Pseudocheilinus dispilus Randall 1999

Doublespot wrasse

PLATE 90

Pseudocheilinus octotaenia (non Jenkins 1901): Allen & Steene 1987; Fricke 1999.

Pseudocheilinus dispilus Randall 1999: 10, Fig. 1, Pl. 1b–c (Réunion and Mauritius, Mascarenes).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 14 rays. Upper jaw with 3 pairs of large canines at front, lateral pair 1.5–2 times longer and strongly recurved. Body moderately elongate, depth 3.2–3.6 in SL; HL 2.5–2.6 in SL; snout length 2.6–3 in HL; first 2 dorsal-fin spines without very long filaments (<40% spine length); filament on 2nd anal-fin spine moderately long (23–70% spine length, longer in males than in females); caudal fin 3.8–4.1 in SL. Preopercle with membranous flap at angle, margin smooth above this. GR 12–14. LL scales 18 + 4–7; horizontal rows of scales on cheek 3 or 4.

Body yellow, with 8 narrow pink stripes following centre of scale rows, the upper stripes continuing twice as numerous on head behind eye and indistinctly on snout; more narrowly onto dorsal part of head; ventral part of head lavender with yellow lines and small spots; 2 prominent purple spots appear on opercle after death, one oval and dorsoposterior, the other smaller and vertically linear or hook-shaped (the spots are on the bone of the opercle and may not show through the overlying tissue in life); dorsal and anal fins lavender-pink basally, hyaline distally, with yellow stripes, the dorsal with pale blue margin; caudal fin with pale blue rays, translucent membranes, and longitudinal rows of small yellow spots, mostly on membranes. Attains 9.5 cm TL.

DISTRIBUTION WIO: Réunion and Mauritius.

REMARKS Type specimens collected from reefs, in 15–37 m. In addition to colour and length of anal-fin spines, this species is differentiated from *P. octotaenia* by a modal difference in GR counts (13 in *P. dispilus* versus 14.5 in *P. octotaenia*). Dentition also differs: the inner row of small conical teeth behind the canines of the upper jaw is continuous across the symphysis in *P. dispilus*, whereas in *P. octotaenia* the small conical teeth medial to the 2 small conical teeth at the symphysis are usually absent.

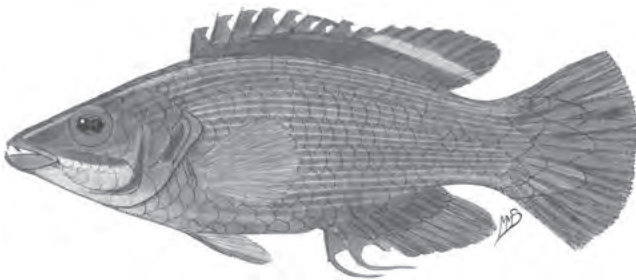
Pseudocheilinus evanidus Jordan & Evermann 1903
Disappearing wrasse

PLATE 90

Pseudocheilinus evanidus Jordan & Evermann 1903: 192 (near Hilo, Hawaii I., Hawaii); Regan 1907; Smith 1957; Smith & Smith 1963*; Harmelin-Vivien 1976; Randall 1981*, 1983*; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.47*; Allen & Steene 1987*; Winterbottom *et al.* 1989*; Field & Field 1998*; Fricke 1999; Heemstra & Heemstra 2004; Lieske & Myers 2004.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 13 or 14 (rarely 13) rays. Upper jaw with 3 pairs of small canines at front, followed on each side by large recurved canine. Body depth 2.7–3.4 in SL; HL 2.5–2.8 in SL; snout length 2.7–3 in HL; anal-fin spines 1–2 with long filaments; caudal fin 3.3–3.8 in SL; pelvic fins not extending to anus. GR 11–15 (usually 13 or 14). LL scales 14–17 + 4–6; horizontal rows of scales on cheek 2 (3 anteriorly).

Body red to orange-red, with ~25 longitudinal whitish lines on body, and bluish white streak extending back from mouth; lower edge of preopercle often magenta, and vertically elongate purple spot or streak usually present on opercle (magenta to purple markings persist as dark blue or green in preservative). Attains ~8 cm TL.



Pseudocheilinus evanidus, 6 cm TL (Aldabra). Source: Smith & Smith 1963

DISTRIBUTION Indo-Pacific. WIO: Red Sea to South Africa (KwaZulu-Natal), Madagascar, Comoros, Aldabra, Seychelles,

Mascarenes, Chagos and Maldives; elsewhere to Andaman Sea, Japan, Great Barrier Reef, New Caledonia, Tuamotu Is. and Hawaii.

REMARKS Secretive, as other members of the genus; to 66 m deep. The holotype was collected from a deep tidepool at Hawaii. JE Randall examined the stomach contents of nine adult specimens: one contained a small fish, the others small crustaceans (no crabs), a small worm and a fragment of a brittlestar.

Pseudocheilinus hexataenia (Bleeker 1857)

Sixstripe wrasse

PLATE 90

Cheilinus hexataenia Bleeker 1857: 84 (Ambon I., Moluccas, Indonesia).
Pseudocheilinus hexataenia: Bleeker 1862; Sauvage 1891; Smith 1957; Smith & Smith 1963*; SFS No. 819*; Harmelin-Vivien 1976; Jones & Kumaran 1980; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.48*; Allen & Steene 1987*; Winterbottom *et al.* 1989*; Randall 1992*, 1995*; Allen & Smith-Vaniz 1994; Heemstra & Heemstra 2004*.
Cossyphus echis Guichenot 1869: 197, Pl. 12, Fig. 5 (Madagascar).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 15–16 (rarely 17) rays. Upper jaw with 3 pairs of small canines at front, followed on each side by large, recurved, outflaring canine. Body moderately deep, 2.5–2.9 in SL; HL 2.6–2.9 in SL, proportionately shorter with growth; snout length 2.8–3.5 in HL; first 2 dorsal-fin spines without long filaments (filament of 1st spine $\frac{1}{3}$ – $\frac{1}{2}$ length of spine); first 2 anal-fin spines with long filaments; caudal fin 3.7–4 in SL. Preopercle with membranous flap at angle, margin above flap usually finely serrate for about half its length. GR 12–18 (usually 16). LL scales 16–18 + 4–6; horizontal rows of scales on cheek 2.

Body with 6 dark blue stripes alternating with yellow-orange; blue-edged black spot slightly smaller than pupil at upper caudal-fin base; 2 small blackish spots anteriorly on lower lip; caudal fin green. Attains 7.5 cm TL.



Pseudocheilinus hexataenia, 4 cm SL (Comoros). © R Winterbottom, ROM

DISTRIBUTION Indo-Pacific (widespread). WIO: Red Sea, Gulf of Aden, Oman to South Africa (Park Rynie), Madagascar, Comoros, Seychelles, Mascarenes, Chagos, Maldives and Lakshadweep; elsewhere to Andaman Is., Indonesia, Ryukyu Is., southern Great Barrier Reef, Lord Howe I., Tuamotu Is. and Line Is.

REMARKS Solitary and cryptic; to ~36 m deep. Winterbottom *et al.* (1989) reported an optimal depth of 6–15 m at Chagos. Four food-habit studies reported mainly a wide variety of benthic and demersal planktonic crustaceans, chiefly copepods (including parasitic calagoids), amphipods, isopods, tanaids, shrimps and shrimp larvae, mysids and crab larvae, but also foraminiferans, polychaetes, small gastropods and gastropod eggs.

Pseudocheilinus octotaenia Jenkins 1901

Eightstripe wrasse

PLATE 90

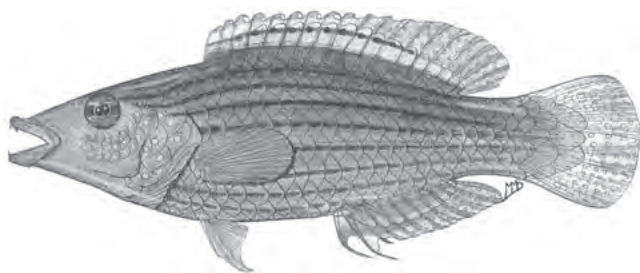
Pseudocheilinus hexataenia (*non* Bleeker 1857): Streets 1877.

Pseudocheilinus octotaenia Jenkins 1901: 64 (Oahu I., Hawaii); Gomon *in* Fischer & Bianchi 1984; SSF No. 220.49*; Winterbottom *et al.* 1989*; Randall & Anderson 1993; Anderson *et al.* 1998; Debelius 1999*; Heemstra & Heemstra 2004.

Pseudocheilinus margaretae Smith 1956: 929, Fig. 1 (Aldabra); Smith 1957*; Smith & Smith 1963*.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 9 rays; pectoral fins 13–15 (usually 14) rays. Upper jaw with 3 pairs of large canines at front, lateral pair about twice as long and strongly recurved. Body moderately elongate, depth 2.9–3.5 in SL; HL 2.5–2.7 in SL; snout length 2.7–2.9 in HL; anal-fin spines 2–3 without long filaments (filaments $< \frac{3}{4}$ length of spine); caudal fin 4–4.2 in SL. Preopercle with membranous flap at angle, upper margin smooth. GR 12–17 (usually 14 or 15). LL scales 16–18 + 5 or 6; horizontal rows of scales on cheek 3 or 4.

Body yellow, with 8 lavender, magenta or purplish brown stripes narrower than yellow interspaces (sometimes orange dashes or elongate spots within yellow interspaces); head with small orange-yellow spots; caudal fin pale yellow, finely spotted with orange-yellow; dorsal and anal fins faintly and narrowly striped with violet and yellow. Attains 12 cm TL.



Pseudocheilinus octotaenia, 10 cm TL (Aldabra). Source: Smith & Smith 1963

DISTRIBUTION Indo-Pacific. WIO: South Africa (Aliwal Shoal), Aldabra and Agalega Is., Comoros, Seychelles, Chagos and Maldives; elsewhere to Indonesia, southern Japan, Great Barrier Reef, New Caledonia, Pitcairn Is. and Hawaii.

REMARKS An insular species, with no records from continental shores or large islands (such as Madagascar, Sumatra, Borneo or New Guinea); in 6–41 m. Solitary and secretive, in low reef and rubble areas, more approachable than other species of the genus. Two food-habit studies (Hobson 1974; Randall 1988) reported mainly small crustaceans, including brachyuran crabs, shrimps and copepods, but also small fishes, demersal fish eggs, small gastropods and an echinoid.

GENUS *Pseudocoris* Bleeker 1862

Dorsal fin 9 spines (first 2 spines of adults closer together than remaining spines), 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12–14 rays; caudal fin 14 rays. Mouth small and oblique, maxilla extending at most to below rear nostrils; front of jaws with pair of forward-projecting, slightly recurved canines that curve laterally; remaining conical teeth on sides of jaws small and almost equal in length; no canine at corners of mouth. Body depth 3.4–5 in SL, deeper-bodied with growth; HL 3.3–3.7 in SL; eyes near centre on sides of head; snout short, 3.4–4.3 in HL; dorsal-fin origin above upper end of gill opening; dorsal- and anal-fin spines flexible. Preopercle margin smooth. Lateral line continuous, abruptly curved downward below rear part of dorsal fin to straight on peduncle, LL pored scales 64–79, +1 scale on caudal-fin base; no scales on head, no median predorsal scales; scales on sides of nape extending forward almost to rear edge of eyes (anterior scales on nape embedded); no scales on base of dorsal and anal fins. Vertebrae 25.

Torpedo wrasse is the preferred common name for these swift-swimming fishes, but false coris is also used. The species form aggregations that feed on zooplankton, generally well above the substratum; they are very difficult to approach. All species are sexually dichromatic. The initial phase is either male or female, both sexes are the same colour; the terminal phase is only male and typically more colourful. Spawning not observed, but initial-phase fish presumed to spawn in aggregations, the terminal male spawns individually with females in a harem. Nine species, in Indo-Pacific, 3 in WIO (Randall *et al.* 2015).

KEY TO SPECIES

- 1a Adults slender, body depth 4.7–5 in SL; 1st spine of dorsal fin of terminal males long, subequal to HL. Initial phase orange dorsally, with narrow dark purple stripe from top of snout following lateral line dorsally on body; broad sides of body mainly blue-green, with large black spot on opercular flap and irregular spot at caudal-fin base; head and body pink ventrally. Terminal male with broad black stripe on upper sides, narrowly green above, bordered below by blue line wavy; 2 yellow bars of near-eye width across black stripe in middle of body, separated by black zone of equal width; head mainly yellowish green, blue around mouth and ventrally *P. petila*
- 1b Adults not slender, body depth 3.3–4.7 in SL; 1st spine of dorsal fin shorter than HL; colour not as above 2
- 2a Snout profile of males convex to above eyes; LL scales 72–79; body depth 3.4–4 in SL. Females green, often with 2 darker green to blackish stripes, one from top of snout to dorsally on caudal-fin base, other from upper pectoral-fin base, to below lateral line on caudal-fin base; caudal fin bluish white with blackish base and narrowing black lobes. Males yellowish green dorsally, pale blue-green or greenish yellow ventrally, with 2 broad black areas anteriorly on side of body, followed by series of black bars that diminish in height posteriorly; head blue to blue-green with blackish zone behind eye that broadens posteriorly; black spot on opercular flap *P. occidentalis*
- 2b Snout profile of males almost straight to above eyes (may be slightly convex or slightly sinuous); LL scales 66–74; body depth 3.6–4.7 in SL. Females lavender-grey, yellowish grey, or pink, often with longitudinal pale lines, 2 of which extend onto head, one above and one below eye; bright red spot at base and axil of pectoral fins. Males yellowish green, with irregular vertical black lines to level of lower edge of pectoral-fin base (so dense on some individuals to almost obscure yellowish green colouration); black stripe from heavier black lines often present at level of pectoral-fin base, narrowing and disappearing posteriorly; body white below stripe, with small yellow spots in zone above anal fin; head bluish to greenish grey, darker on snout and interorbital, white ventrally *P. hemichrysos*

Pseudocoris hemichrysos

Randall, Connell & Victor 2015

Yellowback torpedo wrasse

PLATE 90

Pseudocoris yamashiroi (non Schmidt 1931): Gomon *in* Fischer & Bianchi 1984; Winterbottom *et al.* 1989*; Randall & Anderson 1993*; Lieske & Myers 1994; Kuitert 1998*; Fricke 1999; Randall & Connell 2013*.

Pseudocoris sp.: Allen & Steene 1987*.

Pseudocoris hemichrysos Randall, Connell & Victor 2015: 26, Figs. 22–25 (Maldives).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body depth 3.6–4.7 in SL, terminal male deeper-bodied; snout profile to above eyes almost straight, may be slightly sinuous or slightly convex; HL 3.4–3.7 in SL; snout length 3.5–4.3 in HL; first 2 dorsal-fin spines of adults closer together than remaining spines, 1st spine of terminal male elongate, varying in small individuals from ~3.5 in HL to ~1.5 in HL in large males; 3rd–9th dorsal-fin spines progressively longer, 3rd spine ~1.2–1.3 in length of 9th spine; caudal fin truncate in initial phase, slightly emarginate in terminal male; pectoral fins long, ~ $\frac{3}{4}$ HL in adults; pelvic fins short, not extending to anus. GR 17–21. LL scales 70–75.

Colour variable. Small initial-phase fish lavender-grey, pale blue-green, yellowish grey, or pink, with pale yellow to whitish longitudinal lines, 2 continuing broader onto head, one above and one below eye; head and anterior body often suffused with blue; large bright red spot at base and axil of pectoral fins; dark red stripe on side of snout in line with red of middle part of iris; larger females lose pale lines on body but retain 2 broader lines on head. Terminal male yellowish green, with irregular vertical black lines to level of lower edge of pectoral-fin base (so dense on some individuals to almost obscure ground colour); black longitudinal stripe resulting from thicker black lines often present at level of pectoral-fin base, narrowing and disappearing posteriorly; body white below stripe, with small yellow spots above anal fin; head bluish to greenish grey, darker on snout and interorbital, white ventrally. Attains 15 cm TL.

DISTRIBUTION WIO: Madagascar, Comoros, Seychelles, Mascarenes, Chagos and Maldives.

REMARKS Generally found in 5–30 m.

Pseudocoris occidentalis

Randall, Connell & Victor 2015

Elusive torpedo wrasse

PLATE 91

Pseudocoris heteroptera (non Bleeker 1857): Gomon *in* Fischer & Bianchi 1984; Winterbottom *et al.* 1989*; Randall & Van Egmond 1994; Taquet & Diringer 2013.

Pseudocoris sp.: Kuitert 2002*.

Pseudocoris occidentalis Randall, Connell & Victor 2015: 13, Figs. 8–14 (near Mombasa, Kenya).

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body depth 3.5–4.7 in SL, males deeper-bodied; head profile evenly convex; HL 3.3–3.5 in SL; snout length 3.4–3.7 in HL; first 2 dorsal-fin spines of adults closer together

than remaining spines; 1st dorsal-fin spine of males elongate (up to $\sim\frac{1}{2}$ HL), 3rd–9th dorsal-fin spines progressively longer, posterior rays shorter; pectoral fins long, $\sim\frac{3}{4}$ HL; pelvic fins short, not extending to anus. GR 17–21. LL scales 73–77.

Small juveniles red, with blue-bordered, black lateral stripe; caudal fin yellow; larger juveniles with red replaced by yellow. Initial phase blue-green anteriorly, grading to pale green posteriorly, with 2 narrow green to dusky stripes on body, one from above opercle to caudal-fin base, one from above pectoral-fin base; vertically oval black spot on opercular flap; dorsal and anal fins orange-yellow, dorsal with small pale green spots; caudal-fin lobes black. Terminal male yellowish green dorsally, pale blue-green or greenish yellow ventrally, with large irregular blackish to black area above pectoral-fin base, followed by series of 7 or 8 black bars becoming progressively shorter posteriorly, last 1 or 2 as blotches; head blue to blue-green with blackish zone behind eye that broadens posteriorly; jet black spot on opercular flap; lobes of caudal fin blackish or edged in black, central rear part whitish. Attains 20 cm TL.

DISTRIBUTION WIO: Kenya to South Africa (southern KwaZulu-Natal), Madagascar, Seychelles (including Amirantes and Aldabra), Réunion and Mauritius.

REMARKS Usually seen in small aggregations, feeding on zooplankton, to 5 m or more above the substrate; difficult to approach. The related Pacific species *P. heteroptera* ranges from Indonesia to Taiwan, Line Is. and Tuamotu Is.

Pseudocoris petila Allen & Erdmann 2012

Slender torpedo wrasse

PLATE 91

Pseudocoris cf. *bleekeri*: Taquet & Diringier 2012.

Pseudocoris petila Allen & Erdmann 2012: 1146, Figs. 1–5 (South Cinque I., Andaman Is.); Randall *et al.* 2015*.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body slender, depth 4.7–5 in SL; head profile of initial phase evenly convex, of terminal male almost straight from snout to well above eyes and then convex on nape; HL 3.3–3.5 in SL; snout length 4.6–4.7 in HL; 1st dorsal-fin spine of terminal male elongate (at least $\frac{3}{4}$ HL), 9th spine longest (2.8–3.6 in HL); caudal fin truncate, 1.6–1.9 in HL; pectoral fins pointed, ~ 1.4 in HL; pelvic fins short, tips not extending to anus. GR 15 or 16. LL scales 73–75.

Initial phase pink dorsally on head and anterior part of body, grading to orange posteriorly, with narrow black stripe from dorsally on snout, following lateral line, and disappearing near middle of body; side of body with broad blue-green stripe suffused with purple dorsally, ending in large elliptical pale green spot posteriorly on body with irregular black spot;

ventral part of body pink; large black spot on opercular flap, preceded by broad purple stripe to eye; cheek mainly blue-green; iris red; median fins orange-yellow, dorsal and anal fins with small pale blue-green spots. Terminal male with broad black stripe on upper sides, narrowly green above, bordered by blue below line wavy; 2 yellow bars of near-eye width across black stripe, separated by black bar of equal width, above anal-fin origin; head green dorsally, grading to yellow on cheek, blue ventrally and around mouth; chest and abdomen yellow; dorsal fin black with submarginal blue-green line, narrowly blue-green at base; caudal fin black, longitudinally lined with blue. Attains 8 cm TL.

DISTRIBUTION Indian Ocean. WIO: southern Mozambique photograph [J Strömvoll], South Africa photograph [DR King], Seychelles photograph [R Daly], Réunion photograph [Taquet & Diringier 2013] and Sri Lanka (aquarium trade); elsewhere, Andaman Is. and Indonesia (northwestern Sumatra).

REMARKS Found over rubble bottom and off outer-reef drop-offs, in 10–25 m. Described from two initial-phase specimens collected at Andaman Is. and an underwater photograph of a terminal male from Pulau Weh, off northwestern tip of Sumatra, Indonesia.

GENUS *Pseudodax* Bleeker 1861

Genus diagnosis as for the single species. This monotypic Indo-Pacific genus possibly merits placement in its own subfamily based on the unique dentition.

Pseudodax moluccanus (Valenciennes 1840)

Chiseltooth wrasse

PLATE 92

Odax moluccanus Valenciennes *in* Cuv. & Val. 1840: 305, Pl. 408, Fig. 2 (Moluccas, Indonesia).

Odax borbonicus Valenciennes *in* Cuv. & Val. 1840: 306 (Réunion, Mascarenes).

Pseudodax moluccanus: Bleeker 1861; Playfair & Günther 1867; Day 1877; Baissac 1953; Smith 1955*, 1957*; Fourmanoir & Guézé 1962; Smith & Smith 1963*; Randall 1983*, 1992; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.50*; Allen & Steene 1987*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Pseudodax moluccensis: Günther 1862 [unjustified emendation].

Dorsal fin 11 spines, 12 rays; anal fin 3 spines, 14 rays; pectoral fins 15 rays. Pair of large spatulate, incisiform teeth at front of jaws, lower jaw with adjacent smaller rear pair; remaining teeth on sides of jaws coalesce to form cutting ridge; no

canine at corners of mouth; pharyngeal teeth more like those of parrotfishes than wrasses (illustrated in Bleeker's *Atlas Ichthyologique*, Vol. 1, 1862; Pl. 18). Body depth 2.5–3.4 in SL, deeper-bodied with growth; head profile of adults straight to above eyes, then slightly convex on nape; mouth small; spines and rays of dorsal and anal fins increasing gradually to penultimate ray; caudal fin slightly rounded. GR 16–19. Lateral line continuous, without sharp bend below rear of dorsal fin, LL scales 30 or 31; head scaly except on interorbital region, snout and chin; sheath of small scales at base of dorsal and anal fins; large scales on basal half of caudal fin, last row pointed.

Adults greenish or bluish grey, with reddish brown spot on each scale of body (vertically elongate dorsally, round ventrally); wash of orange on nape and dorsoanteriorly on body; upper lip mainly yellow with blue streak above extending across lower cheek; teeth blue; caudal fin deep purple to dark blue with narrow blue margin and broad yellowish white bar across base; dorsal and anal fins dull orange-yellow with faint dark markings, blue margin and black submarginal band; pectoral fins with yellow rays and blackish streak dorsally at base, with blue dorsal margin; juveniles dark brown with 2 bright blue stripes, one dorsal and one ventral, that narrow posteriorly on body and extend anteriorly onto head. Attains 25 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Red Sea to South Africa (Sodwana Bay), Comoros, Aldabra, Seychelles, Réunion, Mauritius, Chagos and Sri Lanka; elsewhere to Andaman Is., Cocos (Keeling) Is., Indonesia, Japan, Great Barrier Reef, New Caledonia, Marquesas Is. and Tuamotu Is.

REMARKS Occurs on coral and rocky reefs, to ~60 m deep. Feeds by scraping small invertebrates from the substrate, but a food-habit study is needed; juveniles have been observed cleaning other fishes.

GENUS *Pseudojuloides* Fowler 1949

Dorsal fin 9 spines, 11 or 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 or 13 rays, uppermost ray rudimentary. Pair of canines at front of jaws; teeth on sides of jaws chisel-like incisors; no canine at corners of mouth; no very large molars on pharyngeal plates. Body slender, depth 3.8–5.6 in SL; head profile slightly to moderately convex; HL 2.9–3.4 in SL; snout pointed, length 2.5–3.6 in HL; pectoral fins small, length 1.3–1.9 in HL; pelvic-fin length 1.5–2.9 in HL; caudal fin slightly rounded to double emarginate. Preopercle margin smooth. GR 14–19. Lateral line continuous, sharply deflected ventrally below rear of dorsal fin to straight on peduncle, LL pored scales 27, +1 scale at caudal-fin base; scales between

lateral line and dorsal-fin origin 3–5; scales on chest much smaller than those on remainder of body. Eighteen species, in Indo-Pacific, 7 in WIO (6 described here; see Remarks under *Pseudojuloides erythroptus*).

KEY TO SPECIES

- 1a Dorsal fin 12 rays; pectoral fins 12 rays; no median predorsal scales; body green, males with horizontally elongate blackish patch on side of body between soft-rayed portions of dorsal and anal fins *P. argyreogaster*
- 1b Dorsal fin 11 rays; pectoral fins 13 rays; median predorsal scales 8–12, small and may be embedded anteriorly; colour not as above 2
- 2a Body depth 5–5.4 in SL; upper sides of males behind pectoral fins with 2 narrow blue stripes that enclose broad zone of green 3
- 2b Body depth 3.8–4.9 in SL; colour of males not as above 4
- 3a GR 16 or 17; head and body of males to base of 6th dorsal-fin spine black with bright blue markings; remainder of body green with 2 irregular blue stripes, white ventrally ... *P. erythroptus*
- 3b GR 13; postorbital part of head and upper half of body to base of 7th or 8th dorsal-fin spines black or green or brown suffused with black; snout and ventral half of head and body below pectoral fins yellow with irregular reticulate pattern of bright pink *P. edwardi*
- 4a Caudal fin truncate; preopercle free margin with 9 pores; median predorsal scales ~12; colour of females probably red; males orangish grey, shading to yellowish ventrally, with yellow band in shoulder region and large black spot anteriorly on dorsal fin *P. xanthomos*
- 4b Caudal fin slightly rounded to double emarginate; pores along preopercle free margin 10–13; median predorsal scales 8–11; male colour not as above 5
- 5a GR 15 or 16 (usually 15½). Females dusky pink on upper half of body, grading to pale lavender-blue ventrally, and to dark blue-green on dorsal half of peduncle; lower half of body, chest and head pale green; upper half of snout green, grading to blue on interorbital; large squarish violet area across head posterior to eye; mid-dorsal whitish line on snout and nape, continuing faintly along dorsal-fin base. Males mostly green, with narrow pink stripe along dorsal-fin base, from nape to caudal peduncle; a variably dark band along upper body and a midlateral pale green, blue or pinkish band; mid-dorsal black stripe from upper lip to nape, with adjacent bright blue stripe from sides of upper lip to nape *P. kaleidos*

Continued ...

KEY TO SPECIES

- 5b GR 15–19 (usually 17). Females pale orange-red dorsally, shading to yellowish ventrally on body and whitish ventrally on head and chest; males olive-green dorsally, pale blue ventrally, with double stripe of blue and yellow midlaterally on body and large black area edged in pale blue submarginally in caudal fin. Terminal male green, with orange stripe as wide as eye containing scattered blue dots near upper margin and bordered above and below by blue line on sides of body from behind opercular flap to caudal-fin base; faint orange stripe on cheeks below eyes *P. polackorum*

Pseudojuloides argyreogaster (Günther 1867)

Green smalltail wrasse

PLATE 92

Pseudojulis argyreogaster Günther in Playfair & Günther 1867: 95, Pl. 12, Fig. 2 (Zanzibar, Tanzania).

Julis argyreogaster: Smith 1957.

Pseudojuloides argyreogaster: Randall & Randall 1981*; Gomon in Fischer & Bianchi 1984; SSF No. 220 [in key]; Randall & Van Egmond 1994.

Dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays; caudal-fin lower procurrent rays 5 (6 in other species). Body elongate, depth 4.7–5.1 in SL; HL 3–3.2 in SL; snout moderately long, 2.5–2.7 in HL; dorsal-fin spines progressively longer, 9th spine 2.9–3.5 in HL; pelvic fins short, 2.5–2.9 in HL. GR 17–19. LL scales 27; suborbital pores 8–12; no median predorsal scales.

Females green, grading to greenish yellow on cheek, opercle and chest; fins with greenish yellow spines and rays and translucent membranes. Males dark green dorsally, many scales with small pale blue spot, those anteriorly vertically elongate, grading to paler green ventrally on abdomen, chest and head; irregular, horizontally elongate black spot on upper midlateral part of body containing bright pale blue spots and dashes; head with irregular long blue lines. Juvenile (32 mm SL) green, abdomen and throat bluish white, with 3 rows or red dots on upper half of body and pale blue stripe under eyes. Attains 10.5 cm TL.

DISTRIBUTION WIO: Tanzania (Zanzibar), Comoros and Seychelles.

REMARKS Occurs in seagrass beds; the juvenile from Platte I., Seychelles, was collected from *Thalassodendron ciliatum*, in 6 m.

Pseudojuloides edwardi Victor & Randall 2014

Edward's wrasse

PLATE 92

Pseudojuloides edwardi Victor & Randall 2014: 3, Figs. 1–4, 6a (off Mombasa, Kenya).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body elongate, depth 4.2–4.9 in SL; HL 2.9–3 in SL; snout length 3.1–3.4 in HL; eyes relatively small, orbit diameter 4.7–5 in HL; dorsal-fin spines progressively longer, 9th spine 3.2–4 in HL; caudal fin slightly rounded in females, truncate to slightly emarginate in males, 1.6–1.9 in HL; 3rd pectoral-fin ray longest, 1.8–2.1 in HL; pelvic fins 2.2–2.4 in HL. GR 14. LL scales 27; suborbital pores 4–7; series of pores along free margin of preopercle 10 or 11; head naked; median predorsal scales 8 or 9; scales between lateral line and dorsal-fin origin 3 or 4.

Females reddish orange to pink, often with yellow tint anteriorly, grading to white ventrally on head and abdomen. Males with rear half of body emerald green with 2 bright blue stripes, lower along lateral midline, upper along mid-upper body, dorsum above upper blue line olive-green; upper head and anterior body olive-green, becoming darker to black at mid-body; lower half of head and anterior body yellow with prominent deep pink reticulum; dorsal and anal fins with bluish base and edge surrounding thick central yellow band; caudal fin blue-edged dorsally (and sometimes ventrally), with blue extension of midlateral stripe onto fin base. Attains 73 mm SL.



Pseudojuloides edwardi, 7 cm SL, female paratype (Kenya). © BC Victor

DISTRIBUTION Known only from aquarium-trade specimens collected in Kenya.

REMARKS The East African representative of the *P. severnsi* species-complex. *Pseudojuloides severnsi* Bellwood & Randall 2000 occurs from Sri Lanka to Japan and New Caledonia.

Pseudojuloides erythroptus Randall & Randall 1981

Redeye smalltail wrasse

PLATE 92

Pseudojuloides erythroptus Randall & Randall 1981: 71, Figs. 13–14

(Mauritius, Mascarenes); Gomon in Fischer & Bianchi 1984;

SSF No. 220 [in key]; Allen & Steene 1987*; Randall & Von Egmond

1994; Fricke 1999.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body elongate, depth 5–5.4 in SL; HL 3–3.1 in SL; snout length 3.1–3.2 in HL; dorsal-fin spines progressively longer, 9th spine 2.9–3.2 in HL; pelvic fins moderately long, but not extending to anus, length 2.1–2.2 in HL; caudal fin slightly rounded in females, truncate to slightly emarginate in males, 1.5–1.8 in HL. GR 16 or 17. LL scales 27; suborbital pores 5–7; series of pores along free margin of preopercle 10–13; head naked; median predorsal scales 8 or 9; scales between lateral line and dorsal-fin origin 3½.

Females orange-red dorsally, grading to yellow ventrally, with wash of lavender over abdomen; head orange dorsally, white on cheek, lower opercle, and chest, snout and interorbital suffused with violet; whitish streak from upper lip to lower edge of orbit; iris bright red; dorsal fin with yellow rays and translucent, pale yellow membranes; caudal and anal fins with pale pink rays and translucent membranes. Males dark purplish grey on head and anterior fifth of body, with 2 narrow bright blue bands extending back from corners of mouth across head, one above and the other below eye; 2 blue dashes ventrally on opercle, and numerous blue spots on dark anterior fifth of body; rear four-fifths of body green dorsally with 2 irregular longitudinal blue lines, white ventrally; dorsal fin grey with irregular blue band at base and white submarginal line; caudal fin pale. Attains 10 cm TL.

DISTRIBUTION WIO: Mauritius.

REMARKS The Mascarene representative of the *P. severnsi* species-complex. A related species, *Pseudojuloides labyrinthus* Victor & Edward 2016, occurs in Kenya and Seychelles, characterised by a prominent maze of blue bands on the head and body (Plate 93).

Pseudojuloides kaleidos Kuiter & Randall 1995

Kaleidoscope wrasse

PLATE 92

Pseudojuloides kaleidos Kuiter & Randall 1995: 107, Figs. 1–4 (North Malé Atoll, Maldives).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body depth 4–4.4 in SL; HL 2.9–3 in SL; snout length 3–3.1 in HL; dorsal-fin spines progressively longer, 9th spine 2.8–3.5 in HL; pelvic fins moderately short, 1.9–2 in HL; caudal fin truncate, 1.6–1.7 in HL. GR 15 or 16. LL scales 27;

suborbital pores 5 or 6; pores along free margin of preopercle 10 or 11; head naked; median predorsal scales 8–10; scales between lateral line and dorsal-fin origin 3.5.

Females overall reddish to orange or pinkish, grading to pale then white ventrally; in transition this species develops a bluish interorbital wash. Male colour as in key, variation occurs in the length of the broad black stripe on the upper sides of males (from none to >½ SL). Attains 9 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Maldives; elsewhere, Andaman Sea, Indonesia and New Guinea.

REMARKS Type specimens collected from open area of bottom rubble, in ~30 m.

Pseudojuloides polackorum

Connell, Victor & Randall 2015

Polack's wrasse

PLATE 93

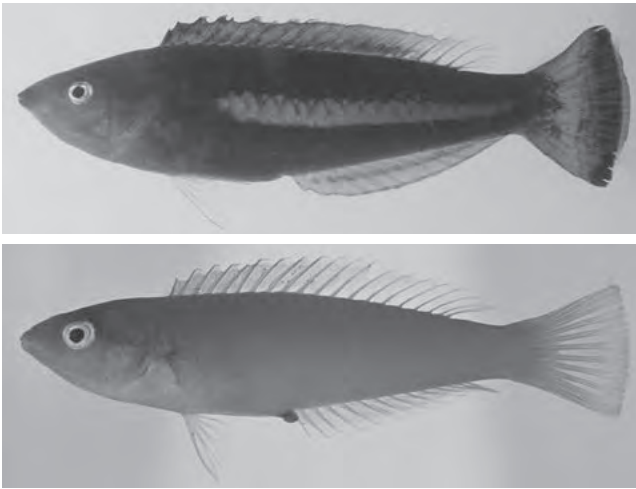
Pseudojuloides cerasinus (non Snyder 1904): Gomon in Fisher & Bianchi 1984; SSF No. 220.51*.

Pseudojuloides cf. *cerasinus*: King & Fraser 2014.

Pseudojuloides polackorum Connell, Victor & Randall 2015: 51, Figs. 1–5 (Mombasa region, Kenya).

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body depth 3.9–4.4 in SL; HL 3–3.2 in SL; snout length 2.8–3.4 in HL; dorsal-fin spines progressively longer, 9th 3–3.6 in HL; 2nd or 3rd pectoral-fin ray longest, 1.8–1.9 in HL; pelvic fins short, 1.8–2.1 in HL; caudal fin truncate, length 1.6–1.8 in HL. GR 15–18. LL scales 27; suborbital pores 5–7; series of pores along free margin of preopercle 10 or 11; head naked; median predorsal scales 7–9; scales between lateral line and dorsal-fin origin 3 or 4.

Females pale orange-red dorsally, shading to pale pink ventrally on body and pinkish white ventrally on head and chest, fins pale yellowish, caudal and anal fins with thin blue margin; iris yellow. Terminal male green with bright orange stripe as wide as eye, bordered above and below by blue dashes and dots, on side of body from behind opercular flap to caudal-fin base; faint orange stripe on cheek below eye; caudal fin with green to blue vertical line where fin broadest, followed by black zone and thin blue posterior margin; dorsal and anal fins pale blue with broad median green stripe. Attains ~8.5 cm SL.



Pseudojuloides polackorum, 8 cm SL, TP (top); 5 cm SL, IP (bottom) (both South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: Kenya (Mombasa), South Africa (Sodwana Bay) and northern Madagascar (photograph).

REMARKS Swims close to the bottom in rocky and weedy areas, the females in small groups, the males more active and solitary (King & Fraser 2014). Long overlooked because of its similarity to the wide-ranging *P. cerasinus*, now split into a species-complex; members have very different mtDNA sequences and clearly different colour patterns.

Pseudojuloides xanthomos Randall & Randall 1981

Yellowstreak wrasse

PLATE 93

Pseudojuloides xanthomos Randall & Randall 1981: 67, Fig. 10 (Mauritius, Mascarenes); Gomon in Fischer & Bianchi 1984; Fricke 1999.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 12 rays; pectoral fins 13 rays. Body depth 4.2 in SL; HL 3.2 in SL; snout length 2.9 in HL; mouth slightly inferior, the gape horizontal; 1st dorsal-fin spine 4.5 in HL, 9th spine 3.9 in HL; caudal fin truncate; pelvic fins almost extending to anus, 1.9 in HL. GR 15–17. LL scales 27; suborbital pores 5; pores along free margin of preopercle 9; head naked; median predorsal scales ~12, extending before upper end of margin of preopercle but not to vertical at rear edge of orbit; scales between lateral line and dorsal-fin origin 4; scales on sides of chest about half height of those on body.

Male (fresh specimen) orangish grey dorsally on body, grading ventrally through indistinct zone of bluish grey to pale yellow on ventral half of body; chest pale blue-green; head with broad yellow stripe from front of snout through eye and

across upper part of opercle, then continuing brighter yellow above upper end of gill opening for about 6 scales; dorsal, anal and paired fins translucent whitish, 1st membrane of dorsal fin almost covered by black spot; caudal fin pale yellowish basally, grading to translucent whitish posteriorly. Females uniform pink to reddish, TP individuals develop yellowish band on head behind eye. Attains at least 7 cm TL.

DISTRIBUTION Known only from Mauritius.

REMARKS The Mascarene representative of the wide-ranging *P. cerasinus* species complex, differing in colour pattern and mtDNA sequences.

GENUS *Pteragogus* Peters 1855

Dorsal fin 9–11 spines, 9–11 rays; anal fin 3 spines, 9 rays; pectoral fins 12–17 (rarely 12 or 17) rays. Two pairs of canines at front of jaws, anterior pair projecting, 2nd pair outcurved; well-developed molars on pharyngeal plates. Body depth 2.2–2.9 in SL; snout profile straight to above eyes, then slightly convex on nape; cirrus often extending as filament from membrane near tip of anterior dorsal-fin spines, best developed in males; caudal fin slightly to strongly rounded. Scleral cornea of eyes modified to form double pupil. Preopercle ventral margin thin and membranous, rear margin finely serrate. Lateral line complete, deflected sharply downward below 5th ray of dorsal fin to straight on peduncle; LL pored scales 23 or 24, +1 or 2 very large scales on caudal-fin base; head with scales, except on snout, interorbital region and chin; low scaly sheath at base of dorsal and anal fins. Ten species, in Indo-Pacific, 7 in WIO. *Duymaeria* Bleeker 1856 and *Labrastrum* Guichenot 1860 are generic synonyms.

KEY TO SPECIES

- 1a Dorsal fin 9 spines, 11 rays; long filaments and adjacent membrane extending from tip of anterior 4 dorsal-fin spine membranes in males (short and only from first 2 membranes in females); oblique white band usually present from near eye to chest below pectoral-fin base; no ocellated black spot on opercle *P. flagellifer*
- 1b Dorsal fin 10 or 11 spines, 9 or 10 rays; long filaments from tip of anterior dorsal-fin spines present or absent; no white band from below eye to chest; ocellated black spot present or absent on opercle 2

Continued ...

KEY TO SPECIES

- 2a Dorsal fin 10 spines; dusky to blackish spot present or absent anteriorly on dorsal fin (if present, only on 1st membrane) 3
- 2b Dorsal fin 11 spines; black spot present on first 2 or 3 membranes of dorsal fin 4
- 3a Males with filaments from membrane tips of first 4 spines of dorsal fin; pelvic fins not extending beyond anal-fin origin; dark ocellus on opercle; no prominent dark bar ventrally from eye; no dark bars dorsally on body; no black spot at rear dorsal-fin base; maximum 11 cm TL *P. cryptus*
- 3b Males without filaments from membrane tips of first 4 spines of dorsal fin; pelvic fins of males long, 1st ray extending beyond anal-fin spines; no dark ocellus on opercle; prominent, usually pale-edged, dark bar ventrally from eye; irregular dark bars on body above lateral line; pupil-size black spot at rear dorsal-fin base; maximum 15 cm TL *P. taeniops*
- 4a Head profile of adults concave; body depth of adults 2.4–2.5 in SL; maximum 15 cm TL *P. pelycus*
- 4b Head profile of adults straight; body depth of adults 2.7–2.9 in SL; maximum <11 cm TL 5
- 5a Interorbital convex; pelvic fins long, extending well beyond anal-fin origin in adults, 2–3.3 in SL; eye small, 4.3–5.4 in HL; caudal fin long, 2.7–3.1 in SL; black spot on each of first 3 membranes of dorsal fin (may be faint or absent on 3rd membrane of small females) *P. trispilus*
- 5b Interorbital flat; pelvic fins 3.3–4.1 in SL; eye 3.5–4.5 in HL; caudal fin 3–3.3 in SL; black spot present on first 1 or 2 membranes of dorsal fin 6
- 6a Longest anal-fin ray 1.7–1.8 in HL; body depth 3–3.2 in SL; dark brown spots along lateral line; rear soft-rayed part of dorsal fin probably not transparent in life *P. darkae*
- 6b Longest anal-fin ray 1.9–2.3 in HL; body depth 2.7–3 in SL; no dark brown spots along lateral line; rear three-quarters of soft-rayed part of dorsal fin transparent in life, except basally *P. variabilis*

Pteragogus clarkae Randall 2013

Clark's wrasse

PLATE 93

Duymaeria opercularis (non Peters 1855): Klunzinger 1871.

Pteragogus opercularis (non Peters 1855): Al-Hussaini 1947;

Klausewitz 1964.

Pteragogus pelycus [in part]: Dor 1984; Goren & Dor 1994; Golani & Bogorodsky 2010.

Pteragogus clarkae Randall 2013: 24, Fig. 17 (Hurghada, Egypt, Red Sea).

Dorsal fin 11 spines, 9 rays; anal fin 3 spines, 9 rays; pectoral fins 13 or 14 (usually 13) rays. Body moderately deep, depth 3–3.2 in SL; HL ~2.6 in SL; head profile straight; dorsal-fin spines progressively longer, last spine 2–2.2 in HL; 1st pelvic-fin ray 3.5–3.8 in SL; caudal-fin length 3–3.3 in SL. Preopercle margin with 14–21 serrae on straight part. GR 12–17. LL scales 23 or 24, +1 greatly enlarged scale at caudal-fin base.

Body yellowish brown, with dark brown blotches on lower sides; small dark brown spots along anterior part of lateral line; scattered small dark brown spots on nape; dark brown dash or pair of small dark spots on side of snout before eye; only traces remain of opercular ocellus; rear margin of preopercle and adjacent band of opercle pale yellowish; dorsal fin pale yellowish with dark brown spot on each of first 2 spinous membranes, 2nd spot usually smaller; irregular black spot at rear dorsal-fin base. Attains ~10.5 cm SL.

DISTRIBUTION WIO: northern Red Sea.

REMARKS Known from seagrass beds, in 2–15 m.

Al-Hussaini (1947) reported on the food habits of specimens identified as *Pteragogus opercularis* from Hurghada, Egypt, collected in 10–15 m, and found the intestine full of the shells of foraminiferans, and small gastropods in a larger specimen.

Pteragogus cryptus Randall 1981

Cryptic wrasse

PLATE 94

Pteragogus cryptus Randall 1981: 83, Pl. 1, Figs. 3–4 (Eilat, Israel,

Gulf of Aqaba, Red Sea); Dor 1984; Field & Field 1998*.

Dorsal fin usually 10 spines (rarely 9), 9 or 10 rays; anal fin 3 spines, 9 rays; pectoral fins 12 or 13 rays. Body depth 2.3–2.6 in SL; head profile straight to nape, then slightly convex; cirrus from near tip of first 4 dorsal-fin spines and adjacent membrane of males elongated as filaments; caudal fin rounded, 3.1–3.2 in SL; pelvic fins not extending beyond anal-fin origin. Preopercle margin serrate. GR 12–17. LL scales 23 or 24.

Colour variable: body usually dark red, reddish brown or olivaceous, scales often with whitish or pale yellow edges; lateral line conspicuous, with small white spots and dashes and dark olive or brown spots; white line or streak often present from front of snout, dorsally through eye, to upper margin of opercle; dorsal and anal fins with irregular, oblique, whitish streaks or lines; caudal fin membranes often dotted with blue, and sometimes rows of blue dashes posteriorly in dorsal and anal fins. Attains 9.5 cm TL.

DISTRIBUTION WIO: Red Sea.

REMARKS Found on coral reefs and adjacent habitats, in 4–67 m. Secretive, usually hiding in soft corals, branching corals or algae. Donaldson (1995) described the courtship and spawning of a closely related, undescribed species from the Pacific, which has usually one fewer gill raker and a smaller maximum size.

Pteragogus flagellifer (Valenciennes 1839)

Cocktail wrasse

PLATE 94

Ctenolabrus flagellifer Valenciennes in Cuv. & Val. 1839: 240 [no locality given].

Duymaeria flagellifera: Smith 1955*, 1957*; Fourmanoir 1957; SFSA No. 796*.

Pteragogus flagellifera: Schultz in Schultz *et al.* 1960; Jones & Kumaran 1980; Lieske & Myers 1994.

Pteragogus flagellifer: Randall 1981, 1995*; Gomon in Fischer & Bianchi 1984; SSF No. 220.52*; Randall *et al.* 1994*; Carpenter *et al.* 1997; Fricke 1999.

Dorsal fin 9 spines, 10–12 rays; anal fin 3 spines, 9 rays; pectoral fins 13 or 14 rays. Body depth 2.5–3.1 in SL, deeper-bodied with growth; head profile straight, at most slightly convex posteriorly on nape; membranes from tips of anterior dorsal-fin spines elongated to filaments, extremely long (to ~½ SL) on first 4 spines in fully mature males; caudal fin strongly rounded, very large in mature males, fin length up to 2.5 in SL; pelvic fins short, at most extending slightly beyond anus. Preopercle margin finely serrate. GR 12–16. LL scales 23 or 24; cheeks scaly to below centre of eyes.

Colour variable: body often olivaceous or yellowish brown, paler ventrally on head, chest and abdomen; lateral line with small dark brown and white spots; body with 3 indistinct pale bars from vertical series of small double or single white spots on scales that extend finely into adjacent dorsal and anal fins; 4th vertical series of single white spots across front of peduncle, ending in small white spot at rear base of dorsal and anal fins; cluster of very small black spots above and behind eye; irregular oblique white band usually present from near eye to chest; large whitish blotch usually behind corner of mouth; midlateral series of 5 large brown blotches often present, 1st on opercle (but not as ocellated black spot as seen on *P. pelycus* and *P. cryptus*); oval bluish black spot on outer part of 1st membrane of dorsal fin. Attains 20 cm TL.



Pteragogus flagellifer, 10 cm SL (Kenya). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific (scattered localities). WIO: Persian/Arabian Gulf, Red Sea, Kenya to South Africa (Aliwal Shoal), Madagascar, Comoros, Aldabra, Seychelles, Mauritius and Lakshadweep; elsewhere to Taiwan, Australia, Great Barrier Reef, New Caledonia and Vanuatu.

REMARKS Usually found in seagrass beds, on mixed rubble, or areas of dense algal growth, in 1.5–20 m. A record from Japan (Masuda *et al.* 1984) is a misidentification of *Pteragogus aurigarius* (Richardson 1845). Parenti & Randall (1998) discovered an earlier name for this species, *Labrus ramentosus* Forskål 1775, and petitioned for its suppression to preserve the established name *P. flagellifer*.

Pteragogus pelycus Randall 1981

Sideburn wrasse

PLATE 95

Cossyphus opercularis Peters 1855: 451 (Mozambique) [objectively invalid; preoccupied by *Cossyphus opercularis* Guichenot 1847].

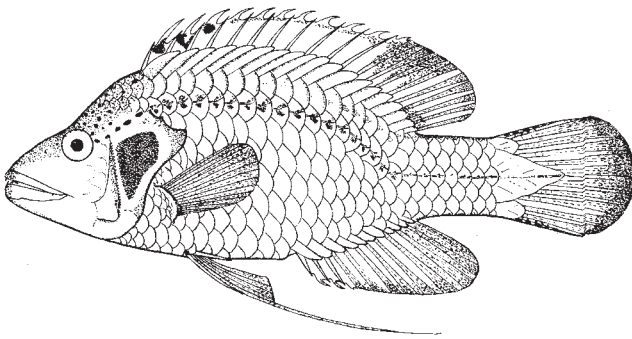
Duymaeria filamentosa (non Peters 1855): Günther 1862; Playfair & Günther 1867.

Pteragogus opercularis: Playfair & Günther 1867; Smith 1955*, 1957*; Fourmanoir 1957; Smith & Smith 1963*; SFSA No. 797*.

Pteragogus pelycus Randall 1981: 82, Pl. 1, Figs. 1–2 [replacement name for *Cossyphus opercularis* Peters 1855, a homonym]; SSF No. 220.53*; Randall 2013.

Dorsal fin 11 spines, 9 rays; anal fin 3 spines, 9 rays; pectoral fins usually 13 (rarely 12) rays. Body depth 2.5–3.1 in SL; tips of dorsal-fin spine membranes not filamentous; caudal fin strongly rounded, length 3.4–4 in SL in females, 2.7–2.9 in males; 1st pelvic-fin ray elongated, very long in males (2.3–3 in SL). Preopercle margin with moderate-sized serrae (increasing in number with age, but not as numerous as those of *P. flagellifer* or *P. taeniops* of same body size). GR 12–16. LL scales 24; cheeks scaly to below centre of eyes.

Colour variable: body olivaceous, green, yellowish brown or brownish red; large oval black spot, edged in yellow, on opercle; small black spots on head behind eye, upper interorbital and on nape; small white spots along lateral line (dark brown spots may also be present); black spot, narrowly rimmed in blue, on first 2 or 3 dorsal-fin membranes of adults, broadly edged below in orange in males, which may continue as broken orange band to end of fin; longitudinal whitish band, consisting mainly of adjacent white blotches, from above eye to below lateral line; sometimes lesser whitish stripe on lower side from beneath ventral edge of pectoral fin; eye with 7 short dark lines radiating like spokes in outer part of iris. Attains 15 cm TL.



Pteragogus pelycus, 14 cm TL (South Africa). Source: Smith 1937

DISTRIBUTION WIO: Tanzania (Zanzibar), Mozambique, South Africa (Aliwal Shoal), Madagascar, Comoros, Seychelles, Réunion, Mauritius and St Brandon Shoals.

REMARKS Usually found on substrates dominated by seagrass or algae, in 6–28 m. Randall (1981) included specimens from the Red Sea when publishing a replacement name for *Cossyphus opercularis* Peters 1855; however, the Red Sea specimens represent the related species *P. clarkae*.

Pteragogus taeniops Peters 1855

Cheekbar wrasse

PLATE 95

Cossyphus taeniops Peters 1855: 262 (Mozambique).

Pteragogus taeniops: Günther 1862; Playfair & Günther 1867; Peters 1877; Bleeker 1879; Smith 1957; SFA No. 798*; Baissac 1976; SSF No. 220.54*; Fricke 1999.

Dorsal fin 10 spines, 10 rays; anal fin 3 spines, 9 rays; pectoral fins 13 rays. Body depth 2.2–2.5 in SL; spinous dorsal-fin membranes moderately incised, tips not elongated as filaments; 1st pelvic-fin ray elongated as filament, extending well beyond anal-fin origin in males; caudal fin rounded, ~3.3–3.7 in SL in adults. Preopercle margin finely serrate, serrae more numerous

with growth (a 63-mm specimen had 30 serrae, and a 103-mm specimen had 40; serrae in *P. cryptus* and *P. flagellifer* more numerous, and serrae fewer in *P. pelycus*, at a given body size). GR 13 or 14. LL scales 23; cheeks scaly to below centre of eyes.

Body mainly red or brownish red, with series of 8 dark brown blotches or indistinct bars dorsally on head and above lateral line on body, the 1st on interorbital, the 2nd mid-dorsal on nape and 6 below dorsal-fin base (the blotch on nape and the one at rear dorsal-fin base darkest); small blackish spots behind eye; lateral line clearly evident from small pale and blackish spots; pale-edged dusky red bar extending ventrally from eye across head; often narrow dark band across interorbital area and one anteriorly from eye onto snout; oblong black spot on 1st dorsal-fin membrane; no ocellated black spot on opercle. Attains 15 cm TL.



Pteragogus taeniops, 5 cm SL (Comoros). © R Winterbottom, ROM

DISTRIBUTION WIO: Tanzania (Zanzibar), Mozambique, South Africa (Aliwal Shoal), Madagascar, Comoros, Seychelles and Mauritius.

REMARKS Usually found on algal-covered substrates.

Pteragogus trispilus Randall 2013

Triplespot wrasse

PLATE 95

Pteragogus pelycus [in part]: Randall 1981; Dor 1984; Goren & Dor 1994; Khalaf & Disi 1997; Kuitert 2002*; Golani & Bogorodsky 2010.
Pteragogus trispilus Randall 2013: 29, Figs. 20–22 (Gulf of Aqaba).

Dorsal fin 11 spines, 9 rays; anal fin 3 spines, 9 rays; pectoral fins 13 (rarely 12) rays. Body depth 2.8–3.0 in SL; HL 2.7 in SL; dorsal profile of head of adult males a slight sinuous curve, concave above eye, nape slightly convex; dorsal profile of adult female straight; eye 4.2–5.4 in HL; 1st dorsal-fin spine 3.3–3.8 in HL; 11th dorsal-fin spine longest, 2–2.2 in HL; membranes of spinous portion of dorsal fin very narrowly incised

posteriorly; filamentous 1st pelvic-fin ray reaching well beyond origin of anal fin, 2.4–3.3 in SL. Straight part of rear margin of preopercle with close-set, spinous serrae that angle slightly dorsally, progressively longer ventrally, except last few a little shorter; number of serrae increasing with growth, from 14 (on 27-mm paratype) to 23 (on 73-mm holotype). GR 13–15. LL scales 24, with 2 on caudal-fin base, last scale greatly enlarged; 2 scales from LL to base of dorsal fin.

Colour in life variable: body brownish to olive, paler ventrally, with many irregular white and brown flecks; opercle with dark green to black ocellus with narrow, greenish border; median and pelvic fins pale greenish with many small white spots on rays; membrane between first 4 dorsal-fin spines of males with black spot at base, mature females with only 2 spots; pectoral fins translucent. Colour in preservative yellowish brown with faint dark spots and dashes along anterior part of lateral line; fins translucent yellowish, with dark brown spots on spinous dorsal fin as above. Attains 7 cm SL.

DISTRIBUTION WIO: Red Sea (Gulf of Suez and Gulf of Aqaba).

REMARKS Lessepsian migrant into Mediterranean; from seagrass beds and other sheltered waters, to 18.5 m.

Pteragogus variabilis Randall 2013

Variable wrasse

PLATE 96

Pteragogus pelycus (non Randall 1981): Fricke 1999; Kuitert 2002*.

Pteragogus variabilis Randall 2013: 34, Figs. 23–27 (Mauritius, Mascarenes).

Dorsal fin 11 spines, 9 rays; anal fin 3 spines, 9 rays; pectoral fins 13 or 14 (usually 13) rays, rays flattened at tips but not branched. Body depth 2.7–3.1 in SL; HL 2.6–2.6 in SL; head profile straight; eyes large, 3.5–4.5 in HL; dorsal-fin spines progressively longer, last spine 2–2.2 in HL; no long filaments at tips of dorsal-fin spines; caudal fin rounded and moderately long, 3.1–3.15 in SL; 1st pelvic-fin ray extending to between 1st and last anal-fin spines, 3.2–4.1 in SL. Preopercle margin serrate on straight part, serrae varying from 13 (on 34-mm specimen) to 25 (on 58-mm specimen). GR 12–15. LL scales 24, last scale on caudal-fin base greatly enlarged; 1 row of scales from behind to below eyes.

Colour in life very variable: body ground colour may be brown, sometimes suffused with orange, red or yellow, or else greenish grey, orange-yellow or red; all colour forms share the following features: opercle of darker colour, often more red, orange or yellow than remainder of head, and with oblique elliptical ocellus; 4 white spots along anterior lateral line,

4th anteriorly on peduncle, with irregular white spots and flecks dorsally from first 3 spots into dorsal fin, and ventrally from all 4 spots; preopercle with broad white rear border, with adjacent white triangular band on opercle; white dots extending down and back from orbit; median and pelvic fins coloured much like adjacent body, but with more small white blotches and dots; dorsal fin with blackish spot on 1st membrane and usually smaller spot on 2nd membrane; about posterior three-quarters of soft-rayed part of fin transparent, except basally (transparent zone may be crossed by brown lines); caudal fin with series of white or transparent spots along dorsal margin and smaller spots along ventral margin. Preserved specimens pale brownish yellow; oblique elliptical ocellus about twice pupil diameter in length on opercle (often damaged, sometimes effaced); short dark brown dash on side of snout anterior to middle of eye; dark dots sometimes faintly visible on nape; fins translucent pale yellowish, dorsal with blackish spot on 1st membrane, and usually 2nd, smaller spot on 2nd membrane; small dark brown spot at rear dorsal-fin base. Attains ~6 cm SL.



Pteragogus variabilis (Mauritius). © JE Randall, Bishop Museum

DISTRIBUTION WIO: Aldabra, Mauritius and St Brandon Shoals.

REMARKS Found to ~71 m deep.

GENUS *Stethojulis* Günther 1862

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12–16 (rarely 12 or 16) rays, including the very short upper ray. Mouth small; no canines except 1 posteriorly on upper jaw; teeth close-set, incisiform, in single series; no molariform pharyngeal teeth. Body depth 2.8–4.5 in SL; dorsal and anal fins low, spines progressively longer, membrane not notched between spines and rays; pectoral-fin bases strongly

oblique; caudal fin slightly rounded. Preopercle margin smooth. GR 19–30, unique in structure (Winterbottom & Burridge-Smith 1987). Lateral line continuous, deflected downward below rear of dorsal fin; LL pored scales 25 or 26, +1 or 2 scales on caudal-fin base; no scaly sheath at base of dorsal and anal fins; head naked; scales on chest at least as large as those on remainder of body.

All species are strong swimmers, propelled by powerful strokes of the pectoral fins; almost constantly in motion and difficult to approach underwater. Their feeding consists of a quick bite of sand or algal-covered rock, with fine sediment emerging from the gill openings and as they swim off the bottom. Stomach content analysis of 3 species revealed a broad spectrum of very small benthic invertebrates (crustaceans, bivalves, gastropods, polychaetes, sipunculids and foraminifera; the shells of the small molluscs were intact). All species sexually dichromatic: initial phase is either male or female, and both sexes are the same colour; terminal phase is only male, and typically more colourful. Initial-phase fish spawn in aggregations; the terminal male spawns individually with females in a harem. Ten species (Randall 2000), in Indo-Pacific (with 1 to tropical eastern Pacific), 4 in WIO.

KEY TO SPECIES

- 1a Pectoral fins 12 or 13 rays 2
 1b Pectoral fins 14 or 15 rays 3
- 2a GR 20–24. Initial phase olivaceous to yellowish brown on dorsal half of head and body, ventral half white with rows of blackish dots, the 2 zones usually separated by blackish stripe. Terminal male green to yellowish green with 2 blue lines on body, one from above eye along dorsal-fin base, ending dorsally on caudal-fin base, other midlateral on posterior half of body; 2 blue lines running back from eye, and one back from dorsal edge of eye; black spot at upper pectoral-fin base with blue line above and below, and orange-red spot above that *S. interrupta*
- 2b GR 25–28. Initial phase grey-brown on dorsal two-thirds of body, yellowish posteriorly, with longitudinal rows of very small whitish spots, continuing more finely onto head; lower third of body white with rows of black dots, smaller ventrally, zones separated by orange stripe. Terminal male green on body and nape, grading to yellow on head below eye and prepectoral region, with 4 longitudinal, black-edged blue lines, 3rd from snout ending below pectoral fins *S. trilineata*

Continued ...

KEY TO SPECIES

- 3a Pectoral fins usually 14 rays. Initial phase greenish to greyish brown on dorsal half of body, finely dotted in pale blue; 2 small, pale-edged, blackish spots usually present midlaterally at end of peduncle; orange-red spot above pectoral-fin base. Terminal male with 3 blue lines on body, one from front of snout through upper part of eye and along dorsal-fin base (may be broken into dots), one from maxilla, below eye, above pectoral-fin base, to near middle of caudal fin, and one from lower pectoral-fin base, parallel to 2nd; curved blue line from chin to lower edge of opercle, continuing on front margin of chest, preceded by black, to pectoral-fin base; pectoral-fin base orange-yellow *S. albovittata*
- 3b Pectoral fins usually 15 rays. Initial phase with small pale-edged blackish spot above midlateral line at caudal-fin base; upper half of body yellowish grey, lower half paler with dark-edged, longitudinal white lines; small dark spot at rear dorsal-fin base. Terminal male yellowish to greyish brown on dorsal half of body, abruptly white ventrally, with dark-edged blue line from front of snout through upper part of eye, encircling small black spot dorsally on opercular flap, and continuing to middle of caudal fin; dark-edged white line from upper lip to above pectoral-fin base; bright red area anterior to oblique pectoral-fin base, continuing faintly below white line on opercle; very small black spot on caudal-fin base above midlateral blue line *S. strigiventer*

Stethojulis albovittata (Bonnaterre 1788)

Bluelined wrasse

PLATE 96

Labrus albovittatus Bonnaterre (ex Koelreuter) 1788: 108, Pl. 98, Fig. 399 [no locality given].

Labrus koelreuteri Walbaum 1792: 262 [no locality given].

Stethojulis albovittata: Günther 1861 [in part], 1862; Playfair & Günther 1867; Bleeker 1874; Smith 1955*, 1957; Smith & Smith 1963*; SFSA No. 802*; Harmelin-Vivien 1976; Jones & Kumaran 1980; Randall 1983*, 1992, 1995*, 2000; Gomon in Fischer & Bianchi 1984; SSF No. 220.55*; Winterbottom *et al.* 1989*; Field & Field 1998*; Fricke 1999; Lieske & Myers 2004.

Julis balteatus (non Quoy & Gaimard 1824): Guichenot 1863.

Julis axillaris (non Quoy & Gaimard 1824): Guichenot 1863.

Stethojulis axillaris (non Quoy & Gaimard 1824): Playfair & Günther 1867; Klunzinger 1871; Bleeker 1874; Smith 1957; Smith & Smith 1963*; SFSA No. 800*; Jones & Kumaran 1980.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 14 or 15 (usually 14) rays. Body depth 3–3.5 in SL; pelvic fins short; caudal fin slightly rounded. GR 25–30 (usually 28). LL scales 25; suborbital pores 10–15.

Initial phase (male or female) greenish to grey-brown, finely flecked with pale dots on upper half of body, whitish below, the 2 areas sometimes separated by narrow reddish zone; 2 small blue-edged black spots midlaterally on caudal-fin base; elongate bright orange-red spot above pectoral-fin base. Terminal male dark green to olivaceous dorsally, shading to pale greyish blue or pale green ventrally, with 4 narrow blue stripes, 1st extending from top of snout through upper edge of eye and continuing along back to end dorsally on peduncle; 2nd stripe from behind eye to above pectoral fin; 3rd from corner of mouth through lower edge of eye, above pectoral-fin base, ending in middle of caudal fin; 4th from chin across cheek and along lower edge of gill opening, curved over pectoral-fin base and continuing to ventral caudal-fin base; pectoral-fin base, axil and adjacent area bright yellow. Attains 13 cm TL.

DISTRIBUTION Indian Ocean. WIO: Red Sea to South Africa (Transkei region), Seychelles, Réunion, Mauritius, Chagos and Lakshadweep; elsewhere to Andaman Sea and Indonesia (western Sumatra, southern Java and Bali).

REMARKS Found on shallow reefs, reef flats and large tidepools, to at least 21 m deep (most collections from <2 m). Harmelin-Vivien (1979) examined the stomach contents of 45 specimens from Madagascar and found the dominant prey to be benthic copepods, tanaids and amphipods, followed by polychaetes. A member of a complex of 3 allopatric species: the others, *S. balteata* (Quoy & Gaimard 1824) from Hawaii and *S. bandanensis* (Bleeker 1851), are wide-ranging in the eastern Indian Ocean and throughout the tropical and subtropical Pacific, including islands of the eastern Pacific.

Stethojulis interrupta (Bleeker 1851)

Cutribbon wrasse

PLATE 96

Labrus chlorocephalus Bloch & Schneider 1801: 254 (Indian Ocean)
[*nomen oblitum*: Randall & Parenti 1999].

Julis (Halichoeres) interruptus Bleeker 1851: 252 (Banda Is., Moluccas, Indonesia).

Stethojulis interrupta: Günther 1861; Playfair & Günther 1867; Barnard 1927; Smith 1955*, 1957; SFSA No. 803*; Randall 1983*, 1995*, 2000; Gomon in Fischer & Bianchi 1984; SSF No. 220.56*; De Bruin *et al.* 1994; Field & Field 1998*; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Stethojulis kallosoma Bleeker 1862: 290 [unjustified emendation of *Julis (Halichoeres) kallosoma*]; Playfair & Günther 1867.

Stethojulis phekadopleura (*non* Bleeker 1849): SFSA No 804*.

Stethojulis axillaris (*non* Quoy & Gaimard 1824): Smith & Smith 1963*.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 or 13 (rarely 12) rays. Body depth 3.6–4.1 in SL. GR 20–24. LL scales 25; suborbital pores 6–9.

Initial phase grey-brown to olivaceous, sometimes tinged with yellow or pinkish yellow, often with pattern of fine pale blue dots, grading to white ventrally; scales above anal fin and dorsally on abdomen with small grey to black spot; pale-edged longitudinal black line above pectoral-fin base, continuing beneath pectoral fins and to lower edge of eyes (line on head may be yellow or blue); small red area often present dorsoanterior to pectoral-fin base. Terminal male with upper half of head and body yellowish grey, green, or olivaceous, lower half abruptly white to pale green, zones separated by dark-edged blue line, usually interrupted on anterior half of body; bright orange-red to yellow spot above and in front of pectoral-fin base; dark-edged blue line from above eye, along dorsal-fin base, ending dorsally on peduncle or caudal-fin base; second dark-edged blue line from dorsally on snout, through upper part of eye, curved above black spot on opercular flap, and ending dorsal to bright pectoral spot; dorsal fin dull orange to reddish; remaining fins with grey rays and translucent membranes; juveniles with 2 dark stripes, one mid-dorsal, the other midlateral. Attains 13 cm TL.



Stethojulis interrupta, 5 cm TL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Persian/Arabian Gulf, Red Sea to South Africa (Algoa Bay), and sight records (by JE Randall) at Seychelles, Mauritius and St Brandon Shoals; elsewhere to Indonesia, Solomon Is., Australia and Lord Howe I.

REMARKS Most specimens collected in <18 m, except one taken in a trawl from 31 m off Somalia. *Julis kallosoma* Bleeker 1852 is a synonym based on the initial phase (Randall & Kay 1974). *Labrus chlorocephalus* Bloch & Schneider was discovered as an earlier name for this species; Parenti & Randall (2000) advised that it be suppressed in order to conserve the established name *S. interrupta*.

Stethojulis strigiventer (Bennett 1833)

Stripebelly wrasse

PLATES 96 & 97

Julis strigiventer Bennett 1833: 184 (Mauritius, Mascarenes).

Stethojulis strigiventer: Playfair & Günther 1867; Bleeker 1874; Day 1877; Barnard 1927; Smith 1955*; Smith & Smith 1963*; SFSA No. 801*; Harmelin-Vivien 1976; Jones & Kumaran 1980; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.57*; Winterbottom *et al.* 1989*; Randall 1992, 2000; Fricke 1999; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*.
Stethojulis renardi: Playfair & Günther 1867; SFSA No. 799*.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins usually 15 (rarely 14 or 16) rays. Body depth 3.3–3.9 in SL. GR 24–30. LL scales 25; suborbital pores 8–15.

Initial phase with upper half of body greenish to brownish grey, lower half with dark-edged, longitudinal white lines, uppermost at ventral edge of pectoral-fin base largest and brightest; dark-edged, bluish white line from upper lip across head just below eye to pectoral-fin base; much narrower parallel line through upper part of eye; small blue-edged dark spot at rear dorsal-fin base; smaller spot on caudal-fin base. Terminal male yellowish to greyish brown on dorsal half of body, abruptly white ventrally, with dark-edged bluish white line from front of snout through upper part of eye, encircling small black spot dorsally on opercular flap, and continuing to middle of caudal fin; dark-edged white line from upper lip to above pectoral-fin base; narrow bright red area anterior to pectoral-fin base, continuing faintly below white line on opercle; small, pale-edged, blackish spot above midlateral line on caudal-fin base. Juveniles similar in colour to initial phase, some with narrow white stripe from front of snout to upper caudal-fin base, and may have 2nd narrower and more irregular stripe from corner of mouth to lower caudal-fin base; small dark spot at upper caudal-fin base, one at rear dorsal-fin base, and one at rear base of anal fin, this lost at 38–59 mm SL. Attains 12 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (Transkei region), Madagascar, Aldabra, Seychelles, Mascarenes, Maldives, Chagos and Lakshadweep; not known from Red Sea, Oman, Persian/Arabian Gulf and northern Arabian Sea; elsewhere to Andaman Sea, Indonesia, Japan (Honshu I.), Marshall Is., Australia and Tuamotu Is.

REMARKS The most wide-ranging species of the genus; inhabits shallow waters, often on seagrass beds, algal flats or sand bottom, and usually within or near well-developed coral reefs. Harmelin-Vivien (1979) collected specimens from Madagascar for stomach-content analysis, and found benthic copepods (primarily harpacticoids) as the principal prey, but also foraminiferans, ostracods, tanaids and amphipods.

Stethojulis trilineata (Bloch & Schneider 1801)

Three-ribbon wrasse

PLATE 97

Labrus trilineatus Bloch & Schneider 1801: 253 (Coringa, Coromandel coast, India).

Julis sebanus Valenciennes *in* Cuv. & Val. 1839: 474 [no locality given].

Halichoeres sebae Kner 1860: 12, Pl. 1, Fig. 9 [no locality given].

Stethojulis trilineata: Günther 1861; Jones & Kumaran 1980; Randall 1992*, 2000.

Stethojulis phekadopleura: Jones & Kumaran 1980.

Dorsal fin 9 spines, 11 rays; anal fin 3 spines, 11 rays; pectoral fins 12 or 13 (rarely 12) rays. Body moderately deep, 2.7–3.2 in SL. Total GR 25–28 (usually 27). LL scales 25; suborbital pores 8–12.

Initial phase grey-brown on upper two-thirds of body, yellowish posteriorly, with longitudinal rows of very small whitish to pale yellowish spots, continuing progressively smaller onto head; lower third of body white with rows of black dots, smaller ventrally, zones separated by orange stripe (may be pinkish orange or yellow) continuing anteriorly to chin; mainly grey on head; lips white, followed by white stripe below eye, through pectoral-fin base, narrowing posteriorly; small blackish spot usually visible at midcaudal-fin base. Terminal male green on nape and upper two-thirds of body; head and chest to level of chin orange-yellow, suffused with green dorsally; ventral part of head and body pale blue; 4 longitudinal, black-edged, blue lines, one from dorsally on head, above eye, along dorsal-fin base; 2nd from snout through upper edge of eye, ending in dorsal third of caudal fin; 3rd from upper lip, passing below eye, and ending beneath pectoral fin; 4th from chin to lower third of caudal fin; lips pink; dorsal fin orange-red; caudal fin orange; pelvic and anal fins pale blue. Attains 15 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Maldives, Lakshadweep and India; elsewhere to Andaman Sea, Indonesia, southern Japan, Australia, Caroline Is. and Samoa.

REMARKS Usually found in outer-reef areas or clear lagoons.

GENUS *Suezichthys* Smith 1958

Dorsal fin 9 spines, 11 or 12 rays (rarely 13); anal fin 3 spines, 10 rays; pectoral fins rounded to pointed, with 12 or 13 rays; pelvic fins 1 spine, 5 rays; caudal fin rounded to truncate. Dorsal- and anal-fin spines and rays progressively longer, spines pungent. Body elongate, depth at dorsal-fin origin 3.2–5.3 in SL. Mouth terminal and small, maxilla extending to or slightly beyond vertical through anterior nostril; lips

moderately fleshy, upper lip with longitudinal plicae. Upper jaw with pair of large recurved canines at front, followed by 10–14 progressively smaller teeth, an inner row of 4–7 small canines behind anteriormost teeth, and 1 enlarged canine (rarely 2) posteriorly; lower jaw with 1 or 2 canines at front, followed by inner row of 3 or 4 smaller canines; pharyngeal dentition well-developed. Lateral line complete, abruptly deflected downward below rear end of dorsal fin to midlateral on peduncle; LL pored scales 25 or 26 (rarely 27); scale rows between lateral line and dorsal-fin (plus small basal sheath scale) $1\frac{1}{2}$ – $2\frac{1}{2}$ (species with $2\frac{1}{2}$ are often considered genus *Nelabrichthys* Russell 1983; a split supported by genetic divergence); low scaly sheath at base of dorsal and anal fins present or absent; predorsal scales 3–6; cheek scale rows behind eye 1–3, with several rows below eye extending forward to beneath middle of orbit; opercle with large scales posteriorly; body scales large. GR 15–20. Vertebrae 25. Apparently 14 species in tropical to temperate Indo-Pacific, probably 5 in WIO.

KEY TO SPECIES

- 1a Scale rows between lateral line and dorsal-fin base $1\frac{1}{2}$; no scaly sheath at base of dorsal and anal fins; initial phase whitish with midlateral dark band from front of snout through eye on sides of body below lateral line, ending in black spot at caudal-fin base, no rear dorsal-fin spot; terminal male with dark upper body band (often segmented); no prominent cheek lines; dorsal half of caudal fin with oblique dark band *S. caudavittatus*
- 1b Scale rows above lateral line $2\frac{1}{2}$; low scaly sheath at base of dorsal and anal fins; initial phase with 3 dark spots (1st dorsal-fin membrane, posterior dorsal fin and upper caudal peduncle) and yellowish or reddish body, uniform or barred, with rows of pearly spots on lateral scales; terminal phase with prominent blue striping and reticulations, especially curved blue lines under eye 2
- 2a Terminal male with blue stripes and reticulations mainly on head and upper body *S. russelli*
- 2b Terminal male with blue striping prominent, but reduced or absent along midlateral body; caudal fin with 4 vertical blue lines *S. ornatus*

Suezichthys caudavittatus (Steindachner 1898)

Tailband wrasse

PLATE 97

Labrichthys caudavittatus Steindachner 1898: 199 (Suez fish market, Gulf of Suez, Red Sea).

Suezia caudovittatus: Smith 1957.

Suezichthys caudovittatus: Smith 1958; Dor 1984; Russell 1985, 1995*; Carpenter *et al.* 1997.

Suezichthys gracilis (*non* Steindachner & Döderlein 1887): Randall *et al.* 1994*; Carpenter *et al.* 1997.

Suezichthys caudavittatus: Parenti & Randall 2000; Manilo & Bogorodsky 2003; Russell & Westneat 2013.

Dorsal fin 9 spines, 11 rays; no scaly sheath at base of dorsal and anal fins; scale rows above lateral line $1\frac{1}{2}$.

Initial phase dark above, pale below, a dark brownish stripe from front of snout through eye and along sides slightly below lateral line (stripe often partially broken into segments), usually ending in elliptical dark to black spot at caudal-fin base; additional parallel dark band from above eye along dorsal-fin base; fins unmarked and no rear dorsal-fin spot, but larger IP developing black spot on 1st dorsal-fin membrane. Terminal male with lower two-thirds of head and body mostly pale; brownish upper body band from snout to caudal-fin base and sometimes with dark spot at caudal end, band on head with dark margins; dorsal fin with black spot on first 2 dorsal-fin membranes, and a dark submarginal band below long marginal yellow band along the fin; dorsal half of caudal fin with oblique dark band. Attains ~12 cm TL.



Suezichthys caudavittatus, 7 cm SL (Gulf of Suez). © SV Bogorodsky

DISTRIBUTION WIO: northern Red Sea, Somalia and Persian/Arabian Gulf to Mozambique and South Africa (KwaZulu-Natal).

REMARKS Described from five terminal-male specimens obtained from the Suez fish market. Juveniles found at 25 m on open sand near reefs, adults deeper. Trawled off Mozambique in 64–69 m and DNA-identified larvae in KwaZulu-Natal, South Africa. DNA lineage from South Africa and Saudi Arabia very close to Western Australian *S. soelae*.

Suezichthys ornatus (Carmichael 1819)

Southern ornate wrasse

PLATE 98

Labrus ornatus Carmichael 1819: 502, Pl. 27 (Tristan da Cunha).

Labrichthys lantzii Sauvage 1875: 988 (Saint-Paul I.).

Labrichthys isleanus Sauvage 1875: 988 (Saint-Paul I.).

Pseudolabrus isleanus: Gill 1892.

Pseudolabrus lantzii: Gill 1892.

Labrichthys ornatus: Regan 1913.

Labrichthys tetrica (non Richardson 1840): Angot 1951.

Nelabrichthys ornatus: Russell 1983; Collette & Parin 1991; Parenti & Randall 2000.

Suezichthys ornatus: Russell & Westneat 2013*.

Dorsal fin 9 spines, 12 (rarely 13) rays; scaly sheath at base of dorsal and anal fins; scale rows above lateral line $2\frac{1}{2}$.

Initial phase head and body yellowish to reddish, with rows of pinkish spots on lateral scales; prominent black spot on 1st dorsal-fin membrane, also near rear of fin, and on upper caudal-fin base. Terminal male with head yellowish, body greenish, and lavender to blue stripes along head and body, fading rearward, prominent blue curved lines below eye; caudal fin barred with irregular vertical thin blue lines. Attains 15 cm TL.

DISTRIBUTION WIO: Walters Shoals; elsewhere, Tristan da Cunha, in southern Atlantic, Saint Paul I. and seamounts of southern Indian Ocean.

REMARKS Described from Tristan da Cunha where found on shallow reefs as well as on deep slopes. Collette & Parin (1991) found them in trawls on Walters Shoals at 35–48 m. The mtDNA lineage is several percent different from the South African *S. aff. ornatus*, which has a more colourful IP (Plate 97). Interestingly, *S. aff. ornatus* is genetically closer to the New Zealand *S. ornatus*. An additional, more distant, mtDNA lineage is present in South Africa based on a larval specimen – it may represent the presently unrecognised species *PlatyGLOSSUS robinsoni* Gilchrist & Thompson 1914, described from a unique holotype from KwaZulu-Natal.

Suezichthys russelli Randall 1981

Russell's wrasse

PLATE 98

?*PlatyGLOSSUS robinsoni* Gilchrist & Thompson 1914: 86 (KwaZulu-Natal, South Africa).

?*Halichoeres robinsoni*: SFSA No. 734*.

Suezichthys tripunctatus: (non Randall & Kotthaus 1977) [in part].

Suezichthys russelli Randall 1981: 90, Pl. 2, Fig. 5 (Ras Abu Galum, Sinai Peninsula, Red Sea); Dor 1984; Russell 1985; Russell & Westneat 2013.

Dorsal fin 9 spines, 11 rays; scaly sheath at base of dorsal and anal fins; scales above lateral line $2\frac{1}{2}$.

Initial phase head and body yellowish to reddish with rows of pinkish spots on lateral scales; irregular black spot on upper caudal-fin base, prominent black spot on 1st dorsal-fin membrane and ocellated black spot at rear of dorsal fin. Terminal male with head yellowish, body greenish with lavender stripes on head behind eye, in curved lines on snout from eye to jaw, and body with pinkish bars (South African populations with red-barred IP and pinkish-barred TP with blue and lavender stripes behind eye). Attains ~9 cm TL.

DISTRIBUTION WIO: northern Red Sea, Somalia and Kenya, and a similar population in KwaZulu-Natal, South Africa.

REMARKS The holotype and paratype were speared at over 50 m depth at the base of a steep drop-off, in the Gulf of Aqaba, off Sinai; paratypes from Somalia and Kenya were taken by trawl from 70–130 m. The latter two collections were included (in error) as paratypes of the Hawaiian *Suezichthys tripunctatus*. *Suezichthys russelli* is the NWIO representative of the *S. ornatus/arquatus/notatus* species-complex.

GENUS *Thalassoma* Swainson 1839

Dorsal fin continuous, with 9 spines, 12–14 (usually 13) rays; anal fin 3 spines, 10–13 (usually 11) rays; caudal fin 14 principal rays (12 branched); pectoral fins 14–17 rays. Mouth terminal, relatively small, maxilla not extending to vertical at front edge of orbit. Pair of strong canines at front of jaws, followed by row of 9–14 progressively smaller conical teeth; no canine at corners of mouth in upper jaw; pharyngeal dentition well-developed. Body depth 2.9–4.2 in SL; head relatively small, HL 3–4 in SL; caudal fin slightly rounded to double emarginate or lunate; pelvic fins short, not extending to anus. Lateral line complete, abruptly bent downward below rear part of dorsal fin to straight on peduncle; LL pored scales 25–29; 3 or 4 scales between lateral line and dorsal-fin origin; scales on chest distinctly smaller than those on body; head naked except for patch of small scales dorsally on opercle in most species; no scaly sheath at base of dorsal and anal fins. The species are very similar in morphology and some are distinguished principally by colour. Twenty-eight species, 6 in Atlantic, 5 in eastern Pacific, and the remainder in Indo-Pacific; 12 species in WIO.

KEY TO SPECIES

- 1a No scales dorsally on opercle; body slender, depth 3.8–4.2 in SL; snout short and bluntly rounded, 4–4.6 in HL of adults. Initial phase pale green dorsally, white ventrally, with broad black stripe from snout through eye to caudal-fin base, and 2nd narrower black stripe from interorbital along dorsal-fin base. Terminal male reddish with vertical green lines and broad yellow bar dorsoanteriorly, enclosing pectoral-fin base; head green, grading to blue ventrally and on chest, with 2 parallel oblique golden lines, one behind eye and one from corner of mouth; attains <16 cm TL *T. amblycephalum*
- 1b Small patch of scales dorsally on opercle; body not slender as adult, depth 2.9–4 in SL; snout 2.5–3.5 in HL of adults; colour not as above; maximum size >16 cm TL 2
- 2a Body depth of adults 2.9–3.2 in SL; both colour phases green, with 6 oblique wedge-shaped black bars, progressively shorter posteriorly, 1st beneath pectoral fins to abdomen, last saddle-like spot on peduncle, and broad pink bands on head, most radiating from eye; terminal male also with midlateral pink stripe *T. hardwicke*
- 2b Body depth of adults >3 in SL (except *T. purpureum*); colour not as above 3
- 3a Initial phase yellowish green, with numerous vertical black lines; pale yellow bar below pectoral fins from front of dorsal fin, often followed by series of 6 short pale yellowish bars dorsally on body, with shorter faint bar between each pair; head blue-green with narrow curved green bands behind eyes, on cheeks and chest; black spot anteriorly on dorsal fin; caudal fin yellow with orangish lobes *T. hebraicum*
- 3b Colour not as above 4
- 4a Pectoral fins usually 15 rays 5
- 4b Pectoral fins usually 16 rays 6
- 5a Terminal male dusky salmon-pink, with 2 longitudinal series of blue-green bars aligned to vertical scale rows, one on upper side at level of dorsal end of gill opening, other in line with pectoral-fin base; 4 blue-green bars of upper series with extension to dorsal-fin base; chest mainly blue, continuing as stripe across ventral part of abdomen; head blue-green to blue ventrally with 4 short salmon-pink bands above eye, long irregular band from snout through lower part of eye, across opercle, and one on lower cheek behind salmon-pink spot at corner of mouth; large dark purplish blue area covering most of dorsal part of opercle, and another over most of caudal fin, fin margins green. Juvenile (4.5 cm TL) pale blue, with 2 irregular black stripes, one dorsal, other midlateral; orange line along lower side at level of pectoral-fin base containing 6 long blackish dashes; bluish black spot covering most of 2nd dorsal-fin membrane, rimmed in front of orange-red; GR 15–20 *T. loxum*
- 5b Colour not as above; GR 17–25 6
- 6a Initial phase white, with blackish bar on nape and head behind eyes, followed by 6 irregular, broad, blackish bars on body (in which scales are evident from a vertical black streak), that reach progressively farther ventrally; bars separated mainly dorsally by irregular white ground colour, those below dorsal fin extending basally into fin. Terminal male with extension of black bar on nape to below basal part of pectoral fin, interrupted by yellow streak above opercular flap; 2nd broad oblique black bar from 4th–7th dorsal-fin spines extending below outer 3rd of pectoral fin, 3rd broad oblique black bar from soft-rayed dorsal fin to posterior half of soft-rayed part of anal fin, expanding distally in fin; black bar across caudal-fin base, continuing narrowly along upper and lower margins *T. janseni*
- 6b Colour not as above 7
- 7a Initial phase green, with vertical pink lines, grading to blue ventrally; head green with irregular pink bands radiating from eye; large black spot at midcaudal-fin base (ocellus at mid-dorsal-fin base of juveniles may also be present on small initial-phase fish). Terminal male with suffusion of blue over head and anterior body, masking pink bands; pectoral fins blue with large magenta central area; caudal fin with bright yellow posterior crescent *T. lunare*
- 7b Colour not as above 8
- 8a Initial phase green, with vertical broken magenta lines on body; head dusky green dorsally, pale green ventrally, with magenta band on snout and large magenta area over postorbital part of head, except for green margin on opercular flap; large circular pink mark below eye. Terminal male blue on lower 60% of body, black on upper 40%, extending into large yellow area on peduncle; head black dorsally, enclosing blue lips, eye, and extending into large yellow area on nape; cheek and lower opercle pink and yellow with blue band forming irregular C-shape; dorsal and anal fins of both phases blue with pink longitudinal band; black spot centred on 2nd dorsal-fin spine *T. genivittatum*
- 8b Colour not as above 9
- 9a Initial phase yellow to yellowish green, with vertical magenta lines; head and anterior body above pectoral-fin base yellow with 5 curved deep pink bands (1 dorsal, 1 on side of snout, 2 curved from behind eye to above pectoral-fin base, and 2 on cheek); median fins yellowish green, dorsal and anal with pink band near base, caudal with pink band in each lobe. Terminal male green, with vertical magenta lines, becoming blue with purple vertical lines in front of zone beneath pectoral fin; head pink, with suffusion of purple dorsally, and narrow blue-edged green bands (3 behind eye, 2 in front of eye, joining broad median green zone on chin, snout, and continuing to nape, and 2 on cheek that join anteriorly); pectoral fins bright yellow with broad outer deep blue border *T. lutescens*
- 9b Colour not as above 10

Continued...

KEY TO SPECIES

- 10a Initial phase pale green dorsally, pale green to white ventrally, with irregular, orange-pink, midlateral stripe almost dividing the 2 colours; pale violet stripe from nape along back and adjacent dorsal-fin base, ending dorsally on peduncle; 19 narrow magenta bars linking dorsal and midlateral stripes; pink stripe extending back from lower pectoral-fin base across abdomen and fading on lower side above anal fin; head yellowish green with pink bands (2 above eye, 1 before and behind eye, and 2 progressively more curved below eye). Terminal male with dorsal stripe and bars purplish blue, midlateral stripe deep orange, lower stripe indistinct pale blue; pink bands on head dark magenta *T. rueppellii*
- 10b Colour not as above 11
- 11a Caudal fin of adults slightly emarginate. Initial phase green or greenish yellow, with 2 irregular deep pink stripes on upper side, linked by narrow bars of same colour; head deep pink with 4 narrow green bands extending outward from eye, and narrow, semicircular green band on cheek, convex upper end almost touching ventral edge of eye; oblique deep pink band on chest, followed by shorter parallel one anteriorly on abdomen; caudal fin green with semicircular translucent orange area posteriorly in fin, each lobe with deep pink band. Terminal male with similar pattern, pink markings suffused with purple *T. quinquevittatum*
- 11b Caudal fin of adults truncate; colour not as above 12

- 12a GR 20–25 (usually 23). Initial phase green, with 3 pink stripes on body overlaid by 6 squarish dark blotches and vertical series of pink lines containing spindle-shaped dark brown spots; head with irregular bands (dark red dorsally, pink ventrally), one on snout forming diagnostic V- or Y-shape. Terminal male blue-green, with 2 irregular pink stripes on sides narrowing posteriorly; irregular magenta to violet band dorsally on body continuous with irregular pink band dorsally on head ending in eye; large irregular pink band claw-shaped, extending ventroposteriorly from eye, and large diagnostic V-shaped pink spot on snout *T. purpureum*
- 12b GR 17–24 (usually 20). Initial phase very similar to that of *T. purpureum*, with irregular C- or G-shaped pink mark on snout. Terminal male red (may be suffused with purple dorsally), grading to orange on abdomen and chest, with 2 longitudinal series of vertically elongate green rectangles on side of body, 4 of which continue narrowly to dorsal-fin base; head orange, sometimes heavily overlaid dorsally with green or purple *T. trilobatum*

Thalassoma amblycephalum (Bleeker 1856)

Twotone wrasse

PLATE 98

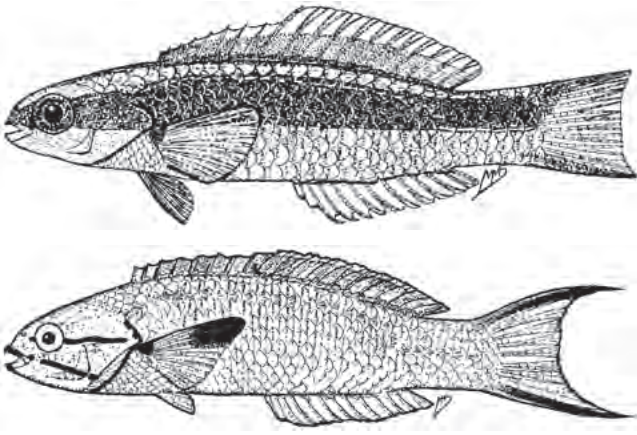
Julis (Julis) amblycephalus Bleeker 1856: 83 (Java, Indonesia); Bleeker 1862; Günther 1862; Day 1877.

Thalassoma melanochir: Fowler 1904; Smith 1957; Smith & Smith 1963*; SFSA No. 780a*.

Thalassoma amblycephalus: Fowler & Bean 1928; Smith 1957; Smith & Smith 1963*; SFSA No. 569*, No. 782a*; Harmelin-Vivien 1976; Jones & Kumaran 1980; Gomon *in* Fischer & Bianchi 1984; SSF No. 220.58*; Winterbottom *et al.* 1989*; Randall 1992*; Fricke 1999; Heemstra *et al.* 2004; Heemstra & Heemstra 2004.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 15 rays. Body slender, depth 3.8–4.2 in SL; snout short, 4–4.6 in HL in adults; caudal fin truncate to slightly emarginate, becoming lunate in large males. GR 16–19. LL scales 26 or 27.

Initial phase pale yellowish green dorsally, white ventrally, with broad black stripe from snout through eye and across body to caudal-fin base, part on body consisting of numerous, close-set, vertical black lines; 2nd narrower black stripe from interorbital along dorsal-fin base; upper and lower margins of caudal fin with broad orange band that narrows posteriorly. Terminal male reddish, with vertical green lines and broad yellow bar dorsoanteriorly, enclosing pectoral-fin base; head green, grading to blue ventrally and on chest, with 2 parallel oblique golden lines, one extending back from eye across opercle, 2nd from corner of mouth across cheek to margin of opercle; dorsal fin with broad middle orange band; base and lobes of caudal fin orange to magenta enclosing a hemispherical whitish posterior zone; pectoral fins yellow, broadly tipped with deep blue, with triangular black spot at upper base. Attains 16 cm TL.



Thalassoma amblycephalum, 8 cm TL, IP (top); 10 cm TL, TP (bottom) (both Mozambique). Source: Smith 1956

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (Transkei region), Madagascar, Comoros, Seychelles, Mascarenes, Chagos, Maldives, Lakshadweep, India and Sri Lanka; elsewhere to Andaman Is., Indonesia, southern Japan, Australia, Lord Howe I., northern New Zealand, Line Is. and Tuamotu Is.

REMARKS Usually found in aggregations feeding on zooplankton over shallow reefs. Initial-phase fish often seen group spawning.

Thalassoma genivittatum (Valenciennes 1839)

Cheekmark wrasse PLATES 98 & 99

Julis genivittatus Valenciennes in Cuv. & Val. 1839: 416 (Mauritius, Mascarenes).

Julis commersoni Valenciennes in Cuv. & Val. 1839: 418 (Madagascar; Mauritius, Mascarenes).

Julis matthaei Valenciennes in Cuv. & Val. 1839: 419 (Mauritius, Mascarenes).

Julis bicolor Günther 1862: 184, 508 [no locality given].

Thalassoma commersoni: Barnard 1927; Smith 1957; SFSA No. 781*; Allen & Steene 1994*.

Thalassoma lunare (*non* Linnaeus 1758): Baissac 1953; Fourmanoir & Guézé 1961; Harmelin-Vivien 1976.

Thalassoma genivittatum: SSF No. 220.59*; Randall & Van Egmond 1994; Heemstra *et al.* 2004.

Thalassoma sp.: Allen & Steene 1987*.

Thalassoma mascarenum Fricke 1999: 437, Figs. 6a, 7a (Réunion, Mascarenes).

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 16 rays. Body depth 3.2–3.8 in SL; snout length 2.9–3.5 in HL in adults; caudal fin truncate or with lobes slightly produced in initial phase, lunate in terminal male. GR 19–22. LL scales 25.

Initial phase dusky green dorsally, shading to pale green on lower side and lavender-pink ventrally on abdomen, with irregular vertical magenta lines following scale rows; chest and peduncle often yellow; head dark green dorsally, pale green to yellowish green ventrally, with magenta band on side of snout and broad magenta area covering most of postorbital part of head except for oblique green band on margin of opercular flap; large, irregular, circular pink mark on cheek below eye; lips pale blue; dorsal fin green with broad middle magenta band; anal fin green with basal magenta band; caudal fin green, blackish basally, with magenta band in each lobe. Terminal male blue on lower three-fifths of body, black on upper two-fifths, extending into large yellow area on peduncle; head black dorsally, including blue lips, eye, and extending into large yellow area on nape; cheek and lower opercle pink and yellow with blue band forming irregular C-shape; dorsal and anal fins of both phases blue with pink longitudinal band; black spot centred on 2nd dorsal-fin spine with broad, blackish band covering entire back, shading to yellow anterior to base of 4th spine and onto nape; caudal fin mainly yellow except where dorsal black band extends into middle portion; ventral half of body blue-green; upper part faintly showing pale red vertical lines on scales; head with same basic pattern as initial phase but more blackish dorsally and with blue-green on edges of cheek. Attains 20 cm TL.



Thalassoma genivittatum, 8 cm SL, IP (Rodrigues). PC Heemstra © NRF-SAIAB

DISTRIBUTION WIO: South Africa (Sodwana Bay; Park Rynie), Madagascar, Seychelles and Mascarenes.

REMARKS Common in Mauritius; found on coral reefs and adjacent habitats, including large tidepools, to ~10 m deep. One of a species-complex that includes *T. lutescens*, *T. duperrey* (Quoy & Gaimard 1824) from Hawaii, and *T. grammaticum* Gilbert 1890 from the eastern Pacific.

Thalassoma hardwicke (Bennett 1830)

Sixbar wrasse PLATE 99

Labrus quindecimaculeatus Lacepède 1801: 432, 480, Pl. 25, Fig. 1 (Gulf of India) [*nomen dubium*].

Sparus hardwicke Bennett 1830: no page number, Pl. 12 (Sri Lanka).

Julis dorsalis Quoy & Gaimard 1834: 713, Pl. 15, Fig. 5 (Mauritius, Mascarenes); Playfair & Günther 1867; Day 1877.

Julis semifasciatus Valenciennes in Cuv. & Val. 1839: 448 (Mauritius, Mascarenes).

Thalassoma dorsale: Barnard 1927.

Thalassoma hardwicke: Fowler & Bean 1928; Baissac 1953; Munro 1955* [as *hardwicki*]; Smith 1957; Smith & Smith 1963*; SFSA No. 780*; Jones & Kumaran 1980; Gomon in Fischer & Bianchi 1984; SSF No. 220.60*; Allen & Steene 1988*; Winterbottom *et al.* 1989* [as *hardwicki*]; Randall 1992*; Heemstra *et al.* 2004.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 16 rays. Body depth 2.9–3.2 in SL (initial phase more slender than terminal male); snout length 2.8–3.4 in HL; caudal fin truncate in juveniles, emarginate in adults. GR 22–25. LL scales 25.

Initial and terminal-male phases have essentially the same colour pattern, differing mainly in being more vivid in the terminal male. Body green, with 6 black bars on body, progressively shorter posteriorly (1st bar from below front of dorsal fin, beneath pectoral fins to abdomen, slightly below level of pectoral-fin base; 3rd–5th bars extending onto dorsal fin and joined distally by black band; last bar saddle-like on peduncle); midlateral pink stripe on posterior half of body; head with 5 broad orange to pink bands radiating from eyes; nape with 2 oblique black bands; oblique black band anterior to pectoral-fin base. Attains 18 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (Transkei region), Comoros, Seychelles, Mascarenes, Chagos, Maldives, Sri Lanka and Lakshadweep; elsewhere to Andaman Sea, Ryukyu Is., Australia, Lord Howe I., Line Is. and Marquesas Is.

REMARKS Inhabits reef areas, from near shore to ~15 m deep; initial-phase fish often seen in groups.

Thalassoma hebraicum (Lacepède 1801)

Goldbar wrasse

PLATE 99

Labrus hebraicus Lacepède (ex Commerson) 1801: 454, 526, Pl. 29, Fig. 3 (Mauritius, Mascarenes).

Julis cingulata Quoy & Gaimard 1834: 711, Pl. 15, Fig. 3 (Mauritius, Mascarenes).

Julis hebraicus: Valenciennes in Cuv. & Val. 1839.

Julis hebraica: Playfair & Günther 1867; Day 1877.

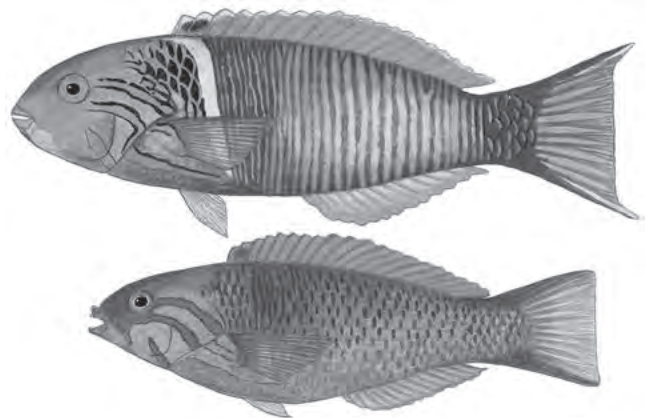
Julis blochii Valenciennes in Cuv. & Val. 1839: 422 [no locality given].

Thalassoma hebraicum: Barnard 1927; Baissac 1953; Smith 1957* [with *genivittatum* wrongly included as a synonym]; Smith & Smith 1963*; SFSA No. 778*; Harmelin-Vivien 1976; Van der Elst 1981*; Gomon in Fischer & Bianchi 1984; SSF No. 220. 61*; Allen & Steene 1987*; Winterbottom *et al.* 1989*; Heemstra & Heemstra 2004*.

Thalassoma schwanefeldi (*non* Bleeker 1853): Smith 1957, 1961; SFSA No. 778a [juvenile].

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 15–16 rays. Body depth 3.2–3.8 in SL; dorsal and ventral profiles of head of terminal male strongly convex; snout length of adults 2.9–3.3 in HL; caudal fin varying with age, from truncate to lunate with long slender lobes in adult males, caudal concavity to ~1.2 in HL. LL scales 25. GR 20–23.

Initial phase yellowish green, with numerous vertical blackish lines; 6 pale yellowish bars dorsally from nape to peduncle, with much shorter and paler bar between each pair of pale bars on body; oblique bright yellow band from below base of 2nd dorsal-fin spine, beneath pectoral fins to front of abdomen (variously developed); head dusky blue-green dorsally, pale bluish grey ventrally, with narrow dark-edged green band curved from behind eye to edge of opercle at level of upper pectoral-fin base; semicircular dark-edged green line from throat curved upward just below eye, and parallel to 1st band; short green line from middle of cheek to ventral edge of chest; 2 broader oblique green bands across chest; dorsal and anal fins greenish grey, dorsal fin with bluish black spot centred on 2nd spine and narrow yellow margin on spinous part of fin; caudal fin yellowish with orangish lobes. Attains 23 cm TL.



Thalassoma hebraicum, 13 cm TL, TP (top); 9 cm TL, IP (bottom) (both South Africa). Source: CFSA

DISTRIBUTION Indian Ocean. WIO: Kenya to South Africa (Algoa Bay), Comoros, Seychelles, Réunion and Mauritius; elsewhere to Andaman Is.

REMARKS Found on rocky or coral reefs, to ~15 m deep; young sometimes in tidepools. Van der Elst (1981) reported it feeding mainly on sea urchins and gastropod molluscs, which are crushed by the pharyngeal teeth, and most of the indigestible shell matter is ejected through the gill openings.

Thalassoma janseni (Bleeker 1856)

Jansen's wrasse

PLATE 99

Julis (Julis) janseni Bleeker 1856: 56 (Manado, Sulawesi, Indonesia); Bleeker 1862; Günther 1862; Day 1877.

Thalassoma janseni: Munro 1955; Jones & Kumaran 1980; Gomon *in* Fischer & Bianchi 1984; Randall 1992*; Allen & Smith-Vaniz 1994.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 15 or 16 rays. Body depth of adults 3.6–3.9 in SL; snout length of adults 3–3.3 in HL; peduncle depth 6.6–7 in HL; caudal fin varying from truncate to slightly emarginate in initial phase, to lunate in terminal male, caudal concavity in terminal phase to half HL. GR 20–23. LL scales 26.

Initial phase white, with blackish bar on nape and postorbital part of head, followed by 6 irregular, broad, blackish bars on body, those after extending progressively farther ventrally; bars separated dorsally by irregular white ground colour; bars below dorsal fin extending basally into fin. Terminal male with extension of black bar on nape to below basal part of pectoral fin, interrupted by yellow streak above opercular flap; 2nd broad oblique black bar from dorsal-fin spines 4–7 extending below outer 3rd of pectoral fin, and 3rd broad oblique black bar from soft-rayed part of dorsal fin to posterior half of soft-rayed part of anal fin, expanding distally into anal fin; black bar across caudal-fin base, continuing narrowly along upper and lower margins of caudal fin. Attains 23 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Maldives, Lakshadweep and Sri Lanka; elsewhere to Andaman Sea, Indo-Malayan Archipelago, New Guinea and Australia.

REMARKS Inhabits shallow coral reefs, usually in <10 m, often in small aggregations. Walsh & Randall (2004) described the hybrid *Thalassoma janseni* × *T. quinquevittatum* from the Banda Sea, Indonesia. Originally regarded as one wide-ranging Indo-Pacific species, but now restricted to WIO, the Indo-Malayan region (except for the eastern end of New Guinea, where it is replaced by *T. nigrofasciatum* Randall 2003) and northwestern Australia.

Thalassoma loxum Randall & Mee 1994

Slantband wrasse

PLATE 100

Thalassoma loxum Randall & Mee 1994: 303, Pls. 1–5 (Hoone's Bay, Oman, Arabian Sea); Randall 1995*; Lieske & Myers 2004.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 14 or (usually) 15 rays. Body depth of adults 3.2–3.9 in SL; HL 2.9–3.3 in SL; snout length of adults 3.2–3.4 in HL.

GR 15–20. LL scales 26; head naked except for isolated patch of 1–4 small scales dorsally on opercle.

Initial-phase colouration unknown. Terminal male with dusky salmon-pink body with 2 longitudinal series of blue-green bars aligned to vertical scale rows, one on upper side at level of dorsal end of gill opening, the other in line with pectoral-fin base; 4 blue-green bars of upper series with dorsal extension to dorsal-fin base; chest mainly blue, continuing as stripe across lower part of abdomen; head blue-green to blue ventrally with 4 short salmon-pink bands above eye, long irregular band from snout through lower part of eye and across opercle, and one on lower cheek behind salmon-pink spot at corner of mouth; large dark purplish blue area covering most of dorsal part of opercle, and another over most of caudal fin, fin margins green. Juvenile (4.5 cm TL) pale blue with 2 irregular black stripes (one dorsal, one midlateral); orange line along lower side at level of pectoral-fin base with 6 long blackish dashes; bluish black spot covering most of 2nd dorsal-fin membrane, with orange-red rim. Attains 18 cm TL.

DISTRIBUTION WIO: Oman.

REMARKS The most abundant inshore wrasse on the southern coast of Oman; rare in the Gulf of Oman, where it has been observed only as juveniles. Closely related to *Thalassoma cupido* (Temminck & Schlegel 1845) of Japan and Taiwan.

Thalassoma lunare (Linnaeus 1758)

Moon wrasse

PLATE 100

Labrus lunaris Linnaeus (ex Gronovius) 1758: 283 ('in Indiis').

Scarus gallus Forsskål 1775: 26, x (Al-Luhayya, Yemen, Red Sea)

Labrus zeylanicus Forster 1781: 24, Pl. 13, Fig. 3 (Sri Lanka).

Trichopus arabicus Shaw 1803: 390 (Al-Luhayya, Yemen, Red Sea).

Julis porphyrocephala Bennett 1833: 183 (Sri Lanka).

Julim lutescentem Bennett 1833: 184 (Sri Lanka).

Julis lunaris: Rüppell 1835; Valenciennes *in* Cuv. & Val. 1839; Playfair & Günther 1867; Gilchrist & Thompson 1908.

Julis trimaculatus Rüppell 1835: 13 (Massawa, Eritrea, Red Sea)

[preoccupied by *Julis trimaculatus* Quoy & Gaimard 1834 = *Halichoeres trimaculatus*].

Julis meniscus Valenciennes *in* Cuv. & Val. 1839: 415 (Seychelles; 'seas of India'; Macao).

Thalassoma lunare: Barnard 1927; Baissac 1953; Smith 1957; Smith & Smith 1963*; SFSA No. 777*; Harmelin-Vivien 1976; Jones & Kumaran 1980; Randall 1983*, 1992*, 1995*; Gomon *in* Fischer & Bianchi 1984; SSF No. 222.62*; Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994*;

Carpenter *et al.* 1997; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Julis cupido var. *bipunctatum* Vasilii 1931: 349, Pl. 10, Fig. 11 (Sri Lanka).

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 15 rays. Body depth 3.1–3.7 in SL; caudal fin truncate in

juveniles to strongly lunate in terminal male, caudal concavity subequal to HL. GR 18–20. LL scales 25.

Initial phase green, with vertical pink to magenta lines on scales; head with pink bands radiating from eye; scythe-shaped pink band ventrally on head from corner of mouth across cheek, enclosing oblique band of the same colour below; chest crossed by pink bands that link to bands on opercle, lowermost continuing on abdomen to anal-fin origin; dorsal and anal fins green with pink stripe; lobes of caudal fin with blue-edged pink bands enclosing large semicircular bright yellow region; pectoral fins blue-green with broad pink band. Terminal male with same basic colour pattern, but green largely replaced by bright blue, and pink by magenta or purple; suffusion of blue over the head and nape of large males almost obliterates pattern of bands. Juveniles green with vertical orange-pink lines, pale blue ventrally, often with 6 short pale blue-green bars dorsally on body; black spot as large or larger than eye at midcaudal-fin base, and large black ocellus in front of soft-rayed portion of dorsal fin; deep pink bands on head fully formed on large juveniles. Attains 25 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Persian/Arabian Gulf, Red Sea, Tanzania to South Africa (Transkei region), Comoros, Maldives, Seychelles, Réunion, Mauritius, Chagos, Lakshadweep and Sri Lanka; elsewhere to Andaman Sea, Cocos (Keeling) Is., Macao, Ryukyu Is., Australia, Tonga and Line Is.

REMARKS Occurs on rocky and coral reefs, including silty areas of dead reefs, to at least 20 m deep. A bold, opportunistic fish that preys mainly on benthic invertebrates and occasionally on small fishes; often follows divers, taking advantage of prey exposed by their habitat disturbance.

Thalassoma lutescens (Lay & Bennett 1839)

Sunset wrasse

PLATE 100

Julis lutescens Lay & Bennett (ex Solander) 1839: 65, Pl. 19, Fig. 2 (Tahiti, Society Is.).

Thalassoma lutescens: Jordan & Snyder 1907; Allen & Steene 1988*; Allen & Smith-Vaniz 1994; Randall 1995*; Lieske & Myers 2004.

Dorsal fin 8 spines, 13 or 14 rays; anal fin 3 spines, 11 rays; pectoral fins 15–17 rays. Body depth 3–3.5 in SL; caudal fin slightly rounded in juveniles to lunate with elongate lobes in large terminal male. GR 20–23. LL scales 25.

Initial phase yellow to yellowish green, with vertical pink to magenta lines on body; head greenish yellow, with 5 longitudinal curved pink bands; median fins greenish yellow, dorsal fin with pink stripe near base, anal fin with pink stripe

at base, and caudal fin with pink upper and lower margins. Terminal male green, with vertical magenta lines, becoming blue with purple vertical lines in front of zone under pectoral fin; head pink with suffusion of purple dorsally, and narrow blue-edged green bands (3 behind eye, 2 in front of eye, joining broad median green zone on chin, snout, and continuing to nape, and 2 bands on cheek that join anteriorly); median fins green with magenta bands; pectoral fins bright yellow with broad outer deep blue border. Juveniles with dorsal half of head and body greenish yellow, lower half white; black stripe from series of black spots, one per scale, in middle of body marginal to white zone, disappearing on peduncle but followed by black spot on caudal-fin base; narrow dull yellow stripe on body at level of lower pectoral-fin base, extending onto head; 3 irregular orange-pink bands extending back from eye; small black spot mid-dorsally near tip of snout; fins greenish yellow. Attains 25 cm TL.

DISTRIBUTION Indo-Pacific. WIO: southern Oman, Gulf of Aden, Kenya and Tanzania; elsewhere widespread to Christmas I., Cocos (Keeling) Is., southern Japan, Australia, Great Barrier Reef, Pitcairn Is., French Polynesia and Hawaii, but not known from Indonesia or Philippines (Allen & Erdmann 2012).

REMARKS Found on coral reefs and adjacent habitats, in 1–30 m. Feeds mainly on molluscs, polychaete worms, brittlestars and sea urchins (Randall 2007).

Thalassoma purpureum (Forsskål 1775)

Surge wrasse

PLATE 101

Scarus purpureus Forsskål in Niebuhr 1775: 27, x (Jeddah, Saudi Arabia, Red Sea).

Julis semicoeruleus Rüppell 1835: 10, Pl. 3, Fig. 1 (Jeddah, Saudi Arabia, Red Sea).

Julis umbrostigma Rüppell 1835: 11, Pl. 3, Fig. 2 (Jeddah, Saudi Arabia, Red Sea).

Julis aeruginosus Valenciennes in Cuv. & Val. 1839: 441 (Mauritius, Mascarenes).

Scarus georgii quarti Bennett 1851: no page number, Pl. 34 (Sri Lanka).

Julis purpurea: Day 1877.

Thalassoma purpureum: Jenkins 1903; Gilchrist & Thompson 1917; Barnard 1927; Baissac 1953; Smith 1957*; SFSA No. 779*; Harmelin-Vivien 1976; Van der Elst 1981*; Randall 1983*, 1992*; Gomon in Fischer & Bianchi 1984; SSF No. 222.63*; Winterbottom *et al.* 1989*; Allen & Smith-Vaniz 1994; Field & Field 1998*; Heemstra *et al.* 2004; Heemstra & Heemstra 2004*; Lieske & Myers 2004.

Julis umbrostigma: Gilchrist & Thompson 1908.

Thalassoma semicoeruleus: Smith & Smith 1963*; SFSA No. 779a.

Thalassoma umbrostigma: Smith & Smith 1963*; Jones & Kumaran 1980.

Thalassoma purpurea: Jones & Kumaran 1980.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 15 or 17 rays. Body depth 2.8–3.6 in SL, deeper-bodied with growth; caudal fin of initial phase slightly rounded to truncate, of terminal males truncate to slightly double emarginate with slightly produced lobes, particularly the upper. GR 20–25. LL scales 26.

Initial phase green, with 3 pink stripes on body overlaid by 6 squarish dark blotches and vertical series of pink lines with spindle-shaped dark brown spots; head with irregular bands, dark red dorsally, pink ventrally, one on snout forming diagnostic V- or Y-shape. Terminal male blue-green, with 2 irregular pink stripes on side of body that narrow posteriorly; irregular magenta to violet band dorsally on body continuous with irregular pink band dorsally on head ending in eye; large, irregular pink band, shaped like claw extending back from eye, and large diagnostic V-shaped pink spot on snout; median fins blue, dorsal and anal fins with pink stripe near base. Attains 43 cm TL.



Thalassoma purpureum, 7 cm SL (Rodrigues). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific to tropical eastern Pacific. WIO: Red Sea, Kenya to South Africa (Algoa Bay), Seychelles, Mascarenes, Chagos, Maldives and Sri Lanka; elsewhere to Christmas I., Indonesia, Japan, Australia, Lord Howe I., Hawaii and Easter I.

REMARKS Occurs inshore on reefs and along rocky shores exposed to wave action; may be seen in surprisingly shallow water for so large a fish. Randall (1985) examined the stomach contents of adult specimens and found sea urchins and heart urchins, crabs and other crustaceans, fishes, gastropods and gastropod eggs, brittlestars, bivalves, damselfish eggs and starfish.

Thalassoma quinquevittatum

(Lay & Bennett 1839)

Fivestripe wrasse

PLATE 101

Julis coris Lesson 1828: 404 (Caroline Is.) [*nomen oblitum*: Randall & Parenti 1999].

Scarus quinquevittatus Lay & Bennett 1839: 66, Pl. 19, Fig. 3 (Ryukyu Is., Japan).

Thalassoma quinquevittatus: Smith 1957*; SFSA No. 782b.

Thalassoma quinquevittatum: SSF No. 220.64*; Winterbottom *et al.* 1989*; Randall 1992*; Randall & Van Egmond 1994; Fricke 1999; Kemp 2000; Lieske & Myers 2004.

Thalassoma quinquevittata: Jones & Kumaran 1980; Gomon *in* Fischer & Bianchi 1984.

Thalassoma purpureum (*non* Forsskål *in* Niebuhr 1775): Allen & Steene 1987*.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 16 (rarely 15 or 17) rays. Body depth 3.2–3.6 in SL; caudal fin slightly rounded in juveniles to emarginate in adults. GR 20–25. LL scales 25.

Initial phase green, sometimes white ventrally, with 2 deep pink stripes on upper side (the 2nd stripe midlateral), linked by narrow bands of same colour; lower edge of 2nd stripe with numerous thin ventral extensions; head deep pink, sometimes with wash of violet dorsally, with 4 narrow green bands radiating from eye, and near-semicircular arc on cheek, convex upper end almost to ventral edge of orbit; oblique orange to deep pink band on chest, with similar, shorter band on abdomen; dorsal fin green with blue-edged black spot on 2nd spinous membrane, followed by rose-pink stripe; anal and paired fins pale blue-green; caudal fin with large semicircular pale orange area centroposteriorly, lobes with narrowing deep pink band, narrowly bordered with green. Terminal male with same basic pattern, dorsal stripe on body purple, midlateral stripe magenta; some individuals with yellow mixed with the green on side of body; cheek below curved green band lavender-pink. Juveniles with upper pink stripe as series of close-sets vertical bands, 2nd in zigzag pattern; head with broad purple band on side of snout, and 2 parallel deep pink bands extending back from eye; dorsal fin with anterior, posterior, and larger middle black spot. Attains 17 cm TL.

DISTRIBUTION Indo-Pacific. WIO: Gulf of Aden, Mozambique, South Africa (Transkei region), Comoros, Mascarenes and Chagos; elsewhere to Christmas I., Indonesia, Ryukyu Is., Caroline Is., Australia, Tuamotu Is., Line Is., Marshall Is. and Hawaii.

REMARKS Found to ~40 m deep, usually in <10 m. Kemp (2000) observed spawning at Sikha I., Gulf of Aden, in 0.5–3 m.

Thalassoma rueppellii (Klunzinger 1871)

Rüppell's wrasse

PLATE 101

Julis purpureus (*non* Forsskål *in* Niebuhr 1775): Rüppell 1828.

Julis rueppellii Klunzinger 1871: 536 (Al-Qusayr, Egypt, Red Sea).

Thalassoma klunzingeri Fowler & Steinitz 1956: 278, Fig. 24 (Eilat, Israel, Gulf of Aqaba, Red Sea); Randall 1983*; Field & Field 1998*.

Thalassoma rueppellii: Dor 1984; Allen & Steene 1987* [*as ruppellii*]; Lieske & Myers 2004.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins 15 or 16 (rarely 15) rays. Body depth 3.3–3.7 in SL; caudal fin slightly rounded in juveniles, to truncate or slightly emarginate in initial phase, and lunate in terminal males, caudal concavity at least ½ HL. GR 19–23. LL scales 24–26.

Initial phase pale green on upper half of body, white below, grading to pale blue-green ventrally, with violet stripe from nape, below dorsal fin, to dorsally on peduncle, orange-pink midlateral stripe with irregular borders, breaking into spots anteriorly, lavender-pink stripe at level of lower pectoral-fin base, crossing abdomen and disappearing above middle of anal fin; body between upper and midlateral stripes crossed by ~20 narrow magenta bars, except posteriorly; body between midlateral and lower stripes white; oblique deep pink band from middle of chest onto abdomen; head yellowish green, with deep pink bands broader than green interspace: short oblique band above eye; band on side of snout, expanding anteriorly; 2 bands curved posteriorly from eye, uppermost ending dorsally at pectoral-fin base, and 2 bands on cheek strongly curved ventrally; median fins pale blue-green, dorsal fin with median orange-pink stripe, anal fin with lavender-pink basal stripe, and caudal fin with lavender-pink band in each lobe. Terminal male pale blue-green overall, upper and lower stripes reduced or missing, deep pink bands on head more irregular, and median fins dominantly greenish yellow. Attains 17 cm TL.

DISTRIBUTION WIO: endemic to Red Sea.

REMARKS Occurs on coral reefs and adjacent habitats, to ~20 m deep. Feeds mainly on benthic invertebrates, occasionally on small fishes. Relatively unafraid of divers and attracted to the disturbances they often make to the substrate. Rüppell (1828) misidentified this species as *Julis purpureus* (Forsskål 1775). Klunzinger (1871) recognised the mistake and proposed a new name, *Julis rüppellii*. However, Bennett (1831) had used the name *Julis rueppellii* for another wrasse. In a review of Indo-Pacific species of *Thalassoma*, Randall & Edwards (1984) considered Klunzinger's name a homonym and used *Thalassoma klunzingeri* for the species. However, rüppellii is not a homonym of rueppellii (spelling must be identical), so the latter is the valid name. Randall & Miroz (2001) described a hybrid of *T. lunare* and *T. rueppellii*.

Thalassoma trilobatum (Lacepède 1801)

Ladder wrasse

PLATES 101 & 102

Labrus fuscus Lacepède (ex Commerson) 1801: 437, 493 (Indo-Pacific, probably Mauritius) [objectively invalid; preoccupied by *Labrus fuscus* Gmelin 1789 and *Labrus fuscus* Walbaum 1792 = *Symphodus mediterraneus* (Linnaeus 1758)].

Labrus trilobatus Lacepède (ex Commerson) 1801: 454, 526, Pl. 4, Fig. 3 (Mauritius, Mascarenes).

Sparus hemisphaericus Shaw 1803: 454, Pl. 66 (Indian seas).

Sparus brachiatus Shaw 1803: 456 (Indian seas).

Julis bicatenatus Bennett 1832: 167 (Mauritius, Mascarenes).

Julis trilobatus: Valenciennes in Cuv. & Val. 1839; Gilchrist & Thompson 1909.

Julis formosus Valenciennes in Cuv. & Val. 1839: 439 (Mauritius, Mascarenes); Guichenot 1863.

Julis souleyetii Valenciennes in Cuv. & Val. 1839: 457 (Mauritius, Mascarenes; Hawaii).

Julis abhortani Valenciennes in Cuv. & Val. 1839: 459 (Mauritius, Mascarenes).

Julis trilobata: Günther 1862; Playfair & Günther 1867; Sauvage 1891.

Thalassoma fuscus: Baissac 1953; Smith 1957*; Smith & Smith 1963*; SFSA No. 782*.

Thalassoma fuscum: Van der Elst 1981*; Gomon in Fischer & Bianchi 1984.

Thalassoma trilobatum: Randall & Edwards 1984*; SSF No. 220.65*;

Allen & Smith-Vaniz 1994; De Bruin *et al.* 1994; Heemstra & Heemstra 2004; Allen *et al.* 2006.

Dorsal fin 8 spines, 13 rays; anal fin 3 spines, 11 rays; pectoral fins usually 16 (rarely 15 or 17) rays. Body depth 3.1–3.4 in SL; caudal fin of initial phase slightly rounded to truncate, of terminal males truncate to slightly double emarginate. Total GR 18–24. LL scales 25.

Initial phase green, reduced on sides to 2 longitudinal series of close-set, vertically elliptical, green spots corresponding to scale rows, separated by dusky pink with numerous spindle-shaped dark brown spots; 6 narrow green bars connect upper series of green spots to dorsal-fin base; head green with numerous small spots and irregular bands (dark red dorsally, pink ventrally), one on snout in irregular C-shape, usually continuing as irregular narrow band across cheek. Terminal male salmon-pink to orange or red with 2 longitudinal rows of close-set, vertically elongate, subrectangular green to blue-green spots on side; 4 green spots of upper row with dorsal extensions linking to irregular green band at dorsal-fin base; head and chest orange to orange-brown without markings; head sometimes overlaid dorsally with green; caudal fin olivaceous to brownish orange, with narrow blue upper and lower margins, outer third of rays blue. Attains 28 cm TL.



Thalassoma trilobatum, 18 cm SL (South Africa). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Kenya to South Africa (Transkei region), Madagascar, Mascarenes and Chagos; elsewhere to Christmas I., Indonesia, Ryukyu Is., Marshall Is., Australia, Polynesia and Hawaii.

REMARKS An active shallow-water fish of exposed rocky shores, but generally occurs in slightly deeper and less turbulent waters than the similar *T. purpureum*. Feeds mainly on crustaceans (especially crabs), molluscs and ophiuroids (Randall & Edwards 1984).

GENUS *Wetmorella* Fowler & Bean 1928

Dorsal fin 9 spines, usually 10 (rarely 11) rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Teeth conical, slightly compressed, close-set, in single row in jaws, those at front slightly recurved; no canine at corners of mouth. Body depth 2.5–3.3 in SL, deeper-bodied with growth; head pointed, profile straight to slightly concave; dorsal-fin membranes deeply incised; caudal fin rounded and short, 1.4–1.9 in HL; pelvic fins short, not extending to anus. GR 11–17, short. Scales large and deciduous; lateral line interrupted, with 13–15 + 5–7 scales; head covered with large scales, except extreme front and sides of snout; preopercle margin scaly; row of large scales basally on dorsal and anal fins; basal two-thirds of caudal fin covered by scales.

Randall (1983) revised the genus, recognising only 2 species: *W. albofasciata* Schultz & Marshall 1954 and *W. nigropinnata* (Seale 1901). However, he documented differences between the Pacific and WIO populations of *W. nigropinnata*, including a modal difference of 1 GR. Additional material and colour photographs, plus noting the consistent concave dorsal profile of the head of WIO specimens, led to the conclusion that the populations should be treated as separate species. Satapoomin *in* Kimura *et al.* (2009) illustrated only *W. nigropinnata* from the Andaman Sea, and Hutchins (2001) listed only *W. nigropinnata* in a checklist of fishes of Western Australia. The Pacific and eastern Indian Ocean population retains the oldest name, *W. nigropinnata* (type locality Guam), and the WIO population is *W. bifasciata* Schultz & Marshall 1954 (type locality Sudan). Randall & Kuitert (2007) added a fourth species, *W. tanakai* Randall & Kuitert 2007, from Indonesia and the Philippines, thus 4 Indo-Pacific species; 2 in WIO. Several authors have noted the resemblance of *Wetmorella* adults to juveniles of *Cheilinus fasciatus* and *Epibulus insidiator*.

KEY TO SPECIES

- 1a Body of adults dark brown, with 4 narrow white bands (from 2nd dorsal-fin spine to mid-abdomen; short band from base of 7th dorsal-fin spine; oblique band from midbase of soft-rayed portion of anal fin to anterior of fin; last band across peduncle); body depth 2.8–3.3 in SL; longest dorsal-fin spine 1.9–2.3 in HL; 3rd anal-fin spine 2–2.3 in HL *W. albofasciata*
- 1b Body of adults red to reddish brown, with narrow pale yellowish bar anteriorly on peduncle, and curved yellow line from nape to lower corner of opercle, touching eye with its convex anterior edge; body depth 2.6–3.2 in SL; longest dorsal-fin spine 1.7–2.1 in HL; 3rd anal-fin spine 1.8–2.1 in HL *W. bifasciata*

Wetmorella albofasciata Schultz & Marshall 1954

Whitebanded sharpnose wrasse

PLATE 102

Wetmorella philippina Fowler & Bean 1928: 211, Pl. 17 (Zamboanga, Philippines) [in part].

Wetmorella albofasciata Schultz & Marshall 1954: 446, Pl. 12e (Mabul I., Malaysia); Smith 1955*; Randall 1983*; Randall & Anderson 1993; Allen *et al.* 2006.

Dorsal fin 9 spines, 10 (rarely 11) rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 2.8–3.3 in SL; HL 2.4–2.6 in SL; head profile straight from upper lip to above eyes, then slightly convex on nape; snout length 3.2–3.4 in HL; eyes subequal to snout length; longest dorsal-fin spine 1.9–2.3 in HL; 3rd anal-fin spine 2–2.3 in HL. GR 11–16, short. LL scales 13–15 + 5–7.

Body dark reddish to yellowish brown, with narrow white bar from 2nd dorsal-fin spine to mid-abdomen; large ocellated black spot in front of soft-rayed portions of dorsal and anal fins; narrow oblique white band rimming rear edge of dorsal-fin black spot and crossing body obliquely to outer half of 2nd anal-fin spine; white line across peduncle; head with 2 curved white lines passing through each eye, one from upper lip to nape, other from behind corner of mouth to pelvic-fin origin; caudal fin mostly translucent, with brown rays, brown at base, and broad blackish bar on most of outer half of fin, followed by narrow translucent zone and narrow white margin; pelvic fins largely covered by reddish black spot, with small white spot at fin origin and on outer white margin. Attains 4.5 cm TL.



Wetmorella albofasciata, 4 cm SL (Comoros). PC Heemstra © NRF-SAIAB

DISTRIBUTION Indo-Pacific. WIO: Tanzania (Mafia I.), Comoros, Aldabra, Agalega Is. and Maldives; elsewhere to Malaysia, Philippines, Christmas I., Society Is. and Hawaii.

REMARKS Known from relatively few records; collected mainly from caves or beneath ledges in coral reefs, in 10–42 m (mostly >30 m). Rarely seen by divers.

Wetmorella bifasciata Schultz & Marshall 1954

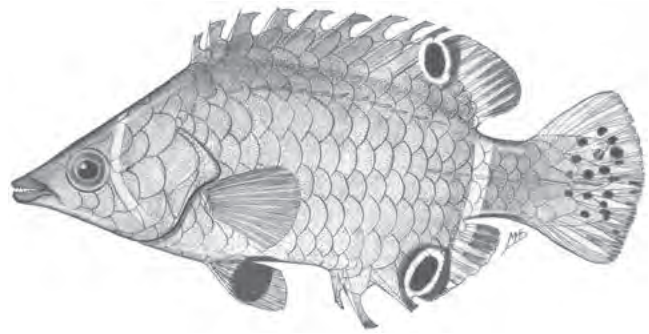
Western sharpnose wrasse

PLATE 102

- Wetmorella philippina* Fowler & Bean 1928: 211, Pl. 17 (Zamboanga, Philippines) [in part]; Smith 1952, 1955*, 1957*; Smith & Smith 1963*.
Wetmorella philippina bifasciata Schultz & Marshall 1954: 441, Pl. 12a–b (Suakin, Sudan, Red Sea); Dor 1984.
Wetmorella ocellata (non Schultz & Marshall 1954): Harmelin-Vivien 1976.
Wetmorella nigropinnata (non Seale 1901): Randall 1983*;
 Winterbottom *et al.* 1989*; Randall & Anderson 1993*; Field & Field 1998*; Fricke 1999; Heemstra *et al.* 2004; Lieske & Myers 2004.

Dorsal fin 9 spines, 10 (rarely 11) rays; anal fin 3 spines, 8 rays; pectoral fins 12 rays. Body depth 2.6–3.2 in SL; HL 2.4–2.6 in SL; head profile and nape slightly concave on anterior two-thirds, straight on posterior third; snout length 3–3.4 in HL; eye diameter in adults slightly less than snout length; longest dorsal-fin spine 1.7–2.1 in HL; longest anal-fin spine 1.8–2.1 in HL. GR 12–16, short. LL scales 13–15 + 5–7.

Body red to reddish brown, with narrow pale greenish yellow bar at anterior end of peduncle; convexly curved yellow line across head, anterior central part contacting rear edge of eyes; juveniles and subadults with 2 white bars across body, one from base of 2nd dorsal-fin spine, one from base of 8th dorsal-fin spine, sometimes persisting in small adults; blue-edged black spot broadly rimmed in pale orange-red distally in anterior parts of soft-rayed dorsal and anal fins; cluster of small black spots centrally in rear part of caudal fin; snout orange-red, white ventrally; pelvic fins bluish white, almost covered by large reddish black spot. Attains 8 cm TL.



Wetmorella bifasciata, 8 cm TL (WIO). Source: Smith & Smith 1963

DISTRIBUTION WIO: Red Sea, Gulf of Aden to Mozambique and islands of WIO; elsewhere, Philippines.

REMARKS Cryptic on sheltered rocky or coral reefs; often found as shallow as 1 m, but reported to 30 m deep. Rarely seen by divers, and only fleetingly.

GENUS *Xyrichtys* Cuvier 1815

Questionably present in WIO. Steindachner (1861) described *Xyrichtys argentimaculata* as a new species of razorfish from the Cape of Good Hope, South Africa, but this was probably a locality error for Mediterranean *Xyrichtys novacula* (Linnaeus 1758). Dor (1970) mistakenly reported “*Hemipteronotus javanicus* (Bleeker 1862)” from the Gulf of Aqaba based on a single specimen (~11 cm SL) with the following data: dorsal fin 9 spines, 12 rays; anal fin 3 spines, 12 rays; pectoral fins 12 rays; LL scales 18 + 5, each with single pore; head naked, except for 2 scales dorsally on opercle; preopercle rounded; length of dorsal-fin spines equal to eye diameter (spines increasing slightly in size posteriorly), soft rays longer, equal to postorbital HL; pectoral fins subequal to pelvic fins, ending before anus; caudal fin slightly rounded; 2 prominent canines at front in both jaws; maxillary teeth conical, in several rows; lower GR 14. Preserved specimens reddish brown; anal fin with 17 oblique dark bands; caudal fin with 7 transverse bands.

Unfortunately, Dor’s specimen has been lost; nevertheless, his drawing conforms to a *Xyrichtys*, perhaps a vagrant *X. novacula* (see Plate 102) from the Mediterranean Sea via the Suez Canal. Without additional specimens, the presence of *Xyrichtys* in the Red Sea cannot be confirmed.

Randall & Bauchot (1993) recommended that the labrid genus *Hemipteronotus* Lacepède be suppressed to preserve the names *Naucrates* and *Xyrichtys*; this was approved by Opinion 1799 of the International Commission on Zoological Nomenclature.

GLOSSARY

brachyuran crabs – typical crabs with the abdomen folded in under the thorax/carapace.

exserted (rays) – elongate; protruding.

foraminifera – single-celled organisms with shells of various minerals, the shells with many tiny holes; may be planktonic or benthic.

homonym – two organisms with the same name, of which the younger name is invalid.

pharyngeal plates – the bones in the pharynx that carry teeth.

plicate (lips) – with pleat-like folds.

scleral cornea of pupil – the transparent outer layer of the eye overlying the pupil.

sipunculids – a group of unsegmented marine worms that live in burrows or discarded shells; some bore into rock or coral. Also called peanut worms.

tanais – a small order of shrimp-like Crustacea, the Tanaidacea.

The taxonomic status of parrotfishes

David R Bellwood

The taxonomic status of the parrotfishes and wrasses is one of the most contentious issues in the field of systematic ichthyology. It underscores the practical limitations of phylogenetic systematics and its potential inability to provide classifications that are of use to ecologists and people who work with living fishes. It seems evident that parrotfishes and wrasses are distinctly different: the former are herbivores with beak-like jaws, the latter are carnivores with individual teeth. However, a cladistic or phylogenetic approach becomes problematic. The early morphological analyses of BC Russell (presented at the 3rd International Conference on the Systematics and Evolution of Indo-Pacific Fishes, Wellington, New Zealand, in 1989) suggest that parrotfishes may be highly modified wrasses. Morphological evidence for the monophyly of parrotfishes by Bellwood (1994) shows the parrotfishes to be distinct, but that work did not resolve the broader question of the status of the Labridae *sensu lato*.

The placement of parrotfishes within the Labridae was first proposed by Westneat & Alfaro (2005) based on molecular evidence. This placement has been supported by subsequent studies (e.g., Cowman *et al.* 2009; Near *et al.* 2013). In these schemes, the parrotfishes are designated as tribe Scarini within the family Labridae, together with the Cheilini, Labrini, Hypsigenyini, etc. (The alternative scenario, with the Labridae split into 8 or more families has, thankfully, never been suggested.) There are currently two schools of thought: those who base classifications on the results of the molecular phylogenies

following Westneat & Alfaro (2005) (e.g., Cowman & Bellwood 2011; Choat *et al.* 2012), and those who prefer the traditional taxonomic divisions with the Scaridae and Labridae as separate families (e.g., Allen & Erdman 2012; Randall & Parenti 2014). Both approaches have advantages. Placement of the scarines within the Labridae more accurately reflects evolutionary relationships, whereas the division of the Scaridae and Labridae seems to more accurately reflect the fishes as they are physically encountered in nature.

This taxonomic instability has led to a plethora of terms: in the new school ‘parrotfishes’ (Labridae) or ‘scarine labrids’ vs. the old school ‘scarids’ (Scaridae, and potentially the Scarinae and Sparisomatinae: subfamilies within the Scaridae). There is collective agreement that parrotfishes are distinct from wrasses, and that within the parrotfishes there are two groups or clades (cf. Streebman *et al.* 2002) — namely the seagrass-associated parrotfishes and the reef-associated parrotfishes. The former group matches the old Sparisomatinae (comprised of *Nicholsina*, *Cryptotomus*, *Sparisoma*, *Leptoscarus* and *Calotomus*), and the latter group the Scarinae (*Cetoscarus*, *Bolbometopon*, *Scarus*, *Chlorurus* and *Hipposcarus*). Indeed, this scheme may offer the most parsimonious solution: parrotfishes and wrasses recognised as two separate groups (not families, nor clades) within the Labridae. Lastly, it is a testament to the importance of the parrotfishes that their names and taxonomic status elicit so much concern.

Family **LABRIDAE**, Wrasses



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Anampses caeruleopunctatus, bluespotted tamarin, female (Seychelles).

Anampses caeruleopunctatus, bluespotted tamarin, male (Gulf of Aqaba).



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Anampses lineatus, lined tamarin, female (Maldives).

Anampses lineatus, lined tamarin, 2 cm TL, juvenile (Mauritius).



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Anampses lineatus, lined tamarin, male (Maldives).

Anampses meleagrides, yellowtail tamarin, female (Gulf of Aqaba).



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Anampses meleagrides, yellowtail tamarin, male (Red Sea).

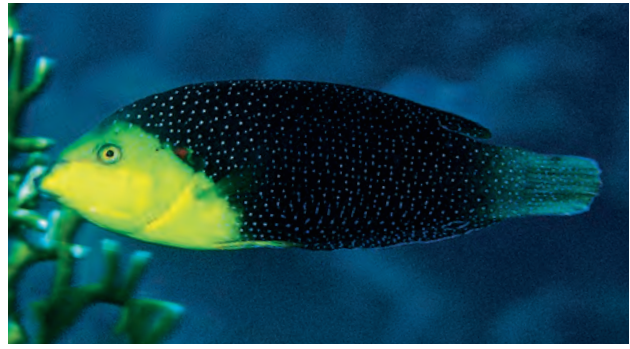
Anampses twistii, yellowbreasted tamarin, juvenile (Red Sea).

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Anampses twistii, yellowbreasted tamarin, female (Red Sea).



© E. Lieske

Anampses twistii, yellowbreasted tamarin, male (Red Sea).



© DR King

Anchichoerops natalensis, Natal wrasse (South Africa).



Source: CFA

Anchichoerops natalensis, Natal wrasse, 58 cm TL (South Africa).



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Bodianus anthioides, lyretail hogfish, juvenile (Maldives).



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Bodianus anthioides, lyretail hogfish, adult (Red Sea).



© DR King

Bodianus atrolumbus, blackside hogfish, ~30 cm TL (South Africa).



© DR King

Bodianus atrolumbus, blackside hogfish, 28 cm TL (South Africa).

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Bodianus axillaris, turncoat hogfish, female (Gulf of Aqaba).



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Bodianus axillaris, turncoat hogfish, juvenile (Maldives).



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Bodianus axillaris, turncoat hogfish, male (Maldives).



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Bodianus bilunulatus, saddleback hogfish, juvenile (Seychelles).



© A. Sutton

Bodianus bilunulatus, saddleback hogfish, adult (Tanzania).



© J. Dench

Bodianus bilunulatus, saddleback hogfish, adult (South Africa).



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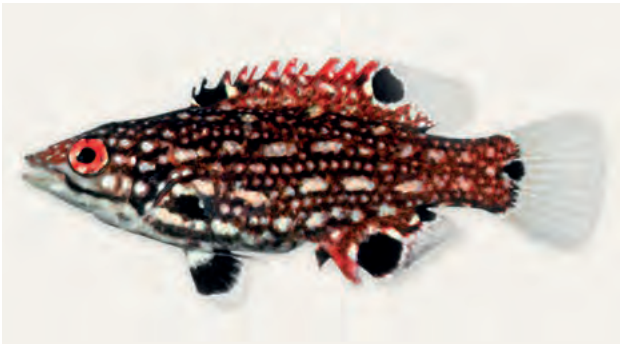
Bodianus bimaculatus, twospot hogfish, 8 cm SL (South Africa).



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Bodianus bimaculatus, twospot hogfish, adult (Mauritius).

Family **LABRIDAE**, Wrasses



© R Winterbottom, ROM

Bodianus diana, Diana's hogfish, 4 cm SL, juvenile (Comoros).



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Bodianus diana, Diana's hogfish, adult (Maldives).



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Bodianus diana, Diana's hogfish, large juvenile (Maldives).



© R-H Chang

Bodianus leucosticticus, lined hogfish, 13 cm SL (Taiwan).



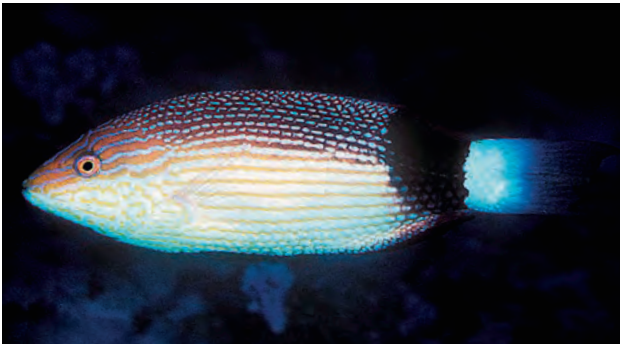
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Bodianus macrognathos, giant hogfish, 13 cm SL, juvenile (Oman).



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Bodianus macrognathos, giant hogfish (S Oman).



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Bodianus macrourus, black-banded hogfish (Mauritius).



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Bodianus neilli, Neill's hogfish, 16 cm TL (Sri Lanka).

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Bodianus neilli, Neill's hogfish, 5 cm SL, juvenile (Sri Lanka).



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Bodianus neilli, Neill's hogfish (Andaman Sea).



© R.F. Myers

Bodianus opercularis, red-striped hogfish (Gulf of Aqaba).



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Bodianus tanyokidus, ear-ring hogfish, 15 cm SL (Mauritius).



© P. Timm

Bodianus trilineatus, threeline hogfish, TP (South Africa).



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Cheilinus abudjubbe, abudjubbe, female (Gulf of Aqaba).



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Cheilinus abudjubbe, abudjubbe, male (Gulf of Aqaba).



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Cheilinus chlorourus, floral wrasse, 7 cm TL (Seychelles).

Family **LABRIDAE**, Wrasses



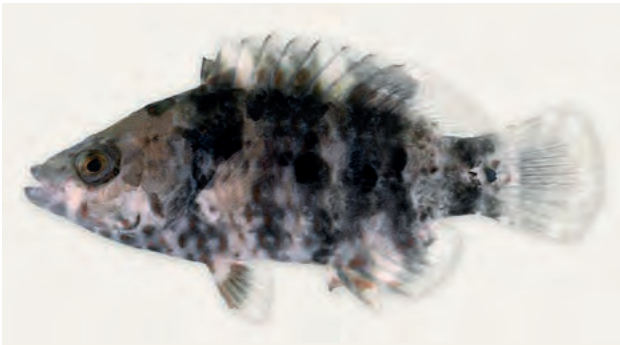
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Cheilinus chlorourus, floral wrasse (Seychelles).



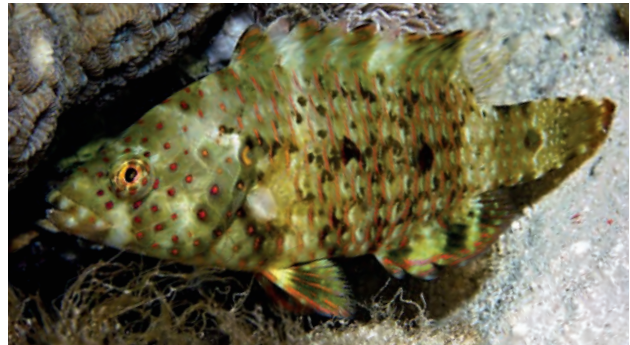
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Cheilinus fasciatus, redbreasted wrasse (Maldives).



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Cheilinus lunulatus, broomtail wrasse, 4 cm SL, juvenile (Oman).



© SV Bogorodsky

Cheilinus lunulatus, broomtail wrasse, juvenile (Red Sea).



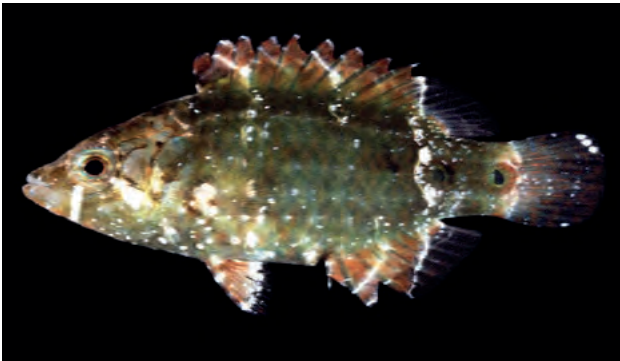
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Cheilinus lunulatus, broomtail wrasse, male (Gulf of Aqaba).



© JE Randall, Bishop Museum

Cheilinus lunulatus, broomtail wrasse (Persian/Arabian Gulf).



© JE Randall, Bishop Museum

Cheilinus oxycephalus, snooty wrasse, 4 cm TL (Coral Sea).



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Cheilinus oxycephalus, snooty wrasse (Maldives).

Family **LABRIDAE**, Wrasses



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Cheilinus quinquecinctus, whitebarred wrasse, 3 cm SL, juvenile (Sudan).



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Cheilinus quinquecinctus, whitebarred wrasse, juvenile (Red Sea).



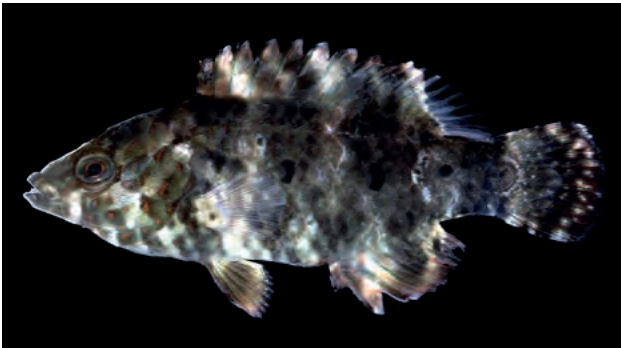
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Cheilinus quinquecinctus, whitebarred wrasse, female (Red Sea).



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Cheilinus quinquecinctus, whitebarred wrasse, male (Red Sea).



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Cheilinus trilobatus, tripletail wrasse, 4 cm SL, juvenile (Indonesia).



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Cheilinus trilobatus, tripletail wrasse, female (Maldives).



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Cheilinus undulatus, humphead wrasse, juvenile (Red Sea).



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Cheilinus undulatus, humphead wrasse (Maldives).

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Cheilinus undulatus, humphead wrasse, male (Red Sea).



© SV Bogorodsky

Cheilio inermis, cigar wrasse, male (Red Sea).



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Cheilio inermis, cigar wrasse (top, Seychelles); 29 cm SL (bottom, Red Sea).



PC-Heemstra © NRF-SAIAB

Choerodon gymnogynys, purple-lined tuskfish, 15 cm SL, female (S Mozambique).



PC-Heemstra © NRF-SAIAB

Choerodon gymnogynys, purple-lined tuskfish, 15 cm SL, male (S Mozambique).



© JE Randall, Bishop Museum

Choerodon robustus, robust tuskfish, 27 cm SL (Gulf of Aqaba).



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Cirrhilabrus africanus, African longfin fairy wrasse, 5 cm SL, male holotype (Kenya) #



PC-Heemstra © NRF-SAIAB

Cirrhilabrus africanus, African longfin fairy wrasse, 5 cm SL, female (South Africa). #

= no species account

Family **LABRIDAE**, Wrasses



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Cirrhilabrus blatteus, purple-boned fairy wrasse, female (Red Sea).



© JE Randall, Bishop Museum

Cirrhilabrus blatteus, purple-boned fairy wrasse, male (Red Sea).



Source: CFSA

Cirrhilabrus exquisitus, exquisite fairy wrasse, 2 cm TL, juvenile (South Africa); 10 cm TL, male (Maldives); 8 cm TL, female (South Africa).



© JE Randall, Bishop Museum

Cirrhilabrus exquisitus, exquisite fairy wrasse, male (Seychelles).



© YK Tea

Cirrhilabrus rubrisquamis, strawberry fairy wrasse, aquarium (Maldives).



© JE Randall, Bishop Museum

Cirrhilabrus rubrisquamis, strawberry fairy wrasse, juvenile (Maldives).



© H Tanaka

Cirrhilabrus rubrisquamis, strawberry fairy wrasse, male (Maldives).



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Cirrhilabrus rubriventralis, social fairy wrasse, female (Red Sea).

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Cirrhilabrus rubriventralis, social fairy wrasse, 6 cm SL, male (Red Sea).



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Cirrhilabrus rubeus, ruby longfin fairy wrasse, 5 cm SL, male paratype (Sri Lanka). #



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Cirrhilabrus sanguineus, red-blotched fairy wrasse, 7 cm SL, male neotype (Mauritius).



© A Driinger

Cirrhilabrus sanguineus, red-blotched fairy wrasse (Réunion).



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Coris aygula, clown coris, female (Red Sea).



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Coris aygula, clown coris, juvenile (Kenya).



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Coris aygula, clown coris, male (Red Sea).



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Coris aygula, clown coris, female (Red Sea).

= no species account

Family **LABRIDAE**, Wrasses



© A. Sutton

Coris caudimacula, spottail coris, male (Tanzania).



© JE Randall, Bishop Museum

Coris caudimacula, spottail coris, 5 cm SL, juvenile (Mauritius).



© JE Randall, Bishop Museum

Coris caudimacula, spottail coris (Kenya).



© JP Hoover

Coris caudimacula, spottail coris (Oman).



© JE Randall, Bishop Museum

Coris caudimacula, spottail coris, male, 12 cm SL (South Africa).



© A. Sutton

Coris caudimacula, spottail coris, female (Tanzania).



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Coris cuvieri, Cuvier's coris, juvenile (Mauritius).



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Coris cuvieri, Cuvier's coris, male (Seychelles).

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Coris formosa, queen coris, female (Red Sea).



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Coris formosa, queen coris, juvenile (Sri Lanka).



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Coris formosa, queen coris, male (Maldives).



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Coris latifasciata, broad-barred coris, female (Maldives).



© JE Randall, Bishop Museum

Coris latifasciata, broad-barred coris, juvenile (Maldives).



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Coris latifasciata, broad-barred coris, male (Maldives).



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Coris nigrotaenia, blackbar coris, 3 cm TL, juvenile (S Oman).



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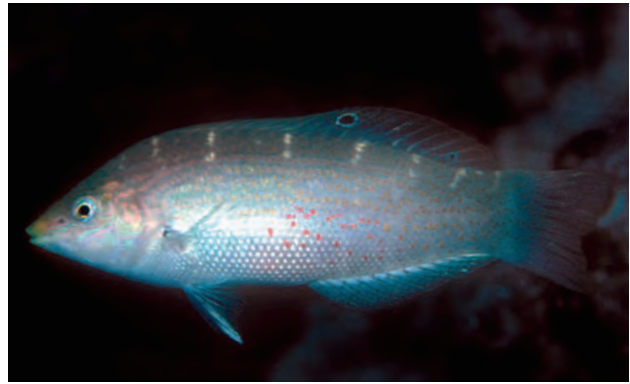
Coris nigrotaenia, blackbar coris, female (Oman).

Family **LABRIDAE**, Wrasses



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Coris nigrotaenia, blackbar coris, 39 cm TL, male (Oman).



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Coris variegata, dapple coris, female (Red Sea).



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Coris variegata, dapple coris, juvenile (Red Sea).



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Coris variegata, dapple coris, male (Red Sea).



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Cymolutes praetextatus, knifefish, 10 cm SL, female (Marshall Is.).



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Cymolutes praetextatus, knifefish, 7 cm SL, male (Maldives).



PC Heemstra © NRF-SAAB

Cymolutes torquatus, collared knifefish, 6 cm SL (Rodrigues).



PC Heemstra © NRF-SAAB

Cymolutes torquatus, collared knifefish, 7 cm SL, female (Mauritius).

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Cymolutes torquatus, collared knifefish, 8 cm SL, male (Kenya).



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Decodon grandisquamis, largescale wrasse (Mozambique).



© H. Sjöholm

Epibulus insidiator, slingjaw wrasse, juvenile (Red Sea).



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Epibulus insidiator, slingjaw wrasse, male (Red Sea).



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Epibulus insidiator, slingjaw wrasse, subadult (Maldives).



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Epibulus insidiator, slingjaw wrasse (Maldives).



© D. Terver

Frontilabrus caeruleus, blue wrasse (Maldives).



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Gomphosus caeruleus, blue bird wrasse, IP (Maldives).

Family **LABRIDAE**, Wrasses



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Gomphosus caeruleus, blue bird wrasse, juvenile (Maldives).



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Gomphosus caeruleus, blue bird wrasse, TP (Seychelles).



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Gomphosus caeruleus, blue bird wrasse, IP (Red Sea).



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Gomphosus caeruleus, blue bird wrasse, juvenile (Red Sea).



© A. Surtton

Gomphosus caeruleus, blue bird wrasse, IP (Tanzania).



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Halichoeres argus, argus wrasse, female (Philippines).



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Halichoeres argus, argus wrasse, male (Philippines).



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Halichoeres cosmetus, adorned wrasse, female (Kenya).

Family **LABRIDAE**, Wrasses



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Halichoeres cosmetus, adorned wrasse, juvenile (Maldives).



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Halichoeres cosmetus, adorned wrasse, male (Maldives).



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Halichoeres dussumieri, bubblefin wrasse, 7 cm SL, female (Sri Lanka).



© J.P. Hoover

Halichoeres dussumieri, bubblefin wrasse (Oman).



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Halichoeres dussumieri, bubblefin wrasse (Sri Lanka).



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Halichoeres dussumieri, bubblefin wrasse, 4 cm SL, juvenile (Singapore).



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Halichoeres dussumieri, bubblefin wrasse, 8 cm SL (Singapore).



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Halichoeres gurrobyi, blacksaddle wrasse, 4 cm SL, IP, holotype (Mauritius). #

= no species account

Family **LABRIDAE**, Wrasses



© M Gurroby

Halichoeres gurrobyi, black saddle wrasse, adults (Mauritius). #



© SV Bogorodsky

Halichoeres hortulanus, checkerboard wrasse, juvenile (Red Sea).



© J.E. Randall, Bishop Museum

Halichoeres hortulanus, checkerboard wrasse, male (Maldives).



© A. Sutton

Halichoeres hortulanus, checkerboard wrasse, female (Tanzania).



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Halichoeres iridis, rainbow wrasse, juvenile (South Africa).



© A. Sutton

Halichoeres iridis, rainbow wrasse, female (Tanzania).



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Halichoeres iridis, rainbow wrasse, 9 cm SL, male (Mauritius).

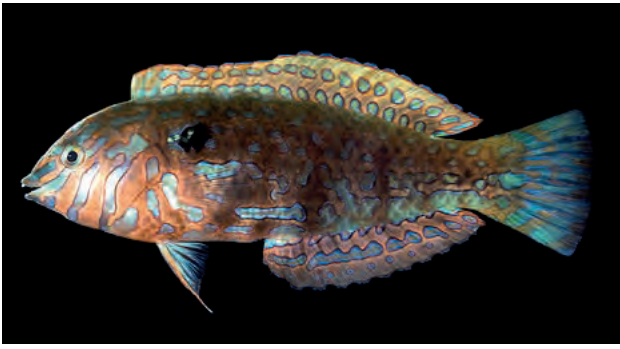


Source: CFSa

Halichoeres lapillus, jeweled wrasse, 12 cm TL, male; 8 cm TL, female (both South Africa).

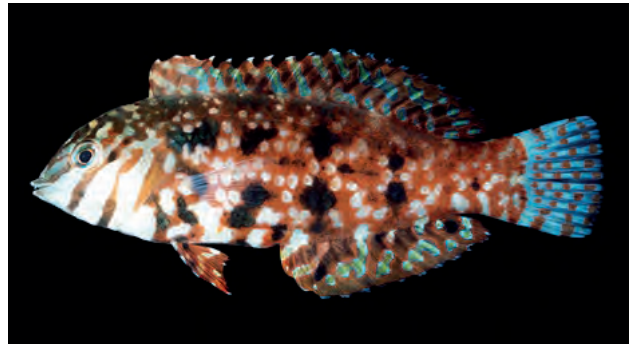
= no species account

Family **LABRIDAE**, Wrasses



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Halichoeres lapillus, jewelled wrasse, 10 cm SL, male (Mauritius).



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Halichoeres lapillus, jewelled wrasse, 7 cm SL, female (Mauritius).



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Halichoeres leptotaenia, thin-striped wrasse, female (Oman).



© J.E. Randall, Bishop Museum

Halichoeres leptotaenia, thin-striped wrasse, subadult (Oman).



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Halichoeres leucoxanthus, yellowback wrasse, female (Andaman Sea).



© J.E. Randall, Bishop Museum

Halichoeres leucoxanthus, yellowback wrasse, male (Maldives).



© A. Ryansky

Halichoeres marginatus, dusky wrasse, female (Red Sea).



© A. Ryansky

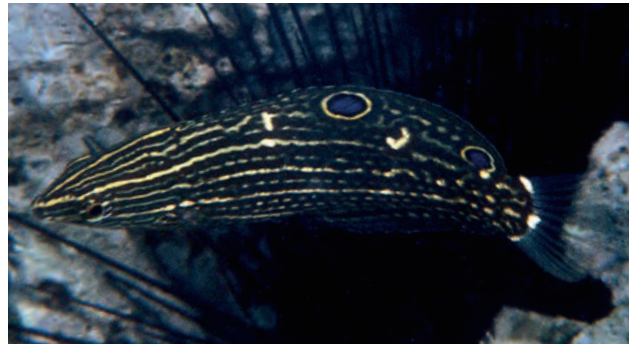
Halichoeres marginatus, dusky wrasse, male (Red Sea).

Family **LABRIDAE**, Wrasses



© J.E. Randall, Bishop Museum

Halichoeres marginatus, dusky wrasse, male (Oman).



© J.E. Randall, Bishop Museum

Halichoeres marginatus, dusky wrasse, juvenile (Red Sea).



© J.E. Randall, Bishop Museum

Halichoeres melas, black wrasse, 15 cm TL, male (Oman).



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Halichoeres nebulosus, picture wrasse, male (Mauritius).



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Halichoeres nebulosus, picture wrasse, female (Mauritius).



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Halichoeres pardaleocephalus, lineblotch wrasse, 13 cm TL, male (SW India).



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Halichoeres pardaleocephalus, lineblotch wrasse, 9 cm TL, female (SW India).



© M. Gurruby

Halichoeres pelicieri, Pelicier's wrasse, male, aquarium (Mauritius).

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© J.E. Randall, Bishop Museum

Halichoeres pelicieri, Pelicier's wrasse (Mauritius).



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Halichoeres scapularis, zigzag wrasse, 8 cm SL, female (Tanzania).



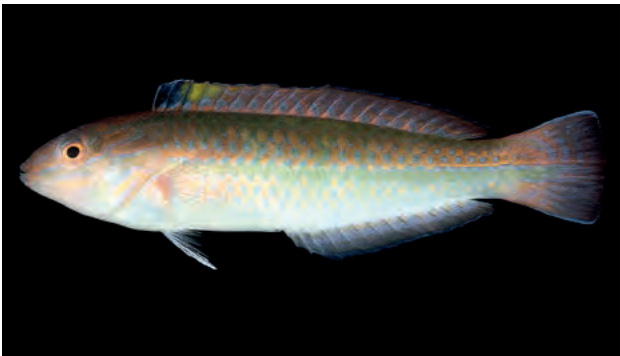
© J.E. Randall, Bishop Museum

Halichoeres scapularis, zigzag wrasse, male (Kenya).



© J.E. Randall, Bishop Museum

Halichoeres signifer, flag wrasse, 6 cm SL, female (Oman).



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Halichoeres signifer, flag wrasse, 8 cm SL, male (Oman).



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Halichoeres signifer, flag wrasse, male (Oman).



© J.P. Hoover

Halichoeres signifer, flag wrasse (Oman).



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Halichoeres stigmaticus, U-spot wrasse, IP (Oman).

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© J.E. Randall, Bishop Museum

Halichoeres stigmaticus, U-spot wrasse, 10 cm SL, male (Bahrain).

Halichoeres trispilus, triplespot wrasse, female (Maldives).



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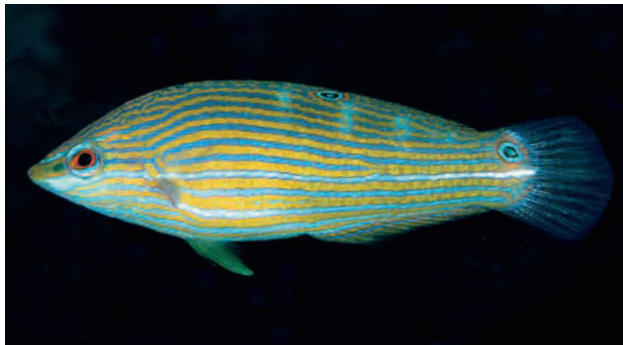
© J.E. Randall, Bishop Museum

Halichoeres trispilus, triplespot wrasse, male (Maldives).

Halichoeres vrolikii, pinstriped wrasse, female (Maldives).



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Halichoeres vrolikii, pinstriped wrasse, male (Maldives).

Halichoeres vrolikii, pinstriped wrasse, intersex (Maldives).



© J.E. Randall, Bishop Museum



PC Heemstra © NRF-SAB

Halichoeres zeylonicus, goldstriped wrasse, 9 cm SL, female (Oman).

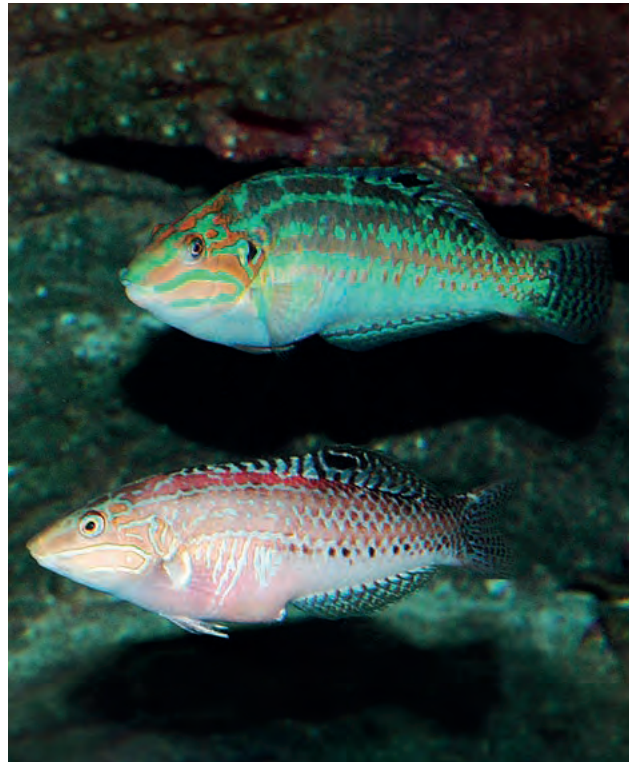
Halichoeres zeylonicus, goldstriped wrasse, 14 cm SL, male (South Africa).

Family **LABRIDAE**, Wrasses



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Halichoeres zeylonicus, goldstriped wrasse, male (Maldives).



© DR King

Halichoeres zulu, Zulu wrasse, male above, female below (South Africa).



© J. Dench

Hemigymnus fasciatus, barred thicklip wrasse, female (South Africa).



© J.E. Randall, Bishop Museum

Hemigymnus fasciatus, barred thicklip wrasse, 5 cm SL, juvenile (Tahiti).



© DA Polack

Hemigymnus fasciatus, barred thicklip wrasse, male (South Africa).



© DA Polack

Hemigymnus fasciatus, barred thicklip wrasse (Indonesia).



© J.E. Randall, Bishop Museum

Hemigymnus fasciatus, barred thicklip wrasse (Maldives).

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© J.E. Randall, Bishop Museum

Hemigymnus melapterus, blackeye thicklip wrasse, female (Maldives).



© S. Polack

Hemigymnus melapterus, blackeye thicklip wrasse, juvenile (Indonesia).



© J.E. Randall, Bishop Museum

Hemigymnus melapterus, blackeye thicklip wrasse, juvenile (Sudan).



© DA Polack

Hemigymnus melapterus, blackeye thicklip wrasse, 40 cm SL, male (Indonesia).



© RF Myers

Hemigymnus melapterus, blackeye thicklip wrasse, male (Kenya).



© J.E. Randall, Bishop Museum

Hemigymnus melapterus, blackeye thicklip wrasse, female (Maldives).



© RF Myers

Hemigymnus sexfasciatus, Red Sea thicklip wrasse, male (Red Sea).



© SV Bogorodsky

Hemigymnus sexfasciatus, Red Sea thicklip wrasse, female (Red Sea).

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© H Sjöholm

Hemigymnus sexfasciatus, Red Sea thicklip wrasse, juvenile (Red Sea).



© J.E. Randall, Bishop Museum

Hologymnosus annulatus, ring wrasse, female (Red Sea).



© A Golubev

Hologymnosus annulatus, ring wrasse, juvenile (Red Sea).



© J.E. Randall, Bishop Museum

Hologymnosus annulatus, ring wrasse, male (Red Sea).



© SV Bogorodsky

Hologymnosus annulatus, ring wrasse, male (Red Sea).



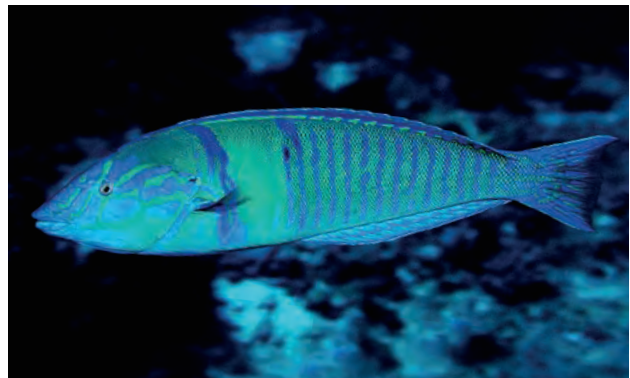
© SV Bogorodsky

Hologymnosus annulatus, ring wrasse, male (Red Sea).



© J.E. Randall, Bishop Museum

Hologymnosus doliatus, pastel ring wrasse, juvenile (Mauritius).



© J.E. Randall, Bishop Museum

Hologymnosus doliatus, pastel ring wrasse, male (Seychelles).

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Hologymnosus doliatus, pastel ring wrasse, female (Tanzania).



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Iniistius aneitensis, whitepatch razorfish, 8 cm SL, female (Marshall Is.).



© J.E. Randall, Bishop Museum

Iniistius aneitensis, whitepatch razorfish, 5 cm SL, juvenile (Hawaii).



© J.E. Randall, Bishop Museum

Iniistius aneitensis, whitepatch razorfish, 17 cm SL, male (Hawaii).



© J.E. Randall, Bishop Museum

Iniistius bimaculatus, two-spot razorfish, 13 cm TL, female (SE India).



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Iniistius bimaculatus, two-spot razorfish, 18 cm TL, male (SW India).



© J. Maggs

Iniistius brevipinnis, shortfin razorfish, 14 cm SL, holotype (South Africa).



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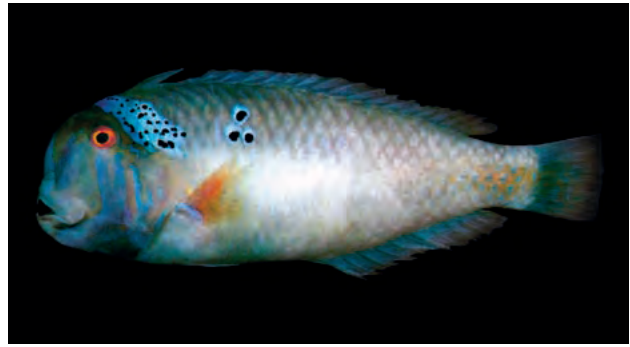
Iniistius cyanifrons, Indian razorfish, 15 cm SL, male (SE India).

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Iniistius cyanifrons, Indian razorfish, 12 cm SL, female (SW India).



© J. Griffiths

Iniistius griffithsi, Griffiths' razorfish, male (Mauritius).



© A Sutton

Iniistius naevus, blemished razorfish, male (Tanzania). #



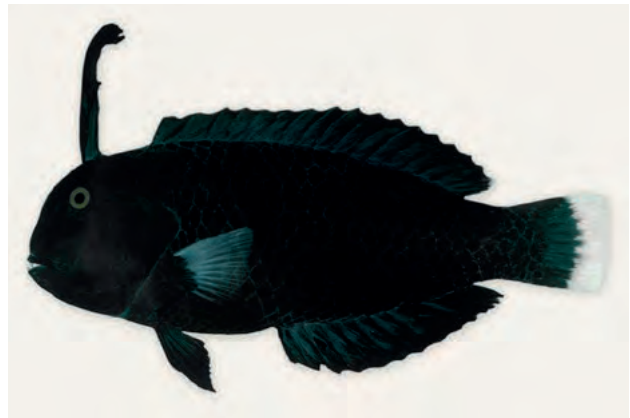
© J.E. Randall, Bishop Museum

Iniistius pavo, peacock razorfish, male, 30 cm SL (Red Sea).



© SV Bogorodsky

Iniistius pavo, peacock razorfish, juvenile (Red Sea).



© J.E. Randall, Bishop Museum

Iniistius pavo, peacock razorfish, 14 cm TL, black phase (Red Sea).



© SV Bogorodsky

Iniistius pentadactylus, five-finger razorfish, male (Red Sea).



© J.E. Randall, Bishop Museum

Iniistius pentadactylus, five-finger razorfish, 21 cm TL, male (Red Sea).

= no species account

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Iniistius pentadactylus, five-finger razorfish, female (Red Sea).



© JE Randall, Bishop Museum

Iniistius pentadactylus, five-finger razorfish, 17 cm TL, female (Red Sea).



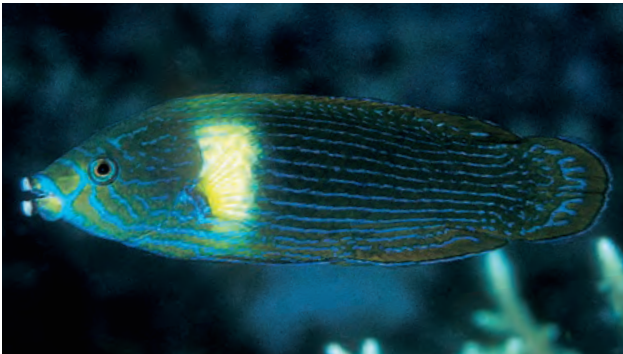
© JE Randall, Bishop Museum

Labrichthys unilineatus, tubelip wrasse, female (Philippines).



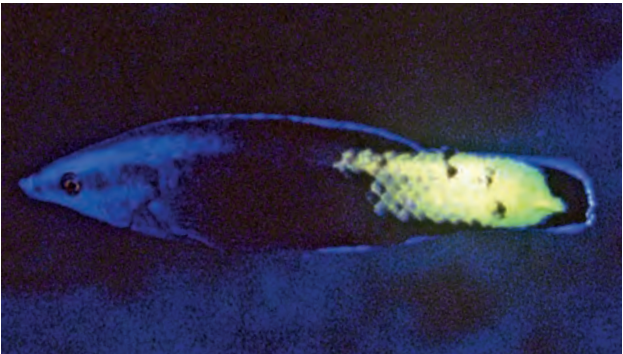
© JE Randall, Bishop Museum

Labrichthys unilineatus, tubelip wrasse, juvenile (Maldives).



© JE Randall, Bishop Museum

Labrichthys unilineatus, tubelip wrasse, male (Philippines).



© JP Hoover

Labroides bicolor, bicolor cleaner wrasse, adult (Oman).



© DR King

Labroides bicolor, bicolor cleaner wrasse, subadult (South Africa).



© JE Randall, Bishop Museum

Labroides dimidiatus, striped cleaner wrasse (right), and *Parupeneus macronema*, band-dot goatfish (Red Sea).

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© R Field

Labroides dimidiatus, juvenile (top), and *Gymnothorax javanicus* (Red Sea).



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Labropsis xanthonota, yellowback tubelip, female (Kenya).



© A. Sutton

Labropsis xanthonota, yellowback tubelip, male (Tanzania).



© SV Bogorodsky

Larabicus quadrilineatus, fourline wrasse, female (Red Sea).



© J.E. Randall, Bishop Museum

Larabicus quadrilineatus, fourline wrasse, male (Red Sea).



© GR Allen

Leptojulis chrysotaenia, jaggedband wrasse, male (Indonesia).



© J.E. Randall, Bishop Museum

Leptojulis chrysotaenia, jaggedband wrasse, subadult (Indonesia).



© J.E. Randall, Bishop Museum

Leptojulis chrysotaenia, jaggedband wrasse, 7 cm TL female (Thailand).

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Leptojulius chrysotaenia, jaggedband wrasse, subadult (Sri Lanka).



© J.E. Randall, Bishop Museum

Leptojulius cyanopleura, shoulderspot wrasse, female (Gulf of Oman).



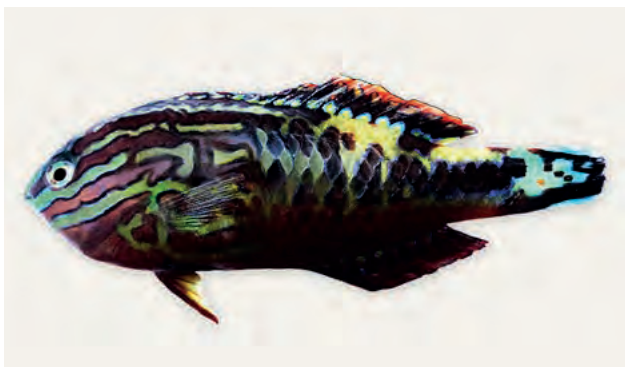
© J.E. Randall, Bishop Museum

Leptojulius cyanopleura, shoulderspot wrasse, 73 mm SL, male (Malaysia).



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Macropharyngodon bipartitus, vermiculate wrasse, female (Mauritius).



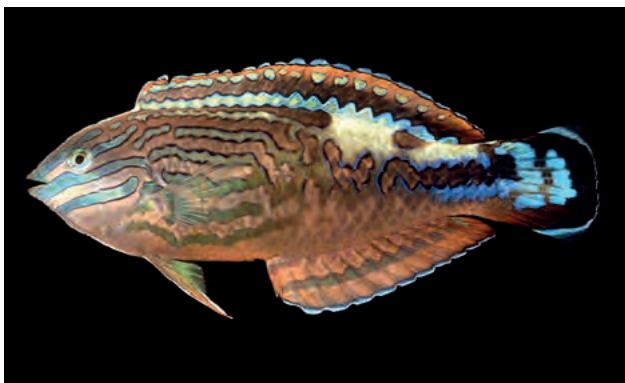
© M. Shankh-Deed

Macropharyngodon bipartitus, vermiculate wrasse, immature male (Gulf of Aden).



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Macropharyngodon bipartitus, vermiculate wrasse, juvenile (Maldives).



© J.E. Randall, Bishop Museum

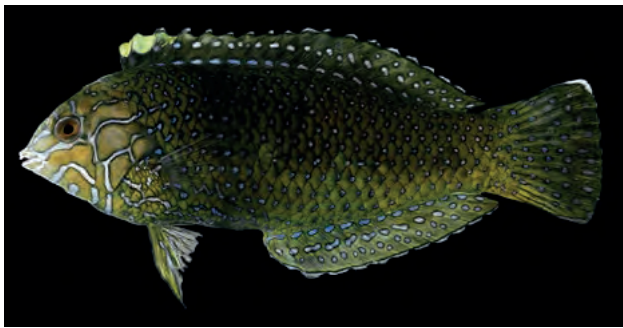
Macropharyngodon bipartitus, vermiculate wrasse, 9 cm SL, male (Mauritius).



© J.E. Randall, Bishop Museum

Macropharyngodon cyanoguttatus, bluespotted wrasse, 8 cm SL, female (Réunion).

Family **LABRIDAE**, Wrasses



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Macropharyngodon cyanoguttatus, bluespotted wrasse, 10 cm SL, male (Mauritius).



© JE Randall, Bishop Museum

Macropharyngodon cyanoguttatus, bluespotted wrasse, juvenile (Mauritius).



© JE Randall, Bishop Museum

Macropharyngodon marisrubri, Red Sea vermiculate wrasse, female (Gulf of Aqaba).



© JE Randall, Bishop Museum

Macropharyngodon marisrubri, Red Sea vermiculate wrasse, 6 cm SL, small female (Gulf of Aqaba).



© JE Randall, Bishop Museum

Macropharyngodon marisrubri, Red Sea vermiculate wrasse, juvenile (Gulf of Aqaba).



© JE Randall, Bishop Museum

Macropharyngodon marisrubri, Red Sea vermiculate wrasse, 8 cm SL, male (Gulf of Aqaba).



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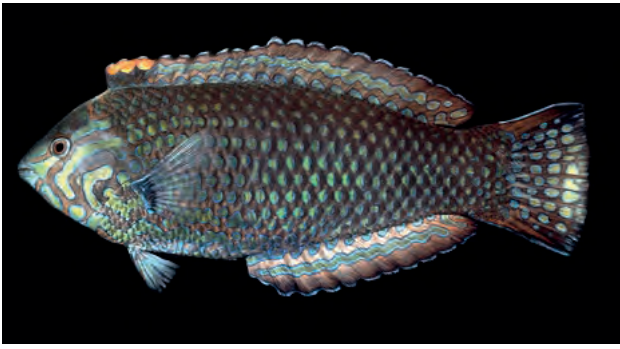
Macropharyngodon marisrubri, Red Sea vermiculate wrasse, male (Gulf of Aqaba).



© JE Randall, Bishop Museum

Macropharyngodon ornatus, ornate wrasse, female (Maldives).

Family **LABRIDAE**, Wrasses



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Macropharyngodon ornatus, ornate wrasse, 12 cm SL, male (Indonesia).



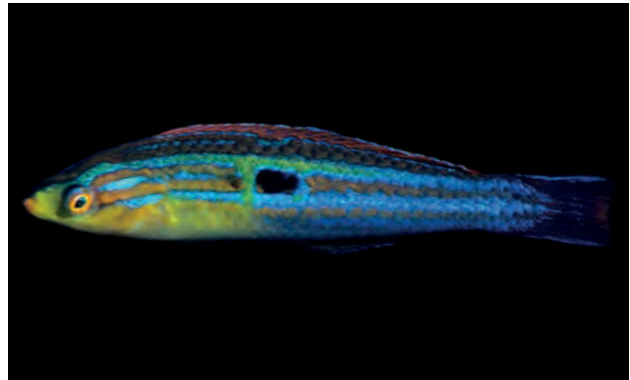
© R.H. Kulter

Macropharyngodon vivienae, Vivien's wrasse, male (South Africa).



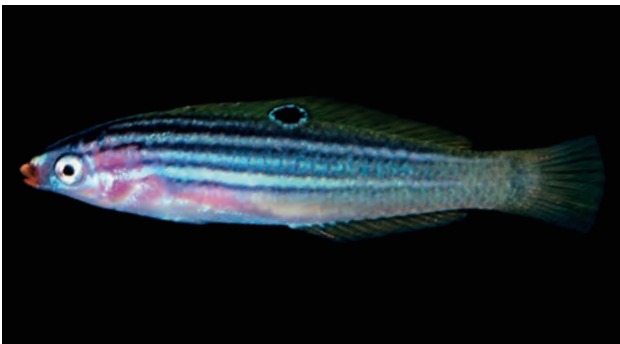
© J.E. Randall, Bishop Museum

Macropharyngodon vivienae, Vivien's wrasse, 5 cm TL, female (South Africa).



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Minilabrus striatus, striped minute wrasse, male (Sudan).



© J.E. Randall, Bishop Museum

Minilabrus striatus, striped minute wrasse, female (Sudan).



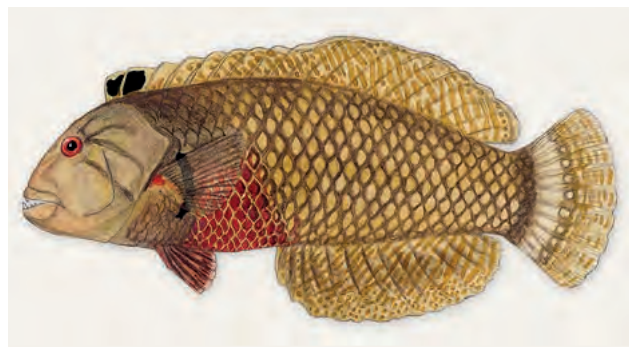
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Novaculichthys taeniourus, rockmover wrasse, juvenile (Tanzania).



© J.E. Randall, Bishop Museum

Novaculichthys taeniourus, rockmover wrasse, male (Maldives).



Source: C.F.S.A.

Novaculichthys taeniourus, rockmover wrasse, 22 cm TL, female (Mauritius).

Family **LABRIDAE**, Wrasses



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Novaculoides macrolepidotus, seagrass wrasse (Kenya).



© A. Spreinat

Novaculoides macrolepidotus, seagrass wrasse, subadult mimic of *Ablabys* (Kenya).



© O. Alvheim © IMR

Novaculops alvheimi, St Brandon's sandy, 10 cm SL, male holotype (St Brandon Shoals).



© O. Alvheim © IMR

Novaculops alvheimi, St Brandon's sandy, 8 cm SL, female paratype (St Brandon Shoals).



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Oxycheilinus arenatus, blackstripe wrasse, 21 cm TL, female (Red Sea).



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Oxycheilinus arenatus, blackstripe wrasse, subadult (Maldives).



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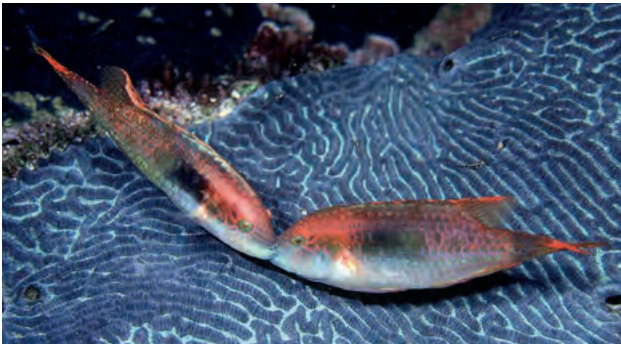
Oxycheilinus bimaculatus, two-spot wrasse, female (New Guinea).



© A. Sutton

Oxycheilinus bimaculatus, two-spot wrasse, male (Tanzania).

Family **LABRIDAE**, Wrasses



© J.P. Hoover

Oxycheilinus bimaculatus, two-spot wrasse, males (Oman).



© J.E. Randall, Bishop Museum

Oxycheilinus digramma, cheeklined wrasse, female (Red Sea).



© S.V. Bogorodsky

Oxycheilinus digramma, cheeklined wrasse (Red Sea).



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Oxycheilinus digramma, cheeklined wrasse, male (Red Sea).



© R. Field

Oxycheilinus mentalis, mental wrasse (top), and *Parupeneus macronemus*, band-dot goatfish (bottom) (Red Sea).



© J.E. Randall, Bishop Museum

Oxycheilinus mentalis, mental wrasse, subadult (Gulf of Aqaba).



© J.E. Randall, Bishop Museum

Oxycheilinus mentalis, mental wrasse (Gulf of Aqaba).



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Oxycheilinus mentalis, mental wrasse (Red Sea).

Family **LABRIDAE**, Wrasses



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Oxycheilinus mentalis, mental wrasse (Red Sea).



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Oxycheilinus mentalis, mental wrasse (Red Sea).



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Oxycheilinus orientalis, oriental wrasse (Gulf of Aqaba).



© JE Randall, Bishop Museum

Oxycheilinus orientalis, oriental wrasse (Red Sea).



© SV Bogorodsky

Oxycheilinus orientalis, oriental wrasse, male (Red Sea).



© JE Randall, Bishop Museum

Paracheilinus attenuatus, diamondtail flasher wrasse, juvenile (Seychelles).



© JE Randall, Bishop Museum

Paracheilinus attenuatus, diamondtail flasher wrasse, 4 cm SL, female (Seychelles).



© JE Randall, Bishop Museum

Paracheilinus attenuatus, diamondtail flasher wrasse, 6 cm SL, male (Seychelles).

Family **LABRIDAE**, Wrasses



© T Aoki

Paracheilinus attenuatus, diamondtail flasher wrasse, male in aquarium.



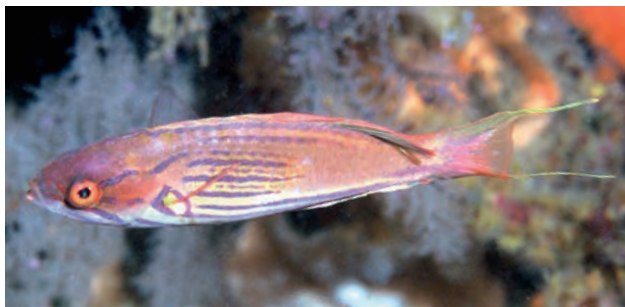
© K Kohlen

Paracheilinus attenuatus, diamondtail flasher wrasse, male courtship in aquarium.



© DR King

Paracheilinus hemitaeniatus, halfbanded flasher wrasse, female (left) and male (right) (South Africa).



© DR King

Paracheilinus hemitaeniatus, halfbanded flasher wrasse, male (South Africa).



© A Surton

Paracheilinus mccoskeri, McCosker's flasher wrasse, male (Tanzania).



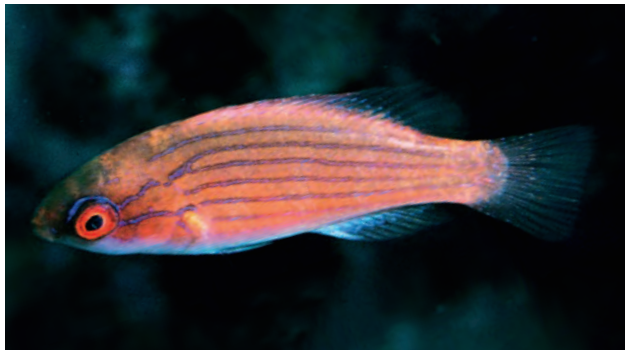
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Paracheilinus mccoskeri, McCosker's flasher wrasse, females (Tanzania).



© JE Randall, Bishop Museum

Paracheilinus octotaenia, eightline wrasse, male (Red Sea).



© JE Randall, Bishop Museum

Paracheilinus octotaenia, eightline wrasse, female (Gulf of Aqaba).

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Paracheilinus piscilineatus, blue-lined flasher wrasse, 5 cm SL, female (Mauritius).



© G.R. Allen

Paracheilinus piscilineatus, blue-lined flasher wrasse, male (Mauritius).



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Pseudocheilinus dispilus, doublespot wrasse (Mauritius).



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Pseudocheilinus evanidus, disappearing wrasse (Sudan).



© J.E. Randall, Bishop Museum

Pseudocheilinus hexataenia, sixstripe wrasse (Djibouti).



© J.E. Randall, Bishop Museum

Pseudocheilinus octotaenia, eightstripe wrasse (Ambon).



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Pseudocoris hemichrysos, yellowback torpedo wrasse, 74 mm SL, TP, holotype (Maldives).



© R.H. Kulter

Pseudocoris hemichrysos, yellowback torpedo wrasse, TP (Maldives).

Family **LABRIDAE**, Wrasses

© J.E. Randall, Bishop Museum

Pseudocoris occidentalis, elusive torpedo wrasse, TP (Seychelles).

© DR King

Pseudocoris occidentalis, elusive torpedo wrasse, juvenile (South Africa).

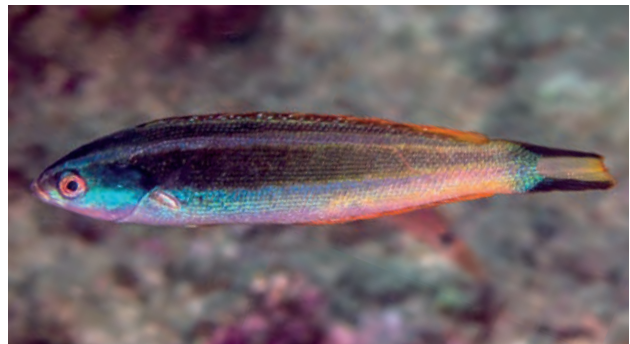
© GR Allen

Pseudocoris occidentalis, elusive torpedo wrasse, juvenile (SW Madagascar).

© BC Victor, CC BY 4.0

Pseudocoris occidentalis, elusive torpedo wrasse, 16 cm SL, TP, holotype (Kenya).

© DR King

Pseudocoris occidentalis, elusive torpedo wrasse, ~12 cm SL, TP (South Africa).

© A. Sutton

Pseudocoris occidentalis, elusive torpedo wrasse, juvenile (Tanzania).

© GR Allen

Pseudocoris petila, slender torpedo wrasse, 65 mm TL, IP (Andaman Is.).

© DR King

Pseudocoris petila, slender torpedo wrasse, TP (South Africa).

Family **LABRIDAE**, Wrasses



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Pseudodax moluccanus, chiseltooth wrasse, juvenile (Red Sea).



© SV Bogorodsky

Pseudodax moluccanus, chiseltooth wrasse, adult (Red Sea).



© A Sutton

Pseudojuloides argyreogaster, green smalltail wrasse, male (Tanzania).



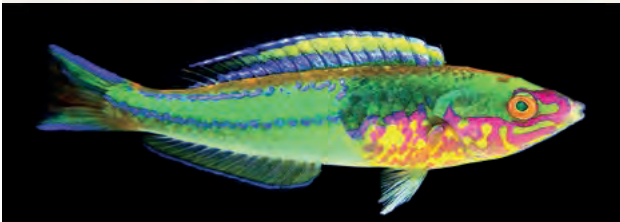
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Pseudojuloides argyreogaster, green smalltail wrasse, female (Tanzania).



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Pseudojuloides edwardi, Edward's wrasse, 7 cm SL, male holotype (Kenya).



© V Altamirano



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Pseudojuloides erythroptis, redeye smalltail wrasse, 5 cm SL, female (top); 9 cm SL, male holotype (bottom) (both Mauritius).



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Pseudojuloides kaleidos, kaleidoscope wrasse, female (Maldives).



© J.E. Randall, Bishop Museum

Pseudojuloides kaleidos, kaleidoscope wrasse, male (Maldives).

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© V Altamirano

Pseudojuloides labyrinthus, labyrinth wrasse, 4 cm TL, IP, paratype (Kenya). #



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Pseudojuloides labyrinthus, labyrinth wrasse, 7 cm SL, male holotype (Kenya). #



© DR King

Pseudojuloides polackorum, Polack's wrasse, male (South Africa).



© JE Randall, Bishop Museum

Pseudojuloides xanthomos, yellowstreak wrasse, 6 cm SL, female (Mauritius).



© D Peilcier

Pseudojuloides xanthomos, yellowstreak wrasse, 6 cm SL, male (Mauritius).



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Pteragogus clarkae, Clark's wrasse (Red Sea).



© J.L. Rose

Pteragogus clarkae, Clark's wrasse (Red Sea).



© SV Bogorodsky

Pteragogus clarkae, Clark's wrasse (Red Sea).

= no species account

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Pteragogus cryptus, cryptic wrasse, 6 cm SL, female (Sudan).



© J.E. Randall, Bishop Museum

Pteragogus cryptus, cryptic wrasse, juvenile (Red Sea).



© J.E. Randall, Bishop Museum

Pteragogus cryptus, cryptic wrasse, 6 cm SL, male (Gulf of Aqaba).



© SV Bogorodsky

Pteragogus cryptus, cryptic wrasse (Red Sea).



© J.E. Randall, Bishop Museum

Pteragogus flagellifer, cocktail wrasse, 7 cm SL, female (Kenya).



© R. Winterbottom, ROM

Pteragogus flagellifer, cocktail wrasse, 11 cm SL, male (Comoros).

Family **LABRIDAE**, Wrasses



© J.E. Randall, Bishop Museum

Pteragogus pelycus, sideburn wrasse, 8 cm SL, male (Seychelles).



© J.E. Randall, Bishop Museum

Pteragogus pelycus, sideburn wrasse, 4 cm SL, juvenile (Seychelles).



PC Heemstra © NRF-SA/AB

Pteragogus taeniops, cheekbar wrasse, 7 cm SL (South Africa).



© DR King

Pteragogus taeniops, cheekbar wrasse (South Africa).



© J.E. Randall, Bishop Museum

Pteragogus trispilus, triplespot wrasse, 6 cm SL, female (Gulf of Aqaba).



© SV Bogorodsky

Pteragogus trispilus, triplespot wrasse (Gulf of Aqaba).



© SV Bogorodsky

Pteragogus trispilus, triplespot wrasse (Red Sea).



© J.E. Randall, Bishop Museum

Pteragogus trispilus, triplespot wrasse, 7 cm SL, male holotype (Gulf of Aqaba).

Family **LABRIDAE**, Wrasses



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Pteragogus variabilis, variable wrasse, 5 cm SL, male holotype (Mauritius).



© P.C. Heemstra, NRF-SA/AB

Pteragogus variabilis, variable wrasse, 5 cm SL (St Brandon Shoals).



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Pteragogus variabilis, variable wrasse (Mauritius).



© A. Golubev

Stethojulis albovittata, bluelined wrasse, IP (Red Sea).



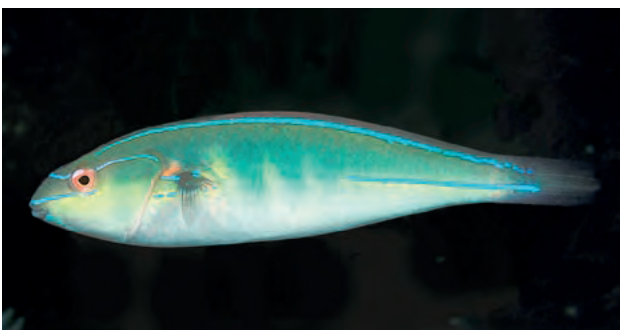
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Stethojulis albovittata, bluelined wrasse, TP (Red Sea).



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Stethojulis interrupta, cutribbon wrasse, IP (South Africa).



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Stethojulis interrupta, cutribbon wrasse, TP (Seychelles).



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Stethojulis strigiventer, stripebelly wrasse, IP (Seychelles).

Family **LABRIDAE**, Wrasses



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Stethojulis strigiventer, stripebelly wrasse, TP (Tanzania).



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Stethojulis strigiventer, stripebelly wrasse, TP (Maldives).



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Stethojulis trilineata, three-ribbon wrasse, IP (Andaman Sea).



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Stethojulis trilineata, three-ribbon wrasse, TP (Maldives).



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Suezichthys caudavittatus, tailband wrasse, subadult (Persian/Arabian Gulf).



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Suezichthys caudavittatus, tailband wrasse, IP (Persian/Arabian Gulf).



PC Heemstra © NRF-SAIAB

Suezichthys caudavittatus, tailband wrasse, 8 cm SL, TP (N Mozambique).

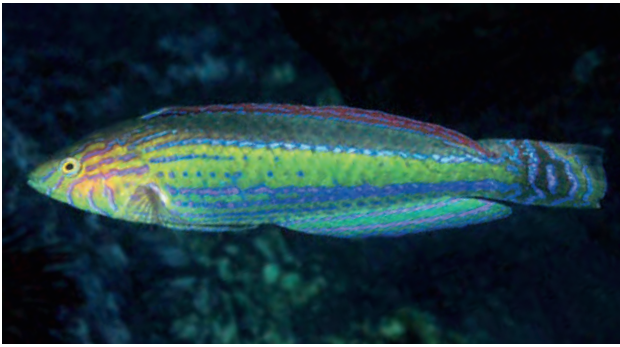


© P. Tlamm

Suezichthys aff. *ornatus* (South Africa). #

= no species account

Family **LABRIDAE**, Wrasses



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Suezichthys ornatus, southern ornate wrasse, TP (Tristan da Cunha).



© S Scott

Suezichthys ornatus, southern ornate wrasse, IP (Tristan da Cunha).



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Suezichthys russelli, Russell's wrasse, 5 cm SL, IP (Gulf of Aqaba).



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Suezichthys russelli, Russell's wrasse, TP (Gulf of Aqaba).



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Thalassoma amblycephalum, twotone wrasse, IP (Maldives).



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Thalassoma amblycephalum, twotone wrasse, TP (Maldives).



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Thalassoma genivittatum, cheekmark wrasse, 3 cm TL (Mauritius).



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Thalassoma genivittatum, cheekmark wrasse, IP (Mauritius).

Family **LABRIDAE**, Wrasses



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Thalassoma genivittatum, cheekmark wrasse, TP (Mauritius).



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Thalassoma hardwicke, sixbar wrasse, IP (Maldives).



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Thalassoma hardwicke, sixbar wrasse, TP (Maldives).



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Thalassoma hebraicum, goldbar wrasse, IP (Seychelles).



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Thalassoma hebraicum, goldbar wrasse, juvenile (Seychelles).



© A. Sutton

Thalassoma hebraicum, goldbar wrasse, TP (Tanzania).



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Thalassoma jansenii, Jansen's wrasse, IP (Maldives).



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Thalassoma jansenii, Jansen's wrasse, TP (Maldives).

Family **LABRIDAE**, Wrasses



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Thalassoma loxum, slantband wrasse, juvenile (Oman).



© JE Randall, Bishop Museum

Thalassoma loxum, slantband wrasse, TP (Oman).



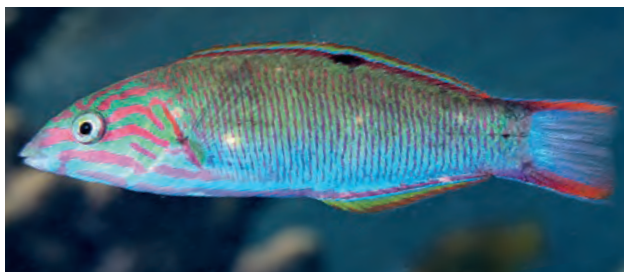
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Thalassoma lunare, moon wrasse, IP (Red Sea).



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Thalassoma lunare, moon wrasse, juvenile (Maldives).



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Thalassoma lunare, moon wrasse, subadult (Red Sea).



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Thalassoma lunare, moon wrasse, TP (Tanzania).



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Thalassoma lutescens, sunset wrasse, IP (Tanzania).



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Thalassoma lutescens, sunset wrasse, IP (Moorea).



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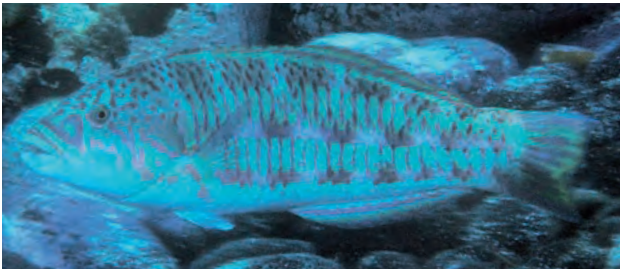
Thalassoma lutescens, sunset wrasse, juvenile (Moorea).



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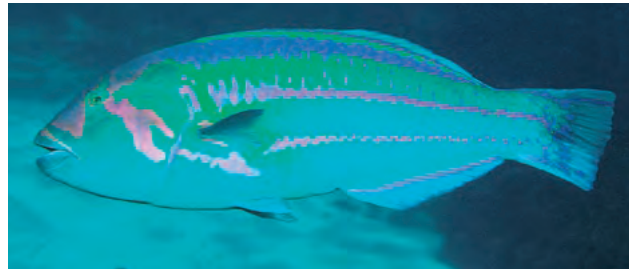
Thalassoma lutescens, sunset wrasse, TP (Kenya).

Family **LABRIDAE**, Wrasses



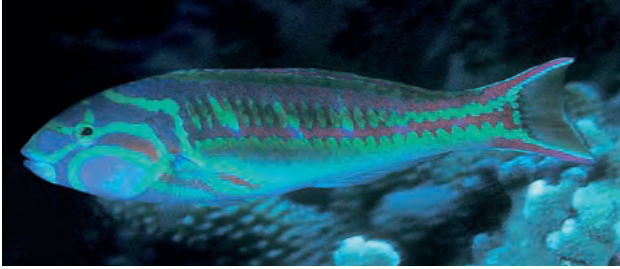
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Thalassoma purpureum, surge wrasse, IP (Indonesia).



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Thalassoma purpureum, surge wrasse, TP (Lord Howe I.).



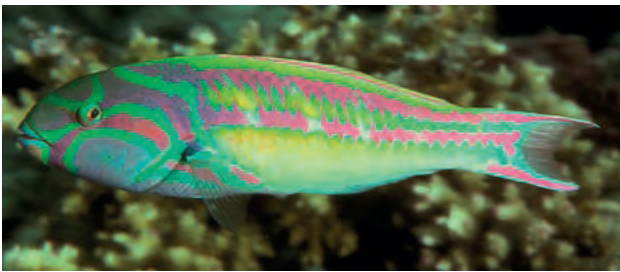
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Thalassoma quinquevittatum, fivestripe wrasse, IP (Indonesia).



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Thalassoma quinquevittatum, fivestripe wrasse, juvenile (Line Is.).



© JE Randall, Bishop Museum

Thalassoma quinquevittatum, fivestripe wrasse, TP (Marshall Is.).



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Thalassoma rueppellii, Rüppell's wrasse, IP (Red Sea).



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Thalassoma rueppellii, Rüppell's wrasse, IP (Red Sea).



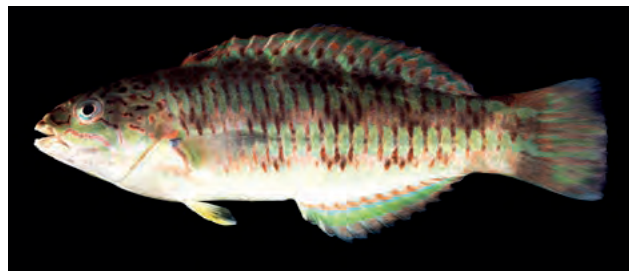
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Thalassoma rueppellii, Rüppell's wrasse, juvenile (Red Sea).



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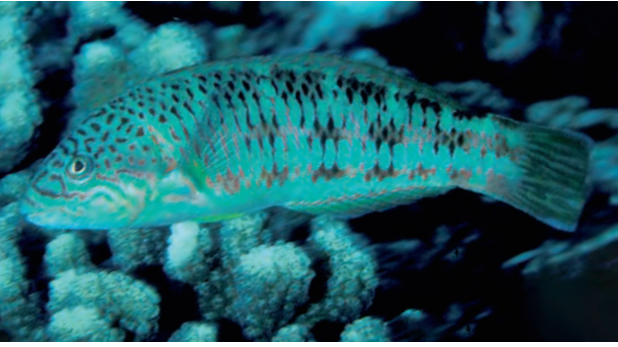
Thalassoma rueppellii, Rüppell's wrasse, TP (Red Sea).



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Thalassoma trilobatum, ladder wrasse, 8 cm SL, IP (Marshall Is.).

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Thalassoma trilobatum, ladder wrasse, IP (Mauritius).



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Thalassoma trilobatum, ladder wrasse, TP (Mauritius).



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Wetmorella albofasciata, whitebanded sharpnose wrasse, 3 cm SL (Maldives).



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Wetmorella albofasciata, whitebanded sharpnose wrasse (Philippines).



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Wetmorella bifasciata, western sharpnose wrasse, 6 cm SL (Maldives).



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Wetmorella bifasciata, western sharpnose wrasse (Red Sea).



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Wetmorella bifasciata, western sharpnose wrasse (Red Sea).



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Xyrichtys novacula, 17 cm SL, male (tropical western Atlantic Is.). #

= no species account