

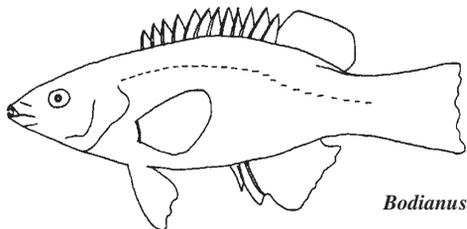
**Suborder LABROIDEI**

**LABRIDAE**

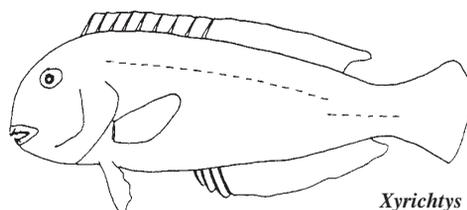
**Wrasses (also, hogfishes, razorfishes, corises, and tuskfishes)**

by M.W. Westneat

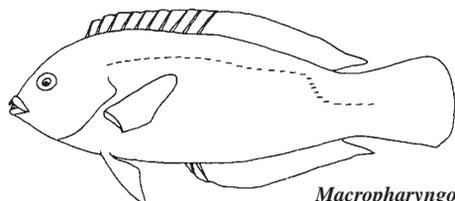
**Diagnostic characters:** A diverse group of fishes that vary in body shape and size (usually below 20 cm); body slightly to extremely compressed. **Mouth terminal, usually with prominent lips; mouth slightly to extremely protrusible;** maxilla not exposed on cheek; **teeth in jaws usually separate and caniniform, the anteriormost 1 or 2 pairs typically enlarged and often directed forward;** a few species with lateral teeth reduced and coalesced to form a bony cutting edge and anteriormost teeth modified into prominent incisors; pharyngeal jaws (located at base of throat) strong with pharyngeal teeth either sharp, conical, or broad and molariform. **A single, long-based dorsal fin** (except *Xyrichtys*, in which the first 2 spines are separate); spines rigid to flexible; spines and rays usually of similar length, but some species have elongate first few spines or elongate posteriormost rays. **Scales cycloid** (smooth to touch) and highly variable in size among species; head never fully scaly; lateral line below most of dorsal fin smooth, but often abruptly curved ventrally or discontinuous below posterior portion of soft dorsal fin. **Colour: most species with bright and intricate colour patterns**, including stripes, bars, spots, blotches, and ocelli constructed primarily with various shades of brown, blue, green, red, yellow, and white; patterns often change with age and with sex-reversal in this group.



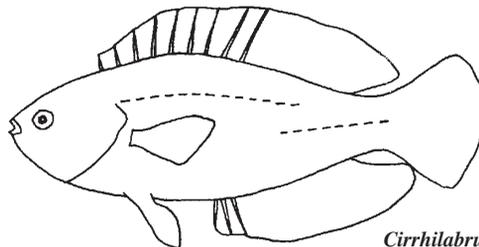
*Bodianus*



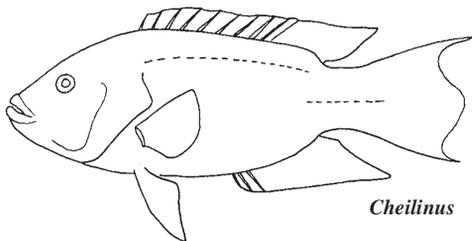
*Xyrichtys*



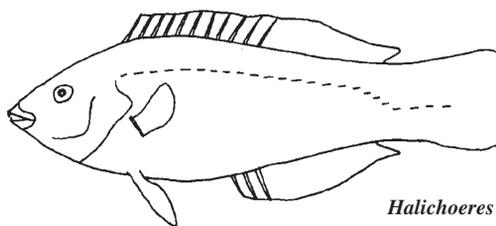
*Macropharyngodon*



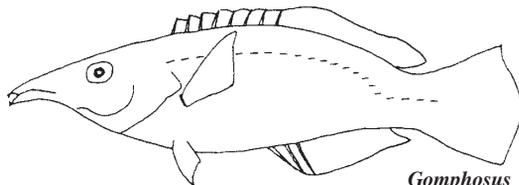
*Cirrhilabrus*



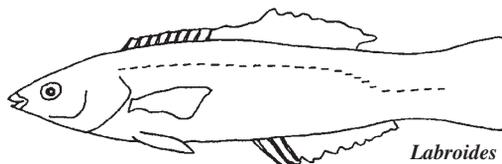
*Cheilinus*



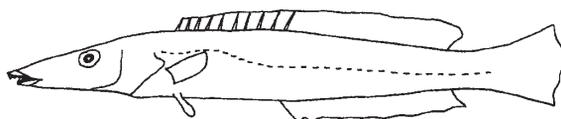
*Halichoeres*



*Gomphosus*



*Labroides*



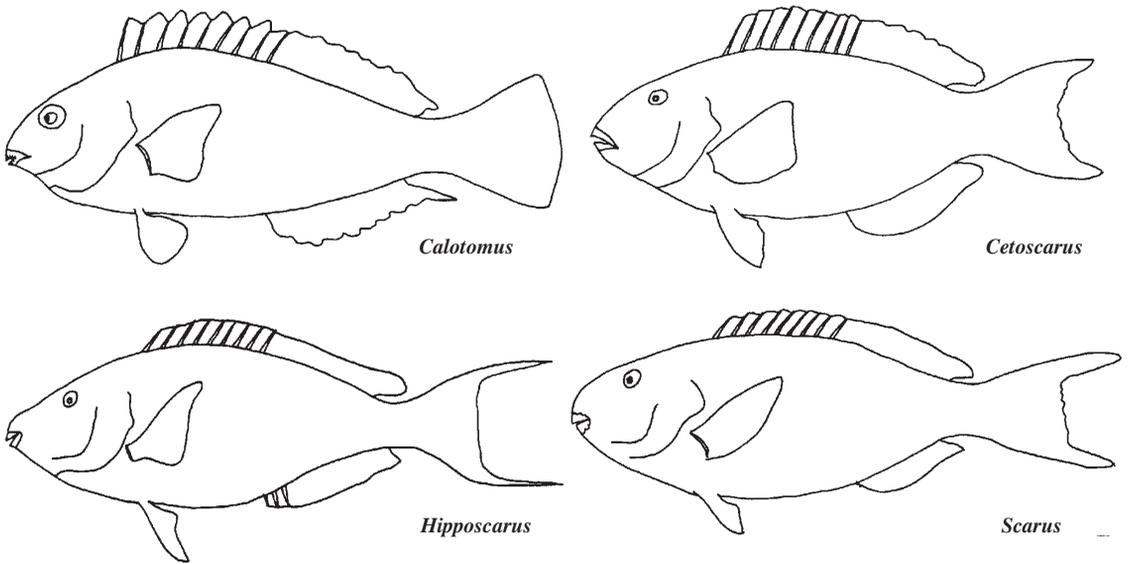
*Cheilio*

examples of body shapes

**Habitat, biology, and fisheries:** Labrids are most common in shallow waters in a variety of habitats such as coral reefs, rocky reefs, sand, grass, and algae. Some species are found at depths of 100 m, but are rarely found in muddy areas. Wrasses are diurnal, taking cover in reef crevices or burrowing into the sediment at night. Feeding habits in the group are diverse, including gastropods, bivalves, crustaceans, fishes, coral mucus, zooplankton, ectoparasites, and algae. The commercial importance of labrid fishes lies primarily in their popularity as aquarium fishes, although many species are prized food fishes. Genera often sought for the aquarium trade include *Anampses*, *Bodianus*, *Choerodon*, *Cirrhilabrus*, *Coris*, *Gomphosus*, *Halichoeres*, *Macropharyngodon*, *Novaculichthys*, and *Thalassoma*. Members of the genera *Bodianus*, *Cheilinus*, *Choerodon*, and *Hemigymnus* are considered excellent food fishes, although only *Cheilinus undulatus* among the labrids is the target of a substantial commercial fishery. From 1990 to 1995, the FAO Yearbook of Fishery Statistics reports a range of yearly catch of around 10 500 to 21 500 t of Labridae from the Western Central Pacific.

**Similar families occurring in the area**

Scaridae: mouth not protrusible; teeth in jaws coalesced at base or fused into a bony, parrot-like beak, except for a few species (*Calotomus*) which have free, imbricate teeth; when not fused, a pair of canine teeth usually directed horizontally to the side of upper jaw; lips continuous with facial skin, without an indentation.



**Key to the genera of Labridae occurring in the area**

- 1a. Dorsal-fin spines XI to XIII. . . . . 2
- 1b. Dorsal-fin spines VIII to X . . . . . 6
  
- 2a. Dorsal-fin spines XI (rarely XII in *Cirrhilabrus*); no large canine teeth present in jaws . . . . . 3
- 2b. Dorsal-fin spines XII or XIII; upper and lower jaws with 2 prominent canines . . . . . 4
  
- 3a. Dorsal-fin rays 9; anal fin with III spines and 9 soft rays; mouth and jaws small; colour patterns of males often including brilliant red, purple, or blue . . . . . *Cirrhilabrus*
- 3b. Dorsal-fin rays 12; anal fin with III spines and 14 soft rays; mouth moderately large with jaws modified into scraping plates similar to a parrotfish; colour pattern grey to purplish with a reddish spot on each scale and orange-red nape. . . . . *Pseudodax*

- 4a. Much of cheek and subopercle without scales; those scales on cheek and subopercle small, often imbedded, usually about 1/4 the size of body scales or smaller (Fig. 1) . . . . . *Choerodon*
- 4b. Scales on cheek and subopercle slightly smaller than body scales; scales usually covering subopercle and may extend onto lower jaw (Fig. 2) . . . . . → 5

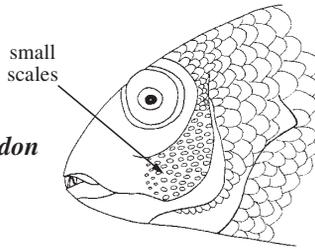


Fig. 1 *Choerodon*

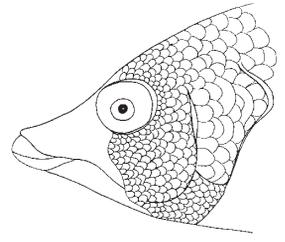


Fig. 2 *Bodianus*

- 5a. Dorsal fin with 8 soft rays; no scaly sheath extending onto dorsal and anal fins; 27 lateral-line scales in anterior portion and 2 in peduncular part . . . . . *Xiphocheilus*
- 5b. Dorsal fin with 9 to 11 (usually 10) soft rays; sheath of scales (1/2 to 4 scales high) extending onto dorsal and anal fins; 29 to 48 lateral-line scales in anterior portion and 2 or 3 in peduncular part . . . . . *Bodianus*
- 6a. Lateral line interrupted, with anterior segment ending below posterior dorsal fin, and posterior segment beginning 1 or more scale rows below anterior segment (Fig. 3) . . . . . → 7
- 6b. Lateral line complete, forming a continuous line (although usually steeply descending below dorsal fin) (Fig. 4) . . . . . → 16

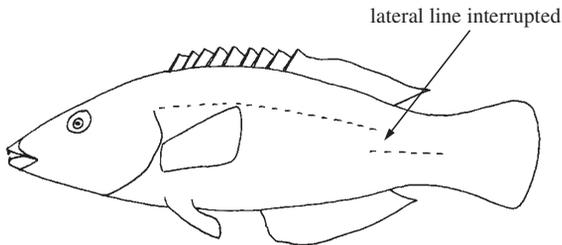


Fig. 3

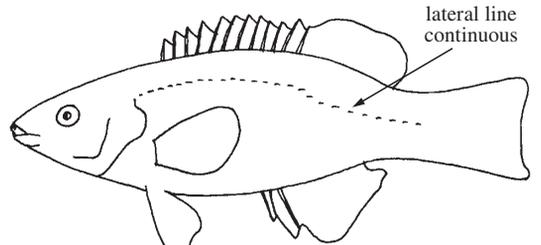
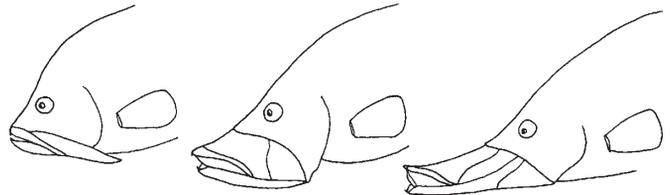


Fig. 4

- 7a. Anal fin with III spines and 8 or 9 soft rays . . . . . → 8
- 7b. Anal fin with II or III spines and 11 or 12 soft rays . . . . . → 14
- 8a. Predorsal scales 6; dorsal fin with IX spines and 10 soft rays (except *Cheilinus chlorourus*, with X spines and 8 or 9 soft rays) . . . . . → 9
- 8b. Predorsal scales 4 or 5; dorsal fin with IX spines and 11 or 12 soft rays . . . . . → 12

- 9a. Upper and lower jaws highly protrusible; lower jaw extending posteriorly all the way to gill membrane when mouth closed (Fig. 5) . . . *Epibulus*
- 9b. Lower jaw not protrusible as above, not extending posteriorly to gill membrane when mouth closed . . . . . → 10



jaw protrusion (3 stages)

Fig. 5 *Epibulus insidiator*

- 10a. Cheek and operculum fully scaly; ventral and posterior margins of preopercle covered . . *Wetmorella*
- 10b. Cheek and operculum with 2 rows of scales, but ventral and posterior margins of preopercle free . . . . . → 11

**11a.** Body moderately deep, its depth equal to or greater than head length; anterior tip of lower jaw even with anterior tip of upper jaw; pelvic fins unpigmented or solid dark colour; body colour pattern often with distinct or mottled vertical bars, or light spots scattered on dark background (Fig. 6) . . . . . *Cheilinus*

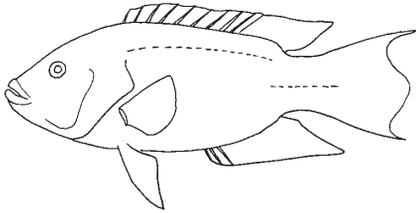


Fig. 6 *Cheilinus*

**11b.** Body moderately shallow, its depth less than head length; anterior tip of lower jaw ending anterior to tip of upper jaw; pelvic fins with orange or red pigment on proximal half of fin; body colour pattern often with horizontal stripe and/or black spot at anterior of dorsal fin (Fig. 7) . . . . . *Oxycheilinus*

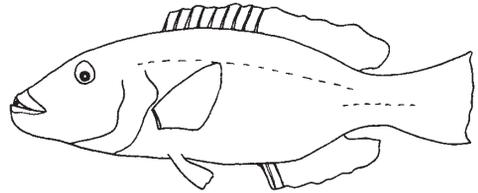


Fig. 7 *Oxycheilinus*

**12a.** Pectoral fins with ii unbranched and 11 branched rays; 4 predorsal scales; second nostril twice the diameter of first nostril. . . . . *Pseudocheilinus*

**12b.** Pectoral fins with ii unbranched and 11 to 17 branched rays; 5 predorsal scales; second nostril same size as first nostril . . . . . → 13

**13a.** Five branchiostegal rays; dorsal and anal fins long, deep, colourful, and often with posterior filaments; snout short and comparatively blunt, 3.3 to 4.8 times in head length (Fig. 8) . . . . . *Paracheilinus*

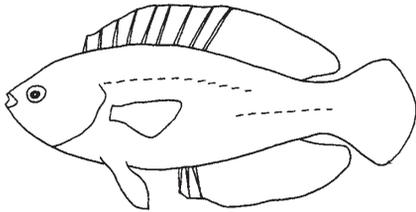


Fig. 8 *Paracheilinus*

**13b.** Six branchiostegal rays; dorsal and anal fins not greatly expanded; snout moderately long and pointed, 2.5 to 3.2 times in head length (Fig. 9) . . . . . *Pseudocheilinus*

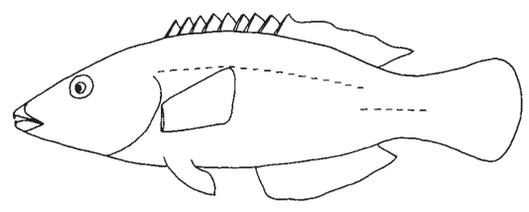


Fig. 9 *Pseudocheilinus*

**14a.** Anal fin with only II spines; lateral-line scales 50 to 69 in anterior portion and 16 to 20 peduncular part . . . . . *Cymolutes*

**14b.** Anal fin with III spines; lateral-line scales 19 to 22 in anterior portion and 4 to 6 peduncular part . . . . . → 15

**15a.** Pectoral-fin rays 13; dorsal profile of head sloping gradually to snout; colour dark with white spot on each scale, black bands radiating from eyes across white-grey head (Fig. 10) . . . . . *Novaculichthys*

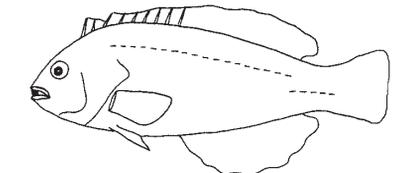


Fig. 10 *Novaculichthys*

**15b.** Pectoral-fin rays 12; dorsal profile of head blunt with nearly vertical drop to snout; colour of body generally light, some species with black spots behind eye (Fig. 11) . . . . . *Xyrichtys*

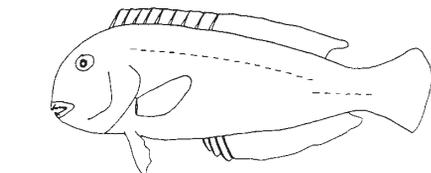


Fig. 11 *Xyrichtys*

- 16a. Lips modified, either bilobed lower lip or lips pursed and plicate, forming tube when mouth closed, scales on thorax minute, much smaller than on rest of body (Figs 12 to 15) . . . . . → 17
- 16b. Mouth not tube-like, lips not bilobed; scales on thorax and body comparatively large . . . . . → 20
- 17a. Lower lip bilobed (2 halves separated by a prominent U-shaped notch); body slender, its depth 3.5 to 4.4 times in standard length; 1 pair of enlarged canine teeth anteriorly in jaws (Fig. 12) . . . . . *Labroides*
- 17b. Lower lip not bilobed; body not slender, its depth 2.6 to 3.3 times in standard length; 1 or 2 pairs of enlarged canine teeth anteriorly in jaws. . . . . → 18
- 18a. Anal-fin spines III; ventral part of head naked (Fig. 13) . . . . . *Labrichthys*
- 18b. Anal-fin spines II; ventral part of head fully scaly except for chin . . . . . → 19
- 19a. Small canine teeth present along side of upper jaw; dorsal profile of snout straight; caudal peduncle long relative to depth, its length 1.2 to 1.5 times in least depth of caudal peduncle (Fig. 14) . . . . . *Diproctacanthus*
- 19b. No small teeth on side of upper jaw between anterior canines and posterior canines; dorsal profile of snout convex (except juveniles); caudal peduncle short relative to depth, its length (measured horizontally from rear of anal-fin base to caudal-fin base) 1.7 to 3 times in least depth of caudal peduncle (Fig. 15) . . . . . *Labropsis*

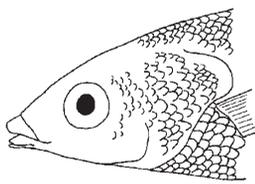


Fig. 12 *Labroides*

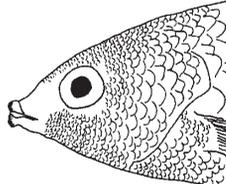


Fig. 13 *Labrichthys*

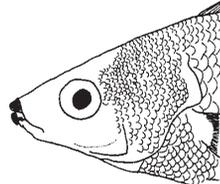


Fig. 14 *Diproctacanthus*

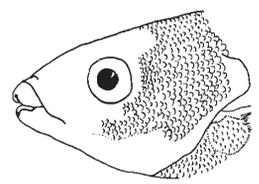


Fig. 15 *Labropsis*

- 20a. Cheek below eye scaly, with 1 or more rows of scales that may be very small in some species) . . . . . → 21
- 20b. Cheek below eye nearly or entirely without scales, except for *Cheilio inermis* with a few scales on operculum behind eye . . . . . → 24
- 21a. Sheath of scales extending onto dorsal and anal fins; branchiostegal rays 5; anal-fin rays 9 or 11; lateral-line scales 24 or 27; branched caudal-fin rays 10 or 11 . . . . . → 22
- 21b. No sheath of scales extending onto dorsal and anal fins; branchiostegal rays 6; anal-fin rays 10; lateral-line scales 25 or 26; branched caudal-fin rays 12. . . . . → 23

- 22a. Lips very thick and fleshy, upper lip extending anteriorly of lower lip (Fig. 16); anal-fin rays 11; lateral-line scales 27; canine tooth at corner of mouth in large individuals; posterior margin of preopercle smooth to slightly serrate; colour of head of adults with pink and blue-green bands . . . . . *Hemigymnus*
- 22b. Lips not thick and fleshy; anal-fin rays 9; lateral-line scales 24; no canine tooth at corner of mouth; posterior margin of preopercle serrate; colour of adults brown to dark red with blotchy markings . . . . . *Pteragogus*

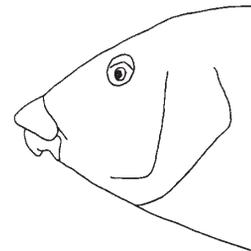


Fig. 16 *Hemigymnus*

- 23a. Body elongate, its depth 4 to 5 times in total length; 1 1/2 to 2 1/2 scale rows above lateral line; 1 to 3 cheek-scale rows behind eye . . . . . *Suezichthys*
- 23b. Body moderately deep, its depth 2 to 3.5 times in total length; 3 to 5 scale rows above lateral line; 2 to 6 cheek-scale rows behind eye . . . . . *Pseudolabrus*

- 24a. Anterior pair of teeth in upper and lower jaws directed horizontally forward, curved away from head, incisiform in large individuals (Fig. 17); colour striking in most species, with a colour spot or bar on each body scale (except female *A. geographicus* which is a uniform brown). . . . . *Anampses*
- 24b. Anterior pair of teeth in upper and lower jaws distinctly caniniform, not directed horizontally forward, and usually curved slightly inward toward head . . . . . → 25

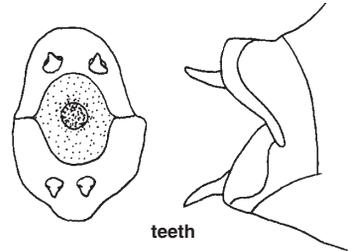


Fig. 17 *Anampses*

- 25a. Lateral-line scales 25 to 28 . . . . . → 26
- 25b. Lateral-line scales 45 to 118 . . . . . → 33
- 26a. Dorsal fin with VIII spines and 12 to 14 soft rays . . . . . → 27
- 26b. Dorsal fin with IX spines and 11 to 13 soft rays (rarely *Halichoeres* will have VIII spines) . . . . . → 28
- 27a. Snout elongate, with upper and lower jaws forming anteriorly projecting tube; upper and lower jaws with 2 or 3 pairs of canine teeth . . . . . *Gomphosus*
- 27b. Snout blunt, with moderately small jaws, not tube-like; single pair of forwardly curved canine teeth in upper jaw; lower jaw with 1 or 2 pairs of canines . . . . . *Thalassoma*
- 28a. Anterior teeth in upper and lower jaws enlarged to form canines, often with second upper canine recurved; 3 or more scale rows between lateral line and dorsal-fin origin . . . . . → 29
- 28b. Anterior teeth in upper and lower jaws only slightly larger than posterior teeth, not enlarged to form canines; 2 ½ scale rows between lateral line and dorsal-fin origin . . . . . → 32
- 29a. Body slender, its depth 4 to 5 times in standard length . . . . . → 30
- 29b. Body moderately deep, its depth 2.5 to 4 times in standard length . . . . . → 31
- 30a. Two pairs of canine teeth anteriorly in both upper and lower jaw; canine tooth present at corner of mouth; 4 scale rows between lateral line and origin of first dorsal fin; 5 branchiostegal rays; colour pattern often with single dark midlateral stripe . . . . . *Leptojulius*
- 30b. One pair of canine teeth anteriorly in both upper and lower jaw; no canine tooth present at corner of mouth; 3 to 5 scale rows between lateral line and origin of first dorsal fin; 6 branchiostegal rays; colour pattern not consisting of a single dark midlateral stripe . . *Pseudojuloides*
- 31a. Dorsal-fin origin above point midway between eye and pectoral-fin base; body deep and moderately compressed; lower pharyngeal jaw with single oval-shaped plate and lacking molariform teeth; colour pattern striking with most species showing bright bands on head and body, or bright colour blotches or individual scale spots on body (Fig. 18) . . *Macropharyngodon*
- 31b. Dorsal-fin origin posterior to point midway between eye and pectoral-fin base; body not as deep and compressed; lower pharyngeal jaw with molariform teeth; colour pattern usually not as above (Fig. 19) . . . . . *Halichoeres*

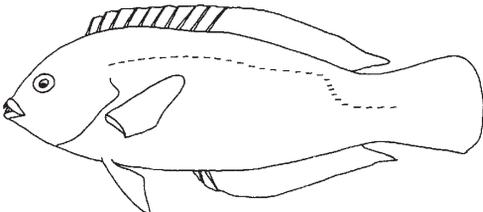


Fig. 18 *Macropharyngodon*

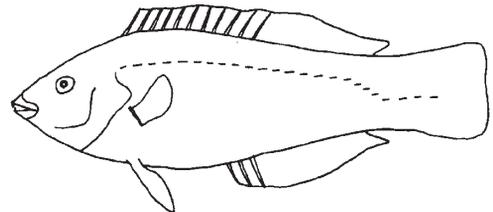


Fig. 19 *Halichoeres*

- 32a. Body moderately wide and robust (Fig. 20); caudal peduncle narrow; pectoral fins set high on body with pectoral-fin origin reaching nearly to opercle flap; pectoral muscles dark red with rich blood supply . . . . . *Stethojulis*
- 32b. Body compressed; caudal peduncle comparatively deep (Fig. 21); pectoral fins set in normal body positions; pectoral muscles mixture of red and white fibers. . . . . *Xenojulis*

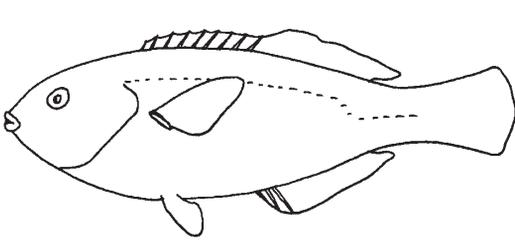


Fig. 20 *Stethojulis*

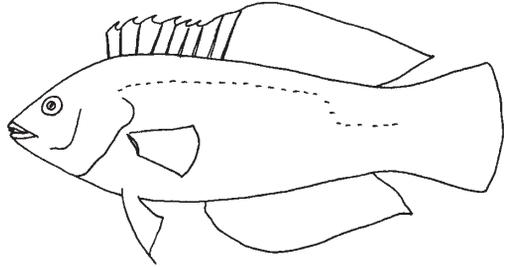


Fig. 21 *Xenojulis*

- 33a. Body extremely elongate (Fig. 22), its depth 5.5 to 8 times in total length; snout long, 2.2 to 2.4 times in head length (also true of *Hologymnosus*); lateral line descending smoothly to caudal peduncle without abrupt angle below dorsal fin; lateral-line scales 45 to 47 . . . . . *Cheilio*
- 33b. Body moderately elongate to moderately deep, its depth 2.5 to 5 times in total length; lateral line steeply descending below dorsal fin; lateral-line scales 50 to 118. . . . . → 34
- 34a. Lateral-line scales very small and numerous, 95 to 118 (Fig. 23); 2 pairs of enlarged canine teeth anteriorly in jaws; snout long (2.3 to 2.7 times in head length) and lips fleshy . . . . . *Hologymnosus*
- 34b. Lateral-line scales small, 50 to 80; single pair of enlarged canine teeth anteriorly in jaws; snout short (2.8 to 3.5 times in head length) . . . . . → 35

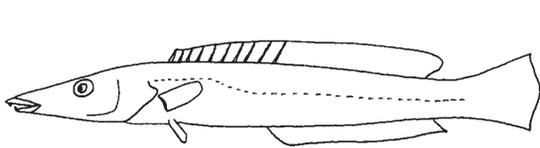


Fig. 22 *Cheilio*

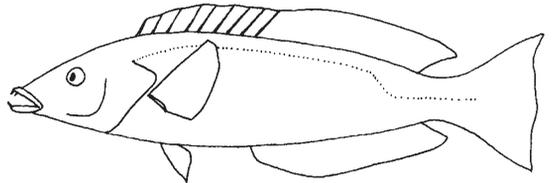


Fig. 23 *Hologymnosus*

- 35a. Canine teeth of upper jaw not laterally curved; enlarged molariform teeth present on lower pharyngeal jaw; canine present at corner of mouth; body moderately deep, its depth 2.5 to 3.7 times in total length (Fig. 24) . . . . . *Coris*
- 35b. Canine teeth of upper jaw laterally curved; enlarged molariform teeth not present on lower pharyngeal jaw; no canine at corner of mouth; body moderately elongate, its depth 3.5 to 4 times in total length (Fig. 25) . . . . . *Pseudocoris*

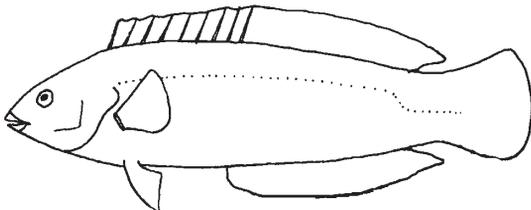


Fig. 24 *Coris*

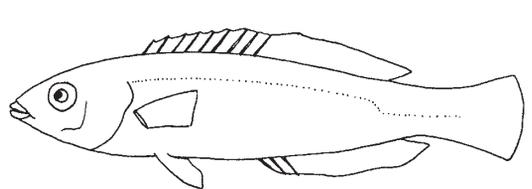


Fig. 25 *Pseudocoris*

**Key to the species of *Anampses* occurring in the area** (adapted from Randall, 1972)

- 1a.** Lateral-line scales 48 to 50 . . . . . *Anampses geographicus*
- 1b.** Lateral-line scales 26 or 27 . . . . . → 2
- 2a.** Body moderately to very deep, its depth 2.3 to 3 times in standard length; gill rakers 18 to 25; lateral-line scales 27 (not including last pored scale, beyond end of hypural); body with dark-edged light blue spots or vertical lines on scales; head with narrow dark-edged blue bands, the longer ones radiating from eye, the male form usually with a broad band of blue across anterior interorbital space. . . . . *Anampses caeruleopunctatus*  
(Indo-Pacific; Red Sea to Easter Island)
- 2b.** Body not very deep, its depth 2.8 to 3.65 times in standard length; gill rakers 14 to 20; lateral-line scales 26 (not including last pored scale, beyond end of hypural) . . . . . → 3
- 3a.** Caudal fin truncate to emarginate (except juveniles); gill rakers 18 to 20; body dark brown with a small round pale spot on each scale, the caudal fin entirely yellow, except extreme base which is coloured like body (female), or reddish brown, lighter outwardly, the 2 colours separated by a curved black line with a whitish band adjacent and posterior to it (male) . . . . . *Anampses meleagrides*  
(western Pacific to East Africa)
- 3b.** Caudal fin slightly to moderately rounded; gill rakers 14 to 18 (except *A. elegans*); if body dark with pale spots, caudal-fin coloration not as above . . . . . → 4
- 4a.** Pectoral fins comparatively long, 1.5 to 1.7 times in head length; gill rakers 18 to 20; colour of body light brown with a faint blue spot, 1 per scale, above lateral line and 7 faint golden stripes following centres of scale rows below lateral line; a faint dark stripe from front of snout to eye with a fainter continuation behind eye; lower half of head pale silvery; large individuals, presumed the male of this species, with vertical blue lines on scales and blue lines on upper half of head . . . . . *Anampses elegans*  
(Lord Howe Island, Norfolk Island, New Zealand, and New South Wales)
- 4b.** Pectoral fins not long, 1.7 to 2.1 times in head length; gill rakers 14 to 19 (rarely 19); colour not as above . . . . . → 5
- 5a.** Gill rakers 14 to 17, body dark brown with light blue-green stripes or rows of white spots along scale rows; a black spot on opercular membrane; caudal fin with a broad zone of bright yellow near base, an outer zone of black, and a pale posterior margin; body with a small white spot on each scale . . . . . *Anampses melanurus*  
(Indonesia, Taiwan Province of China, Samoa, and Marquesas)
- 5b.** Gill rakers 15 to 19; colour not as above (if coloured dark brown with white spots, caudal fin not yellow and black) . . . . . → 6
- 6a.** Bright orange with dark-edged blue stripes anteriorly, shading to deep blue posteriorly (female) or dusky yellow to blackish with vertical blue lines on scales, the head broadly striped with brownish orange and blue (male) . . . . . *Anampses femininus*  
(southern Oceania, from Eastern Island to Lord Howe Island)
- 6b.** Colour not as above . . . . . → 7
- 7a.** Back above a demarcation from pectoral-fin base to rear base of dorsal fin blackish with blue dots, shading to whitish on sides and ventrally with blue spots (female) or vertical blue lines (male) on scales; no dark bar at pectoral-fin base . . . . . *Anampses neoguinaicus*  
(western Pacific)
- 7b.** No demarcation in colour on upper side of body; dark reddish brown posteriorly with small dark-edged blue spots, shading to yellow on lower head, thorax and abdomen; a dark brown bar at pectoral-fin base . . . . . *Anampses twistii*  
(Indo-Pacific)

**Key to the species of *Bodianus* occurring in the area** (adapted from Gomon, manuscript)

- 1a.** Scales on dorsal midline of head not reaching forward to above anterior extent of orbit . . . . . → **2**
- 1b.** Scales on dorsal midline of head reaching in advance of above anterior extent of orbit . . . . . → **8**
- 2a.** A prominent black spot present on operculum; body with numerous narrow red stripes; black spot on scaly caudal fin; dorsal-fin base immediately above lateral line . *Bodianus bimaculatus*  
(western Pacific)
- 2b.** No black spot on operculum . . . . . → **3**
- 3a.** Pelvic fins reaching distinctly short of anus in all but very small specimens (fin approaching anus in small specimens); a single prominent black spot present near centre of scaly caudal-fin base; teeth in lower jaw behind prominent anterior canines short, of nearly equal size, usually numerous . . . . . → **4**
- 3b.** Pelvic fins reaching to or past anus in all but some juveniles (fin almost reaching anus in juveniles); a single prominent black spot not present near centre of scaly caudal-fin base; teeth in lower jaw behind prominent anterior canines usually short anteriorly and posteriorly, intermediate teeth distinctly longer . . . . . → **5**
- 4a.** Snout pointed, posterior corner of mouth below or immediately posterior to forward margin of orbit . . . . . *Bodianus diana*  
(western Pacific, Indian Ocean)
- 4b.** Snout long and pointed; posterior corner of mouth anterior to forward margin of orbit by about 1/2 eye diameter . . . . . *Bodianus prognathus*  
(Line Islands, Central Pacific)
- 5a.** Scales present posteriorly on lower jaw, extending anterior to forward end of ventral preopercular edge (scales often embedded); a distinct black band encircling body posteriorly in adults . . . . . → **6**
- 5b.** Scales absent on lower jaw, not extending anterior to forward end of ventral preopercular edge; no black band encircling body posteriorly in adults . . . . . → **7**
- 6a.** Black band encircling body posteriorly oriented vertically in adults, almost as broad below lateral line as above; posterior edge of band not reaching past posterior edge of hypurals ventrally . . . . . *Bodianus macrourus*  
(western Indian Ocean)
- 6b.** Black band encircling body posteriorly angled posteroventrally in adults, much narrower below lateral line than above; posterior edge of band usually reaching past posterior edge of hypurals ventrally in all but small specimens . . . . . *Bodianus loxozonus*  
(western and Central Pacific)
- 7a.** Head with a posteriorly flared blackish stripe or series of spots directed posteriorly from corner of mouth; adults with a black saddle-like spot on dorsal half of body below posterior end of dorsal fin and on anterodorsal portion of caudal peduncle (secondary phase adults of some subspecies with spot reduced or absent); no pale band on side in juveniles or adults; juveniles with a broad black band encircling body posteriorly and covering most of anal fin to edge; black spot at anterior end of dorsal fin extending posteriorly little, if at all, past fourth spine in very large adults . . . . . *Bodianus bilunulatus*  
(Indo-Pacific)
- 7b.** Head without blackish markings; a large black spot or smudge present on body below dorsal fin posteriorly, but not extending onto caudal peduncle; a broad pale band present on dorsal half of side below centre of dorsal fin in juveniles and adults; juveniles with a large black spot below posterior half of dorsal fin, not extending onto lower third of body, and a black spot on anterior portion of anal fin; black spot anteriorly on dorsal fin extending posteriorly to about seventh spine in very large adults . . . . . *Bodianus perditio*  
(southern Indo-Pacific, Japan)

- 8a. Snout sharply pointed; dorsal and ventral corners of caudal fin not prolonged into filaments . . . . . → 9
- 8b. Snout blunt, rounded; dorsal and ventral corners of caudal fin prolonged into filaments . . . . . *Bodianus anthioides* (Indo-Pacific)
- 9a. Juveniles and adults with a prominent black spot distally on dorsal and anal fins immediately posterior to last spine; juveniles and some females with prominent large white spots, including 1 on belly immediately anterior to anal-fin origin . . . . . *Bodianus axillaris* (Indo-Pacific)
- 9b. No distinct black spot on dorsal and anal fins posterior to last spine; juveniles without large white spot on belly immediately adjacent to anal-fin origin; adults with a prominent ventrally tapered black band angled from base of last few dorsal-fin spines to dorsoposterior side of pectoral-fin base; body grey or brownish grey anterior to band, white posterior to band; juveniles brownish with several prominent yellow spots, 1 spot encircling dorsal side of pectoral-fin base, but none on belly or midlaterally on side below lateral line . . . . . *Bodianus mesothorax* (western and Central Pacific)

**Key to the species of *Cheilinus* occurring in the area**

- 1a. Dorsal fin with X spines and 9 soft rays; body brown to dark olive with small pale spots; head with small orange-red spots (may be a few short irregular lines); median fins with whitish dots . . . . . *Cheilinus chlorourus* (Indo-Pacific)
- 1b. Dorsal fin with IX spines and 9 to 11 soft rays; colour not as above . . . . . → 2
- 2a. Adults with a prominent fleshy hump on forehead; greenish yellow with vertical dark green markings on scales (except nape and chest); head with a highly irregular reticulum of orangish and bluegreen; 2 black lines extending posteriorly from eye: juveniles pale yellow-white with dark vertical markings on scales; attains enormous size (over 2 m) . . . . . *Cheilinus undulatus* (Indo-Pacific)
- 2b. Adults without prominent hump on forehead: colour not as above; maximum length 40 cm . . . . . → 3
- 3a. Dorsal profile of head from mouth to above eye concave; caudal fin always rounded; a pair of prominent dark brown spots anteriorly on upper lip; no bars on body. . *Cheilinus oxycephalus* (Indo-Pacific)
- 3b. Dorsal profile of head from mouth to above eye straight or convex; caudal fin rounded, truncate or double emarginate; no prominent dark brown spots anteriorly on upper lip; bars on body present or absent . . . . . → 4
- 4a. Body depth 2.3 to 2.6 times in standard length; caudal fin rounded, becoming trilobed in adult males (a broad rounded central lobe and filamentous upper and lower lobes); body olivaceous with a vertical red line on each scale; head and chest with numerous small red spots and red lines radiating anteriorly from eye. . . . . *Cheilinus trilobatus* (Indo-Pacific)
- 4b. Body depth 2.6 to 3.3 times in standard length; caudal fin variable in shape, but not trilobed; colour not as above . . . . . → 5

- 5a. Caudal fin of adults emarginate, the lobes of large fish prolonged; body blackish with narrow whitish bars; adults with a broad orange-red zone on rear of head and anteriorly on body; caudal fin with a transverse blackish bar, the posterior margin broadly blackish . . . . . *Cheilinus fasciatus*  
(Micronesia and Samoa to Red Sea)
- 5b. Caudal fin of adults rounded (though may have prolonged lobes), truncate, or slightly double emarginate; colour not as above . . . . . → 6

**Key to the species of *Choerodon* occurring in the area** (adapted from Gomon, manuscript)

- 1a. Dorsal fin with XIII spines and 7 soft rays . . . . . → 2
- 1b. Dorsal fin with XII spines and 8 soft rays . . . . . → 13
- 2a. Anal fin with III spines and 9 soft rays; a broad pale saddle present on caudal peduncle, extending anteriorly to below posterior end of dorsal-fin base; a pale wedge-shaped band present midlaterally on side below about fifth dorsal-fin spine; head greenish brown above level of mouth, covered by tiny orange spots . . . . . *Choerodon anchorago*  
(western Pacific)
- 2b. Anal fin with III spines and 10 soft rays; colour pattern not as above . . . . . → 3
- 3a. Predorsal scales reaching forward beyond point above posterior extent of orbit on dorsal midline of head, scales lateral to midline reaching to above centre of orbit . . . . . → 4
- 3b. Predorsal scales not reaching, or barely reaching forward to above posterior extent of orbit on dorsal midline of head, scales lateral to midline not reaching forward of point above posterior extent of orbit . . . . . → 5
- 4a. Second prominent anterior canine distinctly curved posterolaterally; body of moderate depth at level of dorsal-fin origin, 2.7 to 2.9 times in standard length; caudal fin slightly forked; body with a prominent dusky stripe on lateral midline; a prominent dusky spot present midlaterally at posterior end of caudal peduncle; no dark spot on dorsal fin in adults . . . . . *Choerodon vitta*  
(northern Australia)
- 4b. Second prominent anterior canine mostly straight, only slightly curved in large specimens, angled dorsolaterally and sometimes slightly posteriorly; body deep at level of dorsal-fin origin, 2.3 to 2.6 times in standard length; caudal fin truncate to slightly rounded; body mostly pale with faint broad dusky bands especially dorsally; a prominent ocellated dark spot present on dorsal fin between last few spines . . . . . *Choerodon monostigma*  
(northern Australia)
- 5a. Scales on subopercle reaching to or nearly to below anterior extent of ventral preopercular edge; predorsal scales reaching nearly to above posterior extent of orbit on dorsal midline of head (somewhat short of this in very large specimens); body with an anteroventrally angled narrow dusky wedge extending from base of tenth or eleventh dorsal-fin spine to posterior side of pectoral-fin base; body anterior to wedge in adults somewhat dusky, paler posteriorly; juveniles somewhat mottled, but with a faint indication of above pattern and an ocellated dark spot posteriorly on dorsal fin. . . . . *Choerodon azurio*  
(Japan, China, Taiwan Province of China, Ryukyu Islands)
- 5b. Scales on subopercle not reaching near anterior end of ventral preopercular edge, though extending forward to below midpoint of ventral edge in some species; predorsal scales rarely reaching forward near point above posterior extent of orbit on dorsal midline of head; body not pigmented as described above . . . . . → 6

- 6a. Body with a prominent anteroventrally directed dark band (occasionally restricted to a large black spot dorsally on body extending onto ventral portion of dorsal fin between last spine and about fourth segmented ray) associated with a single prominent pale band or pale spot; pectoral-fin rays with ii unbranched and 13 branched rays . . . . . → 7
- 6b. Body coloration not as above; pectoral-fin rays with ii unbranched and 13 to 17 branched rays . . . . . → 8
- 7a. A large pale spot situated below posterior end of dorsal-fin base, bordered anteriorly by a broad dark band tapering anteroventrally toward pectoral-fin base (band extending as dusky segment around ventral and posterior side of pale spot); dorsal edge of caudal fin dark in adults . . . . . *Choerodon jordani*  
(Philippines, New Caledonia, Australia)
- 7b. A broad pale band directed from below base of last few dorsal-fin spines to upper side of pectoral-fin base; a large dark spot situated dorsally on side and on ventral edge of dorsal fin at dorsoposterior end of pale band, usually extending anteroventrally as a dark tapering marginal band on pale band at least along posteroventral edge; caudal fin uniformly pale in adults . . . . . *Choerodon zosterophorus*  
(Papua New Guinea, Philippines)
- 8a. Subopercle with 9 to 11 scales in an anteriorly tapering row; caudal fin slightly forked; pectoral fins narrowly pointed at dorsoposterior tip in large specimens; body pale without distinct dusky to dark markings, only a small dusky spot on each body scale and several dusky marks on head in freshly preserved specimens . . . . . *Choerodon venustus*  
(Queensland, Australia)
- 8b. Subopercle with 1 to 8 scales in an anteriorly tapering row; caudal fin rounded, truncate or slightly double emarginate; pectoral fins broadly pointed or rounded at dorsoposterior tip; body variously pigmented . . . . . → 9
- 9a. Pores on dorsal side of head moderate in number, confined to distinct lines corresponding to major cephalic sensory canals . . . . . → 10
- 9b. Pores on dorsal side of head extremely numerous, so dense as to obscure position of major cephalic sensory canals . . . . . → 11
- 10a. Body with about 5 to 7 complete broad dusky bands; a distinct dark spot centred on lateral line along dusky band below fifth or sixth dorsal-fin spine; adults with second prominent anterior canine approximately 1/2 the size of the first, directed mostly dorsally . . . . . *Choerodon graphicus*  
(northeastern Australia, New Caledonia)
- 10b. Body with about 5 very faint broad dusky bands dorsally on side in most freshly preserved specimens; a large pale spot often present below posterior end of caudal fin in adults; no dark dusky spot present on side below fifth or sixth dorsal-fin spine; adults with second prominent anterior canine approximately same size as first, second canine slanted dorsolaterally . . . . . *Choerodon cyanodus*  
(northern Australia)
- 11a. Subopercle with 6 to 10 scales, scales extending anteriorly at least to below midpoint on ventral preopercular edge; pectoral fins with ii unbranched and 13 to 15 (rarely 15) branched rays; colour orange with light grey longitudinal stripes, a large bright yellow oval spot on side above lateral line and below anterior half of dorsal fin . . . *Choerodon oligacanthus*  
(Indonesia, Philippines)
- 11b. Subopercle with 1 to 5 scales, scales distinctly not extending anteriorly to below midpoint on ventral preopercular edge; pectoral fins with ii unbranched and 15 to 17 (rarely 15) branched rays; colour not as above. . . . . → 12

- 12a. A moderately small but prominent dark spot present on body at base of last dorsal-fin spine (spot not extending onto fin membrane); body scales each with a blue centre in life forming horizontal rows of spots on side; second prominent anterior canine in lower jaw distinctly shorter than first in adults, directed mostly dorsally and slightly anteriorly; 3 to 5 scales on subopercle . . . . . *Choerodon schoenleinii*  
(western Pacific)
- 12b. No small prominent black spot on side; a horizontally elongate dusky blotch present below centre of fin in some specimens; head with many small orange spots on cheek, forehead crossed by 4 or 5 sets of alternating blue and orange stripes; body scales edged with blue giving sides uneven banded appearance; second prominent anterior canine in lower jaw distinctly smaller than first in adults, directed dorsolaterally and curved slightly posteriorly; 1 to 3 scales on subopercle . . . . . *Choerodon cephalotes*  
(Australia)
- 13a. Posterior edge of pectoral fins produced ventrally (ventralmost rays distinctly longer than those immediately above); scales ventrally on cheek distinctly not extending forward to corner of mouth; head with a pale stripe directed horizontally forward from lower edge of eye extending around tip of snout and adjoining stripe from opposite side; side of body with 2 pale stripes or horizontal series of spots; a pale stripe present midlaterally on caudal peduncle (perhaps extension of stripe anteriorly on side); an additional stripe located dorsally on caudal peduncle and side immediately below most of dorsal-fin base . . . . . *Choerodon margaritiferus*  
(Philippines)
- 13b. Posterior edge of pectoral fins not produced ventrally (ventralmost rays shorter than those immediately above); scales ventrally on cheek extending forward to or nearly to corner of mouth; colour not as above . . . . . → 14
- 14a. Pectoral fins with ii unbranched and 15 branched rays; predorsal scales approximately 10 to 14, reaching forward in advance of posterior extent of orbit on dorsal midline of head; body with 7 or 8 pairs of alternating prominent red, blue, white and blackish bands . . . *Choerodon fasciatus*  
(eastern Australia, Philippines, New Caledonia, Japan)
- 14b. Pectoral fins with ii unbranched and 14 branched rays; predorsal scales approximately 5 to 8, scales often reaching forward near, but not in advance of above posterior extent of orbit on dorsal midline of head; body without bands or with a single broad anteroventrally slanted dark band . . . . . → 15
- 15a. A broad dark, oblique band present on dorsal half of body directed anteroventrally from below posterior third of dorsal fin, dark band with pale marginal bands anteriorly and posteriorly . . . . . *Choerodon melanostigma*  
(Philippines)
- 15b. Body without a broad dark, pale-margined, oblique band on side; body bicoloured, dusky anterodorsally and pale posteroventrally, line of demarcation extending between base of first dorsal-fin spine and upper side of pectoral-fin base; a broad anteroventrally tapering reddish brown stripe covering dorsal half of side posterior to greenish brown anterodorsal portion of body; reddish brown area edged ventrally by yellow stripe . . . *Choerodon zamboange*  
(Philippines, Japan)

**Key to the species of *Coris* occurring in the area**

- 1a. Lateral-line scales 61 to 80 . . . . . → 2
- 1b. Lateral-line scales 49 to 55 . . . . . → 3

- 2a.** Lateral-line scales 59 to 67; a hump on forehead of adults (slight on females, large on males); pectoral-fin rays 14; juveniles whitish with small black spots on head and anterior body and 2 large semicircular orange-red spots on back; mature females greenish with red spots anteriorly; adult males dark blue-green, often with 1 or 2 pale green bars on sides . . . . . *Coris aygula*  
(Indo-Pacific)
- 2b.** Lateral-line scales 70 to 80; no hump on forehead; pectoral-fin rays 13; juveniles bright orange with black edged white wedges dorsally on head and body; adults red to dark green-brown with numerous small bright blue spots posteriorly on sides and tail; head with several bright green stripes; caudal fin bright yellow . . . . . *Coris gaimard*  
(western and Central Pacific)
- 3a.** First 2 dorsal-fin spines with flexible tips slightly longer than other dorsal-fin spines; a black spot rimmed with yellow on posterior margin of opercle; a black spot at posterior basal portion of dorsal fin; body greenish with several red stripes breaking into spots posteriorly and about 8 thin vertical pale bars . . . . . *Coris dorsomacula*  
(western Pacific)
- 3b.** First and second dorsal-fin spines shorter than remaining spines; colour not as above . . . . . → **4**
- 4a.** Dorsal fin with IX spines and 11 soft rays; anal fin with III spines and 11 soft rays; lateral-line scales 51 to 53; body pale greenish white with irregular black bars on dorsum; a narrow black bar at pectoral-fin base, a large ocellated black spot in middle of dorsal fin and a small black spot anteriorly in dorsal fin. . . . . *Coris batuensis* (= *C. schroederi*)  
(Marshall Islands and Tonga to western Indian Ocean)
- 4b.** Dorsal fin with IX spines and 12 soft rays; anal fin with III spines and 12 soft rays; lateral-line scales 48 to 51; colour not as above (except female *C. aurilineata* has black spot in centre of dorsal fin) . . . . . → **5**
- 5a.** Pectoral-fin rays 14; body green dorsally with numerous longitudinal lines of orange-yellow and blue-green; blue-edged black spot on upper caudal peduncle; females with large black spot in centre of dorsal fin . . . . . *Coris aurilineata*  
(New South Wales to southern Great Barrier Reef)
- 5b.** Pectoral-fin rays 13 (rarely 14); body white ventrally with 2 broad dark stripes separated by thin light line running along entire body . . . . . *Coris pictoides*  
(Indonesia, Philippines, Australia north of 27° latitude)

**Key to the species of *Labropsis* occurring in the area** (adapted from Randall, 1981)

- 1a.** Lateral-line scales 27; anterior pair of canine teeth of upper jaw strongly curved laterally (and slightly posteriorly); posterior caudal peduncle and caudal fin white . . . . . *Labropsis alleni*  
(Indo-Malayan region)
- 1b.** Lateral-line scales 35 to 49; anterior pair of canine teeth of upper jaw not curved laterally; posterior caudal peduncle and caudal fin principally dark brown or black . . . . . → **2**
- 2a.** Lateral-line scales 43 to 49; pelvic fins short, less than 18% standard length; caudal fin of males emarginate; penultimate dorsal- and anal-fin rays not the longest . . . . . → **3**
- 2b.** Lateral-line scales 35 to 41; pelvic fins of adults long (especially in males), more than 18% standard length; caudal fin of males rounded; penultimate dorsal- and anal-fin rays the longest . . . . . → **4**

- 3a.** First and second pairs of canine teeth anteriorly in jaws nearly equal in size; lateral-line scales 43 to 47; lips and a region around mouth abruptly pale, in contrast to dark colour of rest of head; juveniles and small females with 3 narrow dark stripes (bright blue in life), dorsal fin dark; males without a white area posteriorly in caudal fin . . . . . *Labropsis polynésica*  
(Society Islands, Tuamotu Archipelago, Austral Islands, and Cook Islands)
- 3b.** Anterior pair of canine teeth in jaws nearly twice as large as second pair; lateral-line scales 46 to 49; lips dark except anteriorly; juveniles and small females with 5 or more blue longitudinal lines; dorsal fin and adjacent back pale yellow; males with a large triangular white area in caudal fin . . . . . *Labropsis xanthonota*  
(East Africa to Samoa Islands and Marshall Islands)
- 4a.** Dorsal-fin rays 11; anal-fin rays 10; base of pectoral fins enclosed in a large dark brown to black spot not containing 2 prominent white (orange-red in life) spots; males usually with a large orange area beneath and around pectoral fins . . . . . *Labropsis manabei*  
(Ryukyu Islands and central and northern Philippines)
- 4b.** Dorsal-fin rays 12; anal-fin rays 11; base of pectoral fins with or without a large dark spot, but if present, containing 2 prominent white areas (orange-red in life) . . . . . → 5
- 5a.** Scales on suborbital region reaching to or anterior to a vertical through centre of eye; ninth dorsal-fin spine 2.7 to 3.3 times in head length; base of pectoral fins orange-red in life; males with a prominent orange-red area dorsally on head . . . . . *Labropsis micronesica*  
(Marshall, Mariana, Caroline, and Palau islands)
- 5b.** Scales on suborbital region usually not reaching a vertical through centre of eye; ninth dorsal-fin spine 3.1 to 3.85 times in head length; base of pectoral fins in a large round dark brown to black spot containing 2 orange-red spots; males without an orange-red area dorsally on head . . . . . *Labropsis australis*  
(Solomon, Samoa, Fiji, Loyalty, and Tonga islands and Great Barrier Reef)

**Key to the species of *Macropharyngodon* occurring in the area** (adapted from Randall, 1978)

- 1a.** Dorsal- and anal-fin rays 12; teeth spatulate (except canine at corner of mouth); caudal peduncle short, its length 2.3 to 2.5 in least depth; body light orangish with a bluish white spot on each scale, a large black spot on opercle rimmed in blue and a small blackish spot behind eye . . . . . *Macropharyngodon kuiteri*  
(New Caledonia and eastern Australia south to Sydney)
- 1b.** Dorsal- and anal-fin rays 11; teeth conical; caudal peduncle not short, its length 1.4 to 1.9 in least depth; colour not as above (if large black spot present on opercle, it is not rimmed with blue). . . . . → 2
- 2a.** Pectoral-fin rays 13 (including upper rudimentary ray); body whitish with orange blotches and/or irregular longitudinal bands; a large black spot edged dorsally with yellow on opercle . . . . . *Macropharyngodon choati*  
(eastern Australia and Great Barrier Reef)
- 2b.** Pectoral-fin rays 12 (including upper rudimentary ray); colour not as above . . . . . → 3
- 3a.** Anal and pelvic fins blackish except for a narrow blue margin and a row of faint dark blue-green spots on base of anal fin; caudal fin whitish in life, the male with broad blackish upper and lower margins; body primarily blackish with faint pale spotting in female (male with light greenish edges on scales); specimens from Oceania with 4 diffuse saddle-like pale yellowish areas on back and 1 on nape . . . *Macropharyngodon negrosensis*  
(Philippines, Ryukyu Islands, and western Oceania)
- 3b.** Anal and pelvic fins not blackish (though there may be dark markings); caudal fin not whitish in life; body not coloured as above . . . . . → 4

- 4a. Females whitish to light greenish with numerous irregular black spots; males reddish with dark-edged green spots (one per scale) on body, a black humeral spot containing small yellowish spots, and dark edged green or greenish yellow spots and bands on head . . . . . *Macropharyngodon meleagris*  
(tropical western and Central Pacific and Cocos-Keeling Islands)
- 4b. Females reddish anteriorly, shading to blackish posteriorly, with greenish yellow spots edged in blue and black (1 per scale) on body and similar spots and irregular bands on head; males similar in colour to females, with no black humeral spot . . . *Macropharyngodon ornatus*  
(Indonesia, Sri Lanka, and western Australia)

**Key to the species of *Oxycheilinus* occurring in the area**

- 1a. Mouth terminal or lower jaw slightly projecting; caudal fin of terminal males rhomboid, with central rays longest, and dorsalmost caudal-fin ray elongated into a short filament; body yellowish brown to greenish, young with a broad, dark lateral stripe which breaks into dark blotches in adults, the largest above distal pectoral fins; a small dark spot behind eye; a small species, reaching about 14 cm . . . . . *Oxycheilinus bimaculatus*  
(Indo-Pacific)
- 1b. Lower jaw prominent, projecting forward of upper jaw, colour not as above; adults attain sizes of up to 30 cm . . . . . → 2
- 2a. Body pale green with about 15 dark horizontal lines covering body surface, beginning behind opercle and ending at caudal peduncle at rear margins of dorsal and anal fins; peduncle and tail pale green without distinctive markings; head also covered with complex pattern of vermiculating dark green lines . . . . . *Oxycheilinus* sp. 1  
(Rarotonga)
- 2b. Colour not as above . . . . . → 3
- 3a. Body mostly green (ranging from light to dark green) with red markings on head, body, and fins; head with red lines radiating from eye anteriorly and posteriorly; cheek with 6 to 8 red lines slanting anterodorsally to posteroventrally at an angle of about 45° . . . . . → 4
- 3b. Body mostly pale pinkish, dark red, or brownish, some species with dark midlateral stripe, others with white or dark markings on body, above opercle, or on dorsal fin; no prominent cheek lines . . . . . → 6
- 4a. Dorsal margin of head distinctly concave, snout long and pointed; black midlateral stripe prominent, particularly posteriorly on caudal peduncle, becoming irregular and blotchy anteriorly, often disappearing before reaching pectoral fins (in small individuals black stripe is a series of black spots on peduncle); large individuals with pattern of yellow vermiculating lines and spots on anterodorsal portion of body . . . . . *Oxycheilinus celebicus*  
(northwestern Pacific)
- 4b. Dorsal margin of head straight or slightly convex; midlateral stripe reddish, yellowish, indistinct or absent; no yellow markings on anterodorsal portion of body . . . . . → 5
- 5a. Membranes of spinous portion of dorsal fin distinctly incised; no white bar on caudal peduncle; red lines radiating posteriorly from eye not continuous across opercle to posterior opercular edge . . . . . *Oxycheilinus digrammus*  
(Indo-Pacific)
- 5b. Membranes of spinous portion of dorsal fin smooth, not incised; white bar often present on caudal peduncle (this pattern very changeable); red lines radiating posteriorly from eye continuous across opercle to posterior opercular edge. . . . . *Oxycheilinus unifasciatus*  
(western and Central Pacific)

- 6a.** Body reddish dorsally, pale below, with 5 evenly spaced pale vertical bars on dorsal half of body, the first just anterior of dorsal-fin origin, the last below posterior dorsal-fin rays on dorsal portion of caudal peduncle; caudal fin with black posterior margin; spot between first 2 dorsal-fin rays is dusky, not prominent . . . . . *Oxycheilinus* sp. 2  
(New Caledonia, Vanuatu, Coral Sea, New South Wales)
- 6b.** Colour not as above; body often with a midlateral stripe and prominent spot on interspinous membrane of dorsal fin between first 2 spines . . . . . → 7
- 7a.** Prominent irregular black spot on body 2 or 3 scale rows below first 1 to 4 dorsal-fin spines; spot on anterior dorsal-fin base limited to first 2 interspinous membranes; midlateral stripe usually reddish and indistinct . . . . . *Oxycheilinus orientalis*  
(northwestern Pacific)
- 7b.** No black spot on body below dorsal fin; midlateral stripe dark, prominent; spot on anterior dorsal-fin base extending past first 2 interspinous membranes to cover space between third and fourth spine . . . . . *Oxycheilinus arenatus*  
(Indo-Pacific)

**Key to the species of *Pseudojuloides* occurring in the area** (adapted from Randall and Randall, 1981)

- 1a.** Body very elongate, its depth 5 to 5.4 times in standard length; body slightly compressed, its width 1.5 to 1.7 times in its depth; depth of caudal peduncle about equal to length of peduncle; males with conical teeth along side of jaws; males with a large black area on upper side of middle of body, extending onto dorsal fin; caudal fin of males black with a broad whitish posterior border . . . . . *Pseudojuloides mesostigma*  
(Philippines)
- 1b.** Body not very elongate, its depth 3.8 to 4.7 times in standard length; body moderately compressed, its width 1.8 to 2.4 times in its depth; depth of caudal peduncle greater than length of peduncle (measured horizontally from rear base of anal fin to base of caudal fin); colour not as above . . . . . → 2
- 2a.** Caudal fin not very short, its length 1.3 to 1.5 times in head length; first dorsal-fin ray longest; snout 2.7 to 2.9 times in head length; females with a narrow black and bright blue band from eye to upper base of caudal fin, the body brown above this band (except pale zone middorsally) and pale below; males bluish black posteriorly, except for a large triangular pale area posteriorly in caudal fin, the body light brown anteriorly (light red with yellow spots in life); head of male orange-yellow with violet bands . . . . . *Pseudojuloides atavai*  
(southeastern Oceania)
- 2b.** Caudal fin very short, its length 1.55 to 1.9 times in head length; ninth dorsal-fin ray usually longest; snout 2.85 to 3.3 times in head length; colour not as above . . . . . → 3
- 3a.** Pelvic fins comparatively long, 1.45 to 2 times in head length, in males extending posterior to origin of anal fin; males bright yellow dorsally on body and nape, bright red ventrally, the head red, a black area anteriorly in dorsal fin, a black submarginal line in dorsal and anal fins, and a blackish line forming an arc posteriorly in caudal fin . . . . . *Pseudojuloides pyrius*  
(Marquesas Islands)
- 3b.** Pelvic fins not long, 1.8 to 2.3 times in head length, rarely reaching anus; males olive green dorsally, blue ventrally, with a midlateral blue and yellow stripe; posterior part of caudal fin black, edged in pale blue . . . . . *Pseudojuloides cerasinus*  
(Indo-Pacific)

**Key to the species of *Stethojulis* occurring in the area**

- 1a.** Pectoral-fin rays 14 or 15; primary phase with a small dark brown spot middorsally at front of snout . . . . . → 2
- 1b.** Pectoral-fin rays 13 (rarely 12); no dark brown spot middorsally at front of snout . . . . . → 3

- 2a. Pectoral-fin rays 15 (rarely 14); gill rakers 24 to 28 (usually 25 to 27); body moderately elongate, its depth 3.3 to 3.85 times in standard length; primary phase with 5 narrow whitish stripes on ventral half of body; primary and terminal phases with a very small dark spot on caudal fin at level of upper edge of last lateral-line scale; terminal phase with an oblong black spot, partially rimmed in pale blue, on upper part of opercular flap . . . . . *Stethojulis strigiventer*  
(Indo-Pacific, except Hawaii)
- 2b. Pectoral-fin rays 14 (rarely 15); gill rakers 25 to 30 (usually 27 to 29); body not slender, its depth 2.75 to 3.5 times in standard length; primary phase without 5 narrow whitish stripes on ventral half of body; terminal phase lacking a dark spot on caudal-fin base and on opercular flap; terminal phase with 2 parallel blue lines on side of body, 1 from gill opening along upper edge of red area to a vertical approximately at anus, and the other from pectoral-fin axil to caudal fin . . . . . *Stethojulis bandanensis*  
(western Pacific, Oceania except Hawaii, and Clipperton and Cocos in eastern Pacific)
- 3a. Body moderately deep, its depth 2.7 to 3.2 times in standard length; gill rakers 25 to 28; primary phase with pale dots on upper two-thirds of body (only dorsally on caudal peduncle), horizontal rows of dark spots on lower third, and a dark spot at midbase of caudal fin; side of body of terminal phase with 3 narrow pale stripes that are blue in life, the one from upper end of gill opening and the one skirting lower pectoral-fin base passing to caudal fin, the middle stripe ending beneath pectoral fins . . . . . *Stethojulis trilineata*  
(Indo-Malayan region and a few localities in Oceania)
- 3b. Body moderately elongate, its depth 3.45 to 4.4 times in standard length; gill rakers 19 to 23; colour not as above . . . . . → 4
- 4a. Gill rakers 19 to 23 (usually 21 or 22); initial phase yellow-brown to grey with bluish white dots and short lines on back; white below with black dots; blue to blue-green line below eye; terminal phase greenish to yellowish grey on upper half of body, white below, the 2 zones separated by a blue line running below pectoral-fin base; a blue line from top of head along base of dorsal fin and 2 blue lines on head passing anteriorly and posteriorly from eye . . . . . *Stethojulis interrupta*  
(Indo-Malayan region)
- 4b. Gill rakers 19; initial phase brownish above, paler underside marked with a series of dark spots following scale rows, often appearing as a cross-hatched pattern; distinctly yellow line below eye; terminal phase with olivaceous dorsally, pale ventrally, with a series of 4 large vertically elongate blackish bars on side of body from beneath pectoral fins to above first 3 anal-fin rays; a bright yellow spot posterior to upper gill opening . . . *Stethojulis maculata*  
(Ryukyu Islands)

**Key to the species of *Thalassoma* occurring in the area**

- 1a. Head naked, no scales dorsally on opercle; initial phase with a broad blackish stripe from snout through eye to caudal-fin base; terminal male with green head and chest, broad yellow zone anterodorsally on body, the rest reddish with vertical green lines . . . . . *Thalassoma amblycephalum*  
(Indo-Pacific)
- 1b. Head naked except for a small patch of scales dorsally on opercle; colour not as above . . . . . → 2
- 2a. Body with 6 vertical black bars which are progressively shorter posteriorly, the first passing beneath pectoral fins to abdomen, the last a saddle-like spot on caudal peduncle . . . . . *Thalassoma hardwicke*  
(Indo-Pacific)
- 2b. Body without 6 vertical black bars . . . . . → 3

- 3a.** Body dark green to blue with vertical red to purplish red lines; head green to blue with irregular pink to violet bands; adults with large yellow crescent posteriorly in caudal fin and blue pectoral fins with a large elongate pink area distally; juveniles with a large dark spot in middle of dorsal fin and a large diffuse black spot at base of caudal fin . . . *Thalassoma lunare*  
(Indo-Pacific)
- 3b.** Colour not as above . . . → **4**
- 4a.** Pectoral-fin rays 15 or 16 (usually 15); initial phase white with 3 black bars, the first on upper half of head and anterior body containing a yellow streak at edge of opercle, the second across dorsal fin and ventrally to anus, the third covering most of body and posterior portions of dorsal and anal fins; terminal male with yellow between black bars; pectoral fins bluish . . . *Thalassoma jansenii*  
(Fiji and western Pacific to Maldives)
- 4b.** Pectoral-fin rays 16 (rarely 15); colour pattern without black bars . . . → **5**
- 5a.** Lateral-line scales 26 or 27; distal half of caudal fin dark; head greenish with a single blue-green stripe running from mouth under eye, then turning ventrally to end on posterior margin of opercle . . . *Thalassoma heiseri*  
(Pitcairn Group and Tuamotu Archipelago)
- 5b.** Lateral-line scales 25; distal half of caudal fin not dark, but blue or greenish; head with multiple stripes or a combination of stripes and spots, but not as above . . . → **6**
- 6a.** Adult head pink with 4 or 5 blue to green bands radiating from eye and circular or semicircular green band on cheek; scaleless part of caudal fin yellow to orange with a blue or green-edged rose band in each lobe; juvenile *T. lutescens* with yellowish green head and body with red bands radiating from eye . . . → **7**
- 6b.** Head green or red, not coloured as above; caudal fin either longitudinally streaked with green and blue or solid blue . . . → **8**
- 7a.** Two uneven red stripes on dorsal half of body, 1 from below dorsal-fin origin onto upper caudal lobe, the other from above pectoral-fin base to caudal peduncle; pectoral fins with green base and dark pectoral fins . . . *Thalassoma quinquevittatum*  
(Indo-Pacific)
- 7b.** Body without longitudinal stripes; initial phase body yellow with light vertical red lines; terminal phase body abruptly blue to blue-green behind pink and green head; reddish vertical lines on body; pectoral fins yellow on basal half, blue to black distally . *Thalassoma lutescens*  
(tropical eastern Pacific, Oceania, western Pacific, and eastern Indian Ocean)
- 8a.** Total gill raker count 21 to 25 (modally 23); initial phase with a vertical dark red line below front of eye usually with a branch to front of snout; head of terminal male blue-green with 2 or 3 broad irregular pink bands; caudal fin of terminal male solid blue . . . *Thalassoma purpureum*  
(Indo-Pacific)
- 8b.** Total gill raker count 18 to 23 (modally 20); initial phase with a diagonal dark red line below front of eye; head of terminal male orange-brown without bands; caudal fin of terminal male brownish to greenish, shading distally to pink, the posterior third of rays blue . . . *Thalassoma trilobatum*  
(Indo-Pacific)

### List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Anampses caeruleopunctatus* Rüppell, 1829
- Anampses femininus* Randall, 1972
-  *Anampses geographicus* Valenciennes, 1840
- Anampses melanurus* Bleeker, 1857
- Anampses meleagrides* Valenciennes, 1840
-  *Anampses neoguinaicus* Bleeker, 1878
-  *Anampses twistii* Bleeker, 1856
- Bodianus anthioides* (Bennett, 1830)
-  *Bodianus axillaris* (Bennett, 1831)
-  *Bodianus bilunulatus* (Lacepède, 1801)
- Bodianus bimaculatus* Allen, 1973
-  *Bodianus diana* (Lacepède, 1801)
-  *Bodianus loxozonus* (Snyder, 1908)
- Bodianus mesothorax* (Bloch and Schneider, 1801)
-  *Bodianus perditio* (Quoy and Gaimard, 1834)
- Bodianus prognathus* Lobel, 1981
-  *Cheilinus chlorourus* (Bloch, 1791)
-  *Cheilinus fasciatus* (Bloch, 1791)
- Cheilinus oxycephalus* Bleeker, 1853
-  *Cheilinus trilobatus* Lacepède, 1801
-  *Cheilinus undulatus* Rüppell, 1828
-  *Cheilio inermis* (Forsskål, 1775)
-  *Choerodon anchorago* (Bloch, 1791)
- Choerodon azurio* (Jordan and Snyder, 1901)
-  *Choerodon cephalotes* (Castelnau, 1875)
- Choerodon cyanodus* (Richardson, 1843)
-  *Choerodon fasciatus* (Günther, 1867)
-  *Choerodon graphicus* (De Vis, 1885)
- Choerodon jordani* (Snyder, 1908)
- Choerodon margaritiferus* Fowler and Bean, 1928
- Choerodon melanostigma* Fowler and Bean, 1928
- Choerodon monostigma* (Ogilby, 1910)
- Choerodon oligacanthus* (Bleeker, 1851)
-  *Choerodon schoenleini* (Valenciennes, 1839)
- Choerodon venustus* (De Vis, 1884)
- Choerodon vitta* Ogilby, 1910
- Choerodon zamboangae* (Seale and Bean), 1907
- Choerodon zosterophorus* (Bleeker, 1868)
- Cirrhilabrus aurantidorsalis* Allen and Kuitert, 1999
- Cirrhilabrus balteatus* Randall, 1988
- Cirrhilabrus condei* Allen and Randall, 1996
-  *Cirrhilabrus cyanopleura* (Bleeker, 1851)
-  *Cirrhilabrus exquisitus* Smith, 1957
- Cirrhilabrus flavidorsalis* Randall and Carpenter, 1980
- Cirrhilabrus johnsoni* Randall, 1988
- Cirrhilabrus katherinae* Randall, 1992
- Cirrhilabrus laboutei* Randall and Lubbock, 1982
- Cirrhilabrus lineatus* Randall and Lubbock, 1982
-  *Cirrhilabrus lubbocki* Randall and Carpenter, 1980
- Cirrhilabrus luteovittatus* Randall, 1988
- Cirrhilabrus melanomarginatus* Randall and Shen, 1978
- Cirrhilabrus punctatus* Randall and Kuitert, 1989
- Cirrhilabrus pylei* Allen and Randall, 1996
- Cirrhilabrus rhomboidalis* Randall, 1988

- Cirrhilabrus roseafascia* Randall and Lubbock, 1982  
*Cirrhilabrus rubrimarginatus* Randall, 1992  
 ↖ *Cirrhilabrus rubripinnis* Randall and Carpenter, 1980  
*Cirrhilabrus ryukyuensis* Ishikawa, 1904  
*Cirrhilabrus scottorum* Randall and Pyle, 1989  
*Cirrhilabrus temminckii* Bleeker, 1851  
*Cirrhilabrus tonozukai* Allen and Kuitert, 1999  
*Cirrhilabrus walindi* Allen and Randall, 1996  
  
*Coris aurilineata* Randall and Kuitert, 1982  
 ↖ *Coris aygula* Lacepède, 1801  
*Coris batuensis* (Bleeker, 1858)  
 (= *C. schroederi*)  
*Coris dorsomaculata* Fowler, 1908  
 ↖ *Coris gaimard* (Quoy and Gaimard, 1834)  
*Coris pictoides* Randall and Kuitert, 1982  
 ↖ *Cymolutes praetextatus* (Quoy and Gaimard, 1834)  
*Cymolutes torquatus* Valenciennes, 1840  
 ↖ *Diproctacanthus xanthurus* (Bleeker, 1856)  
 ↖ *Epibulus insidiator* (Pallas, 1770)  
 ↖ *Gomphosus varius* Lacepède, 1801  
  
*Halichoeres argus* (Bloch and Schneider, 1801)  
*Halichoeres biocellatus* Schultz, 1960  
*Halichoeres binotopsis* (Bleeker, 1849)  
*Halichoeres chlorocephalus* Kuitert and Randall, 1995  
 ↖ *Halichoeres chloropterus* (Bloch, 1791)  
*Halichoeres chrysus* Randall, 1981  
*Halichoeres dussumieri* (Valenciennes, 1839)  
 ↖ *Halichoeres hortulanus* (Lacepède, 1801)  
*Halichoeres hyrtlui* (Bleeker, 1856)  
 ↖ *Halichoeres margaritaceus* (Valenciennes, 1839)  
*Halichoeres marginatus* Rüppell, 1835  
 ↖ *Halichoeres melanurus* (Bleeker, 1851)  
*Halichoeres melasmapomus* Randall, 1980  
*Halichoeres miniatus* (Valenciennes, 1839)  
*Halichoeres nebulosus* (Valenciennes, 1839)  
*Halichoeres ornatissimus* (Garrett, 1863)  
*Halichoeres pallidus* Kuitert and Randall, 1995  
*Halichoeres podostigma* (Bleeker, 1854)  
 ↖ *Halichoeres prosopion* (Bleeker, 1853)  
*Halichoeres purpurescens* (Bloch and Schneider, 1801)  
*Halichoeres richmondi* Fowler and Bean, 1928  
*Halichoeres rubricephalus* Kuitert and Randall, 1995  
*Halichoeres scapularis* (Bennett, 1831)  
*Halichoeres solorensis* (Bleeker, 1853)  
*Halichoeres schwarzi* (Bleeker, 1849)  
*Halichoeres timorensis* (Bleeker, 1852)  
*Halichoeres trimaculatus* (Quoy and Gaimard, 1834)  
*Halichoeres vrolikii* Bleeker, 1855  
*Halichoeres zeylonicus* (Bennett, 1832)  
  
 ↖ *Hemigymnus fasciatus* (Bloch, 1792)  
 ↖ *Hemigymnus melapterus* (Bloch, 1791)  
 ↖ *Hologymnosus annulatus* (Lacepède, 1801)  
 ↖ *Hologymnosus doliatus* (Lacepède, 1801)  
*Hologymnosus longipes* (Günther, 1862)  
*Hologymnosus rhodonotus* Randall and Yamakawa, 1988

- *Labrichthys unilineatus* (Guichenot, 1847)
  - Labroides bicolour* Fowler and Bean, 1928
- *Labroides dimidiatus* (Valenciennes, 1839)
  - Labroides pectoralis* Randall and Springer, 1975
  - Labroides rubrolabiatus* Randall, 1958
  - Labropsis alleni* Randall, 1981
- *Labropsis australis* Randall, 1981
  - Labropsis manabei* Schmidt, 1930
  - Labropsis micronesica* Randall, 1981
  - Labropsis polynesica* Randall, 1981
  - Labropsis xanthonota* Randall, 1981
- Leptojulius chrysotaenia* Randall and Ferraris, 1981
- *Leptojulius cyanopleura* (Bleeker, 1853)
  - Leptojulius lambdastigma* Randall and Ferraris, 1981
  - Leptojulius polylepis* Randall, 1996
  - Leptojulius urostigma* Randall, 1996
- Macropharyngodon choati* Randall, 1978
- Macropharyngodon kuiteri* Randall, 1978
- *Macropharyngodon meleagris* (Valenciennes, 1839)
  - Macropharyngodon negrosensis* Herre, 1932
  - Macropharyngodon ornatus* Randall, 1978
- Novaculichthys macrolepidotus* (Bloch, 1791)
- *Novaculichthys taeniourus* (Lacepède, 1801)
- *Oxycheilinus arenatus* (Valenciennes, 1840)
  - Oxycheilinus bimaculatus* (Valenciennes, 1840)
  - Oxycheilinus celebicus* (Bleeker, 1853)
- *Oxycheilinus digrammus* (Lacepède, 1801)
- *Oxycheilinus orientalis* (Günther, 1862)
- *Oxycheilinus unifasciatus* (Streets, 1877)
  - Oxycheilinus* sp. 1
  - Oxycheilinus* sp. 2
- Paracheilinus angulatus* Randall and Lubbock, 1981
- Paracheilinus carpenteri* Randall and Lubbock, 1981
- *Paracheilinus filamentosus* Allen, 1974
  - Paracheilinus lineopunctatus* Randall and Lubbock, 1981
  - Paracheilinus mccoskeri* Randall and Harmelin-Vivien, 1977
- *Pseudocheilinus ataeia* Schultz, 1960
  - Pseudocheilinus citrinus* Randall, 1999
  - Pseudocheilinus evanidus* Jordan and Evermann, 1903
  - Pseudocheilinus hexataenia* (Bleeker, 1857)
  - Pseudocheilinus ocellatus* Randall, 1999
- *Pseudocheilinus octotaenia* Jenkins, 1900
  - Pseudocheilinus tetrataenia* Schultz, 1960
- Pseudocoris aurantifasciata* Fourmanoir, 1971
- Pseudocoris heteroptera* (Bleeker, 1857)
- Pseudocoris bleekeri* Hubrecht, 1876
- *Pseudocoris yamashiroi* (Schmidt, 1930)
- *Pseudodax moluccanus* (Valenciennes, 1839)
  - Pseudojuloides atavai* Randall and Randall, 1981
  - Pseudojuloides cerasinus* (Snyder, 1904)
  - Pseudojuloides pyrius* Randall and Randall, 1981
  - Pseudojuloides mesostigma* Randall and Randall, 1981
  - Pseudojuloides kaleidos* (Kuitert and Randall, 1995)

- Pseudolabrus fuentesi* Regan, 1913  
 ➤ *Pseudolabrus guentheri* Bleeker, 1862  
*Pseudolabrus torotai* Russell and Randall, 1981  
 ➤ *Pteragogus cryptus* Randall, 1981  
*Pteragogus enneacanthus* (Bleeker, 1853)  
*Pteragogus flagellifera* (Valenciennes, 1839)  
*Pteragogus guttatus* (Fowler and Bean, 1828)  
 ➤ *Stethojulis bandanensis* (Bleeker, 1851)  
*Stethojulis interrupta* (Bleeker, 1851)  
*Stethojulis maculatus* Schmidt, 1930  
*Stethojulis strigiventer* (Bennett, 1832)  
*Stethojulis trilineata* (Bloch and Schneider, 1801)  
 ➤ *Suezichthys gracilis* (Steindachner and Döderlein, 1887)  
*Suezichthys arquatus* Russell, 1985  
 ➤ *Thalassoma amblycephalum* (Bleeker, 1856)  
*Thalassoma hardwicke* (Bennett, 1828)  
*Thalassoma heiseri* Randall and Edwards, 1984  
*Thalassoma janseni* (Bleeker, 1856)  
 ➤ *Thalassoma lunare* (Linnaeus, 1758)  
*Thalassoma lutescens* (Lay and Bennett, 1839)  
*Thalassoma purpureum* (Forsskål, 1775)  
*Thalassoma quinquevittatum* (Lay and Bennett, 1839)  
*Thalassoma trilobatum* (Lacepède, 1801)  
*Wetmorella albofasciata* Schultz and Marshall, 1954  
 ➤ *Wetmorella nigropinnata* (Seale, 1901)  
 ➤ *Xenojulis margaritaceus* MacLeay, 1884  
 ➤ *Xiphocheilus typus* (Bleeker, 1856)  
*Xyrichtys aneitensis* (Günther, 1862)  
*Xyrichtys celebicus* (Bleeker, 1856)  
*Xyrichtys dea* (Temminck and Schlegel, 1845)  
 ➤ *Xyrichtys pavo* (Valenciennes, 1840)  
 ➤ *Xyrichtys pentadactylus* (Linnaeus, 1758)  
*Xyrichtys twistii* (Bleeker, 1856)

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