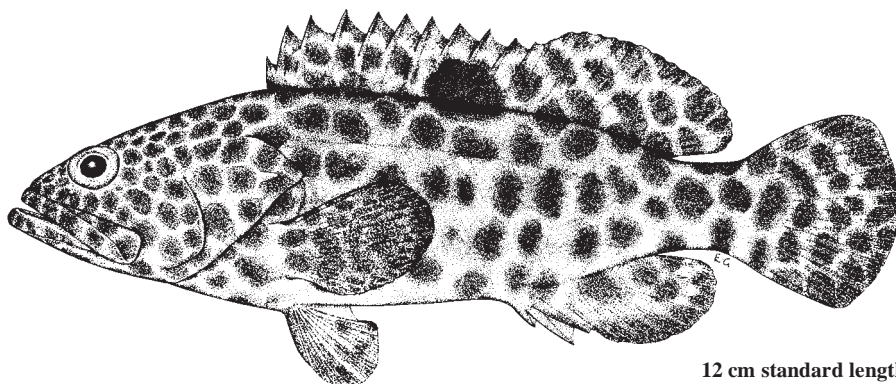


Epinephelus tauvina (Forsskål, 1775)

(Plate VI, 43)

Frequent synonyms / misidentifications: *Epinephelus elongatus* Schultz, 1953; *E. chewa* Morgans, 1966 / *Epinephelus coioides* (non Hamilton, 1822); *E. malabaricus* (non Bloch and Schneider, 1801); *E. lanceolatus* (non Bloch, 1790).

FAO names: En - Greasy grouper; Fr - Mérou loutre; Sp - Mero lutra.



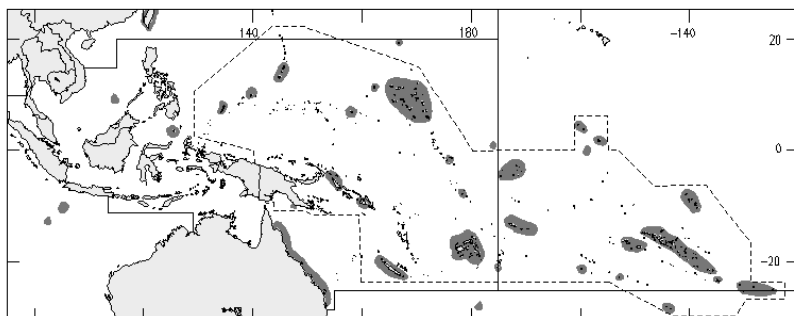
12 cm standard length

Diagnostic characters: Body elongate, its depth 3.0 to 3.6 times in standard length; head large, its length 2.1 to 2.4 times in standard length. Interorbital area narrow, flat to slightly concave, its width 6.8 to 8.1 times in head length; serrae at corner of preopercle slightly enlarged; upper edge of operculum almost straight; maxilla reaching well past eye, the greatest width about twice suborbital depth (least distance from eye to maxilla) and 5.4 to 6.5% of standard length; midlateral part of lower jaw with 2 to 5 rows of teeth. Rear nostrils distinctly larger than anterior nostrils. First gill arch with 8 to 10 gill rakers on upper limb, 17 to 20 on lower limb; no bony platelets on gill arch. Pyloric caeca 16 to 18. Dorsal fin with XI spines and 13 to 16 soft rays, the third to fifth spines longest, 3.1 to 4.7 times in head length and shorter than longest dorsal-fin rays; anal fin with III spines and 8 soft rays; caudal fin rounded; pectoral-fin rays 18 or 19. Midlateral body scales rough in juveniles, smooth in adults, except for small patch covered by pectoral fin; lateral-line scales 63 to 74; lateral scale series 95 to 112. **Colour:** head and body pale greenish grey or brown, covered with dull orange-red to dark brown spots; spots on head progressively smaller anteriorly; large black blotch (or group of black spots) often visible at base of last 4 dorsal-fin spines and extending onto lower part of fin; 5 faint subvertical dark bars may be present on body, 4 below dorsal fin and fifth on caudal peduncle (these bars may be represented by dusky blotches at base of dorsal fin and a dark saddle-blotch on caudal peduncle); fins also covered with dark spots, those on pectoral fins becoming smaller and less distinct distally; rear margin of caudal, anal, and pectoral fins often with white edge; dark spots on median fins of juveniles are so close set that the pale interspaces form a white reticulum.

Size: Maximum total length 75 cm; reports of larger sizes are probably based on misidentifications of *Epinephelus coioides*, *E. malabaricus*, or *E. lanceolatus*.

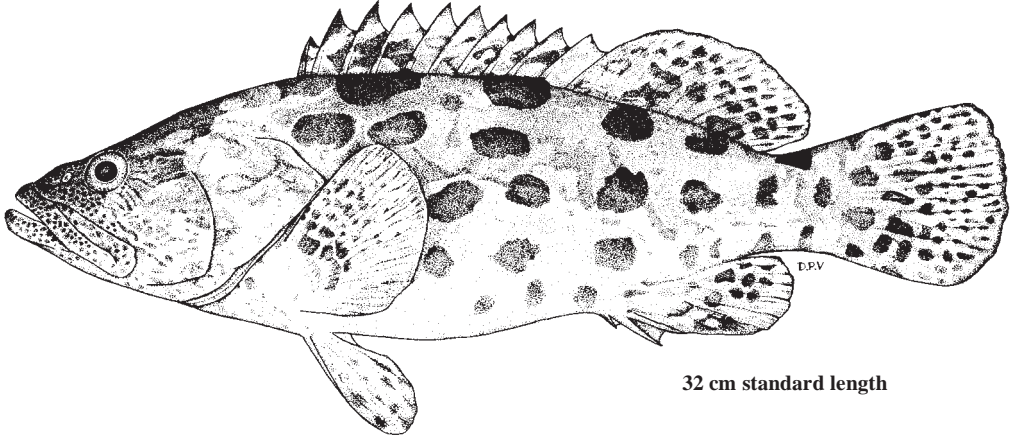
Habitat, biology, and fisheries: Clear water areas on coral reefs; juveniles on reef flats and in tidepools, but adults occur down to 50 m. Adults primarily piscivorous. Important to artisanal fisheries. Caught with hook-and-line, spear, and traps. Sold fresh in local markets. Also important in aquaculture. From 1990 to 1995, the reported yearly aquaculture production of *E. tauvina* in Malaysia ranged from 144 to 1 006 t (FAO Aquaculture Production Statistics).

Distribution: From Red Sea to South Africa and eastwards to Pitcairn Group; in western Pacific, from Japan to New South Wales and Lord Howe Island. More common at islands than along continental shores. No verifiable records from Persian Gulf, Asia mainland, the Philippines, Indonesia, northern or western Australia.



Epinephelus tukula Morgans, 1959

(Plate VI, 45)

Frequent synonyms / misidentifications: *Serranus dispar* var. A Playfair, 1867 / None.**FAO names:** En - Potato grouper; Fr - M erou patate; Sp - Mero patata.

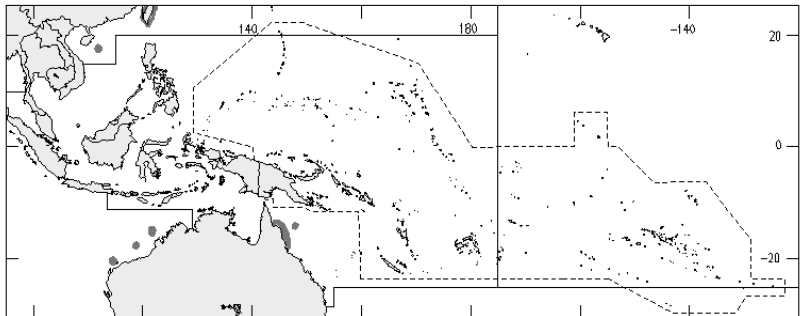
32 cm standard length

Diagnostic characters: Body depth 2.9 to 3.5 times in standard length; head length 2.3 to 2.6 times in standard length. Interorbital area slightly convex; the dorsal head profile straight; preopercle rounded or subangular, the serrae at corner slightly enlarged; upper edge of operculum almost straight; maxilla reaches to or beyond vertical at rear edge of eye; midlateral part of lower jaw with 2 to 6 rows of teeth. Nostrils subequal. First gill arch with 8 to 10 gill rakers on upper limb, 15 to 18 on lower limb. Dorsal fin with XI spines and 14 or 15 soft rays, the third or fourth spines longest, 3.1 to 3.8 times in head length and distinctly shorter than longest dorsal-fin rays; interspinous dorsal-fin membranes distinctly incised; anal fin with III spines and 8 soft rays; caudal fin rounded; pectoral-fin rays 18 to 20, the fin length 1.6 to 2.1 times in head length; pelvic fins usually not reaching anus, 1.9 to 2.4 times in head length. Lateral body scales rough, with auxiliary scales in adults; **lateral-line scales 62 to 70; lateral scale series 113 to 130. Colour:** body pale brownish grey with several dark brown to black widely-spaced blotches, mostly larger than eye and varying in shape from round to oval or dumbbell-shaped; head with smaller dark brown spots and streaks (many radiating from eye, especially posteriorly); dark spots on fins, smaller distally. Large adults may be nearly black.

Size: One of the largest groupers; maximum total length 200 cm, weight to 90 kg.

Habitat, biology, and fisheries: Coral-reefs; juveniles in tidepools, and adults occur in depths of 10 to 150 m. Maturity occurs at 90 cm standard length. Feeds on a wide variety of reef fishes, skates, crabs, and spiny lobsters. *Epinephelus tukula* is "exceedingly territorial, and is very aggressive towards unwelcome intruders." The large size and territorial behaviour of *E. tukula* make it especially vulnerable to spearfishermen, hence spearfishing for this species is illegal in South African waters. Although it is not common, it is an important species in the sportfishery of South Africa and Australia. Caught with hook-and-line and spear.

Distribution: From the western Indian Ocean and Red Sea to the western Pacific, including Japan (Okinawa and Honshu), Taiwan Province of China, South China Sea (Paracel Islands), Western Australia, and Queensland. It is surprising that there are no records of this distinctive species from Indonesia, the Philippines, or New Guinea.

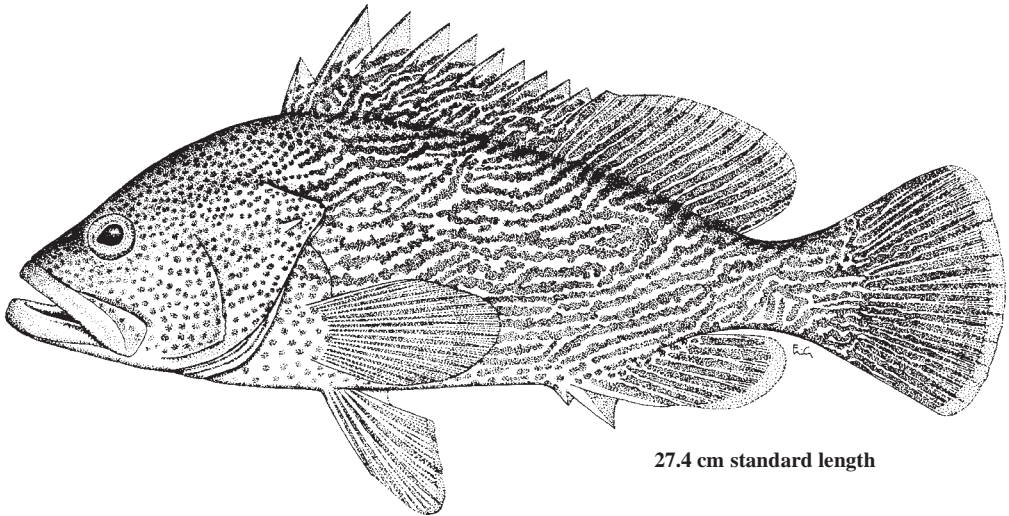


Epinephelus undulatostratus (Peters, 1867)

(Plate VI, 46)

Frequent synonyms / misidentifications: *Serranus guttulatus* Macleay, 1879 / None.

FAO names: En - Maori grouper; Fr - Mérrou Maori; Sp - Mero Maori.



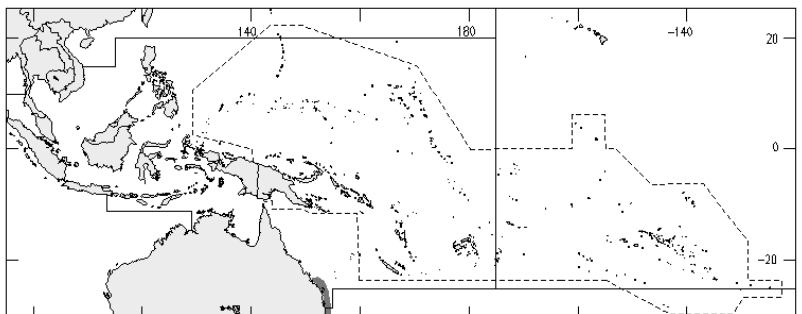
27.4 cm standard length

Diagnostic characters: Body depth 2.5 to 2.9 times in standard length; head length 2.3 to 2.5 times in standard length. Interorbital area convex, the dorsal head profile almost straight; preopercle subangular, the serrae at corner slightly enlarged; upper edge of operculum almost straight; maxilla reaches to or slightly past vertical at rear edge of eye; midlateral part of lower jaw with 2 rows of teeth. Nostrils subequal. First gill arch with 9 or 10 gill rakers on upper limb, 15 or 16 on lower limb. Pyloric caeca 11. Dorsal fin with XI spines and 15 to 17 soft rays, the third or fourth spine longest, 2.2 to 2.8 times in head length and longer than longest dorsal-fin rays; interspinous dorsal-fin membranes distinctly incised; anal fin with III spines 8 soft rays; **caudal fin rounded; pectoral fins fleshy, with 17 to 19 rays, the fin length 1.6 to 2.0 times in head length;** pelvic fins not reaching anus (except in small juveniles), 1.8 to 2.0 times in head length. Lateral body scales rough, with auxiliary scales; lateral-line scales 48 to 55; lateral scale series 98 to 108. **Colour:** body buff, covered with close-set wavy longitudinal brownish orange, golden brown, or reddish brown stripes; some stripes broken into series of small spots; head pale greyish brown, covered with small spots like those on body; maxillary streak orange brown; fin rays pale, with small brown spots, the interradial membranes dark brown; median fins with narrow yellow margin; pectoral fins diffusely yellow distally.

Size: Maximum total length 61 cm; maximum weight about 6 kg.

Habitat, biology, and fisheries: Coral reefs and rocky areas in depths of 27 to 80 m. An active swimmer that will leave the bottom to take a floating bait. Feeds on fishes. An esteemed food fish and important species in the hook-and-line fishery of Australia's east coast. Caught with hook-and-line and spear.

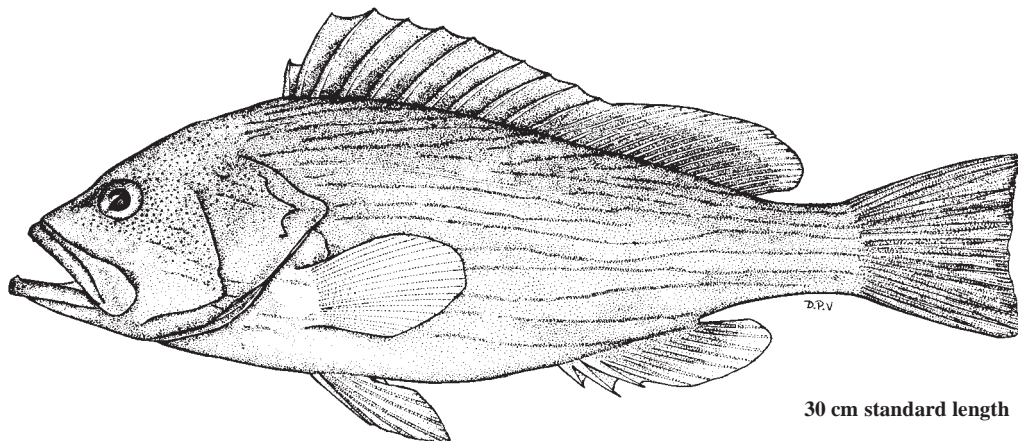
Distribution: Endemic to Australia, from southern Queensland (most northern record, One Tree Island, Great Barrier Reef at 23°30'S) to Bateman's Bay (35°44'S) New South Wales. One specimen was reported from Kangaroo Island, South Australia.



Epinephelus undulosus (Quoy and Gaimard, 1824)

Frequent synonyms / misidentifications: *Serranus lineatus* Valenciennes, 1828, *S. amboinensis* Bleeker, 1852 / None.

FAO names: En - Wavylined grouper; Fr - M  rou ondul  ; Sp - Mero ondulado.

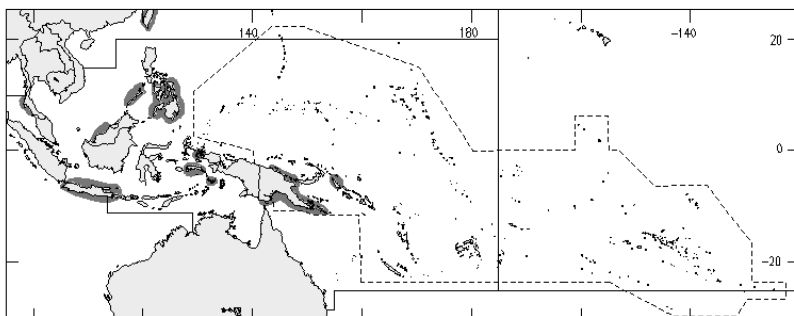


Diagnostic characters: Body depth 2.7 to 3.1 times in standard length; head length 2.5 to 2.7 times in standard length. Interorbital area convex; preopercle angular, with a notch above the corner and serrae at the corner enlarged; upper edge of operculum straight or slightly concave; maxilla reaches to vertical at rear edge of eye; **adults with a prominent knob or hook-like process on ventral edge of maxilla (covered by upper lip)**; midlateral part of lower jaw with 2 rows of teeth. Nostrils subequal or the posteriors slightly larger. **Gill rakers longer and more numerous than other species of *Epinephelus***; first gill arch with 32 to 38 rakers, of which 12 to 16 on upper limb and 20 to 23 on lower limb; 1 or 2 rudimentary rakers in juveniles, but none in adults. Dorsal fin with XI spines and 17 to 19 soft rays, **the third or fourth spines longest, 2.5 to 3.4 times in head length and longer than longest dorsal-fin ray**; interspinous membranes of dorsal fin not incised; anal fin with III spines and 8 soft rays; **caudal fin truncate to emarginate**; pectoral-fin rays 18 or 19, the fins shorter than pelvic fins, 1.7 to 2.3 times in head length; pelvic fins not reaching anus (except for juveniles), 1.6 to 2.2 times in head length. Lateral body scales distinctly rough, with numerous auxiliary scales; lateral-line scales 63 to 76; lateral scale series 124 to 150. **Colour: head, body, and fins purplish grey to brownish grey, with brown to golden-brown dots on head and wavy longitudinal lines of the same colour on dorsal part of body (lines faint or absent on large specimens); margin of spinous dorsal fin narrowly blackish.**

Size: Maximum total length at least 73 cm (reported to attain 122 cm); maximum weight at least 7 kg.

Habitat, biology, and fisheries: Usually found on offshore banks (rather than coral reefs) at depths of 24 to 90 m. Feeds on a variety of small fishes, small crustaceans (especially stomatopods), shrimps, and pelagic tunicates (*Thalia* and *Pyrosoma* sp.). Females were estimated to be mature at 55 cm total length. Caught with hook-and-line, vertical long lines, and trawls.

Distribution: Northern Indian Ocean and western Central Pacific: Indonesia, Sarawak, New Guinea, Solomon Islands, and the Philippines. Not known from the Red Sea, Persian Gulf, or Australia.

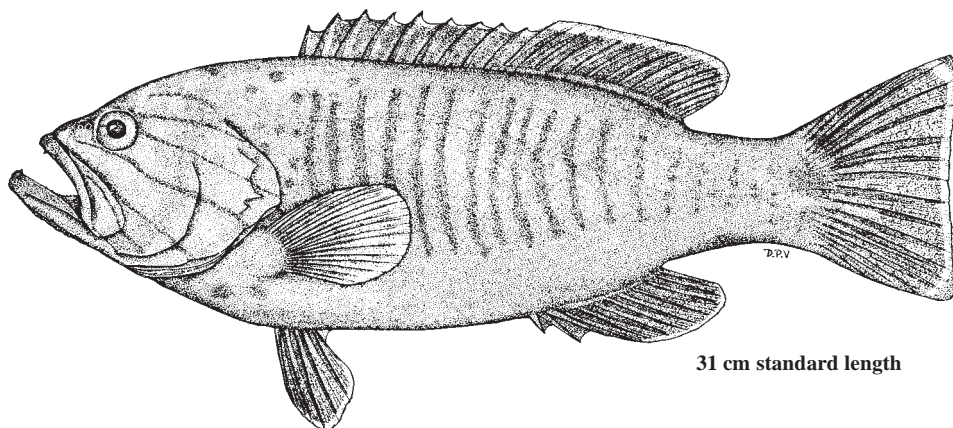


Gracila albomarginata (Fowler and Bean, 1930)

(Plate VI, 47)

Frequent synonyms / misidentifications: None / None.

FAO names: En - Masked grouper; Fr - Mérou bord rouge; Sp - Mero paranjero.

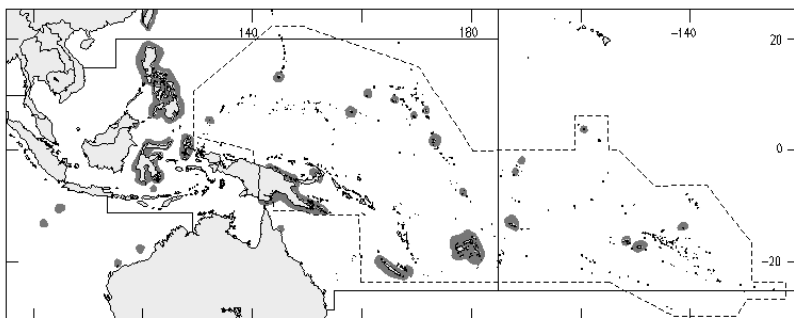


Diagnostic characters: Body oblong, somewhat compressed, its depth 2.6 to 3.3 times in standard length, body width 1.8 to 2.3 times in body depth; **head smaller than most other groupers, 2.9 to 3.2 times in standard length**; dorsal head profile evenly convex; interorbital area slightly convex and wide, its width greater than eye diameter; preorbital narrow, its depth distinctly less than eye diameter, 10 to 15 times in head length; preopercle rounded, finely serrate, the lower edge smooth and fleshy; ventral edge of subopercle and interopercle smooth; upper edge of operculum distinctly convex; nostrils subequal. A pair of small canines at front of both jaws; palatine teeth present; **distal part of maxilla in adults with a hook-shaped or step-like expansion on ventral edge**; supramaxilla well developed. First gill arch with 8 to 10 gill rakers on upper limb, 14 to 16 on lower limb. **Dorsal fin with IX slender spines and 14 to 16 soft rays, the fin origin over rear end of operculum**; anal fin with III spines and 9 or 10 soft rays; caudal fin truncate to slightly emarginate, with 8 branched rays in upper lobe and 7 in lower lobe; **soft dorsal and anal fins rounded**; dorsal-fin membranes not (adults) or slightly (juveniles) incised between the spines; pectoral fins rounded, with 18 or 19 rays, the middle rays longest. Midlateral body scales rough. **Colour:** adults greenish or reddish brown to grey, with several narrow curved dark bars on flanks and dark brown spot on side of caudal peduncle; 3 to 5 blue lines (often broken into spots) across the head (the upper 2 lines may serve as margins for a mask-like dark band from snout to end of opercle, enclosing eye); region under maxilla and along edge of gill opening often orange; soft dorsal and anal fins with narrow blue margin. **A transient colour phase has the caudal peduncle white, with a prominent black spot, and a large white area flanked by black areas on dorsal part of body. Juveniles brown or violet, with a bright reddish orange stripe in dorsal and anal fins and along upper and lower edges of caudal peduncle and fin.**

Size: Maximum total length about 60 cm.

Habitat, biology, and fisheries: Usually found on outer reef slope at depths of 15 to 120 m. An active swimmer that roams over the reef during the day. An excellent food fish, but not common enough to be of commercial importance. Caught with hook-and-line, gill nets, and spear.

Distribution: Tropical Indo-West Pacific from northern Mozambique to French Polynesia, including Taiwan Province of China, Philippines, Indonesia, New Guinea, New Britain, New Caledonia, Society Islands, Phoenix Islands, Marshall Islands, Minami Tori Shima, Guam, Caroline Islands, Palau Islands, Loyalty Islands, Samoa Islands, Takaroa, Tuamotus, and Fanning Island.

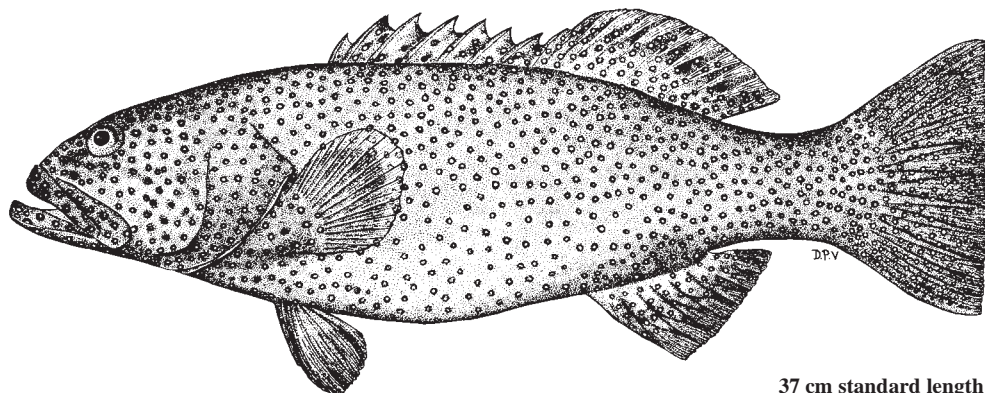


Plectropomus areolatus Rüppell, 1830

(Plate VI, 48)

Frequent synonyms / misidentifications: *Plectropoma maculatum* ? (non Bloch, 1790); *Plectropomus truncatus* Fowler and Bean, 1930 / None.

FAO names: En - Squaretail coralgroupier; Fr - M erou queue carr ee; Sp - Mero troncon.



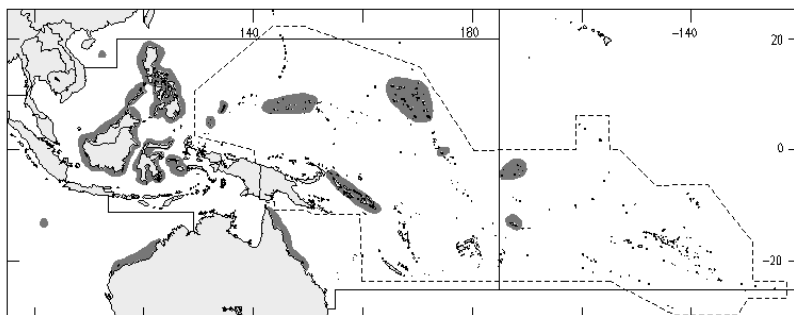
37 cm standard length

Diagnostic characters: Body elongate, robust, its depth 2.9 to 3.9 times in standard length; head length 2.7 to 3.1 times in standard length; snout 2.8 to 3.6 times in head length; suborbital depth 5.6 to 10 times in head length. Interorbital area flat (rounded at edges of orbits), with small, embedded scales; preopercle broadly rounded, with 3 large, ventrally-directed spines along lower half; interopercle and subopercle smooth; opercle with 3 flat spines, the upper and lower spines covered by skin. Midlateral part of lower jaw with 1 to 4 enlarged fixed canines. Nostrils subequal, set in a shallow groove running forward from eye. First gill arch with 2 to 7 developed gill rakers on lower limb; gill raker at angle shorter than gill filaments at angle. Dorsal fin with VII or VIII slender spines and 10 to 12 soft rays, the third or fourth spines longest, 3.2 to 4.2 times in head length, the longest soft ray 2.3 to 2.6 times in head length; base of spinous part of dorsal fin subequal to that of soft-rayed part; anal fin with III slender spines and 8 soft rays, the first 1 or 2 spines embedded and difficult to see in large fish; **caudal fin truncate to slightly emarginate, the caudal concavity more than 13 times in head length; pectoral-fin rays 15 or 16;** pectoral fins subequal to pelvic fins, 2.0 to 2.4 times in head length. Lateral-line scales 83 to 97. **Colour: head, body, and median fins greenish grey to brown or brownish red, with numerous round to oval dark-edged blue spots (the largest about equal to pupil); most spots within a spot diameter of adjacent spots;** pelvic fins with dark brown to blackish membranes; rear margin of caudal fin with a white edge and often with a blackish submarginal band.

Size: Maximum total length about 100 cm.

Habitat, biology, and fisheries: Coral reefs in lagoons and on outer reef at depths of 2 to 20 m. Feeds on fishes. A wary grouper, difficult for a diver to approach. It is reported that for a few days before new moon in May, large numbers gather in the seaward end of Ulong Channel, Palau to spawn and males may display pale bodies with about 5 irregular dark saddles and dark dorsal and anal fins. Undoubtedly of interest to artisanal fisheries. Caught with hook-and-line.

Distribution: Indo-Pacific; except for the Red Sea and Australia, records are limited to insular localities: Chagos, Maldives, Cocos-Keeling, Rowley Shoals (Western Australia), Indonesia, Philippines, Taiwan Province of China, Ryukyus, Paracel Islands (South China Sea), Palau, Great Barrier Reef, Caroline, Marshall, Samoa, and Phoenix islands.

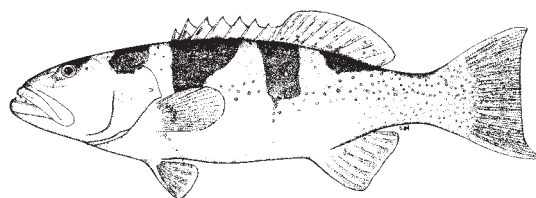


Plectropomus laevis (Lacepède, 1801)

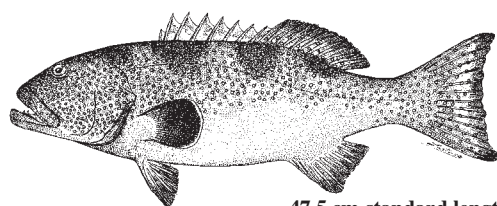
(Plate VII, 49)

Frequent synonyms / misidentifications: *Plectropomus melanoleucus* (Lacepède, 1802) / *Plectropomus maculatus* (non Bloch, 1790).

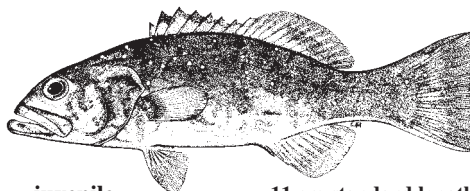
FAO names: En - Blacksaddled coralgroupier; Fr - Mérou sellé; Sp - Mero ensillado.



59.7 cm standard length



47.5 cm standard length



juvenile

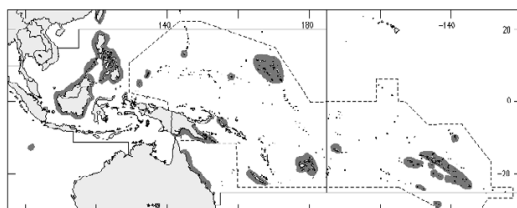
11 cm standard length

Diagnostic characters: Body elongate, robust, its depth 2.9 to 3.9 times in standard length; head length 2.7 to 3.1 times in standard length; suborbital depth 5.6 to 10 times in head length. Interorbital area without scales; preopercle broadly rounded, with 3 large, ventrally-directed spines along lower half; interopercle and subopercle smooth; opercle with 3 flat spines, the upper and lower spines covered by skin. Midlateral part of lower jaw with 1 to 4 enlarged fixed canines. Nostrils subequal, set in a shallow groove running forward from eye. First gill arch with 4 to 10 developed gill rakers on lower limb; gill raker at angle shorter than gill filaments at angle. Dorsal fin with VII or VIII slender spines and 10 to 12 soft rays, the third or fourth spines longest, 3.2 to 4.2 times in head length, the longest soft ray 2.3 to 3.3 times in head length; anal fin with III slender spines and 8 soft rays, the first 1 or 2 spines embedded and difficult to see in large fish; **caudal fin emarginate, the caudal concavity 5 to 10 times in head length; pectoral-fin rays 16 to 18**, the fin length about equal to pelvic fins, 2.1 to 2.4 times in head length. Lateral-line scales 83 to 97. **Colour:** 2 colour forms: the pale black-saddled form is whitish or pale yellowish with 5 dark brown to black, saddle-like or wedge-shaped bars or blotches on dorsal part of head and body, the first just behind eyes, the second on nape, the third to fifth under dorsal fin; small dark-edged blue spots may be visible on body (mainly posteriorly); fins, caudal peduncle, snout, and jaws yellow; black blotch centrally at base of paired fins; small juveniles (10 to 20 cm) with membranes between first and fifth dorsal-fin spines mostly blackish. The dark form is brown, olivaceous, red, or nearly black, the dark bars (as on pale form) are usually faint or absent; numerous, round, dark-edged blue spots (about 1/2 pupil diameter) on head, body (except ventrally), soft dorsal, caudal, and anal fins, and base of pectoral fins; pectoral fins dark brown distally, the rays darker than membranes, the rear edge white.

Size: Maximum total length about 125 cm; maximum weight 18 kg.

Habitat, biology, and fisheries: Coral reefs of Indo-West Pacific region in depths of 4 to 90 m. The pale black-saddled juveniles may be mimics of the pufferfish *Canthigaster valentini*. Juveniles of both forms [pale and dark] less than about 20 cm normally employ the pectoral fins for propulsion, holding the caudal fin distinctly folded and the front section of the spinous dorsal erect. When swimming in this manner, juveniles of *Plectropomus laevis* look remarkably similar to *Canthigaster valentini*. The pale black-saddled form of *P. laevis* is usually smaller (8 to 57 cm standard length) than the dark reddish brown phase (15 to 100 cm standard length), and the smaller pale phase may be juveniles and females, with the larger dark phase being males. This hypothesis would agree with a protogynous type of hermaphroditism which seems to be the usual system for groupers and is known for *P. leopardus*. Maturity (at least for females) "seems to occur" at 50 to 52 cm standard length (2.8 to 3.2 kg). The blacksaddled coralgroupier feeds on a variety of large reef fishes, including groupers. This diet of large fishes is responsible for the high concentrations of ciguatera toxins found in some specimens of this species. Despite the danger of ciguatera poisoning, *P. laevis* is commonly used for food. Caught with hook-and-line, spear, and in fish traps.

Distribution: Indo-Pacific, from southern Mozambique to the Tuamotus, Austral Islands, and Rapa, but not in the Red Sea or Persian Gulf. Except for the east coasts of Africa and Australia, records of *P. laevis* are from insular localities, from Japan (Ryukyu Islands) to southern Great Barrier Reef and most islands in the central and western Pacific. Not recorded from the Asian coast or Indonesia.

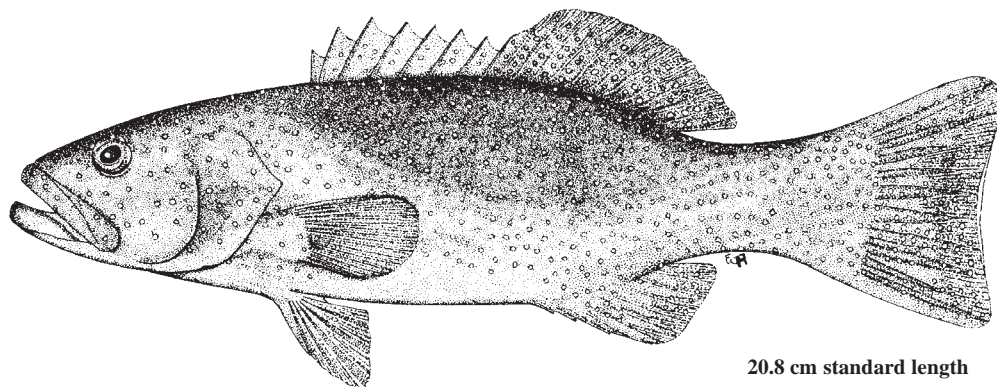


Plectropomus leopardus (Lacepède, 1802)

(Plate VII, 50)

Frequent synonyms / misidentifications: *Plectropoma leopardinus* Cuvier, 1828 / *Plectropoma maculatus* (non Bloch, 1790).

FAO names: En - Leopard coralgroup; Fr - Saumonée léopard; Sp - Mero celestial.

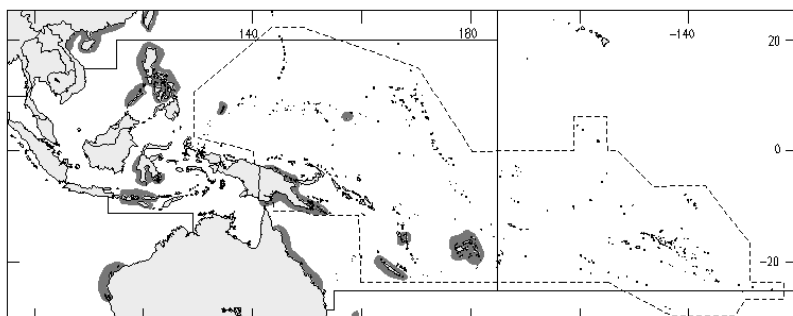


Diagnostic characters: Body depth 2.9 to 3.9 times in standard length; head length 2.7 to 3.1 times in standard length; suborbital depth 5.6 to 10 times in head length. Interorbital area without scales; preopercle broadly rounded, with 3 large, ventrally-directed spines along lower half; interopercle and subopercle smooth; opercle with 3 flat spines, the upper and lower spines covered by skin. Midlateral part of lower jaw with 1 to 4 enlarged fixed canines. Nostrils subequal for specimens less than 50 cm (at larger sizes, the rear nostrils may be enlarged). First gill arch with 6 to 10 developed gill rakers on lower limb; gill raker at angle longer than gill filaments at angle. Dorsal fin with VII or VIII slender spines and 10 to 12 soft rays, the third or fourth spines longest, 3.2 to 4.2 times in head length, the longest soft ray 2.2 to 2.7 times in head length; anal fin with III slender spines and 8 soft rays, the first 1 or 2 spines embedded in large fish; **caudal fin emarginate, the caudal concavity 5 to 12 times in head length and the fin length 1.3 to 1.5 times in head length; pectoral-fin rays 15 to 17, the fin length about equal to pelvic-fin length, 1.9 to 2.2 times in head length.** Lateral-line scales 89 to 99. **Colour:** olivaceous to reddish brown, orange-red, or red, with numerous, small blue spots (nostril sized and usually dark-edged) on head and body (except ventrally) and median fins; more than 10 spots on cheek (below and behind eye to rear edge of preopercle); blue ring (dark brown in alcohol) on edge of orbit (sometimes broken into segments); pectoral fins reddish or hyaline with darker rays; an indistinct dark band at rear margin of caudal fin and a white line usually visible along middle of rear edge.

Size: Maximum total length about 70 cm.

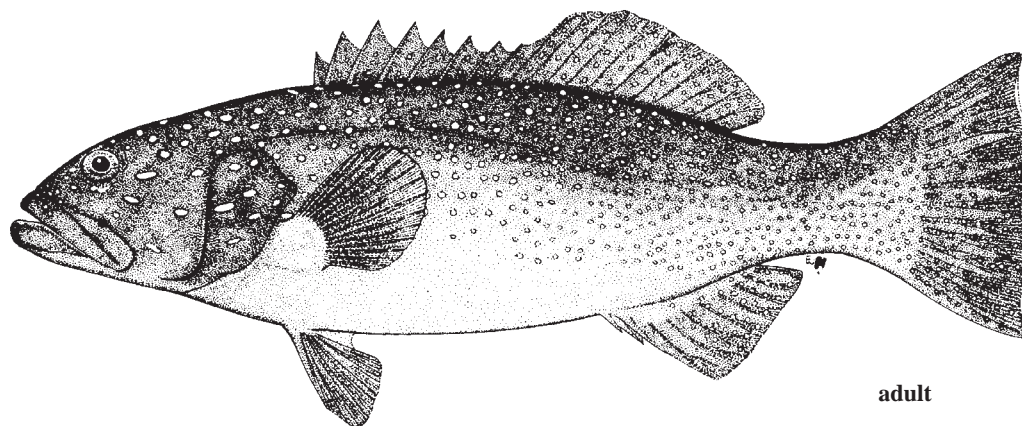
Habitat, biology, and fisheries: Coral reefs at depths of 3 to 100 m. The leopard coralgroup is a protogynous hermaphrodite. On the Great Barrier Reef, the smallest mature female (21 cm standard length) was estimated to be 2 years old, and the largest female (47 cm standard length) was age 4; the smallest mature male (30 cm standard length) was age 3, and the largest male (54 cm standard length) was estimated to be 5 years old. Spawning occurred in late November and early December. Feeds throughout the day and is inactive at night; 96% of the prey comprised fishes. Small juveniles included a few benthic crustaceans in their diet, but adults fed only on fishes, primarily atherinid and scarid fishes. A popular food fish that rarely causes ciguatera. Caught with hook-and-line, spear, traps, and trawls.

Distribution: Western Pacific, from southern Japan to Australia (Queensland and Western Australia) and eastwards to the Caroline Islands and Fiji, including Hong Kong, Viet Nam, Philippines, Indonesia, Palau, Papua New Guinea, and New Caledonia.



Plectropomus maculatus (Bloch, 1790)

(Plate VII, 51)

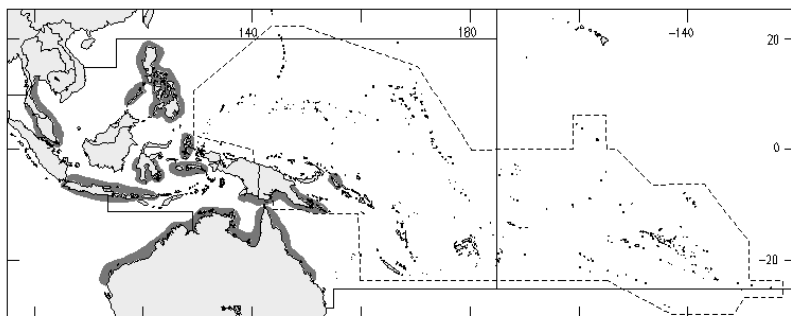
Frequent synonyms / misidentifications: None / None.**FAO names:** En - Spotted coral grouper; Fr - Vielle Saint-Silac; Sp - Mero con pintas.

Diagnostic characters: Body elongate, robust, its depth 2.9 to 3.9 times in standard length; head length 2.7 to 3.1 times in standard length; suborbital depth 5.6 to 10 times in head length. Interorbital area without scales; preopercle broadly rounded, with 3 large, ventrally-directed spines along lower half; interopercle and subopercle smooth; opercle with 3 flat spines, the upper and lower spines covered by skin; midlateral part of lower jaw with 1 to 4 enlarged fixed canines. Nostrils subequal, set in a shallow groove running forward from eye. First gill arch with 6 to 9 developed gill rakers on lower limb; gill raker at angle distinctly longer than gill filaments at angle. Dorsal fin with VII or VIII slender spines and 10 to 12 soft rays, the third or fourth spines longest, 3.2 to 4.2 times in head length, the longest soft ray 2.2 to 2.5 times in head length; base of spinous part of dorsal fin subequal to that of soft-rayed part; anal fin with III slender spines and 8 soft rays, the first 1 or 2 spines embedded in large fish; **caudal fin emarginate, the caudal concavity 5 to 10 times and the fin length 1.3 to 1.5 times in head length; pectoral-fin rays 15 to 17; the fin length about equal to pelvic-fin length, 1.7 to 2.2 times in head length.** Lateral-line scales 83 to 97. **Colour:** head, body, and median fins greenish grey, brown, red, or orange-red, with dark-edged blue spots; spots on head and anterior part of body about 1/2 pupil diameter or larger (and many are oval or horizontally elongated), becoming much smaller, more uniformly round, and more numerous on rear part of body and on fins; few spots on head, 3 to 7 on cheeks (below and behind eye to rear edge of preopercle); no blue spots on ventral parts of head and body; usually a single blue spot on pectoral-fin base and another in axil; no blue spots on pelvic fins; rear margin of caudal fin with a white edge.

Size: Maximum total length about 125 cm; maximum weight at least 25 kg.

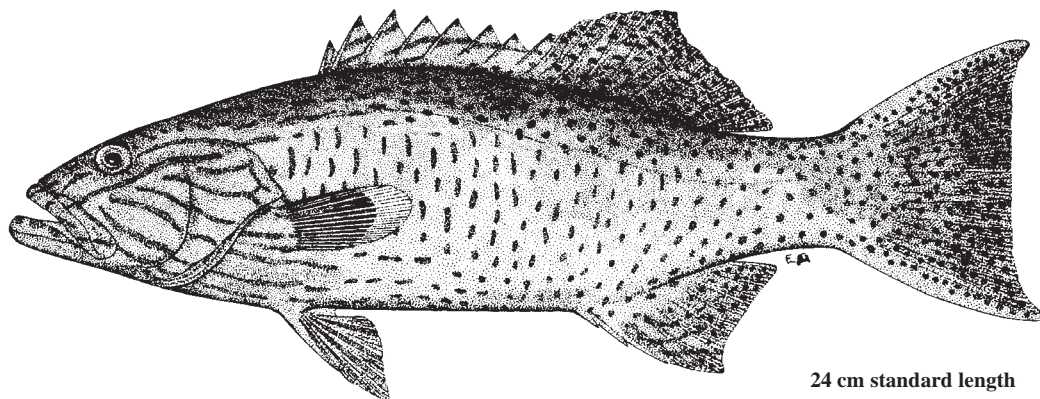
Habitat, biology, and fisheries: Coral reefs at depths of 5 to 50 m. Common in markets. Caught with hook-and-line, spear, and in trawls.

Distribution: Known only from the western tropical Pacific: Thailand, Singapore, Philippines, Indonesia, Papua New Guinea, Solomon Islands, and Australia (Western Australia to southern Queensland).



Plectropomus oligacanthus Bleeker, 1854

(Plate VII, 52)

Frequent synonyms / misidentifications: *Plectropoma variegatum* Castelnau, 1875 / None.**FAO names:** En - Highfin coralgrouper; Fr - Mérou-loche cacatois; Sp - Mero vela.

Diagnostic characters: Body elongate, robust, its depth 2.9 to 3.9 times in standard length; head length 2.7 to 3.1 times in standard length; suborbital depth 3.3 to 7.2 times in head length. Interorbital area without scales; preopercle broadly rounded, with 3 large ventrally-directed spines along lower half; interopercle and subopercle smooth; opercle with 3 flat spines, the upper and lower spines covered by skin. Midlateral part of lower jaw with 1 to 4 enlarged fixed canines. First gill arch with 7 to 9 developed gill rakers on lower limb, gill raker at angle subequal to gill filaments at angle. Dorsal fin with VII or VIII slender spines and 10 to 12 soft rays, the third or fourth spines longest, 3.2 to 4.2 times in head length; **soft dorsal and anal fins pointed anteriorly, the second to fourth rays elongated, 1.5 to 2.1 times in head length**; anal fin with III slender spines and 8 soft rays, the first 1 or 2 spines embedded and difficult to see in large fish; **caudal fin emarginate, the caudal concavity 3 to 7 times in head length**; **pectoral-fin rays 14 to 16**; the fin shorter than pelvic fins, 2.1 to 2.4 times in head length. Lateral-line scales 86 to 96. **Colour:** head, body, and fins reddish brown to red, with horizontal to oblique blue lines on rear of head and anterodorsally on body; vertical blue lines (or dashes) anteriorly on side of body (at least in adults), and numerous blue spots elsewhere on body and on caudal fin; dorsal and anal fins with blue lines and spots; pectoral fins pale yellowish, with basal two-thirds of rays dark brown and a few blue lines at base of fin; pelvic fins with brownish red rays and blue membranes.

Size: Maximum total length 75 cm.

Habitat, biology, and fisheries: Coral reefs in depths of 4 to 40 m. Very little has been published on the biology of this rare species. Sometimes groups of 2 or 3 often forage together for rock- and sand-living crustaceans and fishes. Well known in the Philippines, but it seems to be rare elsewhere. Of minor importance in artisanal fisheries, and it has been implicated in cases of ciguatera fish poisonings. Caught with hook-and-line, spear, and in traps.

Distribution: Known only from western Pacific Ocean: Philippines, Indonesia, New Guinea, northeastern Australia (Cape York to northern Great Barrier Reef), Palau, Truk, Caroline Islands, Marshall Islands, and the Solomon Islands.

