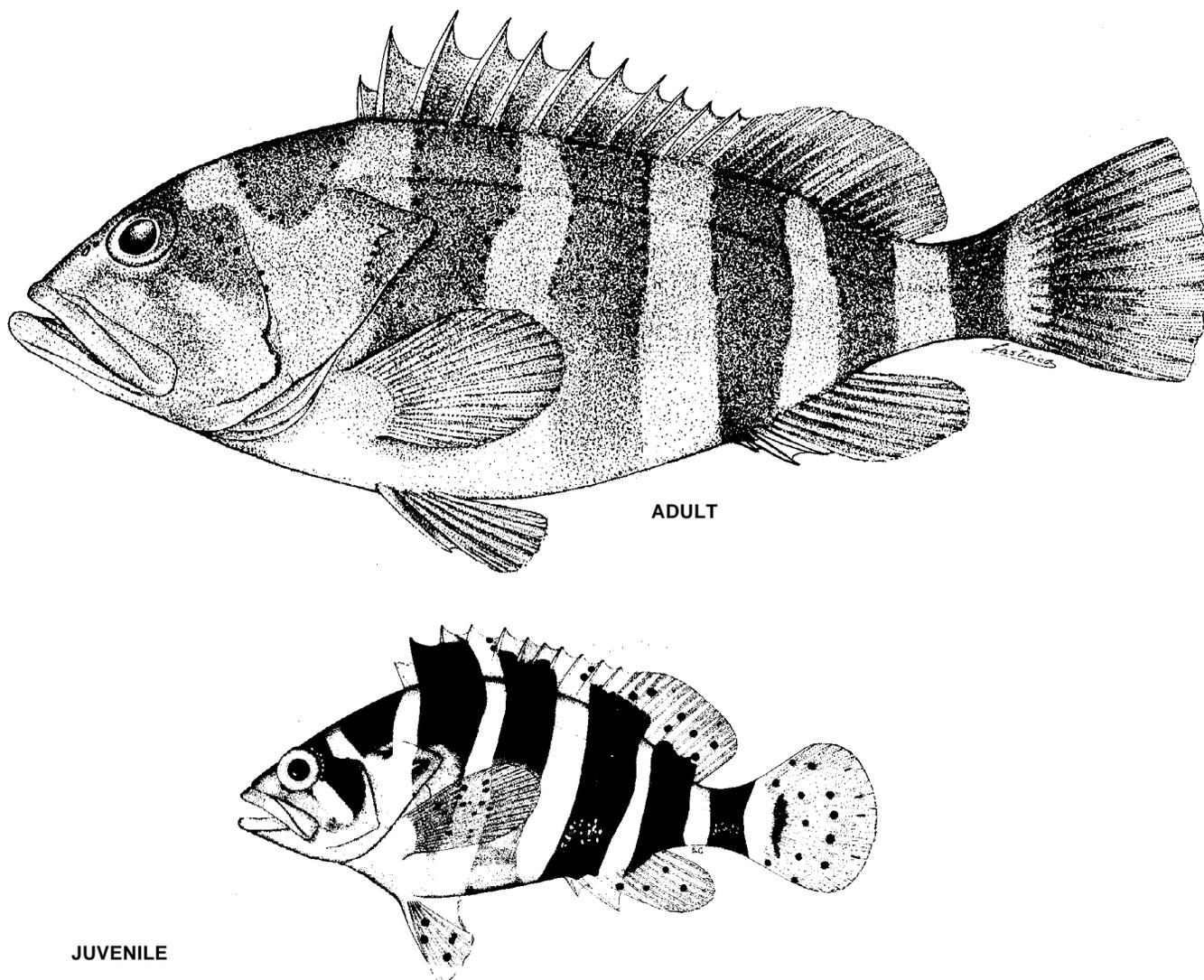


Epinephelus amblycephalus (Bleeker, 1857)

Fig. 249; Pl. VIIF

SERRAN Epin 74

Serranus amblycephalus Bleeker, 1857a:32 (type locality: Ambon, Indonesia).**Synonyms:** None.**FAO Names:** En - Banded grouper; Fr - Mérou bande; Sp - Cabrilla venda.**Fig. 249** *Epinephelus amblycephalus*

(adult 365 mm standard length, juvenile 57 mm standard length)

Diagnostic Features: Body depth less than head length, depth contained 2.5 to 3.0 times in standard length (for fish 12 to 35 cm standard length). Head length contained 2.1 to 2.4 times in standard length; preopercle rounded, with 3 to 6 enlarged serrae at the "corner"; upper edge of operculum slightly convex; nostrils subequal or posterior nostril larger than anterior; maxilla scaly, reaching about to vertical at rear edge of eye; midside of lower jaw with 2 rows of teeth. Gill rakers 8 on upper limb, 14 to 16 on lower limb, 22 to 24 total. Dorsal fin with XI spines and 15 or 16 rays, the third or fourth spine longest, contained 2.7 to 3.2 times in head length, the interspinous membranes only slightly incised; anal fin with III spines and 8 rays; pectoral fins with 18 or 19 rays, pectoral-fin length equal to pelvic-fin length, contained 1.7 to 2.3 times in head length; caudal fin rounded. Lateral-body scales ctenoid, with a few auxiliary scales in adults; lateral-line scales 47 to 52; lateral-scale series 90 to 121. **Colour:** Head, body, and median fins pale grey; body with 4 broad dark brown bars, the first two extending into spinous part of dorsal fin, the third and fourth bars extending into soft dorsal and anal fins; a fifth dark bar at base of caudal fin; small black spots on dorsal Parts of body bars (mainly along the edges of the bars); dark brown saddle blotch on nape, with small black spots mainly along edge of this-blotch; cheeks, snout, interorbital area, jaws, and chest mostly dark brown, with 2 or 3 white bands radiating from eye; irregular black bar on middle of caudal fin; maxillary groove

yellow; ventral parts of head and body often with a pinkish tinge. Small juveniles (6 cm standard length) white, with black bars on body as described for adults, the fins pale yellow with small black spots.

Geographical Distribution: *E. amblycephalus* is known from the Andaman Sea to southern Japan, Taiwan, China, Philippines, Viet Nam, Malaysia, Thailand, Indonesia, New Guinea, northwestern Australia, and Fiji (Fig. 250).

Habitat and Biology: Coral and rocky reefs in depths of 80 to 130 m. Tseng and Chan (1985) discussed food, rearing procedures, and larval development of specimens from Hong Kong.

Size: Maximum total length 50 cm.

Interest to Fisheries: According to Tseng and Chan (1985), *E. amblycephalus* is a popular and commercially important species in Hong Kong; but in Singapore it is "Not a popular grouper in the market." (Tan et al., 1982). Caught with hand lines. Sold fresh.

Local Names: JAPAN: Kokuten-ao-hata; MALAYSIA: Anak per-tang; SINGAPORE: Anak keretang.

Literature: Randall and Heemstra (1991).

Remarks: *E. amblycephalus* is not known east of New Guinea except for the record of a specimen at Fiji (based on a photograph supplied by Tony Lewis).

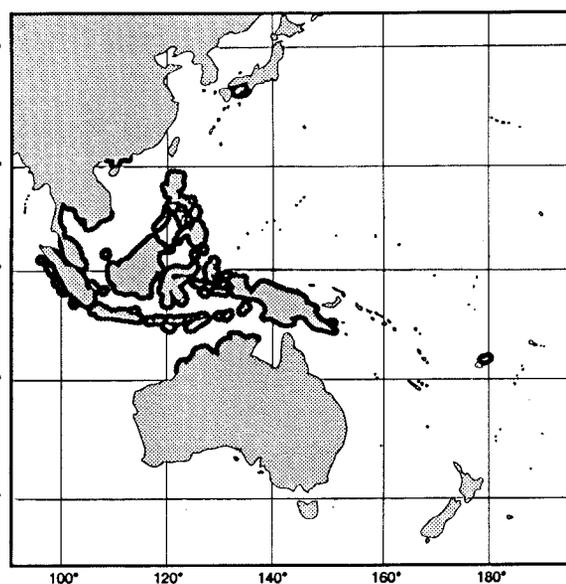


Fig. 250

Epinephelus analogus Gill, 1864

Fig. 251; Pl. VIII A

SERRAN Epin 60

Epinephelus analogus Gill, 1864:163 (type locality: west coast of Panama).

Synonyms: *Serranus courtadei* Bocourt, 1868:222 (type locality: La Union, El Salvador).

FAO Names: En - Spotted grouper; Fr - Mérou cabrilla; Sp - Mero moteado.

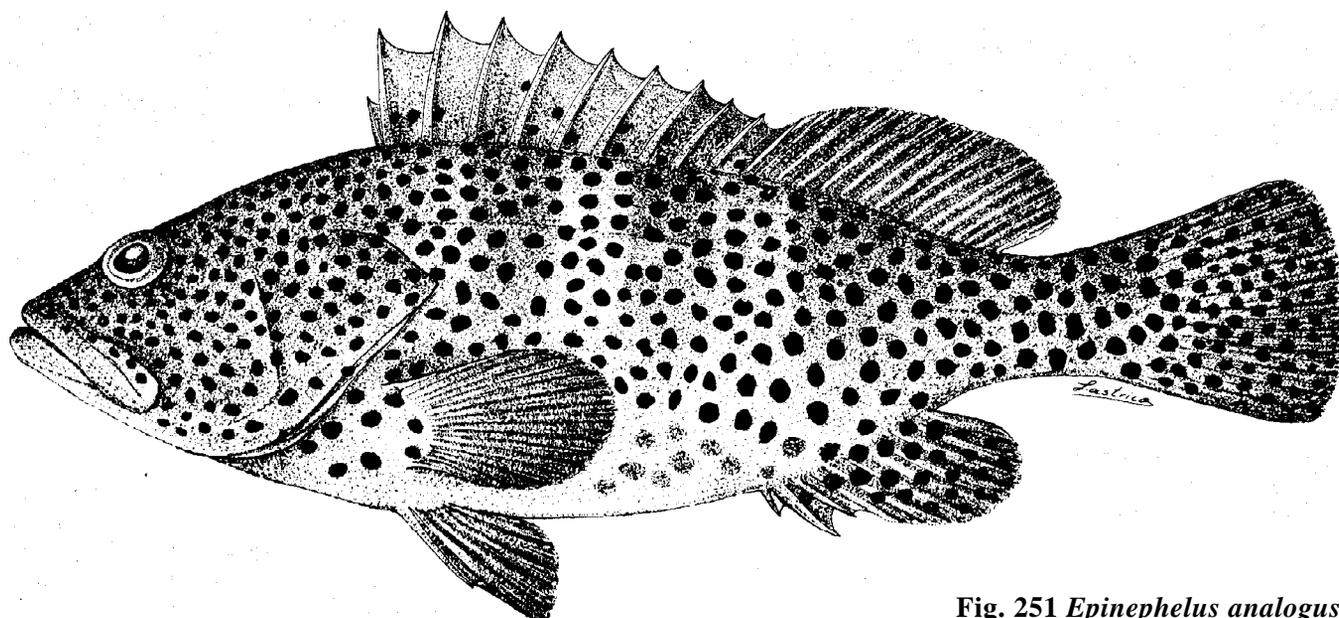


Fig. 251 *Epinephelus analogus*
(about 750 mm total length)

Diagnostic Features: Body depth distinctly less than head length, depth contained 2.6 to 3.0 times in standard length (for fish 10 to 32 cm standard length). Head length contained 2.3 to 2.5 times in standard length; preopercle with a shallow notch above the angle, the serrae at angle slightly enlarged; upper edge of operculum slightly convex; nostrils subequal. Total gill rakers 26 to 28. Dorsal fin with X spines and 16 to 18 rays, the third spine longest and the membranes moderately incised between the spines; anal fin with

III spines and 8 rays; pectoral fins with 19 or 20 rays; pelvic fins distinctly shorter than pectoral fins and their origin below or behind lower end of pectoral-fin base; caudal fin rounded. Midlateral-body scales ctenoid, with numerous auxiliary scales; lateral-line scales 53 to 69; lateral-scale series 96 to 112. **Colour:** Generally reddish brown covered with dark brown spots; body with 5 faint, oblique, dark bars.

Geographical Distribution: Eastern Pacific from southern California to Peru and the Galapagos Islands. The spotted grouper is the most abundant small grouper in the northern Gulf of California (Fig. 252).

Habitat and Biology: This species is abundant on offshore patch reefs where it is readily caught by anglers. It feeds mainly on crustaceans and fishes on rocky and sandy bottoms; in winter it moves closer to shore where it feeds heavily on swarms of the pelagic red crab, *Pleuroncodes planipes*.

Size: Maximum total length about 75 cm; maximum weight probably around 9 kg.

Interest to Fisheries: Spotted grouper are of importance to anglers and local hand-line fisheries.

Local Names:

Literature: Smith (1971); Thomson et al. (1979).

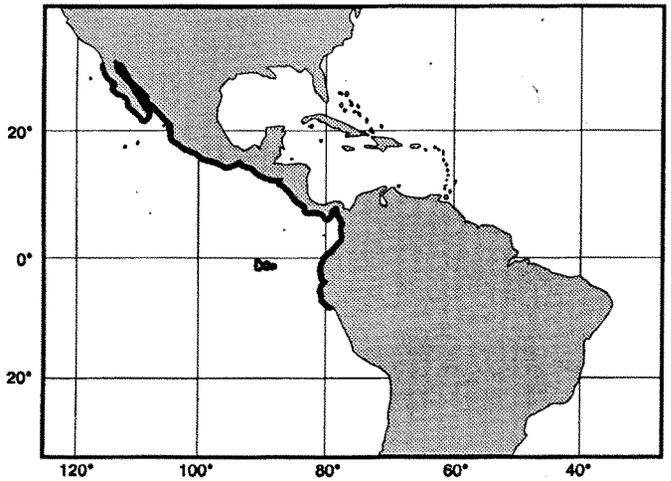


Fig. 252

Epinephelus andersoni Boulenger, 1903

Fig. 253; Pl. VIII B

SERRAN Epin 27

Epinephelus andersoni Boulenger, 1903:66, pl. 5 (type locality: Natal, South Africa).

Synonyms: None.

FAO Names: En - Catface grouper; Fr - Mérou chat; Sp - Mero gato.

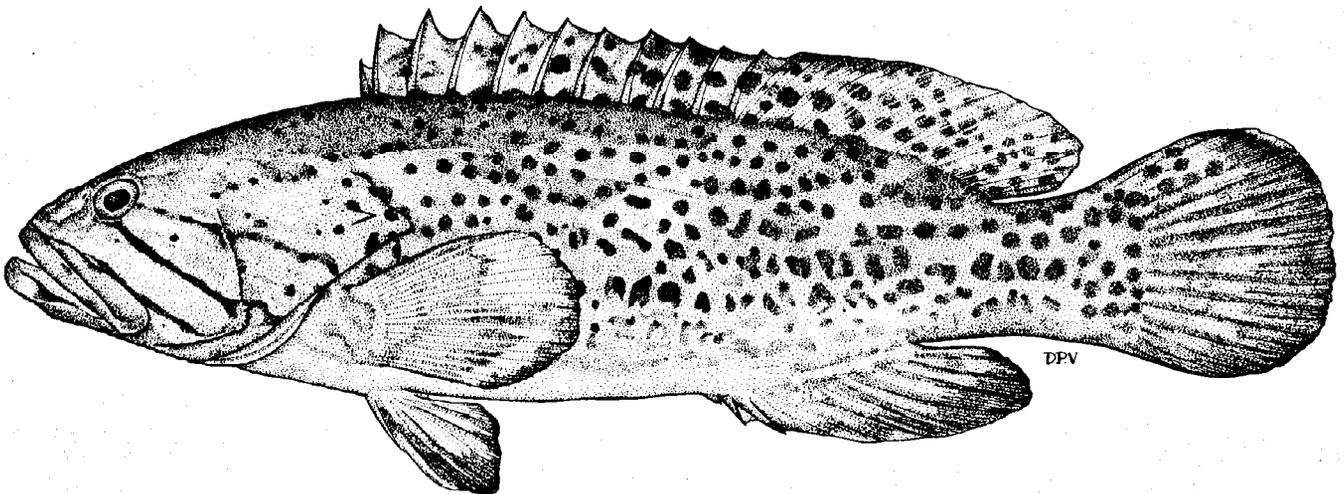


Fig. 253 *Epinephelus andersoni*
(372 mm standard length)

Diagnostic Features: Body elongate, the depth contained 3.2 to 3.7 times in standard length (for fish 10 to 50 cm standard length); greatest body width contained 1.4 to 1.8 times in body depth. Head length contained 2.4 to 2.7 times in standard length; preopercle angular, with several enlarged serrae at the angle; upper edge of operculum slightly convex; nostrils equal in size; maxilla scaly, reaching to or past vertical at rear edge of eye; midside of lower jaw with 2 or 3 rows of teeth. Gill rakers shorter than gill filaments, 8 to 11 on upper limb, 14 to 17 on lower limb, 22 to 27 total. Dorsal fin with XI spines and 13 to 15 rays, the third or fourth spine longest, its length contained 2.9 to 3.9 times in head length, the interspinous membranes moderately incised; anal fin with III spines and 8 rays; pectoral fins with 17 to 19 rays, their length contained 1.5 to 2.0 times in head length; pelvic-fin length contained 2.1 to 2.6 times in head length; caudal fin well

rounded. Midlateral-body scales ctenoid (although mostly embedded), with auxiliary scales; lateral-line scales 66 to 74; lateral-scale series 97 to 106. **Colour:** Head, body, and fins brown; body, caudal, and dorsal fins with numerous, small, close-set, irregular, dark brown spots; 2 dark brown stripes posteriorly from eye across operculum and another continuing from maxillary groove to lower edge of preopercle. Juveniles with longitudinal dark stripes that break up into spots posteriorly on body; black blotch at base of last few dorsal-fin spines; 2 small black spots at base of dorsal-fin rays, and a third on top of caudal peduncle; these black blotches separated by 4 or 5 white spots.

Geographical Distribution: *E. andersoni* is known with certainty only from the southeast coast of Africa between Quissico, Mozambique (24°50'S) and Knysna, South Africa (23°E) (Fig. 254). Reports from Madagascar (Fourmanoir, 1957) are dubious.

Habitat and Biology: Rocky bottom from shore to depths of at least 50 m; juveniles are found in tidepools. According to van der Elst (1981), *E. andersoni* is a sedentary ambush predator that feeds on fishes, crabs, and spiny lobsters. Sexual maturity is attained at a length of 50 to 60 cm.

Size: Maximum total length at least 80 cm.

Interest to Fisheries: This species is primarily of interest to sportfishermen.

Local Names: SOUTH AFRICA: Catface rockcod, Captain Fine, Spotted rockcod.

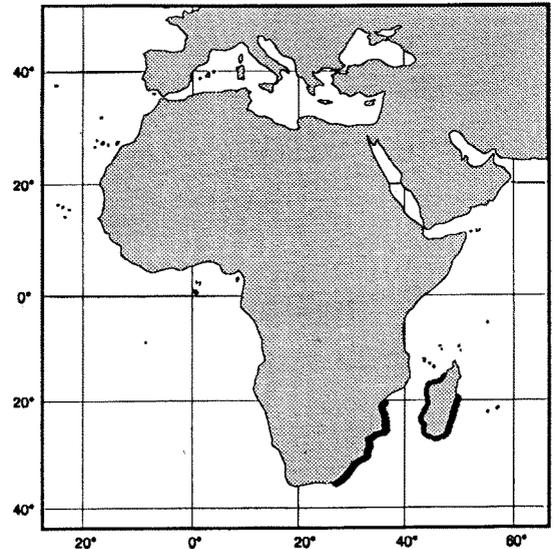


Fig. 254

Epinephelus areolatus (Forsskbl, 1775)

Fig. 255; Pl. VIII C

SERRAN Epin 4

Perca areolata Forsskål, 1775:42 (type locality: Jeddah, Saudi Arabia, Red Sea).

Synonyms: *Bodianus melanurus* Geoffroy Saint-Hilaire, 1809:317, pl. 21, fig. 1 (type locality: Suez, Red Sea). *Serranus angularis* Valenciennes in Cuv. and Val., 1828:353 (type locality: Sri Lanka). *Serranus celebicus* Bleeker, 1851 a:21 7 (type locality: Bulucomba, Sulawesi [Celebes] Indonesia). *Serranus Waandersii* Bleeker, 1858a:152 (type locality: Boleling, Bali, Indonesia). *Serranus glaucus* Day, 1870:678 (type locality: Andaman Islands, Indian Ocean). *Epinephelus craspedurus* Jordan and Richardson, 1910:447, fig. 7 (type locality: Kagoshima, Japan).

FAO Names: En - Areolate grouper; Fr - Mérou aréolé; Sp - Mero areolado.

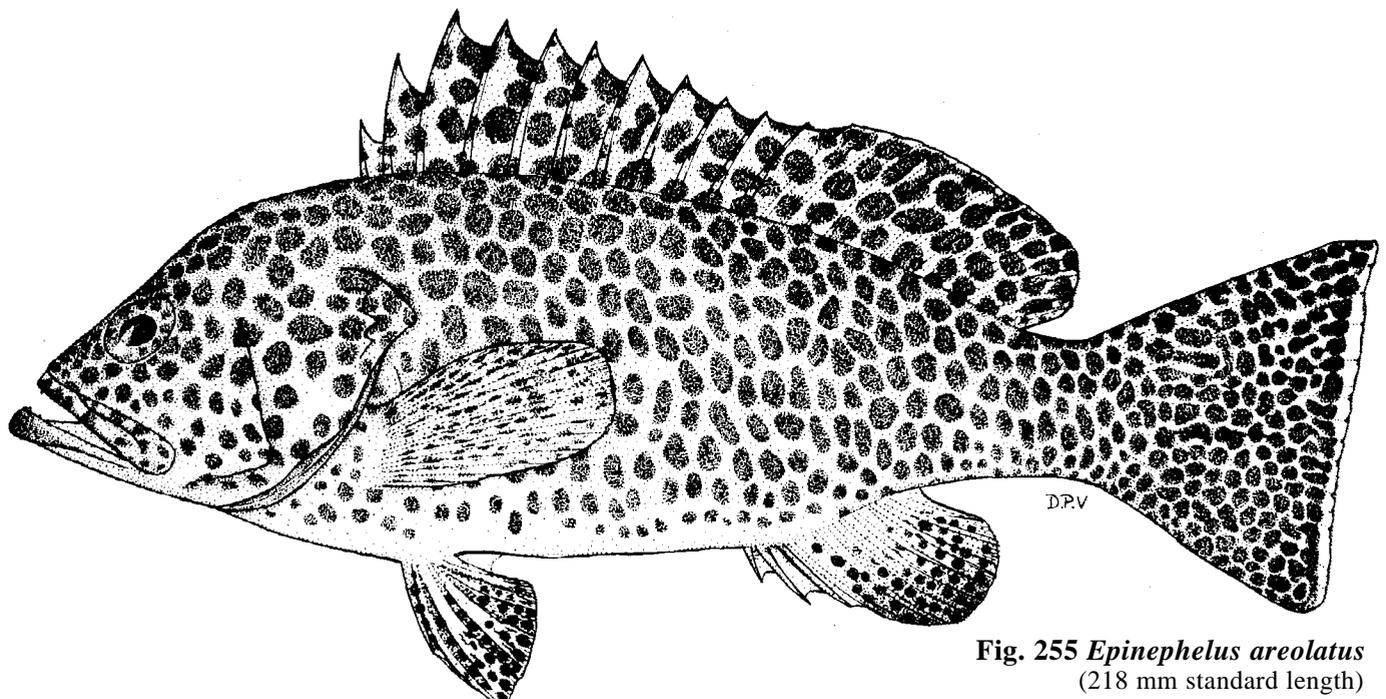


Fig. 255 *Epinephelus areolatus*
(218 mm standard length)

Diagnostic Features: Body depth less than head length, depth contained 2.8 to 3.3 times in standard length (for fish 14 to 31 cm standard length). Head length contained 2.4 to 2.8 times in standard length: interorbital area convex; preopercle angular, with 2 to 7 enlarged serrae at the angle; upper edge of operculum straight or slightly convex; nostrils subequal; maxilla extending to below rear half of eye, the lower edge with a distinct step posteriorly; maxilla, lower jaw and gular area scaly; midlateral part of lower jaw with 2 rows of teeth. Gill rakers 8 to 10 on upper limb, 14 to 16 on lower limb, total 23 to 25. Dorsal fin with XI spines and 15 to 17 rays, the third or fourth spine longest and subequal to longest ray, the interspinous membranes moderately incised; anal fin with III spines and 8 rays, the margin rounded or angular; pectoral-fin rays 17 to 19; pectoral fins longer than pelvic fins, pectoral-fin length contained 1.5 to 1.8 times in head length; pelvic-fin length contained 1.7 to 2.1 times in head length, reaching to or nearly to anus; caudal fin slightly convex in juveniles, truncate or slightly emarginate in adults. Lateral-body scales ctenoid; adults with auxiliary scales; lateral-line scales 49 to 53; lateral-scale series 97 to 116. Pyloric caeca 11 to 17. **Colour:** Head, body, and fins pale; covered with numerous close-set brown, brownish yellow, or greenish yellow spots, the largest about size of pupil, those on front of head smaller than those on operculum. Pectoral fins pale, with small dark spots on the rays. Posterior edge of caudal fin with a distinct white margin.

Geographical Distribution: *E. areolatus* occurs in the Red Sea, Persian Gulf, and western Indian Ocean south to Natal, South Africa; its range extends eastward to India, Sri Lanka, Andaman Islands, Thailand, Malaysia, Viet Nam, Indonesia, Philippines, Hong Kong, China, Taiwan, Japan, northern Australia (and nearby islands), Papua New Guinea, New Caledonia, and Fiji. It appears to be absent from Micronesia, Polynesia, and most of the islands of the western Indian Ocean (e.g., Madagascar, Mascarenes, Comoros, Chagos Archipelago, and the Maldives). It has been taken at the Seychelles (market specimen) and the Laccadives (Fig. 256).

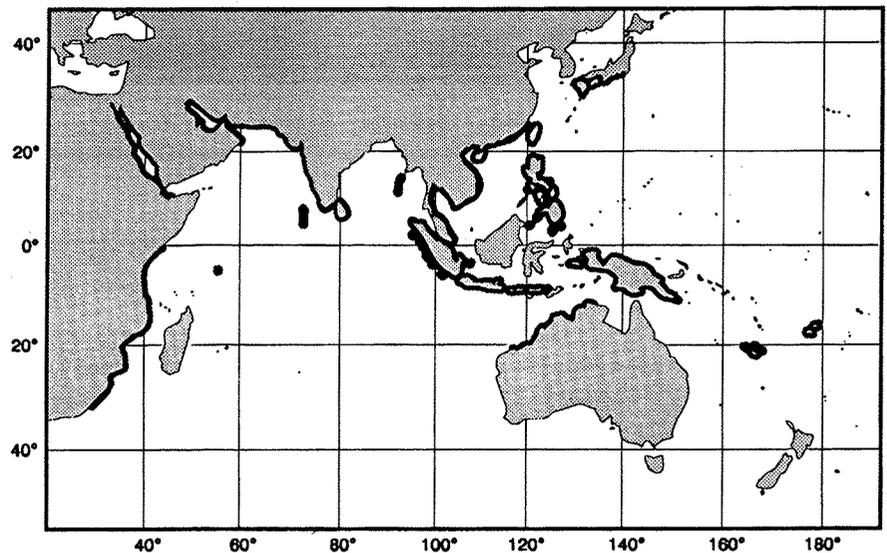


Fig. 256

Habitat and Biology: This species is usually found in seagrass beds or on fine sediment bottoms near rocky reefs, dead coral, or alcyonarians. It has been taken in depths of 6 to 200 m. At New Caledonia, *E. areolatus* was reported to feed on penaeid prawns (Fourmanoir and Laboute, 1976).

Size: Maximum total length about 40 cm (31 cm standard length).

Interest to Fisheries: *E. areolatus* is common in the markets of Hong Kong, Singapore, and probably throughout its range. Caught with hook-and-line, traps, and in trawls.

Local Names: AUSTRALIA: Yellow-spotted rockcod; HONG KONG: Chai-may-tsee-mah-paan; JAPAN: Omon-hata; KUWAIT: Gatow; MAURITIUS: Vielle plate; NEW CALEDONIA: Loche aréolée; SEYCHELLES: Vielle maconde; SINGAPORE: Kerapu ekor puteh; SOUTH AFRICA: Squaretail rockcod.

Literature: Tan et al. (1982); Randall and Ben-Tuvia (1983); Randall and Heemstra (1991).

Remarks: *E. areolatus* has often been confused with *E. chlorostigma*, which is also covered with brown spots and has a truncate or emarginate caudal fin with a white posterior margin. But *E. chlorostigma* has modally one more dorsal- and pectoral-fin ray, 2 more gill rakers, and smaller, more numerous, dark brown spots, with the largest dark spots on body about half of the size of the pupil; also the dark spots are closer together, with the pale interspaces forming a pale network on the head, body and median fins.

Epinephelus awoara (Temminck and Schlegel, 1842)

Fig. 257; Pl. VIID, E

SERRAN Epin 5

serranus awo-ara Temminck and Schlegel, 1842:9, pl. 3, fig. 2 (type locality: Nagasaki, Japan).

Synonyms: None.

FAO Names: En - Yellow grouper; Fr - Mérou jaune; Sp - Mero amarillo.

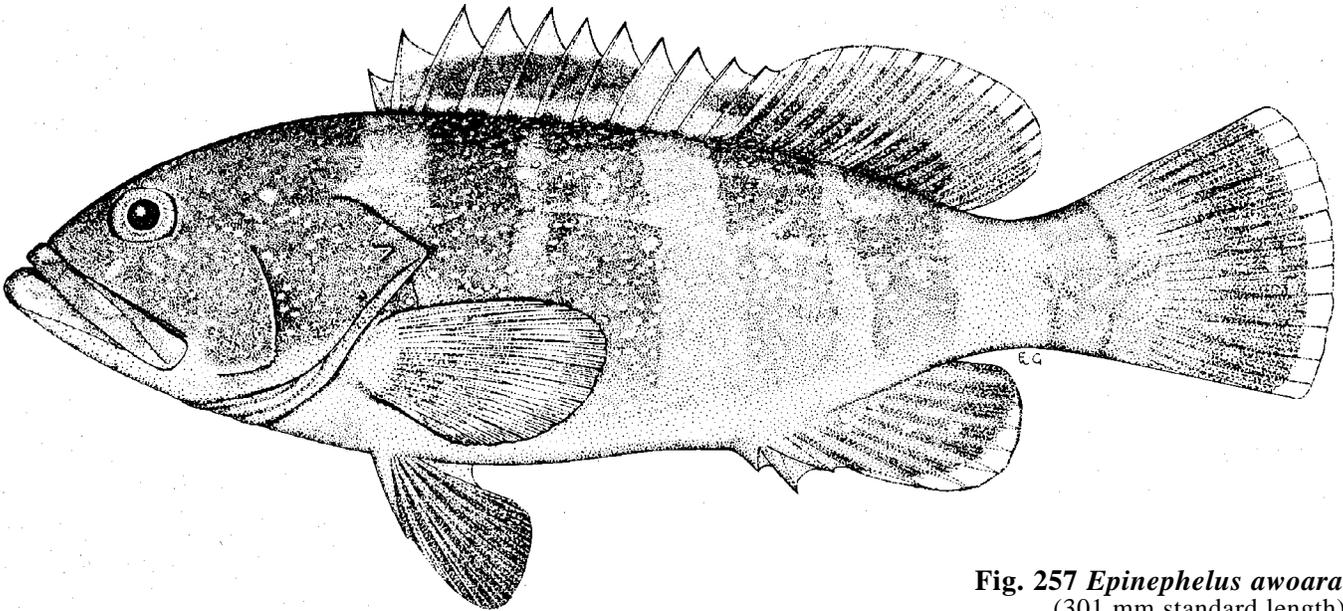


Fig. 257 *Epinephelus awoara*
(301 mm standard length)

Diagnostic Features: Body depth contained 2.7 to 3.3 times in standard length (for fish 13 to 31 cm standard length). Head length contained 2.25 to 2.6 times in standard length; interorbital area convex; dorsal head profile strongly convex; preopercle subangular, with 2 to 5 strong spines at the angle; upper edge of operculum straight, the uppermost spine rudimentary; maxilla reaches about to vertical at rear edge of eye; midlateral part of lower jaw with 2 rows of small, subequal teeth. Gill rakers 8 or 9 on upper limb, 16 to 18 on lower limb, total 22 to 26. Dorsal fin with XI spines and 15 or 16 rays, the third or fourth spine longest but shorter than the longest. ray, the interspinous membranes deeply incised; anal fin with III spines and 8 rays; pectoral-fin rays 17 to 19; pectoral fins longer than pelvic fins, pectoral-fin length contained 1.6 to 1.9 times in head length; caudal fin convex. Lateral-body scales distinctly ctenoid, with auxiliary scales in fish larger than 30 cm standard length; lateral-line scales 49 to 55; lateral-scale series 92 to 109. Pyloric caeca 12, in 3 bundles. **Colour:** Head and body pale greyish brown dorsally, usually golden yellow ventrally; 4 broad dark bars on dorsal part of body, one on caudal peduncle and another often visible on nape; head and body with numerous small yellow spots; body and median fins also with small greyish white spots; soft dorsal, caudal, and sometimes the anal fin with prominent yellow margin paired fins dusky yellow. Dark bars on body may be faint or absent in large adults.

Geographical Distribution: *E. awoara* occurs in the western North Pacific Ocean; it is known from Korea, Japan, Taiwan, China, Viet Nam, and islands in the South China Sea (Fig. 258).

Habitat and Biology: This species is found in rocky areas as well as on sandy-mud bottoms. Juveniles are common in tidepools, and adults are caught in depths of 10 to 50 m. In captivity, *E. awoara* is an aggressive fish, spending much of its time chasing and biting other fishes, especially members of its own species.

Size: Maximum total length at least 60 cm.

Interest to Fisheries: *E. awoara* is a valuable food fish, which is caught with trawls or hook-and-line. Artificial fertilization of eggs was accomplished by Zhang and Li (1988), and the longest survival time for the larvae was 15 days.

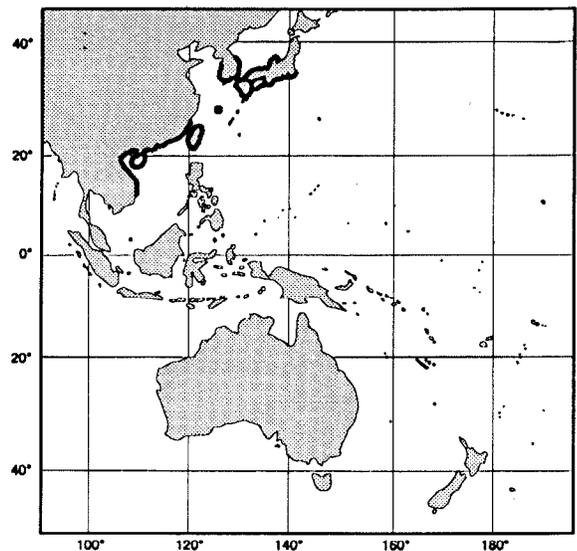


Fig. 258