

Local Names: HONG KONG: Wong-paan (large fish), Wong-dang (small fish); JAPAN: Aohata.

Literature: Chan (1968); Randall and Heemstra (1991).

Remarks: The fish illustrated as "*Epinephelus awoara*" by Lindberg and Krasnyukova (1971 :fig. 145) appears to be *E. trimaculatus*.

Epinephelus bilobatus Randall and Allen, 1987

Fig. 259; Pl. VIII F

SERRAN Epin 82

Epinephelus bilobatus Randall and Allen, 1987:391, 406, fig. 4 (type locality: Rosemary Island, Dampier Archipelago, Western Australia).

Synonyms: None.

FAO Names: En - Twinspot grouper; Fr - Mérou gemine; Sp - Mero de pintas gemelas.

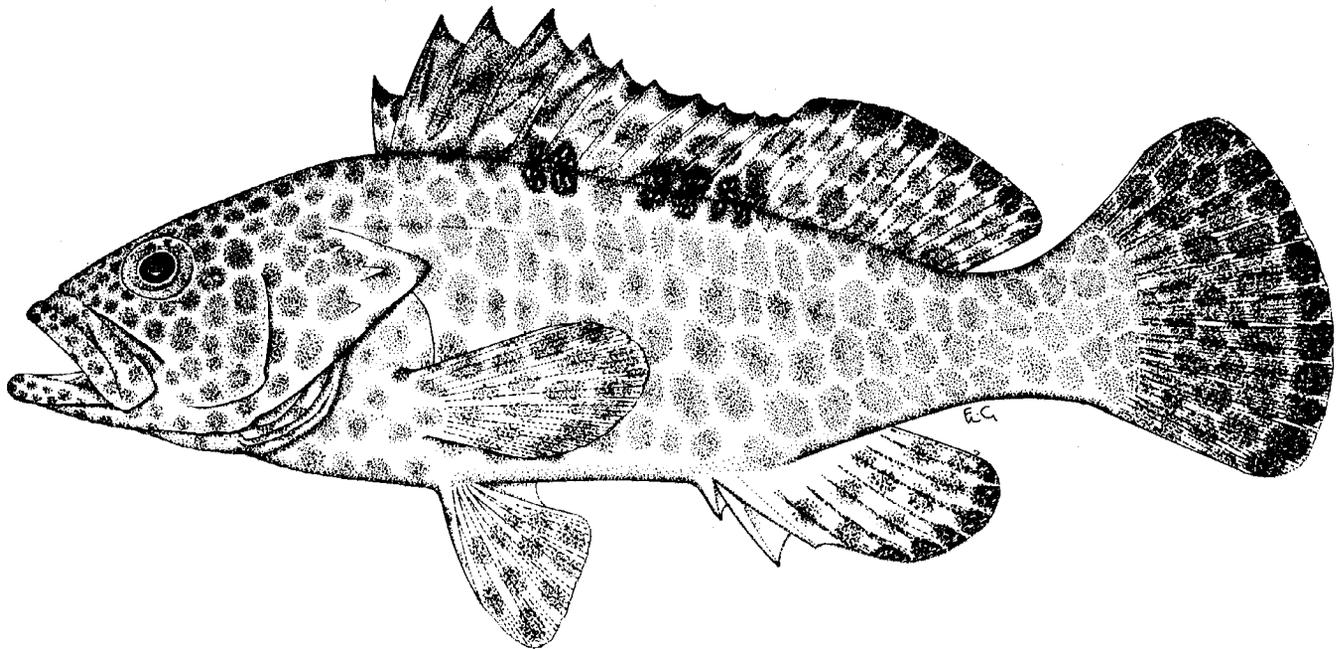


Fig. 259 *Epinephelus bilobatus*
(156 mm standard length)

Diagnostic Features: Body depth contained 2.8 to 3.3 times in standard length (for fish 8 to 27 cm standard length). Head length contained 2.4 to 2.6 times in standard length; preopercle subangular, with the serrae at the angle slightly enlarged; opercular spines inconspicuous; upper edge of operculum straight or slightly concave; nostrils subequal in small fish, but rear nostril diameter about twice that of anterior nostril in a fish of 27 cm standard length; maxilla reaches below rear half of eye; midlateral part of lower jaw with 2 rows of small teeth. Gill rakers 7 to 9 on upper limb, 14 to 16 on lower limb, total 23 to 25. Dorsal fin with XI spines and 17 or 18 rays, the third or fourth spine longest (contained 2.1 to 2.5 times in head length) and slightly longer than the longest dorsal-fin ray, the interspinous membranes slightly to moderately incised; anal fin with III spines and 8 rays, the second and third spines subequal, their length contained 2.5 to 3.2 times in head length; 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; caudal-peduncle depth contained 3.2 to 3.6 times in head length; caudal fin rounded. Lateral-body scales ctenoid; auxiliary scales present or absent; lateral-line scales 48 to 52; lateral-scale series 94 to 102. **Colour:** Head and body pale, covered with indistinctly defined, dark orange-brown spots; dark spots extend onto soft dorsal, caudal, and anal fins where the pale interspaces form a network pattern; the spots along the margin of these fins are darker than other spots: a series of 3 bilobed dark blotches or close-set pairs of dark brown to black spots along base of dorsal fin and adjacent body; dorsal part of body of fresh specimens with a pale bluish grey tinge; spinous dorsal fin dusky, with indistinct dark spots and a blackish margin; paired fins also with dark brown spots. Dark brown line in maxillary groove.

Geographical Distribution: *E. bilobatus* is known only from northwestern Australia. A frozen specimen was purchased in the market at Hengchun, Taiwan; but this fish was from a trawler that had been fishing in foreign waters, and its place of origin could not be determined (Fig. 260).

Habitat and Biology: Coral reefs and rocky bottom in depths of 4 to 50 m. There is no published information on the biology of this species.

Size: Maximum total length at least 33 cm.

Interest to Fisheries: No information is available.

Local Names: AUSTRALIA: Frostback rockcod.

Literature: Randall and Allen (1987); Randall and Heemstra (1991).

Remarks: *E. bilobatus* was illustrated in colour (as "*Epinephelus maculatus*") by Allen (1985) and Sainsbury et al. (1985).

E. bilobatus is one of a group of 9 shallow-water coral reef species that have a rounded caudal fin and close-set dark brown spots with the pale interspaces forming a network on the body. These species have been much confused in the literature, and many museum specimens have been misidentified. The other "reticulated groupers" differ from *E. bilobatus* as follows:

E. faveatus has the lateral-body scales smooth (except for area covered by pectoral fins), shorter dorsal-fin spines (length of fourth spine contained 2.6 to 3.9 times in head length), and dark spots on body at dorsal-fin base not bilobed or in pairs.

E. hexagonatus has conspicuous white dots on the body between the dark spots, dark spots on body at dorsal-fin base not bilobed or in pairs, dorsal-fin rays 15 to 17, and second anal-fin spine much longer than third spine.

E. macrospilos has the lateral-body scales mostly smooth, pectoral fins dusky with narrow white edge, dark spots on body at dorsal-fin base not bilobed or in pairs and rear edge of caudal fin pale yellow or white.

E. maculatus has the dorsal-fin membranes not incised between the spines; juveniles yellowish brown, with a few small black spots (mainly on head and fins) and a few large irregular white blotches on head, body, and fins; dorsal-fin rays 15 to 17; lateral-scale series 102 to 120.

E. melanostigma has a single black blotch at base of last 4 dorsal-fin spines, dorsal-fin rays 14 to 16, lateral-line scales 56 to 68, and midlateral part of lower jaw with 3 to 5 rows of teeth.

E. merra has dark spots on body at dorsal-fin base not bilobed or in pairs, pectoral fins with small black spots largely confined to the rays, dorsal-fin rays 15 to 17, and fourth to ninth dorsal-fin spines subequal (the longest contained 2.6 to 2.9 times in head length).

E. quoyanus has dark spots on body at dorsal-fin base not bilobed or in pairs, pectoral fins with indistinct dark brown spots, the base with large semicircular dark brown spot edged posteriorly with white, 2 oblique dark brown bands or blotches linked by bands on sides of chest, pectoral-fin length more than 25% of standard length and contained 1.2 to 1.7 times in head length, third to fifth dorsal-fin spines longest and contained 2.3 to 3.0 times in head length.

E. spilotoceps has dorsal-fin rays 14 to 16, lateral-line scales 59 to 69, fourth dorsal-fin spine usually longest (its length contained 2.7 to 3.5 times in head length), 3 brownish black blotches or spots on body at base of dorsal fin but these are not bilobed or in pairs, and caudal-peduncle depth contained 3.7 to 4.3 times in head length.

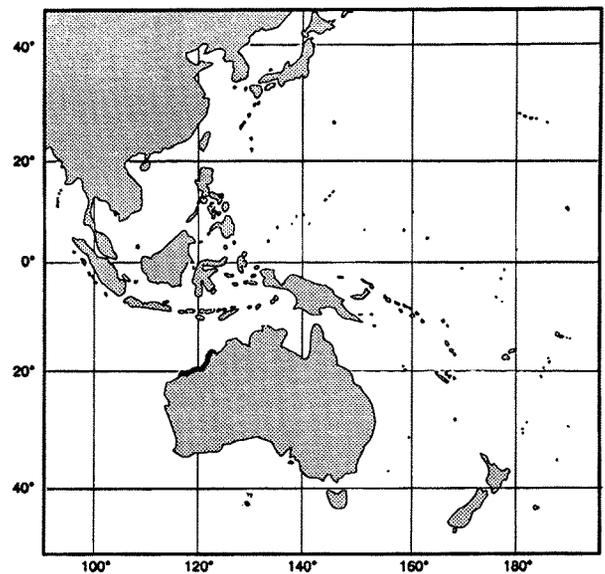


Fig. 260

Epinephelus bleekeri (Vaillant, 1877)

Fig. 261; Pl. IXA,B

SERRAN Epin 6

Serranus bleekeri Vaillant in Vaillant and Bocourt, 1877:47 and 69 (based on *Serranus variolosus* [non Valenciennes]: Bleeker, 1849).

Synonyms: *Serranus variolosus* (non Valenciennes): Bleeker, 1849:35 (Indonesia). *Epinephelus Dayi* Bleeker, 1875:47 (based on *Serranus Waandersii* [non Bleeker]: Day, 1875:12, pl. 8, fig. 1 from India; preoccupied by *Epinephelus Dayi* Bleeker, 1873 [a synonym of *E. diacanthus*]). *Serranus Coromandelicus* Day, 1878 (replacement name for *Epinephelus Dayi* Bleeker, 1875). *Epinephelus albimaculatus* Seale, 1909:509, pl. 8 (type locality: Mindanao, Philippines).

FAO Names: En - Duskytail grouper; Fr - M erou demideuil; Sp - Mero medioluto.

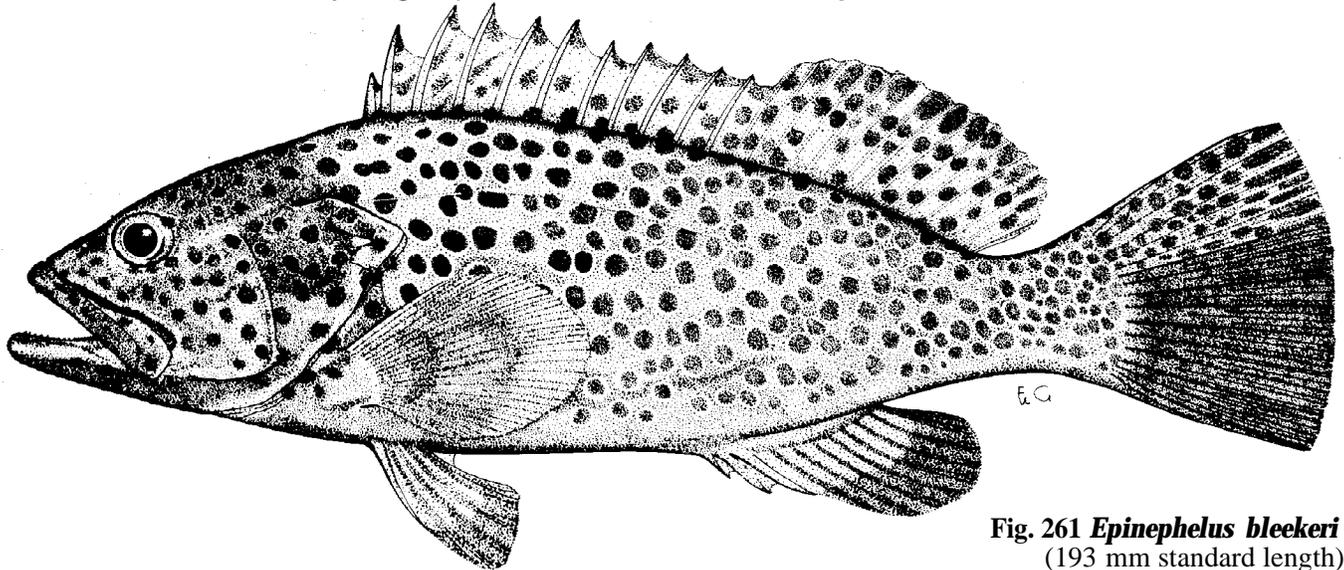


Fig. 261 *Epinephelus bleekeri*
(193 mm standard length)

Diagnostic Features: Body elongate, the depth contained 3.0 to 3.5 times in standard length (for fish 11 to 52 cm standard length). Head length contained 2.4 to 2.7 times in standard length; interorbital area flat to slightly convex; preopercle angle with 2 to 9 enlarged serrae; adults with a notch above preopercle angle; upper edge of operculum straight; maxilla scaly, reaching to or beyond vertical at rear edge of eye; midlateral part of lower jaw with 2 rows of subequal teeth. Gill rakers 9 to 11 on upper limb, 16 to 18 on lower limb, 25 to 28 total. Dorsal fin with XI spines and 16 to 18 rays, third to fifth spines longest, the interspinous membranes incised; anal fin with III spines and 8 or 9 (rarely 9) rays; pectoral-fin rays 17 to 19; pectoral-fin length contained 1.6 to 2.1 times in head length; pelvic-fin length contained 1.9 to 2.5 times in head length; caudal fin truncate or slightly convex. Lateral-body scales ctenoid; adults with a few small auxiliary scales; lateral-line scales 49 to 53; lateral-scale series 99 to 104. **Colour:** Head and body brownish, reddish brown or purplish grey, covered (except ventrally) with numerous reddish orange, gold, or yellow spots; dorsal fin and upper third of caudal fin with spots like those on body; lower two-thirds of caudal fin dusky; spots on body of some fish with a faint dark margin; pectoral and pelvic fins and distal part of anal fin dusky; dark streak along maxillary groove. Juveniles (less than 11 cm standard length) with 7 faint dark bars dorsally on body, the first two on nape, the last on caudal peduncle; all bars more or less demarcated by small dark spots; no dark spots on head or fins.

Geographical Distribution: *E. bleekeri* is an Indo-West Pacific species occurring from the Persian Gulf to Taiwan, Indonesia and the northern coast of Australia. We have examined specimens from Bahrain, Iran, India, Thailand, Cambodia, Indonesia, Borneo, Philippines, China, Hong Kong, Taiwan, and Australia. It is not known from Japan or New Guinea, but it may occur there. It has not been found at any of the islands of Micronesia or Polynesia (Fig. 262).

Habitat and Biology: *E. bleekeri* occurs on shallow rocky banks, but it is not known from well-developed

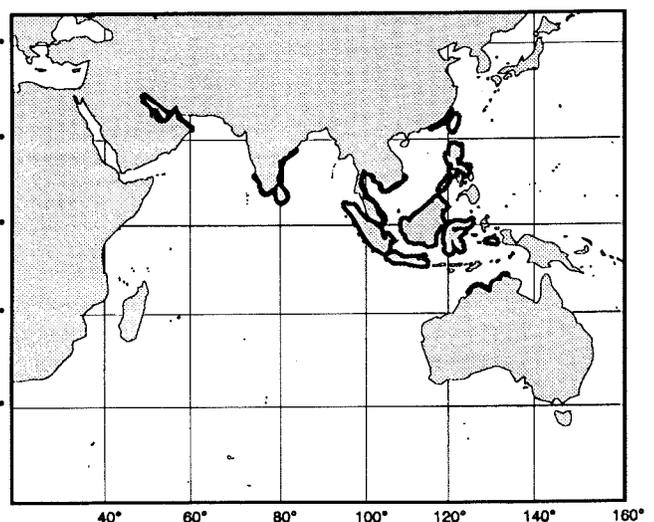


Fig. 262

coral reefs. The depth range for this species has been reported as 30 to 104 m.

Size: Maximum total length about 76 cm, according to Chan (1968).

Interest to Fisheries: An excellent eating fish, but it is apparently not abundant. Caught with hook-and-line, longlines, and trawls,

Local Names: HONG KONG: Hung-paan; INDONESIA: Kerapo-tutul, Balong; SINGAPORE: Bleeker's grouper, Jiao zhī hou, Chi hou, Hua hou.

Literature: Randall and Heemstra (1991).

Remarks: It is ironic that *E. bleekeri* was twice misidentified and then three new names were given to this species. According to information supplied by Dr Marie-Louise Bauchot and Mat-tine Desoutter, Vaillant's description of *Serranus Bleekeri* was published in the second instalment of the work by Vaillant and Bocourt (p. 41 to 120) on 31 October 1877. It thus predates the other replacement name, *Serranus Coromandelicus*, of Day (1878).

Epinephelus bontoides (Bleeker, 1855)

Fig. 263; Pl. IXC

SERRAN Epin 86

Serranus bontoides Bleeker, 1855c:405 (type locality: Ambon, Molucca Islands).

Synonyms: None.

FAO Names: En - Palembang grouper; Fr - Mérou bord clair; Sp - Mero de márgenes pálidos.

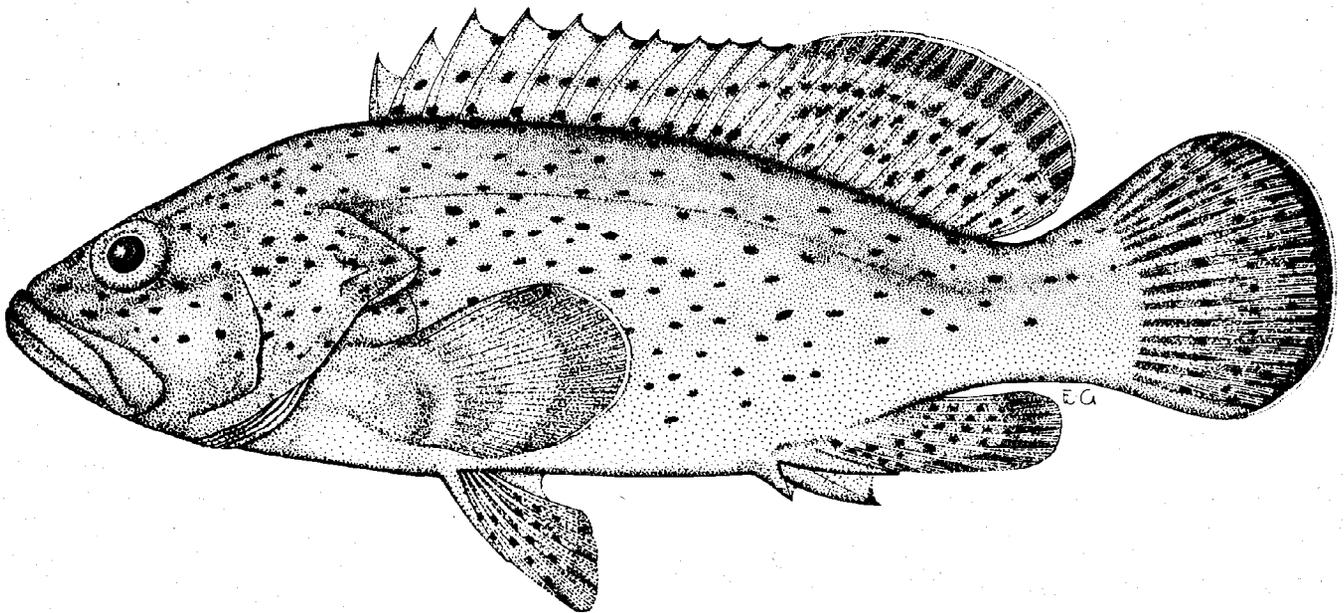


Fig. 263 *Epinephelus bontoides*
(165 mm standard length)

Diagnostic Features: Body depth contained 2.8 to 3.2 times in standard length (for fish 8 to 23 cm standard length). Head length contained 2.3 to 2.6 times in standard length; interorbital area flat to slightly convex, the dorsal head profile almost straight; preopercle rounded, finely serrate, the ventral serrae slightly enlarged; upper edge of operculum straight; maxilla reaches past rear edge of eye; midlateral part of lower jaw with 2 or 3 rows of teeth. Gill rakers 6 to 8 on upper limb, 13 to 15 on lower limb, 21 total. Dorsal fin with XI spines 16 or 17 rays, the 3rd to 11th spines subequal and shorter than longest rays, the interspinous membranes incised; anal fin with III spines and 8 rays; pectoral-fin rays 18 to 20; pectoral-fin length contained 1.6 to 2.0 times in head length; pelvic-fin length contained 1.9 to 2.3 times in head length; caudal fin rounded. Midlateral-body scales ctenoid; adults with auxiliary scales; lateral-line scales 48 to 51; lateral-scale series 82 to 86. Pyloric caeca about 18 (1 specimen). **Colour:** Head and body greyish brown, covered (except ventrally) with well-separated, dark reddish brown to black spots, smaller than pupil and many horizontally elongate; fins darker than body, the median fins with small dark spots; pectoral, soft dorsal, caudal, and sometimes anal fin dark with a narrow pale yellow or white margin; spinous dorsal fin with 3 rows of oblique black spots.

Geographical Distribution: Western Pacific: Indonesia, Philippines, Taiwan, and New Britain (Fig. 264).

Habitat and Biology: Mud or rocky/cobble bottoms in depths of 2 to 30 m. Nothing has been published on the biology of this rare species.

Size: Attains at least 30 cm total length.

Interest to Fisheries: None.

Local Names:

Literature: Randall and Heemstra (1991).

Remarks: *E. bontoides* appears to be one of the rarest groupers in the Indo-Pacific region.

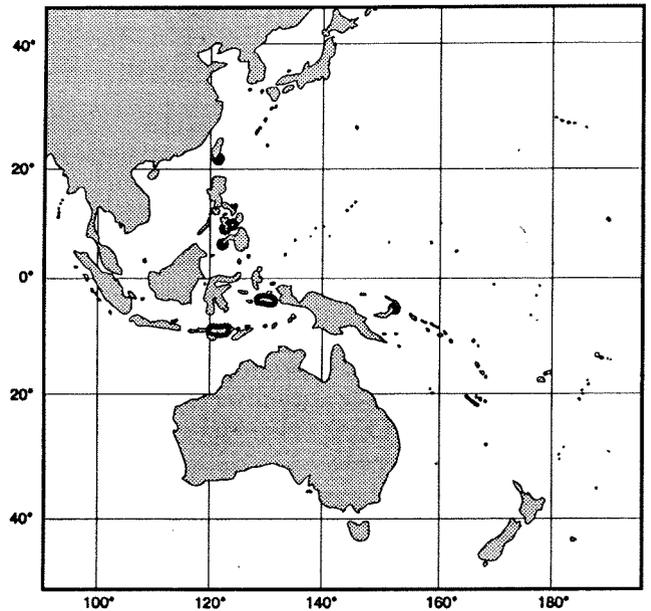


Fig. 264

Epinephelus bruneus Bloch, 1793

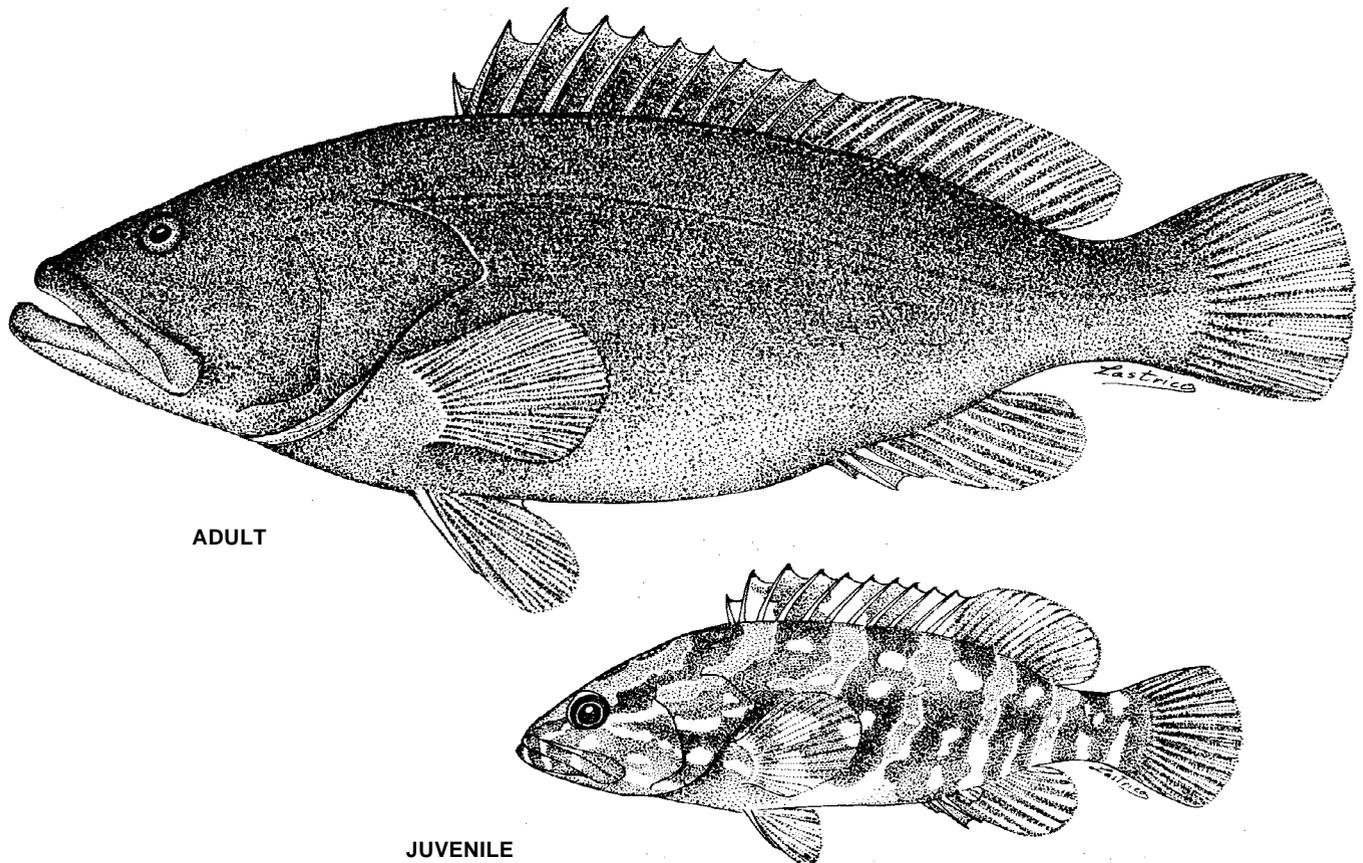
Fig. 265; Pl. XID,E

SERRAN Epin 7

Epinephelus bruneus Bloch, 1793:15, pl. 328, fig. 2 (type locality given erroneously as Norway).

Synonyms: *Serranus mo-ara* Temminck and Schlegel, 1842:10, pl. 4, fig. 2 (type locality: Nagasaki, Japan).

FAO Names: En - Longtooth grouper (formerly: Mudgrouper); Fr - Mérou longues dents; Sp - Mero diente largo.



ADULT

JUVENILE

Fig. 265 *Epinephelus bruneus*
(adult 800 mm standard length, juvenile 400 mm standard length)

Diagnostic Features: Body elongate, the depth contained 3.0 to 3.6 times in standard length (for fish 12 to 51 cm standard length). Head length contained 2.3 to 2.5 times in standard length; interorbital area convex; preopercle angular, with the serrae at angle distinctly enlarged; dorsal spine-on opercle inconspicuous: upper edge of operculum convex; nostrils small subequal; maxilla reaches past vertical at rear edge of eye: tiny embedded scales on maxilla; no step on ventral edge of maxilla; midlateral part of lower jaw with 2 rows of well-developed canines, those along sides of upper jaw slightly smaller. Gill rakers shorter than gill filaments, 9 to 11 on upper limb, 16 to 18 on lower limb, total 24 to 27. Dorsal fin with XI spines and 13 to 15 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-fin length contained 1.9 to 2.5 times in head length; pelvic-fin length contained 2.2 to 2.6 times in head length and ending well short of anus; caudal fin rounded. Midlateral-body scales ctenoid; no auxiliary scales on body; lateral-line scales 64 to 72; some anterior lateral-line scales on adults with branched tubes; lateral-scale series 93 to 126. **Colour:** Adults (larger than 40 cm standard length) dark greyish brown, the bars and bands replaced by faint dorsal blotches or absent altogether, the body covered with small pale grey spots forming short horizontal lines and a mottled pattern; lower margin of anal fin and lower corner of caudal fin with white edge. Juveniles pale yellowish brown, the body with 6 irregular, oblique dark bars containing irregular pale spots: first bar extends from nape to eye, the last on caudal peduncle; 3 dark brown bands radiating from lower part of eye; some fish with distal part of interspinous membranes greenish yellow.

Geographical Distribution: *E. bruneus* is known only from the coasts of Korea, Japan (north to Hegura-jima Island, 37°50'N), China (south to Hong Kong and Hainan Island), and Taiwan (Fig. 266).

Habitat and Biology: Rocky reefs and mud bottom; adults found in depths of 20 to 200 m; juveniles occur in shallow water.

Size: Maximum total length about 100 cm.

Interest to Fisheries: An excellent eating fish. In 1968, *E. bruneus* was one of the most abundant species in Hong Kong waters. It is caught with handlines, longlines, and trawls.

Local Names: HONG KONG: Mud grouper, Lai-paan (adults), Ching-paan (juveniles); JAPAN: Hue.

Literature: Chan (1968); Randall and Heemstra (1991).

Remarks: In recent literature, this species was generally identified as *Epinephelus moara*. According to Burgess and Axelrod (1971) a specimen (identified as "*Epinephelus moara*") of 134 cm and weighing about 30 kg was caught off Kochi, Japan. This record may be true, but we have seen no verification of it.

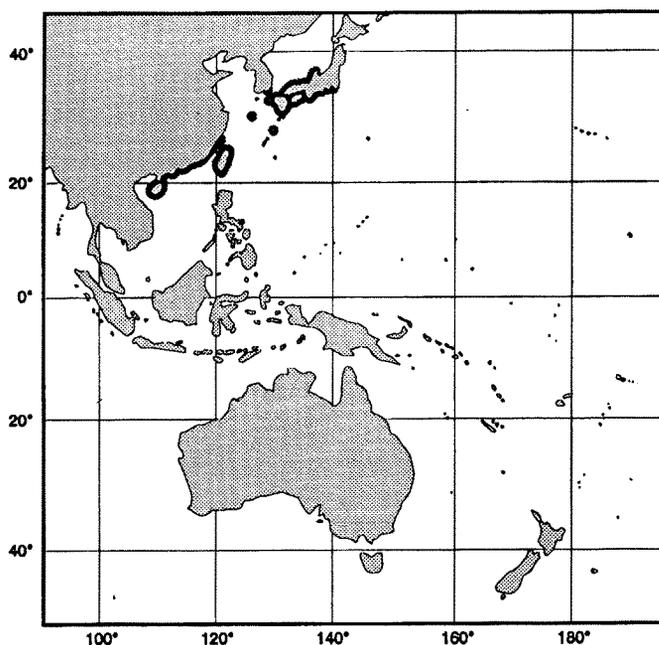


Fig. 266

Epinephelus caeruleopunctatus (Bloch, 1790)

Fig. 267; Pls IXF, XA

SERRAN Epin 28

Holocentrus caeruleo-punctatus Bloch, 1790:94, pl. 242, fig. 2 (type locality unknown).

Synonyms: *Serranus alboguttatus* Valenciennes in Cuv. and Val., 1828:366 (type locality: Indian Ocean). *Serranus dermochirus* Valenciennes in Cuv. and Val., 1830:513 (type locality: coast of Coromandel, India). *Serranus Hoevenii* Bleeker, 1849:36 (type locality: Jakarta, Indonesia). *Serranus Kunhardtii* Bleeker, 1851 b:169 (type locality: Padang, Sumatera [Sumatra], Indonesia). *Serranus flavoguttatus* Peters, 1855a:429 (type locality: Mozambique).

FAO Names: En - Whitespotted grouper; Fr -Mérrou taches blanches; Sp - Mero nevero.

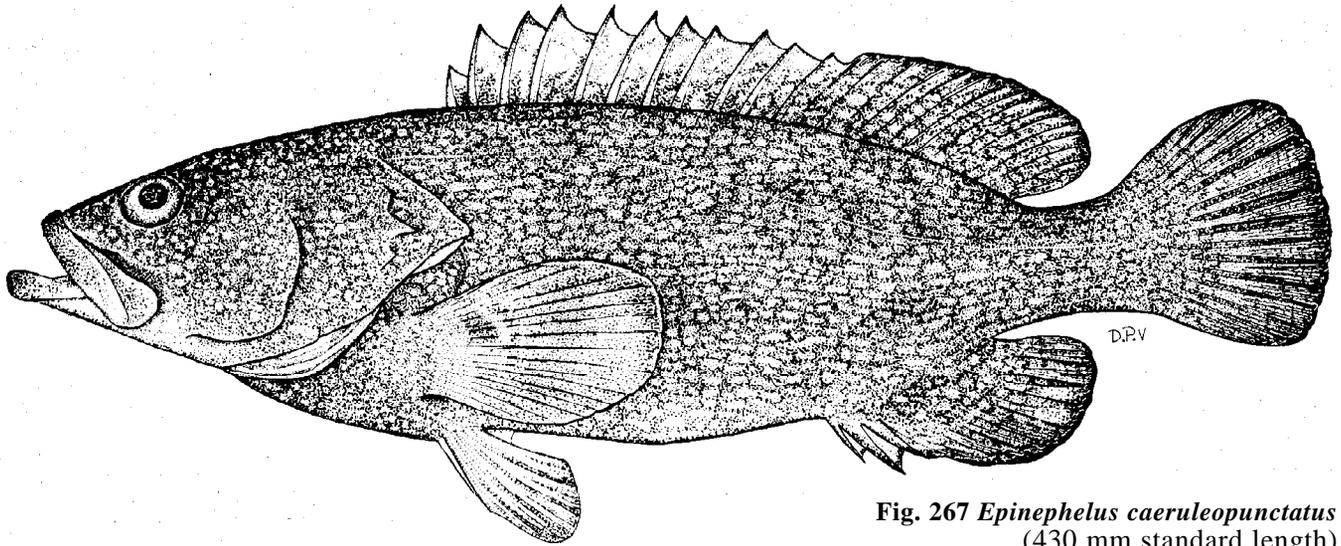


Fig. 267 *Epinephelus caeruleopunctatus*
(430 mm standard length)

Diagnostic Features: Body depth distinctly less than head length, depth contained 2.9 to 3.4 times in standard length (for fish 11 to 47 cm standard length). Head length contained 2.3 to 2.5 times in standard length; head pointed, the interorbital area usually flat (sometimes concave or slightly convex), and the dorsal profile almost straight; preopercle rounded, finely serrate; opercular spines inconspicuous; upper edge of operculum straight, sinuous or slightly convex; in fish more than 35 cm standard length, the posterior nostril becomes vertically elongated, its length 5 or 6 times greater than diameter of front nostrils; maxilla reaches short of or slightly beyond vertical at rear edge of eye; maxilla naked, mostly covered by upper lip; canines at front of jaws small or absent; midlateral part of lower jaw with 3 to 5 rows of small teeth. Gill rakers 8 to 10 on upper limb, 13 to 17 on lower limb; fish larger than 20 cm standard length with only 4 to 8 developed rakers on lower limb, and the rudiments are difficult to count because of intercalated bony tooth plates; gill rakers shorter than gill filaments, the raker at angle of gill arch about twice as long as adjacent rakers. Dorsal fin with XI spines and 15 to 17 rays, the third or fourth spine longest, its length contained 2.7 to 3.6 times in head length, the interspinous membranes incised; anal fin with III spines and 8 rays; pectoral fins large and fleshy, with 17 to 19 rays; pectoral-fin length contained 1.5 to 2.1 times in head length; pelvic fins end well short of anus, their length contained 2.0 to 2.7 times in head length; caudal fin rounded. Lateral-body scales ctenoid (1 fish, 43 cm standard length, with "mostly smooth" lateral-body scales), with auxiliary scales; lateral-line scales 51 to 61; lateral-scale series 86 to 109. **Colour:** Adults brownish grey, the body covered with small pale spots overlain with large pale blotches; oblique black saddle on rear half of peduncle; 4 or 5 indistinct black blotches at base of dorsal fin; prominent black streak on maxillary groove. Large adults (over 40 cm standard length) brownish, covered with indistinct, contiguous, small pale spots. Juveniles (less than 20 cm standard length) dark grey to black, covered with prominent pupil-size white spots and smaller white dots.

Geographical Distribution: *E. caeruleopunctatus* is a widely-distributed species that ranges from the east coast of Africa (south to East London, South Africa) to Fiji in the central Pacific. It is not known from the Red Sea (where it is replaced by the endemic *Epinephelus summana*), but it does occur in the Persian Gulf. We have examined specimens from South Africa, Mozambique, Tanzania, Zanzibar, Kenya, Madagascar, Seychelles, Chagos Islands, India, Sri Lanka, Nicobars, Thailand, Indonesia, Philippines, Taiwan, Papua New Guinea, Australia (Queensland and New South Wales), Palau, Solomon Islands, New Caledonia, Vanuatu, Caroline Islands, Marshall Islands, Gilbert Islands (Kiribati), and Fiji. Reliable records indicate that the species is also known from Japan, Ogasawara Islands, Lakshadweep Islands, and the Maldives (Fig. 268). The record from northwestern Australia (Allen and Swainston, 1988) is doubtful; we found no specimens of *E. caeruleopunctatus* in the Western Australian Museum, but we did find a few specimens of *E. corallicola* that were misidentified as *E. caeruleopunctatus*.

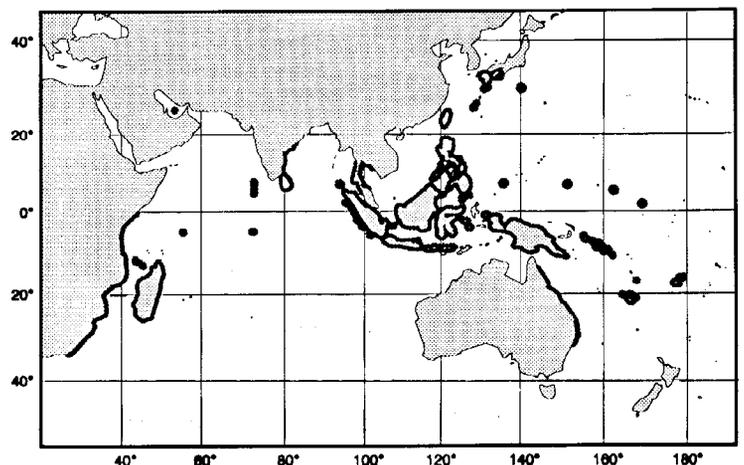


Fig. 268

Habitat and Biology: Coral reefs, usually in or near caves. Juveniles are found in tidepools.

Size: The largest specimen that we have seen is 59 cm total length (47 cm standard length). According to Grant (1982), this species attains 76 cm total length.

Interest to Fisheries: *E. caeruleopunctatus* is probably of some importance to fisheries in areas where it is common, but we have no fishery information on this species.

Local Names: JAPAN: Hakuten-hata; SEYCHELLES: Vieille cuisinier.

Literature: Randall and Heemstra (1991).

Remarks: *E. caeruleopunctatus* is closely related to (and often confused with) three other white-spotted species: *E. ongus*, *E. summana*, and *E. corallicola*. Adults of *E. ongus* also have a pattern of pale spots and blotches and a prominent black maxillary streak; but the white spots tend to form irregular longitudinal bands on the body, and the soft dorsal, caudal, and anal fins have a blackish brown margin with a narrow white edge. The juveniles (less than 15 cm standard length) have close-set, uniformly small white spots covering the body and most of the median fins; but *E. caeruleopunctatus* juveniles have scattered, prominent, irregular, white spots of various sizes, with only a few on the median fins. There are also significant meristic differences between these two species: *E. ongus* has 15 to 17 pectoral-fin rays, usually 15 dorsal-fin rays, and 48 to 53 lateral-line scales. And in *E. ongus* the upper edge of the operculum is very convex, in contrast to the nearly straight or slightly convex margin of *E. caeruleopunctatus*. *E. summana* has the body and median fins dark brown or brownish grey, covered with very small white spots: superimposed on the body are several pale brown blotches. *E. summana* also has fewer dorsal- and pectoral-fin rays (14 to 16 and 16 to 18 respectively) and lateral-line scales (49 to 54). The shape of the upper edge of the operculum is intermediate between *E. caeruleopunctatus* and *E. ongus*. Adults of *E. corallicola* do not have white spots, but the juveniles have large, prominent, black-edged white spots. In addition to colour pattern, *E. corallicola* also differs in having the rear nostrils noticeably elongated at a smaller size (15 cm standard length, versus 35 cm standard length in *E. caeruleopunctatus*). The morphometric and meristic features of these two species are very similar, and the "gestalt" (ignoring the colour pattern) of these two species is identical.

Epinephelus caninus (Valenciennes, 1843)

Fig. 269

SERRAN Epin 23

Serranus caninus Valenciennes, 1843:10 (type locality: Canary Islands; holotype apparently not preserved).

Synonyms: None.

FAO Names: En - Dogtooth grouper; Fr - M erou gris; Sp - Mero dent on (formerly: Cherne dent on).

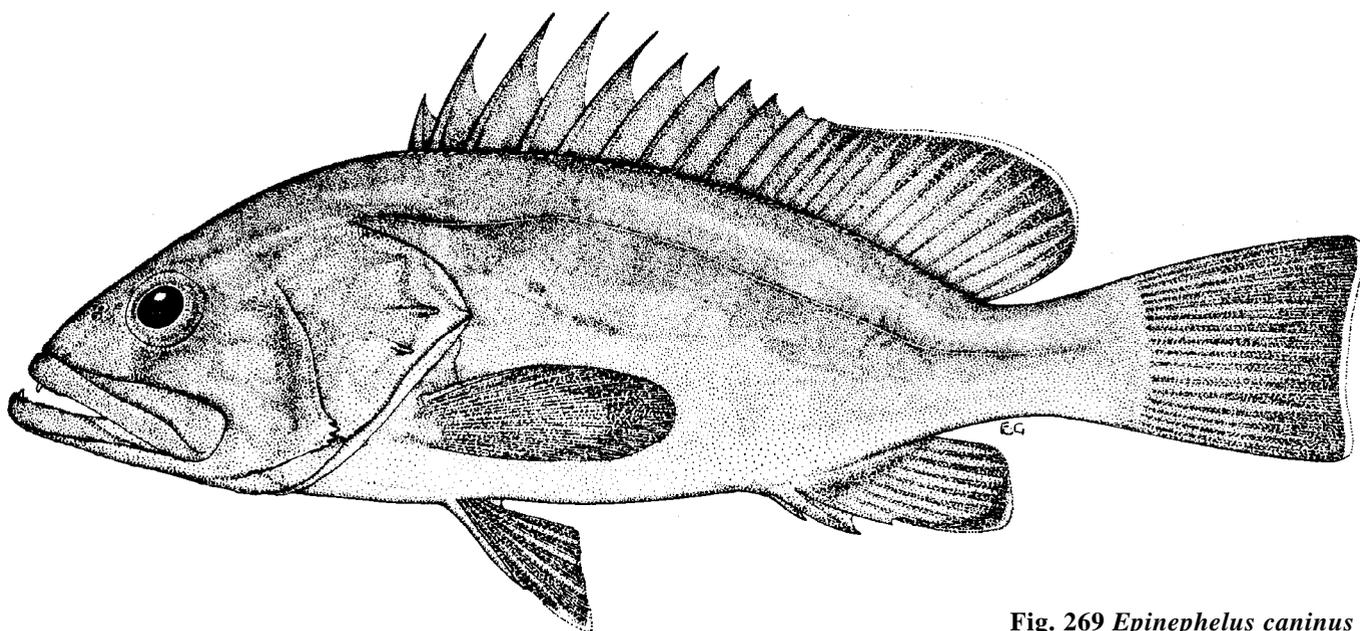


Fig. 269 *Epinephelus caninus*
(497 mm standard length)

Diagnostic Features: Body depth 2.7 to 3.0 times in standard length (for fish 20 to 78 cm standard, length). Head length contained 2.3 to 2.5 times in standard length; interorbital area convex; preopercle angular, with 3 to 5 distinctly enlarged serrae at the angle and usually a slender, antrorse or ventrally-directed spine on

ventral edge near the angle; subopercle and interopercle serrate; upper edge of operculum distinctly convex; eye diameter more than interorbital width in fish less than 30 cm standard length, but noticeably less than interorbital in fish more than 45 cm standard length; rear nostril 2 or 3 times size of front nostrils; maxilla scaly, reaching to or beyond vertical at rear edge of eye; midlateral part of lower jaw with 2 rows of teeth, the inner teeth larger; canines at front of jaws well developed. Gill rakers 8 to 10 on upper limb and 15 to 17 on lower limb, total 23 to 27. Dorsal fin with XI spines and 13 or 14 rays, the membranes deeply incised between the spines; anal fin with III spines and 8 rays; pectoral fins with 17 or 18 rays, distinctly longer than pelvic fins, pectoral-fin length contained 1.7 to 2.2 times in head length; pelvic fins clearly not reaching anus; caudal fin truncate, the corners slightly rounded. Body scales distinctly ctenoid; lateral-line scales 70 to 79; lateral-scale series about 120 to 135. **Colour:** Uniformly dark reddish brown or greyish violet to yellowish grey; posterior parts of median fins with a distinct white edge. Usually two or three dark bands radiating posteriorly from the eye, the uppermost extends from eye to lower opercular spine, the second runs from lower edge of eye across angle of preopercle to juncture of interopercle and subopercle, and the third band (usually the faintest) extends from the dark moustache streak at the upper edge of the maxilla to the lower edge of the preopercle. The dark bands on the head are not discernible in fish larger than 45 cm standard length. A good colour photograph was published by Manzoni (1987). The illustration in Seret's (1981) book is also a good likeness.

Geographical Distribution: Mediterranean and eastern Atlantic from Portugal to Angola; we have examined specimens from Sicily, Israel, Senegal, Togo, and Angola. Dooley et al. (1985) reported that it is rare in the Canaries (Fig. 270).

Habitat and Biology: *E. caninus* occurs on sandy mud bottoms in depths of 30 to 400 m. An age and growth curve for Tunisian specimens was published by Bouain (1986).

Size: Maximum 157 cm total length, and at least 35 kg.

interest to Fisheries: *E. caninus* is of commercial importance in the Mediterranean and along the west coast of Africa; it is common in the fish markets of Dakar, Senegal.

Local Names: BENIN: Merou noir; CAMEROON: Merou noir; CONGO: Merou noir; COTE D'IVOIRE: Merou noir; GABON: Merou noir; ITALY: Cernia nera; MAURITANIA: Merou noir; SENEGAL: Cherne, Ngaingo, Rour; SPAIN (Canaries): Cachorro, Cherne ley; TOGO: Merou noir; TUNISIA: Merou noir; ZAIRE: Merou noir.

Literature: Cadenat (1935, 1951); Furnestin et al. (1958); Maurin (1968); Tortenese (1975, 1986); Bauchot (1987); Bellemans et al. (1988); Heemstra (1991).

Remarks: *E. caninus* is similar to *E. gorensis*, which has 16 dorsal-fin rays, a smaller head (its length contained 2.5 to 2.7 times in standard length), and the upper edge of the operculum is almost straight. Another similar species, *E. haifensis*, has a rounded caudal fin, 9 anal-fin rays, body depth usually greater (depth contained 2.4 or 2.8 times in standard length), pelvic fins subequal to pectoral fins and reaching to or beyond the anus, no scales on maxilla, and fewer lateral-scale series (104 to 112). *E. costae* has a more elongate body (depth contained 3.0 to 3.4 times in standard length), smaller head (head length contained 2.5 to 2.7 times in standard length), 15 to 17 dorsal-fin rays, and no scales on the maxilla. *E. marginatus* differs in having a rounded caudal fin, 14 to 16 dorsal-fin rays, no scales on maxilla, and 98 to 116 lateral-scale series. The 78 cm standard length specimen from Angola described by Franca (1957) under the name of "*Epinephelus* sp.- B2" was examined at the Museu Bocage; it appears to be *E. caninus*. The species described and illustrated as "*Epinephelus alexandrinus*" by Poll (1954:56, fig. 15) is probably *E. caninus*.

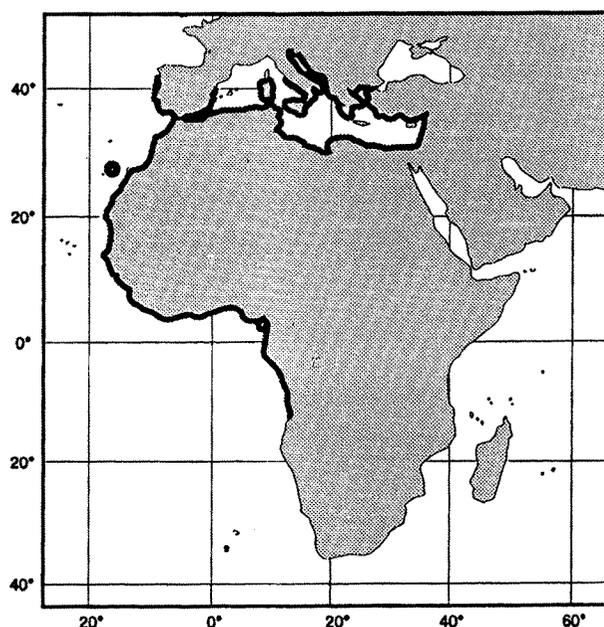


Fig. 270