Diagnostic Features: Body depth less than head length, depth contained 2.7 to 3.2 times in standard length (for fish 9 to 35 cm standard length). Head length contained 2.3 to 2.5 times in standard length; head pointed, the interorbital area flat, and the dorsal head profile almost straight; preopercle rounded, finely serrate, with slight notch; upper edge of operculum convex; posterior nostrils vertically elongated in fish larger than 15 cm standard length, its length 5 or 6 times larger than diameter of anterior nostrils; maxilla reaches about to 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 4 to 6 rows of teeth (2 or 3 rows in juveniles). Gill rakers 8 to 10 on upper limb, 14 to 17 on lower limb (with 7 to 10 developed rakers on lower limb); gill rakers shorter than gill filaments; gill raker at angle of first arch subequal to adjacent rakers. Dorsal fin with XI spines and 15 to 17 rays, the third or fourth spine longest, its length contained 2.8 to 3.8 times in head length, the interspinous membranes moderately incised; anal fin with III spines and 8 rays; pectoral-fin rays 17 to 20; pectoral-fin length contained 1.5 to 1.8 times in head length; pelvic fins not reaching past anus, their length contained 1.9 to 2.4 times in head length; caudal fin rounded. Lateral-body scales ctenoid (smooth in large adults), with auxiliary scales; lateral-line scales 53 to 63; lateral-scale series 88 to 109. Pyloric caeca 9 to 13. **Colour:** Head and body brownish to greenish grey; widely spaced small black spots over all of head, body and fins; 3 dark blotches on body at base of dorsal fin, the first (at base of last 2 or 3 dorsal-fin spines) largest and most distinct; dark saddle blotch on caudal peduncle; black streak hidden by upper edge of maxilla when mouth is closed; white line usually present along rear edge of median and pectoral fins. Juveniles 3 to 6 cm standard length with prominent white spots on head, body, and fins, those on head and body with black edges (especially along dorsal and ventral edges of white spots) or 2 contiguous black spots at upper and lower edges of white spots; juveniles 7 to 10 cm with black edges dividing to form 2 to 4 black spots as white spots become fainter; juveniles of 13 or 14 cm with white spots almost completely faded.

Geographical Distribution: Western Pacific from Thailand, Hong Kong, and Taiwan to Australia (Western Australia, Northern Territory, Queensland and New South Wales) and eastward to the Solomon and Mariana Islands, including Indonesia, Singapore, Philippines, Papua New Guinea, and Belau (Fig. 282). The colour photograph of ***"Epinephelus corallicola"*** reported from Japan by Katayama (1988) is of ***E. howlandi.*** The record from Christmas Island in the eastern Indian Ocean (Allen and Steene, 1979) is based on McKay's (1974) mistaken placement of ***E. spilotoceps*** in the synonymy of ***E. corallicola.***

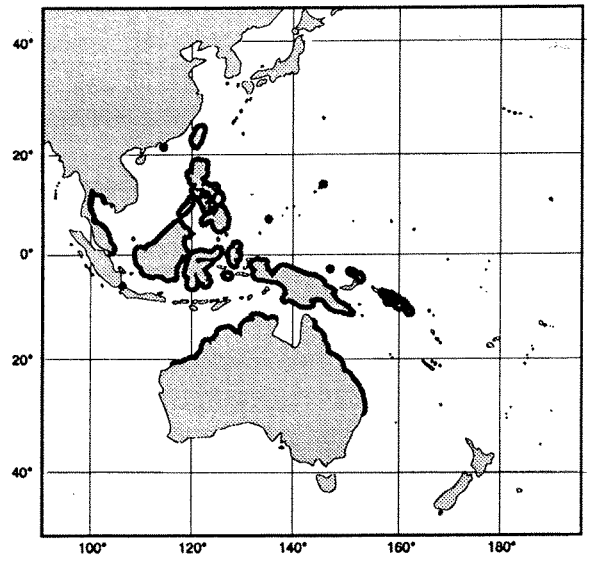


Fig. 282

Habitat and Biology: Shallow silty reefs and estuarine areas. The ovary was well developed in a fish of 30 cm standard length that we examined.

Size: Attains at least 49 cm total length.

Interest to Fisheries: ***E. corallicola*** is apparently too rare to be of commercial importance.

Local Names: AUSTRALIA: Coral rockcod.

Literature: Randall and Heemstra (1991).

Remarks: Adults are often misidentified as ***E. macrospilos,*** which differ in having the dark spots on body larger and more closely set, the lower jaw projecting, and the rear nostrils not vertically elongated; also, the juveniles of ***E. macrospilos*** do not have white spots.

E. corallicola was compared with ***E. caeruleopunctatus*** in the "Remarks" section of that species account.

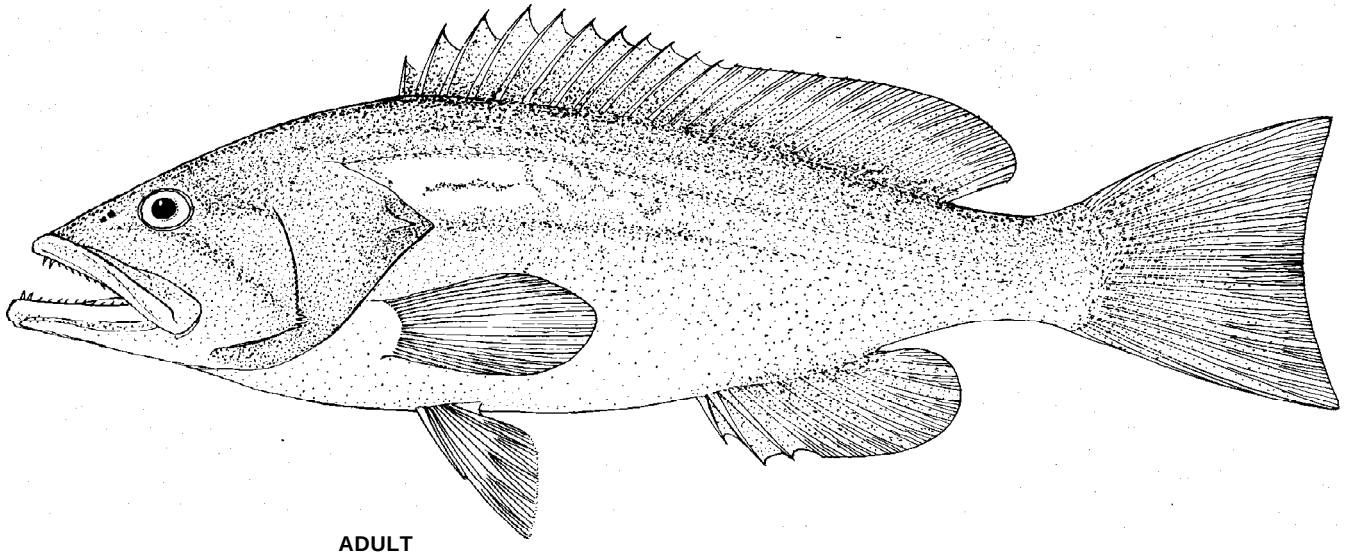
E. howlandi differs in lacking dark spots on the belly, chest and underside of head; posterior nostrils not vertically elongated: and the juveniles do not have white spots.

Epinephelus costae (Steindachner, 1878) Fig. 283; Pl. XIA,B **SERRAN Epin 2**

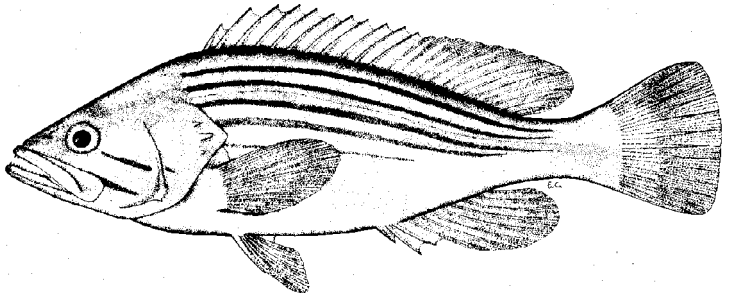
Serranus costae Steindachner, 1878:389 (based on ***Plectropoma fasciatus*** [non Bloch or Lacepède] Costa, 1836; type locality: southern Italy).

Synonyms: ***Plectropoma fasciatus*** Costa, 1836:1, pl. 6 (type locality: southern Italy; preoccupied in ***Epinephelus*** by ***Perca fasciata*** Forsskal, 1775). ***Serranus chrysotaenia*** Doderlein, 1882:208, pl. 2, fig. 4 (type locality: Sicily). ***Cerna catalonica*** Gibert, 1913:38 (type locality: Catalonia, Spain). ***Epinephelus zaslavskii*** Poll, 1949:191, fig. 12 (type locality: Baie des Eléphants, Angola). ***Epinephelus*** sp.-A_1 Franca, 1957:33; ***Epinephelus*** sp.-A_2 Franca, 1957:34. ***Epinephelus alexandrinus*** (non Valenciennes): many references (see "Literature" below). ***Epinephelus costae:*** Heemstra, 1991.

FAO Names: En - Goldblotch grouper; **Fr -** Mérou badèche; **Sp** - Falso abadejo.



ADULT



JUVENILE

Fig. 283 *Epinephelus costae*
(adult, juvenile 170 mm total length)

Diagnostic Features: Body depth less than head length, depth contained 3.0 to 3.4 times in standard length (for fish 10 to 46 cm standard length). Head length contained 2.5 to 2.7 times in standard length; interorbital area convex; preopercle angular, with 2 or 3 greatly enlarged serrae at the angle; in adults larger than 40 cm standard length, the preopercle angle is produced into a rounded lobe, with an indentation immediately above the lobe; middle and lower opercular spines flat but distinct, upper spine not apparent; upper edge of operculum straight or slightly convex; nostrils subequal in specimens less than 30 cm standard length; rear nostril diameter about twice that of anterior nostril in fish of 40 to 50 cm standard length; maxilla usually reaching a vertical at rear edge of eye; ventral edge of maxilla with a low step; no scales on maxilla; midlateral part of lower jaw with 2 rows of teeth. Gill rakers 8 to 10 on upper limb, 16 to 18 on lower limb, total 24 to 27. Dorsal fin with XI spines and 15 to 17 rays, the third or fourth spine longest, subequal to longest dorsal-fin ray, the interspinous membranes distinctly incised; anal fin with III spines and 8 soft rays; pectoral-fin rays 18 or 19; pectoral fins usually longer than pelvic fins, pectoral-fin length contained 1.6 to 2.1 times in head length; caudal fin truncate or slightly convex in juveniles, becoming concave or lunate in adults larger than 40 cm standard length. Lateral-body scales ctenoid; adults with auxiliary scales; lateral-line scales 70 to 73; lateral-scale series 113 to 130. Pyloric caeca 17. **Colour**: Head and body

brownish, the fins darker. Juveniles less than 15 cm standard length with 3 to 5 narrow dark stripes (possibly blue in life) paralleling lateral line on dorsal part of body: 2 stripes above and 1 to 3 stripes below lateral line. Two dark lines on head: one from lower edge of eye to ventral rear edge of interopercle, the second from dark maxillary streak to lower edge of preopercle. Adults brown or greyish brown, often with a large, distinct golden yellow blotch (vaguely defined at periphery) on body below spinous dorsal fin. Two specimens from Angola, (Museu Bocage nos. MB 2087 and 2091, 46 and 42 cm standard length; reported by Franca, 1957) are distinctly bicoloured, the body dark brown dorsally and abruptly paler ventrally, the two parts separated by a wavy boundary. Both fish are males, with flaccid testes containing a large empty lumen; if the condition of the testes is indicative of recent spawning, the bicoloured pattern may be the spawning coloration of this species.

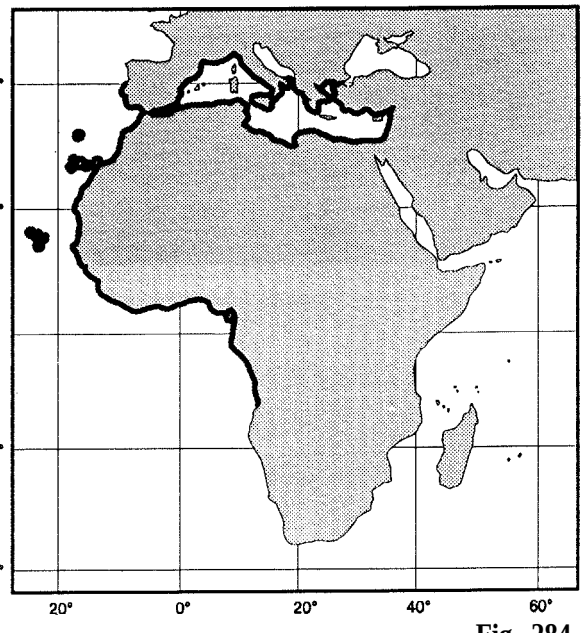


Fig. 284

Geographical Distribution: ***E. costae*** occurs in the eastern Atlantic anti Mediterranean. We have examined specimens from Greece (Corfu Island), the Cape Verde Islands, and Angola. Reliable literature records document its occurrence on the Mediterranean coasts of Italy, France, Spain, Egypt, Tunisia, also along the south coast of Portugal, and along the west coast of Africa from Morocco to southern Angola (Fig. 284). Alberto Brito informed us that ***E. costae*** is known in the Canary Islands from only 10 records, and these are mostly based on juvenile specimens. Records of ***"Epinephelus alexandrinus"*** from Madeira (see Remarks, below) are apparently based on misidentifications of ***Mycteroperca fusca.***

Habitat and Biology: According to Poll (1954) ***E. costae*** (identified as ***E. zaslavskii)*** is found on a variety of bottom types (sand, mud, or rock) in depths of 20 to 80 m. Maurin (1968) reported ***Epinephelus alexandrinus*** (probably ***E. costae***) as rather common on clumps of coral off Cape Blanc on the north coast of Mauritania. Age and growth of Egyptian specimens (identified as ***"Epinephelus alexandrinus")*** were studied by Wadie et al. (1981). Bouain (1986) reported a maximum age of 11 years for ***"Epinephelus alexandrinus"*** of 50 cm standard length from Tunisia, and a growth coefficient (K) = 0.042 derived from the Von Bertalanffy growth equation for this population. Bouain and Siau (1983) estimated total potential fecundity for an ***"Epinephelus alexandrinus"*** of 46.5 cm standard length to be 879 038 eggs. Larvae described as ***"Epinephelus alexandrinus"*** by Bertolini (1933) and Sparta (1935) are actually ***Mycteroperca rubra.***

Size: Maximum total length probably about 80 cm. According to Tortonese (1986), this species (identified as ***"Epinephelus alexandrinus"***) attains 140 cm standard length.

Interest to Fisheries: This species is of some importance to the fisheries of the Mediterranean and west coast of Africa.

Local Names: ALGERIA: Abadech; EGYPT: Wakar; FRANCE: Badèche; GREECE: Stira; ITALY: Cernia dorata; PORTUGAL: Garoupa amarela; SENEGAL: Doy; SPAIN: Jabali; TUNISIA: Mennani; TURKEY: Tashanisi; YUGOSLAVIA: Kirnja ligaca.

Literature: Most of the recent (since 1895) literature has used the name ***Epinephelus alexandrinus*** for this species: Cadenat (1935, 1951); Torchio (1963); Bini (1968); Tortonese (1973, 1975, 1986); Bianchi (1986); Bauchot (1987): Manzoni (1987); Bellemans et al. (1988).

Remarks: Following Boulenger's (1895) authoritative work on serranid fishes, this species has generally been referred to as ***Epinephelus alexandrinus*** (Valenciennes, 1828). Unfortunately, Valenciennes' holotype of ***Serranus alexandrinus*** (MNHN 7325) is a.specimen of the well-known ***Epinephelus fasciatus*** of the Red Sea and Indo-Pacific region. This holotype differs significantly from the species here recognized as ***E. costae*** in having fewer scales (lateral-line 54, versus 70 to 73; lateral-scale series about 100, versus 113 to 130), deeper body (depth 2.8 times in standard length, versus 3.0 to 3.4 times in standard length), 3 or 4 rows of teeth at midside of lower jaw (versus 2 rows), fewer gill rakers (7 on upper limb and 1.5 on lower limb, 22 in total, versus 8 to 10 on upper limb, 16 to 18 on lower limb, 24-27 in total); and a rounded caudal fin (the shape of the caudal fin of the holotype cannot now be determined, as it is damaged; but in his description of ***Serranus goreensis,*** Valenciennes (1830) mentioned that the caudal fin of ***E. alexandrinus*** is rounded). In his original description, Valenciennes (1828) wrote "Sa couleur parait avoir été brune, sans taches ni marbrures, sur tout le corps et sur les nageoires." ***E. fasciatus*** has distinctive black triangles at the margin of the interspinous dorsal-fin membranes, and these are clearly seen on the holotype of ***S. alexandrinus*** if

the fin is erected. This feature was overlooked by Valenciennes and subsequent workers. The holotype also still shows the dark pigment on the edge of the orbit that is typical of ***E. fasciatus***. Although Valenciennes gave the place of origin of his holotype as "rapportée de l'Egypte par M. Geoffroy," his choice of name for his new species (***Serranus alexandrinus***) implied that it was a Mediterranean species; and this accounts for the misapplication of this species name by subsequent authors.

Bauchot et al. (1960) discussed the synonymy of ***"Epinephelus alexandrinus"*** in which they included ***Epinephelus zaslavskii*** Poll, 1949, but they did not give any data on the holotype of ***Serranus alexandrinus.***

E. costae is similar to ***E. goreensis*** in meristic and most morphometric features, but these two species can be distinguished by their colour patterns. Juveniles of ***E. costae*** have 3 to 5 narrow dark stripes paralleling the lateral line (no dark stripes in ***E. goreensis***), and live (or freshly dead) adults of ***E. costae*** often have a large golden yellow blotch on the body below the spinous dorsal fin. ***E. costae*** has never been reported with the subvertical dark bars or "saddles" on the dorsal part of the body that are characteristic for ***E. goreensis.*** Séret (1981) published an excellent figure of ***E. costae*** (identified as ***E. goreensis).*** Reports of ***"Epinephelus alexandrinus"*** from Madeira and the Azores (Saldanha, 1979; Waschkewitz and Wirtz, 1990) are apparently misidentifications (based on underwater visual identifications or photographs of live fish) of ***Mycteroperca fusca,*** which is superficially similar to ***E. costae*** (both species are relatively elongate, somewhat compressed groupers with concave or lunate caudal fins in adults and a protruding lower jaw). The Spanish common name "falso abadejo" for ***E. costae*** alludes to its similarity to ***M. fusca***, the true "abadejo." ***M. fusca*** is common at Madeira, and is well known to the fishermen as "abadejo."According to G.E. Maul, ichthyologist at the Funchal Municipal Museum for the past 50 years, ***M. fusca*** and the mero ***(E. marginatus)*** are the only two species of groupers that occur in Madeiran waters.Examination of Madeiran specimens in the Funchal Museum and at the British Museum (Natural History) also confirms Mr Maul's statement.

Epinephelus cyanopodus (Richardson, 1846) Fig. 285; Pl. XIC,D **SERRAN Epin 69**

Serranus cyanopodus Richardson, 1846:233 (type locality: Guangzhou, China).

Synonyms: ***Serranus Hoedtii*** Bleeker, 1855c:406 (type locality: Ambon). ***Serranus punctatissimus*** Gunther, 1859:144 (type locality: China). ***Homalogrystes luctuosus*** De Vis, 1883b:369 (type locality: Brisbane, Australia). ***Epinephelus suitonis*** Tanaka, 1915:566 (type locality: Saiki, Oita Prefecture, Japan). ***Epinephelus kohleri*** Schultz in Schultz et al., 1953:329, 336, fig. 51 (type locality: Rongerik Atoll, Marshall Islands).

FAO Names: En - Speckled blue grouper; **Fr** - Mérou bleu; **Sp** - Mero azul.

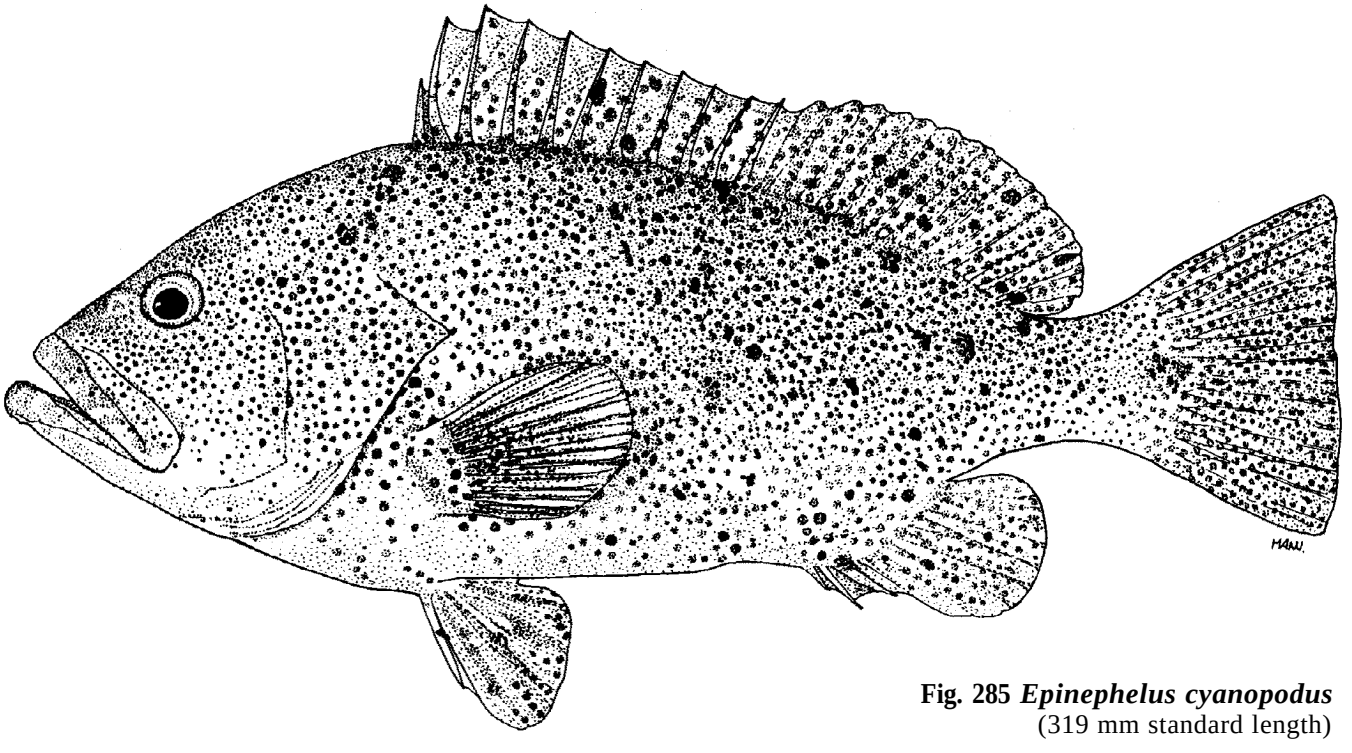


Fig. 285 ***Epinephelus cyanopodus***
(319 mm standard length)

Diagnostic Features: Body deep and compressed, the depth subequal to head length, contained 2.4 to 2.7 times in standard length (for fish 11 to 43 cm standard length); body width contained 1.9 to 2.8 times in the depth. Dorsal head profile steep, the interorbital area distinctly convex; preopercle subangular, finely serrate, serrae at rounded corner slightly enlarged; opercular spines inconspicuous; upper edge of operculum straight; posterior nostrils of adults 2 or 3 times larger than anteriors; maxilla reaches about to vertical at rear edge of eye; midlateral part of lower jaw with 2 to 4 rows of teeth. Gill rakers 9 or 10 on upper limb, 15 to 17 on lower limb, 24 to 27 total. Dorsal fin with XI spines and 16 or 17 rays, the third or fourth spine longest, its length contained 2.2 to 2.8 times in head length, the interspinous membranes not or only slightly incised; anal fin with III spines and 8 rays; pectoral fins thin (not fleshy), with 18 to 20 rays; pectoral fins subequal to pelvic fins, their length contained 1.7 to 2.0 times in head length; caudal fin truncate or slightly emarginate. Lateral-body scales distinctly ctenoid, with auxiliary scales; lateral-line scales 63 to 75; lateral-scale series 128 to 147. Pyloric caeca very numerous. **Colour:** Adults usually pale bluish grey, covered with black dots and a few scattered, irregular black spots; broad black submarginal band on caudal fin of some large juveniles; pelvic fins usually black tipped. Juveniles with yellow fins; body of small juveniles (to 12 cm standard length) mainly yellow, the head and front part of body with a wash of bluish grey and faint dark dots.

Geographical Distribution: Western Pacific, from southern Japan to southern Queensland and east to Fiji and the islands of Micronesia; ***E. cyanopodus*** is also known from Taiwan, Hong Kong, Viet Nam, Gulf of Thailand, Indonesia, Philippines, Papua New Guinea, New Caledonia, and Lord Howe Island (Fig. 286). The only record from the Indian Ocean (a specimen in the Vienna Museum, NMW 40520, 293 mm standard length, from Western Australia) is dubious; the species was not reported from Western Australia by Allen and Swainston (1988), and there are no specimens from there in the Western Australian Museum.

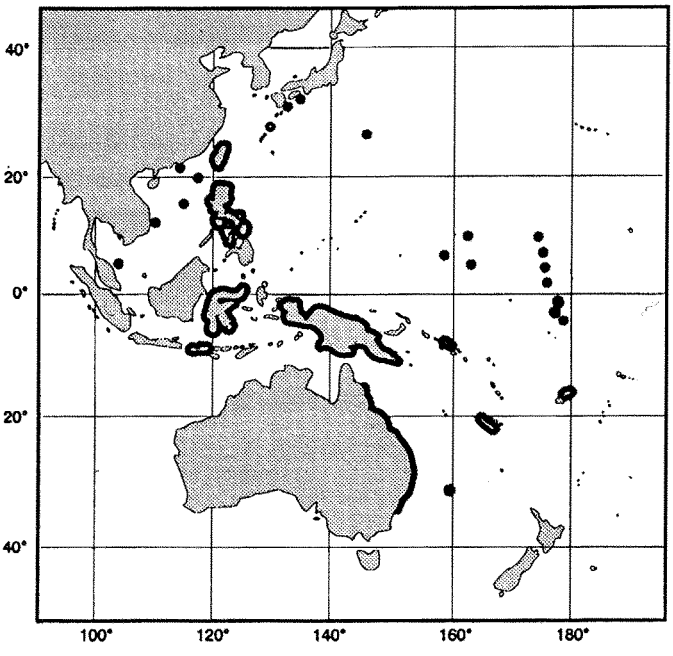


Fig. 286

Habitat and Biology: ***E. cyanopodus*** is usually found on isolated coral heads in lagoons or bays, but it is also caught at depths to 150 m on the outer reef area. Myers (1989) wrote that it usually swims out in the open, several metres above the bottom, and Grant (1975) noted that it is readily caught by anglers at night. Reported stomach contents are fishes and calappid crabs.

Size: Attains 120 cm total length.

Interest to Fisheries: According to Chan (1968), ***E. cyanopodus*** was abundant at Macclesfield Bank and Pratas Reef in the South China Sea. It is caught with trawls, handlines, and longlines.

Local Names: AUSTRALIA: Purple rockcod, Blue Maori; HONG KONG: Naam-dim-paan; JAPAN: Tsuchihozeri; NEW CALEDONIA: Loche bleue, Loche morue; PAPUA NEW GUINEA: Taguma; PHILIPPINES: Kobe (Visayan).

Literature: Randall and Whitehead (1985); Pandall and Heemstra (1991).

Remarks: ***E. cyanopodus*** is closely related to ***E. flavocaeruleus*** and ***E. multinotatus*** of the Indian Ocean. These two allopatric species differ from ***E. cyanopodus*** only in colour pattern.

Epinephelus daemelii (Günther, 1876) Fig. 287; Pl. XIE **SERRAN Epin 70**

Serranus Dämelii Günther, 1876:391 (type locality: Sydney, Australia).

Synonyms: ***Epinephelus forsythi*** Whitley, 1937b:222, pl. 13, fig. 4 (type locality: Lord Howe Island).

FAO Names: En - Saddletail grouper; **Fr -** Mérou troussequin; **Sp -** Mero montado.

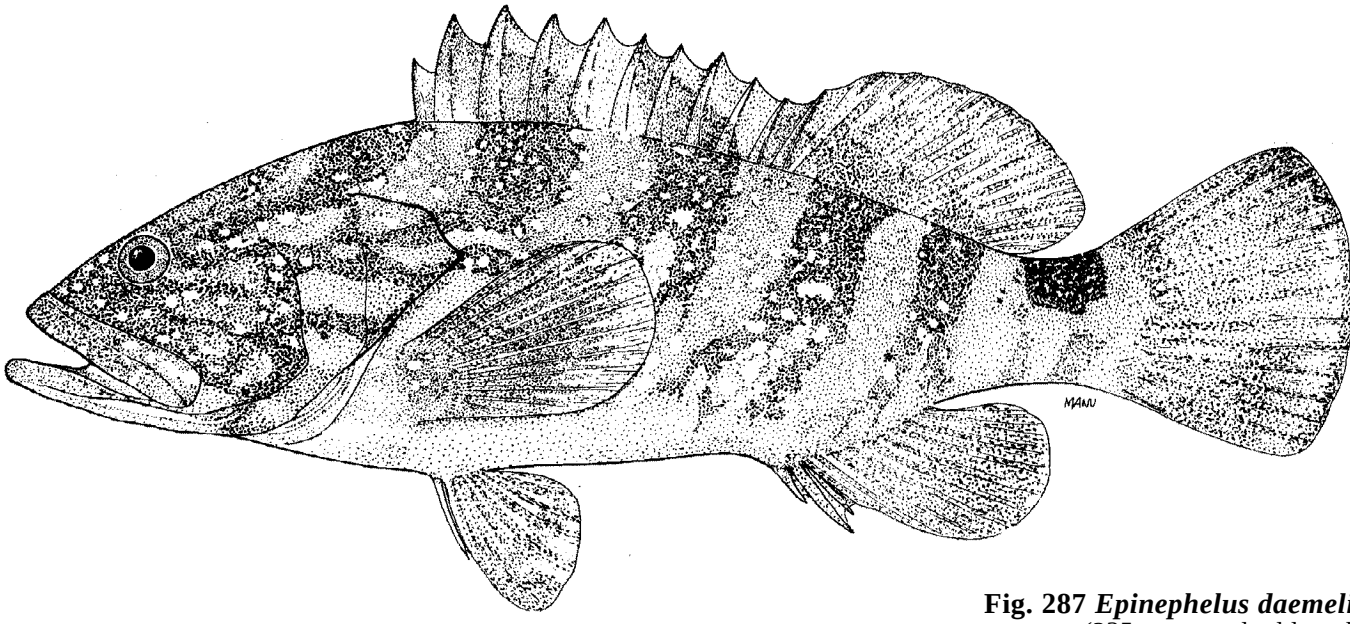


Fig. 287 ***Epinephelus daemelii***
(235 mm standard length)

Diagnostic Features: Body depth contained 2.9 to 3.3 times in standard length (for fish 11 to 45 cm standard length). Head length contained 2.3 to 2.5 times in standard length; interorbital area flat to slightly convex; dorsal head profile almost straight; preopercle rounded, finely serrate; opercular spines inconspicuous; upper edge of operculum distinctly convex; posterior nostrils of adults enlarged, 2 to 4 times larger than anterior nostrils; maxilla reaches past vertical at rear edge of eye; canines at front of jaws well developed, particularly the inner depressible teeth at symphysis of upper jaw; midlateral part of lower jaw with 2 rows of large teeth. Gill rakers 9 to 12 on upper limb, 15 to 19 on lower limb, 25 to 28 total; longest gill raker shorter than longest gill filaments. Dorsal fin with XI spines and 14 rays, the third to last spines subequal and shorter than longest dorsal-fin rays and 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 1.6 to 2.1 times in head length; pelvic fins not reaching anus, their length contained 2.1 to 2.5 times in head length; caudal fin rounded. Lateral-body scales smooth (except for area covered by pectoral fins), with auxiliary scales; lateral-line scales 63 to 71; lateral-scale series 111 to 126. **Colour:** Head and body greyish brown or dark greenish brown with small irregular pale yellow or whitish spots; black saddle blotch on peduncle. Juveniles and subadults with 4 irregular, oblique, dark brown bars on body and a dark band from nape to eye; median and pelvic fins with narrow white margins on some fish. Large adults often uniformly dark brown or black, the underside of head pale and a few pale spots on cheeks.

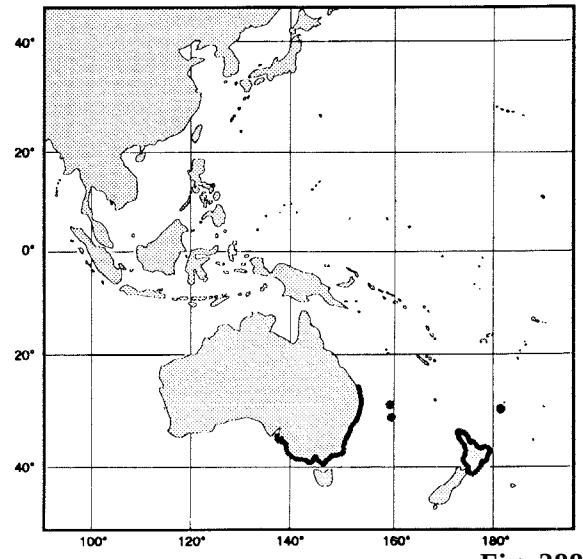


Fig. 288

Geographical Distribution: Temperate and subtropical waters of the southwestern Pacific: Australia, Lord Howe Island, Norfolk Island, Kermadec Islands, and New Zealand (North Island and Poor Knights Islands). The Australian range extends from southern Queensland to Kangaroo Island off South Australia; reported from the Bass Strait, but not known from the coast of Tasmania (Fig. 288).

Habitat and Biology: Rocky reefs from near shore to depths of at least 50 m. ***E. daemelii*** is an aggressive territorial species that may occupy a particular cave for life. According to Francis (1988), sexual transition occurs at a length of 100 to 110 cm. Juveniles feed on crabs and fishes.

Size: Attains at least 122 cm total length and a weight of 64 kg.

Interest to Fisheries: ***E. daemelii*** is an esteemed food fish, and it is avidly sought by anglers and spearfishermen.

Local Names: AUSTRALIA: Black rockcod, Saddled rockcod; NEW ZEALAND: Spotted black grouper.

Literature: Randall and Heemstra (1991); Paxton et al. (1989).

Epinephelus darwinensis Randall and Heemstra, 1991 | Fig. 289; Pl. XIF | **SERRAN Epin 71**

Epinephelus darwinensis Randall and Heemstra, 1991:133, pl. 11B; fig. 66 (type locality: Timor Sea, north of Bathurst Island, Australia).

Synonyms: None.

FAO Names: En - Darwin grouper; **Fr -** Mérou Darwin; **Sp -** Mero de Darwin.

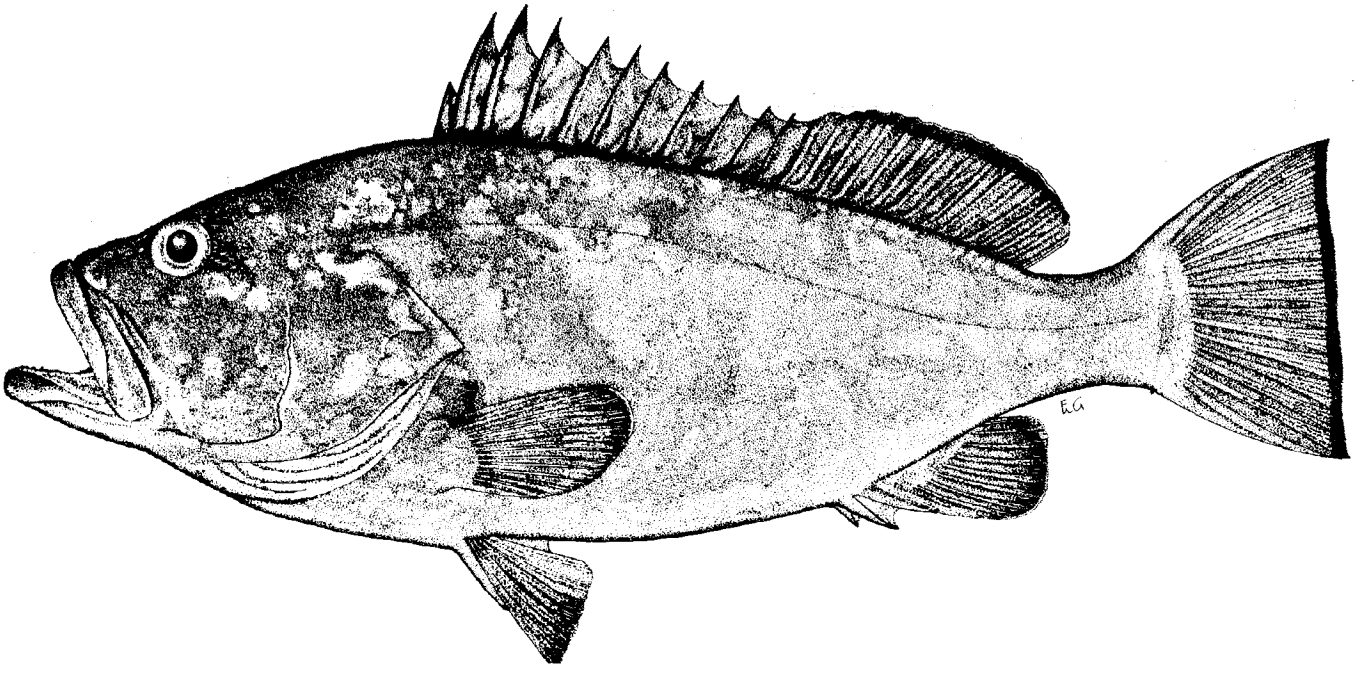


Fig. 289 ***Epinephelus darwinensis***
(532 mm standard length)

Diagnostic Features: Body depth contained 2.8 times in standard length (holotype 535 mm standard length). Head length contained 2.6 times in standard length); interorbital area convex; dorsal head profile almost straight; preopercle angle rounded, with a shallow indentation above angle and no enlarged serrae; upper edge of operculum straight; maxilla reaching almost to vertical at rear edge of eye; posterior nostrils 2.5 times larger than anterior nostrils; maxilla rounded posteriorly, with a prominent angle (hidden by lower lip) on lower edge; anterior canines in jaws small; midlateral part of lower jaw with 3 or 4 rows of small teeth. Gill rakers 9 on upper limb, 16 on lower limb; longest gill raker (first on lower limb next to raker at angle) shorter than longest gill filaments; small bony platelets present on side of first gill arch. Dorsal fin with XI spines and 16 rays, the third spine longest, twice length of last spine, distinctly longer than longest rays and contained 2.9 times in head length; interspinous dorsal-fin membranes moderately incised; anal fin with III spines and 8 rays; pectoral-fin rays 18; pectoral fins equal to pelvic fins, their length contained 2.35 times in head length; caudal fin truncate. Lateral-body scales ctenoid, with numerous auxiliary scales; lateral-line scales 71; lateral-scale series 147. **Colour:** Yellowish brown, shading to yellowish ventrally; small faint irregular pale spots scattered over head and body; dorsal and caudal fins yellowish brown, the caudal with a black posterior margin; soft dorsal and anal fins with traces of a white line along distal margin; pectoral and pelvic fins blackish distally.

Geographical Distribution: Known from a single specimen caught off the north coast of Australia and landed at Darwin (Fig. 290).

Habitat and Biology: Depth of capture 107 m.

Size: 53,5 cm standard length, 62 cm total length.

Interest to Fisheries: Unknown.

Local Names:

Literature: Randall and Heemstra (1991).

Remarks: The affinities of this species are unclear.

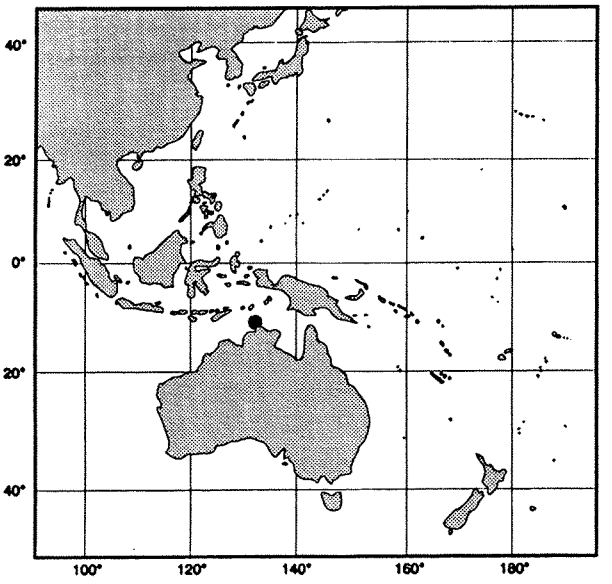


Fig. 290

Epinephelus diacanthus (Valenciennes, 1828) Fig. 291; Pl. XIIA **SERRAN Epin 30**

Serranus diacanthus Valenciennes in Cuv. and Vat., 1828:319 (type locality: Malabar coast, Kerala, India).

Synonyms: ***Serranus sexfasciatus*** (non Valenciennes): Day, 1865:2 (Cochin, India). ***Epinephelus Dayi*** Bleeker, 1874: 105 (based on ***Serranus sexfasciatus***: Day, 1865).

FAO Names: En - Spinycheek grouper (formerly: Thornycheek grouper; **Fr -** Mérou épineux; **Sp -** Mero espinudo.

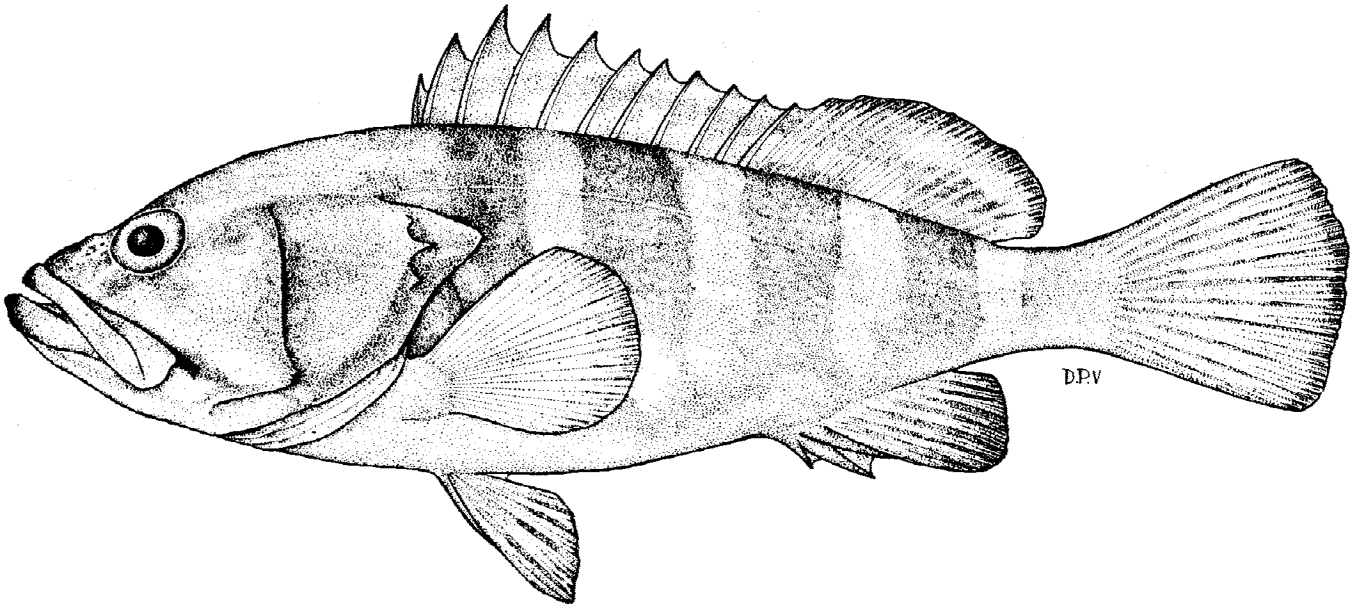


Fig. 291 ***Epinephelus diacanthus***
(327 mm standard length)

Diagnostic Features: Body depth contained 2.8 to 3.5 times in standard length (for fish 10 to 34 cm standard length). Head large, its length contained 2.2 to 2.4 times in standard length; interorbital region flat or slightly convex, the dorsal profile convex; preopercle with 1 to 5 prominent spines at the angle; upper edge of operculum straight or slightly convex: nostrils subequal; anterior nostrils tubular, the margin usually with a large, bilobed flap of skin; maxilla reaches to or almost to vertical at rear edge of eye, the lower edge smoothly curved; midlateral part of lower jaw with 2 rows of short, subequal teeth. Gill rakers 8 to 10 on upper limb, 15 to 17 on lower limb; numerous bony plates on sides of gill arches. Dorsal fin with XI spines and 15 to 17 rays, the third or fourth spine longest, its length contained 2.8 to 3.6 times in head length and longer than longest ray, the interspinous membranes incised; anal fin with III spines and 8 rays; pectoral fins with 17 to 20 rays; pectoral-fin length contained 1.7 to 2.1 times in head length; pelvic fins end well short of anus, their length contained 2.0 to 2.6 times in head length; caudal fin usually rounded or convex: caudal-peduncle depth contained 3.7 to 4.7 times in head length. Lateral-body scales ctenoid, with auxiliary scales in adults; lateral-line scales 52 to 60; lateral-scale series 103 to 121. Pyloric caeca 7 or 8. **Colour:** Body pale greyish brown, usually with 5 dark vertical bars broader than interspaces, 4 below dorsal fin and fifth (faintest) on peduncle; ventral part of head and body often pink or reddish; dark maxillary streak continues faintly to lower edge of preopercle; fins dusky grey without spots.

Geographical Distribution: ***E. diacanthus*** occurs on the continental shelf of the northern Indian Ocean from the Gulf of Aden to Sri Lanka and Madras, India. Not known from the Persian Gulf or the Red Sea (Fig. 292).

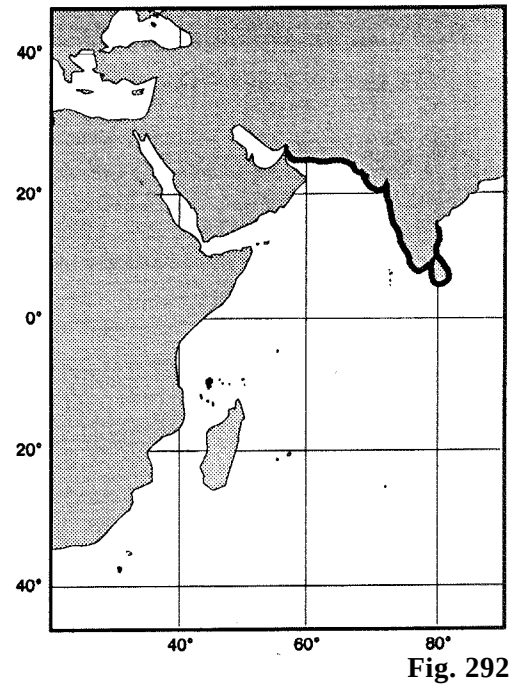


Fig. 292

Habitat and Biology: ***E. diacanthus*** occurs on mud or muddy sand bottom in depths of 10 to 120 m.

Size: According to Boulenger (1895), this species attains 52 cm total length.

Interest to Fisheries: According to Talwar and Kacker (1984), ***E. diacanthus*** is an important component of the grouper fishery off the Kerala coast in depths of 63 to 100 m. Common in catches off Bombay, Caught with trawls, traps, gill nets, and hook-and-line.

Local Names: INDIA: Hekaru, Gobra (Marathi).

Literature: Randall and Heemstra (1991).

Remarks: Records of ***E. diacanthus*** from the western Pacific are based on misidentifications of ***E. stictus:*** Japan (Katayama, 1988), Hong Kong (Chan, 1968), Viet Nam (Fourmanoir, 1965); or ***E. fasciatomaculos*** : Burgess et al., 1988), Taiwan (Shen, 1984). Records from South Africa (Fowler, 1925, 1934; Smith, 1949, 1961) are misidentifications of ***E. rivulatus. E. diacanthus*** is similar to the allopatric species ***E. sexfasciatus*** and ***E. stictus***, which also have 5 dark bars on the body and distinctly enlarged serrae at the angle of the preopercle. ***E. sexfasciatus***, the western Pacific sister species of ***E. diacanthus,*** differs in having black spots on the median fins, fewer scales (lateral-line 46 to 51, lateral-scale series 82 to 96), a smaller head (length contained 2.4 to 2.6 times in standard length) and deeper caudal peduncle (depth contained 2.6 to 3.4 times in head length). ***E. stictus*** has numerous black dots on the head and front part of the body, fewer scales (lateral-line 48 to 51, lateral-scale series 84 to 96) and no auxiliary scales.