

*Gonioplectrus* Gill, 1862

SERRAN Gonio

*Gonioplectrus* Gill, 1862:236; type species, *Plectropoma hispanum* Cuvier, by monotypy.

**Synonyms:** None.

**Species:** A single species, known from the western Atlantic and Caribbean.

**Remarks:** The relationships of the monotypic genus *Gonioplectrus* are unclear. It is a *bona fide* member of the Epinephelinae, with 10 precaudal and 14 caudal vertebrae, one supernumerary spine on the first dorsal-fin pterygiophore, well-developed supramaxilla, inner teeth of jaws depressible, proximal third of inner pelvic-fin ray attached by membrane to body, and larva with the second dorsal-fin spine and pelvic-fin spine elongated and serrate. It differs from other groupers in having the dorsal part of the cranium exposed (not covered by skin or scales) and rugose, without crests; the middle opercular spine extends to the rear edge of the operculum and is 2.7 to 2.9 times longer than the other opercular spines; it also lacks the scaly flap of skin that joins the upper pectoral-fin rays to the body. Unlike the postlarvae that are known for other groupers, the 13 mm standard length postlarva of *Gonioplectrus* has the third dorsal-fin spine greatly elongated, almost as long as the second spine.

Although it shares with *Saloptia* and *Plectropomus* a preopercle with a large antrorse spine (or spines) on the lower edge and a short dorsal fin (base less than 50% of standard length) with only VIII spines and 11 to 13 rays, *Gonioplectrus* does not seem to be closely related to these genera. It has two well-developed supraneurals (only 1 in *Saloptia* and *Plectropomus*), 15 branched caudal-fin rays (versus 13), prominent knob on lower corner of maxilla (no knob), and the cranium is quite different (see above).

*Gonioplectrus hispanus* (Cuvier, 1828)

Fig. 435; Pl. XXVB

SERRAN Gonio 1

*Plectropoma hispanum* Cuvier in Cuv. and Val., 1828:396 (type locality: Martinique).

**Synonyms:** None.

**FAO Names:** En - Spanish flag; Fr - Pavillon espagnol; Sp - Bandera español.

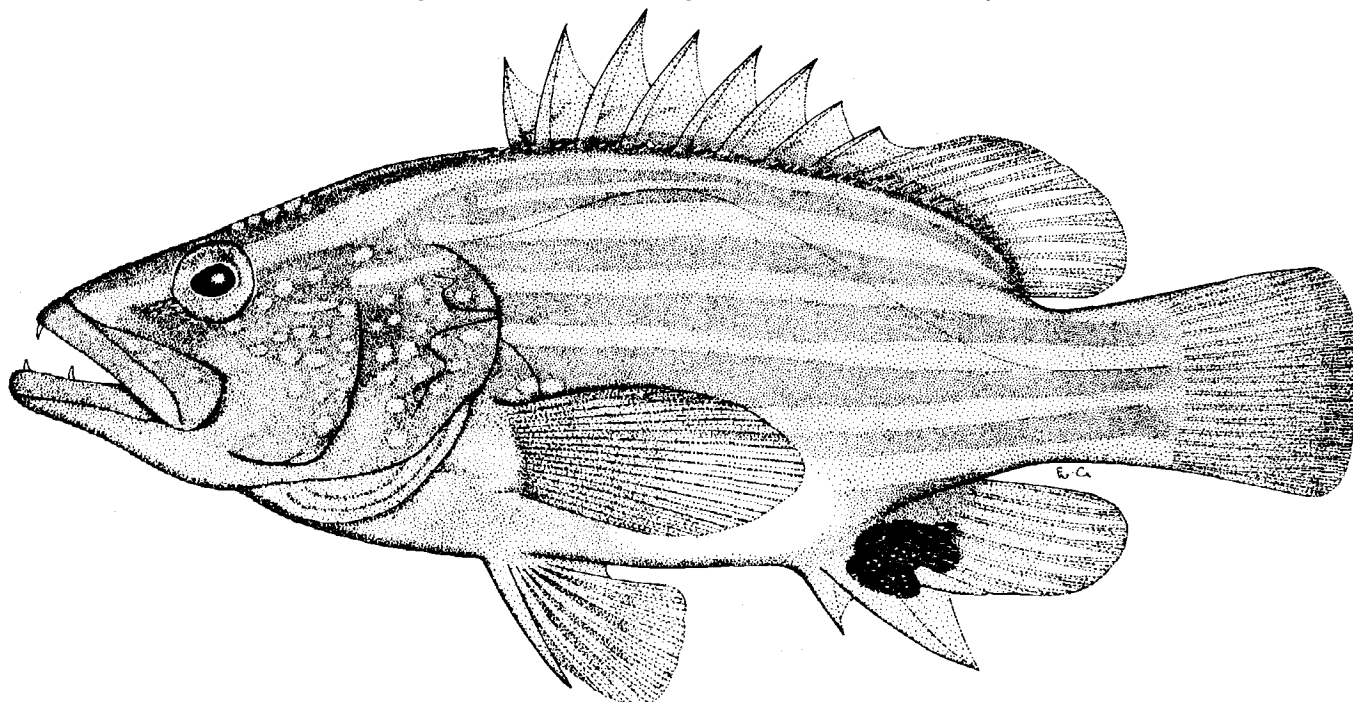


Fig. 435 *Gonioplectrus hispanus*  
(110 mm standard length)

**Diagnostic Features:** Body depth subequal to head length, depth contained 2.3 to 2.5 times in standard length (for fish 13 to 20 cm standard length), the body width contained 2.3 to 2.4 times in body depth. Head length contained 2.2 to 2.3 times in standard length; interorbital area convex, the dorsal head profile convex; top of head rugose; preorbital depth contained about 12 times in head length; preopercle rounded, with a large, curved (antrorse) spine at the angle, the lower edge fleshy; middle opercle spine very large, extending to or beyond rear edge of opercular membrane; subopercle and interopercle with a few minute serrae; nostrils small, subequal; maxilla with a well-developed supramaxilla and a prominent bony knob (hidden by upper lip) on lower rear corner; jaws with a band of minute, slender, depressible teeth, the inner teeth near symphysis enlarged; a short, curved, fixed canine tooth on each side of symphysis of both jaws and 1 to 3 similar fixed canines at midside of lower jaw; 2 rows of minute teeth on vomer and palatines. Gill rakers 5 to 7 on upper limb, 16 on lower limb, the longest slightly longer than longest gill filaments. Dorsal fin with VIII spines and 13 rays, the fin origin over upper end of pectoral-fin base, the third or fourth spine longest; interspinous membranes deeply incised, their proximal part fleshy, covered with scales; base of spinous part of fin longer than soft-rayed part; anal fin with III well-developed spines and 7 rays; pectoral fins symmetrically rounded, with 16 or 17 rays, the middle rays longest; pelvic fins reach anus; caudal fin truncate, with 8 branched rays and 7 procurrent rays in upper part and 7 branched rays and 7 procurrent rays in lower part. Lateral line distinctly curved upward below spinous dorsal fin. Scales on body large, distinctly ctenoid and without auxiliary scales; lateral-line scales 47 to 49; 5 rows of scales between lateral line and base of sixth dorsal-fin spine; lateral-scales series 78 to 83; no scales on top of head, preorbital, snout, maxilla or lower jaw. Supraneural bones straight, the second almost as long as the first but noticeably thinner; epipleural ribs on vertebrae 1 to 9; dorsal fin with 9, anal fin with 5, trisegmental pterygiophores; rear edge of first dorsal-fin pterygiophore slightly indented at tip of third neural spine; dorsal part of cranium rugose; no crests on frontals; supraoccipital crest low, not continued onto frontals. **Colour:** Head, body, dorsal, and caudal fins yellow; 6 or 7 salmon coloured stripes from head to soft dorsal and caudal fins; blood-red blotch on front half of anal fin; white blotch on side of belly; pelvic fins pinkish purple.

**Geographical Distribution:** Western Atlantic from off North Carolina (pelagic post-larva, possibly drifted north from Florida or the Bahamas) to the Gulf of Mexico, Caribbean, and south to Vitoria, Brazil (Fig. 436).

**Habitat and Biology:** Reported from rocky bottom in depths of 60 to 365 m. No information is available on the biology of this species.

**Size:** Attains at least 23 cm standard length.

**Interest to Fisheries:** *Gonioplectrus* is not important as a food fish, because of its rarity and small size. With its beautiful colours, the Spanish flag could be a valuable fish in the aquarium trade, but its deep habitat would make it difficult to keep alive after capture.

**Local Names:** MEXICO: Biajaiba.

**Literature:** Colin (1974); Robins and Ray (1986); Bullock and Smith (1991).

**Remarks:** Kendall and Fahay (1979) described a postlarva and suggested that *Gonioplectrus* was more closely related to the Epinephelinae than to the Anthiinae. Johnson and Keener (1984) illustrated the unique configuration of transverse ridges on the second dorsal- and pelvic-fin spines of the postlarva.

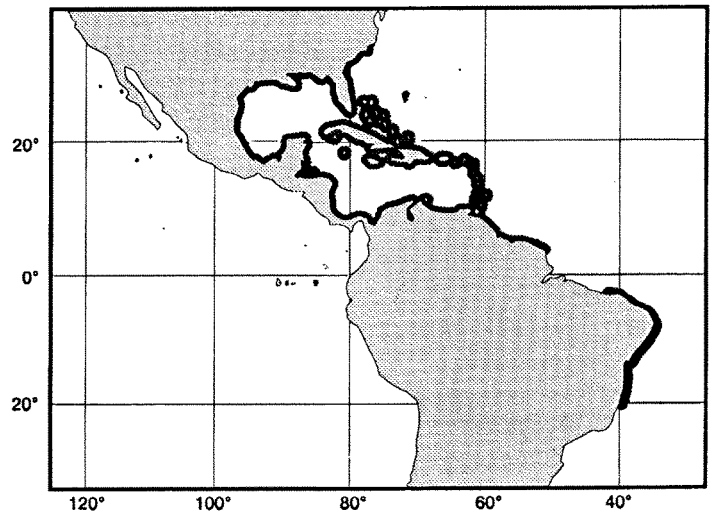


Fig. 436

*Gracila* Randall, 1964

SERRAN Gracil

*Gracila* Randall, 1964:281; type species, *Cephalopholis albomarginatus* Fowler and Bean, 1930, by original designation and monotypy.

**Synonyms:** None.

**Species:** The genus *Gracila* comprises a single species.

**Remarks:** The definition and relationships of *Gracila* were recently considered by Smith-Vaniz et al. (1988). We agree with their decision to recognize *Gracila* as a monotypic genus.

*Gracila albomarginata* (Fowler and Bean, 1930)

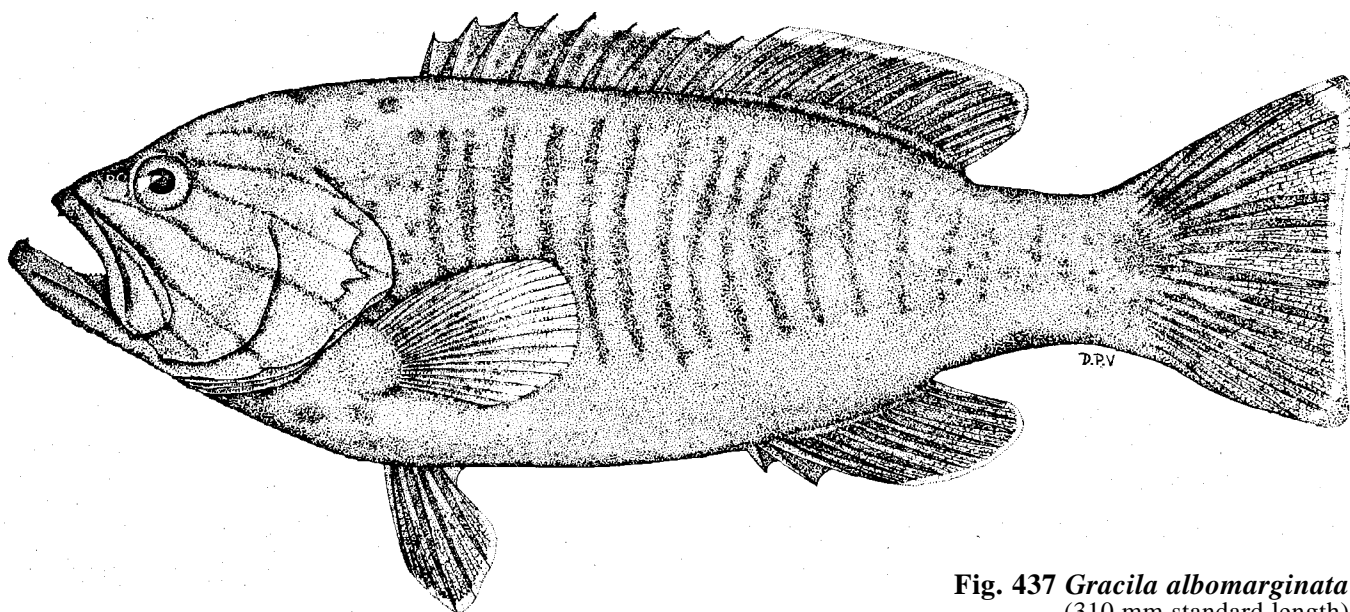
Fig. 437; Pl. XXVC,D

SERRAN Gracil 1

*Cephalopholis albomarginatus* Fowler and Bean, 1930:235, fig. 11 (type locality: Danawan Island, Borneo).

**Synonyms:** None.

**FAO Names:** **En** - Masked grouper (formerly: Red-edged grouper); **Fr** - M  rou bord rouge; **Sp** - Mero paranjero.



**Fig. 437** *Gracila albomarginata*  
(310 mm standard length)

**Diagnostic Features:** Body oblong, somewhat compressed, the depth contained 2.6 to 3.3 times in standard length, the body width contained 1.8 to 2.3 in the depth. Head smaller than most other groupers, head length contained 2.9 to 3.2 in standard length; dorsal head profile evenly convex; interorbital area slightly convex, its width greater than eye diameter; preorbital narrow, its depth distinctly less than eye diameter, preorbital depth contained 10 to 15 times in head length: preopercle rounded, finely serrate, the lower edge smooth and fleshy; ventral edge of subopercle and interopercle smooth; middle opercular spine located one-third distance from lower to upper spine, the upper edge of operculum distinctly convex; nostrils subequal; posterior part of maxilla in adults with a hook-shaped or step-like expansion on ventral edge; supramaxilla well developed; jaws with a pair of small canines at the front; palatine teeth present; midside of lower jaw with 2 rows of teeth, the inner teeth depressible and twice as long as outer teeth. Gill rakers 8 to 10 on upper limb, 14 to 16 on lower limb. Dorsal fin with IX spines and 14 to 16 rays, the fin origin over rear end of operculum; dorsal-fin membranes not (adults) or slightly (juveniles) incised between the spines, dorsal-fin spines slender, the dorsal-fin spines not much thicker than the dorsal-fin rays; anal fin with III spines and 9 or 10 rays, anal-fin spines slender; pectoral fins rounded, with 18-19 rays, the middle rays longest; pectoral fins slightly longer than pelvic fins; pelvic fins not reaching anus: caudal fin truncate to slightly emarginate, with 8 branched rays and 9 to 10 procurrent rays in upper part and 7 branched rays and

9 to 10 procurrent rays in lower part. Midlateral-body scales ctenoid, with numerous auxiliary scales; lateral-line scales 66 to 76; lateral-scale series 101 to 114. Supraneural bones distinct, the posterior one more than half length of first one; epipleural ribs on vertebrae 1 to 9; dorsal fin with the posterior 3 to 5 pterygiophores trisegmental; posterior 3 to 4 pterygiophores of anal fin trisegmental; rear edge of first dorsal-fin pterygiophore not excavated for tip of third neural spine; cranium broad, its greatest width more than half its length; least interorbital width more than 25% of cranium length; supraoccipital crest and parietal crests not extending onto frontals; frontopteric ridges extend past midpoint of orbit; mesethmoid pit deep and cancellous; parietals with a prominent lateral process extending posteriorly over the pterotic bone.

**Colour:** Adults greenish or reddish brown to brownish grey, with several narrow curved dark bars on midlateral part of body and dark brown spot midlaterally on 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 the eye); region under maxilla and along edge of gill opening often orange; soft dorsal and anal fins with narrow blue margin; upper and lower edges of caudal fin darker than rest of fin. 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.

**Geographical Distribution:**

*G. albomarginata* occurs from northern Mozambique to French Polynesia. In the western Pacific it ranges from Okinawa to the northern Great Barrier Reef. Most records are from islands and off shore coral reefs, including Zanzibar, Comoros, Seychelles, Chagos, Mauritius, Reunion, Maldives, Cocos-Keeling Islands, Christmas Island (Indian Ocean), Rowley Shoals, and Scott Reef off Western Australia, Indonesia, Philippines; Taiwan, Papua New Guinea, New Britain, New Caledonia,

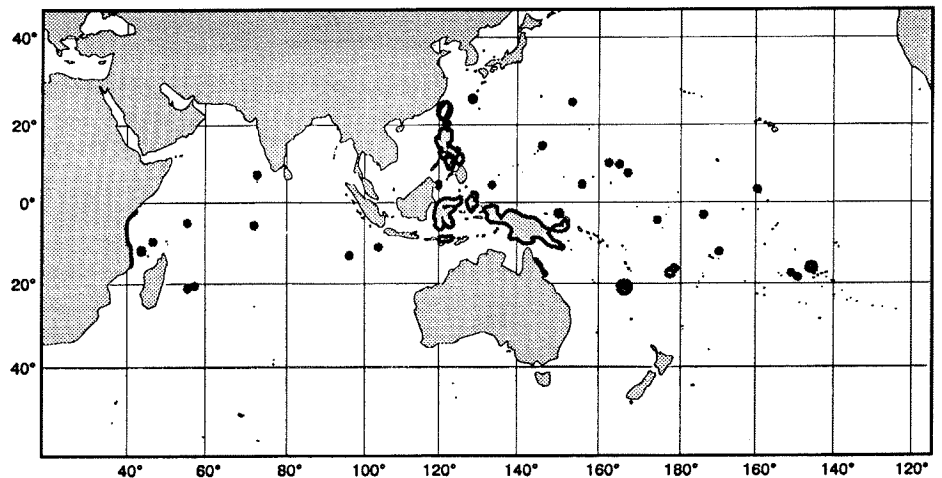


Fig. 438

Society Islands, Phoenix Islands, Marshall Islands, Minami Tori Shima, Guam, Caroline Islands, Palau Islands, Loyalty Islands, Samoa Islands, Takaroa, Tuamotus, and Fanning Island (Fig. 438). Not known from the Red Sea or Persian Gulf.

**Habitat and Biology:** *G. albomarginata* is an active swimmer that roams over the reef; it is usually found on the outer reef slope in depths of 15 to 120 m. It is an uncommon and (like most groupers) usually solitary species, but Myers (1989) reports occasional sightings of groups of 3 or 4 fish. A specimen speared at the Society Islands had fish remains in its stomach.

**Size:** Attains at least 38 cm total length (50 cm total length, according to Fourmanoir and Laboute, 1976).

**Interest to Fisheries:** *G. albomarginata* is an excellent food-fish, but it is not common enough to be of commercial importance. Caught with hook-and-line and gillnets.

**Local Names:** AUSTRALIA: Thinspine grouper; CAROLINE ISLANDS: White-margined grouper; JAPAN: Tatesuji-hata; KIRIBATI ISLANDS: White-margined grouper; MARSHALL ISLANDS: White-margined grouper; NEW CALEDONIA: Loche a bords blancs.

**Literature:** Smith-Vaniz (1989); Randall and Heemstra (1991).

**Remarks:** In addition to *G. albomarginata*, most species of groupers with a truncate or emarginate caudal fin (*Mycteroperca* spp. and *Plectropomus* spp.) are actively swimming fishes that are primarily piscivorous.