

## 2.4 Information by genus and species

*Aethaloperca* Fowler, 1904

SERRAN Aethal

*Aethaloperca* Fowler, 1904:522; type species, *Perca rogaa* Forsskål, 1775, by original designation and monotypy; proposed as a subgenus.

**Synonyms:** None.

**Species:** A single species widely distributed in the Red Sea and Indo-West Pacific region.

**Remarks:** The genus *Aethaloperca* is closely related to *Cephalopholis* and *Gracila* which also have IX dorsal-fin spines and several trisegmental pterygiophores in the dorsal and anal fin. Smith-Vaniz et al. (1988) discussed the relationships of these genera, and we agree with their decision to recognize *Aethaloperca* as a valid genus. It differs from *Cephalopholis* and *Gracila* in the configuration of the pectoral and median fins and in some cranial features (the anteriorly converging parietal crests and the well-developed median crest on the frontals that extends to the rear edge of the ethmoidal depression). *Aethaloperca* also differs from *Gracila* in the shape of the maxilla and in having a larger head and deeper body.

*Aethaloperca rogaa* (Forsskål, 1775)

Fig. 35; Pl. IA

SERRAN Aethal 1

*Perca rogaa* Forsskål, 1775:38 (type locality: Red Sea, Jeddah, Saudi Arabia).

**Synonyms:** *Perca lunaris* Forsskål; 1775:39 (type locality: Al Hudaydah [Yemen] and Jeddah). *Cephalopholis rogaa*.

**FAO Names:** En - Redmouth grouper; Fr - Vielle roga; Sp - Cherna roga.

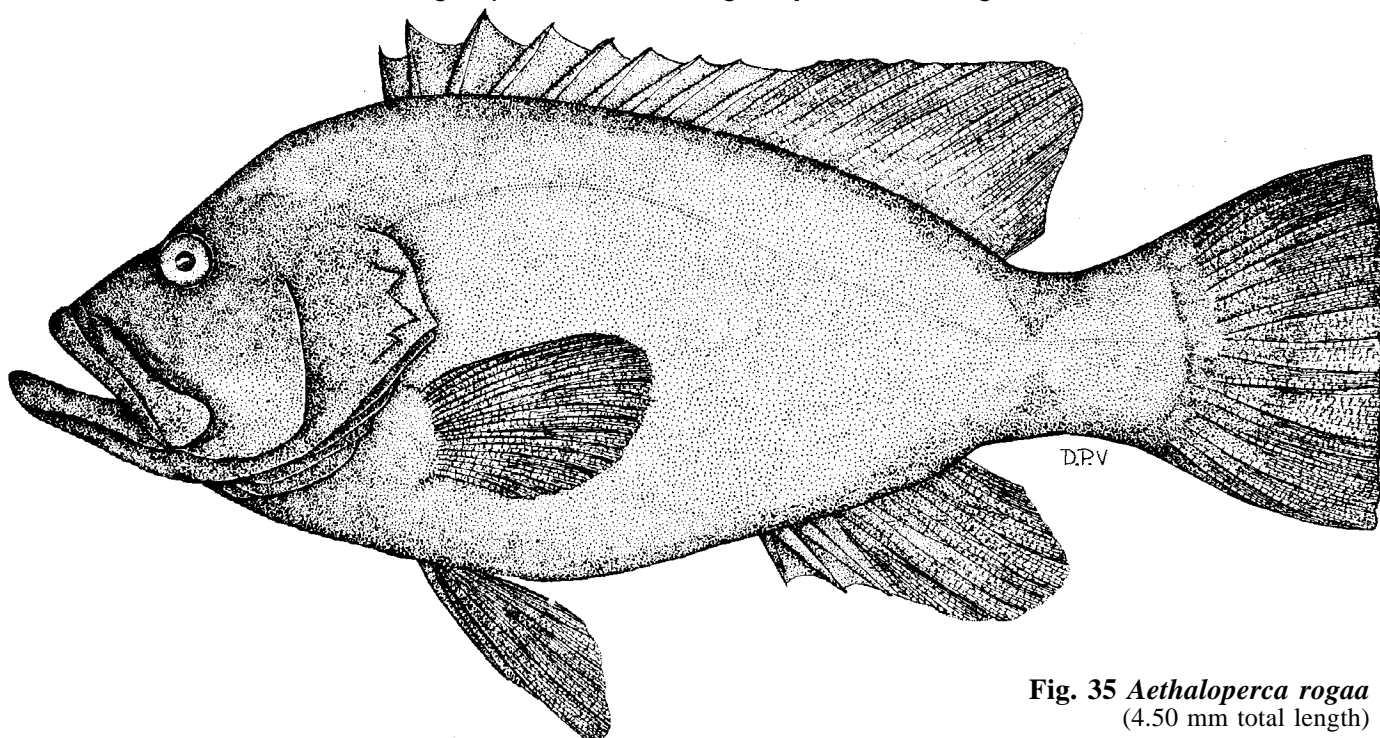


Fig. 35 *Aethaloperca rogaa*  
(4.50 mm total length)

**Diagnosis:** Body deep and compressed, the depth greater than the head length and contained 2.1 to 2.4 times in standard length, the body width contained 2.3 to 2.8 times in the depth. Head length contained 2.5 to 2.7 times in standard length; interorbital area convex; dorsal head profile steep, straight or slightly concave along the snout and distinctly convex from eye to dorsal fin; preorbital depth contained 6.5 to 9.2 times in head length; preopercle finely serrate, the lower edge fleshy; subopercle and interopercle smooth or with minute serrae; opercle with 3 flat spines, the middle one closer to the lower spine; upper edge of operculum convex; rear nostrils round or oval, not much larger than front ones; maxilla reaches past eye; ventroposterior corner of maxilla with a distinct bony protuberance; supramaxilla slender; small canines at front of jaws,

none elsewhere; 2 to 4 rows of small slender teeth at side of lower jaw; palatine teeth present. Gill rakers 8 to 10 on upper limb, 15 to 17 on lower limb, the longest gill raker slightly longer than longest gill filaments. Dorsal fin with IX spines and 17 or 18 rays, the fin origin over opercle; dorsal-fin membranes slightly incised between the spines, the third or fourth spine longest; anal fin with III spines and 8 or 9 rays; middle dorsal- and anal-fin rays elongate in adults, giving these fins an angular profile, with the rear margin almost vertical; pectoral fins asymmetric, with 17 to 19 rays, the fifth or sixth ray longest; a well-developed scaly flap of skin joining upper pectoral-fin rays to body; pelvic fins subequal to pectoral fins, reaching to or beyond anus; caudal fin truncate, with 8 branched rays and 9 procurent rays in upper part and 7 branched rays and 8 procurent rays in lower part. Scales on body ctenoid, with auxiliary scales; lateral-line scales 48 to 54; lateral-scale series 94 to 104. Pyloric caeca 10. Supraneural bones 2, not noticeably curved; dorsal and anal fins with 3 or 4 trisegmental pterygiophores; rear edge of first dorsal-fin pterygiophore not excavated for tip of third neural spine; epipleural ribs on vertebrae 1 to 10; cranium cuneiform, high posteriorly, with an elevated supraoccipital crest continuous with a well-developed median crest on the frontals; parietal crests convergent anteriorly, not reaching frontals; dorsolateral crests on frontals are approximately parallel, project laterally and are medial to and separate from the postorbital processes; interorbital region of cranium distinctly convex. **Colour:** Dark brown to black, occasionally with an orange cast, usually with a pale vertical bar on side of abdomen; distal part of spinous dorsal fin dark orange to brownish red; inside of mouth, gill cavity and upper jaw membranes reddish orange. Juveniles with a broad white posterior margin on caudal fin and a narrow white margin on soft dorsal fin: Allen and Steene (1987) show a 30 cm total length juvenile from the Maldives with a yellow-green spot on each body scale and the median fins with a pale bluish grey margin posteriorly.

**Geographical Distribution:** Red Sea to South Africa and east to the Gilbert Islands (Kiribati) in the central Pacific; Japan, Philippines, Indonesia, Australia, Papua New Guinea, Solomon Islands, Caroline Islands, Palau, Thailand, India, Pakistan, Persian Gulf, Gulf of Oman, and probably all of the tropical islands of the Indian Ocean (although not yet found at Reunion or Mauritius) (Fig. 36).

**Habitat and Biology:** *Aethaloperca* prefers well-developed coral reefs in depths of 3 to at least 60 m. Usually seen in or near caves and holes in the reef. Morgans (1982) reported that small

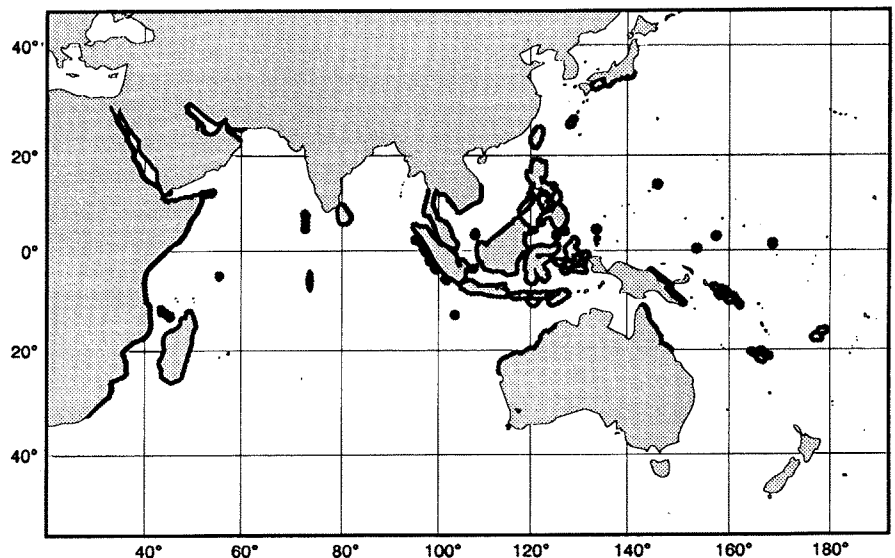


Fig. 36

fishes (including *Pempheris* sp., a common cave dweller) are the primary food of this species, and that it also eats stomatopods (*Pseudosquilla* sp.). Preliminary data indicate that it spawns at any time of the year and matures (females?) at a length of about 35 cm standard length (Morgans, 1982).

**Size:** Maximum 60 cm total length.

**Interest to Fisheries:** An uncommon species, occasionally seen in markets. Caught with hook-and-line, spear, and probably in traps.

**Local Names:** JAPAN: Kurohata; KENYA (Swahili): Chewa, Tewa; PALAU: Chubei; PHILIPPINES: Lapu-lapung itim (Tagalog), Kubing (Visayan); SEYCHELLES: Matongo; SOUTH AFRICA: Redmouth rockcod, Rooibek-kabeljou; TANZANIA (Swahili): Chewa, Tewa.

**Literature:** Schroeder (1980); Randall (1983); Randall and Ben-Tuvia (1983); Heemstra and Randall (1984, 1986); Kuronuma and Abe (1986); Katayama (1988); Winterbottom et al. (1989); Myers (1989); Randall and Heemstra (1991).

*Alphestes* Bloch and Schneider, 1801

**SERRAN Alph**

*Alphestes* Bloch and Schneider, 1801:236; type species, *Epinephelus afer* Bloch, 1793 by subsequent designation of Jordan and Swain, 1885:394.

**Synonyms:** *Prospinus* Poey in Gill, 1863:236; type species, *Plectropoma chloropterum* Valenciennes in Cuv. and Val., 1828 (= *Alphestes afer*) by monotypy.

**Diagnostic Features:** Small compressed groupers with large eyes, short snout, and coloration that resembles their benthic habitat. Body depth less than head length and contained 2.3 to 3.1 times in standard length, the body width contained 1.9 to 2.6 times in the depth. Head length contained 2.4 to 2.6 times in standard length, the dorsal head profile nearly straight; snout length less than or subequal to orbit diameter; preorbital narrow, its depth contained 18 to 26 times in head length; preopercle subangular, the posterior edge distinctly serrate, with a large spine (usually hidden by skin) directed downward and forward at the "angle"; rear nostrils round or oval, not much larger than front ones; ventral edge of maxilla smoothly curved (no step or bony knob at posterior end); supramaxilla well developed; a pair of small canines (hidden by lips) at front of both jaws; 3 to 5 rows of small slender teeth at side of lower jaw and similar but smaller teeth on vomer and palatines. Dorsal fin with XI spines and 17 to 19 soft rays, the fin origin over opercle and in front of vertical at upper end of pectoral-fin base, the membranes incised between the spines; anal fin with III spines and 9 rays; caudal fin rounded, with 8 branched rays and 7 procurent rays in upper part and 7 branched rays and 7 procurent rays in lower part. Midlateral-body scales smooth. Supraneural bones 2, the posterior one approximately straight, about three-fourths length of first one and situated just anterior to tip of second neural spine; no trisegmental pterygiophores; rear edge of first dorsal-fin pterygiophore not excavated for tip of third neural spine; epipleural ribs on vertebrae 1 to 9; skull with well-developed cranial crests, the frontoparietal crests parallel; no transverse wall on supraethmoid, which forms floor of pit between end of frontals; medial process of epiotics produced, much longer than lateral process; interorbital width less than vomer width.

**Habitat and Biology:** The mutton hamlets are shallow-water, cryptically coloured, secretive fishes that are easily overlooked in their typical seagrass habitat. They are sedentary during the day, hiding in crevices or lying among seaweed, and rely on their effective camouflage to escape detection. Sometimes they will even lie on their side and partly cover themselves with sand. With their cryptic coloration and sedentary habitats, they resemble scorpaenid fishes and can easily be approached or even touched. Mutton hamlets are nocturnal predators feeding mainly on benthic crustaceans.

**Geographic Distribution:** The genus *Alphestes* is represented in the eastern Pacific and western Atlantic oceans.

**Interest to Fisheries:** Because of their small size, the mutton hamlets are of little commercial importance.

**Species:** The genus comprises three species:

*Alphestes afer*: Western Atlantic and Caribbean Sea.

*Alphestes immaculatus*: Eastern Pacific

*Alphestes multiguttatus*: Eastern Pacific.

**Remarks:** *Alphestes* was regarded as a subgenus of *Epinephelus* by C.L. Smith (1971), who wrote, "Although the dorsolateral (skull) crests are parallel to each other they are more similar to those of *Epinephelus* than to those of *Mycteroperca* and the general aspect of the skull is clearly that of other species of *Epinephelus*. The postocular skull process bears the same relationship to the crest that it does in *Epinephelus* and is unlike that of *Mycteroperca*." We agree that the cranium of *Alphestes afer* is more similar to the crania of western Atlantic species of *Epinephelus* than it is to any *Mycteroperca* species, but this does not mean that *Alphestes* and *Epinephelus* are necessarily congeneric. Smith (1971) gave no diagnosis for his (expanded) genus *Epinephelus*, nor did he mention any characters that might indicate its monophyletic status. The large antrorse spine at the corner of the preopercle in *Alphestes* species does not occur on any species of *Epinephelus*. The only other grouper with a single large antrorse spine at the corner of the preopercle is *Gonioplectrus hispanus*; and it differs markedly from *Alphestes* in dorsal- and anal-fin counts, development of opercular spines, maxilla shape, head shape, body shape, and cranial configuration. Although *Alphestes* may be more closely related to *Epinephelus* than to any other genus, we believe that the distinctive antrorse preopercle spine, head configuration (very short snout and narrow preorbital), and smooth scales justify recognition of a separate genus for these three species. Johnson and Keener (1984) described a distinctive feature of the late postlarvae (15 mm) and small juveniles (38 to 60 mm) of *Alphestes*: the dorsal and lateral surfaces of the neurocranium from mid orbit to the nape are extremely rugose. This condition was not seen in other grouper larvae that they examined and is further justification for the recognition of *Alphestes* as a valid genus. The sedentary behaviour of *Alphestes* (see above) is also unlike any other grouper known to us.

### Key to the Species of *Alphestes*:

- 1a.** Pectoral fins orange with distinct white spots, sometimes with faint dusky mottling but no dark crossbars; depth of caudal peduncle 12 to 14% of standard length (for fish 12 to 21 cm standard length) (Fig. 37, Plate I) (western Atlantic) ..... *A. afer*
- 1b.** Pectoral fins pale, with dark crossbars formed by series of dark spots on the fin rays; peduncle depth 10.6 to 12.0% of standard length ..... → 2  
caudal-peduncle depth 12-14% of standard length

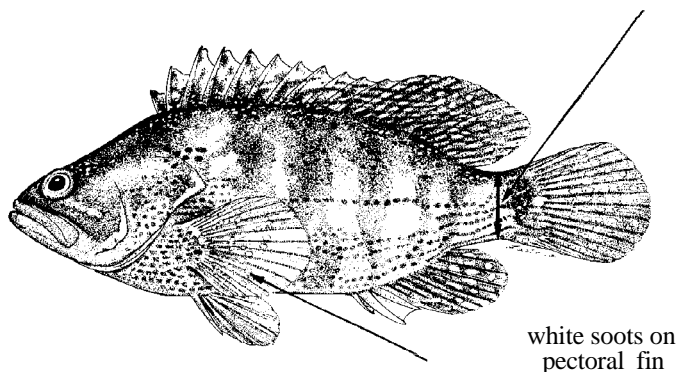


Fig. 37 *Alphestes afer*

- 2a:** Pectoral fins with 7 or 8 irregular dark crossbars; body mottled and covered with black specks; pectoral-fin rays 16 to 18; dorsal-fin rays 17 to 19; body depth 2.3 to 2.8 times in standard length (Fig. 38) (eastern Pacific, Gulf of California to Peru, Galapagos Islands) ..... *A. immaculatus*
- 2b.** Pectoral fins with 5 or 6 broad dark crossbars; body with numerous small dark spots forming horizontal dark streaks posteriorly and extending onto soft dorsal and caudal fins; pectoral-fin rays 17 to 19; dorsal-fin rays 18 to 20; body depth 2.7 to 3.1 times in standard length (Fig. 39) (eastern Pacific, Gulf of California to Panama) ..... *A. multiguttatus*

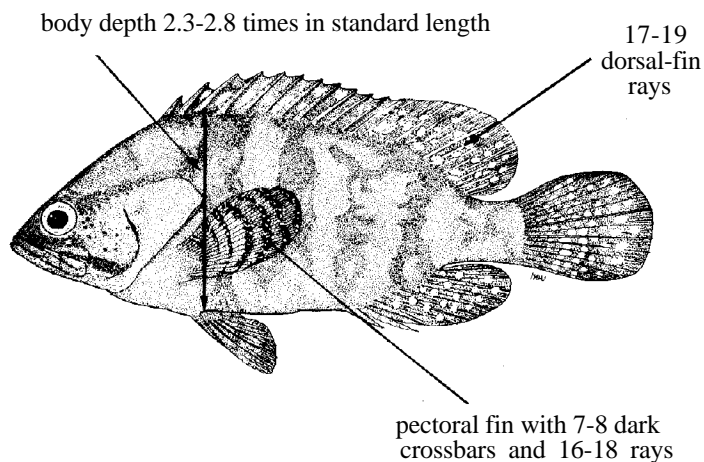


Fig. 38 *Alphestes immaculatus*

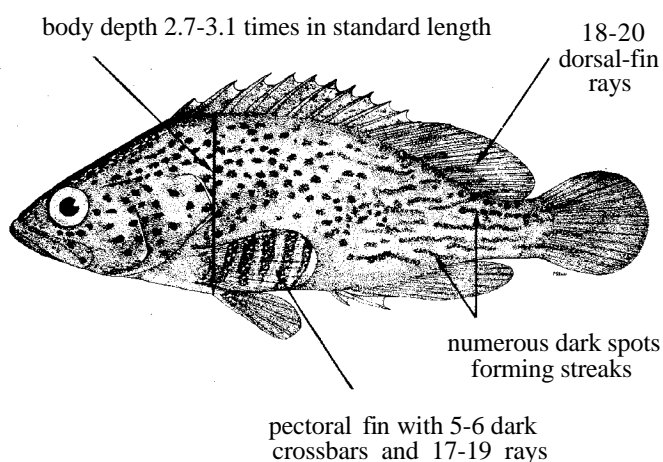


Fig. 39 *Alphestes multiguttatus*

*Alphestes afer* (Bloch, 1793)

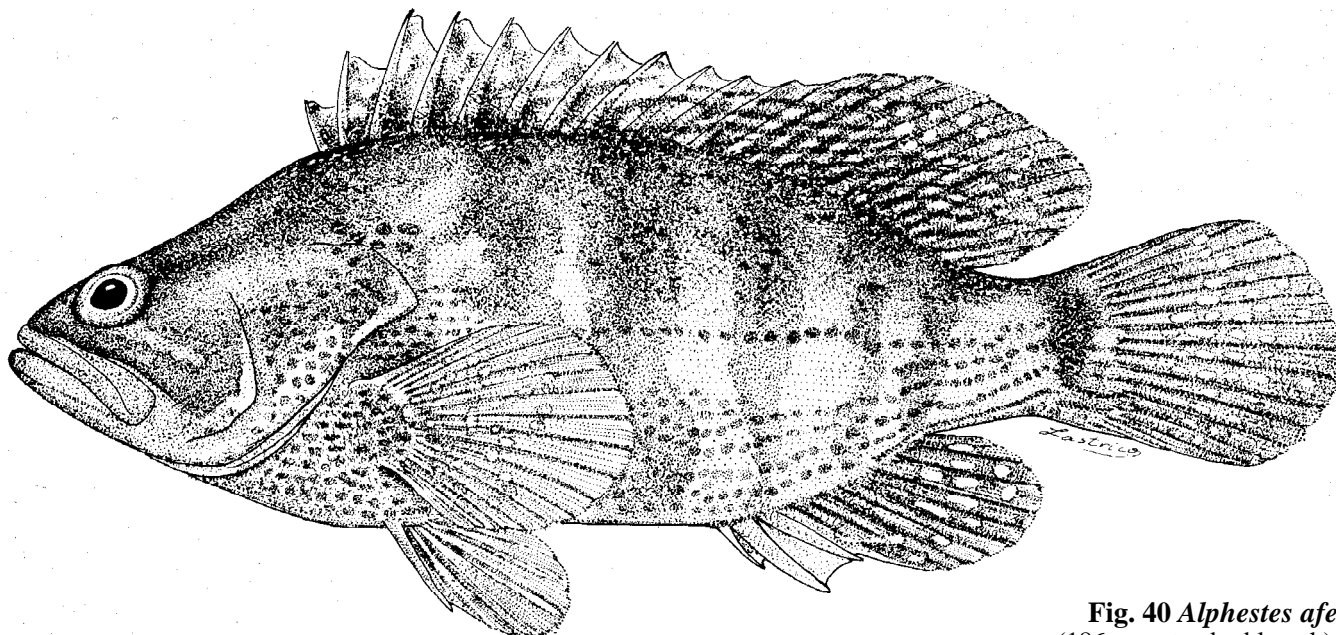
Fig. 40; Pl. IB

SERRAN Alph 1

*Epinephelus afer* Bloch, 1793:12, Pl. 327 (type locality: "Guinea" [erroneous]).

**Synonyms:** *Plectropoma chloropteron* Valenciennes in Cuv. and Val., 1828:398 (type locality: Dominican Republic and Martinique). *Plectropoma monacanthus* Müller and Troschel, 1848:665 (type locality: Barbados). *Epinephelus lightfooti* Fowler, 1907:258 (type locality: Santo Domingo, Dominican Republic).

**FAO Names:** En - Mutton hamlet; Fr - Varech; Sp - Guaseta.



**Fig. 40** *Alphestes afer*  
(186 mm standard length)

**Diagnostic Features:** Body depth slightly less than head length, depth contained 2.4 to 3.1 times in standard length (for fish 13 to 22 cm standard length); caudal-peduncle depth 12.0 to 14.0% of standard length. Eye diameter greater than snout length, eye diameter contained 4.1 to 5.3 times in head length; preopercle rounded, the posterior edge distinctly serrate with a large spine (usually hidden by skin) directed downward and forward at the "angle." Gill rakers 6 to 8 on upper limb, 16 or 17 on lower limb, 22 to 25 total. Dorsal fin with XI spines and 17 to 19 rays; anal fin with III spines and 9 rays; pectoral fins with 16 or 17 rays; caudal fin rounded. Scales smooth: lateral-line scales 55 to 61; lateral-scale series 68 to 77. **Colour:** Head, body, and median fins olivaceous or light brown, irregularly blotched, and barred with dark brown, and densely spotted with orange; head, body, and all fins with scattered, small white spots; pectoral fins orange or yellow with faint brownish reticulations.

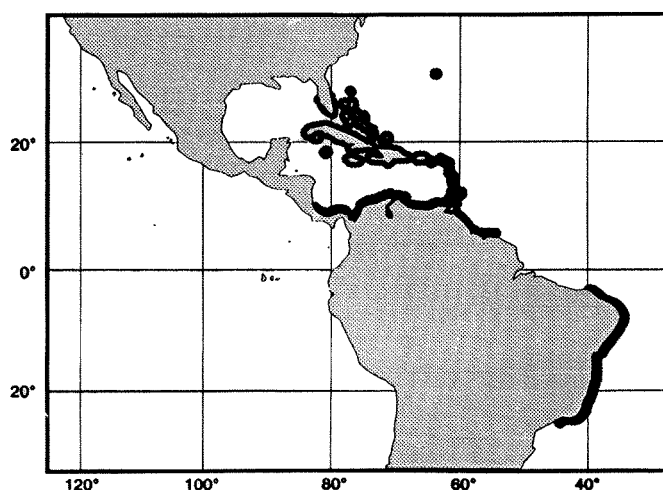
**Geographical Distribution:** Western Atlantic: Bermuda, south Florida, Bahamas, Cuba, West Indies, Panama, Venezuela, and southward to the state of São Paulo, Brazil (Fig. 41). Boulenger's (1895) record of *E. afer* from the Falkland Islands is based on the stuffed specimen reported by Gunther (1859); this specimen probably came from Brazil and was mislabelled or mixed up with specimens from the Falklands.

**Habitat and Biology:** See above under the genus account. Thompson and Munro (1983) estimated the number of eggs in 4 females to range from 157 512 to 223 706 per fish.

**Size:** Maximum total length about 33 cm.

**Interest to Fisheries:** Although common in the Caribbean area, the mutton hamlet is too small to be of much commercial importance.

**Local Names:** BRAZIL: Garoupa-gato.



**Fig. 41**

**Literature:** Randall (1968); Smith (1971, in part, not the eastern Pacific specimens which are *A. immaculatus*); Figueiredo and Menezes (1980).

**Remarks:** Smith (1971) synonymized the eastern Pacific species *Alphestes galapagensis* Fowler, *A. fasciatus* Hildebrand, and *A. immaculatus* Breder with the Atlantic species *A. afer*. We believe that these amphi-American populations are distinct species, as indicated by their different colour patterns and the greater depth of the caudal peduncle in *A. afer*. The distinctive dark crossbars on the pectoral fins of *A. immaculatus* are lacking in *A. afer*, and *A. afer* usually has 23 or 24 total gill rakers, whereas *A. immaculatus* has 20 to 22 gill rakers. Furthermore, Johnson and Keener (1984) have shown that the dorsal- and pelvic-fin spines of larval *A. afer* differ considerably in their distinctive ornamentation from the spines of *A. immaculatus* (which they refer to as the Pacific population of *A. afer*). Also these authors concluded that the striking differences in spine morphology suggest that these two populations are specifically distinct.

*Alphestes immaculatus* Breder, 1936

Fig. 42

SERRAN Alph 2

*Alphestes immaculatus* Breder, 1936:22, Fig. 9 (type locality: not stated in original description; Bahia San Francisquito [Gulf coast of northern Baja California] is given on the label with the holotype, BOC 596.82 mm standard length).

**Synonyms:** *Alphestes galapagensis* Fowler, 1944:342, fig. 186 (Chatham Island, Galapagos). *Alphestes fasciatus* Hildebrand, 1946:163, fig. 36 (Lobos de Afuera Bay, Peru; holotype USNM 127950, 160 mm standard length).

**FAO Names:** En - Pacific mutton hamlet; Fr - Varech pacifique; Sp - Guaseta pacifico.

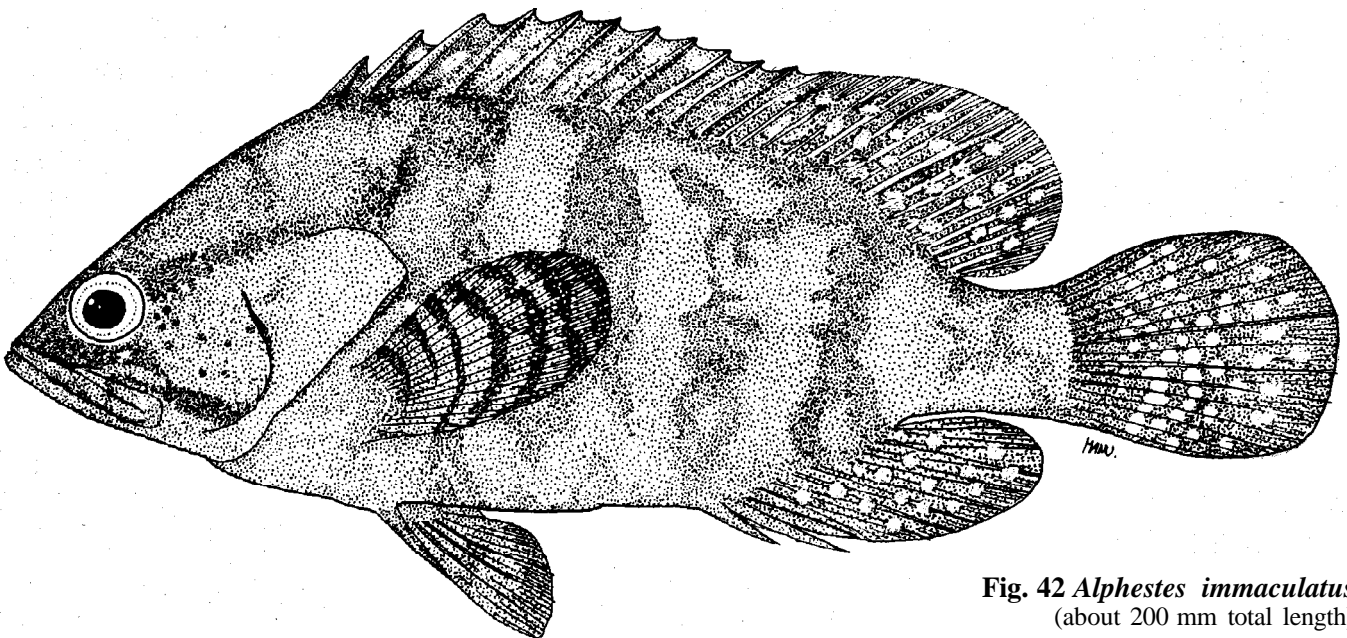


Fig. 42 *Alphestes immaculatus*  
(about 200 mm total length)

**Diagnostic Features:** Body depth less than or equal to head length, depth contained 2.3 to 2.8 times in standard length (for fish 13 to 21 cm standard length); caudal-peduncle depth 10.6 to 12.0% of standard length. Eye diameter subequal to snout length, contained 4.1 to 5.5 times in head length; preopercle rounded, the posterior edge distinctly serrate, with a large spine (usually hidden by skin) directed downward and forward at the "angle." Gill rakers 5 to 7 on upper limb, 14 to 16 on lower limb, 20 to 22 total. Dorsal fin with XI spines and 17 to 19 rays; anal fin with III spines and 9 rays; pectoral fins with 16 to 18 rays; caudal fin rounded. Scales smooth; lateral-line scales 55 to 63, lateral-scale series 71 to 75. **Colour:** Head and body marbled reddish brown, with obscure bars and small dark spots; 7 or 8 irregular transverse series of small dark spots on pectoral fin; pale spots and blotches over all of head, body, and median fins.



**Geographical Distribution:** Eastern tropical Pacific from the northern Gulf of California to Peru and the Galapagos Islands (Fig. 43).

**Habitat and Biology:** See above under the genus account.

**Size:** Maximum total length about 30 cm.

**Interest to Fisheries:** None.

**Local Names:** MEXICO: Guaseta.

**Literature:** Thomson et al. (1979 [as "*Epinephelus* (*Alphestes*) *afer*"]); Hobson (1968 [as "*Alphestes multiguttatus*," which is rare in the Gulf of California and has not been definitely recorded from Baja California]).

**Remarks:** As indicated in the account of *A. afer* above, we regard *A. immaculatus* as a valid species. When Hildebrand described *Alphestes fasciatus* as a new species in 1946, he apparently was not aware of Fowler's description of *A. galapagensis*, which was published in 1944.

The original description of *A. immaculatus* Breder (1936) was based on a juvenile of 82 mm standard length with an "almost uniform" colour pattern. The dorsal-fin soft-ray count of 17 for this holotype is one ray less than any of the *A. multiguttatus* for which we have data (range 18 to 20, mean=19, n = 42) but it is within the range of counts for *A. immaculatus* (range 17 to 19, mean = 18, n =29, 5 fish with a count of 17 dorsal-fin rays). The holotype was collected at San Francisquito Bay in the northwestern Gulf of California, not the Galapagos, as listed by C.L. Smith (1971). According to Thomson et al. (1979), the pacific mutton hamlet ("*Epinephelus afer*") is much more common than the rivulated mutton hamlet (*A. multiguttatus*) in the Gulf of California. Although Thomson et al. (1979) correctly distinguish these two species on differences in colour pattern, their stated differences in fin-ray counts appear to be mean values for each species (no range in counts is given for either species).

Johnson and Keener (1984) described and illustrated the dorsal- and pelvic-fin spine morphology of the larvae (as "Pacific *E. afer*").

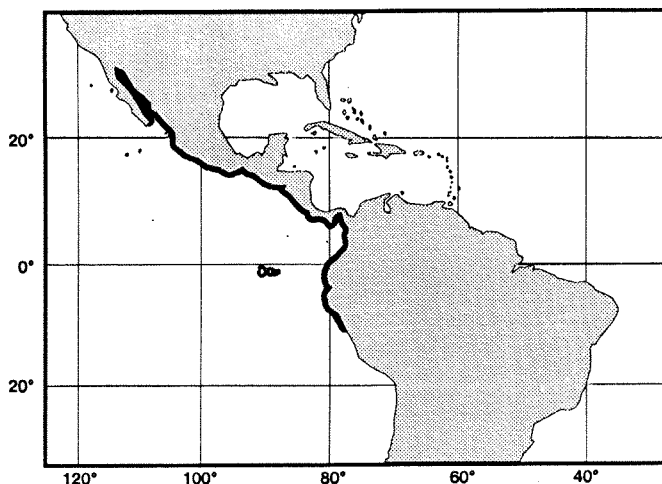


Fig. 43

*Alphestes multiguttatus* (Günther, 1867)

Fig. 44

SERRAN Alph 3

*Plectropoma multiguttatum* Günther, 1867:600 (type locality: Panama).

**Synonyms:** *Epinephelus multiguttatus*.

**FAO Names:** En - Rivulated mutton hamlet; Fr - Varech veiné; Sp- Guaseta rayado.

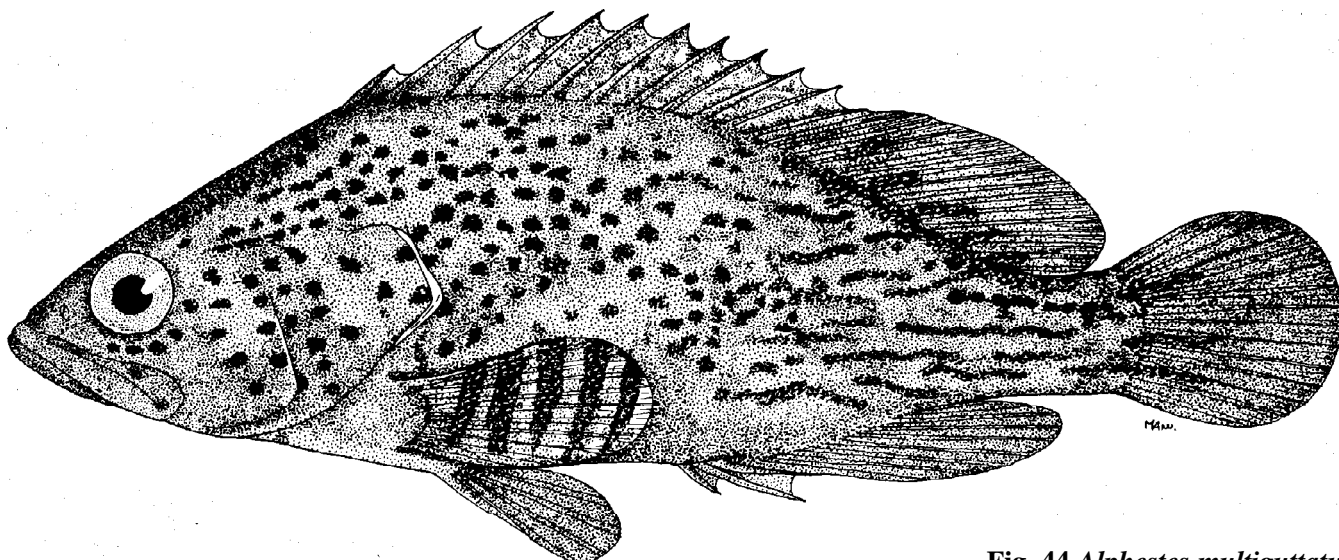


Fig. 44 *Alphestes multiguttatus*  
(167 mm total length)

**Diagnostic Features:** Body depth distinctly less than head length, depth contained 2.7 to 3.1 times in standard length (for fish 13 to 20 cm standard length); caudal-peduncle depth 10.6 to 11.8% of standard length. Eye diameter slightly greater than snout length, contained 4.3 to 4.7 times in head length; preopercle rounded, the rear edge distinctly serrate with a large spine (usually hidden by skin) directed downward and forward at the "angle." Gill rakers 6 to 8 on upper limb, 14 to 16 on lower limb, 20 to 23 total. Dorsal fin with XI spines and 18 to 20 rays; anal fin with III spines and 9 rays; pectoral fins with 17 to 19 rays; caudal fin rounded. Scales smooth; lateral-line scales 54 to 62; lateral-scale series 67 to 75. **Colour:** Head and body brownish, with small dark spots forming horizontal streaks posteriorly and extending onto soft dorsal and caudal fins; pectoral fins pale, with 5 or 6 broad, dark crossbars, which are darker and more distinct distally.

**Geographical Distribution:** Eastern tropical Pacific from northern Gulf of California to Panama (Fig. 45).

**Habitat and Biology:** Presumably like that of the other two species (see above under the genus account). Johnson and Keener (1984) have described and illustrated the dorsal- and pelvic-fin spines of the larvae and compared them with *Alphestes immaculatus* and *A. afer*.

**Size:** Maximum total length about 25 cm.

**Interest to Fisheries:** None.

**Local Names:** MEXICO: Pacific guaseta (Gulf of California).

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

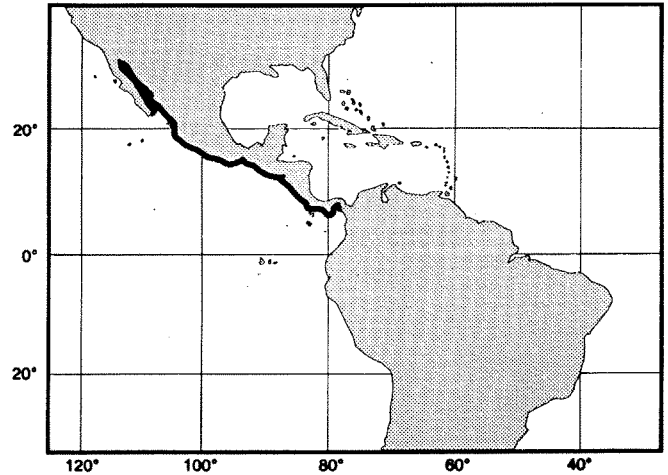


Fig. 45

*Anyperodon* Günther, 1859

SERRAN Anyper

*Anyperodon* Günther, 1859:95; type species, *Serranus leucogrammicus* Valenciennes in Cuv. and Val., 1828 by monotypy.

**Synonyms:** None.

**Species:** A single species widely distributed in the Indo-West Pacific region.

**Remarks:** This distinctive monotypic genus is probably most closely related to *Epinephelus*, with which it shares XI dorsal-fin spines and the absence of trisegmental pterygiophores; but it differs from *Epinephelus* (and all other groupers) in its lacking teeth on the palatines. *Anyperodon* is also unique among groupers in its elongate and markedly compressed head and body (body width 11 to 15% of standard length); there are some other elongate groupers, but none of these are as compressed as *Anyperodon*.

*Anyperodon leucogrammicus* (Valenciennes, 1828)

Fig. 46; Pl. IC

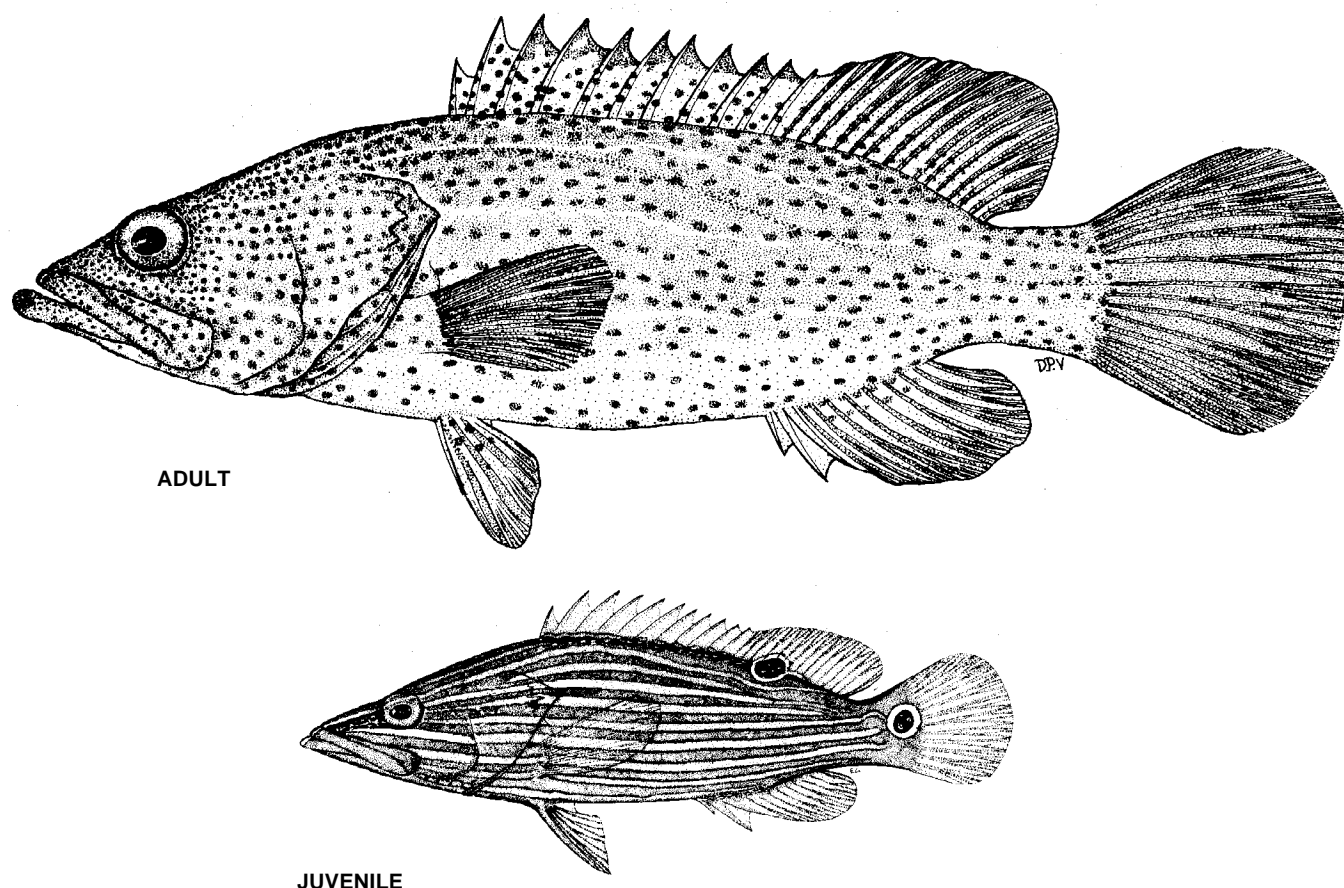
SERRAN Anyper 1

*Serranus leucogrammicus* Valenciennes in Cuv. and Val., 1828:347 (type locality: Seychelles).

**Synonyms:** *Serranus micronotatus* Rüppell, 1838:90 (type locality: Red Sea: Massaua [Mits'iwa] Ethiopia). *Serranus urophthalmus* Bleeker, 1855a:310 (type locality: Indonesia: Batu Archipelago).



**FAO Names:** En - Slender grouper; Fr - Mérou élégant; Sp - Mero elegante.



**Fig. 46** *Anyperodon leucogrammicus*

(adult 294 mm standard length, juvenile about 75 mm total length)

**Diagnostic Features:** Body and head elongate and markedly compressed, the depth distinctly less than head length and contained 3.1 to 3.7 times in standard length (for fish 10 to 40 cm standard length), the body width contained 2.3 to 2.8 times in the depth. Head pointed, its length contained 2.3 to 2.5 times in standard length; interorbital region narrow, slightly concave, flat or slightly convex; dorsal head profile almost straight; preorbital narrow, its depth contained 14 to 17 times in head length; snout distinctly longer than eye; preopercle rounded, finely serrate, the lower serrae only slightly enlarged, the lower edge fleshy; ventral edge of interopercle with a shallow indentation; opercular spines small, the upper edge of operculum distinctly convex; diameter of posterior nostrils about twice that of anterior nostrils; maxilla reaches well past eye, the exposed part covered with tiny cycloid scales; no bony process on rear end of maxilla; supramaxilla well developed; no teeth on palatines; canines at front of jaws rudimentary or absent; teeth at sides of lower jaw subequal, in 2 or 3 irregular rows. Gill rakers 7 to 9 on upper limb, 14 to 17 on lower limb, the longest gill raker subequal to longest gill filaments. Dorsal fin with XI spines and 14 to 16 rays, the fin origin over the opercle, the membranes distinctly incised between the spines; anal fin with III spines and 8 or 9 rays; soft dorsal and anal fins rounded; pectoral and pelvic fins small, subequal, their length contained 1.9 to 2.4 times in head length; pectoral fins thin, transparent and symmetrical; pelvic fins not reaching anus; caudal fin rounded, with 8 branched rays and 10 procurrent rays in upper part and 7 branched rays and 9 procurrent rays in lower part. Midlateral-body scales ctenoid, with auxiliary scales; lateral-line scales 61 to 72; lateral-scale series 106 to 125. Supraneural bones 2, the posterior one curving forward and situated dorsal to tip of first neural spine; no trisegmental pterygiophores; rear edge of first dorsal-fin pterygiophore deeply excavated for tip of third neural spine; epipleural ribs on vertebrae 1 to 10; cranium low, the greatest height about 3 times in its length; parietal and median supraoccipital crests inconspicuous, not reaching frontals; frontals with an anterior median depression for reception of the tips of the ascending processes of the premaxillae. **Colour:** Adults greenish to brownish grey with numerous orange-red spots on head, body, dorsal fin, and basally on caudal fin; 4 longitudinal whitish bands or series of streaks often visible on postorbital head and body; membranes of soft dorsal, anal, and caudal fins clear. Juveniles (less than 8 cm total length) with longitudinal, dark-edged, pale bluish grey stripes on a gold background; a blue-edged black spot (or double spot) at base of caudal fin and in dorsal fin; an elongate, blackish spot often present on each side of snout in front of nostrils.