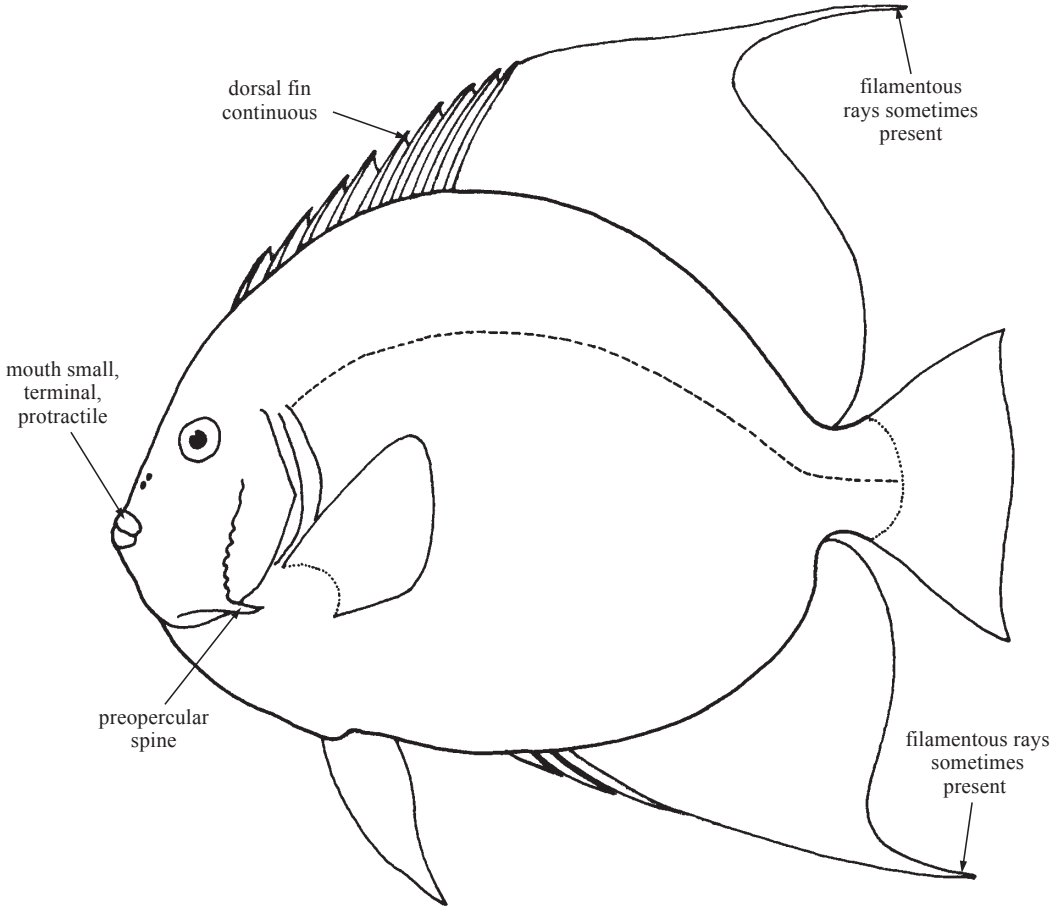
POMACANTHIDAE

Angelfishes

by W.E. Burgess, Red Bank, New Jersey, USA

Diagnostic characters: Small to medium-sized (7 to 45 cm) fishes with body deep, elongate-oval to orbicular, and strongly compressed. Snout never produced. **Mouth very small**, terminal, protractile, the gape not extending to rim of orbit; **teeth setiform, normally arranged in brush-like bands in jaws**. **Preopercle always with a strong spine at angle**. No procumbent spine at nape. Dorsal fin with 9 to 15 spines (in western Atlantic 9 or 10, or 14 or 15), and 15 to 37 soft rays (15 to 33 in western Atlantic species), continuous; soft portion of dorsal and anal fins sometimes greatly extended into filaments; anal fin always with 3 spines and 14 to 25 soft rays (17 to 25 in western Atlantic species); caudal fin rounded to lunate (rounded to emarginate in western Atlantic species), with 15 branched rays. Scales ctenoid, ribbed, small to moderate in size, rounded to angular in shape, extending onto soft portions of vertical fins; **no axillary scaly process at pelvic-fin base**. Lateral line complete or missing a few scales at downward curvature below soft dorsal fin. **Larval stage without tholichthys plates**. Vertebrae 10 + 14 = 24. **Colour:** brightly coloured fishes; predominantly black, yellow, and/or deep blue with orange and light blue hues; eyeband usually absent except in young; juveniles in several species completely differently coloured from adults, some with only minor differences.



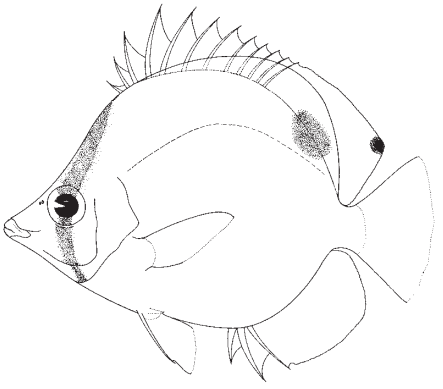
Habitat, biology, and fisheries: Angelfishes inhabit mostly shallow-water reef areas, but a number of species live at greater depths (particularly species of *Genicanthus* and *Centropyge*). They feed for the most part on invertebrates and vegetable matter. Adults have a tendency to eat sponges, as well as other benthic invertebrates; juveniles predominantly eat algae, but also search out small invertebrates. Juveniles of *Holacanthus* and *Pomacanthus* also are reported to be cleaners, removing ectoparasites from other fishes. Angelfishes are usually caught in traps. Although of minor commercial importance as a foodfish, almost every angelfish species is sought after for the aquarium trade.

Similar families occurring in the area

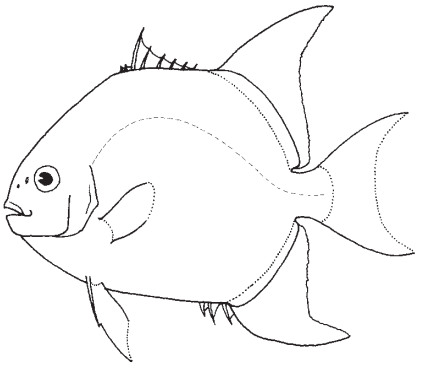
None of the similar families occurring in the area have a prominent spine at the corner of the preopercle. No tholichthys larvae. Spinous and soft-rayed dorsal fin continuous. No scaly axillary process at pelvic-fin base.

Chaetodontidae: no large spine at angle of preopercle; possess tholichthys larvae as well as scaly axillary process at the pelvic-fin base.

Ephippidae: spinous and soft-rayed dorsal fins distinct. No large spine at angle of preopercle. No tholichthys larvae.



Chaetodontidae



Ephippidae

Key to the genera of Pomacanthidae occurring in the area

1a. Dorsal-fin spines 9 or 10; dorsal and anal soft fins extended into filaments (Fig. 1); scales small to moderate, irregular in size and placement, more than 70 in lateral series; juveniles extremely different in colour and pattern from adults . . . . . ***Pomacanthus***

1b. Dorsal-fin spines 14 or 15; dorsal and anal fins extended into filaments or not (Fig. 2,3); scales moderate, regularly arranged, less than 50 in lateral series; juveniles may or may not differ in colour and pattern from adults. . . . . → *2*

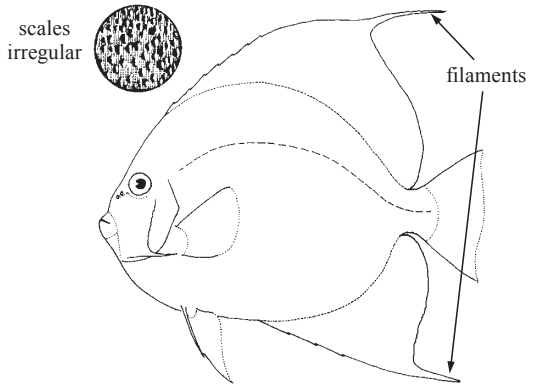


Fig. 1 ***Pomacanthus***

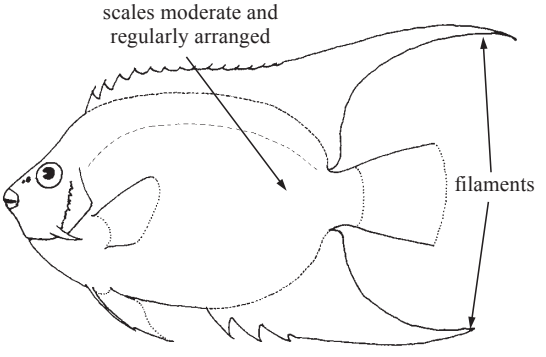


Fig. 2 ***Holacanthus***

2a. Dorsal and anal soft fins extend into filaments in adults (Fig. 2); hind margin of preorbital bone without enlarged, posteriorly-directed spines (Fig. 4a); moderate to large-sized fishes; juveniles differently coloured than adults, most greatly so . . . . . ***Holacanthus***

2b. Dorsal and anal fins not extended into filaments (Fig. 3); hind margin of preorbital bone with enlarged, strong, posteriorly-directed spines (Fig. 4b); small in size; juveniles similar to adults . . . . . ***Centropyge***

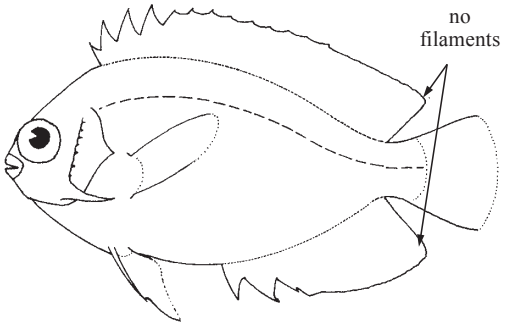


Fig. 3 ***Centropyge***

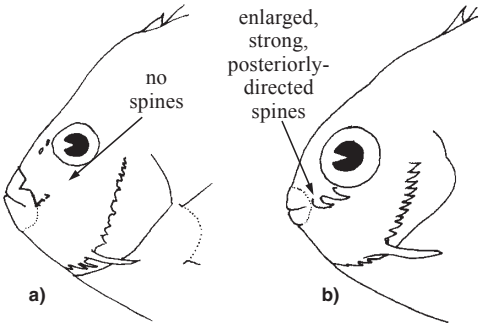


Fig. 4 lateral view of head

Key to the species of *Pomacanthus* occurring in the area

1a. Dorsal-fin spines 9, rays 31 to 33; adults: body scales (large and small) with large blackish, greyish, or brownish spot edged in light brown to straw colour; inside of pectoral fin yellowish, no yellow bar at base; juveniles: black with yellow bars; posterior caudal-fin edge clear; yellow stripe on forehead crosses mouth, ending on chin . . . . . ***Pomacanthus arcuatus***

1b. Dorsal-fin spines 10, rays 29 to 31; adults: body scales with golden yellow rim; pectoral-fin base with yellow bar; juveniles: black with yellow bars; caudal-fin edge bright yellow; yellow stripe on forehead ends at base of upper lip . . . . . ***Pomacanthus paru***

Key to the species of *Holacanthus* occurring in the area

1a. Anterior portion of body bright yellow, posterior black; juveniles bright yellow with large black spot ocellated in blue in posterior portion of body above midline . . . . . ***Holacanthus tricolor***

1b. Body not two-toned yellow and black; juveniles not solid yellow with black ocellated spot . . . . . → ***2***

2a. Adults: large black spot on nape bordered with blue and containing blue spots; caudal fin yellow; pectoral-fin base with large blue spot; upper corner of opercle blue; juveniles: body brownish yellow crossed by blue-white bars, the second of which is curved . . . ***Holacanthus ciliaris***

2b. Adults: no black spot on nape; caudal fin body colour and only edged with yellow; pectoral-fin base without large blue spot; upper corner of opercle same colour as head; juveniles: body brownish yellow crossed by blue-white bars, second bar is straight . . . . . ***Holacanthus bermudensis***

Key to the species of *Centropyge* occurring in the area

1a. Purplish blue with orangish chest and lower portion of head . . . . . ***Centropyge argi***

1b. Velvet blue to black; head and back to midsoft dorsal-fin yellow-orange . . ***Centropyge aurantonotus***

List of species occurring in the area

The symbol is given when species accounts are included.

Centropyge argi Woods and Kanazawa, 1951.
Centropyge aurantonotus Burgess, 1974.

Holacanthus bermudensis Goode, 1876.
Holacanthus ciliaris (Linnaeus, 1758).
Holacanthus tricolor (Bloch, 1795).

Pomacanthus arcuatus (Linnaeus, 1758).
Pomacanthus paru (Bloch, 1787).

References

Allen, G.R., R. Steene, and M. Allen. 1998. *A Guide to Angelfishes and Butterflyfishes*. Australia, Odyssey Publishing/Tropical Reef Research, 250 p.

Böhlke, J. and C.C.G. Chaplin. 1968. *Fishes of the Bahamas and Adjacent Tropical Waters*. Synnewood, Pennsylvania, Livingston Publishing Company, 771 p.

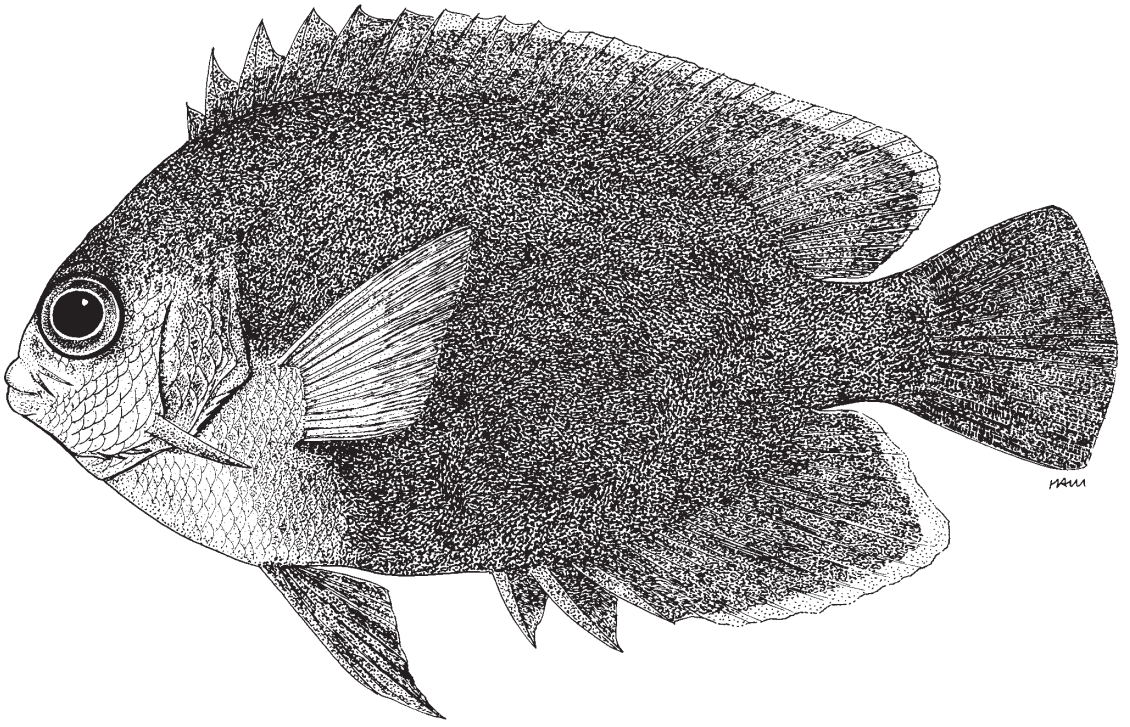
Randall, J.E. 1996. *Caribbean Reef Fishes, Third Edition.* Neptune City, New Jersey, T.F.H. Publications, Inc., 368 p.

Robins, C.R., G.C. Ray, and J. Douglass. 1986. *A Field Guide to Atlantic Coast Fishes of North America*. Boston, Haughton Mifflin Co., Inc., 354 p.

Centropyge argi Woods and Kanazawa, 1951

Frequent synonyms / misidentifications: None / None.

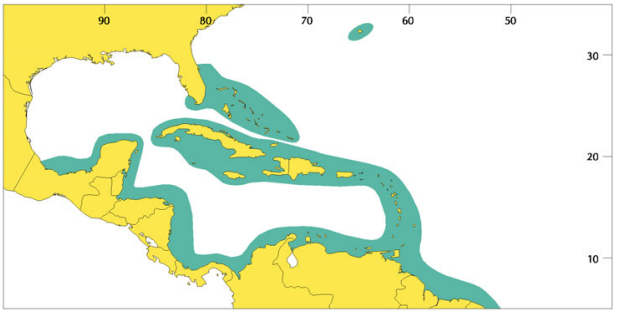
FAO names: En - Cherubfish.



Diagnostic characters: Body oval, not deep, 1.8 to 2.0 in standard length, slightly compressed. Snout short, mouth small, terminal, the teeth arranged in bands in the jaws. A large spine at angle of preopercle; **3 strong spines on preorbital, the posterior 2 enlarged and directed posteriorly**; and strong spine(s) on interopercle. **Dorsal fin with 14** (or 15) spines and (15 or) 16 soft rays; anal fin with 3 spines and 17 soft rays. Soft dorsal and anal fins with blunt angle, reaching about midway along caudal fin. **Caudal fin rounded.** Pectoral fins moderate, with 15 or 16 rays. **Scales in regular series**; lateral-line scales 32 to 34. Lateral line ending below rear portion of dorsal fin. There are **22 to 24 gill rakers** (16 to 19 in other species in the area). **Colour:** body mostly dark blue with light blue edge to vertical and pelvic fins; **head from about middle of eye downward and chest to insertion of ventral fins yellow-orange**, pectoral fins and lips yellow; eye circled with a blue ring; spine and spinules of preopercle blue; blue marking at corner of mouth; juveniles similar to adults.

Size: A small species attaining a length of about 5 cm.

Habitat, biology, and fisheries: Not uncommon in reef and rocky regions in warm waters. Prefers depths of 30 m or more, but can be found in moderate numbers in much shallower water. Moderately secretive and territorial, but inquisitive. Feeds on algae and tiny benthic invertebrates. Their value lies in the aquarium trade. Because of their small size they do well in “living reef” aquaria.



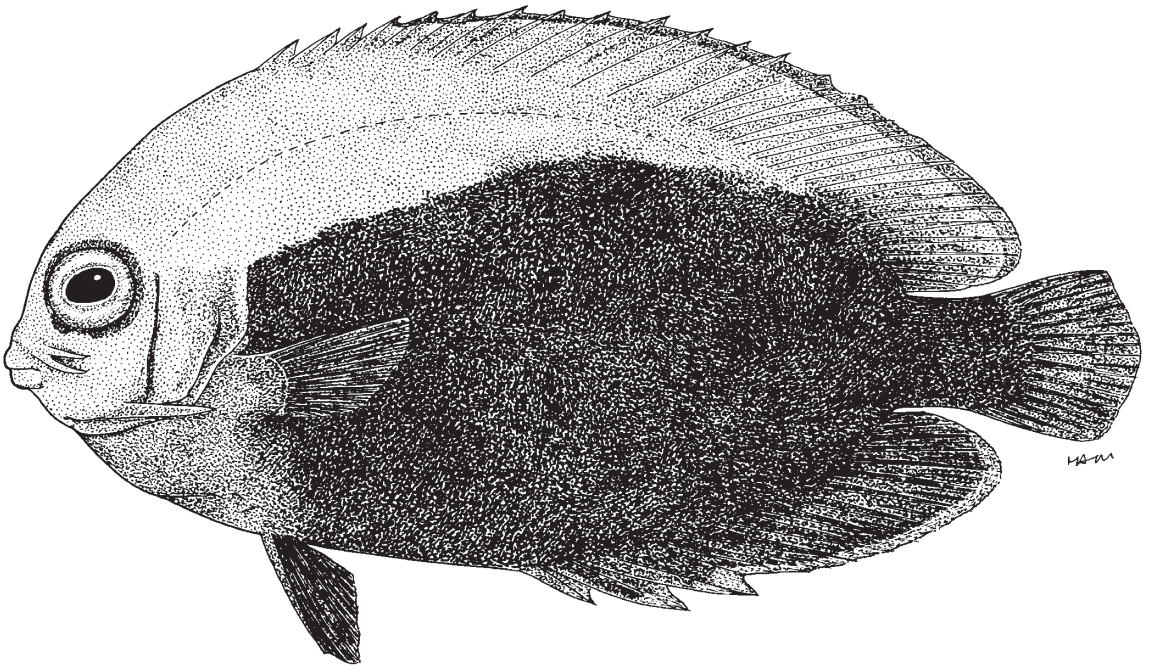
Distribution: Bermuda, Florida, the Bahamas, and southern Gulf of Mexico to northern South America.

Note: Commonly known as the Pygmy angelfish.

Centropyge aurantonotus Burgess, 1974

Frequent synonyms / misidentifications: None / None.

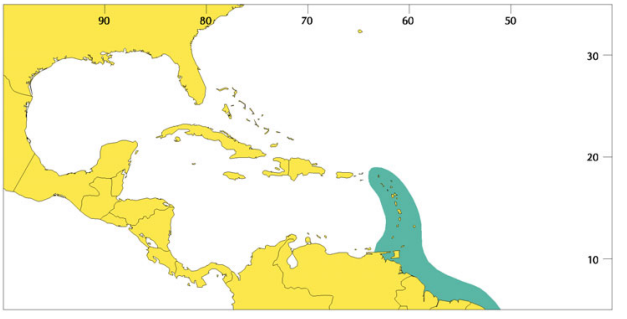
FAO names: En - Flameback angelfish.



Diagnostic characters: Body oval, not deep, 2.1 to 2.2 in standard length, slightly compressed. Snout short, mouth small, terminal, the teeth arranged in bands in the jaws. A large spine at angle of preopercle and a well-developed spine on the horizontal limb anterior to the large spine; **2 strong spines on preorbital**; and a small spine on the interopercle. Dorsal fin with 14 or 15 spines and 15 to 17 soft rays; anal fin with 3 spines and 17 soft rays. Soft dorsal and anal fins with rounded angle, reaching about a third of the way along caudal fin. Caudal fin rounded. Pectoral fins moderate, with 15 soft rays. **Scales in regular series**; lateral-line scales 34 to 36. **Colour:** body mostly deep blue, **head and back, including dorsal fin up to middle soft rays, yellow-orange**; pectoral fins yellow, other fins body colour; narrow blue stripe edges vertical fins and leading edge of ventral fins; blue ring surrounds eye; juveniles similarly coloured but yellow-orange extends more posteriorly on dorsal fin.

Size: To 6 cm.

Habitat, biology, and fisheries: Inhabits similar habitat as the Cherubfish, i.e., live reef and rubble rock areas. The species appears to be territorial, always maintaining a certain distance from their neighbors. The type specimen was collected in about 15 to 20 m deep in a patch of staghorn coral, but specimens have been taken in traps off St. Lucia in excess of 300 m. It has turned up in the aquarium trade, but not as frequently as the Cherubfish.



Distribution: Lesser Antilles and Curaçao, extending to southern Brazil.

Notes: The sister species of *C. aurantonotus* is not *Centropyge argi* but *Centropyge acanthops* from South Africa. This species is similarly coloured but the yellow-orange of the back includes the entire dorsal fin. In addition the caudal fin is yellow compared with the dark blue caudal fin of *C. aurantonotus*.