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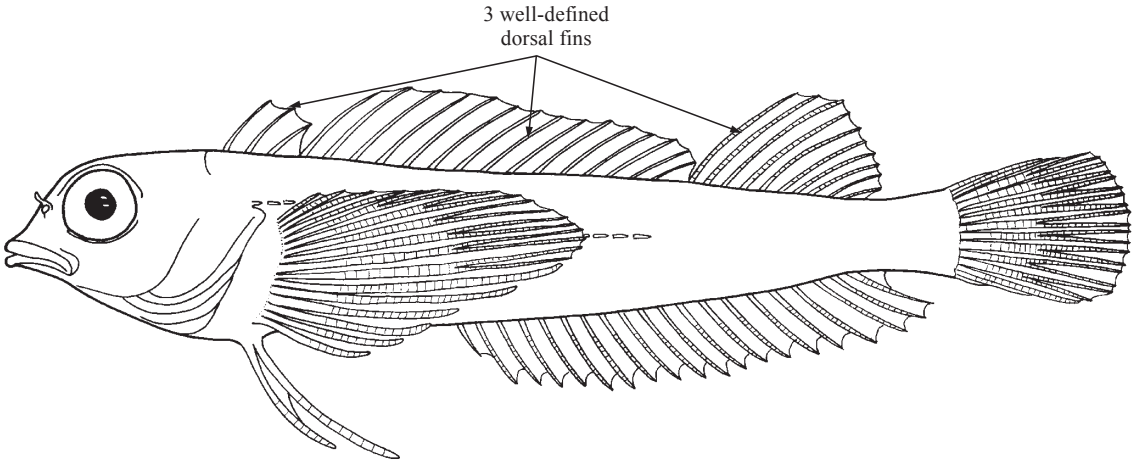
Suborder BLENNIOIDEI

TRIPTERYGIIDAE

Triplefins

by J.T. Williams, National Museum of Natural History, Washington, D.C., USA

Diagnostic characters: Small, slender fishes, largest specimens about 3.5 cm standard length, most under 2.5 cm standard length. Cirri often present on top of eye and on rim of anterior nostril; upper and lower jaws each with broad band of conical teeth. **Three well-defined dorsal fins; first with 3 spines, second with 10 to 13 spines, third with 7 to 10 segmented rays; last dorsal-fin spine and first segmented ray borne on separate pterygiophores**. Caudal fin with 13 segmented rays, 9 of which are branched; pelvic fin with 2 simple segmented rays and 1 embedded spine, inserted anterior to pectoral-fin base. **Ctenoid scales on body**; pectoral-fin base and belly naked or covered with cycloid scales; lateral line interrupted at midbody, anterior lateral-line scales pored, posterior scales notched. **Colour:** body with brown or black bars on a pale (often red) background.



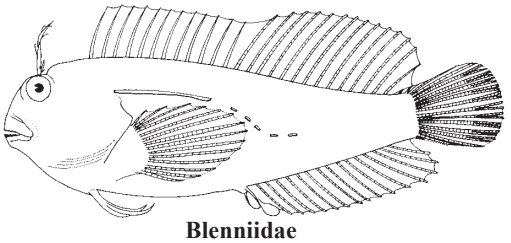
Habitat, biology, and fisheries: Benthic, coastal fishes, usually living at very shallow depths, but some species occur at depths to about 30 m; found on rock and coral reefs. Of no commercial importance because of their small size and drab coloration.

Remarks: There are at least 4 undescribed species of *Enneanectes* in the Western Central Atlantic. All of these will key to *Enneanectes boehlkei*. The genus is in need of taxonomic revision.

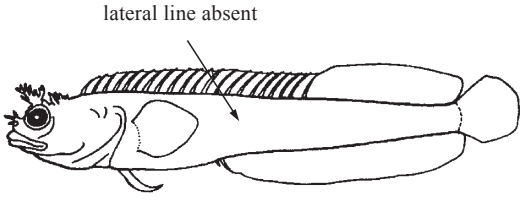
Similar families occurring in the area

Blenniidae: body without scales.

Chaenopsidae: body without scales (cycloid scales on one species of *Stathmonotus*); lateral line absent.



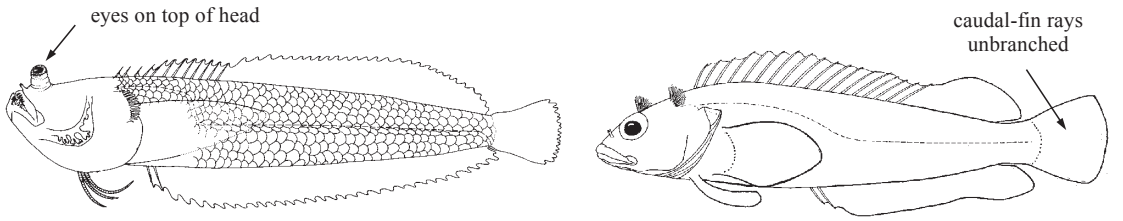
Blenniidae



Chaenopsidae

Dactyloscopidae: body with cycloid scales; eyes on top of head, facing upwards; gill covers overlapping ventrally, and filamentous lobes present on posterior edge of gill covers.

Labrisomidae: body with cycloid scales; caudal-fin rays always unbranched.



Dactyloscopidae **Labrisomidae**

Key to the described species of Tripterygiidae occurring in the area

1a. Pectoral-fin base and belly scaled; dorsum and pectoral-fin axil with enlarged scales; segmented anal-fin rays usually 15 . . . . . → ***2***

1b. Pectoral-fin base and belly without scales; no enlarged scales on dorsum or in pectoral-fin axil; segmented anal-fin rays usually 16 . . . . . → ***4***

2a. Pectoral-fin soft rays usually 14; pored lateral-line scales usually 11 . . . . . ***Enneanectes altivelis***

2b. Pectoral-fin soft rays usually 15; pored lateral-line scales usually 13 . . . . . → ***3***

3a. Anal fin uniformly pigmented; cheek behind eye naked or with 1 or 2 small cycloid scales . . . . . ***Enneanectes jordani***

3b. Anal fin with 6 or 7 bars; cheek behind eye with 3 to 8 small ctenoid scales . . ***Enneanectes pectoralis***

4a. Pored lateral-line scales 11 to 13 . . . . . ***Enneanectes atrorus***

4b. Pored lateral-line scales 14 to 17 . . . . . ***Enneanectes boehlkei***

List of species occurring in the area

Note: Lengths are in standard length. At least 4 undescribed species are not included below.

Enneanectes altivelis Rosenblatt, 1960. To 30 mm. Caribbean to SE Florida.
Enneanectes atrorus Rosenblatt, 1960. To 33 mm. Caribbean.
Enneanectes boehlkei Rosenblatt, 1960. To 30 mm. Caribbean to SE Florida.
Enneanectes jordani (Evermann and Marsh, 1899). To 30 mm. Caribbean.
Enneanectes pectoralis (Fowler, 1941). To 30 mm. Caribbean to SE Florida.

References

Böhlke, J.E. and C.C.G. Chaplin. 1968. *Fishes of the Bahamas and adjacent Tropical waters*. Wynnewood, Pennsylvania, Livingston Publishing Company, 771 p.

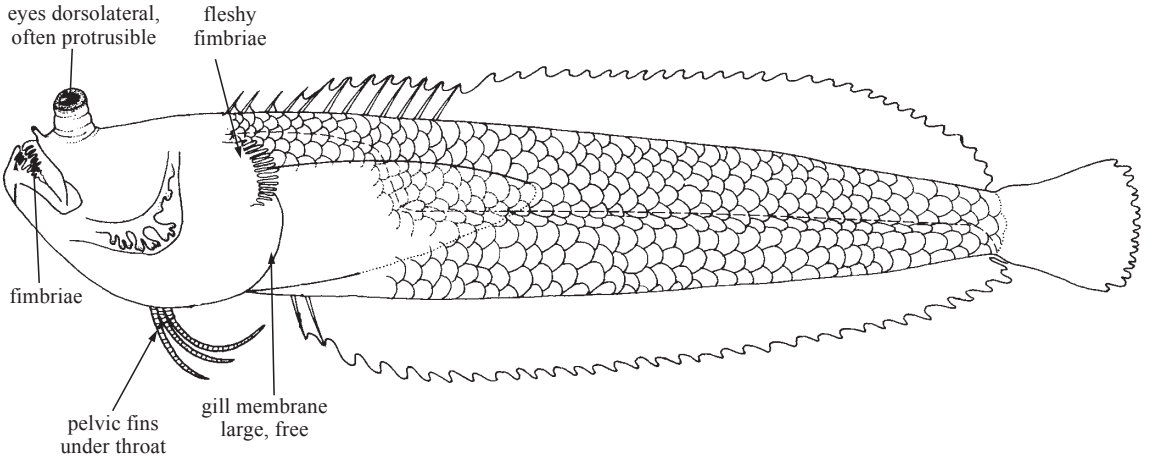
Rosenblatt, R.H. 1960. The Atlantic species of the blennioid fish genus *Enneanectes*. *Proc. Acad. Nat. Sci. Philadelphia,* 112(1):1-23.

DACTYLOSCOPIDAE

Sand stargazers

by J.T. Williams, National Museum of Natural History, Washington, D.C., USA

Diagnostic characters: Small, elongate fishes, largest reaching about 15 cm, most species under 7.5 cm. Head usually broad and deep, body tapering and compressed behind. **Eyes on top of head, often protrusible; mouth moderate to large, oblique to vertical; upper and/or lower lips with fimbriae** (except *Leurochilus* and *Gillellus*); jaw teeth minute, in 2 or more series; no teeth on roof of mouth (vomer and palatines). **Opercular opening large, gill membrane free from isthmus; opercles membranous, large, usually overlapping on underside of head, typically fringed above with 2 to 24 fleshy fimbriae**. Dorsal fin continuous, with an isolated or semi-isolated anterior finlet, or with 1 to 5 separate anterior rays; **dorsal-fin spines 7 to 23**; anal-fin spines 2; dorsal and anal fins free or united to caudal fin by fragile membranes; pectoral fins broad-based, usually enlarged in mature males; caudal-fin rays simple or branched; **pelvic fins under throat (insertion anterior to pectoral-fin base), with 1 spine and 3 thickened segmented rays**; all other rays simple. Head and venter naked (except the latter scaled in *Platygillellus*), body elsewhere with large cycloid scales (smooth to touch); lateral line high anteriorly, deflecting ventrally behind pectoral fin to continue along middle of side to caudal-fin base where terminal lateral-line scale bears ventrally directed canal. **Colour:** variably pale to strongly pigmented with white, brown, or reddish; some forms with characteristic saddle-like bars crossing back; others plain, mottled, or with indications of lateral stripes.

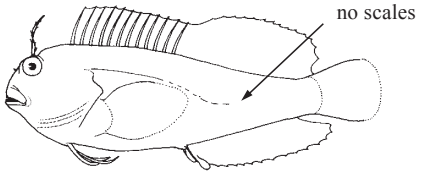


Habitat, biology, and fisheries: Sand stargazers commonly inhabit coarse sand substrates with only mouth and eyes exposed; most species are strictly marine but a few enter estuaries or lower reaches of rivers; males of several genera carry incubating egg-clusters beneath their enlarged and modified pectoral fins. Sand stargazers occur from the intertidal zone to depths of at least 137 m. Often locally abundant, but apparently not regularly marketed in the area. They may occur in seine and trawl catches over sand bottoms.

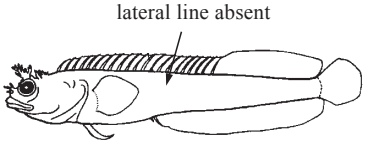
Similar families occurring in the area

Blenniidae: body without scales.

Chaenopsidae: lateral line absent; usually more dorsal-fin spines than segmented rays (except *Chaenopsis*).



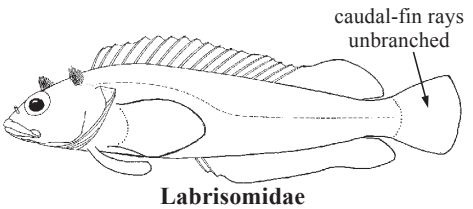
Blenniidae



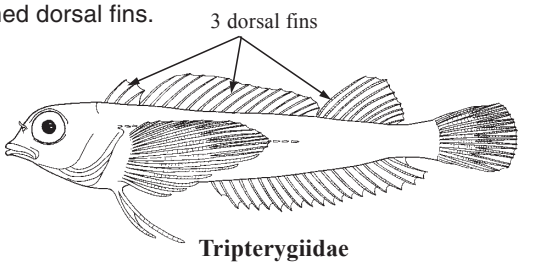
Chaenopsidae

Labrisomidae: eyes on sides of head; caudal-fin rays always unbranched; more dorsal-fin spines than segmented rays.

Tripterygiidae: body with ctenoid scales; 3 clearly defined dorsal fins.

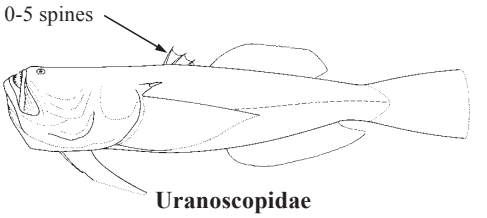


Labrisomidae



Tripterygiidae

Uranoscopidae: dorsal-fin spines 0 to 5; pelvic fins with 1 spine and 5 segmented rays; teeth present on roof of mouth.



Uranoscopidae

Key to species of Dactyloscopidae occurring in the area

(Modified from Dawson, 1982)

1a. Dorsal-fin origin on nape . . . . . → *2*

1b. Dorsal-fin origin behind nape, near vertical from anal-fin origin . . . . . → *15*

2a. Dorsal fin without a distinct anterior finlet; first preopercular canal branched, with 2 or more distal pores (Fig. 1a) . . . . . → *3*

2b. Dorsal fin with an isolated or semi-isolated anterior finlet; first preopercular canal not branched, with a single distal pore (Fig. 1b) . . . . → *9*

3a. Posterior naris (a single pore) located on anterior rim of preorbital, adjacent to base of tubiform anterior naris; premaxillary pedicels reach well past rear margins of orbits . . . . . →*4*

3b. Posterior naris (a patch of 1 to 8 pores) located on preorbital, between tubiform anterior naris and eye; premaxillary pedicels usually not reaching past rear margins of orbits . . . . . *Dactyloscopus crossotus*

4a. Expanded eyestalk long and slender (Fig. 1a) . . . . . *Dactyloscopus tridigitatus*

4b. Expanded eyestalk not exceptionally long and slender (Fig. 1b) . . . . . → *5*

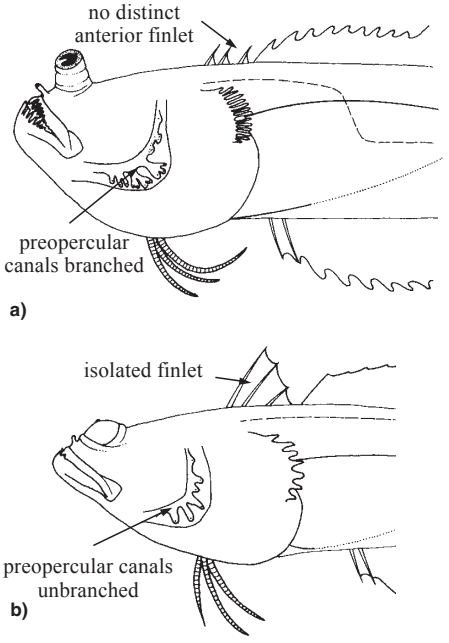


Fig. 1 lateral veiw of head

5a. Dorsal-fin spines usually 10 . . . . . → *6*

5b. Dorsal-fin spines usually 11 to 13 . . . . . → *7*

6a. Total dorsal-fin elements 39 to 41 (usually 40); segmented anal-fin rays 32 or 33 . . . . . *Dactyloscopus boehlkei*

6b. Total dorsal-fin elements 40 to 42 (usually 41); segmented anal-fin rays 33 or 34 . . . . . *Dactyloscopus foraminosus*

7a. Segmented anal-fin rays 30 to 35 (usually 31 to 34); upper lip fimbriae usually 13 to 17; eye without a distal ring of translucent spots or dermal flaps . . . . . → ***8***

7b. Segmented anal-fin rays 28 to 30 (usually 31 to 34); upper lip fimbriae usually 10 to 13; eye with a distal ring of translucent spots or dermal flaps . . . . . ***Dactyloscopus comptus***

8a. No scales on nape anterior to first dorsal-fin spine base . . . . . ***Dactyloscopus poeyi***

8b. Two to 4 rows of scales on each side of nape anterior to first dorsal-fin spine base (midline of nape naked) . . . . . ***Dactyloscopus moorei***

9a. Upper lip without fimbriae . . . . . → ***10***

9b. Upper lip with fimbriae. . . . . → ***14***

10a. Segmented caudal-fin rays usually 10; arched lateral-line scales 22 to 33 . . . . . → ***11***

10b. Segmented caudal-fin rays usually 11; arched lateral-line scales 14 to 17. . . . . ***Leurochilus acon***

11a. Dorsal-fin spines 11 to 15 . . . . . → ***12***

11b. Dorsal-fin spines 17 to 20 . . . . . → ***13***

12a. Segmented dorsal-fin rays 14 to 17 . . . . . ***Gillellus uranidea***

12b. Segmented dorsal-fin rays 27 to 29 . . . . . ***Gillellus healae***

13a. Segmented anal-fin rays 28 to 30; lower lip fimbriae 2 to 4; straight lateral-line scales 18 or 19 . . . . . ***Gillellus jacksoni***

13b. Segmented anal-fin rays 31 to 35; lower lip fimbriae 4 to 16 (usually 5 to 11; straight lateral-line scales 22 to 25 . . . . . ***Gillellus greyae***

14a. Anterior dorsal finlet with 3 spines; segmented anal-fin rays 23 to 27. . . ***Platygillellus rubrocinctus***

14b. Anterior dorsal finlet with 4 spines; segmented anal-fin rays 22. . . . . ***Platygillellus smithi***

15a. Lower jaw narrowly rounded in dorsal aspect, conical and strongly protruding in front . . . . . ***Myxodagnus belone***

15b. Lower jaw broadly rounded in dorsal aspect, neither conical nor strongly protruding in front . . . . . ***Dactylagnus peratikos***

List of species occurring in the area

Dactylagnus peratikos Böhlke and Caldwell, 1961. 66 mm. Costa Rica and Panama.

Dactyloscopus boehlkei Dawson, 1982. 55 mm. Bahamas.
Dactyloscopus comptus Dawson, 1982. 39 mm. Bahamas, Puerto Rico, Virgin Islands.
Dactyloscopus crossotus Starks, 1913. 63 mm. Caribbean to SE Florida.
Dactyloscopus foraminosus Dawson, 1982. 74 mm. S Florida and Brazil.
Dactyloscopus moorei (Fowler, 1906). 75 mm. North Carolina to Key West, Cape Sable, Florida to Texas.
Dactyloscopus poeyi Gill, 1861. 67 mm. Caribbean.
Dactyloscopus tridigitatus Gill, 1859. 75 mm. S Florida and Caribbean to Brazil.

Gillellus greyae Kanazawa, 1952. 78 mm. Brazil and Caribbean to SE Florida.
Gillellus healae Dawson, 1982. 55 mm. South Carolina to Pensacola, Florida, and Aruba.
Gillellus jacksoni Dawson, 1982. 25 mm. Lesser Antilles.
Gillellus uranidea Böhlke, 1968. 37 mm. Caribbean to SE Florida.

Leurochilus acon Böhlke, 1968. 21 mm. Bahamas to Antigua.

Myxodagnus belone Böhlke, 1968. 57 mm. Bahamas and Puerto Rico

Platygillellus rubrocinctus (Longley, 1934). 47 mm. Caribbean to SE Florida.
Platygillellus smithi Dawson, 1982. 34 mm. Bahamas.

Reference

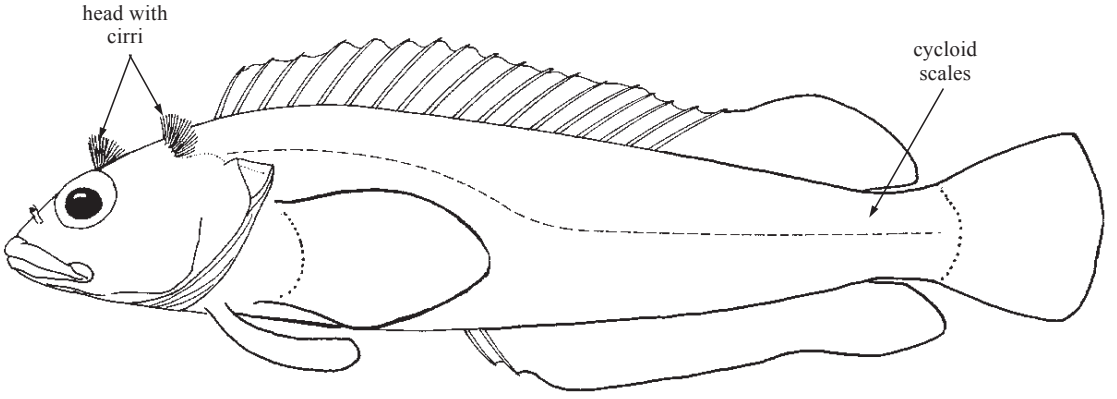
Dawson, C.E. 1982. Atlantic sand stargazers (Pisces: Dactyloscopidae), with description of one new genus and seven new species. *Bull. Mar. Sci*., 32(1):14-85.

LABRISOMIDAE

Labrisomids

by J.T. Williams, National Museum of Natural History, Washington, D.C., USA

Diagnostic characters: Small, often elongate fishes; largest species about 20 cm standard length, most under 10 cm standard length. **Head usually with cirri or fleshy flaps on anterior nostrils, eyes, and laterally on nape**; gill membranes continuous with each other across posteroventral surface of head. Each jaw with an outer row of relatively large, canine-like or incisor-like teeth, often with patches of smaller teeth behind; teeth usually also present on vomer and often on palatines (roof of mouth). Dorsal and anal fins long, frequently highest anteriorly; **dorsal-fin spines often flexible, outnumbering segmented dorsal-fin soft rays**; 2 usually flexible spines in anal fin; **pelvic fins** inserted anterior to pectoral-fin bases, **with 1 spine not visible externally and only 2 or 3 segmented rays; all fin rays, including those of caudal, unbranched (simple)**. Lateral-line tubes or canals varying from complete (extending entire length of body) to present only on anterior portion of body (absent in 1 species). **Cycloid (smooth to touch) scales present at least posteriorly on body. Colour:** varying from drab to brilliant hues; usually with irregular vertical bands, spots, or marbled pattern.

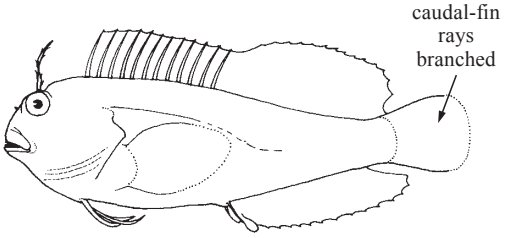


Habitat, biology, and fisheries: Benthic inhabitants usually dwelling in holes and restricted to rocky, shelly, or coral reefs in shallow water, a few species in marine grass beds or sponges; a few species in deep water. The larvae, which are scaleless and often cirriless, are often misidentified as Blenniidae. The presence of more spines than rays in the dorsal fin of all labrisomids is an aid to identification. Labrisomids have no commercial importance in Area 31. They are, however, very abundant in certain localities and some of the larger species are caught, usually on hook-and-line, around jetties. They are edible, but rarely consumed.

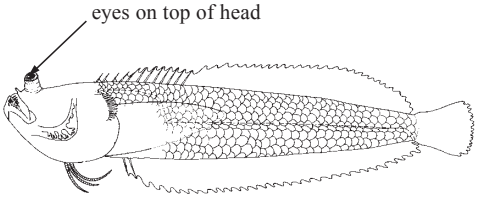
Similar families occurring in the area

Blenniidae: caudal-fin rays branched in all but 1 species (always simple in Labrisomidae); scales always absent; segmented dorsal-fin rays always more numerous than spines.

Dactyloscopidae: eyes on top of head, facing upwards; gill covers overlapping ventrally and filamentous lobes present on posterior edge of gill covers.



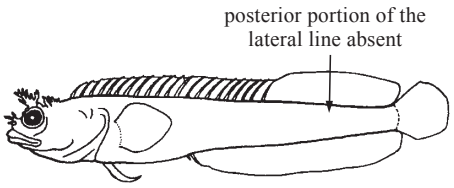
Blenniidae



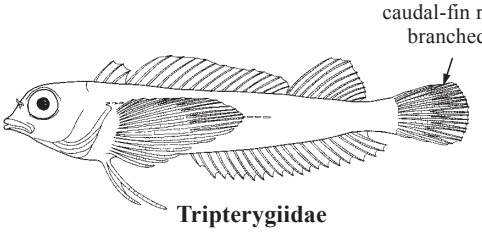
Dactyloscopidae

Chaenopsidae: at least posterior portion of lateral line absent; scales lacking (present on 1 species of *Stathmonotus*).

Tripterygiidae: caudal-fin rays branched; usually 3 clearly defined dorsal fins, posteriormost dorsal-fin spines always completely separated from soft rays; scales ctenoid (rough to touch).



Chaenopsidae



Tripterygiidae

Key to the species of Labrisomidae occurring in the area

1a. Dorsal-fin elements consisting either of spines only or spines and 1 segmented ray . . . . . → ***2***

1b. Dorsal fin consisting of spines and 7 to 37 segmented rays . . . . . → ***9***

2a. Prominent median fleshy barbel on chin . . . . . ***Paraclinus barbatus***

2b. No median fleshy barbel on chin . . . . . → ***3***

3a. Nuchal cirrus absent . . . . . ***Paraclinus infrons***

3b. Nuchal cirrus present on both sides of nape . . . . . → ***4***

4a. Pelvic fin with 1 spine and 3 soft rays (Fig. 1a); last dorsal-fin element segmented . . . . . → ***5***

4b. Pelvic fin with 1 spine and 2 soft rays (Fig. 1b); last dorsal-fin element spinous . . . . . → ***7***

5a. Orbital cirrus long, broad, often fringed, reaching to or beyond dorsal-fin origin . . . . . ***Paraclinus grandicomis***

5b. Orbital cirrus short, not reaching dorsal-fin origin . . . . . → ***6***

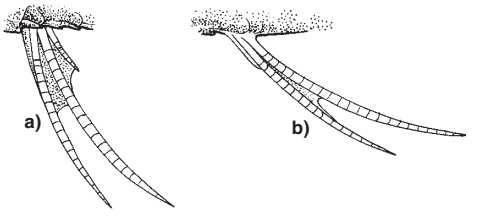


Fig. 1 pelvic-fin rays

6a. Opercular spine ending in 2 to 8 points (Fig. 2a, b), not reaching vertical through base of third dorsal-fin spine . . . . . ***Paraclinus nigripinnis***

6b. Opercular spine ending in 1 point (Fig. 2c), reaching vertical through base of third dorsal-fin spine . . . . . ***Paraclinus marmoratus***

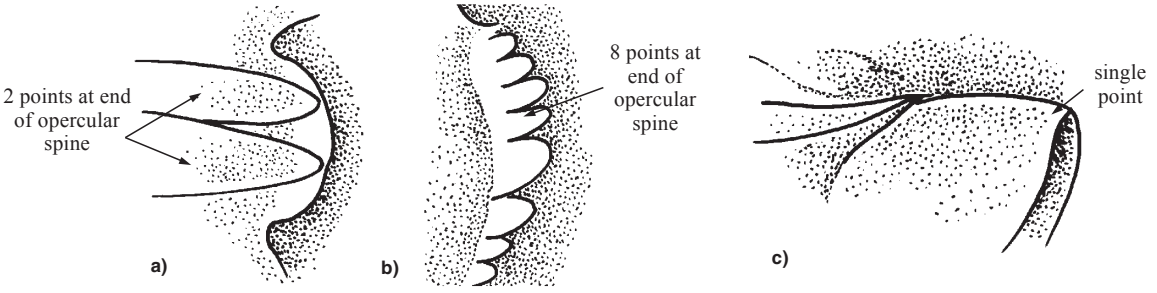


Fig. 2 opercular spine

7a. Pectoral-fin soft rays usually 12; no scales on pectoral-fin base . . . . . ***Paraclinus cingulatus***
7b. Pectoral-fin soft rays usually 13; scales on pectoral-fin base . . . . . → ***8***

8a. Dorsal-fin spines 28 to 31; lateral line with 32 to 38 scales . . . . . ***Paraclinus fasciatus***
8b. Dorsal-fin spines 26 or 27; lateral line with 29 to 31 scales . . . . . ***Paraclinus naeorhegmis***

9a. No lateral-line tubes or canals on body (Fig. 3) . . . . . ***Haptoclinus apectolophus***
9b. Lateral-line tubes or canals present at least anteriorly on body . . . . . → ***10***

10a. Two or more cirri on each side of nape just anterior to dorsal-fin origin (1 cirrus on each side in one species of *Malacoctenus*, which has 15 pectoral-fin rays and lacks palatine teeth); pelvic-fin soft rays 3 (innermost ray may be reduced in length and folded over middle ray); scales in lateral-line series 40 to 69 (some scales in posterior portion of lateral line may lack sensory tubes, but are included in count) . . . . → ***11***

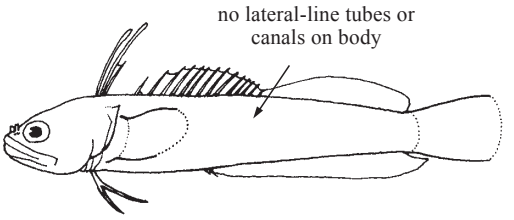


Fig. 3 ***Haptoclinus***

10b. Only 1 or no cirrus on each side of nape; pelvic-fin soft rays 2 (3 in one species of *Starksia*, which is distinguished by having palatine teeth and a single cirrus on each side of nape); scales in lateral-line series usually 35 to 41 (some species with fewer) . . . . . → ***30***

11a. Maxillary bone exposed posteriorly (Fig. 4a); patches of small teeth behind outer row of large teeth in at least upper jaw; teeth present or absent on palatines . . . . . → ***12***
11b. Maxillary bone sheathed (Fig. 4b); small teeth behind outer row of large teeth in each jaw absent in most species; teeth absent on palatines . . . . . → ***23***

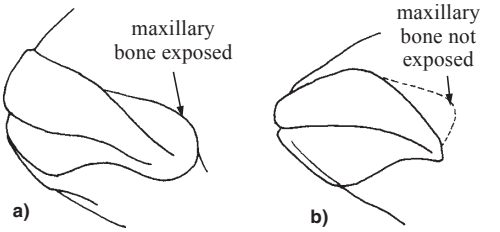


Fig. 4 lateral view of mouth

12a. Palatine teeth present, some distinctly larger than those on vomer (in some *L. haitiensis* teeth may be about equal in size, but these specimens will have 14 pectoral-fin rays) . . . . . → ***13***
12b. Palatine teeth, when present, same size as or smaller than those on vomer . . . . . → ***21***

13a. Length of shortest pelvic-fin ray (Fig. 1a) half, or less than half, length of longest ray; pectoral-fin rays usually 14 . . . . . ***Labrisomus haitiensis***
13b. Length of shortest pelvic-fin ray more than half length of longest ray; pectoral-fin rays usually 13 . . . . . → ***14***

14a. Dorsal-fin spines usually 20; segmented anal-fin rays usually 20; peritoneum uniformly dusky grey to black . . . . . ***Labrisomus bucciferus***
14b. Dorsal-fin spines usually 19, segmented anal-fin rays usually 19; peritoneum white with scattered large melanophores . . . . . → ***15***

15a. Specimens longer than 40 mm . . . . . → *16*
15b. Specimens 28 to 40 mm . . . . . → *18*

16a. Symphyseal mandibular pores 2 . . . . . *Labrisomus kalisherae*
16b. Symphyseal mandibular pores more than 2 . . . . . → *17*

17a. Opercular ocellus well developed . . . . . *Labrisomus guppyi*
17b. Opercular ocellus absent . . . . . *Labrisomus gobio*

18a. Opercular ocellus absent . . . . . → *19*
18b. Opercular ocellus well developed . . . . . → *20*

19a. Dorsal and anal fins pale or with very faint markings . . . . . *Labrisomus gobio*
19b. Dorsal and anal fins usually heavily spotted . . . . . *Labrisomus kalisherae*

20a. Gill rakers on first arch usually 11 . . . . . *Labrisomus kalisherae*
20b. Gill rakers on first arch usually 13 or 14 . . . . . *Labrisomus guppyi*

21a. Opercular ocellus absent . . . . . *Labrisomus albigenys*
21b. Opercular ocellus well developed . . . . . → *22*

22a. Palatine teeth absent . . . . . *Labrisomus nigricinctus*
22b. Palatine teeth present . . . . . *Labrisomus nuchipinnis*

23a. Length of shortest pelvic-fin ray (third ray very difficult to see) contained 4 or more times in length of longest ray; pectoral-fin rays usually 15 . . . . . *Malacoctenus boehlkei*
23b. Length of shortest pelvic-fin ray (third ray very difficult to see) contained fewer than 4 times in length of longest ray; pectoral-fin rays 14 to 17 . . . . . → *24*

24a. Pectoral-fin rays usually 15 to 17; small teeth present behind large teeth in outer row (small teeth inconspicuous and easily knocked out while probing); pectoral-fin base scales, when present, same size as those on body . . . . . → *25*
24b. Pectoral-fin rays usually 14; no small teeth behind large teeth in outer row; pectoral-fin base scales, when present, smaller than those on body . . . . . → *26*

25a. Cirri on anterior nostril and above eye usually 2; pectoral-fin rays usually 16; pectoral-fin base naked; distinct, dark blotch at bases of posteriormost dorsal-fin spines . *Malacoctenus erdmani*
25b. Pectoral-fin rays usually 15; pectoral-fin base usually with scales; no distinct black blotch at bases of posteriormost dorsal-fin spines . . . . . *Malacoctenus macropus*

26a. Combination of conspicuous dark spot on anterior dorsal-fin spines and a dark ocellus extending from bases of posterior dorsal-fin spines onto dorsal contour of body; nasal cirri 1 . . . . . *Malacoctenus gilli*
26b. Combination of conspicuous dark spot on anterior dorsal-fin spines and a dark ocellus extending from bases of posterior dorsal-fin spines onto dorsal contour of body not present; nasal cirri usually 2 . . . . . → *27*

27a. Dorsal-fin spines usually 18; total nasal cirri (both sides) usually more than 7 . . . . . *Malacoctenus versicolor*
27b. Dorsal-fin spines usually 19; total nasal cirri (both sides) usually fewer than 6 . . . . . → *28*

28a. Supraorbital cirri 2 on each side, nape cirri 9 to 13 on each side; anterior 2 dark bands often merging dorsally to form a humeral blotch; lateral-line scales 42 to 55 . . . ***Malacoctenus aurolineatus***

28b. Supraorbital cirri usually more than 2 on each side (some *M. triangulatus* with 2), nape cirri 4 to 18 on each side; lateral-line scales 48 to 62 . . . . . → ***29***

29a. Total nape cirri (both sides) 24 to 36, pectoral-fin base naked . . . . . ***Malacoctenus delalandei***

29b. Total nape cirri (both sides) usually fewer than 21, pectoral-fin base with or without scales . . . . . ***Malacoctenus triangulatus***

30a. Pectoral-fin rays 12; no cirrus on anterior nostril; central pectoral-fin rays elongated, filamentous (Fig. 5); first anal-fin spine of males shorter than second spine; known only from depths greater than 25 m . . . . . ***Nemaclinus atelestos***

30b. Pectoral-fin rays usually 13 or 14; cirrus present on anterior nostril; pectoral-fin rays not elongated or filamentous; first anal-fin spine of males longer than second; usually lives at depths shallower than 20 m . . . . . → ***31***

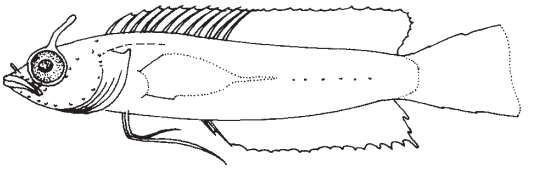


Fig. 5 ***Nemaclinus atelestos***

31a. No orbital cirrus; prominent dark spot, about 3/4 eye diameter, covering bases of posterior segmented dorsal-fin rays and extending onto dorsal profile of body . . . . . ***Starksia atlantica***

31b. A simple cirrus present above each eye; dark spot, if present at bases of posterior segmented dorsal-fin rays, smaller than 1/2 eye diameter . . . . . → ***32***

32a. Pelvic fin with 3 externally obvious segmented rays (inner ray is reduced and difficult to discern, its length 3 to 4 times in length of longest ray); body with alternating dark and pale bars, pale bars narrow with line of small melanophores down the centre . . . . . ***Starksia hassi***

32b. Pelvic fin with 2 externally obvious segmented rays; body coloration variable, if dark and pale bars present, pale bars lack narrow line of small melanophores down the centre . . . . . → ***33***

33a. Belly completely scaled . . . . . → ***34***

33b. Belly naked or with less than posterior third scaled . . . . . → ***35***

34a. Body with 8 or 9 irregular dark bars (often appearing as dark blotches), mid-lateral portion of dark bars may coalesce into broad, broken lateral stripe; anal fin usually with 2 spines and 19 soft rays; segmented dorsal-fin rays usually 9 . . . . . ***Starksia starcki***

34b. Body usually pale, when bars present, pale bars narrow and not contrasting markedly with dark bars; anal fin usually with 2 spines and 17 soft rays; segmented dorsal-fin rays usually 8 . . . . . ***Starksia lepicoelia***

35a. Arched lateral-line scales usually 13; pair of broad, hypural-shaped dark blotches at base of caudal fin (narrower blotches present on *S. elongata*) . . . . . ***Starksia nanodes***

35b. Arched lateral-line scales usually 15 or more; pair of broad, hypural-shaped dark blotches not present at base of caudal fin . . . . . → ***36***

36a. Pectoral-fin rays usually 13; dorsal-fin spines usually 19 or 20; arched lateral-line scales usually 15, scales in straight portion of lateral line usually 19 . . . . . → ***37***

36b. Pectoral-fin rays usually 14; dorsal-fin spines usually 21; arched lateral-line scales usually 17 or 18, scales in straight portion of lateral line usually 20 to 22 . . . . . → ***39***

37a. Body with 7 dark bars separated by broad, pale interspaces . . . . . ***Starksia fasciata***

37b. Colour pattern not as above . . . . . → ***38***

38a. Body with 3 rows of dark blotches on a pale background, the middle row with round blotches, dorsal-row and ventral-row blotches squarish (ventral blotches faint) . . . . ***Starksia sluiteri***

38b. Upper 2/3 of body with series of narrow pale, Y-shaped markings on dark background . . . . . ***Starksia y-lineata***

39a. Body pale with 7 narrow dark bars (each dark bar about half as large as adjacent pale interspace) . . . . . ***Starksia elongata***

39b. Body generally brownish with darker spots, blotches, or broken bars . . . . . → ***40***

40a. Lips uniformly pigmented with scattered melanophores . . . . . → ***41***

40b. Lips with distinct black vertical bars . . . . . → ***42***

41a. Sides of head with small, darkly outlined pale spots, most overlying a broad pale area extending from posterior edge of orbit to preopercle . . . . . ***Starksia ocellata***

41b. Sides of head with or without small dark spots; broad pale area extending posteriorly from edge of orbit, usually branching into a Y-shape over preopercle . . . . . ***Starksia guttata***

42a. Side of head without spots; broad, unbranched pale area extending from posterior edge of orbit onto preopercle . . . . . ***Starksia culebrae***

42b. Side of head spotted; broad, pale area posterior to orbit either reticulated or branched over preopercle . . . . . → ***43***

43a. Side of head with pale Y-shaped bar . . . . . ***Starksia occidentalis***

43b. Side of head with pale area forming a reticulated pattern over preopercle . . . . . ***Starksia variabilis***

List of species occurring in the area

(Several new species of *Starksia* from the Caribbean have yet to be described.)

Haptoclinus apectolophus Böhlke and Robins, 1974. 25 mm. W Caribbean.

Labrisomus albigenys Beebe and Tee-Van, 1928. 52 mm. Campeche Banks and Haiti to Colombia.
Labrisomus bucciferus Poey, 1868. 70 mm. Bermuda to Honduras and Barbados.
Labrisomus filamentosus Springer, 1960. 76 mm. W Caribbean.
Labrisomus gobio (Valenciennes in Cuvier and Valenciennes, 1836). 49 mm. Caribbean.
Labrisomus guppyi (Norman, 1922). 88 mm. Campeche and Bahamas to Colombia and Tobago.
Labrisomus haitiensis Beebe and Tee-Van, 1928. 58 mm. Florida to Belize and Hispaniola.
Labrisomus kalisherae (Jordan, 1904). 69 mm. Gulf of Mexico to Tobago.
Labrisomus nigricinctus Howell Rivero, 1936. 54 mm. Florida to Venezuela.
Labrisomus nuchipinnis (Quoy and Gaimard, 1824). 176 mm. Florida and Bermuda to Brazil.

Malacoctenus aurolineatus C.L. Smith, 1957. 47 mm. Florida to Venezuela.
Malacoctenus boehlkei Springer, 1958. 51 mm. Belize and Bahamas.
Malacoctenus delalandii (Valenciennes in Cuvier and Valenciennes, 1836). 56 mm. Puerto Rico and Panama to Brazil.
Malacoctenus erdmani C.L. Smith, 1957. 29 mm. Bahamas to Barbados.
Malacoctenus gilli (Steindachner, 1867). 58 mm. Bermuda, Caribbean to Venezuela.
Malacoctenus macropus (Poey, 1868). 43 mm. Bermuda and Florida and through the Caribbean.
Malacoctenus triangulatus Springer, 1959. 48 mm. Caribbean.
Malacoctenus versicolor (Poey, 1876). 64 mm. Bahamas to Tobago.

Nemaclinus atelestos Böhlke and Springer, 1975. 29 mm. Gulf of Mexico and Caribbean.

Paraclinus barbatus Springer, 1955. 28 mm. Virgin Islands and Belize.
Paraclinus cingulatus (Evermann and Marsh, 1899). 20 mm. Florida to Puerto Rico.
Paraclinus fasciatus (Steindachner, 1876). 50 mm. Florida to Venezuela.
Paraclinus grandicomis (Rosén, 1911). 32 mm. Florida to Honduras and Virgin Islands.
Paraclinus infrons Böhlke, 1960. 19 mm. Bahamas and Belize.
Paraclinus marmoratus (Steindachner, 1876). 63 mm. Florida and Venezuela.
Paraclinus naeorhegmis Böhlke, 1960. 23 mm. Bahamas.
Paraclinus nigripinnis (Steindachner, 1867). 41 mm. Bermuda and Florida to Venezuela.

Starksia atlantica Longley,1934. 20 mm. Caribbean.
Starksia culebrae (Evermann and Marsh, 1899). 27 mm. Haiti to St. Vincent.
Starksia elongata Gilbert, 1971. 27 mm. Bahamas, Belize, and Tobago.
Starksia fasciata (Longley, 1934). 22 mm. Bahamas, Cuba, Antigua, and Dominica.
Starksia guttata (Fowler, 1931). 38 mm. Grenadines and Tobago to Curacao.
Starksia hassi Klausewitz, 1958. 31 mm. Bahamas and Belize to Venezuela.
Starksia lepicoelia Böhlke and Springer, 1961. 29 mm. W Caribbean and Bahamas to Virgin Islands.
Starksia nanodes Böhlke and Springer, 1961. 17 mm. Caribbean.
Starksia occidentalis Greenfield, 1979. E side of Yucatán peninsula, W Caribbean to Panama.
Starksia ocellata (Steindachner, 1876). 34 mm. Gulf and Atlantic coasts of Florida and to North Carolina.
Starksia sluiteri (Metzelaar, 1919). 21 mm. Caribbean.
Starksia starcki Gilbert, 1971. 27 mm. Florida and Honduras.
Starksia variabilis Greenfield, 1979. 33 mm. Colombia.
Starksia y-lineata Gilbert, 1965. 21 mm. Bahamas and Nicaragua.

References

Böhlke, J.E. and C.C.G. Chaplin. 1970. *Fishes of the Bahamas and adjacent tropical waters*. Wynnewood, Pennsylvania, Livingston Publishing Co., 771 p.

Gilbert, C.R. 1971. Two new clinid fishes of the genus *Starksia*. *Quart. Jour. Florida Acad. Sci*., 33(3):193-206.

Greenfield, D.W. 1979. A review of the western Atlantic *Starksia ocellata*-complex (Pisces: Clinidae) with description of two new species and proposal of superspecies status. *Field. Zool.,* 73(2):9-48.

Springer, V.G. 1958. Systematics and zoogeography of the clinid fishes of the subtribe Labrisomini Hubbs. *Publ. Instit. Mar. Sci.,* 5:417-492.

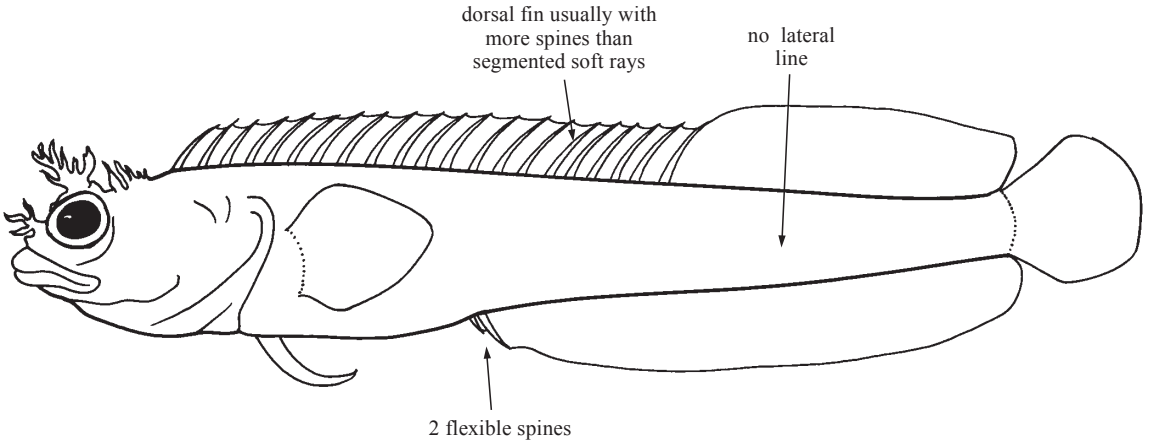
Springer, V.G. and M.F. Gomon. 1975. Variation in the western Atlantic clinid fish *Malacoctenus triangulatus* with a revised key to the Atlantic species of *Malacoctenus*. *Smithson. Contrib. Zool.*, 200:1-11.

CHAENOPSIDAE

Tubeblennies

by J.T. Williams, National Museum of Natural History, Washington, D.C., USA

Diagnostic characters: Small elongate fishes; largest species about 12 cm standard length, most under 5 cm standard length. Head usually with cirri or fleshy flaps on anterior nostrils, eyes, and sometimes laterally on nape; gill membranes continuous with each other across posteroventral surface of head. **Each jaw with canine-like or incisor-like teeth anteriorly**; teeth usually also present on vomer and often on palatines (roof of mouth). **Dorsal-fin spines flexible, usually outnumbering the segmented soft rays, spinous and segmented-rayed portions forming a single, continuous fin; 2 flexible spines in anal fin**; pelvic fins inserted anterior to position of pectoral fins, with 1 spine not visible externally and only 2 or 3 segmented (soft) rays; all fin rays, including caudal-fin rays, unbranched (simple). **Lateral line absent. Scales absent** (cycloid scales present on *Stathmonotus stahli*). **Colour:** varying from drab to brilliant hues; may have stripes, irregular vertical bands, spots, marbled pattern, or uniform coloration.

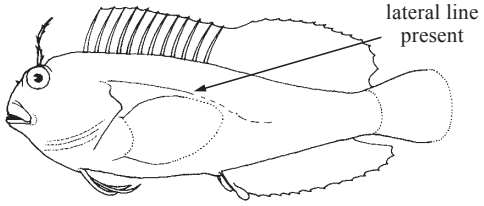


Habitat, biology, and fisheries: Benthic inhabitants usually dwelling in holes and restricted to rock or shell rubble, coral reefs, or marine grass beds. The larvae, which are scaleless and often cirriless, are often misidentified as Blenniidae. The presence of more spines than rays in the dorsal fin of almost all chaenopsids is an aid to identification. Chaenopsids do not have any commercial importance in Area 31. They are, however, very abundant in certain localities.

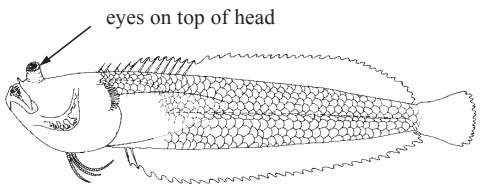
Similar families occurring in the area

Blenniidae: caudal-fin rays branched in all but one species; lateral-line tubes always present; always more segmented dorsal-fin rays than spines (most chaenopsids have more dorsal-fin spines than segmented rays).

Dactyloscopidae: body with cycloid scales; eyes on top of head, facing upwards; gill covers overlapping ventrally, and filamentous lobes present on posterior edge of gill covers.



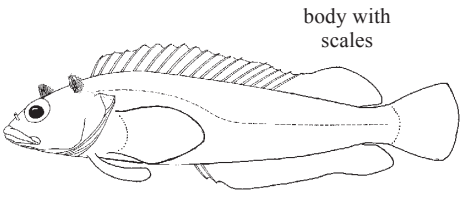
Blenniidae



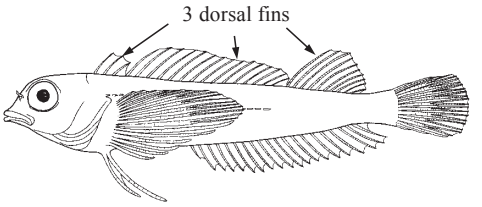
Dactyloscopidae

Labrisomidae: body with cycloid scales.

Tripterygiidae: caudal-fin rays branched; usually 3 clearly defined dorsal fins, posteriormost dorsal-fin spines always completely separated from soft rays; body with ctenoid (rough to touch) scales.



Labrisomidae



Tripterygiidae

Key to genera and species of Chaenopsidae occurirng in the area

1a. Dorsal-fin elements consisting only of spines . . . . . → ***2***

1b. Dorsal fin consisting of spines and 7 to 37 segmented rays . . . . . → ***5***

2a. Preopercular cirrus present (on ventralmost or second ventralmost preopercular pore); nuchal cirrus present . . . . . → ***3***

2b. Preopercular cirrus absent; nuchal cirrus absent . . . . . ***Stathmonotus hemphilli***

3a. Scales absent . . . . . ***Stathmonotus gymnodermis***

3b. Scales present . . . . . → ***4***

4a. Segmented caudal-fin rays 12; dorsal-fin spines modally 43; precaudal vertebrae usually 18 . . . . . ***Stathmonotus stahli stahli***

4b. Segmented caudal-fin rays 11; dorsal-fin spines modally 42; precaudal vertebrae usually 17 . . . . . ***Stathmonotus stahli tekla***

5a. Total dorsal-fin elements 44 to 56 . . . . . → ***6***

5b. Total dorsal-fin elements 29 to 40 . . . . . → ***11***

6a. Total dorsal-fin elements 44 or 45 . . . . . → ***7***

6b. Total dorsal-fin elements 51 or more . . . . . → ***8***

7a. Side of body with 8 dark blotches . . . . . ***Chaenopsis roseola***

7b. Side of body with 6 dark blotches . . . . . ***Chaenopsis stephensi***

8a. Segmented dorsal-fin rays usually 34 or fewer; males with ocellated spot between first and second dorsal-fin spines . . . . . → ***9***

8b. Segmented dorsal-fin rays 35 to 37; males with ocellated spot between second and third dorsal-fin spines . . . . . → ***10***

9a. Coronal sensory pore in line with or slightly posterior to nearest supraorbital pore (Fig. 1a) . . . . . ***Chaenopsis ocellata***

9a. Coronal sensory pore slightly anterior to nearest supraorbital pore (Fig. 1b) . . ***Chaenopsis limbaughi***

a) ***Chaenopsis ocellata*** b) ***Chaenopsis limbaughi***

Fig. 1 dorsal view of head

10a. Dark upside-down L-shaped mark on cheek behind eye; 2 supraorbital pores above posterodorsal margin of eye on each side of median commissural pore . . . . . ***Chaenopsis resh***

10b. Small spot on cheek behind eye; 1 supraorbital pore above posterodorsal margin of eye on each side of median commissural pore . . . . . ***Chaenopsis megalops***

11a. Two or more rows of teeth on each palatine bone; top of head often spiny . . . . . → ***12***

11b. One row of teeth on each palatine bone (except 2 rows in one species of *Emblemaria*, which is distinguished from all *Acanthemblemaria* species by having a simple cirrus on each eye and top of head smooth); top of head never spiny . . . . . → ***22***

12a. Patch of cranial spines on nape extends posterior to supratemporal commissural pore, almost to dorsal-fin origin; inner rim of posterior infraorbital bone spinous or with tuberculate spines . . . . . → ***13***

12b. Patch of cranial spines on nape ends anterior to supratemporal commissural pore; inner rim of posterior infraorbital bone smooth . . . . . → ***14***

13a. Sides of body with series of dark bands or large oval blotches . . . . . ***Acanthemblemaria maria***

13b. Colour pattern not as above . . . . . ***Acanthemblemaria spinosa***

14a. Supraorbital cirrus simple, cranial spines short and blunt . . . . . → ***15***

14b. Supraorbital cirrus moderately to strongly branched, cranial spines not short and blunt . . . . . → ***16***

15a. Dorsal-fin spines 21 or 22 . . . . . ***Acanthemblemaria rivasi***

15b. Dorsal-fin spines 24 . . . . . ***Acanthemblemaria johnsoni***

16a. Large, eye-diameter sized dark blotch on side of head posterior to eye . . . . . ***Acanthemblemaria betinensis***

16b. No large, eye-diameter sized dark blotch on side of head posterior to eye . . . . . → ***17***

17a. Spiny processes on head poorly developed, when present consisting of a few knobby projections; total dorsal-fin elements usually 39 or more . . . . . → ***18***

17b. Spiny processes on head well developed, total dorsal-fin elements usually 38 or fewer . . . . . → ***19***

18a. Several spines present on posterior third of supraorbital flange; fleshy lateral margins of interorbital region without papillae . . . . . ***Acanthemblemaria greenfieldi***

18b. Posterior third of supraorbital flange crenulate, without spines; fleshy lateral margins of interorbital region with row of 3 to 6 blunt papillae . . . . . ***Acanthemblemaria chaplini***

19a. Nasal cirri moderately branched with more than 6 free tips on each side; no black spot in spinous dorsal fin; white stripe along ventral midline of head in life . . . . . ***Acanthemblemaria*** **n. sp**

19b. Nasal cirri with with fewer than 6 (usually 2 or 3) free tips on each side; black spot present or absent in spinous dorsal fin; no white stripe along ventral midline of head in life . . . . . → ***20***

20a. Cranial spines on nape posterior to orbital flange in 2 groups (one group on each side of the dorsal midline), each group with 8 to 11 spines; dorsal-fin spines 18 to 20 . . . . . ***Acanthemblemaria paula***

20b. Cranial spines on nape posterior to orbital flange in 2 groups (one group on each side of the dorsal midline), each group with 3 to 5 spines; dorsal-fin spines 20 to 23 . . . . . → ***21***

21a. Adults with slender tapering papillae on all head spines; segmented anal-fin rays 25 to 27 . . . . . ***Acanthemblemaria medusa***

21b. Head spines without papillae; segmented anal-fin rays usually 24 or fewer . ***Acanthemblemaria aspera***

22a. Segmented dorsal-fin rays 19 to 21; tip of lower jaw with a fleshy projection . ***Lucayablennius zingaro***

22b. Segmented dorsal-fin rays 11 to 18; tip of lower jaw without fleshy projection . . . . . → ***23***

23a. Cirri on each eye arising from 2 separate bases . . . . . → ***24***

23b. Cirri on each eye, when present, arising from a single base. . . . . → ***25***

24a. Cirri on eye branched; total dorsal-fin elements 34 to 37; segmented dorsal-fin rays 13 to 17; pectoral-fin rays usually 14 . . . . . ***Protemblemaria punctata***

24b. Cirri on eye simple; total dorsal-fin elements 29 or 30; segmented dorsal-fin rays 11; pectoral-fin rays usually 13 . . . . . ***Coralliozetus cardonae***

25a. Tip of lower jaw projecting beyond tip of upper jaw; a broad, dark longitudinal stripe or series of dark blotches extending from eye to caudal-fin base usually present; no cirri on eye . . . . . ***Hemiemblemaria simulus***

25b. Tip of lower jaw not projecting beyond tip of upper jaw; no stripe or series of dark blotches on head and body; cirrus present or absent on eye . . . . . → ***26***

26a. Head rugose anteriorly; total dorsal-fin elements 37 to 39. . . . . ***Ekemblemaria nigra***

26b. Head smooth anteriorly; total dorsal-fin elements 30 to 38 . . . . . → ***27***

27a. Cirrus on eye present, longer than eye diameter in males (and often in females); segmented dorsal-fin rays 13 to 17 . . . . . ***(Emblemaria)*** → ***28***

27b. Cirrus on eye, when present, shorter than eye diameter; segmented dorsal-fin rays 10 to 13 (rarely 14 in one species) . . . . . ***(Emblemariopsis)*** → ***37***

28a. Two obvious segmented pelvic-fin rays (third ray vestigial or goes 5 or more times in length of longest). . . . . → ***29***

28b. Three obvious segmented pelvic-fin rays (third ray goes 4 or fewer times in length of longest) . . . . . → ***32***

29a. Pectoral-fin rays 13; dorsal-fin spines 17 to 20 . . . . . → ***30***

29b. Pectoral-fin rays 14; dorsal-fin spines 21 to 23 . . . . . → ***31***

30a. Dorsal-fin rays 14 to 16; anal-fin rays 20 or 21; vertebrae 39 or 40 . . . . . ***Emblemaria piratula***

30b. Dorsal-fin rays 13; anal-fin rays 19; vertebrae 37 . . . . . ***Emblemaria*** **n. sp**

31a. Bases of first 3 anterior dorsal-fin spines separated from bases of remaining spines by a noticeable gap; first 1 or 2 spines of males elongate and filamentous, length of longest about equal to 2/3 standard length . . . . . ***Emblemaria hyltoni***

31a. Bases of first 3 anterior dorsal-fin spines not separated from remaining spines by a noticeable gap; first 3 dorsal-fin spines of males about same length as next 3 spines, spines not filamentous . . . . . ***Emblemaria caldwelli***

32a. Pectoral-fin rays 13; males with flag-like flap on base of first dorsal-fin spine . . . . . → ***33***

32b. Pectoral-fin rays 13 or 14; males without flag-like flap on base of first dorsal-fin spine . . . . . → ***34***

33a. Palatine teeth biserial anteriorly . . . . . ***Emblemaria diphyodontis***

33b. Palatine teeth in a single row . . . . . ***Emblemaria caycedoi***

34a. Pair of obvious bony ridges on rear half of interorbital region; anal-fin rays 24 . ***Emblemaria culmensis***

34b. No bony ridges on rear half of interorbital region; anal-fin rays 20 to 23 . . . . . → ***35***

35a. Supraorbital cirrus distinctly banded, up to 3 times as long as eye diameter; pectoral-fin rays usually 14 . . . . . ***Emblemaria atlantica***

35b. Supraorbital cirrus not distinctly banded, up to 2 times as long as eye diameter; pectoral-fin rays usually 13 . . . . . → ***36***

36a. Palatine with 10 to 12 teeth; supraorbital cirrus of males about equal to length of eye; females without ocellated spots distally on fourth and fifth interspinal membranes . . . . . ***Emblemaria pandionis***

36b. Palatine with 14 to 16 teeth; supraorbital cirrus of males about twice length of eye; females with ocellated spot distally on fourth and fifth interspinal membranes . . . . . ***Emblemaria biocellata***

37a. Pectoral-fin rays 14 . . . . . → ***38***

37b. Pectoral-fin rays 13 . . . . . → ***40***

38a. Supraorbital cirrus present . . . . . ***Emblemariopsis ruetzleri***

38b. Supraorbital cirrus absent . . . . . → ***39***

39a. Intense black spot around anus . . . . . ***Emblemariopsis randalli***

39b. Area around anus pale or with scattered melanophores . . . . . ***Emblemariopsis pricei***

40a. Supraorbital cirrus present on each eye (*Emblemariopsis ramirezi* was described as lacking orbital cirri, but the underwater colour photograph included in the description clearly shows an orbital cirrus on each eye) . . . . . → ***41***

40b. No supraorbital cirri . . . . . → ***45***

41a. Edge of opercle with 4 to 6 oblique, narrow dark stripes . . . . . ***Emblemariopsis tayrona***

41b. Edge of opercle with series of small, round dark spots, or uniformly pigmented . . . . . → ***42***

42a. First dorsal-fin spine same length as, or shorter than, subsequent spines . . . . . ***Emblemariopsis leptocirrus***

42b. First 2 to 5 dorsal-fin spines longer than subsequent spines, forming a raised anterior portion . . . . . → ***43***

43a. First 3 to 5 dorsal-fin spines longest, distal margin of raised portion slightly convex, with each of third to fifth spines becoming slightly shorter in sequence until equal in height with the shorter subsequent spines . . . . . ***Emblemariopsis ramirezi***

43b. First 2 dorsal-fin spines much longer than third and subsequent spines, with distal margin appearing angular as it drops abruptly to the shorter third spine . . . . . ***→ 44***

44a. Underside of head dark or pale, no distinct dark spots; first dorsal-fin spine only slightly longer than third spine . . . . . ***Emblemariopsis occidentalis***

44b. Underside of head dark or pale, with a series of distinct, small dark spots extending posteriorly along ventral edge of opercle; first dorsal-fin spine 2 to 3 times length of third spine . . . . . ***Emblemariopsis signifer***

45a. Males and females with first dorsal-fin spine slightly longer than third spine . . . . . ***Emblemariopsis diaphana***

45b. First dorsal-fin spine slightly shorter than second and third spines . . . . . ***→ 46***

46a. Head length 3.0 to 4.0 in standard length . . . . . ***Emblemariopsis bahamensis***

46b. Head length 4.2 to 5.0 in standard length . . . . . ***Emblemariopsis bottomei***

List of species occurring in the area

(New species of *Emblemariopsis* and *Emblemaria* from the Caribbean have yet to be described.)

Acanthemblemaria n.sp Williams in Collette et al., 2003. 29 mm. Navassa Island.
Acanthemblemaria aspera (Longley, 1927). 30 mm. Caribbean to SE Florida.
Acanthemblemaria betinensis Smith-Vaniz and Palacio, 1974. 43 mm. Colombia to Costa Rica.
Acanthemblemaria chaplini Böhlke, 1957. 41 mm. Bahamas and Florida.
Acanthemblemaria greenfieldi Smith-Vaniz and Palacio, 1974. 36 mm. Providencia Island to Yucatán and Jamaica.
Acanthemblemaria johnsoni Almany and Baldwin, 1996. 20 mm. Tobago.
Acanthemblemaria maria Böhlke, 1957. 45 mm. Bahamas to Tobago.
Acanthemblemaria medusa Smith-Vaniz and Palacio, 1974. 35 mm. Antigua to Venezuela.
Acanthemblemaria paula Johnson and Brothers, 1989. 18 mm. Belize.
Acanthemblemaria rivasi Stephens, 1970. 30 mm. Panama to Costa Rica.
Acanthemblemaria spinosa Metzelaar, 1919. 31 mm. Caribbean.

Chaenopsis limbaughi Robins and Randall, 1965. 77 mm. Bahamas, throughout Caribbean.
Chaenopsis megalops Smith-Vaniz, 2000. 102 mm. Colombia.
Chaenopsis ocellata Poey, 1865. 111 mm. Caribbean to Florida.
Chaenopsis resh Robins and Randall, 1965. 121 mm. Venezuela.
Chaenopsis roseola Hastings and Shipp, 1981. 43 mm. NE Gulf of Mexico.
Chaenopsis stephensi Robins and Randall, 1965. 46 mm. Venezuela.

Coralliozetus cardonae Evermann and Marsh, 1899. 21 mm. Caribbean.

Ekemblemaria nigra (Meek and Hildebrand, 1928). 62 mm. Colombia and Panama.

Emblemaria n. sp. Williams in Collette et al., 2003. 18 mm. Navassa Island and Belize.
Emblemaria atlantica Jordan and Evermann, 1898. 70 mm. Bermuda, Georgia, and Florida.
Emblemaria biocellata Stephens, 1970. 41 mm. Suriname to Colombia.
Emblemaria caldwelli Stephens, 1970. 26 mm. Bahamas, Jamaica, and Belize.
Emblemaria caycedoi Acero, 1984. 38 mm. Colombia.
Emblemaria culmensis Stephens, 1970. 51 mm. Venezuela.
Emblemaria diphyodontis Stephens and Cervigón in Stephens, 1970. 43 mm. Isla de Cubagua, Venezuela.
Emblemaria hyltoni Johnson and Greenfield, 1976. 23 mm. Isla Roatan, Honduras.
Emblemaria pandionis Evermann and Marsh, 1900. 60 mm. Gulf of Mexico and Caribbean.
Emblemaria piratula Ginsburg and Reid, 1942. 27 mm. NE Gulf of Mexico.

Emblemariopsis bahamensis Stephens, 1961. 25 mm. Caribbean to the Bahamas.
Emblemariopsis bottomei Stephens, 1961. 30 mm. Los Roques Archipelago, Venezuela.
Emblemariopsis diaphana Longley, 1927. 25 mm. Dry Tortugas, Florida.
Emblemariopsis leptocirrus Stephens, 1970. 22 mm. Caribbean.
Emblemariopsis occidentalis Stephens, 1970. 17 mm. Bahamas and Lesser Antilles.
Emblemariopsis pricei Greenfield, 1975. 27 mm. Carrie Bow Cay and Glovers Reef, Belize.
Emblemariopsis ramirezi (Cervigón, 1999). 31 mm. Venezuela.
Emblemariopsis randalli Cervigón, 1965. 27 mm. Venezuela.
Emblemariopsis ruetzleri Tyler and Tyler, 1997. 20 mm. Belize.
Emblemariopsis signifer (Ginsburg, 1942). 33 mm. Brazil (Caribbean members represent undescribed species).
Emblemariopsis tayrona (Acero, 1987). 30 mm. Colombia.

Hemiemblemaria simulus Longley and Hildebrand, 1940. 83 mm. Florida, Bahamas, Belize, and Honduras.

Lucayablennius zingaro (Böhlke, 1957). 50 mm. Caribbean to the Bahamas.

Protemblemaria punctata Cervigón, 1966. 41 mm. Venezuela.

Stathmonotus gymnodermis Springer, 1955. 24 mm. Caribbean.
Stathmonotus hemphilli Bean, 1885. 45 mm. N Caribbean to Florida.
Stathmonotus stahli stahli (Evermann and Marsh, 1899). 25 mm. Puerto Rico to Tobago and Venezuela.
Stathmonotus stahli tekla Nichols, 1910. 25 mm. N and W Caribbean.

References

Acero P.A. 1984. A new species of *Emblemaria* (Pisces: Clinidae: Chaenopsinae) from the southwestern Caribbean with comments on two other species of the genus. *Bull. Mar. Sci. (BMS)*, 35(2):187-194.

Böhlke, J.E. and C.C.G. Chaplin. 1970. *Fishes of the Bahamas and adjacent tropical waters*. Wynnewood, Pennsylvania, Livingston Publishing Co., 771 p.

Cervigon, F. 1999. *Coralliozetus ramirezi*, una nueva especie de *Coralliiozetus* de las costas de Venezuela (Pises: Chenopsidae). *Publicaciones Ocasionales, Departamento de Investigaciones Marinas, Fundacion Museo del Mar*, 1:1-4.

Hastings, P.A. and V.G. Springer. 1994. Review of *Stathmonotus*, with redefinition and phylogenetic analysis of the Chaenopsidae (Teleostei: Blennioidei). *Smith. Contrib. Zool*., 558:1-48.

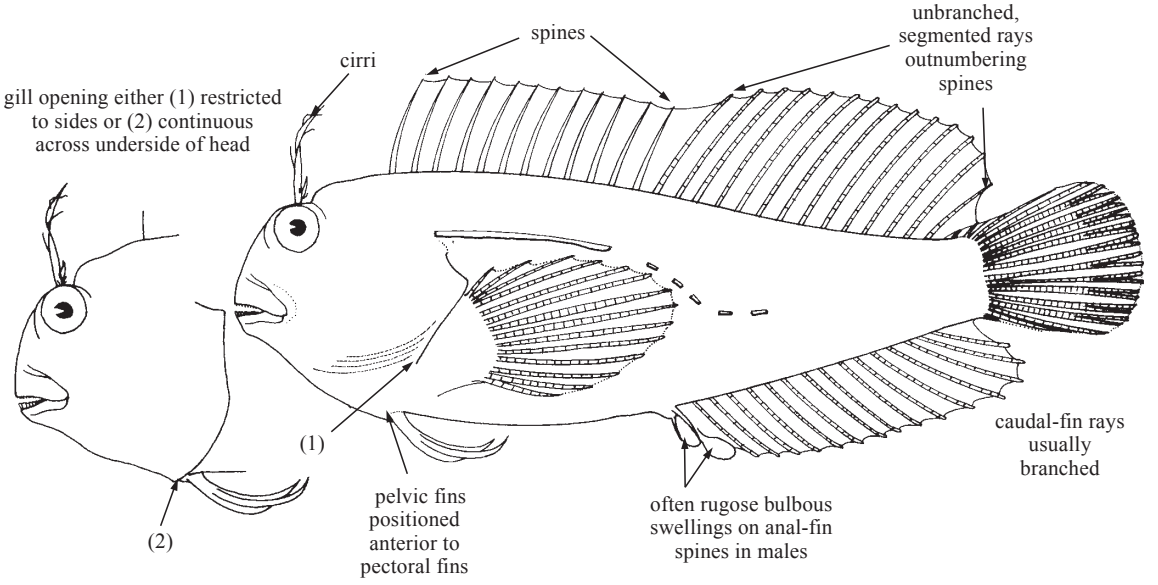
Smith, C.L. 1997. *National Audubon Society Field Guide to Tropical Marine Fishes of the Caribbean, the Gulf of Mexico, the Bahamas, and Bermuda*. New York, Alfred A. Knopf, Inc., 720 p.

BLENNIIDAE

Combtooth blennies

by J.T. Williams, National Museum of Natural History, Washington, D.C., USA

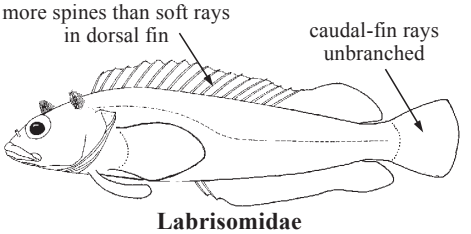
Diagnostic characters: Small, slender fishes, largest species to about 13 cm standard length, most under 7.5 cm standard length. **Head usually with cirri or fleshy flaps on eye**, sometimes also on anterior nostril and nape; eyes high on sides of head; **mouth ventral, upper jaw not protractile. A single row of incisor-like teeth in each jaw and often an enlarged canine-like tooth posteriorly on each side of lower jaw and sometimes upper jaw**; teeth rarely present on roof of mouth (rarely on vomer, never on palatines). Gill membranes either continuous with each other across ventroposterior surface of head or restricted to sides of head (a separate gill opening on each side). **Dorsal and anal fins long, their spines usually flexible; dorsal fin occasionally high anteriorly, with fewer spines than segmented (soft) rays; 2 spines in anal fin**, scarcely differentiated from the segmented rays, **the first not visible in females, both often supporting fleshy, bulbous, rugose swellings at their tips in males; pelvic fins inserted anterior to base of pectoral fins, with 1 spine (not visible) and 2 to 4 segmented rays; all segmented fin rays, except those of caudal fin, unbranched (simple), caudal-fin rays of adults branched in all but one species in which they are simple**. Lateral-line tubes or canals varying from complete (extending entire length of body) to present only anteriorly on body. **All species lack scales. Colour:** highly variable, usually drab, often mottled or with irregular stripes or bands on body.



Habitat, biology, and fisheries: Blennies are benthic, coastal fishes, usually living at very shallow depths; often found in tide pools, on wharf pilings, oyster reefs, rock, and coral reefs; occasionally in marine grass beds. The larvae of some species have 2 to 4 recurved, laterally directed canine teeth at the front of each jaw; others have spines at the lower angle of the preopercle, or darkly pigmented areas on the pectoral fins. Although very abundant in littoral areas, none of the blenniids in the area are of commercial importance, mainly because of their small size; blennies are occasionally found in the aquarium fish trade; they are often caught in traps, but usually not used for food.

Similar families occurring in the area

Labrisomidae: body with scales; caudal-fin rays always unbranched; more dorsal-fin spines than segmented rays.

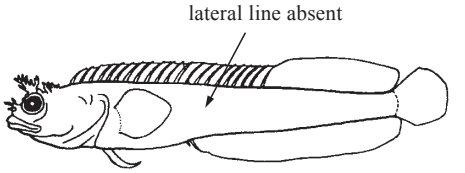


Labrisomidae

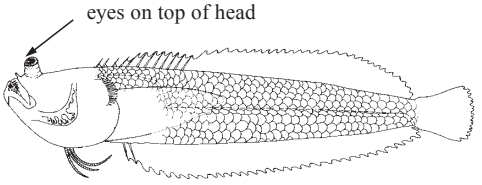
Chaenopsidae: lateral line absent; usually more dorsal-fin spines than segmented rays (except *Chaenopsis*).

Dactyloscopidae: body with scales; eyes on top of head, facing upwards; gill covers overlapping ventrally, and filamentous lobes present on posterior edge of gill covers.

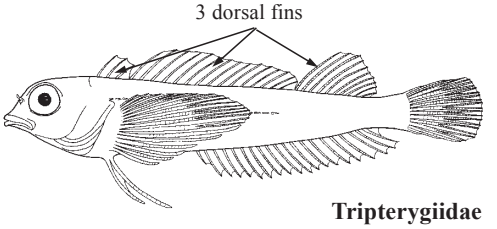
Tripterygiidae: body with scales; 3 clearly defined dorsal fins.



Chaenopsidae



Dactyloscopidae



Tripterygiidae

Key to the species of Blenniidae occurring in the area

1a. All rays in caudal fin simple (unbranched); gill opening restricted to side of head above dorsalmost level of pectoral-fin base (Fig. 1); segmented pelvic-fin rays 2, no cirri on head . . . . . ***Omobranchus punctatus***

1b. Some rays in caudal fin branched; gill opening extending ventrally to about midlevel of pectoral-fin base or further (may extend completely around lower side of head and form common opening with gill opening of opposite side); segmented pelvic-fin rays 3 or 4 (2 in some individuals of 1 species); cirri variously distributed on head (entirely absent in some specimens of 1 species) . . . . . → *2*

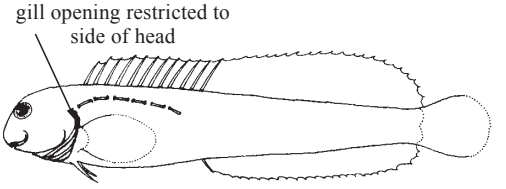


Fig. 1 ***Omobranchus***

2a. Segmented caudal-fin soft rays 10 or 11; pectoral-fin soft rays usually 12; dorsal-fin spines usually 11 . . . . . → *3*

2b. Segmented caudal-fin soft rays usually 13; pectoral-fin soft rays usually 13 to 15; dorsal-fin spines usually 12 or 13 (Fig. 2) . . . . → *5*

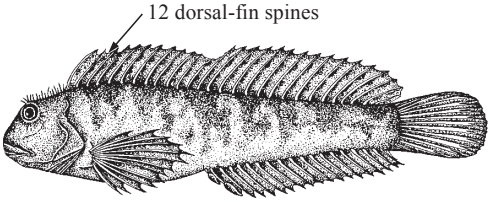


Fig. 2

3a. Prominent lip flaps on lower jaw (Fig. 3a) . . . . . ***Chasmodes saburrae***

3b. Lower jaw without prominent lip flaps (Fig. 3b) . . . . . → *4*

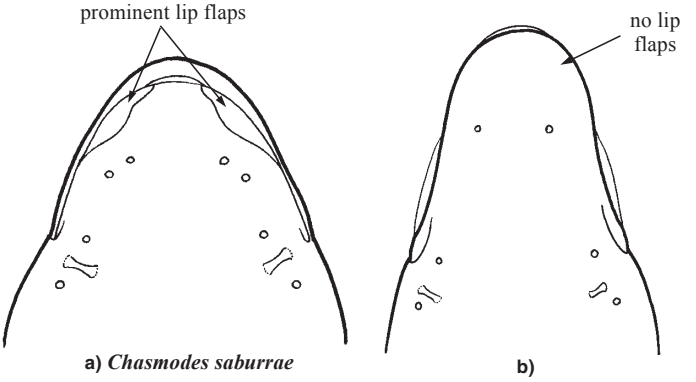


Fig. 3 ventral view of head

4a. Maxillary length usually less than 15.5% standard length; usually 12 gill rakers; New York to northeastern Florida . . . . . ***Chasmodes bosquianus***

4b. Maxillary length usually greater than 15.5% standard length; usually 11 gill rakers; northern Gulf of Mexico . . . . . ***Chasmodes longimaxilla***

5a. Pectoral-fin soft rays usually 15; lateral line consisting of 2 disconnected, elongate portions, anterior portion overlapping anterior end of the ventral portion (Fig. 4); total dorsal-fin elements 31 to 32 . . . . . ***Ophioblennius macclurei***

5b. Pectoral-fin soft rays usually 13 or 14; lateral line variously formed, but never consisting of 2 disconnected, overlapping portions; total dorsal-fin elements 25 to 30 . . . . . → *6*

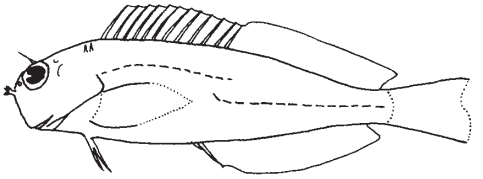


Fig. 4 ***Ophioblennius macclurei***

6a. Ventral edge of upper lip smooth centrally, crenulate laterally (Fig. 5a); a small cirrus on each side of nape anterior to level of dorsal-fin origin and posterior to level of eyes; dorsal fin completely, or almost completely, separated into 2 portions by deep notch that reaches dorsal contour of body (Fig. 5b); dorsal-fin spines usually 13, the last tiny and difficult to see; teeth on vomer . . . ***Entomacrodus nigricans***

6b. Ventral edge of upper lip smooth; nape cirri, if present, numerous and occupying area both anterior and posterior to level of eyes; dorsal fin not separated into 2 portions by deep notch (notch, when present, not reaching nearly to dorsal contour of body); dorsal-fin spines usually 12, the last easy to see; no teeth on vomer . . . . . → *7*

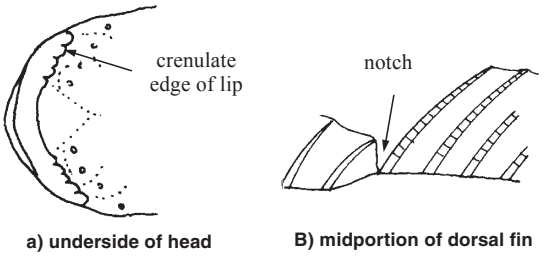


Fig. 5 ***Entomacrodus nigricans***

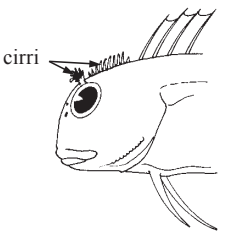


Fig. 6 ***Scartella cristata***

7a. Numerous cirri present on top of head, as well as on each eye (Fig. 6) . . . . . ***Scartella cristata***

7b. Cirri present only on eyes (cirri sometimes small or absent) . . . . → *8*

8a. Gill opening continuous from one side of head to other across ventral surface of head (Fig. 7) . . . . . → *9*

8b. Gill openings not continuous, each restricted to side of head . . . . . → *11*

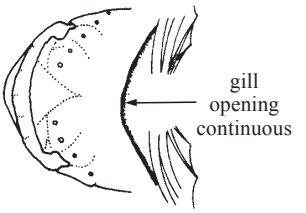


Fig. 7 underside of head

9a. Pectoral-fin soft rays usually 14; total dorsal-fin elements 28 to 30; several cirri on each eye . . . . . ***Parablennius marmoreus***

9b. Pectoral-fin soft rays usually 13; total dorsal-fin elements 25 to 27; a single, simple cirrus on each eye (sometimes frayed at tip) . . . . . → *10*

10a. Anterior dorsal-fin spines longer than posterior rays (greatly elongate in males) (Fig. 8) . . . . . ***Lupinoblennius nicholsi***

10b. Anterior dorsal-fin spines about same length as posterior rays for males and females . ***Lupinoblennius vinctus***

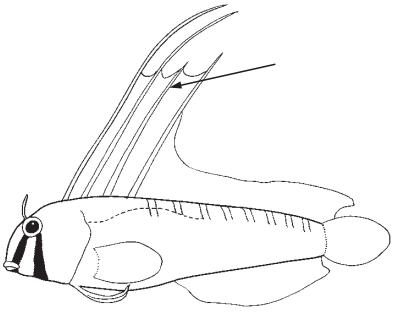


Fig. 8 ***Lupinoblennius nicholsi*** **(male)**

11a. An enlarged canine tooth present posteriorly on both sides of 1 or both jaws (sometimes absent on 1 side) . . . . . ***(Hypleurochilus)*** → ***12***

11b. No enlarged canine teeth in either jaw . . . . . ***(Hypsoblennius)*** → ***17***

12a. Pelvic fins with 1 spine and 3 soft rays (some *H. geminatus* with 4 soft rays) . . . . . → ***13***

12b. Pelvic fins with 1 spine and 4 soft rays . . . . . → ***15***

13a. Caudal fin with 3 or 4 dark bands on translucent background; segmented anal-fin rays usually 16 (west coast of Florida) . . . . . ***Hypleurochilus caudovittatus***

13b. Caudal fin uniformly pigmented or mottled with dark spots; segmented anal-fin rays usually 17 . . . . . → ***14***

14a. Preopercular sensory pore series with 1 pore (sometimes 2) at each position (New Jersey to northeastern Florida) . . . . . ***Hypleurochilus geminatus***

14b. Preopercular sensory pore series with 5 or more pores at each position (northern Gulf of Mexico) . . . . . ***Hypleurochilus multifilis***

15a. Upper half of body with groups of spots forming 4 or 5 partial bars along dorsum; anterior part of body with orange spots in life (south Florida and Caribbean Islands) . ***Hypleurochilus springeri***

15b. Upper half of body with groups of spots forming 6 partial bars along dorsum; no orange spots in life . . . . . → ***16***

16a. Black spot on membrane between first 2 dorsal-fin spines; mandibular sensory pore series with 5 pores per side (south Florida to Brazil) (Fig. 9) . . ***Hypleurochilus pseudoaequipinnis***

16b. No black spot on membrane between first two dorsal-fin spines; mandibular sensory pore series with 3 or 4 pores on each side (Bermuda, Florida, Bahamas) . . . . . ***Hypleurochilus bermudensis***

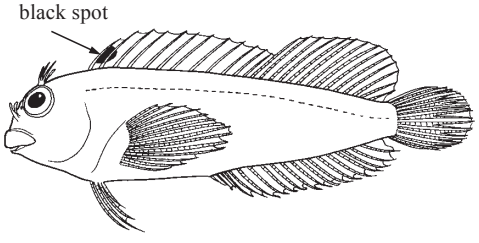


Fig. 9 ***Hypleurochilus pseudoaequipinnis***

17a. Segmented dorsal-fin rays 11 or 12; pelvic fins with 1 spine and 4 soft rays; orange spots on head and anterior portion of body in life . . . . . ***Hypsoblennius invemar***

17b. Segmented dorsal-fin rays 13 to 16; pelvic fins with 1 spine and 3 soft rays; no orange spots on head and anterior portion of body in life . . . . . → ***18***

18a. Dorsal-fin spines slender and flexible; elongate fleshy flap projecting from posterior end of lower lip on each side (Fig. 10). . . . . ***Hypsoblennius exstochilus***

18b. Dorsal-fin spines robust and stiff; no elongate fleshy flap projecting from posterior end of lower lip on each side . . . . . → ***19***

19a. Dorsal margin of upper lip with a free edge; broad, fleshy lobe at symphysis of lower jaw; mandiblular series of pores with 3 on each side . . ***Hypsoblennius ionthas***

19b. Dorsal margin of upper lip not free anteriorly; no broad, fleshy lobe at symphysis of lower jaw; mandiblular series of pores with 4 on each side . . . . . ***Hypsoblennius hentz***

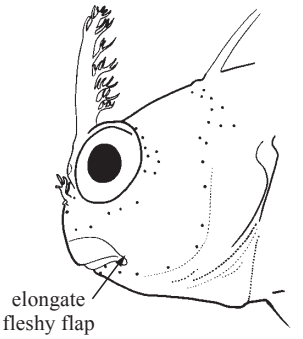


Fig. 10 ***Hypsoblennius exstochilus***

List of species occurring in the area

Chasmodes bosquianus (Lacepède, 1800). To 80 mm. New York to E central coast of Florida.
Chasmodes longimaxilla Williams, 1983 (previously listed as *Chasmodes bosquianus longimaxilla*). To 80 mm. Pensacola, Florida to S Texas.
Chasmodes saburrae Jordan and Gilbert, 1882. To 80 mm. Louisiana to E central coast of Florida.

Entomacrodus nigricans Gill, 1859. To 63 mm. Caribbean to Bermuda.

Hypleurochilus bermudensis Beebe and Tee-Van, 1933. To 100 mm. Bermuda, Florida, and Bahamas.
Hypleurochilus caudovittatus Bath, 1994. To 59 mm. W coast of Florida.
Hypleurochilus geminatus (Wood, 1825). To 89 mm. New Jersey to E central coast of Florida.
Hypleurochilus multifilis (Girard, 1858). To 102 mm. Panama City, Florida to Rockport, Texas.
Hypleurochilus pseudoaequipinnis Bath, 1994 (previously listed as*Hypleurochilus aequipinnis* in part). To 68 mm. Caribbean to S Florida.
Hypleurochilus springeri Randall, 1966. To 48 mm. Florida Keys to Venezuela.

Hypsoblennius brevipinnis (Günther,1861). To 120 mm. Exotic from E Pacific through Panama Canal.
Hypsoblennius exstochilus Böhlke, 1959. To 51 mm. Bahamas, Jamaica, Mona Is., St. Croix.
Hypsoblennius hentz (LeSueur, 1825). To 103 mm. Continental coasts from Nova Scotia to Yucatán.
Hypsoblennius invemar Smith-Vaniz and Acero, 1980. To 47 mm. N Gulf of Mexico to Tobago.
Hypsoblennius ionthas (Jordan and Gilbert, 1882). To 70 mm. North Carolina to N Florida and Cedar Keys, Florida to W Texas.

Lupinoblennius nicholsi (Tavolga, 1954) (previously listed as *Blennius nicholsi*). To 50 mm. N Gulf of Mexico.
Lupinoblennius vinctus (Poey, 1867) (previously listed as*Lupinoblennius dispar*). To 37 mm. Caribbean to S Florida.

Omobranchus punctatus (Valenciennes in Cuvier and Valenciennes, 1836) (exotic introduction from Indo-West Pacific). To 95 mm. Caribbean.

Ophioblennius macclurei Silvester, 1915 (previously listed as *Ophioblennius atlanticus macclurei*). To 115 mm. North Carolina, Florida, Caribbean (Bermuda population may be distinct species).

Parablennius marmoreus (Poey, 1876) (previously listed as *Blennius marmoreus*). To 90 mm. Caribbean, Gulf of Mexico, to New York and Bermuda.

Scartella cristata (Linnaeus, 1758) (previously listed as *Blennius cristatus*). To 100 mm. Caribbean, Gulf of Mexico, to Florida and Bermuda.

References

Bath, H. 1994. Untersuchung der Arten *Hypleurochilus geminatus* (Wood 1825), *H. fissicornis* (Quoy and Gaimard 1824) und *H. aequipinnis* (Günther 1861), mit revalidation von *Hypleurochilus multifilis* (Girard 1858) und beschreibung von zwei neuen Arten (Pisces: Blenniidae). *Senckenbergiana biologica,* 74(1/2):59-85.

Smith, C.L. 1997. *National Audubon Society Field Guide to Tropical Marine Fishes of the Caribbean, the Gulf of Mexico, the Bahamas, and Bermuda.* New York, Alfred A. Knopf, Inc., 720 p.

Smith-Vaniz, W.F. 1980. Revision of western Atlantic species of the Blenniid fish genus *Hypsoblennius*. *Proc. Acad. Nat. Sci. Philadelphia,* 132:285-305.

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