

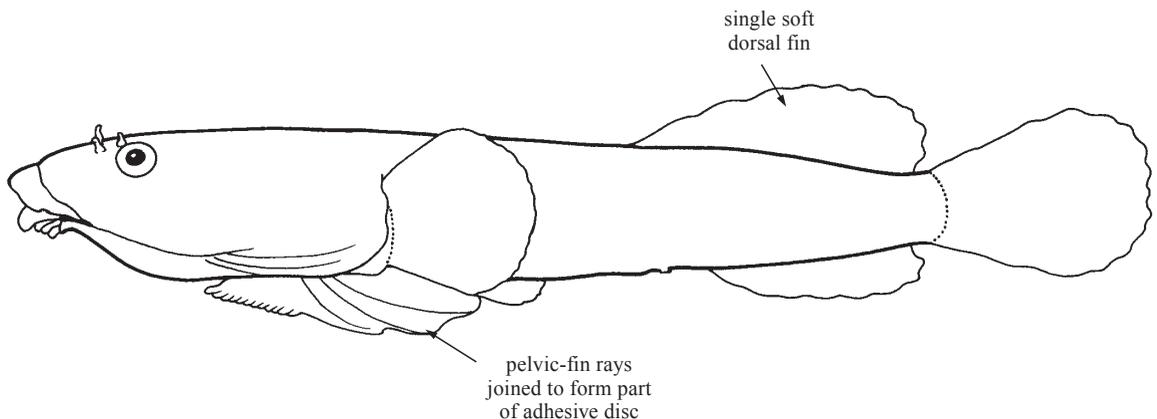
Suborder GOBIESOCOIDEI

GOBIESOCIDAE

Clingfishes

by J.D. McEachran, Texas A & M University, USA

Diagnostic characters: Small to moderate-sized (to about 30 cm total length). Generally dorsoventrally flattened, with anterior part of head depressed. Nostrils paired, with anterior opening tubular and posterior opening usually tubular. Eye on dorsolateral aspect of head and small to moderate in size. Mouth terminal and small to moderate in size. Jaw teeth conical to incisor-like and in patches or rows. Gill membranes usually free of isthmus but occasionally attached. Gills on 3 to 3 1/2 arches (no slit behind last arch). **Dorsal fin single, posteriorly located, consisting entirely of soft rays.** Anal fin lacks spines and similar in size, shape, and position to dorsal fin. Pectoral fin broad and fan-like. **Pelvic fins with 4 rays and joined to form part of adhesive disc located between head and trunk. Pelvic-fin rays form lateral edges of disc, and fourth ray joined to lower portion of pectoral-fin base by membrane. Free edge of posterior section of disc extends dorsally to form axial dermal flap. Disc bears flattened papillae along its anterior lateral margins, posterior margin, and central region.** When papillae of central region continuous with papillae of posterior region, 2 sucking discs formed. When papillae of central region separate from those of posterior region 1 disc formed. Urogenital papilla located behind anus in both sexes. Scales absent. Sensory pores on head only. Vertebrae number 25 to 54. **Colour:** dorsal surface greenish, grey, or dark brown and often patterned with spots, reticulations, or bars. Ventral surface light to white.

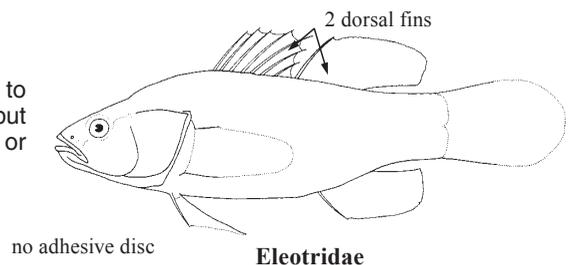


Habitat, biology, and fisheries: Worldwide in shallow tropical to warm-temperate seas, brackish, and fresh waters. Sucking disc is used to attach fish to hard substrates and plants in areas subjected to wave or tidal action.

Remarks: There are about 120 species in 36 genera worldwide, 15 species in eight genera in area.

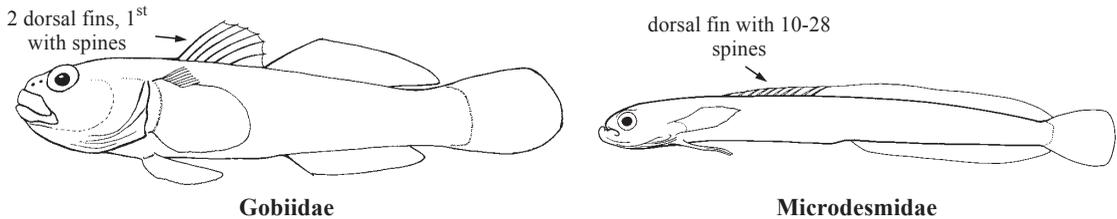
Similar families occurring in the area

Eleotridae: possesses 2 dorsal fins, first consisting of 2 to 8 spines; pelvic fins close together or partially joined but not forming adhesive disc; body covered with cycloid or ctenoid scales.



Gobiidae: generally possess 2 dorsal fins, first consisting of 2 to 8 spines; adhesive disc usually present but consists exclusively of pelvic fins and lacks flattened papillae; cycloid or ctenoid scales usually present on at least part of body.

Microdesmidae: possesses single dorsal fin but anterior section consists of 10 to 28 spines; pelvic fins consist of 1 spine and 2 to 4 rays but do not form adhesive disc; body covered with small embedded scales.



List of species in the area

Acyrtops amplicirrus Briggs, 1955. To 18.6 mm. Virgin Islands and Belize.

Acyrtops beryllinus (Hildebrand and Ginsburg, 1926). To 25 mm. S Florida and Bahamas to Belize and Virgin Islands.

Acyrtus artius Briggs, 1955. To 30 mm. Bahamas to Curaçoa, Yucatán, and Belize.

Acyrtus rubiginosus (Poey, 1868). To 35 mm. Bahamas, Antilles, Grand Cayman, Mexico to Honduras.

Arcos macrophthalmus Günther, 1861. To 88 mm. Bahamas, Lesser Antilles.

Derilissus altifrons Smith-Vaniz, 1971. To 17.1 mm. Dominica.

Derilissus kremnobates Fraser, 1970. To 27 mm. Arrowsmith Bank.

Derilissus nanus Briggs, 1969. To 14.1 mm. Bahamas.

Gobiesox barbatulus Starks, 1913. To 53.4 mm. Belize and Natal, Brazil.

Gobiesox lucayanus Briggs, 1963. To 60 mm. Bahamas.

Gobiesox nigripinnis (Peters, 1859). To 60 mm. Virgin Islands to Curaçoa, Venezuela.

Gobiesox punctulatus (Poey, 1876). To 60 mm. Gulf of Mexico to Bahamas, Lesser Antilles to Venezuela.

Gobiesox strumosus Cope, 1870. To 80 mm. New Jersey and Bermuda to Gulf of Mexico and Lesser Antilles.

Gymnoscyphus ascitus Böhlke and Robins, 1970. To 31.3 mm. St. Vincent Island, Lesser Antilles.

Rimicola brevis Briggs, 1969. To 15.4 mm. Panama, Virgin Islands.

Tomicodon fasciatus (Peters, 1859). To 34.4 mm. Bahamas, Antilles, Curaçoa, Grand Cayman, Belize to Venezuela.

Tomicodon rhabdotus Smith-Vaniz, 1969. To 38.4 mm. Dominica.

References

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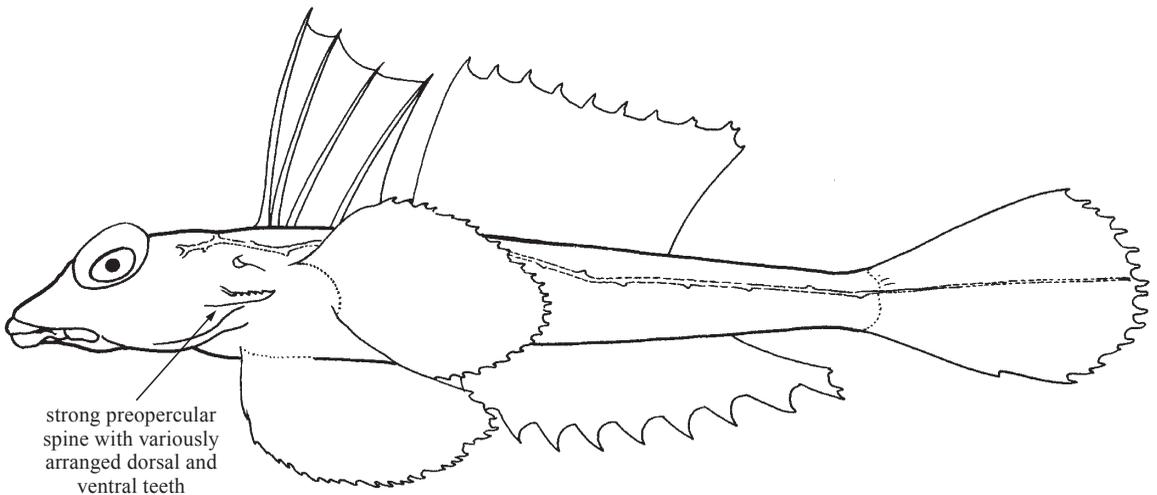
Suborder CALLIONYMOIDEI

CALLIONYMIDAE

Dragonets

by K.E. Hartel, Harvard University, Massachusetts, USA and T. Nakabo Kyoto University Museum, Japan

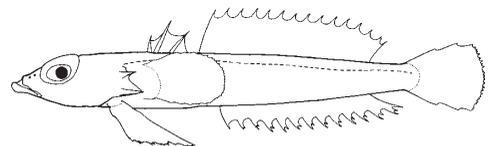
Diagnostic characters: Small fishes seldom reaching more than 30 cm total length. Body elongate and somewhat depressed. **Preopercular spine strong and elongate ornamented with spines in various patterns. Gill opening reduced to a small pore just behind upper side of head.** Mouth small and terminal; angles ventrally when protruded. Eyes large. Dorsal fins separate, usually with 4 weak spines, and 6 to 9 soft rays. **Spiny dorsal fin often high and sometimes filamentous**, sexually dimorphic. Pectoral fin large and rounded. Pelvic fin just below opercular spine, long, reaching well beyond beginning of anal fin in males. Anal fin with 4 to 8 soft rays. Caudal fin elongate with long filamentous central rays in males. Scales absent, but lateral line complete, often extending onto caudal fin. **Colour:** usually colourful with mottled pink, red, and yellow pigments.



Habitat, biology, and fisheries: Dragonets are benthic fishes of tropical and temperate waters. Some species inhabit shallow seagrass beds while the *Foetorepus* species are found as deep as 650 m. Not important to fisheries though taken as bycatch in bottom trawls.

Similar families in the area

Draconettidae, Gobiidae, and Eleotridae: lack the strong preopercular spine with variously arranged dorsal and ventral teeth.



Draconettidae

Key to the species of Callionymidae occurring in the area

- 1a. A long, horizontal fold of skin along body ventrolaterally; 4 anal-fin rays *Diplogrammus pauciradiatus*
- 1b. Ventrolateral dermal fold absent; 7 or more anal-fin rays → 2
- 2a. Preopercular spine with an antrorse ventral spine and 3 or more upward directed spines (Fig. 1a) *Paradiplogrammus bairdi*
- 2b. Antrorse ventral spine lacking and usually only 2 upward directed spines at posterior preopercular tip (Fig. 1b) (*Foetorepus*) → 3
- 3a. First dorsal-fin spine never elongate or filamentous in either sex; second dorsal fin convex in males and almost straight in females; mark on first dorsal fin large and jet black; anal fin with blackish band in both sexes. *Foetorepus agassizii*
- 3b. First dorsal-fin spine elongate and filamentous; second dorsal fin shallowly emarginate in both sexes; blackish mark on first dorsal fin absent or very small; anal fin without blackish band in males; pectoral fin usually with 2 unbranched and 18 to 21 branched rays → 4
- 4a. First dorsal fin without a blackish mark in specimens larger than 12 cm standard length, without blackish mark or with a faint darkish mark between 7 to 12 cm standard length, with a small spot in specimens less than 7 mm standard length; predorsal length 22 to 32% (average 28.5%) of standard length. *Foetorepus goodenbeani*
- 4b. First dorsal fin with a distinct blackish mark at all sizes and sexes; predorsal length 30 to 35% (average 32.5%) of standard length. *Foetorepus dagmarae*

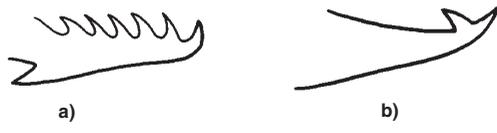


Fig. 1

List of species occurring in the area

- Diplogrammus pauciradiatus* (Gill, 1865). 5 cm. North Carolina to Colombia.
- Foetorepus agassizii* (Goode and Bean, 1888). 25 cm. Widespread, Canada to N Brazil
- Foetorepus dagmarae* (Fricke, 1985). 25 cm. N South America; from Venezuela to French Guiana.
- Foetorepus goodenbeani* Nakabo and Hartel 1999. 30 cm. S New England to N Gulf of Mexico
- Paradiplogrammus bairdi* (Jordan, 1888). 11 cm. Bermuda, Bahamas, S Florida to N South America

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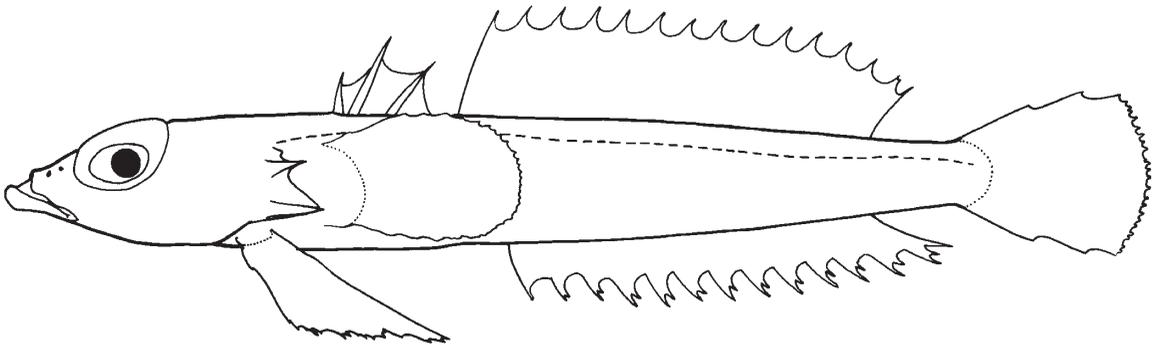
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DRACONETTIDAE

Deepwater draconetts (draconetts)

by K.E. Hartel, Harvard University, Massachusetts, USA and T. Nakabo, Kyoto University Museum, Japan

Diagnostic characters: Small fishes 4 to 11 cm as adults. Body elongate and round in cross-section. Head large with very large eyes; interorbital narrow. Snout and jaws pointed; jaws protrusible. Teeth small, in bands. **Opercle and subopercle each with a strong, pointed, retrorse spine.** Two separated dorsal fins. **First dorsal fin with 3 strong pungent spines in Atlantic species;** second dorsal fin with 13 to 15 soft rays (usually 14). Anal fin long with 13 soft rays. Pectoral fins long and rounded. Pelvic fins long, pointed, and extending past the anal-fin origin with 1 spine and 5 soft rays. Scales absent. **Colour:** usually reddish.



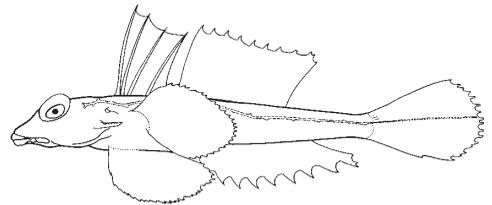
Habitat, biology, and fisheries: Adults benthic in fairly deep water; usually at 300 to 550 m. Postlarvae and small juveniles (1.5 to 2.8 cm) of *Centrodraco acanthopoma* are mesopelagic between 200 to 400 m and found well off the slope. Juveniles probably settling out at about 3 cm. Little else known about their biology.

Similar families occurring in the area

Gobiidae, Eleotridae, and Callionymidae: all have more than 3 spines in the first dorsal fin and all lack the straight, pointed opercular and subopercular spine.

Key to the species of Draconettidae occurring in the area

- 1a. Body lacking 2 or 3 longitudinal elongate stripes although 4 non-elongate blotches may be present; second dorsal-fin spine longest. . . . *Centrodraco acanthopoma*
- 1b. Body with 2 or 3 longitudinal elongate stripes; first dorsal-fin spine longest. *Centrodraco oregonus*



Callionymidae

List of species occurring in the area

- Centrodraco acanthopoma* (Regan, 1904). 11 cm. Subtropical to tropical Atlantic and W Pacific, larvae widespread.
- Centrodraco oregona* (Briggs and Berry, 1959). 14 cm. Tropical, off NE Brazil from 2°N to 12°S.

References

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