

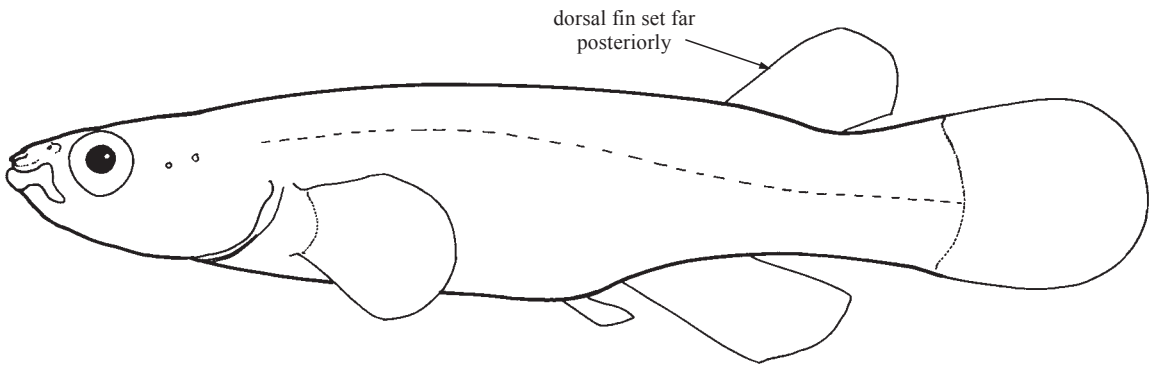
Order CYPRINODONTIFORMES

RIVULIDAE

New World rivulines (rivulid killifishes)

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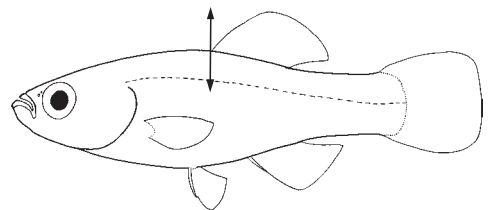
Diagnostic characters: Small fishes (2 to 11 cm standard length, 6 cm maximum in *Rivulus marmoratus*). Body elongate, cylindrical. Head flattened, **lateralis supraorbital sensory system on top of head with grooves and exposed sensory placodes rather than a series of tubes with pores**, mouth slightly up-turned, and terminal; teeth unicuspid. **No spines in fins but first rays may be unbranched; dorsal fin set far posteriorly on body, its origin over insertion of last 2 or 3 soft anal-fin rays** (brackish- and saltwater species only); dorsal fin with 8 to 11 soft rays; anal fin with 10 to 17 soft rays, anal-fin origin anterior to dorsal-fin origin; caudal fin rounded; pectoral fins short and rounded and inserted at or slightly below midbody, with 13 to 16 soft rays; pelvic fins abdominal in position, with 5 to 7 soft rays. Lateral line reduced to sensory pits along side of body. Body with cycloid scales. Sexes dimorphic with males having larger anal fins. **Colour:** body background of brown to green with hints of blue, body pattern variable, often mottled with spots and stripes. Sexually dichromatic, **females usually with a distinct ocellus on upper caudal peduncle** just anterior to caudal fin, males often with more distinct colour pattern seasonally. Hermaphroditic individuals of *Rivulus marmoratus* (most common species in area) also with a distinct ocellus on upper caudal peduncle just anterior to caudal fin.



Habitat, biology, and fisheries: Most rivulid killifish species occur in fresh water, some species are very adaptable to varying salinity and temperature. The most common species, the mangrove rivulus (*Rivulus marmoratus*), is hermaphroditic in the area and males are rare. Hermaphrodites are self-fertilizing and lay fertilized eggs. Some populations of *R. marmoratus* in Venezuela and Brazil are non-hermaphroditic. *Rivulus marmoratus* is found over marl substrates where aquatic vegetation is sparse and detritus is common, and in low oxygen environments in salt marshes and mangrove swamps with salinities of 0 to 32 ‰. Diet consists of small invertebrates. Of little importance as a forage fish and of no commercial importance except as aquarium fishes. (Both *R. marmoratus* and species of the *R. hartii/R. holmiae* complex are kept by aquarists but stock is usually raised in aquaria, not caught in the wild.)

Similar families occurring in the area

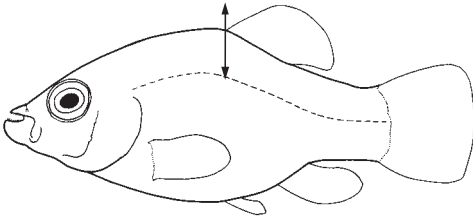
Fundulidae: dorsal fin positioned more anteriorly, dorsal-fin origin anterior to insertion of last 2 or 3 soft anal-fin rays, no ocellus on upper caudal peduncle just anterior to caudal fin, supraorbital sensory system in form of canals and pores in adults.



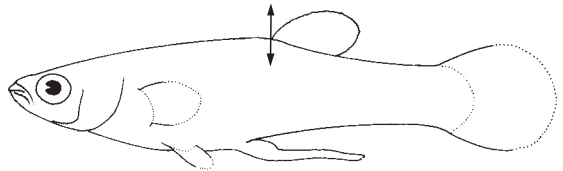
Fundulidae

Cyprinodontidae: generally stouter-bodied; dorsal fin positioned more anteriorly, dorsal-fin origin anterior to anal-fin origin, no ocellus on upper caudal peduncle just anterior to caudal fin, supraorbital sensory system in form of canals and pores in adults; jaw teeth tricuspid.

Poeciliidae: males with long anal fin modified into a non-tubular intromittent organ (gonopodium), no ocellus on upper caudal peduncle just anterior to caudal fin, third anal-fin ray unbranched; viviparous; supraorbital sensory system may be pores, placodes, or a combination.



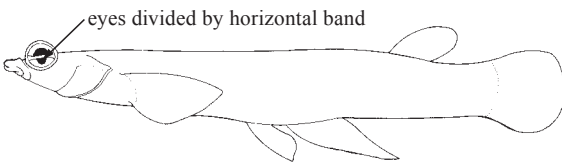
Cyprinodontidae



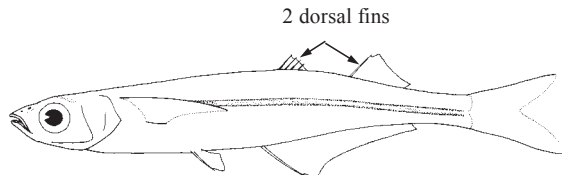
Poeciliidae

Anablepidae: eyes divided by horizontal band of opaque tissue into upper and lower halves; anal fin in males forms tubular intromittent organ; no ocellus on upper caudal peduncle anterior to caudal fin; viviparous.

Atherinidae: 2 dorsal fins, the first with 3 to 9 slender spines, the second with 1 anterior spine; anal and pelvic fins also with spines, pectoral fins set high on body, pelvic fins thoracic; no lateral line; most species with lateral silvery stripe; no ocellus on upper caudal peduncle just anterior to caudal fin; caudal fin forked.



Anablepidae



Atherinidae

Key to the species of Rivulidae occurring in the area

- 1a. Anal-fin with 13 or more soft rays; 6 to 8 rows of reddish spots on side; adult males with bright orange or yellow coloration on dorsal and ventral margins of caudal fin; adults often larger than 6 cm **Rivulus hartii / R. holmiae complex**
- 1b. Anal fin with fewer than 13 rays; mottled with irregularly distributed black spots on side; large males (very rarely encountered) with orange coloration on body and fins, dorsal and ventral margins of caudal fin not distinctly coloured; never larger than 6 cm . . . **Rivulus marmoratus**

List of species occurring in the area

- Rivulus hartii* (Boulenger, 1890)/*Rivulus holmiae* Eigenmann, 1909 complex. To 10 cm. Venezuela, Margarita Island, Trinidad, Guyana, and Suriname; salt tolerant, occurrence doubtful in bays and estuaries).
- Rivulus marmoratus* Poey, 1880. To 6 cm. Widely distributed; commonly occurring from S Florida and the Bahamas S in both the Greater and Lesser Antilles to Venezuela.

References

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